



ASANSOL DURGAPUR DEVELOPMENT AUTHORITY

A Statutory Authority of the Government of West Bengal
(Under Urban Development & Municipal Affairs Department)

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City Centre,
Durgapur – 713216

Vivekananda Sarani, Senraleigh Road,
Near Kalyanpur Housing More,
Asansol -713305

Memo No. ADDA/DGP/PC-170/13-14/712

Date: 15/05/2023

Public Notice

Whereas Asansol Durgapur Development Authority (hereinafter to be referred as 'ADDA'), in pursuance of the provisions of Section 31 of the West Bengal Town and Country (Planning and Development) Act, 1979 (hereinafter T&CP Act), has prepared the Land use and Development Control Plan for Durgapur Sub-division (hereinafter LUDCP) which includes Andal, Pandabeshwar, Faridpur-Durgapur and Kanksa Blocks and Durgapur Municipal Corporation.

And whereas in pursuance of the provisions of Section 35 of the T&CP Act, the State Govt. accorded its approval to the publication of notice of preparation of the said LUDCP vide memo no. 423 - UDMA-22013(99)/26/2020-DAC SEC-Dept. of UDMA-Part(1) dated 17.03.2023.

NOW THEREFORE, in exercise of the power conferred by Sub-section (I) of Section 36 of the T&CP Act, ADDA hereby publishes the public notice of the preparation of the said LUDCP, inviting objections in writing from any person with respect to the said LUDCP within a period of 60 (sixty) days (from the date of publication of this public notice in The Kolkata Gazette Extraordinary).

The copy of the said LUDCP may be inspected at the concerned Municipal Corporation, Office of Concerned B.D.O. and Panchayet Samities, Durgapur; SDM, Durgapur; & SDL & LRO, Durgapur and at the office of Asansol Durgapur Development Authority, Durgapur in-between 11AM to 4 PM on any working day, within the aforesaid period.

The soft copy of the said LUDCP may also be availed at the official websites of ADDA and UD&MA Deptt., Govt. of West Bengal given below:

1. www.addaonline.in;
2. www.wburbanservices.gov.in

**By order of Chief Executive Officer, Asansol Durgapur
Development Authority**

LAND USE AND DEVELOPMENT CONTROL PLAN

FOR

DURGAPUR

(ANDAL, PANDABESWAR, FARIDPUR-DURGAPUR AND KANKSA BLOCKS
AND DURGAPUR MUNICIPAL CORPORATION)

DRAFT REPORT

JANUARY 2023

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1 BACKGROUND

Asansol Durgapur Development Authority (ADDA) intends to prepare the Land Use and Development Control Plan for Durgapur Subdivision which comprises of four Blocks and one Urban Local Body (ULB) in the Paschim Bardhaman District. It has already completed the task of preparing and notifying the present Land Use Map and Land Register for the Durgapur Sub-division consisting of all mouzas under Andal, Pandabeswar, Faridpur-Durgapur, Kanksa Block and Durgapur Municipal Corporation under Sub-section (I) of Section 28 and 29 of The West Bengal Town and Country (Planning and Development) Act, 1979 (West Bengal Act-XIII of 1979). The Official Gazette notification was published on Wednesday, January 2nd, 2019 (Refer Annexure-I for the Gazette Notifications).

Department of Architecture and Regional Planning, Indian Institute of Technology Kharagpur, has been entrusted with the task of providing technical expertise for the Preparation of Land Use and Development Control Plan for Durgapur Sub-division.

Asansol Durgapur Development Authority (ADDA) is a statutory body constituted in 1980 under The West Bengal Town & Country (Planning and Development) Act, 1979 (West Bengal Act XIII of 1979).

Located in the Paschim Bardhaman District of West Bengal, Asansol Durgapur Planning Area (ADPA) was declared a Planning Area under Section 9 (1 & 2) of The West Bengal Town & Country (Planning and Development) Act, 1979 (West Bengal Act XIII of 1979).

In this report, the Land Use and Development Control Plan has been proposed for Durgapur Sub-division covering 772.28 sq. km, (Refer Map No. 1.1). There are four Blocks - Andal Block has 14 mouzas, Pandabeswar Block has 17 mouzas, Faridpur-Durgapur Block has 54 mouzas, and Kanksa Block has 86 mouzas. Apart from that Durgapur Municipal Corporation which also lies within Durgapur Sub-division has 39 mouzas.

Durgapur Sub-division is bounded by Asansol Sub-division in the west, Purba Bardhaman district in the east, River Ajoy and Birbhum district in the north, River Ajoy and Bankura District in the south. This area is well connected via NH-19 (i.e. Delhi-Kolkata Grand Trunk Road) and NH-16 (i.e. Morgram-Kharagpur link) to surrounding districts/regions. Delhi-Howrah eastern rail main line also passes through Durgapur Sub-division providing its rail connectivity. Large reserves of coal lie underneath Andal and Pandabeswar Block and mining is one of the dominant economic activity.

Large volume of coal reserves and consequential extraction activities, favourable geographical setting, proximity to other mineral ores i.e. iron ore, has provided a conducive industrial climate for setting up large iron and steel industries. IISCO Burnpur has experienced a complete

turnaround after its merger with Steel Authority of India Limited (SAIL). Lot of private iron and steel plants as well as other coal based industries have come up - though the trend is more towards medium and small scale industrial set up. Durgapur has also emerged as a regional hub for education and health institutions – mostly engineering colleges, management schools, hospitals etc.



Map No. 1.1. – Location map of Durgapur Sub-division within Asansol Durgapur Planning Area under jurisdiction of Asansol Durgapur Development Authority (Source: Author)

2.0 LEGAL FRAMEWORK

2.1 Statutory Provision

Preparation of Land Use and Development Control Plan had been proposed for Durgapur Sub-division as per provision under section 31 of The West Bengal Town & Country (Planning and Development) Act, 1979 (West Bengal Act XIII of 1979) and subsequent amendments thereon. The provisions of sections 36, 37 and 38 shall, mutatis mutandis, apply to such a Land Use and Development Control Plan.

This document, including the schedules and diagrams, may be called "Land Use and Development Control Plan for Durgapur Sub-division".

This shall apply to the whole of four Blocks of Durgapur Sub-division along with Durgapur Municipal Corporation in the District of Paschim Bardhaman, falling under Asansol Durgapur Planning Area.

2.2 Provision under the Act

2.2.1 Preparation of Land Use and Development Control Plan

Section 31 of the West Bengal Town & Country (Planning and Development) Act, 1979 states:-

Preparation of Land Use and Development Control Plan –

(1) A Planning Authority or Development Authority shall, within two years of the declaration of a Planning Area, prepare a plan (hereinafter called the Land Use and Development Control Plan) for the Planning Area and forward a copy thereof to the State Government;

Provided that the concerned authority may prepare the plan in respect of any portion of the Planning Area, but plan in respect of the entire Planning Area shall be completed within a period of three years or within such time as the State Government may time to time extend.

(2) The Land Use and Development Control Plan in any area shall be a written statement, -

- (a) formulating the policy and the general proposals including maps of the Planning Authority or Development Authority in respect of the development and general use of the land in that area including measures for improvement of the physical environment;*
- (b) stating relationship between these proposals and general proposals for the development and general use of the land in the neighbouring areas which may be expected to affect the area; and*
- (c) containing such matters as may be prescribed or directed by the State Government.*

(3) A Land Use and Development Control Plan in any area shall contain or be accompanied by such maps, diagrams, illustrations and descriptive matters as the Planning Authority or the

Development Authority thinks appropriate for the purpose of explaining or illustrating the proposals in the plan and such diagrams, illustrations and descriptive matters shall be treated as parts of the plan.

(4) The land Use and Development Control Plan may also-

- (a) (i) indicate broadly the manner in which the Planning Authority or the Development Authority proposes that land in such area should be used;*
(ii) indicate areas and buildings requiring preservation and conservation for historical, architectural, environmental and ecological and religious purposes;
- (b) Allocate areas or zones of land for use-*
 - (i) for residential, commercial, industrial, agricultural, natural scenic beauty, forest, wild life, natural resources, fishery and landscaping;*
 - (ii) for public and semi-public open spaces, parks and playgrounds;*
 - (iii) for other such purposes as the Planning Authority or the Development Authority may think fit;*
- (c) Indicate, define or provide for-*
 - (i) the existing and proposed national highways, arterial roads, ring roads and major streets;*
 - (ii) the existing and proposed lines of communications, including railways, transports, airports, canals and linkages between towns and villages;*
 - (iii) the existing and proposed amenities, services and utilities, systems for water supply including improvement of lakes, rivers, fountains and the like, sewerage, drainage and waste disposal, generation and distribution of electric power and distribution of gas, etc.;*
- (d) include regulations (hereinafter called zoning and sub-division regulations) to control within each zone the location, height, number of storeys and size of buildings and other structures and land and sub-division of land and the street alignments, set-back distances, embankments, constructional activities destroying natural scenic beauty and provide for amenities in hill areas and coastal areas and such other issues as may be considered appropriate by the Authority;*
- (e) locate cluster of villages and huts and designate land for hats, markets, cottage industry, livestock, pasture festivals, fairs, melas and like community facilities and conservation of trees and forests;*
- (f) indicate areas or zones for catchment, soil conservation, plantation, unsafe for any construction, subsidence for any reason including operation of mines, earthquake-prone areas and control of natural disaster.*
Explanation. – The expression ‘mine’ has the same meaning as defined in the Mines Act, 1952 (35 of 1952)
- (g) designate land as subject to acquisition for any public purposes.*

2.2.2 Approval of the State Government to the publication of notice of preparation of Land Use and Development Control Plan

Section 35 of the West Bengal Town & Country (Planning and Development) Act, 1979 states: -

Approval of the State Government to the publication of notice of preparation of Land Use and Development Control Plan - As soon as may be after the Land Use and Development Control Plan has been submitted to the State Government, but not later than the time prescribed, the State Government shall direct the Planning Authority or the Development Authority to make such modifications in the Land Use and Development Control Plan as the State Government thinks fit and thereupon the concerned authority shall make the modifications.

2.2.3 Public notice of the preparation of the Land Use and Development Control Plan

Section 36 of the West Bengal Town & Country (Planning and Development) Act, 1979 states: -

Public notice of the preparation of the Land Use and Development Control Plan –

- (1) After the modifications, if any, the Planning Authority or the Development Authority shall publish a public notice in the Official Gazette and in one or more local newspapers, of the preparation of the Land Use and Development Control Plan and the place or places where copies of the same may be inspected, inviting objections in writing from any person with respect to the Land Use and Development Control Plan within a period of sixty days from the date of publication of the public notice in the Official Gazette or from the date of publication of the public notice in the newspaper, whichever is later.
- (2) The notice of preparation of the Land Use and Development Control Plan as provided under the preceding sub-section, shall, notwithstanding anything contained in the Land Acquisition Act, 1894 (1 of 1894), be deemed to be a declaration duly made under section 4 of the said Act.
- (3) After the expiry of the period mentioned in sub-section (1), the concerned authority shall appoint a Committee consisting of three of its members, to consider the objections filed under sub-section (1) and submit report within such time as the Planning Authority or the Development Authority may fix in this behalf.
- (4) The Committee so appointed shall have power to invite any other person, and such a person shall have a right to take part in the discussions of the Committee relevant to that purpose but shall not have a right to vote at a meeting and shall not be a member for any other purpose.

- (5) *The Committee so appointed shall afford a reasonable opportunity of being heard, to any person, including representatives of Government Departments, or local authorities who has or have filed any objection, and who has or have made a request for being so heard.*
- (6) *As soon as may be, after the receipt of the report from the Committee, but not later than such time as may be prescribed,] the Planning Authority or the Development Authority shall consider the report and may make such modifications in the Land Use and Development Control Plan as it considers proper, and shall submit the Land Use and Development Control Plan with or without modifications together with the report of the Committee to the State Government.*

2.2.4 Approval of the State Government

Section 37 of the West Bengal Town & Country (Planning and Development) Act, 1979 states: -

Approval of the State Government –

- (1) *As soon as may be, after the receipt of the Land Use and Development Control Plan, together with the report of the Committee, but not later than such time as may be prescribed, the State Government may either approve the Land Use and Development Control Plan with or without modifications or return the Land Use and Development Control Plan to the concerned authority to modify the plan or to prepare a fresh plan in accordance with such directions as the State Government may issue in this behalf.*
- (2) *After modification in the plan or preparation of a fresh plan in accordance with the directions of the State Government under sub-section (1), the same shall be submitted to the State Government for approval and the State Government shall intimate its decision within such time of the receipt of the plan as may be prescribed.*

2.2.5 Coming into operation of the Land Use and Development Control Plan

Section 38 of the West Bengal Town & Country (Planning and Development) Act, 1979 states: -

Coming into operation of the Land Use and Development Control Plan –

- (1) *Immediately after the Land Use and Development Control Plan has been approved by the State Government, the Planning Authority or the Development Authority shall publish a public notice in the Official Gazette and in a local newspaper or newspapers, of the approval of the Land Use and Development Control Plan and the place or places where copies of the Land Use and Development Control Plan may be inspected.*

- (2) *The publication of the notice in the Official Gazette of the approval of the Land Use and Development Control Plan shall, notwithstanding anything contained in the Land Acquisition Act, 1894 (1 of 1894), be deemed to be a declaration duly made under section 6 of the said Act.*
- (3) *The Land Use and Development Control Plan shall come into operation from the date of publication of the aforesaid notice in the Official Gazette.*
- (4) *If the Land Use and Development Control Plan contains zoning and sub-division regulations as referred to in clause (d) of sub-section (4) of section 31, it shall be the duty of the Corporation or the Commissioners of the municipality or any other local authority, within whose jurisdiction such area or zone is situate, to enforce such regulatory measures in supersession of the rules and regulations, if any, applicable to such area or zone.*

2.2.6 References to High Court questioning the validity of the Land Use and Development Control Plan

Section 39 of the West Bengal Town & Country (Planning and Development) Act, 1979 states: -

References to High Court questioning the validity of the Land Use and Development Control Plan –

- (1) *Within one month of the coming into operation of the Land Use and Development Control Plan, any person aggrieved by it may make an application to the High Court questioning the validity of the Land Use and Development Control Plan or any provisions contained therein on the following grounds:-*
 - (a) *that it is not within the powers conferred by this Act, or*
 - (b) *that any requirement of this Act, or any rules made there under have not been complied with in relation to the making of the Land Use and Development Control Plan.*
- (2) *The High Court, after giving an opportunity to the authority concerned and the State Government to be heard -*
 - (a) *may stay, until the final determination of the proceedings, the operation of any provisions contained therein so far as it affects any property of the applicant; and*
 - (b) *if satisfied that the Land Use and Development Control Plan or any provision contained therein is not within the powers conferred by this Act, or that the interest of the applicant has been substantially prejudiced by a failure to comply with any*

requirement of this Act or rules, may quash the plan or any provision contained therein generally or in so far as it affects any property of the applicant.

- (3) *Subject to the above provisions of this section, a Land Use and Development Control Plan shall not, either before or after it has been approved, be questioned in any manner, in any legal proceedings whatsoever.*

2.3 Objective of the Study

To prepare a comprehensive, functional, implementable & enforceable land use plan with statutory back up as per The West Bengal Town and Country (Planning and Development) Act, 1979 (West Bengal Act XIII of 1979) and taking into consideration the existing laws/rules and regulations.

2.4 Scope of Work

This plan will regulate land use and development activities. It will broadly follow the frame work of land use classification and developmental guidelines recommended by URDPFI guidelines and other relevant guidelines issued at central or state level.

[The published LUMR of Durgapur Sub-division was prepared following URDPFI guidelines. Also the published LU&DCP of Asansol Sub-division which is currently in operation follows land use classification recommended by URDPFI. Therefore, to maintain conformity and continuity among two sub-divisions within same Asansol Durgapur Planning Area, URDPFI guidelines will be followed for land use classification in LU&DCP.]

Contemporary zoning and land use classification techniques along with innovative development control mechanism will be adopted based on the past and current best practices across the country and abroad.

The planning process should be based on scientific inputs, rational analysis and pragmatic approach; and it shall be presented in geo-referenced digital base map.

It will cover all issues and aspects of planning and development at micro and macro level.

It should consider the environmental aspects and efficient utilization of natural resources with due consideration to equity.

It should act as a useful tool for development permission u/s 46 and with specific rules & regulations and procedure for permission, and should have a statutory standing and practical approach to preparation of developmental projects/ schemes.

3.0 PLAN PREPARATION & IMPLEMENTATION

The LU&DCP for Durgapur Sub-division, which primarily consists of land used for mining, industries, agriculture and village settlements along with a considerable component of urbanized land, aims to induce new development in the area commensurate to its importance in the newly formed district, Paschim Bardhaman. Durgapur Sub-division will continue to dominate as a hub for administrative services and institutions yet maintaining existing agrarian character in some portions, preserving forest resources, and restrict development in subsidence prone zones through land use zoning and control regulations. The aim is to achieve outcomes that are beneficial for the people, the economy and the environment.

The stages of plan preparation have been designed to ensure that the methodology suggested in the Act is adhered to by making a rational framework of plan preparation with due attention to the existing land use characteristics and socio-economic condition of the planning area under consideration, keeping the process open and transparent to the all stakeholders, and allowing it to take advantage from the new development in planning ideas and technology.

3.1 Stages of Plan Preparation

The stages involved in preparation of this plan mainly include collection of spatial data, socio-economic information, survey of the present land use, analysis of the data collected, and discussion with the officials of the Development Authority/Line departments/Stakeholder institutions and preparation of land use zoning maps & development control guidelines.

Stage 1: The planning process began with the surveying of the present land use condition in the planning area. The survey of the present land use was conducted by the Asansol Durgapur Development Authority through select agencies in 2015. A fresh base map was prepared collating the cadastral revenue sheets on AutoCAD platform and Quickbird satellite images were used to record the present land use. The land use classification required to be used for recording the present land use was formulated by the Asansol Durgapur Development Authority broadly conforming to the URDPFI Guidelines and it was similar to the classification followed in notified present Land Use Map and Land Register for the other part of Planning Area i.e. Asansol Sub-division.

The Authority has completed the task of preparing and notifying the present Land Use Map and Land Register under Sub-section (I) of Section 28 & 29 of The West Bengal Town and Country (Planning and Development) Act, 1979 (West Bengal Act-XIII of 1979). The Official Gazette notification was published on Wednesday, January 2nd, 2019.

The notified present Land Use Map and Land Register was handed over to IIT Kharagpur for transferring it on to GIS platform with necessary ground verification to update the recent changes. For effective data management and informed planning decisions, GIS platform was

preferred by the Development Authority. IIT Kharagpur has conducted ground verification and made the necessary corrections. This updated present Land Use Map and Land Register was accepted by the Development Authority and it formed the basis for preparation of the LU&DCP in 2022.

Stage 2: The geo-referenced satellite images, mouza maps with updated present land use information, digitised on GIS, was now embedded with other information regarding the location of public land (under ownership of Government of West Bengal), location of land identified as unstable locations due to subsidence, and other relevant information obtained from the Development Authority and other sources.

Stage 3: To understand the socio-economic and demographic characteristics of the planning area relevant information was collected and compiled from various secondary sources. Section 5.0 highlights the major findings regarding the socio economic condition, demographic characteristics, access to various amenities and services etc.

Stage 4: Asansol Durgapur Planning Area has a long history of plan preparations by various organizations. They include Perspective Plan for the entire planning area, Mobility plan for major urban areas, LU&DCP for Asansol Sub-division etc. Section 4.0 and 8.0 highlights some key insights and major proposals from the previous planning efforts.

Stage 5: The distribution of the present population and land use for Durgapur Sub-division was then analysed in Section 6.0. Population projection and future demand of land for various purposes were made. The population was then suitably allocated to various administrative units according to their development potential and land availability.

Stage 6: A 'Broad Conceptual Plan' as part of the LU&DCP was prepared and elaborately discussed with the officials from various line departments and other stakeholders which includes representatives of four Blocks and Durgapur Municipal Corporation [in the Durgapur office of Asansol Durgapur Development Authority in May 2022]. All the elected Gram Panchayat officials and other line department representative were provided a copy of this plan and feedback from their office incorporated.

Stage 7: On acceptance of the 'Broad Conceptual Plan', the pre-draft Land Use and Development Control Plan' were submitted on July 2022. This plan includes the detailed land use distribution, zoning and development control regulations framed after elaborate discussion with the officials of Development Authority and other stakeholders. Moreover, feedback from the Urban Development and Municipal Affairs Department, Government of West Bengal will be taken and necessary modifications will be incorporated in the Plan before public notification.

3.2 GIS based Data Inventory Preparation and Updating

Data collection was split into *data capture* (direct data input) and *data transfer* (input of data from other systems).

Two main types of data capture were

- *Primary data sources* which are collected in digital format specifically for use in a GIS project.
- *Secondary sources* which are digital and analog datasets that were originally captured for other purposes and need to be converted into a suitable digital format for use in a GIS project.

The processes of data collection are also referred to as data capture, data automation, data conversion, data transfer, data translation, and digitization.

3.2.1 Outline of the GIS database creation

- a) Primary geographic data capture
- b) Secondary geographic data capture
- c) Obtaining data from external sources (data transfer)
- d) Capturing attribute data
- e) Data management and analysis

3.2.2. Source of Information/ Map/ Data

Following table outlines the data that was collected from different sources.

Table No. 3.1: Source of spatial data used for this study

Features	Source
Plot boundary, Mouza boundary	Village Map, Mouza Map /Land Record Data from the Notified Land Use Map and Land Register in AutoCAD and Microsoft Excel format by ADDA
Project Boundary of AOI (Area of Interest)	ADDA Information/ Map
Land Use	Maps prepared by select agencies (through ADDA), Satellite Image and Field Survey
Major Location, POI (Point of Interest)	GPS Survey
Image	Satellite Image collected from Open Source
Other (GoWB land ownership, Land under RRZ etc.)	ADDA and Other Departments

Source: Author

3.3 Plan Implementation

The plan will be finally accepted and notified by the State Government in the Urban Development and Municipal Affairs Department under The West Bengal Town and Country (Planning and Development) Act 1979, prior to which people's participation will be asked for in the form of objections and suggestions. The hearing procedure will be conducted by ADDA towards this end.

The plan has also been supplemented with zoning and development control regulation. The plan implementation will primarily adopt these regulations.

All development shall have to incorporate the guidelines mentioned in this report. Applications for permissions shall be accordingly reviewed and scrutinized by the Development Authority and/or the Gram Panchayats/Municipal Corporation. IIT Kharagpur as consultant shall provide all the technical support and justification for disposal of the objections.

4.0 DELINEATION OF PLANNING AREA

Durgapur Sub-division of the Paschim Bardhaman district in the state of West Bengal is the planning area for this LU&DCP. The area is bounded by a distinct physical boundary namely, the River Ajoy on the northern side, River Damodar on the southern side, Purba Bardhaman district on east and Asansol Sub-division of Paschim Bardhaman district on west. The details of the planning area are provided in the following sections.

4.1 Administrative Units

The planning area includes four Blocks – Andal, Pandabeswar, Faridpur-Durgapur and Kanksa, and one Municipal Corporation – Durgapur (Refer Map No 4.1). The mouza map for each of the four Blocks and Municipal Corporation area is provided in Map 4.1A to 4.1E.

A basic outline of the administrative units is given in Table no. 4.1 & 4.2. The mouza list and with their salient features for each of the four Blocks and Durgapur Municipal Corporation area is given in Table 4.2A to 4.2E.

