

EXECUTIVE SUMMARY

1.0 Introduction

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. The corridor is envisaged to influence the pattern of development and industrialization of the region. To tap the development potential of the proposed freight corridor, a band spanning 150 kilometers wide on both sides of the freight corridor has been identified as Influence Region and is proposed to be developed as Delhi-Mumbai Industrial Corridor (DMIC). Several 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), an SPV formed under Ministry of Commerce (MoC), Government of India, is undertaking the planning and development of a **Mega Industrial Park at village Shendra, district Aurangabad** in the state of Maharashtra. The Maharashtra Industrial Development Corporation (MIDC) will be the nodal agency responsible for implementation of Shendra MIP in Maharashtra.

The proposed Shendra MIP is spread over an area of 845.26 hectares (ha), covering three villages- Ladgaon, Karmad and Kumbephall and primarily includes rural hinterland, comprising of agricultural lands, village settlements and scrub lands. The land for the project is under possession with MIDC and was acquired as per the Land Acquisition Act, 1894.

The draft development plan for the industrial park for Shendra MIP has obtained in-principle approval from Maharashtra Industrial Development Corporation (MIDC) has been prepared by Design Point Consult Private Limited. The planned development for Shendra MIP is consistent with the Metropolitan Area Development Plan for Aurangabad, Town Planning and Valuation Department which designates the proposed site location for Industrial landuse.

The proposed MIP is adjacent to the existing MIDC Shendra industrial area in the east. It will have industries, commercial spaces, public/ semi-public areas, a logistic hub, truck terminal, residential areas, utilities, parks and open spaces.

The proposed project falls under item 7(c) i.e Industrial Estate/ park and 8(b) i.e Township and area development as per the Environment Impact Assessment Notification 2006 and has been categorised as Category 'A' project. DMICDC has appointed AECOM India Pvt. Limited to conduct the EIA study as per the Term of Reference (ToR) approved by Ministry of Environment and Forest (MoEF) for the project and to obtain environmental clearance.

2.0 Site Selection

The primary objective behind selection of site for the Shendra MIP was to identify and potential areas for industrial development in the proximity of Aurangabad city. An area of interest (AOI), having total area of 5175 km² and including the existing MIDC land and additional adjacent areas of potential value for development, was selected. Firstly the basic suitability of the entire area of

interest (AOI) was assessed. Thematic maps for elevation, slope, land use and water resources were prepared for the identified AOI and an environmental sensitivity analysis was conducted. Based on it, the overall development suitability of the AOI was determined. The development suitability map indicated that the largest area of contiguous land with low environmental sensitivity (and therefore more suitable for development) is found in the centre of the AOI, along with smaller pockets to the east and west of Aurangabad City Centre.

Secondly the feasibility assessment of three alternative sites within the developable region of the AOI was undertaken.

- Alternative 1- Around Existing MIDC Shendra Industrial Park
- Alternative 2- Around Bidkin town
- Alternative 3- Combination of Alternative 1 and Alternative 2

The three alternatives were evaluated against criteria such as connectivity, water resources, topography, socio-economy and environmental sensitivity and final scores were assigned to each option based on the ranking system. Alternative-3 was selected as the final alternative for development of Shendra MIP. The site has a total developable area of 845.26 ha encompassing two villages. The series of National and State highways including NH 211, SH 178 and SH 148 and the rail line at Karmad enhances the overall connectivity of the site. The site also has good accessibility to the existing Aurangabad Airport. The site also has viable water resources in the form of Sukhna lake and Jayakwadi Dam Reservoir. As compared to other two options, the site comprises of gentler slope over majority of the area which is suitable for development. The population density and irrigation density of the site also favours development. Moreover, the site is just adjacent to the existing Shendra Industrial area of MIDC and has the presence of good number of industries and industrial infrastructure. Also, the site is the least sensitive in terms of environment as compared to the other two options.

3.0 Project Description

The proposed project will be developed in an area of 845.26 ha with 36% of industrial development. The population has been estimated to be about 39220 and will create employment opportunities for about 51026 persons. The project will include mixed land use development including residential, industrial and commercial development along with state-of-the-art supporting infrastructure.