Table no. 4.1: Administrative Units in Durgapur Sub-division

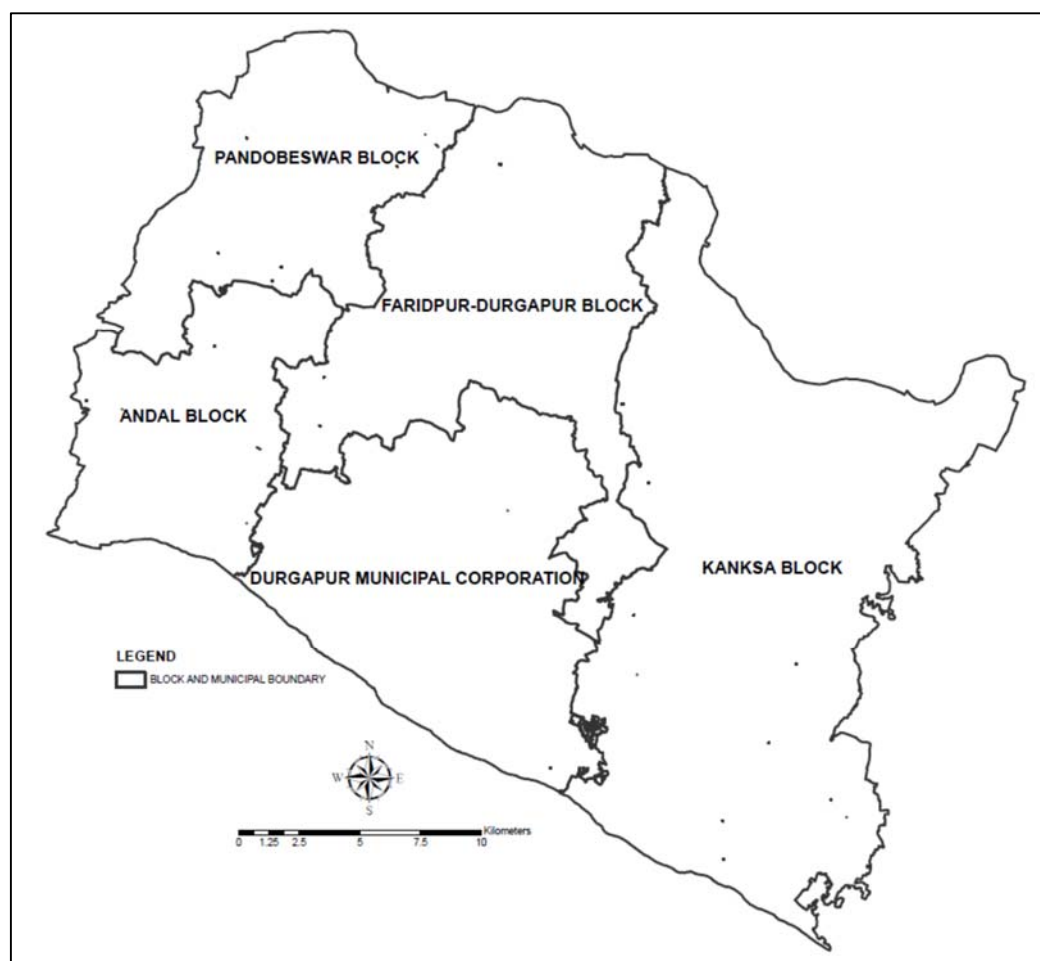
Administrative Units	Name/Number of units	No of Units
Blocks	Andal, Pandabeswar, Faridpur-Durgapur, Kanksa	4
Gram Panchayats	Andal Block: 8 no.s Pandabeswar Block: 6 no.s Faridpur-Durgapur Block: 6 no.s Kanksa Block: 7 no.s	27
Wards (ULB)	Durgapur Municipal Corporation	43 wards
Census Towns (CTs)	Andal -14 no.s; Pandabeswar – 14 no.s; Faridpur-Durgapur – 6 no.s; Kanksa – 7 no.s [2 CT's in Andal Block shared by Pandabeswar; 1 CT in Pandabeswar shared with Jamuria Block]	39
Police Stations	Andal, Pandabeswar, Faridpur, Durgapur, New Township, Durgapur Coke Oven, Kanksa	

Source: District Statistical Handbook, 2014

Table no. 4.2: Salient characteristics of Durgaur Sub-division

Unit	No of Mouzas (no.s)	Area (in sq km)	Population in '000 (2011)
Andal	14	84.87	186.9
Pandabeswar	17	97.80	161.9
Faridpur-Durgapur	54	155.97	115.9
Kanksa	86	279.44	178.0
Durgapur Municipal Corporation	39	154.20	566.5
Total	210	772.28	1209.2

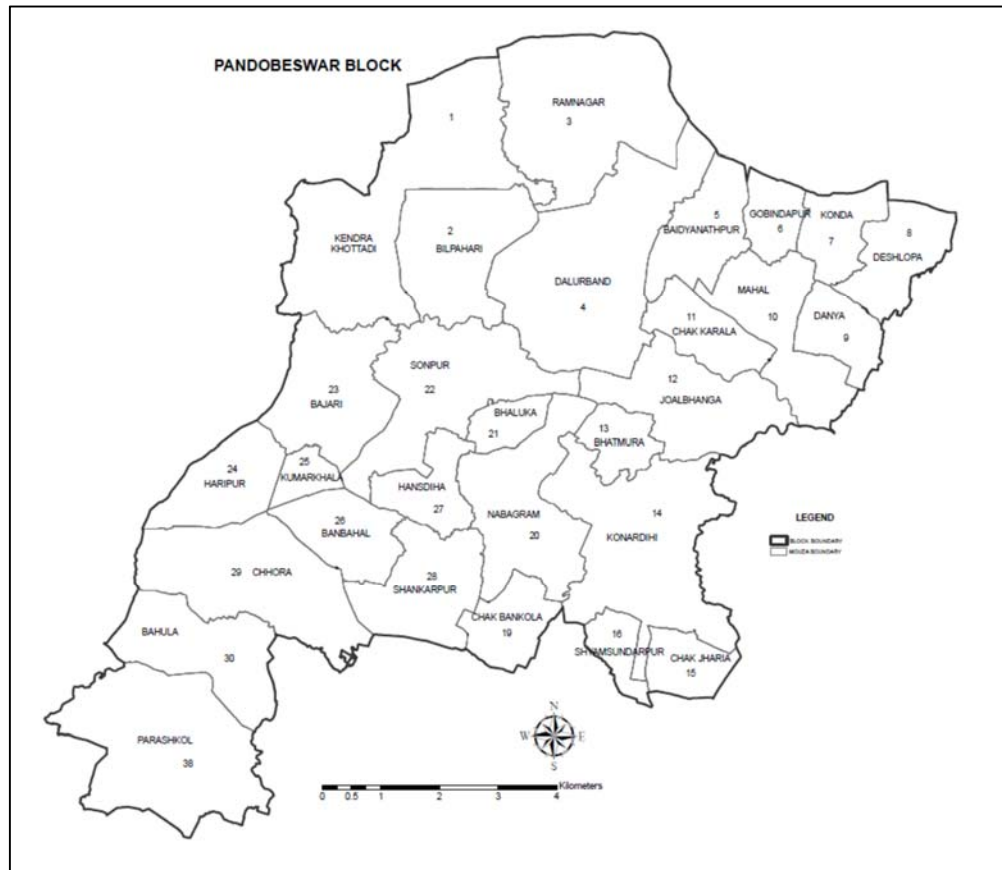
Source: District Statistical Handbook, 2014



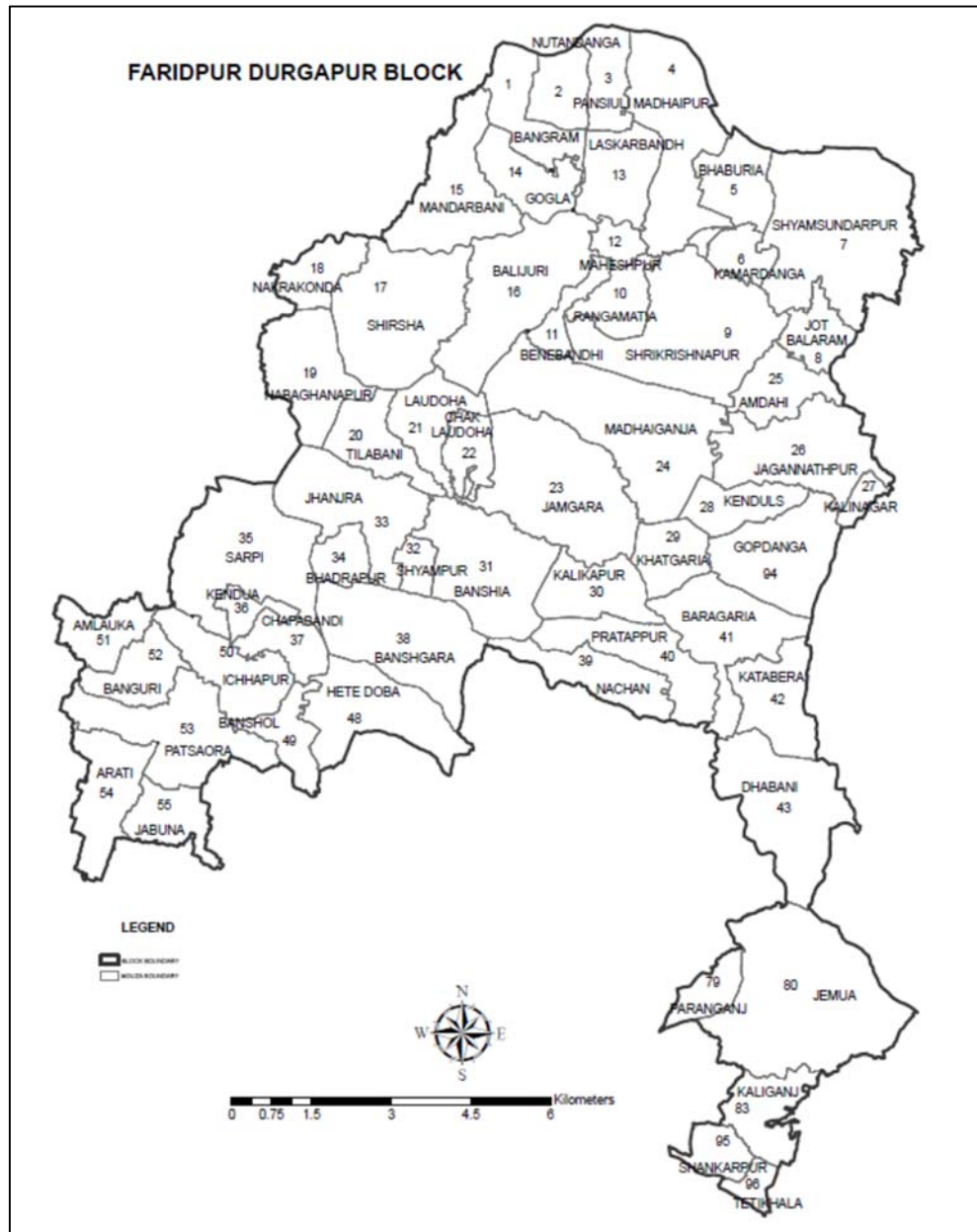
Map 4.1: Administrative Units in Durgapur Sub-division (Source: Author)



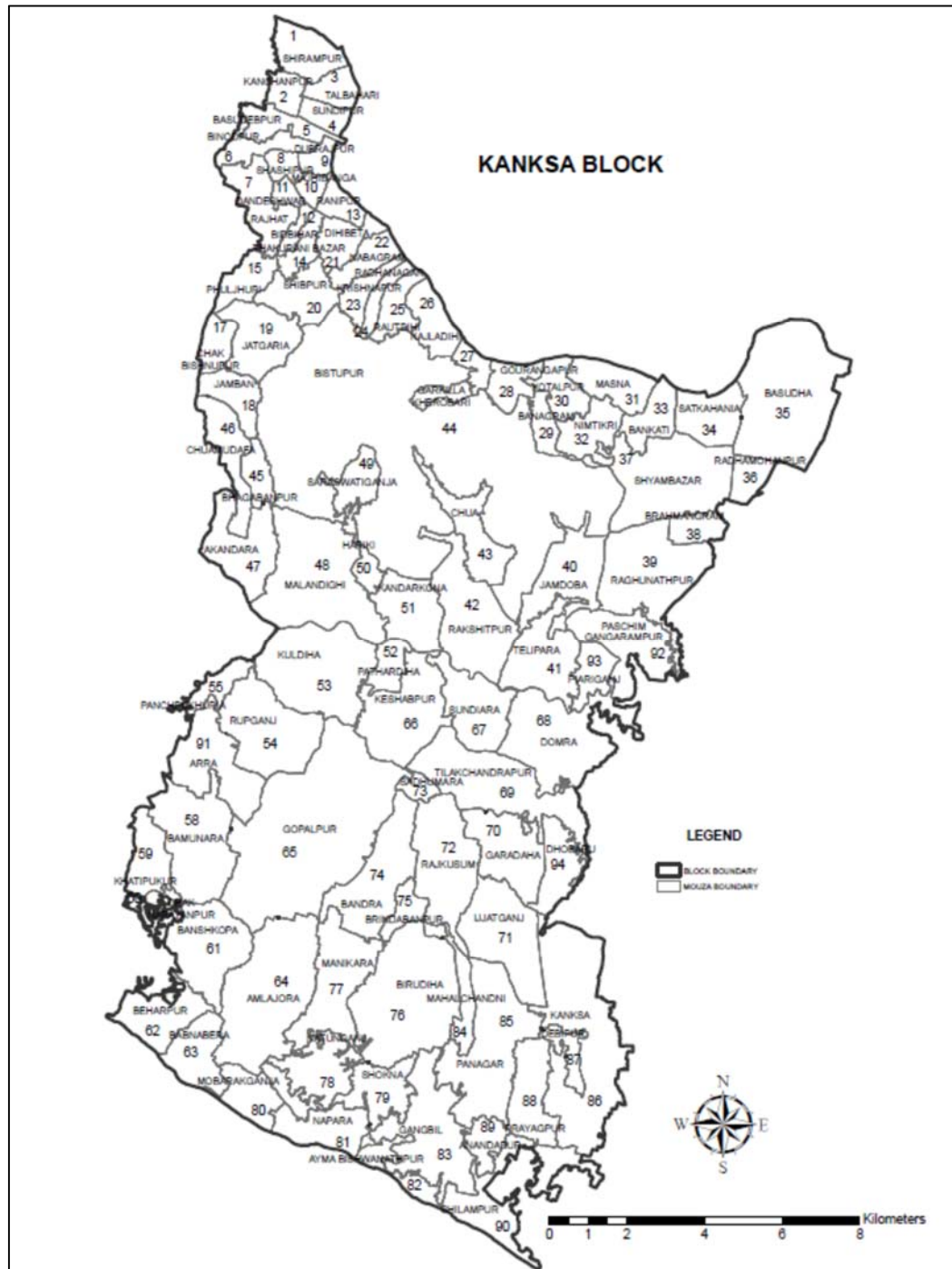
Map 4.1A: Mouza map for Andal Block (Source: Author)



Map 4.1B: Mouza map for Pandabeswar Block (Source: Author)



Map 4.1C: Mouza map for Faridpur-Durgapur Block (Source: Author)





Map 4.1E: Mouza map for Durgapur Municipal Corporation (Source: Author)

Table 4.2A: List of mouza and salient features within Andal Block

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Andal	52	Andal	Andal	2060.76	19924
Babuishol	46	Andal	Madanpur	825.64	1941
Baska	50	Andal	Madanpur	840.94	6609
Bhadur	42	Andal	Andal	396.67	4278
Chak Banbahal	17	Andal	Ukhra	468.52	0
Chak Rambati	45	Andal	Madanpur	163.40	1557
Dakshinkhanda	36	Andal	Dakshinkhanda	1930.46	8449
Dhandadihi	39	Andal	Madanpur	863.34	3800
Dignala	43	Andal	Andal	900.18	13633
Dubchururia	55	Andal	Andal	317.75	3402
Gaidhaba	37	Andal	Dakshinkhanda	392.44	2471
harishpur	44	Andal	Madanpur	603.86	8980
Kajora	41	Andal	Kajora	2551.72	27275
Khandra	32	Andal	Khandra	1837.34	15383
Madanpur	48	Andal	Madanpur	943.80	4631

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Madhabpur	40	Andal	Madanpur	282.61	2216
Madhusudanpur	34	Andal	Dakshinkhanda	361.18	3435
Mahira	35	Andal	Dakshinkhanda	332.15	4188
Mukundapur	33	Andal	Khandra	385.23	2913
Palashban	47	Andal	Madanpur	699.44	4811
Ramprasadpur	51	Andal	Shrirampur	687.31	0
Shrirampur	56	Andal	Shrirampur	1098.27	4235
Siduli	31	Andal	Khandra	457.89	8961
Tamala	53	Andal	Andal	300.16	732
Tiarmana	49	Andal	Madanpur	123.41	0
Ukhra	18	Andal	Ukhra	1342.77	24104

Source: Census of India, 2011

Table 4.2B: List of mouza and salient features within Pandabeswar Block

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Bahula	30	Pandabeswar	Behula	886.99	17510
Baidyanathpur	5	Pandabeswar	Baidyanathpur	597.99	15704
Bajari	23	Pandabeswar	Haripura	976.16	1583
Banbahal	26	Pandabeswar	Chhora	566.36	3540
Bhaluka	21	Pandabeswar	Haripura	234.92	681
Bhatmura	13	Pandabeswar	Haripura	311.68	594
Bilpahari	2	Pandabeswar	Haripura	1008.25	8565
Chak Bankola	19	Pandabeswar	Ukhra	439.35	11527
Chak Jharia	15	Pandabeswar	Nabagram	344.55	1497
Chak Karala	11	Pandabeswar	Baidyanathpur	474.59	1331
Chhora	29	Pandabeswar	Chhora	1393.02	13806
Dalurband	4	Pandabeswar	Kendra	1967.26	15107
Danya	9	Pandabeswar	Baidyanathpur	403.23	3854
Deshlopa	8	Pandabeswar	Baidyanathpur	571.27	1178
Gobindapur	6	Pandabeswar	Baidyanathpur	223.98	1898
Hansdiha	27	Pandabeswar	Haripura	437.89	
Haripur	24	Pandabeswar	Haripura	618.28	5910
Joalbhanga	12	Pandabeswar	Nabagram	1002.33	2070
Kendra Khottadi	1	Pandabeswar	Shyamla	2042.08	6875
Konardihi	14	Pandabeswar	Nabagram	1756.06	8488
Konda	7	Pandabeswar	Baidyanathpur	329.47	916
KumarKhala	25	Pandabeswar	Haripura	188.27	2419
Mahal	10	Pandabeswar	Baidyanathpur	887.00	4841
Nabagram	20	Pandabeswar	Nabagram	1113.39	4626
Parashkol	38	Pandabeswar	Behula	1678.16	10367
Ramnagar	3	Pandabeswar	Kendra	1548.72	5446
Shankarpur	28	Pandabeswar	Chhora	818.20	6399
Shyamsundarpur	16	Pandabeswar	Nabagram	234.42	2801
Sonpur	22	Pandabeswar	Haripura	1275.45	2358

Source: Census of India, 2011

Table 4.2C: List of mouza and salient features within Faridpur-Durgapur Block

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Amdahi	25	Faridpur	Gaurbazar	442.31	1138
Amlauka	51	Faridpur	Ichhapur	395.83	1184
Arati	54	Faridpur	Ichhapur	641.53	2789
Balijuri	16	Faridpur	Laudoha	1273.34	2599
Bangram	1	Faridpur	Gogla	537.06	5635
Banguri	52	Faridpur	Ichhapur	426.57	637
Banshgara	38	Faridpur	Ichhapur	1199.19	1173
Banshia	31	Faridpur	Pratappur	1104.46	1607
Banshol	49	Faridpur	Ichhapur	348.59	2755
Baragaria	41	Faridpur	Pratappur	906.22	1241
Benebandhi	11	Faridpur	Laudoha	218.64	776
Bhaburia	5	Faridpur	Gaurbazar	524.48	0
Bhadrapur	34	Faridpur	Laudoha	248.72	90
Chak Laudoha	22	Faridpur	Laudoha	288.95	0
Chapabandi	37	Faridpur	Ichhapur	332.70	88
Dhabani	43	Faridpur	Pratappur	1151.52	2763

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Gogla	14	Faridpur	Gogla	473.95	1799
Gopdanga	94	Faridpur	Pratappur	892.45	536
Hete Doba	48	Faridpur	Ichhapur	911.13	1092
Ichhapur	50	Faridpur	Ichhapur	625.77	4795
Jabuna	55	Faridpur	Ichhapur	408.19	978
Jagannathpur	26	Faridpur	Pratappur	1011.66	2034
Jamgara	23	Faridpur	Pratappur	1438.65	2315
Jemua	80	Faridpur	Jemua	1976.48	5976
Jhanjra	33	Faridpur	Laudoha	944.46	2125
Jot Balamam	8	Faridpur	Gaurbazar	329.88	918
Kaliganj	83	Faridpur	Jemua	490.76	1948
Kalikapur	30	Faridpur	Pratappur	538.79	1103
Kalinagar	27	Faridpur	Pratappur	120.96	535
Kamardanga	6	Faridpur	Gaurbazar	246.20	0
katabera	42	Faridpur	Pratappur	610.77	1852
Kendua	36	Faridpur	Ichhapur	173.49	835
Kenduls	28	Faridpur	Pratappur	382.82	250
Khatgaria	29	Faridpur	Pratappur	397.28	375
Laskarbandh	13	Faridpur	Gogla	584.79	3048
Laudoha	21	Faridpur	Laudoha	488.22	2399
Madhaiganja	24	Faridpur	Gaurbazar	1771.80	1194
Madhaipur	4	Faridpur	Gogla	1224.31	5140
Maheshpur	12	Faridpur	Laudoha	160.96	284
Mandarban	15	Faridpur	Gogla	955.07	4592
Nabaghanapur	19	Faridpur	Laudoha	768.16	5383
Nachan	39	Faridpur	Pratappur	544.00	917
Nakrakonda	18	Faridpur	Laudoha	366.68	2215
Nutandanga	2	Faridpur	Gogla	367.95	2615
Pansiuli	3	Faridpur	Gogla	366.14	1688
Paranganj	79	Faridpur	Jemua	266.10	1044
Patsaora	53	Faridpur	Ichhapur	1023.49	1810
Pratappur	40	Faridpur	Pratappur	719.28	1644
Rangamatia	10	Faridpur	Laudoha	362.73	2143
Sarpi	35	Faridpur	Ichhapur	1341.88	5549
shankarpur	95	Faridpur	Jemua	253.53	2915
Shirsha	17	Faridpur	Laudoha	1336.48	4600
Shrikrishnapur	9	Faridpur	Gaurbazar	1617.71	1670
Shyampur	32	Faridpur	Laudoha	161.71	33
Shyamsundarpur	7	Faridpur	Gaurbazar	1865.16	6273
Tetikhala	96	Faridpur	Jemua	143.41	3168
Tilabani	20	Faridpur	Laudoha	479.36	1659

Source: Census of India, 2011

Table 4.2D: List of mouza and salient features within Kanksa Block

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Akandara	47	Kanksa	Malandighi	787.5	2051
Amlajora	64	Kanksa	Amlajora	1807.52	5856
Anandapur	89	Kanksa	Amlajora	265.99	1566
Arra	91	Kanksa	Malandighi	921.5	7808
Ayma Bishwanathpur	82	Kanksa	Amlajora	305.03	1971
Babnabera	63	Kanksa	Amlajora	538.97	3009
Bamunara	58	Kanksa	Gopalpur	1226.15	6665
Banagram	29	Kanksa	Bankati	242.47	488
Bandra	74	Kanksa	Gopalpur	1059.73	2240
Bankati	33	Kanksa	Bankati	366.81	1255
Banshkopa	61	Kanksa	Gopalpur	976.08	2711
Basudebpur	5	Kanksa	Bidbihar	333.68	1285
Basudha	35	Kanksa	Bankati	1953.91	5166
Beharpur	62	Kanksa	Amlajora	623.79	1485
Bhagabanpur	45	Kanksa	Malandighi	242.93	0
Bidbihar	12	Kanksa	Bidbihar	108.68	206
Binodpur	6	Kanksa	Bidbihar	319.64	570
Birudiha	76	Kanksa	Gopalpur	1868.5	3377
Bistupur	44	Kanksa	Malandighi	8619.03	2992

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Brahmangram	38	Kanksa	Bankati	251.15	505
Brindabanpur	75	Kanksa	Gopalpur	261.99	627
Chak Bishnupur	17	Kanksa	Bidbihar	252.68	0
Chak Narayanpur	60	Kanksa	Gopalpur	165.66	0
Chua	43	Kanksa	Malandighi	614.91	671
Chuamudafa	46	Kanksa	Bidbihar	539.7	0
Dandeshwar	11	Kanksa	Bidbihar	111.57	897
Debipur	87	Kanksa	Kanksa	216.1	9967
Dhobaru	94	Kanksa	Tilakchandrapur	463.93	859
Dhibeta	21	Kanksa	Bidbihar	360.23	609
Domra	68	Kanksa	Tilakchandrapur	1367.63	2035
Dubrajpur	9	Kanksa	Bidbihar	152.45	342
Gangbil	83	Kanksa	Amlajora	1232.36	2435
Garadaha	70	Kanksa	Tilakchandrapur	806.23	745
Garkilla Kherobari	27	Kanksa	Bankati	325.45	439
Gopalpur	65	Kanksa	Gopalpur	3488.53	15967
Gourangapur	28	Kanksa	Bankati	305.03	110
Hariki	50	Kanksa	Malandighi	203.5	503
Iijatganj	71	Kanksa	Tilakchandrapur	1107.26	4085
Jamban	18	Kanksa	Bidbihar	382.39	580
Jamdoba	40	Kanksa	Bankati	846.7	493
jatgaria	19	Kanksa	Bidbihar	711.76	1595
Kajladihi	26	Kanksa	Bidbihar	413.51	1416
Kanchanpur	2	Kanksa	Bidbihar	219.05	1627
Kandarkona	51	Kanksa	Malandighi	664.63	1253
Kanksa	86	Kanksa	Kanksa	2141.28	23789
Keshabpur	66	Kanksa	Gopalpur	1085.96	832
Khatipukur	59	Kanksa	Gopalpur	466.54	0
Kotalpukur	30	Kanksa	Bankati	358.88	243
Krishnapur	23	Kanksa	Bidbihar	254.32	435
Kuldiha	53	Kanksa	Malandighi	1441.98	3250
Mahalchandni	84	Kanksa	Gopalpur	284.46	347
Majhidanga	10	Kanksa	Bidbihar	120.1	75
Malandighi	48	Kanksa	Malandighi	1726.68	2590
Manikara	77	Kanksa	Kanpur	1040.58	1348
Masna	31	Kanksa	Bankati	498.77	22
Mobarakganja	80	Kanksa	Amlajora	427.96	1558
Nabagram	22	Kanksa	Bidbihar	308.17	549
Napara	81	Kanksa	Amlajora	558.35	2512
Natunganj	78	Kanksa	Amlajora	608.86	1583
Nimtikri	32	Kanksa	Bankati	461.34	490
Panagar	85	Kanksa	Tilakchandrapur	1498.32	5510
Panchpukhuria	55	Kanksa	Malandighi	269.61	0
Pashchim Gangarampur	92	Kanksa	Bankati	834.75	780
Pathardiha	52	Kanksa	Gopalpur	256.42	179
Phuljhuri	15	Kanksa	Bidbihar	342.66	608
Piiriganj	93	Kanksa	Tilakchandrapur	313.5	1146
Prayagpur	88	Kanksa	Tilakchandrapur	638.94	4479
Radhamohanpur	36	Kanksa	Bankati	244.84	1174
Radhanagar	24	Kanksa	Bidbihar	168.39	465
Raghunathpur	39	Kanksa	Bankati	1352.27	988
Rajhat	7	Kanksa	Bidbihar	582.07	642
Rajkusum	72	Kanksa	Tilakchandrapur	1141.16	1705
Rakshitpur	42	Kanksa	Malandighi	1187.11	1625
Ranipur	13	Kanksa	Bidbihar	216.08	
Rautdihi	25	Kanksa	Bidbihar	311.84	433
Rupganj	54	Kanksa	Malandighi	1146.42	1372
Sadhumara	73	Kanksa	Tilakchandrapur	138.52	137
Saraswatiganja	49	Kanksa	Malandighi	332.95	533
Satkahania	34	Kanksa	Bankati	514.14	725
Shashipur	8	Kanksa	Bidbihar	158.89	939
Shibpur	20	Kanksa	Bidbihar	555.1	1953
Shilampur	90	Kanksa	Amlajora	966.61	3968
Shirampur	1	Kanksa	Bidbihar	503.03	202
Shokna	79	Kanksa	Amlajora	753.36	1371

Name of Mouza	JL No	Police Station	Gram Panchayat	Area (in acres)	Population (2011)
Shyambazar	37	Kanksa	Bankati	1452.37	3308
Sundiara	67	Kanksa	Tilakchandrapur	755.04	1300
Sundipur	4	Kanksa	Bidbihar	207.29	312
Talbahari	3	Kanksa	Bidbihar	249.57	109
Telipara	41	Kanksa	Bankati	829.64	1499
Thakurani Bazar	14	Kanksa	Bidbihar	233.71	609
Tilakchandrapur	69	Kanksa	Tilakchandrapur	1428.68	1970

Source: Census of India, 2011

Table 4.2E: List of mouza and salient features within Durgapur Municipal Corporation

Name of Mouza	JL No	Police Station	Area (in acres)
Amrai	58	Faridpur	1116.67
Angadpur	89	Faridpur	508.47
Arjunpur	72	Faridpur	279.49
Banagram	73	Faridpur	321.19
Benachiti	67	Faridpur	1050.96
Bhiringi	68	Faridpur	1499.25
Bijupora	57	Faridpur	552.37
Birbhanpur	91	Faridpur	1225.59
Chak Agar	60	Faridpur	151.25
Chak Bhabai	77	Faridpur	153.11
Chak Gopaldebpur	45	Faridpur	309.08
Dhandabag	66	Faridpur	676.41
Dhunara	70	Faridpur	460.90
Faridpur	74	Faridpur	2830.59
Goalara	78	Faridpur	600.89
Gopal Math	54	Andal	482.68
Gopinathpur	84	Faridpur	6550.94
Hari Bazar	81	Faridpur	358.33
Jagurband	62	Faridpur	268.10
Kamalpur	47	Faridpur	1936.83
Kanrsar	59	Faridpur	246.07
Kururia	56	Faridpur	791.74
Mahishkhapuri	75	Faridpur	1313.78
Mamra	85	Faridpur	502.62
Mejedihi	65	Faridpur	701.85
Mohanpur	61	Faridpur	197.75
Nadiha	92	Faridpur	822.21
Narayanpur	93	Faridpur	241.10
Pardia	76	Faridpur	866.71
Parulia	44	Faridpur	2391.88
Per Radhamadhabpur	87	Faridpur	255.67
Phuljhari	82	Faridpur	1139.35
Punabad	69	Faridpur	902.18
Pursha	71	Faridpur	425.28
Radhamadhabpur	86	Faridpur	1246.57
Raturia	90	Faridpur	1010.03
Sajara	63	Faridpur	690.42
Shobhapur	46	Faridpur	2152.83
Varia	64	Faridpur	521.81

Source: Census of India, 2011

4.2 Delineation into Planning Zones

Asansol Durgapur Development Authority has prepared a Perspective Plan for the whole planning area, named Vision -2025, which outlines the roadmap for its overall development till year 2025. In Vision-2025, the entire Planning Area is earmarked into four type of Development Zones for all decision-making strategies on spatial structure.

They are namely:

- A. **Extensive Development Zone** – essentially the areas for new development using vacant land and less productive farmland;
- B. **Intensive Development Zone** – existing development to be re-densified for new urban functions wherever possible;
- C. **Restricted Development Zone** – all the land under coal mining (active or closed) along with unstable locations i.e. subsidence prone zones; prepared based on the coal seam map provided by Central Mine Planning and Design Institute (CMPDI) and Directorate General of Mine Safety (DGMS);
- D. **Eco-Sensitive Development Zone** – to protect the natural land cover and check soil erosion along the river banks;

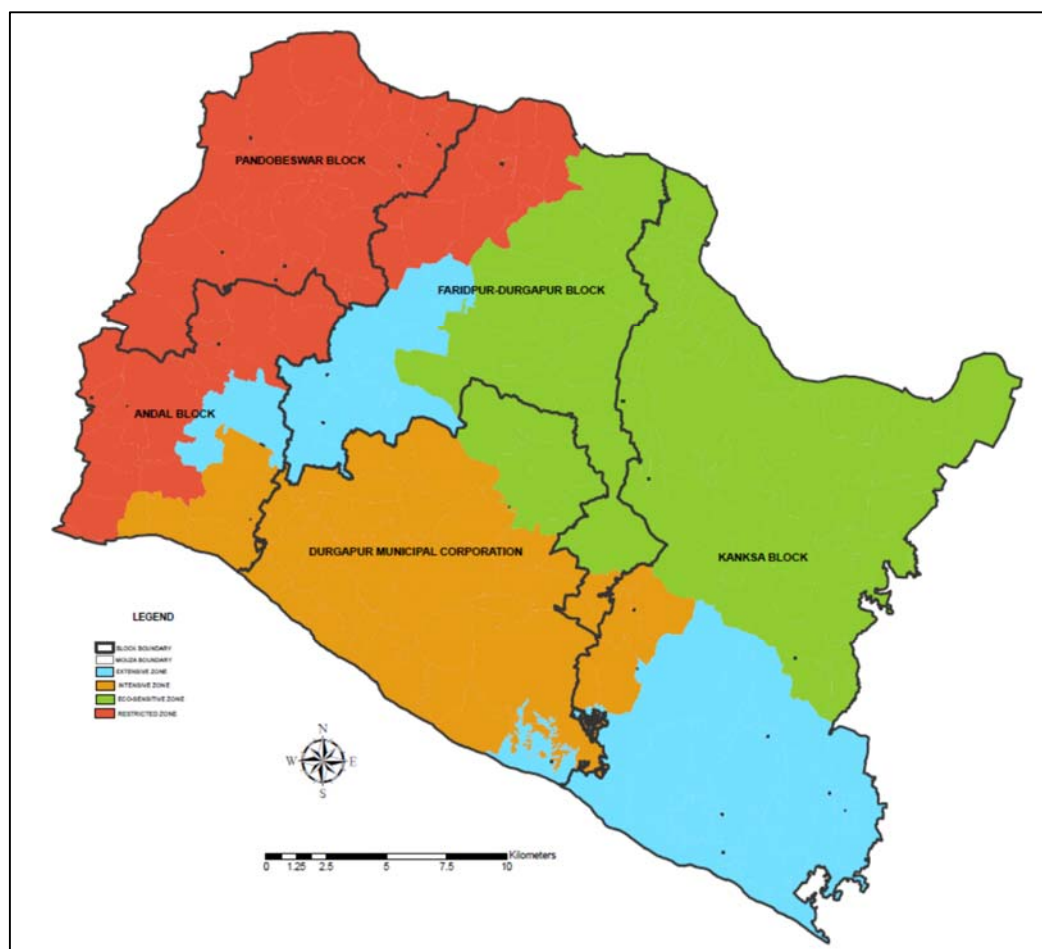
Durgapur Sub-division has been divided into four type of development zones for the purpose of LU&DCP preparation along the same lines for ease of operation. The LU&DCP of Asansol Sub-division has also been prepared following the similar principle. These zones have distinct existing characteristics as well as very different future growth potential. While delineating the development zone boundary, administrative boundaries (mouza boundaries in particular) have been taken into consideration.

The detailed sub-division of four Blocks and Municipal Corporation is listed in Table No. 4.3. The detailed list of mouzas falling each Development Zone type is given in Table 4.3A to 4.3E.

Table no. 4.3: Salient features of Development Zones in Durgapur Sub-division

Unit	Type of Development Zone	No. of Mouzas falling under the respective Development Zone (no.s)
Andal Block	Extensive Development zone	3
	Intensive Development zone	5
	Restricted Development zone	18
Pandebeswar Block	Restricted Development zone	29
Faridpur-Durgapur Block	Eco-Sensitive Development zone	24
	Extensive Development zone	17
	Intensive Development zone	3
	Restricted Development zone	13
Kanksa Block	Eco-Sensitive Development zone	61
	Extensive Development zone	25
	Intensive Development zone	5
Durgapur Municipal Corporation	Eco-Sensitive Development zone	5
	Extensive Development zone	2
	Intensive Development zone	32

Source: Author



Map No. 4.2: Durgapur Sub-division according to type of Development zones (Source: Author)

Table 4.3A: List of mouza's falling under various Type of Development Zone – Andal Block

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
Extensive Development Zone	Bhadur	42	Andal
	Dakshinkhanda	36	Dakshinkhanda
	Tamala	53	Andal
Intensive Development Zone	Andal	52	Andal
	Baska	50	Madanpur
	Dubchururia	55	Andal
	Ramprasadpur	51	Shrirampur
	Shrirampur	56	Shrirampur
Restricted Developmet Zone	Babuishol	46	Madanpur
	Chak Banbahal	17	Ukhra
	Chak Rambati	45	Madanpur
	Dhandadihi	39	Madanpur
	Dignala	43	Andal
	Gaidhaba	37	Dakshinkhanda
	harishpur	44	Madanpur
	Kajora	41	Kajora
	Khandra	32	Khandra

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
	Madanpur	48	Madanpur
	Madhabpur	40	Madanpur
	Madhusudanpur	34	Dakshinkhanda
	Mahira	35	Dakshinkhanda
	Mukundapur	33	Khandra
	Palashban	47	Madanpur
	Siduli	31	Khandra
	Tiarmana	49	Madanpur
	Ukhra	18	Ukhra

Source: Author

Table 4.3B: List of mouza's falling under various Type of Development Zone – Pandabeswar Block

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
Restricted Development Zone	Bahula	30	Behula
	Baidyanathpur	5	Baidyanathpur
	Bajari	23	Haripura
	Banbahal	26	Chhora
	Bhaluka	21	Haripura
	Bhatmura	13	Haripura
	Bilpahari	2	Haripura
	Chak Bankola	19	Ukhra
	Chak Jharla	15	Nabagram
	Chak Karala	11	Baidyanathpur
	Chhora	29	Chhora
	Dalurband	4	Kendra
	Danya	9	Baidyanathpur
	Deshlopa	8	Baidyanathpur
	Gobindapur	6	Baidyanathpur
	Hansdiha	27	Haripura
	Haripur	24	Haripura
	Joalbhangra	12	Nabagram
	Kendra Khottadi	1	Shyamla
	Konardihi	14	Nabagram
	Konda	7	Baidyanathpur
	KumarKhala	25	Haripura
	Mahal	10	Baidyanathpur
	Nabagram	20	Nabagram
	Parashkol	38	Behula
	Ramnagar	3	Kendra
	Shankarpur	28	Chhora
	Shyamsundarpur	16	Nabagram
	Sonpur	22	Haripura

Source: Author

Table 4.3C: List of mouza's falling under various Type of Development Zone – Faridpur-Durgapur Block

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
Eco-Sensitive Development Zone	Amdahi	25	Gaurbazar
	Banshgara	38	Ichhapur
	Banshia	31	Pratappur
	Baragarla	41	Pratappur
	Bhaburia	5	Gaurbazar
	Dhabani	43	Pratappur
	Gopdanga	94	Pratappur
	Jagannathpur	26	Pratappur
	Jamgara	23	Pratappur

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
	Jemua	80	Jemua
	Jot Balaram	8	Gaurbazar
	Kalikapur	30	Pratappur
	Kalinagar	27	Pratappur
	Kamardanga	6	Gaurbazar
	katabera	42	Pratappur
	Kenduls	28	Pratappur
	Khatgaria	29	Pratappur
	Madhaiganja	24	Gaurbazar
	Nachan	39	Pratappur
	Paranganj	79	Jemua
	Pratappur	40	Pratappur
	Rangamatia	10	Laudoha
	Shrikrishnapur	9	Gaurbazar
	Shyamsundarpur	7	Gaurbazar
Extensive Development Zone	Amlauka	51	Ichhapur
	Arati	54	Ichhapur
	Banguri	52	Ichhapur
	Banshol	49	Ichhapur
	Bhadrapur	34	Laudoha
	Chak Laudoha	22	Laudoha
	Chapabandi	37	Ichhapur
	Hete Doba	48	Ichhapur
	Ichhapur	50	Ichhapur
	Jabuna	55	Ichhapur
	Jhanjra	33	Laudoha
	Kendua	36	Ichhapur
	Laudoha	21	Laudoha
	Patsaora	53	Ichhapur
	Sarpi	35	Ichhapur
	Shyampur	32	Laudoha
	Tilabani	20	Laudoha
Intensive Development Zone	Kaliganj	83	Jemua
	shankarpur	95	Jemua
	Tetikhala	96	Jemua
Restricted Developmet Zone	Balijuri	16	Laudoha
	Bangram	1	Gogla
	Benebandhi	11	Laudoha
	Gogla	14	Gogla
	Laskarbandh	13	Gogla
	Madhaipur	4	Gogla
	Maheshpur	12	Laudoha
	Mandarbandi	15	Gogla
	Nabaghanapur	19	Laudoha
	Nakrakonda	18	Laudoha
	Nutandanga	2	Gogla
	Pansiuli	3	Gogla
	Shirsha	17	Laudoha

Source: Author

Table 4.3D: List of mouza's falling under various Type of Development Zone – Kanksa Block

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
Eco-sensitive zone	Akandara	47	Malandighi
	Banagram	29	Bankati
	Bankati	33	Bankati
	Basudebpur	5	Bidbihar
	Basudha	35	Bankati
	Bhagabanpur	45	Malandighi

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
	Bidbihar	12	Bidbihar
	Binodpur	6	Bidbihar
	Bistupur	44	Malandighi
	Brahmangram	38	Bankati
	Chak Bishnupur	17	Bidbihar
	Chua	43	Malandighi
	Chuamudafa	46	Bidbihar
	Dandeshwar	11	Bidbihar
	Dhobaru	94	Tilakchandrapur
	Dihibeta	21	Bidbihar
	Domra	68	Tilakchandrapur
	Dubrajpur	9	Bidbihar
	Garadaha	70	Tilakchandrapur
	Garkilla Kherobari	27	Bankati
	Gourangapur	28	Bankati
	Hariki	50	Malandighi
	Jamban	18	Bidbihar
	Jamdoba	40	Bankati
	jatgaria	19	Bidbihar
	Kajladihi	26	Bidbihar
	Kanchanpur	2	Bidbihar
	Kandarkona	51	Malandighi
	Keshabpur	66	Gopalpur
	Kotalpukur	30	Bankati
	Krishnapur	23	Bidbihar
	Kuldiha	53	Malandighi
	Majhidanga	10	Bidbihar
	Malandighi	48	Malandighi
	Masna	31	Bankati
	Nabagram	22	Bidbihar
	Nimtikri	32	Bankati
	Pashchim Gangarampur	92	Bankati
	Pathardiha	52	Gopalpur
	Phuljhuri	15	Bidbihar
	Piariganj	93	Tilakchandrapur
	Radhamohanpur	36	Bankati
	Radhanagar	24	Bidbihar
	Raghunathpur	39	Bankati
	Rajhat	7	Bidbihar
	Rakshitpur	42	Malandighi
	Ranipur	13	Bidbihar
	Rautdihi	25	Bidbihar
	Sadhumara	73	Tilakchandrapur
	Saraswatiganja	49	Malandighi
	Satkahania	34	Bankati
	Shashipur	8	Bidbihar
	Shibpur	20	Bidbihar
	Shirampur	1	Bidbihar
	Shyambazar	37	Bankati
	Sundiara	67	Tilakchandrapur
	Sundipur	4	Bidbihar
	Talbahari	3	Bidbihar
	Telipara	41	Bankati
	Thakurani Bazar	14	Bidbihar
	Tilakchandrapur	69	Tilakchandrapur
Extensive zone	Amlajora	64	Amlajora
	Anandapur	89	Amlajora
	Ayma Bishwanathpur	82	Amlajora
	Babnabera	63	Amlajora
	Bandra	74	Gopalpur
	Banshkopa	61	Gopalpur
	Beharpur	62	Amlajora

Type of Development Zone	Name of Mouza	JL No	Gram Panchayat
	Birudiha	76	Gopalpur
	Brindabanpur	75	Gopalpur
	Chak Narayanpur	60	Gopalpur
	Debipur	87	Kanksa
	Gangbil	83	Amlajora
	Gopalpur	65	Gopalpur
	Ijjatganj	71	Tilakchandrapur
	Kanksa	86	Kanksa
	Mahalchandni	84	Gopalpur
	Manikara	77	Kanpur
	Mobarakganja	80	Amlajora
	Napara	81	Amlajora
	Natunganj	78	Amlajora
	Panagar	85	Tilakchandrapur
	Prayagpur	88	Tilakchandrapur
	Rajkusum	72	Tilakchandrapur
	Shilampur	90	Amlajora
	Shokna	79	Amlajora
Intensive zone	Arra	91	Malandighi
	Bamunara	58	Gopalpur
	Khatipukur	59	Gopalpur
	Panchpukhuria	55	Malandighi
	Rugganj	54	Malandighi

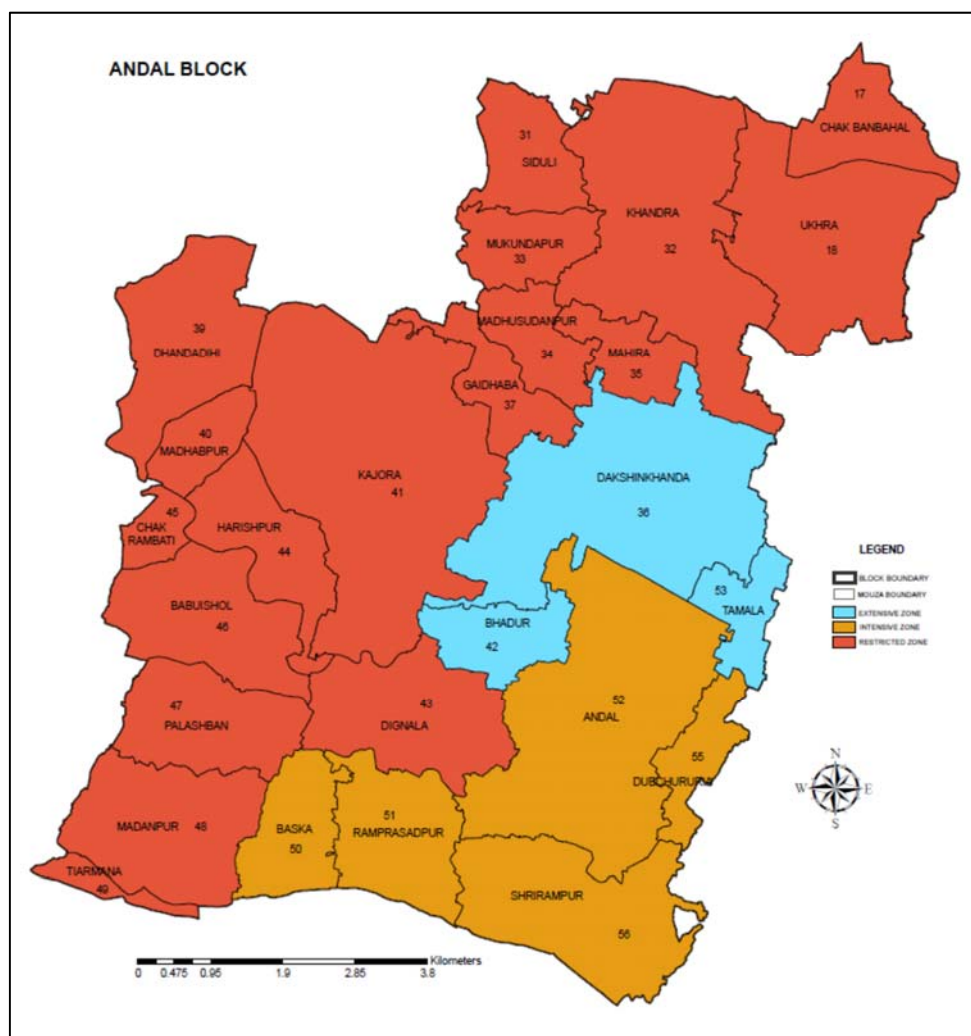
Source: Author

Table 4.3E: List of mouza's falling under various Type of Development Zone – Durgapur Municipal Corporation