Site Location and Settings- The proposed site for Shendra MIP is located towards the east of Aurangabad city. Planned adjacent to the existing Shendra Industrial Area, and north of Jalna road, the proposed Shendra MIP is strategically positioned for direct connection to major state and national highways and rail network. The area will also provide connections to the city of Aurangabad on new expressways leading to NH-211, SH-148, MH SH-30. The land use is dominated by agricultural land that is most likely irrigated with water from the Sukhna Dam Reservoir located in the south direction. Some parts of the hills located on the western and eastern side of the project site boundary are also zoned as reserved forest. No other protected forest area is reportedly present within the study area. Immediately to the east of the project boundary lies the existing MIDC Shendra Industrial area.

Development Plan- Industries have been planned integrated with the existing Shendra Industrial development. The siting of industries has been done considering the predominant wind direction with respect to the residential areas. Only green category industries have been proposed. During micro planning, similar industries will be clustered together to encourage the sharing of common facilities and linkages in production. Concept of industrial ecology will be encouraged. A 30 m wide high tension buffer has been planned between the residential and industrial land uses. About 50 ha of park and green areas have also been proposed.

Degraded hillsides towards the north and centre of the development area will be reforested and labelled as “Ecological Restoration Zone”. The forest lands and hillocks in the north and north-western part of the MIP will be preserved. The catchment of Sukhna Reservoir and the water bodies within the MIP boundary will also be conserved.

About 36% of the total area has been demarcated for industrial land use, 6% for residential land use, 28% for transportation, 9 % for commercial and 8 % for public/semi-public uses. About 6 % of the total area has been earmarked for parks and open spaces. The industrial mix proposed for the MIP shall include clusters comprising of engineering, food parks and textiles. The project is proposed to be developed over a 10 year period upto year 2025.

Project Construction – It is estimated that for the development of each phase, two labour camps with a capacity to accommodate 1000-1200 workers each during peak phase. The labour camps shall be provided with adequate water and power supply and sanitation facilities including toilets with septic tanks. The construction material shall be sourced from authorised quarries and power shall be met from the existing substations. MIDC shall allocate water supply for the labour camps and for the construction activities. The waste generated shall be disposed off in the existing waste management facilities in the region.

Project Utilities

Water and Wastewater - The water demand for the region has been estimated to be about approximately 27-30 MLD including water losses (15%) and water for firefighting.

Power – The power demand for Shendra MIP has been estimated to be 350 MW and will be sourced from existing substations at Shendra and Chitegaon at a distance of 10 km from project site. It is proposed that renewable energy certificates shall be purchased and solar assisted heating shall be made mandatory for all institutional buildings. Also, MIDC will enforce the Energy Conservation Building Codes developed by Bureau of Energy Efficiency. Waste to energy options will also be explored.

Solid Waste Management – The municipal solid waste generation from the proposed region has been estimated as 41 TPD for the year 2025. Industrial waste generation from the proposed project has been estimated to be about 356 TPD. A waste collection and transportation system has been designed in compliance with the Municipal Solid Waste Management Rules, 2000. As part of waste management, an Integrated Solid Waste Management facility has been proposed in the east of the development area spread over 3.62 ha land within the project site boundary.

Transport Infrastructure – A well designed network of urban roads (arterial, sub- arterial and collector roads) have been proposed. A 90 m wide spine road with dual and four line carriageways and service roads on either side will traverse through the Shendra MIP. Primary roads (sub-arterial roads) with ROWW of 60 m are proposed to be three-lane dual carriageways (six lanes) with little scope of expansion. Secondary roads (collector roads) with ROW of 45 m will directly connect to the major roads and primary roads for different land use purposes and will be two-lane dual carriageways. Finally, the Tertiary roads (local roads) with ROW of 30 m will have two-lane carriageway. These are the roads from where traffic actually originates.

4.0 Baseline Environment

The baseline environmental status for Shendra MIP and the study area extending upto 10 kms from the project site boundary has been assessed using primary data collection and secondary data review. One season primary monitoring was carried out during December 2011- March, 2012. The data was supplemented by the latest environmental monitoring data (December 2013-April 2014) collected by Maharashtra State Pollution Control Board (MSPCB) in Aurangabad city. The baseline data generation included site visits, primary environmental monitoring, ecological surveys, social surveys and interviews, processing of satellite imagery and secondary data review from established sources such as Indian Meteorological Department, Census of India etc. The details have been presented in Table E-1.