Type of Development Zone	Name of Mouza	JL No
Eco-Sensitive Development Zone	Chak Bhabai	77
	Chak Gopaldebpur	45
	Goalara	78
	Parulia	44
	Shobhapur	46
Extensive Development Zone	Nadiha	92
	Narayanpur	93
Intensive Development Zone	Amrai	58
	Angadpur	89
	Arjjunpur	72
	Banagram	73
	Benachiti	67
	Bhiringi	68
	Bijupora	57
	Birbhanpur	91
	Chak Agar	60
	Dhandabag	66
	Dhunara	70
	Faridpur	74
	Gopal Math	54
	Gopinathpur	84
	Hari Bazar	81
	Jagurband	62
	Kamalpur	47
	Kanrsar	59
	Kururia	56
	Mahishkhapuri	75
	Mamra	85
	Mejedihi	65
	Mohanpur	61
	Pardia	76

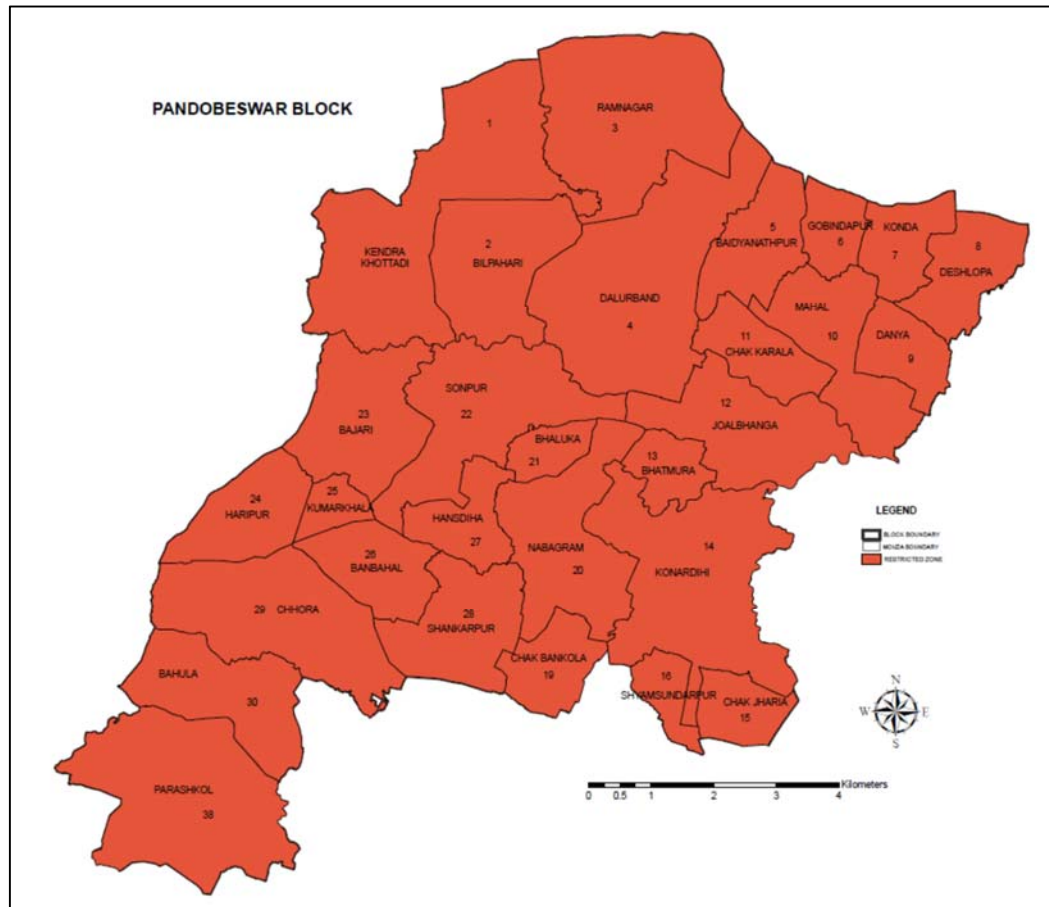
Type of Development Zone	Name of Mouza	JL No
	Per Radhamadhabpur	87
	Phuljhari	82
	Punabad	69
	Pursha	71
	Radhamadhabpur	86
	Raturia	90
	Sajara	63
	Waria	64

Source: Author

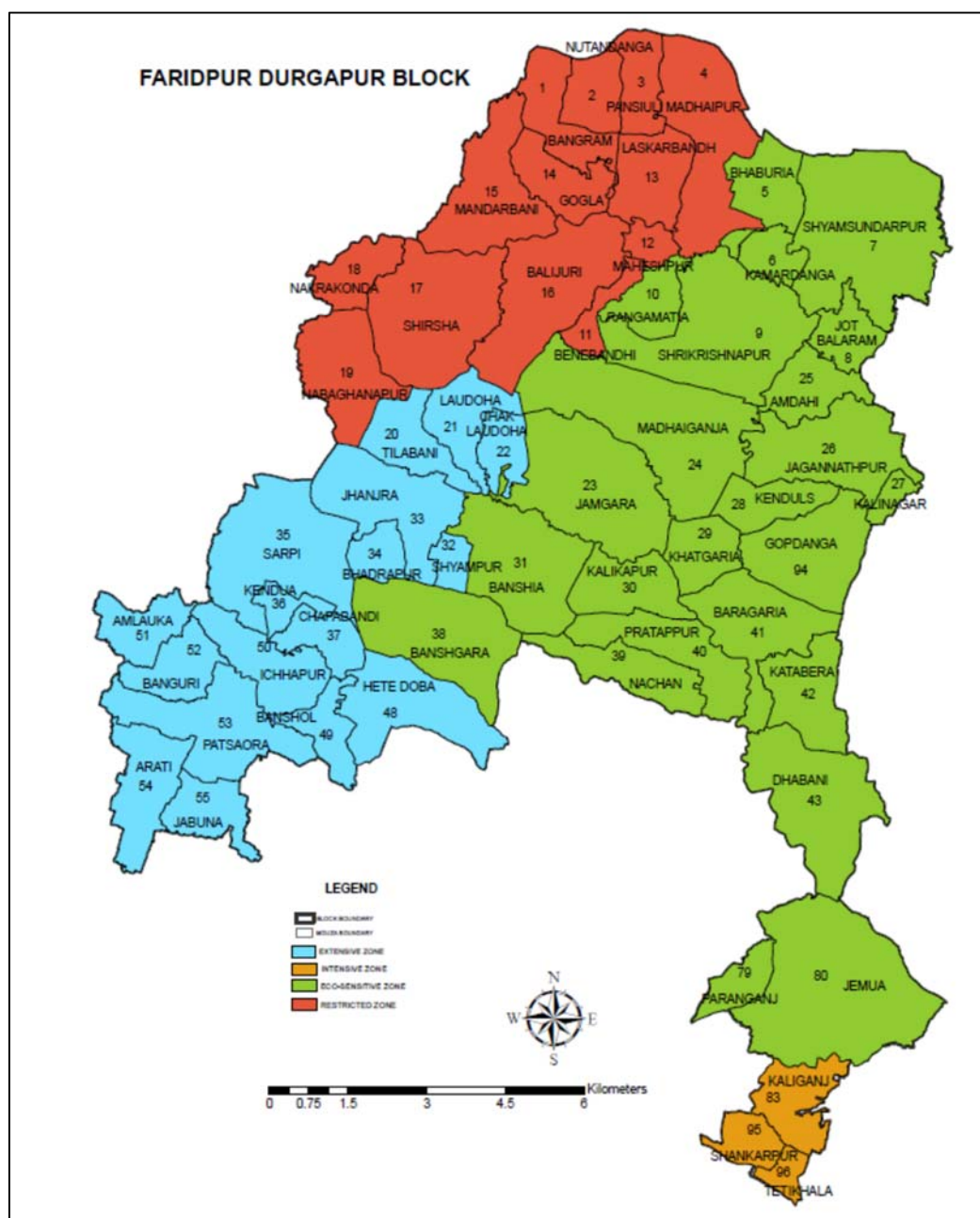


Map 4.2A: Mouza wise distribution according to Development Zones – Andal Block

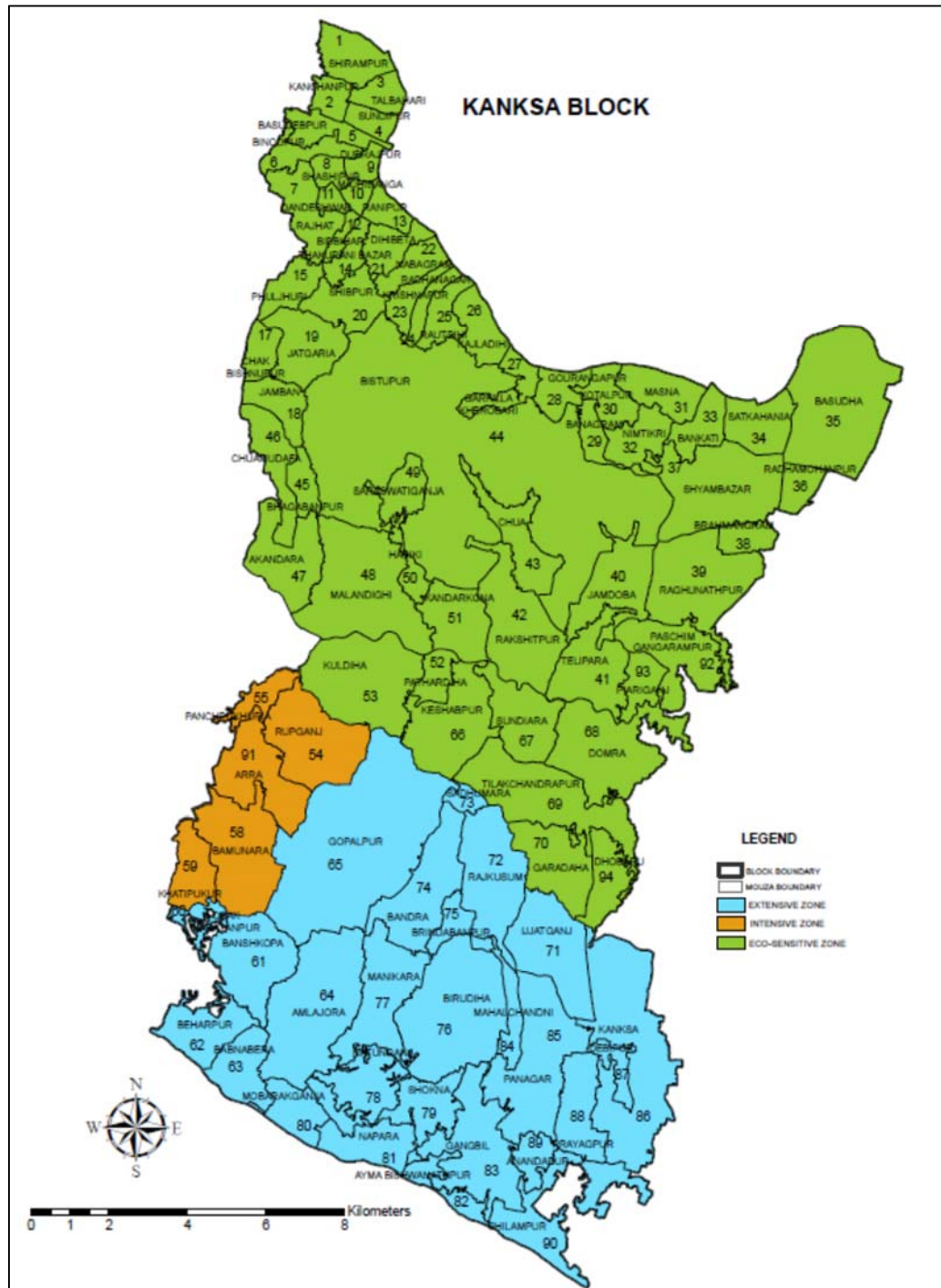
(Source: Author)



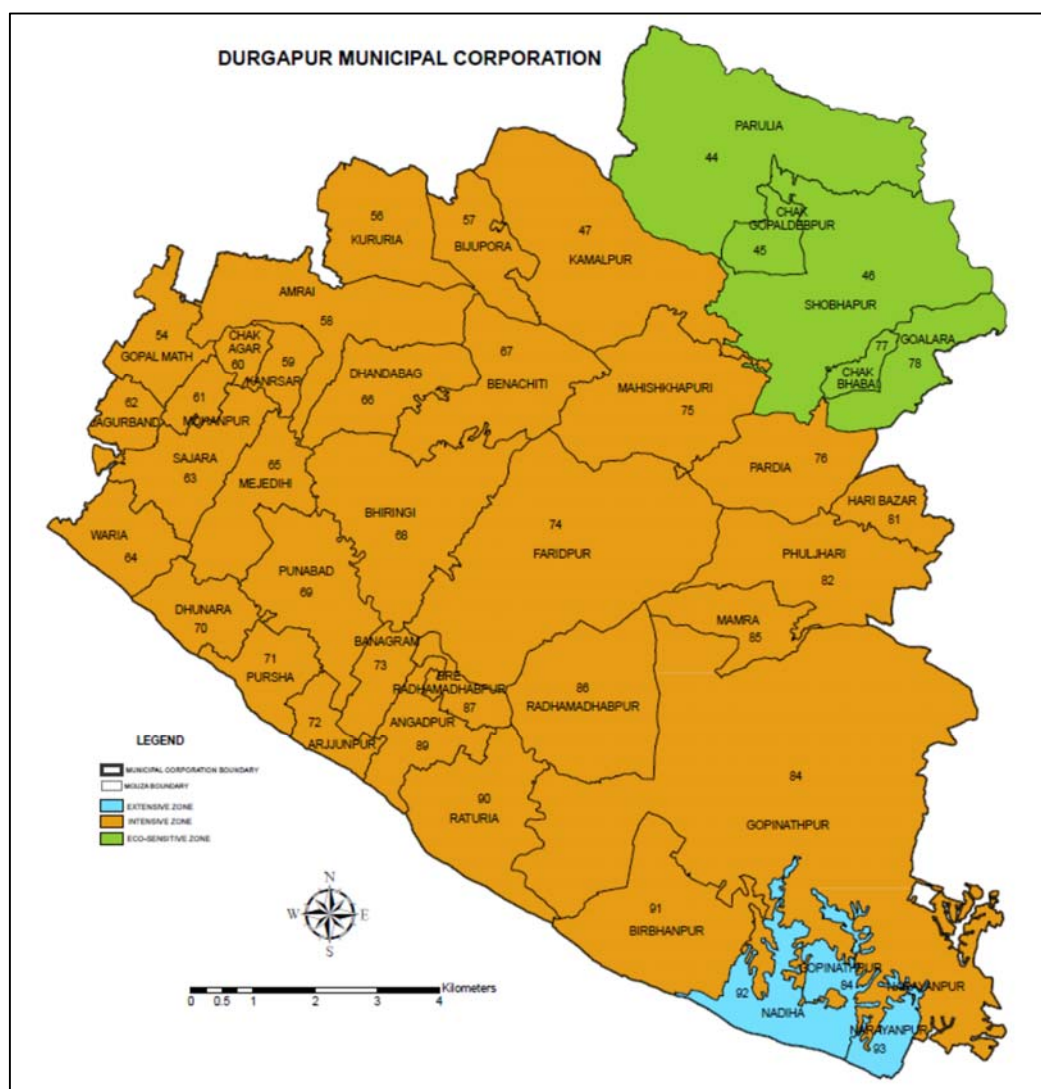
Map 4.2B: Mouza wise distribution according to Development Zones – Pandabeswar Block (Source: Author)



Map 4.2C: Mouza wise distribution according to Development Zones – Faridpur-Durgapur Block (Source: Author)



Map 4.2D: Mouza wise distribution according to Development Zones –Kanksa Block
(Source: Author)



Map 4.2E: Mouza wise distribution according to Development Zones – Durgapur Municipal Corporation (Source: Author)

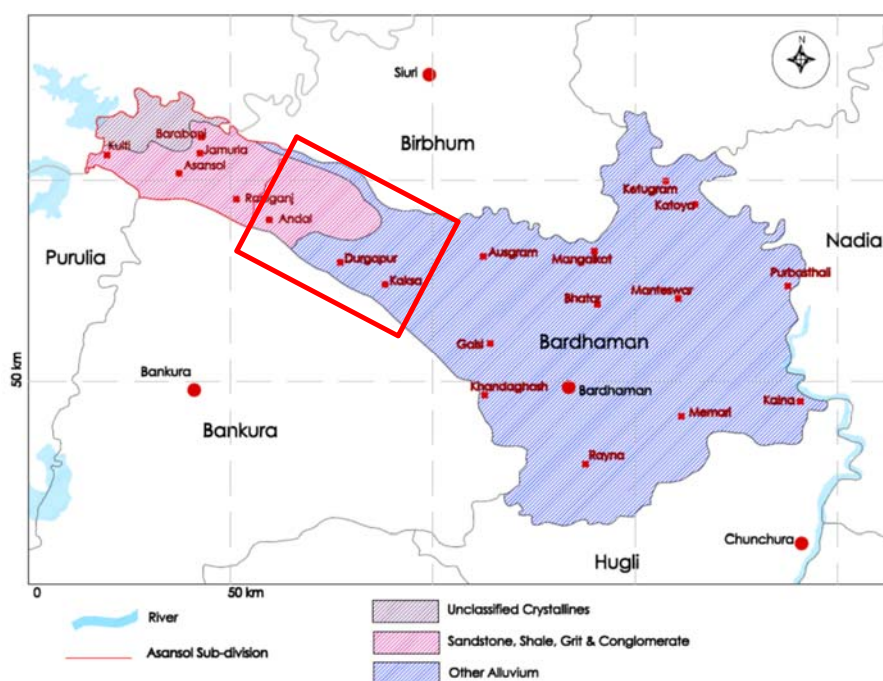
4.3 Salient features of Durgapur Sub-division

4.3.1 Climate, Soil and Natural resources

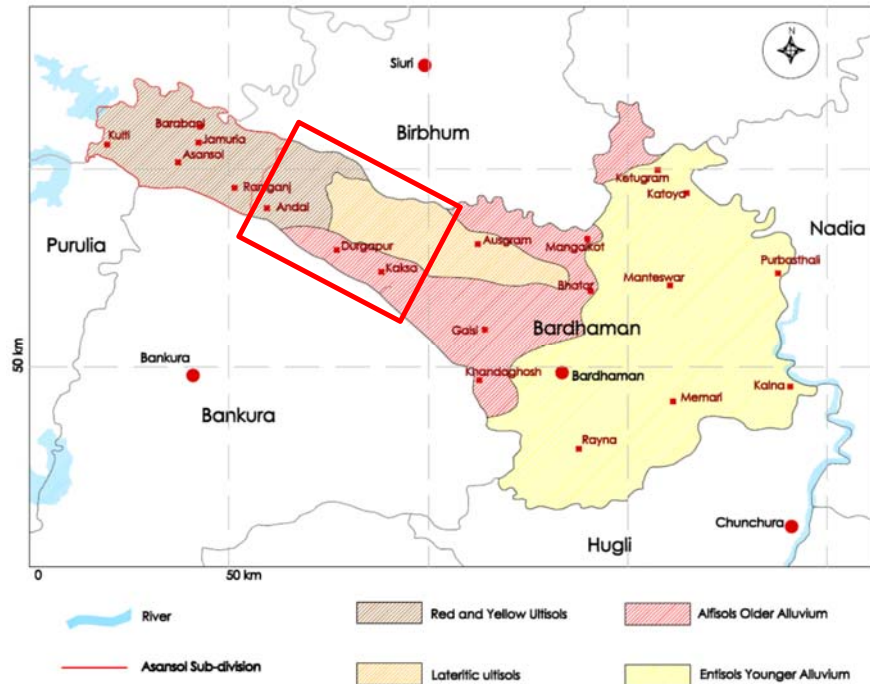
The area experiences a climate which is CWg3 type (based on Koppen's classification of climatic regions), where 'C' stands for 'warm temperate rainy climates with mild winter', 'W' for 'dry winter not compensated for by total rain in the rest of the year', 'g3' for 'eastern Ganges type of temperature trend'. Maximum summer temperature is 44°C while the minimum winter temperature is 5°C. Average rainfall is around 140.8 cm. The cold season starts from about the middle of November and continues till the end of February. March to May is dry summer intervened by tropical cyclones and storms. June to September is wet summer while October and November is autumn.

Durgapur Sub-division has coarse gritty soil blended with rock fragments which are formed from the weathering of pegmatites, quartz veins and conglomeratic sandstones, whereas sandy soil are formed from granitic rocks and sandstones. A part of Durgapur Sub-division is well known for its mineral resources. Besides coal, important minerals found in the district are calcium carbonate, abrasives, silica bricks and moulding sands, glass sands, building materials, manganese, bauxite, laterite etc.

The soil has Red and Yellow Ultisols, Lateritic Ultisols and Alfisols Older Alluvium. Ultisols are reddish, clay-rich, acidic soils that support a mixed forest vegetation prior to cultivation. They are naturally suitable for forestry, but can be made agriculturally productive with the application of lime and fertilizers, and are stable materials for construction projects. Alfisols are very productive soils for both agricultural and silvicultural use (Silviculture is the practice of controlling the growth, composition/structure, and quality of forests to meet values and needs, specifically timber production). Older alluvium is deposition away from the flood plains – River Damodar and Ajoy in this area.



Map 4.3A: Rock classification map of Durgapur Sub-division (with respect to Old Bardhaman district) (Source: Perspective Plan for ADPA - Vision 2025)



Map 4.3B: Soil Classification map of Durgapur Sub-division (with respect to Old Bardhaman district) (Source: Perspective Plan for ADPA - Vision 2025)

The river system in Paschim Bardhaman includes River Ajoy and its tributaries in the north, and River Dwarakeswar and Damodar and its branches in the south-west. Besides, there are innumerable rivulets/canals and old river beds all over the area. Durgapur Sub-division is also dotted with many tanks (with varying sizes) and nullahs. The Durgapur barrage is a large water reservoir on River Damodar in vicinity of the planning area.

Durgapur subdivision has considerable amount of forest reserves in Faridpur-Durgapur and Kanksa Block. These places are covered with Sal (*Shorea robusta*), Mohua (*Madhuca longifolia*), Palas (*Butea monosperma*), Bans (*Bambusa arundinacea*), Shirisha (*Albizia lebbek*), Arka (*Calotropis gigantea*), Kendua (*Diospyros melanoxylon*), Arjun (*Terminalia arjuna*) and Ashan (*Tilia tomentosa*). The common plants in hedges and wastelands are Lal-bharenda (*Jatropha gossypifolia* L.), Banokra (*Urena lobata* L.), *Heliotropium strigosum* Wild., Ulu (*Imperata arundinacea*), *Sida veronicaefolia* Lam., *Sida cordifolia* L. etc.

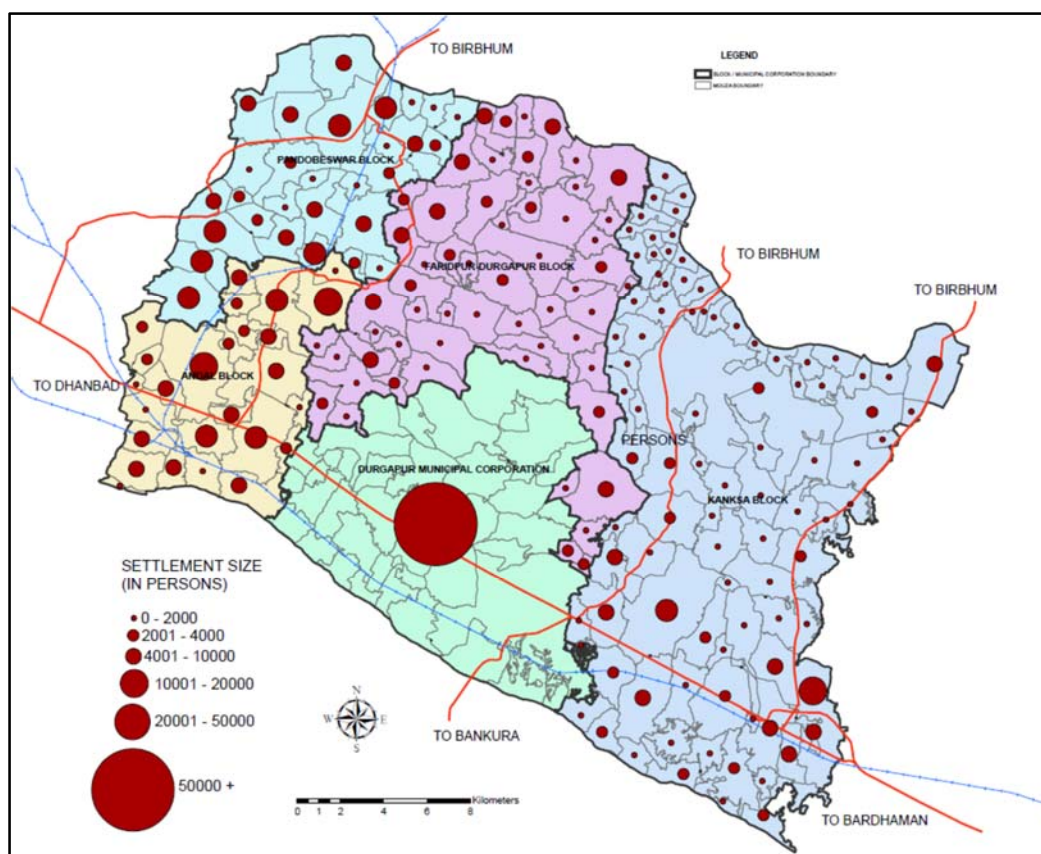
4.3.2 Nature of development of the study area

The nature of development varies widely within the Durgapur Sub-division. Andal and Pandabeswar Block are primarily composed of mining and industrial settlements. On the other hand, Kanksa Block is essentially composed of village settlements either based on farming or forest resources. Durgapur Municipal Corporation is the urbanized portion where the urban way of living has overflowed to Rural areas especially along the Kolkata-Delhi Highway from

Panagarh to Andal. Durgapur is very important for strategic reasons as it is home to higher level institutional, public/semi-public, commercial facilities (education, health, government offices, retail and business establishments etc.) – catering to a hinterland stretching entire South-west Bengal. Creation of Aetropolis in Andal Block has provided further boost to it (discussed later in detail).

4.3.3 Settlement Pattern and Population density

The study area constitutes of one ULB i.e. Durgapur Municipal Corporation and four Blocks namely, Andal, Pandabeswar, Faridpur-Durgapur and Kanksa.



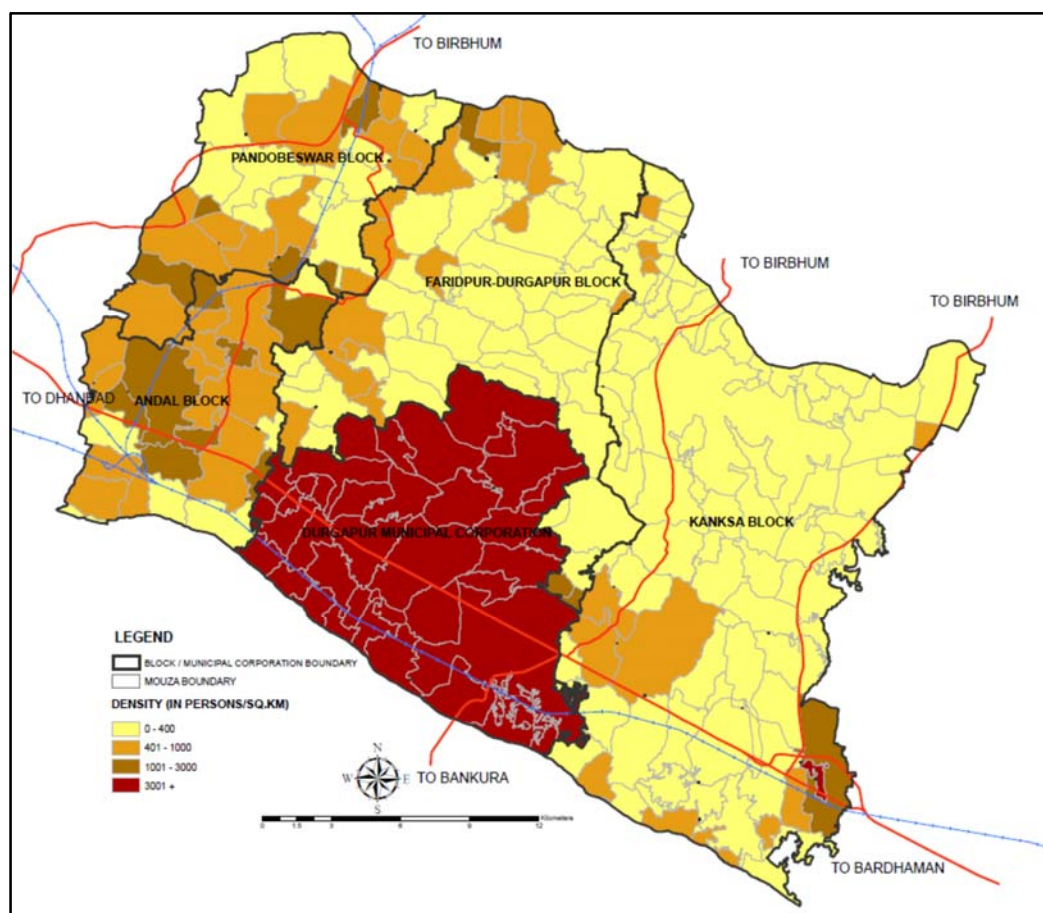
Map No. 4.4A: Hierarchy of settlement system across Durgapur Sub-division according to population size (Source: Author)

There are 39 Census Towns (CTs) within the planning area, of which 26 of them are within Andal and Pandabeswar Block. Most of them are mining or industrial settlements – developed around active or closed mines and manufacturing units. On the other hand, Faridpur-Durgapur and Kanksa Block has 6 and 7 CTs respectively, despite having 3/5th of land area. The population density in Andal and Pandabeswar Block is significantly higher than other two Blocks. This clearly points to two different drivers of settlement pattern within rural areas.

Table no. 4.4: Population Density in Durgapur Sub-division

Unit	Area (sq km)	Population in '000 (2011)	Population density in persons/sq.km (2011)
Andal	84.87	186.9	2202
Pandabeswar	97.80	161.9	1655
Faridpur-Durgapur	155.97	115.9	743
Kanksa	279.44	178.0	637
Durgapur Municipal Corporation	154.20	566.5	3674
Total	772.28	1209.2	

Source: District Statistical Handbook, 2014



Map No. 4.4B: Distribution of population density across Durgapur Sub-division (Source: Author)

4.3.4 Local Economy

The local economy of the entire Durgapur Sub-division consists of primary, secondary and tertiary sector activities. Mining activities are concentrated in Andal and Pandabeswar Block. Manufacturing activities are all along the Delhi-Kolkata road-rail corridor located in Andal Block, Durgapur Municipal Corporation and Kanksa Block – forming a continuous industrial corridor.

Tertiary activities are primarily concentrated in Durgapur Municipal Corporation with spill over in Andal and Kanksa Block. Farming is observed only in parts Kanksa and Faridpur-Durgapur Block.

Durgapur emerged as an industrial township in 1950s with massive investment in steel and heavy engineering sector. However, after the slump in the 1990s its economy has diversified greatly into tertiary sector activities – mainly in education services, trade and commerce, hospitality, real estate, banking and finance etc. In all these sectors, the dominance of Durgapur extends to many districts in south-west Bengal. The industrial sector got a boost after the Durgapur Steel Plant was taken up by Steel Authority of India (SAIL). Several small and medium manufacturing units have come up in its vicinity – both at Andal side as well as Panagarh side.

The share of main worker and marginal worker in the workforce has been provided in Table 4.5. Share of marginal worker are significantly high in Blocks with considerable agrarian activities. Kanksa and Faridpur-Durgapur Block has largest share of cultivators and agricultural labourers compared to other areas.

Table 4.5: Workforce characteristics in Durgapur Sub-division

Unit	Share of Main Worker [#] (%)	Share of Marginal Worker [#] (%)	Share of Total Worker [#] (%)	Share of Cultivators ^{\$} (%)	Share of Agricultural Labourers ^{\$} (%)	Share of Household Ind. Workers ^{\$} (%)	Share of Other Workers ^{\$} (%)
Andal Block	23.11	4.03	27.14	3.21	4.27	1.05	91.47
Faridpur-Durgapur Block	23.27	10.40	33.68	14.94	22.90	3.48	58.68
Pandabeswar Block	23.62	4.69	28.31	3.00	6.65	1.61	88.74
Kanksa Block	24.55	13.15	37.70	15.45	31.67	4.70	48.18
Durgapur Municipal Corporation	26.40	4.75	31.15	1.07	2.95	1.68	94.31

[#] - share of Total Population; ^{\$} - share of Total Worker

Source: District Statistical Handbook, 2014

Table 4.6: Major crops produced, area, productivity and yield

Name of Block	Aman Rice		
	Area (in Ha)	Production (in 000 MT)	Yield (kg per ha)
Andal	1196	3.060	2559
Faridpur-Durgapur	1180	3.061	2594
Pandabeswar	2005	6.253	3119
Kanksa	10211	30.815	3018

Source: District Statistical Handbook, 2014

The major crop produced in Durgapur Sub-division is Aman rice – with production primarily concentrated in Kanksa Block. The production and productivity of rice cultivation are provided in Table 4.6. Musur and mustard is also produced, but in very less area.

Table 4.7A: Distribution of land under cultivation and irrigation

Name of Block	Percentage share of cultivable area to total area (%)	Percentage share of irrigated area to cultivable area (%)
Andal Block	29.72	30.29
Pandabeswar Block	55.04	38.31
Faridpur-Durgapur Block	70.94	17.56
Kanksa Block	54.75	39.96

Source: Census of India, 2011

Share of land available for cultivation is lowest in Andal Block per table 4.7A – mostly due to mining sites and industries. The share is also low in Kanksa Block due to presense of forest reserves. All of the Durgapur Sub-division falls under irrigation command area of Damodar River Valley Corporation. Though Faridpur-Durgapur Block has large share of cultivable land, availability of irrigation facility is lowest in this Block. As per table 4.7B, very less share of households possess land especially in Andal and Pandabeswar Block – as most of them are employed in mining and manufacturing activities living in CTs.

Table 4.7B: Distribution of HHs according to availability of land and agro-equipment

Name of Block	Share of HHs with Land (%)	Share of HHs with No Land (%)	Share of HHs owning Mechanized Three/Four Wheeler Agricultural equipment (%)	Share of HHs owning Irrigation equipment (%)	Share of HHs having Kisan Credit Card with credit limit of Rs 50,000 or above (%)
Andal Block	3.45	96.55	0.24	0.18	0.35
Pandabeswar Block	5.41	94.59	0.81	0.88	0.3
Faridpur-Durgapur Block	20.14	79.86	0.42	2.01	0.34
Kanksa Block	20	80	1.23	3.64	1

Source: Socio-Economic Caste Census, 2011

Pisciculture and related activities are only of relevance in Kanksa and Durgapur-Faridpur Block (Refer Table 4.8A). A large number of waterbodies are also observed in these blocks where such activities take place along with natural streams and canals. Similar trend is also observed for livestock rearing and poultry farming where production is mostly concentrated in Kanksa and Faridpur-Durgapur Block (Refer table 4.8B).

Table 4.8A: Details of pisciculture activities

Name of Block	Net area available for pisciculture (hect.)	Net area under effective pisciculture (hect.)	No. of persons engaged in the profession (2014)	Approx. annual production (qtl.) (2014)
Andal	719	508	2130	20000
Faridpur-Durgapur	1534	1074	3122	47100
Pandabeswar	338	70	1002	9500
Kanksa	1095	880	5300	37500

Source: District Statistical Handbook, 2014

Table 4.8B: Estimated number of livestock and poultry

Name of Block	Live-stock (2014)					Poultry Birds
	Cattle	Buffaloes	Sheep	Goats	Others	
Andal	17879	203	160	14789	1459	19403
Faridpur-Durgapur	24640	1690	512	12719	2022	25596
Pandabeswar	14226	1318	117	8836	1897	16133
Kanksa	52580	2381	2397	37775	4193	71952

Source: District Statistical Handbook, 2014

4.3.5 Housing

A brief look at the ownership of the housing stock reveals that a very large segment of the households in Andal and Pandabeswar Block do not own a dwelling unit as compared to two other Blocks (Refer Table 4.9A). These two Blocks have a large share of population engaged in mining and manufacturing activities where housing is often provided by the employer. Similarly, Durgapur Municipal Corporation with a significant share of population living in townships exhibit lower level of dwelling unit ownership. The share of pucca housing is also very high in Andal and Pandabeswar Block compared to other Blocks – almost comparable to Durgapur Municipal Corporation (Refer Table 4.9B).

Table 4.9A: Distribution of HHs according to ownership and construction type

Unit	Share of Owned HHs (%)	Share of Pucca dwelling unit (%)
Andal Block	69.20	73.43
Pandabeswar Block	58.12	70.45
Faridpur-Durgapur Block	84.46	47.97
Kanksa Block	94.43	47.52
Durgapur Municipal Corporation	71.29	73.55

Source: Socio-Economic Caste Census, 2011

Table 4.9B: Distribution of Census houses according to usage

Unit	Percentage share of households with condition of Census House as							
	Used as Residence				Residence-cum-other use			
	Total	Good	Livable	Dilapidated	Total	Good	Livable	Dilapidated
Andal Block	97.8	53	39.1	5.8	2.2	1.1	1	0.1
Pandabeswar Block	97.1	46.3	44	6.8	2.9	1	1.7	0.3
Faridpur-Durgapur Block	97.9	40.9	46.7	10.2	2.1	1.3	0.8	0.1
Kanksa Block	98	35.2	54.2	8.6	2	0.9	1	0.1
Durgapur Municipal Corporation	98	57	37.1	3.9	2	0.9	1	0.1

Source: Census of India, 2011

Most of the houses in Durgapur Sub-division are used as a residence only. A large share of dilapidated housing is recorded in Faridpur-Durgapur and Kanksa Block. Housing condition is best in Durgapur Municipal Corporation, and in Andal Block among the 4 Blocks.

Distribution of houses according to material of roof, wall and floor indicate that a significant share of it uses temporary materials and will be vulnerable to floods and subsidence related tremors. Usage of concrete as roof material is above 50 percent in Durgapur Municipal corporation and Andal Block – but it is as low as 21.1 percent in Kanksa Block. Conditions are better for wall material as all Blocks except Kanksa uses brick or concrete blocks in more than 50 percent of the housing stock. Around 65 percent of the housing in Kanksa Block has mud flooring.

Table 4.9C: Distribution of HHs according to material of roof

Unit	Percentage share of households with Material of Roof								
	Grass/ Thatch/ Bamboo/ Wood/Mud etc.	Plastic/ Polythene	Hand made Tiles	Machine made Tiles	Burnt Brick	Stone/ Slate	G.I./Metal/ Asbestos sheets	Concrete	Any other material
Andal Block	4.4	0.3	13.3	8.9	1.1	1.7	16.4	53.7	0.2
Pandabeswar Block	10.2	0.4	8.3	7.6	0.7	3.4	31.8	37.1	0.3
Faridpur-Durgapur Block	25	0.1	6.6	8.1	0.3	3	19.5	37.1	0.2
Kanksa Block	40.3	0.2	4.5	7.2	0.2	0.8	25.5	21.1	0.3
Durgapur Municipal Corporation	1.4	0.2	14.7	14	0.8	2.5	9.3	56.8	0.2

Source: Census of India, 2011

Table 4.9D: Distribution of HHs according to material of wall

Unit	Percentage share of households with Material of Wall									
	Grass/ Thatch/ Bamboo etc.	Plastic/ Polythene	Mud/ Unburnt brick	Wood	Stone not packed with mortar	Stone packed with mortar	G.I./ Metal/ Asbestos sheets	Burnt brick	Concrete	Any other material
Andal Block	1.4	0.1	20.3	0.1	1.1	1.3	0.2	66.3	9.2	0.1
Pandabeswar Block	1.6	0.6	24.3	0.1	1.3	2.8	0.2	63.3	5.7	0
Faridpur-Durgapur Block	1.7	0.1	42.3	0	1	0.7	0.1	47.9	6.1	0
Kanksa Block	10.5	0.2	51.8	0.2	0.4	0.4	0.2	32.2	3.9	0.2
Durgapur Municipal Corporation	1.6	0.2	21.6	0.1	1	1.6	0.2	62.4	11	0.3

Source: Census of India, 2011

Table 4.9E: Distribution of HHs according to material of floor

Unit	Percentage share of households with Material of Floor						
	Mud	Wood/ Bamboo	Burnt Brick	Stone	Cement	Mosaic/ Floor tiles	Any other material
Andal Block	20.4	0.1	1.8	0.2	76.8	0.5	0.1
Pandabeswar Block	24.3	0.1	1.3	0.3	73.5	0.4	0.1
Faridpur-Durgapur Block	44.4	0.1	1.9	1.4	51.7	0.4	0.1
Kanksa Block	65.4	0.1	1.3	0.1	32.9	0.2	0
Durgapur Municipal Corporation	21.4	0.1	1.4	1.1	71.8	4.2	0.1

Source: Census of India, 2011

Table 4.9F: Distribution of HHs according to room availability

Unit	Share of HHs with 1 Room (%)	Share of HHs with 2 Rooms (%)	Share of HHs with 3 Rooms (%)	Share of HHs with more than 3 Rooms (%)
Andal Block	29.44	50.12	12.50	7.87
Pandabeswar Block	30.48	45.04	14.87	9.55
Faridpur-Durgapur Block	38.58	39.89	10.71	10.45
Kanksa Block	44.18	38.35	8.67	8.52
Durgapur Municipal Corporation	19.24	45.19	19.47	16.08

Source: Socio-Economic Caste Census, 2011

A large number of households live in a single room dwelling units – especially in Faridpur-Durgapur and Kanksa Block where the share is around 40 percent. Housing congestion, which is often measured via room availability per married couple in the household is lowest in Durgapur Municipal Corporation. Quality of indoor air environment within the house is often dependent of availability of cooking facility. Most of the households do cooking inside house but around 35 percent do not have kitchen – which might significantly affect the health of its inhabitants. A large share of households in Kanksa and Faridpur-Durgapur Block still rely on firewood as cooking fuel.

Table 4.9G: Distribution of HHs according to availability of kitchen in dwelling unit

Unit	Share of HHS with type of Kitchen facility (%)							
	Total	Cooking inside house:	Has Kitchen	Does not have kitchen	Cooking outside house	Has Kitchen	Does not have kitchen	No Cooking
Andal Block	100	87	49.8	37.2	12.6	4	8.6	0.4
Pandabeswar Block	100	80.5	45.8	34.8	19.2	6.4	12.8	0.3
Faridpur-Durgapur Block	100	75.7	51.3	24.5	24	13	11	0.3
Kanksa Block	100	74.9	46.7	28.2	24.8	15	9.8	0.3
Durgapur Municipal Corporation	100	95.1	68.7	26.4	4.4	1.8	2.6	0.5

Source: Census of India, 2011

Table 4.9H: Distribution of HHs according to type of cooking fuel used

Unit	Fire-wood	Crop residue	Cowdung cake	Coal,Lignite,Char coal	Kerosene	LPG/PNG	Electricity	Biogas	Any other	No cooking
Andal Block	6.4	1.3	1.5	66.6	0.7	21.4	0.2	0.3	1.2	0.4
Pandabeswar Block	7.4	1.2	1.8	75.8	0.2	11.8	0.4	0.3	0.8	0.3
Faridpur-Durgapur Block	34.7	2.7	6	36.2	0.3	15.7	0.1	0.3	3.9	0.3
Kanksa Block	57.3	4.6	8.1	19.6	0.2	7.7	0	0.1	2	0.3
Durgapur Municipal Corporation	12.4	1	2.1	24.7	1.5	55.4	0.9	0.4	1.1	0.5

Source: Census of India, 2011

The share of households living in slums are much lower in Durgapur Municipal Corporation compared to nearby Asansol Municipal Corporation. Table 4.9I provides a comparative statistics of slum population with respect to overall urban areas in India, West Bengal, Old Bardhaman district and within urban areas in Asansol Durgapur Planning Area.

Table 4.9I: Slums in Durgapur Municipal Corporation

	All India	State (West Bengal)	District of Bardhaman (old)	Asansol Municipal Corporation	Durgapur Municipal Corporation
Households living in Slum (%)	20.21	30.22	30.59	36.86	8.03
Population living in Slum (%)	13.28	20.43	11.73	29.98	9.48

Source: Socio-Economic Caste Census, 2011

4.3.6 Traffic and Transportation

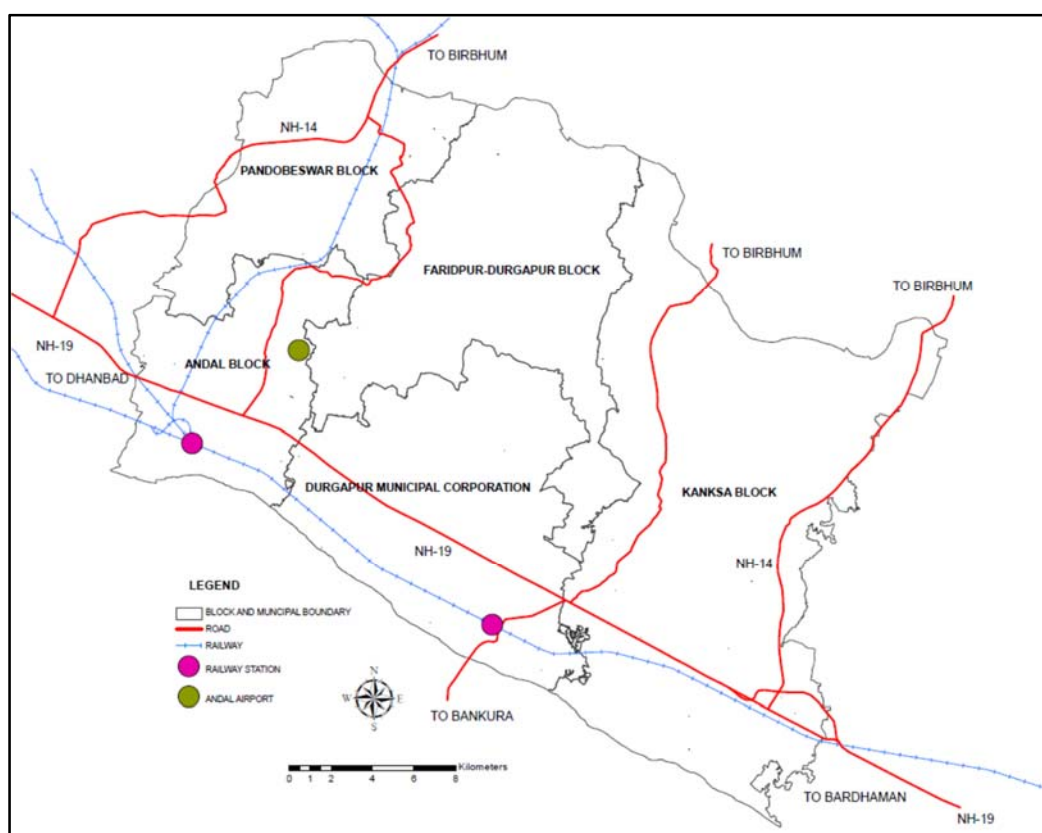
Asansol Durgapur Planning Area is well connected with the important growth nodes in eastern India via road and rail. NH-19 connects Durgapur to Bardhaman, Hoogly and Kolkata in the eastern side, whereas it connects to Asansol, Dhanbad, Delhi on the western side. This segment of NH-19 is part of the Delhi-Kolkata Golden Quadrilateral. On the other hand, NH-14 i.e. Kharagpur-Moregram link connects it to northern parts of Bengal via Birbhum district as well as south-western parts of Bengal via Bankura district. Delhi-Howrah Eastern rail route passes through the planning area. It also provides connection to northern parts of the state via Andal junction. It also does have air connectivity via newly commissioned airport in Andal.