Table E-1: Baseline Environmental Status

Parameter	Description
Topography	The project site falls largely within the Deccan Plains and is relatively flat, with two small areas of hilly land lying to the north and west of the project site that reach a height of over 750 meters. The area slopes south east wards from the Sahyadris and land between these two hill ranges forms a valley draining to the Sukhna Reservoir.
Land Use	The predominant land use within study area is fallow land, open forest, followed by agricultural land and scrub forest land. Built up area constitute around 3 % and water bodies just 1% of the study area.
Physiography and Drainage	The study area falls in the catchment of Godavari basin, with Sukhna Lake being the important reservoirs where the area drains into. The area is sloping towards the south-southeast as the drainage of the area is guided through various small streams and seasonal channels
Climate and Meteorology	The climate of the area is characterized by a hot summer with dry conditions throughout the year except during the south west monsoon season. The summers are hot and winters are warm. The summer months are the driest when the relative humidity is generally between 20% and 25% in the afternoons. As per the onsite meteorological data collected for winter season, the predominant wind direction was observed to be North east and the average wind speed was recorded at 0.69m/s. The southwestern monsoon constitutes about 80% of total rainfall in the region. The months of July and August receive maximum rainfall in the range of 150-160mm. The average annual rainfall observed in the project area range between 640mm and 748mm.
Ambient Air Quality	Ambient air quality was monitored at 3 locations for a period of twelve weeks for PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, HC and O ₃ . The PM ₁₀ and PM _{2.5} values were in the range of 26.4- 67.8µg/m ³ and 11.3-34.1µg/m ³ and were within standards. SO ₂ and NO _x levels were observed to be in the range of 8.4-24.8µg/m ³ and 11.2-37.7µg/m ³ and were well within the standards. Maximum concentration of CO was observed to be 1135 µg/m ³ and was well within the standards. All other parameters were observed to be below detection limits.
Water Resources and Quality	As per studies by Central Ground Water Board, the scope of groundwater development in Aurangabad is about 55% and falls under Safe category. The groundwater is alkaline in nature and is not found suitable for drinking purpose due to high nitrate concentration.

	<p>Ground water monitoring was undertaken at 2 locations and TDS and total hardness levels exceeded the respective desirable limits.</p> <p>Surface water samples collected from 3 locations. The samples from Sukhna Dam were found to be fit for Propagation of Wild life and Fisheries while the one collected from a pond was found to be fit for irrigation. None of the samples were found to be fit for drinking purposes.</p>
Ambient Noise Levels	Noise level was monitored at 3 locations in the study area and was observed to be within prescribed CPCB standards at all locations.
Soil Quality	Soil samples were collected from 2 locations. The soil texture was found to be sandy. The porosity of the soil samples ranged from 25.8 – 31.3% and permeability is high which refers to well-drained soil. Heavy metals such as zinc, copper, iron, lead, chromium and manganese were found in the soil samples.
Traffic Density	Traffic density was monitored at 2 locations, SH 178 at Shendra (Jalna road) and NH-211 at Aadgaon (Beed road). Maximum traffic was observed during night time along both highways. This traffic can be attributed to the high movement of the goods vehicles during the night time. The observed had significant volume of two wheelers followed by Light commercial Vehicle (LCV) which indicate that the roads are mainly used by people going to workplaces.
Ecological Environment	<p>The natural areas in the region comprise of forested patches and open scrub stretches with species such as <i>Acacia catechu</i>, <i>Albizzia procera</i>, <i>Acacia nilotica</i>, <i>Balanites aegyptica</i>, <i>exotic Lantana camara</i>, etc. The study area also comprises of habitations, farmlands, orchards and plantations with trees like Mango, papaya, Bitter Almond, crops like wheat, maize, millets etc. The avifaunal profile is dominated largely by birds associated with open scrublands and wetland birds. The survey-area does not coincide with any known major avian migratory flyway.</p> <p>The important ecological sites in the survey-area include the Sukhna Lake and network of streams which drain the area and a Reserved Forest in the north. An important eco-sensitive area is the Jayakwadi Bird Sanctuary about 40 km in the south direction of the proposed Shendra MIP site.</p>
Social Environment	The project area is spread over 3 villages namely Karmad, Ladgaon and Kumbephal in Aurangabad Tehsil. As per Census 2001 data, the project area comprises of total population of 11451 with average household size being 6. The literacy rates in the project area is 63%. Much of the population is agriculture dependent. The project area lacks access to healthcare facilities. The education infrastructure in the region is poor and there are no colleges or Industrial training Institute in the project area.