Regional connectivity of Durgapur is of tremendous importance due to its mining and industrial activities. A large volume of freight, mostly coal and iron ore moves via rail corridor, whereas road corridor is the major artery for freight bound to and from Kolkata metropolitan area. There are other important links which connect the Durgapur with Birbhum district through crossings

at various points over River Ajoy, via Pandabeswar and Faridpur-Durgapur Block. The existing road and rail network of Durgapur Sub-division along with its regional connections is shown in Map 4.5.

There is a bus terminal facility at Durgapur town which caters to inter-state and local bus movement. Durgapur also have a railway station – however, Andal station is more important from strategic point as it is junction.

There are many para-transit terminal facilities within the Durgapur as well as in Census Towns all across the Blocks. Passenger movement mostly takes place via road-based transit services, with some long distance commuting via rail-based facilities.



Map 4.5: Existing road and rail network within Durgapur Sub-division (Source: Author)

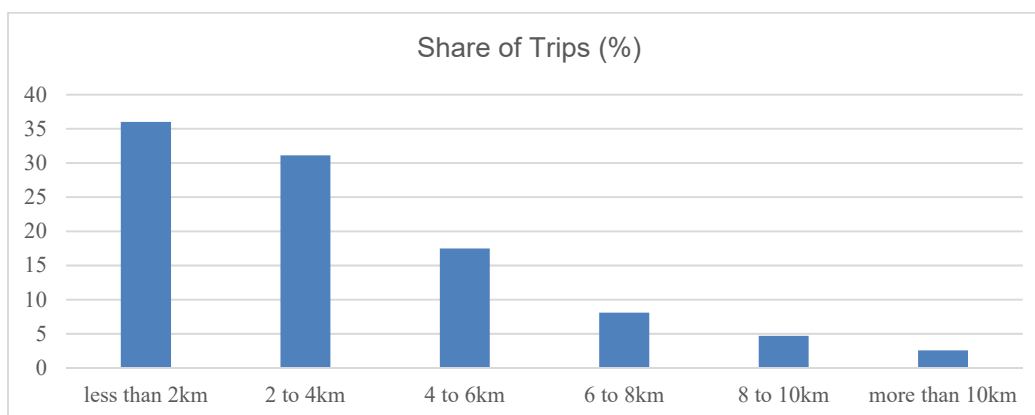


Fig 4.1: Distribution of trips according to trip length in Durgapur

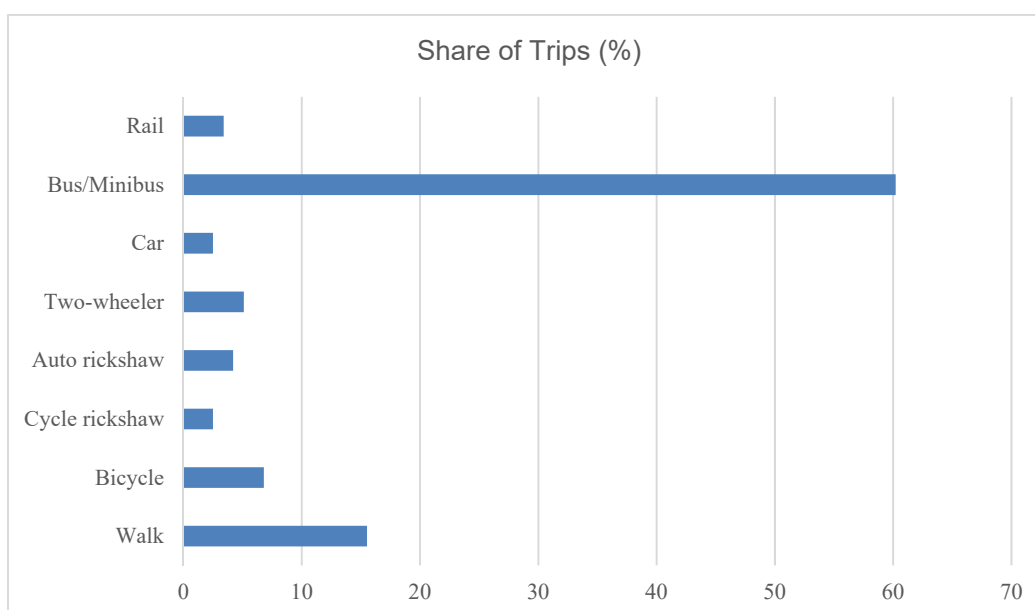


Fig 4.2: Distribution of trips according to mode of travel in Durgapur

Two-wheelers are owned by 39.6 percent households in Durgapur town whereas car ownership is restricted to 7.9 percent. The figures are significantly higher than the Blocks where car ownership is around 2-3 percent. However, two-wheeler ownership in rural areas is more than 20 percent except for Kanksa Block. Bicycle ownership is around 75 percent in Durgapur town as well as in Kanksa and Faridpur-Durgapur Block – whereas it is around 60 percent in Andal and Pandabeswar Block.

Per-capita trip generation rate is 1.2 per day of which 0.9 trips per days are motorized in nature. Work related travel are 0.65 trips/day whereas education related travel is 0.25 trips/day for Durgapur. Average trip length is 3.5 km of which 36 percent of the trips are less than 2km and another 31.1 percent are between 2-4 km. Only 2.6 percent trips have trip length more than 10 km.

Table 4.10: Distribution of HHs according to vehicle ownership.

Unit	Bicycle	Scooter/ Motorcycle/Moped	Car/ Jeep/Van
Andal Block	64.6	20.4	2.6
Pandabeswar Block	61.8	22.9	2.9
Faridpur-Durgapur Block	74.4	21.6	2.1
Kanksa Block	73.2	12.2	1.8
Durgapur Municipal Corporation	74.4	39.6	7.9

Source: Census of India, 2011

4.3.7 Physical Infrastructure – water supply and sanitation facilities

Tapwater from treated source is the source of drinking water in 80 percent of households in Durgapur Municipal Corporation. However, the share is around 30 percent for Andal, pandabeswar and Faridpur-Durgapur Block, with as low as 14 percent in Kanksa Block. Around 44 percent in Kanksa block relied on handpump. Uncovered is a major source of drinking water in other Blocks. The source of drinking water is within premises for 56 percent of the households in Durgapur Municipal corporation but it is as low as 30 percent for Pandabeswar and Faridpur-Durgapur Block.

Table 4.11A: Distribution of HHs according to main source of drinking water

Unit	Main Source of Drinking Water									
	Tapwater from treated source	Tapwater from un-treated source	Covered well	Un-covered well	Handpump	Tubewell/Bore hole	Spring	River/Canal	Tank/Pond/Lake	Other sources
Andal Block	30.5	6.3	3.1	44.7	5.2	9.1	0.2	0.1	0.2	0.6
Pandabeswar Block	32.8	4.5	3.6	49.4	0.9	6	0.2	0.7	0.9	1.1
Faridpur-Durgapur Block	34.5	1.3	4	33.6	9.6	15.8	0.1	0	0.1	0.8
Kanksa Block	14	1.3	0.4	1.9	44.3	36.9	0	0.1	0.1	0.9
Durgapur Municipal Corporation	79.3	1.4	1.9	8.9	2.7	4.9	0.1	0	0.1	0.6

Source: Census of India, 2011

Table 4.11B: Distribution of HHs according to location of drinking water source

Unit	Location of drinking water source		
	Within premises	Near premises	Away
Andal Block	40.2	30.8	29
Pandabeswar Block	29.3	39.8	30.9
Faridpur-Durgapur Block	27.5	41.4	31.1
Kanksa Block	37.7	40.6	21.8
Durgapur Municipal Corporation	56.1	27.5	16.4

Source: Census of India, 2011

Table 4.12A: Distribution of HHs according to availability of flush latrine facility

Unit	Number of households having latrine facility within the premises	Flush/pour flush latrine connected to		
		Piped sewer system	Septic tank	Other system
Andal Block	59	7.5	46.5	1.5
Pandabeswar Block	50.6	3.7	40.6	2.9
Faridpur-Durgapur Block	45.6	5.1	30.4	3.3
Kanksa Block	31.4	1.1	19.2	3.2
Durgapur Municipal Corporation	78.7	29.5	36.6	1.7

Source: Census of India, 2011

The distribution of availability of toilets within premises is presented in Table 4.12 A, 4.12 B and 4.12C. Around 80 percent of the households in Durgapur Municipal Corporation have toilet facilities within premises and most of them are flush-latrine type. In rural areas, Andal Block has the highest share in terms of toilet facility within premise and Kanksa Block lowest with only 31 percent share.

Table 4.12B: Distribution of HHs according to non-flush latrine facility

Unit	Pit latrine		Night soil disposed into open drain	Service Latrine	
	With slab/ventilated improved pit	Without slab/open pit		Night soil removed by human	Night soil serviced by animal
Andal Block	2.8	0.1	0.1	0	0.5
Pandabeswar Block	1.6	0.5	0.1	0	1.1
Faridpur-Durgapur Block	5.7	0.7	0	0.1	0.3
Kanksa Block	6.8	0.8	0.1	0	0.3
Durgapur Municipal Corporation	10.1	0.3	0.1	0	0.3

Source: Census of India, 2011

Table 4.12C: Distribution of HHs according to not having hygienic toilet facility

Unit	Number of households not having latrine facility within the premises	Alternative source	
		Public latrine	Open
Andal Block	41	1.3	39.8
Pandabeswar Block	49.4	2.4	47
Faridpur-Durgapur Block	54.4	1.3	53.1
Kanksa Block	68.6	0.6	68
Durgapur Municipal Corporation	21.3	4.4	16.9

Source: Census of India, 2011

Table 4.13A: Distribution of HHs according to availability of bath room facility.

Unit	Waste water outlet connected to HHS (%)		
	Closed drainage	Open drainage	No drainage
Andal Block	11.7	49.1	39.1
Pandabeswar Block	7.1	56.2	36.7
Faridpur-Durgapur Block	6.3	33.1	60.6
Kanksa Block	2.9	27.7	69.4
Durgapur Municipal Corporation	32.1	48	19.9

Source: Census of India, 2011

Around 60-70 percent of the households in Kanksa and Faridpur-Durgapur Block do not have access to any kind of drains for their waste water outlet. Open drains are prevalent in Durgapur Municipal Corporation as well as in Andal and Pandabeswar Block. Only 20 percent of the households in Durgapur Municipal Corporation do not have bath room facility whereas it is as high as 70 percent in Kanksa Block.

Table 4.13B: Distribution of HHs according to availability of bath room facility.

Unit	Number of households having bathing facility within the premises		
	Yes		No
	Bathroom	Enclosure without roof	
Andal Block	50.6	8.4	41
Pandabeswar Block	42.9	11.7	45.4
Faridpur-Durgapur Block	35.5	8.5	56.1
Kanksa Block	22.6	6.2	71.2
Durgapur Municipal Corporation	70.2	10.6	19.2

Source: Census of India, 2011

4.3.8 Health and Education facilities

The distribution of literacy level in Durgapur Sub-division is provided in Table 4.14 A. Literacy level is highest in Andal among the four Blocks – both for male and female. The gender gap is significant – nearly 15 percent in Blocks and around 10 percent in Durgapur Municipal Corporation. The distribution of population according to education attainment for literate population is given in Table 4.14B. Durgapur Municipal Corporation has around 14 percent of population having graduate degree or more. In all 4 Blocks most of the population has attainment upto secondary school level.

Table 4.14A: Distribution of population according to literacy levels

Unit	Rural			Urban			Combined		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Andal	85.81	66.80	76.93	84.83	69.06	77.33	85.02	68.64	77.25
Faridpur-Durgapur	81.22	64.82	73.33	84.28	67.42	76.37	82.05	65.50	74.14
Pandabeswar	80.43	62.71	71.87	82.10	63.40	73.23	81.82	63.28	73.01
Kanksa	80.58	63.90	72.48	87.90	75.07	81.63	83.65	68.62	76.34
Durgapur Municipal Corporation	-	-	-	90.81	80.84	86.02	90.81	80.84	86.02

Source: Census of India, 2011

Table 4.14B: Distribution of population according to levels of education attainment

Unit	Share of Literates but below primary (%)	Share of Primary (%)	Share of Middle (%)	Share of Secondary (%)	Share of Higher Secondary (%)	Share of Graduate or Higher (%)	Share of Other (%)
Andal Block	9.22	16.5	21.14	11.43	6.79	6.11	0.72
Pandabeswar Block	10.75	17.86	18.67	9.51	5.04	3.86	0.4
Faridpur-Durgapur Block	12.17	18.63	18.11	9.8	5.32	4.14	0.79
Kanksa Block	11.2	18.31	19.5	8.6	5.21	4.3	1.06
Durgapur Municipal Corporation	7.63	15.81	20.22	13.45	9.6	13.89	3.3

Source: Socio-economic Caste Census, 2011

The distribution of education facilities at school level i.e. primary, middle and secondary school is provided in Table 4.14C. Table 4.14D provides the distribution of higher education facilities in Durgapur Sub-division. Most of the higher education facilities are located in Durgapur Municipal Corporation. Among rural areas primary level facilities are adequate but provision of secondary and higher secondary level facilities is low as revealed in Table 4.14E.

Table 4.14C: Distribution of education facilities – school level

Unit	Primary School			Middle School			Secondary School		
	Institutions	Students	Teachers	Institutions	Students	Teachers	Institutions	Students	Teachers
Andal Block	62	11282	302	6	302	16	8	5802	133
Faridpur-Durgapur Block	66	8077	280	-	-	-	6	3368	95
Pandabeswar Block	44	8112	209	5	251	14	1	380	15
Kanksa Block	107	11035	404	7	351	9	10	5518	171
Durgapur Municipal Corporation	121	37728	923	-	-	-	16	11262	314

Source: District Statistical Handbook, 2014

Table 4.14D: Distribution of higher education facilities

Unit	Higher Secondary School			General College & University (Excluding Open University)			Professional & Technical Schools, Colleges & Universities		
	Institutions	Students	Teachers	Institutions	Students	Teachers	Institutions	Students	Teachers
Andal Block	11	16279	218	1	1537	26	2	297	13
Faridpur-Durgapur Block	5	6011	92	-	-	-	1	-	4
Pandabeswar Block	5	8855	99	1	366	15	-	-	-
Kanksa Block	10	9958	190	-	-	-	8	2817	329
Durgapur Municipal Corporation	31	37058	832	4	7089	220	22	13715	948

Source: District Statistical Handbook, 2014

Table 4.14E: Distribution of school level facilities per 1000 population

Unit	Primary school (nos. per 1000 population)	Middle school (nos. per 1000 population)	Secondary/Higher Secondary school (nos. per 1000 population)
Andal Block	0.72	0.07	0.10
Faridpur-Durgapur Block	0.96	0.01	0.10
Pandabeswar Block	0.62	0.02	.05
Kanksa Block	1.26	0.03	0.11
Durgapur Municipal Corporation	0.31	0.04	0.08

Source: District Human Development Report for Bardhaman, 2011

The biggest provider of health facilities in Durgapur Sub-division is Health & Family Welfare Department, Govt. of W.B. However, a large number of facilities are provided by other public agencies especially in Andal Block. Distribution of health facilities in Durgapur Sub-division is provided in Table 4.15A and 4.15B. A lot of facilities in Durgapur Municipal Corporation is through private investment and management. The availability of hospital beds and doctors w.r.t population is far better in Durgapur Municipal Corporation. Andal Block is far ahead of other Blocks in provision of health facilities. Population in other Blocks travel to Durgapur for their medical needs.

Table 4.15A: Distribution of health facilities – state government facilities

Unit	Health & Family Welfare Deptt., Govt. of W.B.			
	Hospitals	Rural Hospitals	Block Primary Health Centres	Primary Health Centres
Andal	-	-	1	1
Faridpur-Durgapur	-	-	1	2
Pandabeswar	-	-	-	1
Kanksa	-	-	1	4
Durgapur Municipal Corporation	1	-	-	-

Source: District Statistical Handbook, 2014

Table 4.15B: Distribution of health facilities – Other agencies

Unit	Other Departments of Govt. of W.B. including State Govt. Undertaking	Govt. of India including Central Govt. Undertaking	N.G.O/ Private Bodies (Nursing Homes)	No. of Sub-Centres	Total No. of beds	Total No. of Doctors
Andal	47	3	6	11	154	21
Faridpur-Durgapur	15	-	-	3	27	4
Pandabeswar	-	-	1	2	6	1
Kanksa	26	-	3	8	39	4
Durgapur Municipal Corporation	-	6	28	36	969	182

Source: District Statistical Handbook, 2014

4.3.9 Environment

A large number of mouzas are located along the River Damodar and Ajoy for which River Centric Urban Planning Guidelines, recommended by Town and Country Planning Organization, Ministry of Housing and Urban Affairs, Government of India, May 2021 (Refer Annexure –VI) are applicable. The specific regulations ask for designating No Development and Construction Zone (NDCZ) in those areas with separate zoning and development control restrictions. The competent authority shall determine a NDCZ on either bank for each river which shall not be less than the “Active Flood Plain” of the river. The Urban Local Body/ Urban Development Authority shall act as per the directions of Ministry of Environment, Forest and Climate Change to designate the State Environment Impact Assessment Authority (SEIAA) or the State Pollution Control Board (SPCB) to act as the Competent Authority for implementation of these regulations for environmental conservation and preservation, including water bodies, forests and drains, parks, playgrounds, burial and crematoria. Both River Damodar and Ajoy have embankments and an area of 500m from the embankment line has been delineated as NDCZ. The list of Mouzas falling under NDCZ is provided in Table 4.16.

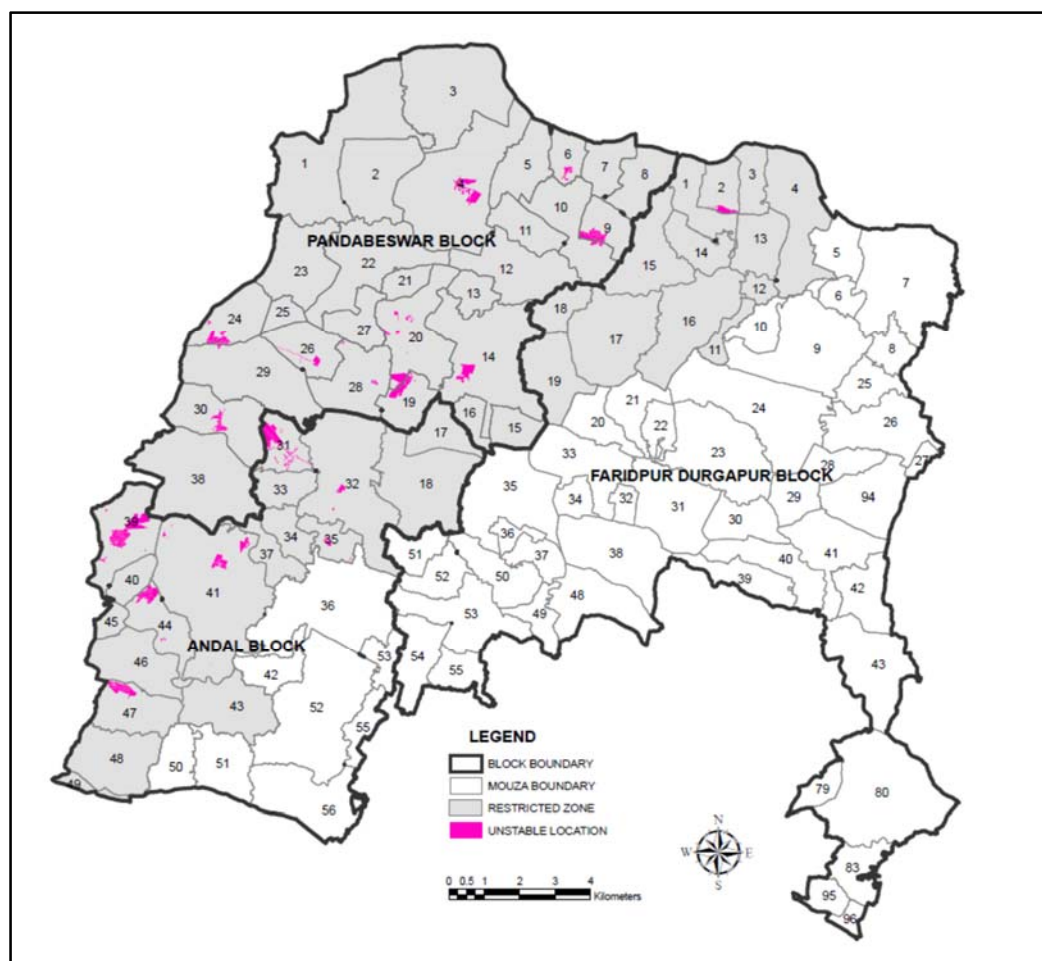
Table 4.16: List of mouzas with areas under No Development and Construction Zone (NDCZ) as per River Centric Urban Planning Guidelines - 2021

Andal Block				
Name of Mouza	JL No	Name of GP	Area (in acres)	Population
Madanpur	48	Madanpur	943.80	4631
Tiarmana	49	Madanpur	123.41	0
Baska	50	Madanpur	840.94	6609
Ramprasadpur	51	Shriarampur	687.31	0
Shrirampur	56	Shriarampur	1098.27	4235
Pandabeswar Block				
Name of Mouza	JL No	Name of GP	Area (in acres)	Population
Kendra Khottadi	1	Shyamla	2042.08	6875
Ramnagar	3	Kendra	1548.72	5446
Dalurband	4	Kendra	1967.26	15107
Baidyanathpur	5	Baidyanathpur	597.99	15704
Gobindapur	6	Baidyanathpur	223.98	1898
Konda	7	Baidyanathpur	329.47	916
Deshlopa	8	Baidyanathpur	571.27	1178
Mahal	10	Baidyanathpur	887.00	4841
Faridpur-Durgapur Block				
Name of Mouza	JL No	Name of GP	Area (in acres)	Population
Bangram	1	Gogla	537.06	5635
Nutandanga	2	Gogla	367.95	2615
Pansiuli	3	Gogla	366.14	1688
Madhaipur	4	Gogla	1224.31	5140
Bhaburia	5	Gaurbazar	524.48	0

Shyamsundarpur	7	Gaurbazar	1865.16	6273
Mandarbani	15	Gogla	955.07	4592
Kanksa Block				
Name of Mouza	JL No	Name of GP	Area (in acres)	Population
Shirampur	1	Bidbihar	503.03	202
Talbahari	3	Bidbihar	249.57	109
Sundipur	4	Bidbihar	207.29	312
Basudebpur	5	Bidbihar	333.68	1285
Binodpur	6	Bidbihar	319.64	570
Shashipur	8	Bidbihar	158.89	939
Dubrajpur	9	Bidbihar	152.45	342
Majhidanga	10	Bidbihar	120.10	75
Ranipur	13	Bidbihar	216.08	0
Dihibeta	21	Bidbihar	360.23	609
Nabagram	22	Bidbihar	308.17	549
Krishnapur	23	Bidbihar	254.32	435
Radhanagar	24	Bidbihar	168.39	465
Rautdihi	25	Bidbihar	311.84	433
Kajladihi	26	Bidbihar	413.51	1416
Garkilla Kherobari	27	Bankati	325.45	439
Gourangapur	28	Bankati	305.03	110
Banagram	29	Bankati	242.47	488
Kotalpukur	30	Bankati	358.88	243
Masna	31	Bankati	498.77	22
Bankati	33	Bankati	366.81	1255
Satkahania	34	Bankati	514.14	725
Basudha	35	Bankati	1953.91	5166
Bistupur	44	Malandighi	8619.03	2992
Beharpur	62	Amlajora	623.79	1485
Babnabera	63	Amlajora	538.97	3009
Shokna	79	Amlajora	753.36	1371
Mobarakganja	80	Amlajora	427.96	1558
Napara	81	Amlajora	558.35	2512
Ayma Bishwanathpur	82	Amlajora	305.03	1971
Gangbil	83	Amlajora	1232.36	2435
Shilampur	90	Amlajora	966.61	3968
Durgapur Municipal Corporation				
Name of Mouza	JL No	Area (in acres)		
Waria	64	521.81		
Dhunara	70	460.90		
Pursha	71	425.28		
Arjjunpur	72	279.49		
Banagram	73	321.19		