5.0 Impact Assessment and Mitigation Measures

The project activities during construction and operation phase were identified and assessed based on various criteria such as spread, duration, intensity and nature of impacts. The impacts identified and the mitigation measures suggested are presented in Table E-2.

Table E-1: Environmental/Social Impacts and Mitigation Measures

S.N	Component	Impacts Identified	Suggested Mitigation Measures	Responsibility
CONSTRUCTION PHASE				
1.	Ambient Air Quality	<ul style="list-style-type: none"> Emissions from construction equipments, vehicles; Improper handling and storage of construction material; Fugitive dust emissions Emissions from onsite operation of diesel generators; Burning of waste at camp sites; 	<ul style="list-style-type: none"> Power supply for construction will be sourced from existing source of MIDC supply. Generators to be used only as backup source Appropriate stack height as per the CPCB guidelines to be provided for DG sets. LPG cylinders to be provided in labour canteens and use of fuel wood to be discouraged. Suppression of fugitive dust emissions by spraying water, wetting of the stockpile, Proper maintenance of machines and vehicles will be undertaken; Paved roads shall be cleaned regularly and un-paved roads to be stabilized and watered regularly. Vehicle speed to be restricted to 25 km/h on unpaved roads. 	SPV
2.	Water Resources and Quality	<ul style="list-style-type: none"> Change in topography and alteration of drainage pattern Additional pressure on local water resources Sediment run off from construction area Disposal of sewage from construction camps Contamination of surface and groundwater resource 	<ul style="list-style-type: none"> Water for construction phase to be sourced from existing sources allocated to MIDC supplemented with authorised tanker supply. Adequate number of toilets (at least 8-10 toilets per 100 labours) with septic tanks and soak pits arrangements to be provided onsite. Sludge from waste water treatment systems to be disposed off properly. Adequate slopes and drainage channels to be provided across the project site to manage storm water. Diversion dykes to channel runoff to be constructed around the excavated site. Oil and grease containing effluents to be pre-treated before discharge. Surface contours will be restored in relation to the surroundings of the project area. 	SPV
3.	Landscape and Topography	<ul style="list-style-type: none"> Change in existing land use from agricultural to mixed use (including industrial and residential) Change in topography Change in drainage pattern Localized flooding and related health issues due to decreased infiltration 	<ul style="list-style-type: none"> 50-100m riparian buffer to be provided around existing water bodies. Excavated soil to be used in level raising; Greenbelt and green buffers will be developed to improve the landscape. Land surface contours to be restored in relation to the surroundings. Construction footprint will be well defined and construction work to be carried out within the Project footprints only Visual intrusion and aesthetics to be considered during the project construction. 	SPV
4.	Soil Resources	<ul style="list-style-type: none"> Soil Erosion and compaction Soil contamination 	<ul style="list-style-type: none"> Top soil to be preserved and relocated after construction activities. Excavation works to be avoided during monsoon season; 	SPV

S.N	Component	Impacts Identified	Suggested Mitigation Measures	Responsibility
			<ul style="list-style-type: none"> • Dikes, berms, drainage swales or ditches to be provided to divert surface run-off. • Movement and parking of heavy machinery and vehicles to be restricted to identified area; • Trainings to be imparted to all workers and subcontractors regarding hazardous waste storage and disposal procedures; • On completion of construction activities, septic tanks for camp sites to be abandoned and filled with earth. • Hazardous waste to be handles and disposed of in accordance with the requirements of hazardous waste management rules 2008. 	
5.	Traffic and transport	<ul style="list-style-type: none"> • Increased traffic volume • Damage to existing village roads • Disruption of traffic and increased case of road related hazards 	<ul style="list-style-type: none"> • Temporary widening of roads to be undertaken based on project specific surveys; • Traffic and heavy machinery movement schedule to be communicated to the local inhabitants. Prior consultation with local Police and local Panchayat to be undertaken. Roads damaged due to project vehicles will be continuously repaired. • Provision of adequate training to drivers to be made. 	SPV
6.	Ambient Noise Quality	<ul style="list-style-type: none"> • Noise due to Construction activities (such as excavation, grading, erecting equipment, piling, etc) • Noise due to operation of heavy equipment and machinery • Movement of vehicles 	<ul style="list-style-type: none"> • Acoustic enclosures, noise barriers to be provided at construction site • Construction workers to use ear muffs in high noise generation areas; • Noise barriers will be provided between the activities and the receptors. • Restriction on use of equipments generating high noise during night time will be put in place. 	SPV
7.	Socio-Economic	<ul style="list-style-type: none"> • Land Acquisition • Loss of existing village assets • Loss of landholdings • Impact on livelihood of the villages • Loss of livelihood • Loss of Common Property Resources 	<ul style="list-style-type: none"> • Land to be procured through procedures under the land acquisition act. • Value of the land to be decided by the district administration after due assessment • Local community to be consulted about their concerns and expectations. • Affected land losers to be considered for benefits like employment, contracts etc. • Skilled and qualified entitled persons to be given preference in employment and other contractual benefits; • Procurement of community land to be avoided to the extent possible and adequate buffer area to be retained around villages. 	SPV/ MIDC
8.	Occupational Health and Safety	<ul style="list-style-type: none"> • Injury due improper handling, operation and execution • Trip and fall, inadequate fall safe arrangements • Exposure to hazardous substances 	<ul style="list-style-type: none"> • Good housekeeping practices to be exercised. • Proper signage to be provided around construction site. • Use of Personal Protection Equipment (PPEs) to be mandatory at work site. • Workers to be provided with health and safety training on regular basis • Use of temporary fall protection measures in scaffolds and out edges of elevated 	SPV

S.N	Component	Impacts Identified	Suggested Mitigation Measures	Responsibility
			<p>work surfaces. Safety harness to be ensured for workers while working at heights.</p> <ul style="list-style-type: none"> • First aid and essential medical services to be provided at site. 	
9.	Employment and Local Economy	<ul style="list-style-type: none"> • Increased employment opportunities • Contracting opportunities for locals • Better avenues for Small scale service providers. 	<ul style="list-style-type: none"> • Project to utilize the facilities available from the local market to support the local economy to the extent possible. • Wherever possible, labour from local community will be employed for project. 	SPV/MIDC with approval from State Apex Authority
10.	Ecology	<ul style="list-style-type: none"> • Loss of trees and ground vegetation • Habitat destruction • Adverse impact on wildlife due to noise, vehicle movement, poaching, illumination • Increased turbidity and siltation 	<ul style="list-style-type: none"> • All reserve forest patches have been excluded from the development of master plan. • A distance of 2km from the western and the northern boundary of project site to be designated as “Zero Development Zone”. • Area around Sukhna reservoir to be preserved in proposed MIP Development Plan; • Original soil profile shall be retained by storing each excavated layers separately • Tree felling to be minimized to the extent possible. Hunting activities will not be permitted within and around the delineated area. • A ‘Local Ecological Monitoring Group’ will be setup to monitor the environmental and ecological safeguard measures during construction phase. • Standard noise levels to be maintained during construction activities. 	SPV
	OPERATION PHASE			
11.	Air Quality	<ul style="list-style-type: none"> • Emission from power backup/ DG sets • Stack emission from industries • Fugitive emission from industrial processes • Emissions from increase in traffic volume 	<ul style="list-style-type: none"> • SPV developed for overview of power supply shall ensure that the power failure is maintained at minimal to reduce use of Diesel generators • All emission sources to be provided with adequate stack height as per CPCB / MoEF norms. Air pollution control equipments to be employed by industries. • Red and Orange category industries shall be located away from the proposed residential areas and existing settlements • Individual industries will be required to obtain adequate approvals such as Consent to Establish/Consent to operate or environment clearance. • The SPV shall establish a Transport Authority for the region and the authority to ensure infrastructure for pollution checking. • Vegetative barrier of 20-40m to be provided around planned industrial area. 	SPV/MIDC
12.	Ambient Noise Quality	<ul style="list-style-type: none"> • Increase in noise levels in residential areas and adjoining villages • Impact on avifaunal species due 	<ul style="list-style-type: none"> • All habitations to have a suitable buffer area delineated around them. • Vegetative barriers in form of green belt to be provided around all industrial areas. • All industrial operations to have acoustic enclosures and employ noise attenuation measures. 	SPV