Gopinathpur	84	6550.94
Angadpur	89	508.47
Raturia	90	1010.03
Birbhanpur	91	1225.59
Nadiha	92	822.21
Narayanpur	93	241.10

Source: Author

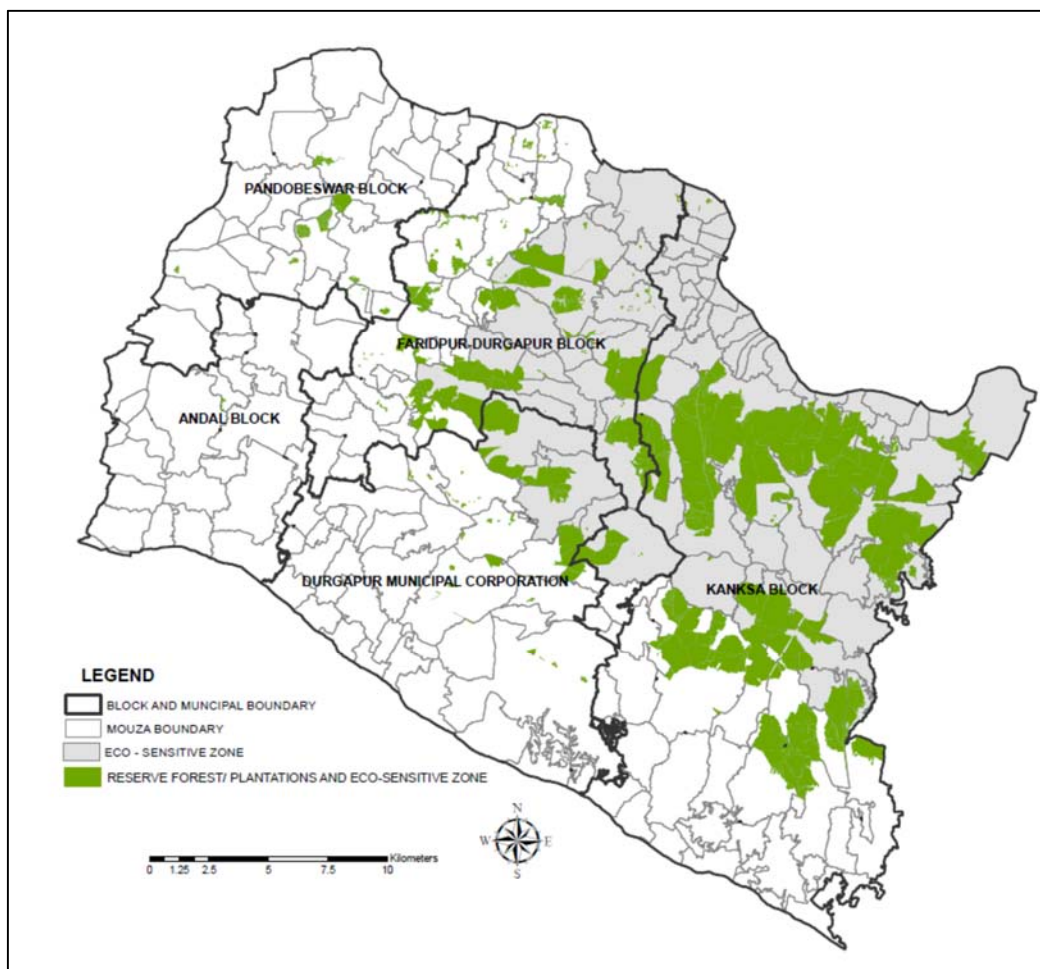


Map 4.5: Location of sites where instability has been reported due to mining subsidence
(Source: Author)

A large portion of Andal and Pandabeswar Block has coal underneath. Some are active mining sites, mostly in Pandabeswar Block, whereas a large number of closed mining sites are located in both Andal and Pandabeswar Block. Some of the mines were closed long time back when proper mine closure procedures were not followed. Apart from that illegal mining activities are rampant with digging of shallow pits. All of these create a situation where land becomes unstable due to subsidence. The locations where such subsidence has taken place is shown in Map 4.5.

It would be prudent not to allow construction activities in vicinity. Apart from that all the mouzas where coal seam is found beneath has been labelled as Restricted Development Zone. Separate zoning and development control guidelines are recommended for these areas due to exposure to mining subsidence related hazard.

A large number of mouzas in Kanksa and Faridpur-Durgapur Block as well as Durgapur Municipal Corporation has rich endowment of forest reserves – both under plantation and reserved forest category. These mouzas are listed as Eco-Sensitive Development Zones. Map 4.6 shows the mouzas which are listed as Eco-Sensitive Development Zones.



Map 4.6: Location of Eco-Sensitive Zones within Durgapur Sub-division (Source: Author)

A large number of heavy and polluting industries (RED category) are located in Durgapur Municipal Corporation, Andal and Kanksa Block. Steel and metal processing industries, coke oven, coal-fired thermal power plant, cement making, fire brick making etc are the major industries which are significant source of air and water pollution. Most of them are located along the Delhi-Kolkata Road and Rail corridor in close proximity to River Damodar. The level of pollution for both air and water quality is unacceptable as per the ambient standards (Refer

Table 4.17). Special care must be taken to locate the future expansion of these existing polluting industries as they might adversely affect the existing residential settlements. Location of future activities i.e. residential zone, institutional zone must also take care of the location existing industrial region as mining and industrial activities are backbone of local economy.

Table 4.17: Selected environmental quality data in Industrial region of Durgapur

Environmental Parameter	Type of pollutant	Unit of measurement	Amount
Air Quality	Suspended Particulate Matter	micrograms per cum.	148
	Respirable Particulate Matter	micrograms per cum.	63
	Sulphur Dioxide	micrograms per cum.	6.5
	Nitrogen Oxides	micrograms per cum.	44.2
Water Quality	pH		7.74
	Total Suspended Solids	mg/litre	72
	COD	mg/litre	29.69
	BOD	mg/litre	6.16
	Oil and Greases	mg/litre	<1.00
	Phenols	mg/litre	Bio-degradable
	Amonia	mg/litre	2.84
	Lead (Pb)	mg/litre	Bio-degradable
	Mercury (Hg)	mg/litre	0.029
	Zinc (Zn)	mg/litre	0.161
	Cyanide (CN)	mg/litre	0.048

Source: District Human Development Report for Bardhaman- 2011

5.0 SOCIO-ECONOMIC CHARACTERISTICS

A detailed understanding of the socio-economic conditions is necessary for the preparation of LU&DCP. The following sections primarily focus on the size distribution of family, age-sex distribution in rural and urban areas, income and asset ownership at household level, deprivation in terms of education, health, material needs, poverty levels etc.

5.1 Data sources

The following section rely heavily on the information collected at household level from Durgapur Sub-division - for preparation of the District Human Development Report for the Bardhaman District. Total Sample size was 5040 of which 1120 was collected from urban areas and rest from rural areas. Apart from that supplementary information from District Statistical Handbook for Bardhaman – 2014, Socio-economic Caste Census -2011, Census of India – 2011 was used in this section.

5.2 Salient findings of the survey

The average HH size varies widely within the Durgapur Sub-division – very high in Andal and Pandabeswar Block where most of the population live in CTs and in dense residential settlements. Most of them are employed in mining and industrial activities. On the other hand, HH size is much low in Kanksa and Faridpur-Durgapur Block where livelihood is earned from agrarian activities. The distribution of average HH size and member wise distribution in provided in Table 5.1.

Table 5.1: Distribution of households according to household size

Unit	Average HH Size	Household size						
		1	2	3	4	5	6-8	9+
Andal Block	5.12	4.7	8.2	17.1	23.9	18.1	22.1	6
Pandabeswar Block	6.44	5.1	9	15.2	22.3	18.1	24	6.2
Faridpur-Durgapur Block	3.50	3.8	8.6	18.5	27.3	17.7	19.8	4.4
Kanksa Block	4.53	3.3	9.2	19.7	29.2	17.9	17	3.7
Durgapur Municipal Corporation	4.60	3.8	9.8	24	26.4	15.8	16.2	4

(Source: Author)

The distribution of population according to sex and age-cohort in presented in Table 5.2, separately for the rural and the urban areas. The age-sex pyramid provides a graphic description of the very wide population base i.e. very high share of young dependent population [Refer Fig 5.1 to 5.3]. In future as these cohorts enter the work force they will demand much larger level of employment opportunities. Moreover, even with declining birth rate very high share of young population base ensures that population will keep on rising in future.

Table No. 5.2: Percentage distribution of population by sex and age cohort

Age group (Years)	Rural			Urban			Total		
	M	F	T	M	F	T	M	F	T
0-4	4.83	4.64	9.46	3.87	3.74	7.62	4.47	4.31	8.78
5-9	5.94	5.72	11.66	5.20	4.88	10.07	5.67	5.41	11.07
10-14	6.04	5.63	11.68	6.00	5.58	11.58	6.03	5.61	11.64
15-19	5.09	4.32	9.41	5.72	4.94	10.66	5.32	4.55	9.87
20-24	4.57	4.48	9.05	5.02	4.35	9.37	4.74	4.43	9.17
25-29	4.48	4.54	9.02	4.50	4.28	8.78	4.49	4.44	8.93
30-34	4.18	3.96	8.14	4.09	3.75	7.84	4.15	3.88	8.03
35-39	4.08	3.68	7.76	4.02	3.80	7.82	4.06	3.72	7.78
40-44	3.28	2.65	5.92	3.51	2.89	6.40	3.36	2.74	6.10
45-49	2.71	2.25	4.96	3.22	2.61	5.83	2.90	2.38	5.28
50-54	1.85	1.66	3.51	2.50	1.87	4.37	2.09	1.73	3.83
55-59	1.43	1.40	2.83	1.95	1.36	3.31	1.62	1.39	3.01
60-64	1.09	1.30	2.39	1.34	1.11	2.45	1.19	1.23	2.41
65-69	0.77	0.97	1.74	0.85	0.78	1.63	0.80	0.90	1.70
70-74	0.56	0.65	1.21	0.57	0.51	1.08	0.56	0.60	1.16
75-79	0.27	0.31	0.57	0.27	0.25	0.52	0.27	0.29	0.56
80+	0.31	0.38	0.68	0.31	0.35	0.66	0.31	0.37	0.68
All Ages	51.49	48.51	100.00	52.96	47.04	100.00	52.03	47.97	100.00

Source: District Human Development Report for Bardhaman – 2011

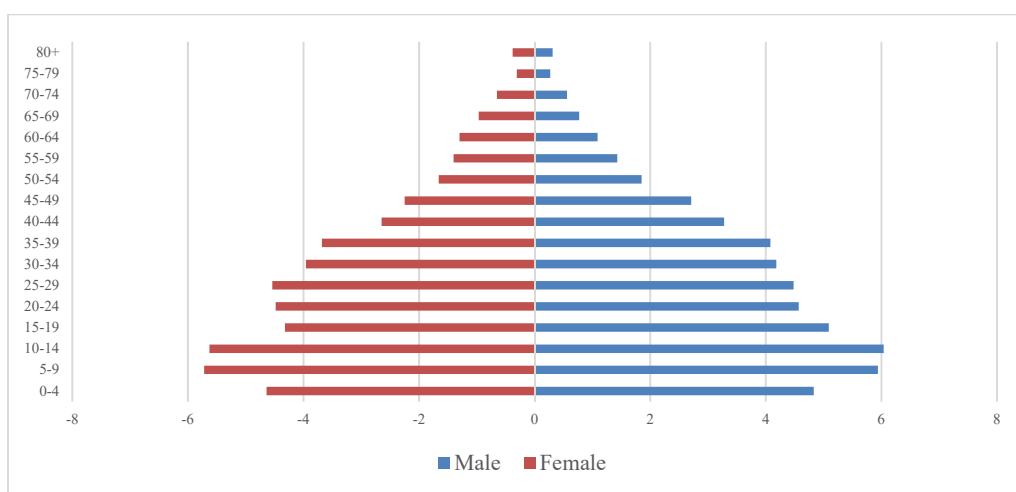


Fig 5.1: Age sex pyramid for Rural population (Source: Author)

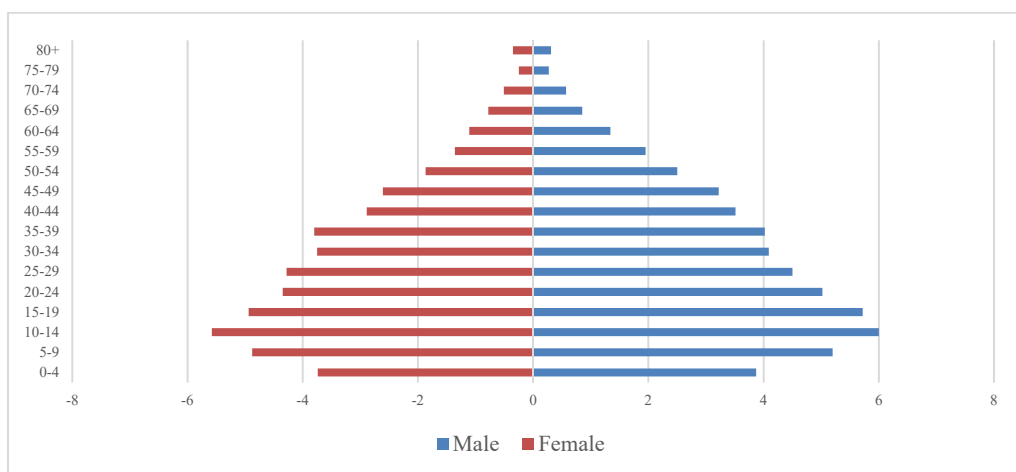


Fig 5.2: Age sex pyramid for Urban population (Source: Author)

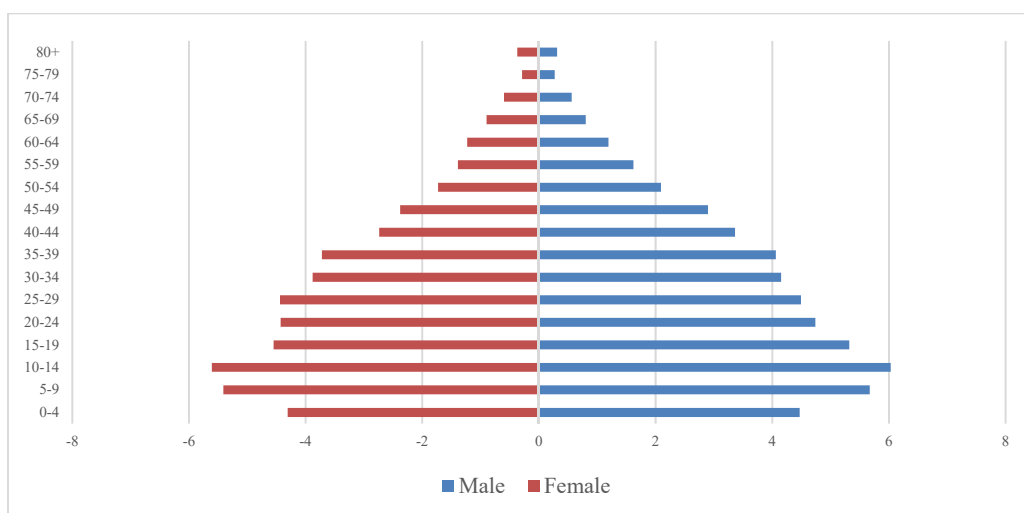


Fig 5.3: Age sex pyramid for Total population (Source: Author)

Table 5.3: Distribution of households according to social groups

Unit	Share of SC Households (%)	Share of ST Households (%)
Andal Block	30.33	4.15
Pandabeswar Block	35.87	8.07
Faridpur-Durgapur Block	34.46	7.36
Kanksa Block	40.57	10.51
Durgapur Municipal Corporation	14.79	2.16

Source: Census of India, 2011

The distribution of households belonging to Scheduled Castes and Scheduled Tribes are shown in Table 5.3. All the Blocks have a very high share of SC population – highest being observed in Kanksa Block. The share of ST households is also very high in Kanksa Block – most of these are located in tribal settlements in and around the rich forest reserves.

A large share of population in Andal and Pandabeswar Block have salaried jobs as compared to other two Blocks. The share of salaried job is lowest in Kanksa Block as shown in Table 5.4 which presents the distribution of HH income. Share of households with earning from highest earning member crosses Rs 10,000 for 1/3rd of the households in Andal and Pandabeswar Block. Income wise households in Kanksa Block earn the lowest as more than ¾ of the earners get less than Rs.5000 per month.

Table 5.4: Distribution of HHs according to monthly household income

Unit	Share of HHs with Salaried Job (%)	Share of HHs with Monthly income# < 5000 (%)	Share of HHs with Monthly income# 5000 - 10000 (%)	Share of HHs with Monthly income# > 10000 (%)	Households paying income tax / professional tax (%)
Andal Block	36.02	53.56	13.71	32.73	34.52
Pandabeswar Block	39.06	56.19	7.54	36.26	36.28
Faridpur-Durgapur Block	22.8	70.14	9.23	20.64	25.42
Kanksa Block	12.07	77.14	13.23	9.64	12.45

Monthly income of highest earning household member

Source: Socio-Economic Caste Census, 2011

As a very large share of the households in Kanksa Block earn their livelihood from manual casual labour as they are landless, it explains why their HH income is comparably low. The distribution of HHs according to source of employment is given in Table 5.5.

Table 5.5: Distribution of HHs according to employment characteristics in four Blocks

Unit	Share of Landless HHs deriving major part of their income from manual casual labour (%)	Share of HHs with non-agricultural enterprises registered with government (%)	Share of HHs with Salaried Job (%)
Andal Block	37.18	10.07	36.02
Pandabeswar Block	41.73	7.16	39.06
Faridpur-Durgapur Block	47.26	4.95	22.8
Kanksa Block	53.2	5.09	12.07

Note: Not to add up to 100 percent – balance share from farm income with access to land/tilling rights.

Source: Socio-Economic Caste Census, 2011

Table 5.6: Farm employment characteristics in Durgapur Sub-division

Unit	Bargadars	Patta holders	Small Farmers (land 1-2 Ha)	Marginal Farmers (land less than 1 Ha)	Agricultural labourers
Andal Block	1107	2480	95	766	2026
Faridpur-Durgapur Block	4470	5048	1252	4224	11969
Pandabeswar Block	480	3265	753	4909	3747
Kanksa Block	6017	10687	1537	5380	22793

Source: Socio-Economic Caste Census, 2011

Table 5.6 shows the distribution of farm land among people along with landless ones who work as agricultural labourers. Most of the farm employment is employed as agricultural labourer and this trend is observed most in Kanksa Block. Even among people who own farm land most of them belong to the category of marginal farmer – where land holding is less than 1 hectare. As mining and industrial employment is available in Andal and Pandabeswar Block, households there could gain meaningful employment outside farm sector. This opportunity is lowest in Kanksa Block and households are poorer here.

On the contrary, more than 56 percent of the population in Durgapur Municipal Corporation are working in urban economy and have some income. Around 31 percent of it have monthly wages whereas others earn their wages on daily or weekly basis as shown in Table 5.7.

Table 5.7: Distribution according to employment characteristics in Durgapur Municipal Corporation

Income and wage earning characteristics		Share of population (%)
Income earner vs non-earner population	Working and have Income (%)	56.02
	Not Working but have Income (%)	4.97
	No Income (%)	39.01
Wage earning characteristics for working population	Having Wages Earned of Daily (%)	11.4
	Having Wages Earned of Weekly (%)	1.39
	Having Wages Earned of Monthly (%)	30.98
	Having Wages Earned of Irregularly (%)	7.04

Source: Socio-Economic Caste Census, 2011

Table 5.8: Distribution of households according to possession of moveable household assets

Unit	Radio/ Transistor	Television	Computer/ Laptop		Telephone/ Mobile Phone			Bicycle	Scooter/ Motorcycle/Moped	Car/ Jeep/ Van	Households with TV, Computer/Laptop, Telephone/mobile phone and
			With Internet	Without Internet	Landline only	Mobile only	Both				
Andal Block	15.7	64.1	2.3	6.4	2.6	64	3.2	64.6	20.4	2.6	2.9
Pandabeswar Block	14.1	60.7	1.8	5.2	3.4	58.2	3.7	61.8	22.9	2.9	2.7
Faridpur-Durgapur Block	15.0	46.3	1.5	5.1	3.2	47.3	3.6	74.4	21.6	2.1	2.4
Kanksa Block	13.8	31.1	0.5	4.3	2.2	40.4	3.3	73.2	12.2	1.8	0.8
Durgapur Municipal Corporation	21.5	75.5	6.8	12.2	4.4	66.7	10.8	74.4	39.6	7.9	12.8

Source: Census of India, 2011

Table 5.8 presents the distribution of households according to possession of household assets i.e. Radio, Television, Computer, Telephone, Mobile, Internet connectivity, Vehicle ownership etc. If we look at the households which own all of them, they are least likely to be found in Kanksa Block - which is less than 1 percent. On the hand, 12-13 percent of the households in Durgapur Municipal Corporation are in possession of such bundle of household assets. Ownership of household assets are often used as a proxy of material affluence – and by that reasoning households in Andal, Pandabeswar and Faridpur-Durgapur are better off than Kanksa Block, whereas households in Durgapur Municipal Corporation are far ahead.

Table 5.9: Distribution of households according to economic groups

Unit	Share of HHs below Rural/ Urban Poverty Line (%)
Andal	18.35
Faridpur-Durgapur	20.59
Pandabeswar	28.84
Kanksa	34.23
Durgapur Municipal Corporation	22.42

Source: District Human Development Report for Bardhaman - 2011

Table 5.9 provides the distribution of households falling below the poverty line estimated for rural and urban areas separately as reported by the District Human Development Report. The poverty line was drawn covering 12 indicators of human necessities and well being i.e.

- i. Effective land holding
- ii. Housing condition

- iii. Clothing expenditure
- iv. Food security
- v. Consumer durables
- vi. Education status
- vii. Earning capability status
- viii. Livelihood
- ix. Child education
- x. Indebtedness
- xi. Migration
- xii. Special vulnerability

Each of the indicator is rated on 1 to 5 point scale, where minimum score for a household can be 12 and maximum 60. Instead of following the method using data from NSSO on household consumption expenditure only, this method has relied on other indicators to make the evaluation more holistic. However, the method was calibrated along with the outcomes from 55th round of NSSO and a cut off point of 33 (out of 12 – 60 range) was adopted as poverty line.

[See Annexure-II for detailed explanation of the methodology adopted by District Human Development Report for Bardhaman, 2011]

More than 1/3rd of the households in Kanksa Block falls below poverty line. Around 1/5th of the Andal and Faridpur-Durgapur Block is below poverty line. A large share of urban poor resides in Durgapur Municipal Corporation despite its affluent and fast growing local economy.

An alternative approach was adopted in the District Human Development Report to measure the human poverty through various kinds of deprivation – namely deprivation of knowledge, health and provisioning measures i.e. access to safe drinking water, toilet and electricity. Knowledge deprivation was based on two factors – share of illiterate population and share of children between age 5-13 years not going to school. The index was calculated as weighted mean of these two factors with 2/3rd weight given to levels of illiteracy and rest to share of non-school going children. Health deprivation was solely based on share of child deliveries through non-institutional means. Provisioning measures was based on access to electricity, toilet and safe drinking water. The index was based on arithmetic mean of the three factors. All three indices are used to calculate the Human Poverty Index and the results are presented in Table 5.10D.