S.N	Component	Impacts Identified	Suggested Mitigation Measures	Responsibility
		<ul style="list-style-type: none"> to increased noise • Movement of vehicles 	<ul style="list-style-type: none"> • All roads and highways to be provided with vegetative barriers and barrier walls. 	
13.	Water Resources and Quality	<ul style="list-style-type: none"> • Increase load on fresh water sources • Unplanned disposal of industrial waste water generated and sewage • Inadequate management of storm water • Spills, leaks from industries, storage areas • Contamination of natural water resources and ground water aquifers 	<ul style="list-style-type: none"> • Water requirements to be met through allocation from Jayakwadi reservoir • Minimum extraction of groundwater; • Individual projects shall have separate water meters; • Building and plumbing code to propose dual plumbing layout; • SCADA system to be implemented for monitoring leakages; • A reliable technical department for maintenance and quality control shall be established; • Domestic and industrial wastewater generated will be treated separately; • Rain water harvesting to be carried out by each individual project; • Proper storm water drainage network designed for 100 year flood period 	SPV/MIDC
14.	Solid Waste Disposal	<ul style="list-style-type: none"> • Generation of 1685 MTD for the year 2042. • Inadequate collection and treatment of domestic waste • Unhygienic conditions, odor problem • Localized flooding • Contamination of soil and groundwater • Improper disposal of sludge and industrial waste 	<ul style="list-style-type: none"> • Integrated solid waste management will be developed for collection, transportation, treatment and disposal of waste. • 2 bin system for Phase I for waste collection; • Industries generating hazardous waste to comply with the requirements of Hazardous Waste (Management, Handling and Tran boundary Movement) Rules, 1989 and subsequent amendments. • The recyclable waste like glass, metal, plastics, paper etc likely to be generated from different land uses, will be collected separately and sold to authorized recyclers/ vendors. 	SPV/MIDC
15.	Traffic Volume	<ul style="list-style-type: none"> • Increase in traffic flow • Increase in private traffic volume • Traffic congestion • Irregular Parking 	<ul style="list-style-type: none"> • The roads will be designed to carry the maximum traffic loads with anticipated future development and on a par with IRC Standards; • A well planned public transport infrastructure has been envisaged for the project; • Four categories of roads (Major roads (arterial roads) with right of way (ROW) of 90 meters; Primary roads (sub-arterial roads) with ROW of 60 meters; Secondary roads (collector roads) with ROW of 45 meters; Tertiary roads (local roads) with ROW of 30 meters) proposed; • The proposed road circulation shall provide for safe and efficient movement of people; 	SPV with approval from State Apex Authority

S.N	Component	Impacts Identified	Suggested Mitigation Measures	Responsibility
			<ul style="list-style-type: none"> • Pedestrian Guard Rails, Road safety Signage and overhead signs shall be placed wherever necessary; • Road widths and lane configurations have been designed based on the modelling exercise; • All 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; • Each residential project to provide parking facilities as per applicable norms and regulations. 	
16.	Land Use Pattern	<ul style="list-style-type: none"> • Impact on irrigated agricultural fields • Impacts on existing human settlements • Impact on reserved forests lying to the north and western boundary of project, barren land/ hills on western boundary of the site • Potential for localized flooding due to alteration of topography 	<ul style="list-style-type: none"> • Delineation of the project site during planning stage to select the option based on socio-economic factors. • High sensitivity forest area towards northern and eastern fringe have been avoided; • It is planned to retain all key water channels in the project area as natural water bodies; • All irrigation channels and check dams of significance will be retained to ensure no impact on the agricultural activities around the delineated project area; • To limit the development in the existing settlements, the Urban Planning Department shall define the land use for these regions through the proposed Development Plan of Shendra MIP and limit the densities in these region through the application of the Building bye laws; 	SPV/MIDC with approval from State Apex Authority
17.	Ecology	<ul style="list-style-type: none"> • Vast areas designated as reserved forests in the north of delineated boundary and few patches on the western fringe of the project boundary. • Impact on flora and fauna of the adjoining green areas including reserve forest • Illegal hunting and cutting of trees. • Bird kill • Habitat fragmentation and loss 	<ul style="list-style-type: none"> • Degraded hillsides towards the central and north of the development area recommended to be reforested and designated as 'Ecological Restoration Zone'; • The Sukhna reservoir and its catchment areas to be preserved and excluded from any heavy developmental activities; • Each industry shall develop green belt in 33% of the total land area with native and local species as per the CPCB guidelines; • Transmission lines and chimneys will be provided with optical markers to enhance visibility for birds. 	SPV

S.N	Component	Impacts Identified	Suggested Mitigation Measures	Responsibility
18.	Socio-Economic	<ul style="list-style-type: none"> Increased employment and business opportunities Improvement in infrastructure Increased income levels Stabilization of the rural economies Potential for cultural conflict Unplanned secondary development in the adjoining areas 	<ul style="list-style-type: none"> DMICDC and individual project to undertake CSR program to ensure communal harmony and cooperation. Area of 10km around the project are will be regulated by DMICDC/MIDC to avoid any secondary development or unplanned development. DMICDC/MIIDC to extend the infrastructure facilities such as water supply, power, transportation etc. to the villages in the project area. Mechanism to train and improve the skill sets of the local community. The project to put in place SPV's responsible for efficient management and maintenance of infrastructure. 	SPV/ MIDC
19.	Cultural Impact	<ul style="list-style-type: none"> Influx of migrant population change of culture and conflicts Impact on archeological monuments 	<ul style="list-style-type: none"> All identified archaeological structures fall outside the delineated project area. DMICDC and individual project to undertake CSR program to ensure communal harmony and cooperation. 	SPV

6.0 Social Impact Assessment

The land required for Shendra MIP comprises of land parcels already in possession of MIDC and private land acquired under the Land Acquisition Act, 1894 falling in three villages namely Karmad, Ladgaon and Kumbephal in Aurangabad Tehsil.

The key impact of land acquisition has been identified as loss of landholdings directly affecting the livelihood of the villagers residing within the project area.

A project specific Resettlement and Rehabilitation entitlement matrix has been developed for the project in accordance with the provisions of the National Resettlement and Rehabilitation Policy.

7.0 Environment Management Plan

Institutional Framework - For the development of Shendra MIP, a city level SPV will be incorporated as a 50:50 Joint Venture Entity between the State Government and the Central Government.

Environmental and Social Monitoring – A comprehensive environmental and social monitoring plan has been developed for the construction and operation phases of Shendra MIP. It is proposed to establish the monitoring plan by two mechanism, viz., Internal and external monitoring mechanism. Internal monitoring team will be headed by SPV's representative and will also comprise of the Environment and Public Relations Department's representatives. This team shall ensure adherence of specific monitoring conditions included while granting statutory clearances.

The external monitoring will ensure that the monitoring activities are carried out as per the plan, norms and schedule, in a transparent manner. The external monitoring will be conducted by a group of experts and stake holders such as Representatives from the company/DMIC, Pollution Control Board, Industrial associations/ federations and/or local NGO group etc.,

This committee will submit a bi-yearly report to the top management of the company with their review comments and suggestions.

Corporate Social Responsibility – The SPV shall undertake CSR activities as a part of the development of Shendra MIP project. Based on the need assessment in the project area, it is suggested to develop Industrial Training Institutes to impart training to the affected population to enhance their skill base so that they can find employment in the proposed development. It is also provided that schools with adequate teaching staffs to be set up within the vicinity of the villages so that local children can avail this facility. A 100 bedded hospital is also proposed along with extension of public amenities, setting up of vocational training institutes and encouraging self help groups in the region. Additionally, provision of public amenities such as drinking water facility at each of the project villages can be provided.