Table 5.10A: Index of Knowledge deprivation in Durgapur Sub-division

Unit	Share of illiterate population (%) [A]	Share of Children between age 5 to 13 not attending school (%) [B]	Index of Knowledge deprivation $[(0.67*A + 0.33*B)/100]$
Andal Block	28.0	6.05	0.207
Pandabeswar Block	36.30	14.18	0.289
Faridpur-Durgapur Block	32.70	7.92	0.244
Kanksa Block	31.90	4.53	0.228

Source: District Human Development Report for Bardhaman - 2011

Table 5.10B: Index of Health deprivation in Durgapur Sub-division

Unit	Share of non-institutional deliveries of total deliveries (%) [A]	Index of Health deprivation [A/100]
Andal Block	17.6	0.176
Pandabeswar Block	26.60	0.266
Faridpur-Durgapur Block	31.3	0.313
Kanksa Block	47.5	0.475

Source: District Human Development Report for Bardhaman - 2011

Table 5.10C: Index of Provisioning deprivation in Durgapur Sub-division

Unit	Share of HHs with no electricity connection (%) [A]	Share of HHs with no toilet facilities (%) [B]	Share of HHs with no access to safe drinking water (%) [C]	Index of Provisioning deprivation [(A+B+C)/100]
Andal Block	29.61	8.39	1.10	0.13
Pandabeswar Block	16.37	37.92	1.43	0.186
Faridpur-Durgapur Block	45.56	29.01	3.03	0.259
Kanksa Block	65.80	40.46	0.9	0.357

Source: District Human Development Report for Bardhaman - 2011

Table 5.10D: Index of Human Poverty in Durgapur Sub-division

Unit	Index of Knowledge deprivation [A]	Index of Health deprivation [B]	Index of Provisioning deprivation [C]	Human Poverty Index $[\{(A^3+B^3+C^3)/3\}^{1/3}]$
Andal Block	0.207	0.176	0.13	0.172
Pandabeswar Block	0.289	0.266	0.186	0.243
Faridpur-Durgapur Block	0.244	0.313	0.259	0.255
Kanksa Block	0.228	0.475	0.357	0.351

Source: District Human Development Report for Bardhaman – 2011

5.3 Development Priorities

The stakeholders were specifically consulted about their priorities related to the development of their neighbourhood, community and their region. A set of priorities were narrowed down based on background information about the study area. The predetermined set of priorities obviously limited scope of participation but it needs to be appreciated that the stakeholders are not used to such practice and probably doing so for the first time. The predetermined set of priorities would save the participant from making wayward responses, which can be insignificant/inconsequential in the preparation of development priorities for the region. This is particularly useful when looked from our purpose of preparing Land use and Development Control Plan for the study area.

The set of development priorities that was offered are as follows.

i. Accessibility and communication	vii. Environmental pollution
ii. Health facilities	viii. Agriculture and irrigation facilities
iii. Educational facilities	ix. Employment generation
iv. Water supply	x. Public Distribution System (PDS)
v. Drainage and Solid Waste Management	xi. Preparedness against natural disasters
vi. Open space conservation	xii. Others, if any

Summary of the results has been presented in Table 5.11. Andal and Pandaneswar Block have given highest priority to 'Preparedness against natural disaster' followed by 'Accessibility and Communication', 'Environmental Pollution' and 'Health facilities'. On the other hand, Kanksa Block and Faridpur-Durgapur Block has given highest importance to 'Accessibility and Communication', 'Health facilities', 'Education facilities' and 'Employment opportunities'. 'Environmental Pollution', 'Drainage and Solid waste management' and 'Accessibility and communication' remains the key priority for Durgapur Municipal Corporation.

Table 5.11: Development priorities based on weighted priorities for next 10 years

Unit	Priority		
	Rank I	Rank II	Rank III
Andal Block	Preparedness against natural disasters	Environmental pollution	Accessibility and communication
Pandabeswar Block	Preparedness against natural disasters	Accessibility and Communication	Health facilities
Faridpur-Durgapur Block	Accessibility and communication	Health facilities	Employment generation
Kanksa Block	Accessibility and communication	Employment generation	Educational facilities
Durgapur Municipal Corporation	Environmental pollution	Drainage and Solid Waste Management	Accessibility and communication

Source: Author

6.0 DEMOGRAPHIC PROFILE AND POPULATION PROJECTION

This chapter has two major sub-sections where, the first one would highlight the significant characteristics of population in Durgapur Sub-division. These characteristics would be based on the available Block/Town level statistics from various sources. The second sub-section would discuss the future population envisaged for the sub-division and the methodology for arriving at the same.

6.1 Present population characteristics

This sub-section will highlight the significant demographic features of the sub-division. Some of the parameters taken into consideration are population density, population growth, urbanisation rate etc.

Population in Durgapur Sub-division has grown at a rate of 13.49 between 2001 and 2011, as seen in Table 6.1. This is higher compared to the growth rate of the overall Bardhaman district of which it was a part in 2011. Among the areas within Durgapur Sub-division, Kanksa Block has shown the highest growth rate – surprisingly which is the most deprived among the all four Blocks. The growth rate in Durgapur Municipal Corporation is few percentage points higher than the rural areas.

Table No. 6.1: Decadal population growth rate (2001-2011) within Durgapur Sub-division

Unit	Total Population (2001)	Total Population (2011)	Decadal Growth Rate of Total Population (2001-11)
District (Bardhaman)	6895514	7717563	11.92
Andal Block (A)	168853	186915	10.70
Pandabeswar Block (B)	146541	161891	10.47
Faridpur-Durgapur Block (C)	105532	115924	9.85
Kanksa Block (D)	151276	178125	17.75
Durgapur Municipal Corporation (E)	493405	566517	14.82
Total (A+B+C+D+E)	1065607	1209372	13.49

Source: District Statistical Handbook, 2014

Table 6.2 provided the distribution of Household size and sex ratio in Durgapur Sub-division which provides important insight into migration pattern. Despite being a larger urban area, Durgapur Municipal Corporation has better Sex-ratio than Andal and Pandabeswar Block. A large share of male population in these two Blocks are due to male-only migration for employment reasons in mining and industrial enterprises. Similarly, for Household size the values are higher in Andal and Pandabeswar Block – probably due to larger proportion of extended families incorporating male migrant-working kin.

Table No. 6.2: Sex-ratio and Household size within Durgapur Sub-division

Unit	Sex Ratio (2011)	Total Population (2011)	Total Households (2011)	HH Size
District (Old Bardhaman)	945	7717563	1250095	6.17
Andal Block	904	186915	36452	5.12
Pandabeswar Block	912	161891	25122	6.44
Faridpur-Durgapur Block	917	115924	33071	3.50
Kanksa Block	950	178125	39281	4.53
Durgapur Municipal Corporation	925	566517	123071	4.60

Source: District Statistical Handbook, 2014

The rate of urbanization and its growth rate within Durgapur Sub-division is presented in Table 6.3. Overall, the sub-division is highly urbanized – where 4 out of 5 live in notified area or census towns. Above 80 percent in Andal and Pandabeswar Block lives in CTs – which is far above when compared to Kanksa and Faridpur-Durgapur Block. The decadal growth rate of urban population is also very high in Blocks – as many villages in 2001 are classified as census towns in 2011. So high growth of urban population does not mean that population in urban areas are growing very fast – rather it means that more rural areas are now becoming urban areas as per census classification. This will also depress the reported growth rate of the rural areas in census tabulations – but that does not mean that rural areas are getting depopulated.

Table No. 6.3: Urbanisation within Durgapur Sub-division

Unit	Total Population (2011)	Urban Population (2011)	Share of Urban Population (2011)	Decadal Growth rate of urban Population (2001-11)
District (Old Bardhaman)	7717563	3078299	39.9	20.86
Andal Block (A)	186915	151304	80.9	18.73
Pandabeswar Block (B)	161891	135171	83.5	24.20
Faridpur-Durgapur Block (C)	115924	30554	26.4	83.94
Kanksa Block (D)	178125	74531	41.8	142.02
Durgapur Municipal Corporation (E)	566517	566517	100.0	14.82
Total (A+B+C+D+E)	1209372	958077	79.22	NA

Source: District Statistical Handbook, 2014

6.2 Population projection

The sole purpose of population projection exercise is to envisage the development pressure and its spatial distribution, which helps estimate the amount of land that would be required in the given timeline (2031 AD).

As per the population projection in Vision-2025, which is a long term perspective plan document for the Asansol Durgapur Planning Area, following population figures were proposed. This was

based on the Census of India, 2001 and past census figures. The assumed growth rate was much higher than what was observed in Census of India, 2011 figures. Given the present understanding of demographic trends we have revised these figures for population projection in this LU&DCP for year 2031.

- a) Andal Block – 3 lakhs
- b) Pandabeswar Block – 2 Lakhs
- c) Faridpur-Durgapur Block – 2.5 lakhs
- d) Kanksa Block – 3.5 lakhs
- e) Durgapur Municipal Corporation – 10 lakhs

It has been observed as a general trend that population growth rate has slowed down over the decades and it can be safely estimated that next decade will show even lower growth rate. The exuberance anticipated in Vision-2025 in terms of population growth due to natural growth as well as migration did not materialize. Moreover, a large share of migration is of so short duration that they are not even recorded in the census enumeration i.e. student population for higher education which is a significant component.

For the purposes of population projection for 2021 and 2031, we have assumed decadal population growth rate of 10 percent for Andal, Pandabeswar and Faridpur Block, 20 percent for Kanksa and 15 percent for Durgapur Municipal Corporation Area. As the decadal growth rate is falling over the last two decades, this will give us conservative population estimates.

The primary reason for restricting the growth rate of Andal and Pandabeswar Block is that a large portion of these three Blocks are falling within Restricted Development Zone. A large number of locations with mining subsidence is recorded in these Blocks. Some of them will require rehabilitation in future as they are often close to unstable location. There are ongoing efforts for rehabilitating a significant share of population to safe sites with funding from Eastern Coalfields Limited (ECL) in association with ADDA.

Future population growth should be diverted from these areas to closest Extensive and Intensive Development Zones. A list of the number of mouzas and population in these Blocks falling within Restricted Development Zone is provided below.

- a) Pandabeswar Block (whole) – 29 mouzas and 161891 persons
- b) Andal Block (part) – 18 mouzas and 130299 persons
- c) Faridpur-Durgapur Block (part) – 13 mouzas and 40674 persons

On the other hand, a large portion of land in these Blocks are either active mining sites or derelict mine site without proper mine closure protocol followed or site of hazardous industries. The hazard potential makes it unsafe for residential settlements in large portion of these three Block.

As certain parts of Kanksa Block i.e. Rajbandh-Panagarh area are close to Durgapur Municipal Corporation, rapid growth in investments, employment opportunities and population has taken place in last decade. Recently, the State Government has also announced Panagarh as the new industrial hub in this region. For these reasons, a slightly higher growth rate has been assumed for this Block in population projection exercise. As the decadal growth rate is falling over the last two decades, this will give us conservative population estimates.

Based on the existing trends of population growth within the study area and the projected decadal growth in 2011 – 21 and 2021 – 31, the population figures of all the constituent Blocks and Municipal Corporation has been presented in Table 6.4A and 6.4B. A quick comparison between the population figures for year 2025 between Vision-2025 and LU&DCP is presented in last two columns. Whereas Vision-2025 envisaged a total population of 21 lakhs for Durgapur Sub-division in 2005, we find reason to believe that the figures will be around 15 lakhs with the observed trends. Following the Vision-2025 figures will lead to over provisioning of land for development purpose and investment for supporting infrastructure.

Table 6.4A: Projection population for Durgapur Sub-division (upto 2021)

Unit	Population (2011) (Pop_11)	Decadal growth rate (2001-2011) (%)	Assumed Decadal Growth rate (2011-21) (%)	Estimated population 2021 (Pop_21)
Andal Block	186915	10.7	10	205607
Pandabeswar Block	161891	10.47	10	178080
Faridpur-Durgapur Block	115924	9.85	10	127516
Kanksa Block	178125	17.75	20	213750
Durgapur Municipal Corporation	566517	14.82	15	651495
Total	1209372			1376448

Source: Author

Table 6.4B: Projection population for Durgapur Sub-division (upto 2031)

Unit	Projected Decadal Growth rate (2021-31) (%)	Projected Population 2031 (Pop_31)	Projected Population 2025 (geometric mean of Pop_2021 and Pop_31)	Vision-2025 Projections
Andal Block	10	226167	215642	300000
Pandabeswar Block	10	195888	186772	200000
Faridpur-Durgapur Block	10	140268	133740	250000
Kanksa Block	20	256500	234151	350000
Durgapur Municipal Corporation	15	749219	698650	1000000
Total		1568042	1469125	2100000

Source: Author

Table 6.5: Population density and Gross Residential Population Density in Durgapur Sub-division

Unit	Share of land under Existing Residential Landuse in 2016 (%)	Total Land Area (in sq.km) [A]	Land Area under Residential Zone in 2016 (in ha) [B]	Estimated Population in 2016 [Geometric mean of Pop_11 and Pop_21] [C]	Population density at whole Block/Town (in pop/ha) [C*100/A]	Gross Residential Population density (in pop/ha) [C*100/B]
Andal Block	13.3	84.87	1128.77	196038	23.1	173.7
Pandabeswar Block	12.1	97.8	1183.38	169793	17.4	143.5
Faridpur-Durgapur Block	9.5	155.97	1481.72	121582	7.8	82.1
Kanksa Block	8.1	279.44	2263.46	195126	7.0	86.2
Durgapur Municipal Corporation	36.3	154.2	5597.46	607522	39.4	108.5
Total	15.1	772.28	11654.79	1290061	16.7	110.7

Source: Author

We use the term Gross Residential Population Density as population living in land marked as residential land use so that we can use it for projecting future land requirement for people with similar way of living. It is estimated by dividing residential population with the land under 'Residential Use' as per the existing Land Use Map. These figures are very different from population density which is calculated by dividing the population with the total area under administrative jurisdiction. Table 6.5 presents the comparative evaluation of population density and gross population density for various Blocks and Durgapur Municipal Corporation. The overall population density is highest in Durgapur Municipal Corporation – as expected from a fairly large size urban settlement. However, when we look at the share of land dedicated for residential purpose we observe that more than 36 percent of land is dedicated in Durgapur Municipal Corporation as compared to 8 to 13 percent in Blocks. Moreover, gross residential population density reveals that in Andal and Pandabeswar Block nearly 144 to 174 persons live in a hectare of residential land when compared to 108 persons per hectare in Durgapur Municipal Corporation. Kanksa and Faridpur-Durgapur Block being predominantly farm-based, village settlements have much lower density i.e. 80 persons per hectare in their residential land.

6.2.1 Land requirement for Planning Area by 2031

The LU&DCP needs to make suitable allocation of land resources to accommodate an additional population of 278 thousand people by the year 2031 AD. The assessment of the

additional land requirement to accommodate the proposed population in 2031 has been compiled in Table 6.6.

The gross residential population densities were assumed to remain close at unit level within the plan period. For Andal and Pandabeswar Block, 150 persons per hectare was taken as gross residential density for the future population to come – whereas for other two Blocks 100 persons per hectare was assumed. For Durgapur Municipal Corporation it was assumed as 100 persons per hectare.

This assumption was made to ensure the continuity in the way of living in urban areas as well as in rural settlements, both in farm-based as well as mining-manufacturing based settlements. With these assumptions, it can be seen that the total additional residential land requirement for accommodating the additional population would be roughly around 3900 hectares as observed from Table 6.6A.

The additional land requirements are high for Kanksa Block and Durgapur Municipal Corporation as they are expected to accommodate more population. As Andal and Pandabeswar Block falls within Restricted Development Zone, it was assumed that no new area will be developed within these Blocks as future residential zones. However, natural expansion of the existing settlements at incremental fashion will go on. Therefore, the land required for Built Up Development to accommodate additional population by 2031 in Andal and Pandabeswar Block i.e. (301.3 + 261.0) hectare, has been provided in adjoining Faridpur-Durgapur Block.

Table 6.6A: Area required for the proposed population in Planning Area

Unit	Gross Residential population density in 2016 (pop/ha)	Assumed Gross Residential population density for 2031 (pop/ha)	Additional Population [Between 2016 and 2031]	Residential land (in ha)	Total area required for Built up development (in ha)	Land Allocation for future development (in ha)
Andal Block	173.7	150.0	30129	200.9	301.3	Preferably None
Pandabeswar Block	143.5	150.0	26095	174.0	261.0	Preferably None
Faridpur-Durgapur Block	82.1	100.0	18686	186.9	280.3	842.5
Kanksa Block	86.2	100.0	61374	613.7	920.6	920.6
Durgapur Municipal Corporation	108.5	100.0	141697	1417.0	2125.5	2125.4
Total			277981			3888.5

Source: Author

In contemplation of a scenario where some or whole of existing population will require rehabilitation in future as they are often close to unstable location – an estimate of land requirement is made for the worst case. Mining Activities falling within Restricted Development

Zone affect a certain number of mouzas and population within them. The details are provided following.

- a) Pandabeswar Block (whole) – 29 mouzas and 161891 persons
- b) Andal Block (part) – 18 mouzas and 130299 persons
- c) Faridpur Block (part) – 13 mouzas and 40674 persons

Table 6.6B: Area required for the proposed population in Planning Area

Unit	Population under restricted Zone	Preferred Residential population density for Rehabilitation (persons/ha)	Land for Rehabilitation, if needed (Residential plus 50% for other activities) (in ha)	Land Allocation for rehabilitation (in ha)	Final land requirement (future population + rehabilitation) (in ha) [See Table 6.6A]
Andal Block	130299	150.0	1303	Preferably None	Preferably None
Pandabeswar Block	161891	150.0	1619	Preferably None	Preferably None
Faridpur-Durgapur Block	40674	100.0	610	3532	4375
Kanksa Block				None	921
Durgapur Municipal Corporation				None	2125
Total	332864		3532		7421

Source: Author

In future these people should be diverted from existing location to other safe areas – preferably to closest Extensive and Intensive Development Zones within Faridpur-Durgapur Block due to land availability and close proximity. The land requirement for rehabilitation is presented in Table 6.6B – where land needed for resettlement is based on preferred gross residential densities. Additional 3500 hectares (approx.) of land will be needed for complete relocation and rehabilitation. Therefore, total land required to accomodate future additional population and complete relocation/rehabilitation will need 7400 hectares (approx.).

7.0 ANALYSIS OF SURVEYED LAND USE

The present Land Use Map and Land Register for Durgapur Sub-division was prepared and adopted u/s 29(5) of The West Bengal Town and Country (Planning and Development) Act, 1979 and was approved by the Government of West Bengal and the same was published in the Calcutta Gazette on Wednesday, January 2nd, 2019.

The notified land use map was prepared using land use classification based on URDPFI guidelines (Refer Annexure - III). The land use maps for all four Blocks and the Durgapur Municipal Corporation is presented in Map 7.1, 7.2, 7.3, 7.4 and 7.5.

Table No. 7.1 shows the overall existing Land-use breakup of the four Blocks and Durgapur Municipal Corporation. Residential land use is the dominant type in Durgapur Municipal Corporation, Farmland in Kanksa and Faridpur-Durgapur Block, and Barren land (mostly derelict mine sites and wastelands) in Andal and Pandabeswar Block.

Table No. 7.1: Existing land use area distribution of Durgapur Sub-division

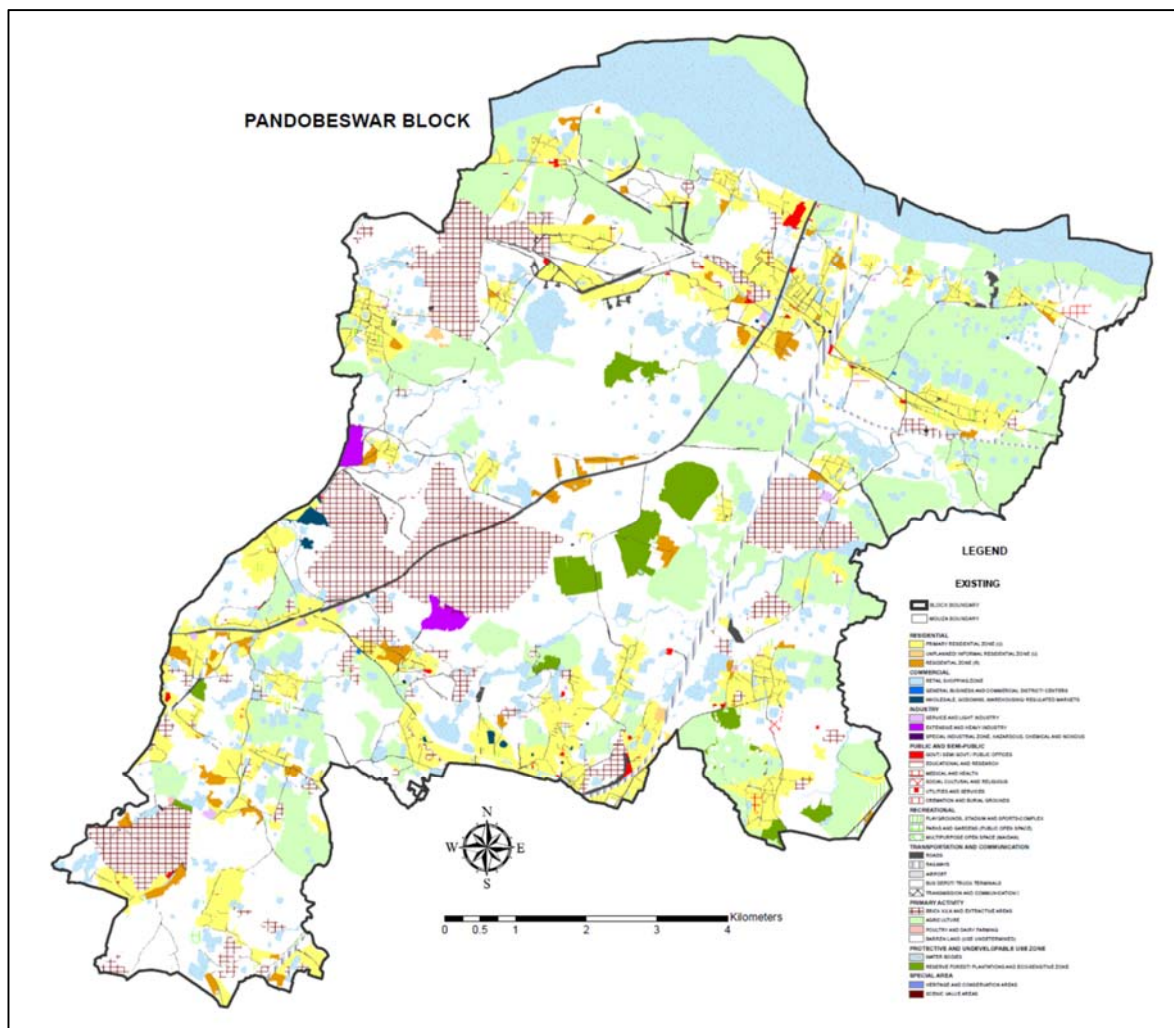
Land use category	Share of land under each land use category (%)				
	Andal Block	Pandabeswar Block	Faridpur Block	Kanksa Block	Durgapur Municipal Corporation
Residential	13.3	12.1	9.5	8.1	36.3
Commercial	0.5	0.3	0.1	0.2	2.6
Industrial (Light)	0.2	0.0	0.1	0.7	4.9
Industrial (Heavy)	2.7	0.4	0.6	1.1	11.3
Public & Semi-Public	0.4	0.3	0.4	0.4	3.4
Recreational	0.3	0.3	0.2	0.1	0.5
Transportation & Communication	4.3	2.5	2.8	2.0	2.3
Primary Sector Activities (Agriculture)	17.4	18.0	52.2	49.8	17.5
Other Primary Sector Activities (Extraction – mining)	0.9	9.9	0.9	0.5	0.0
Waterbodies	8.8	12.8	7.5	8.3	4.8
Forest and Plantation	0.1	1.6	13.1	26.3	4.7
Barren Land	51.2	41.8	12.2	2.5	11.7
Special Areas (Heritage)	0.0	0.0	0.5	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0
Total Area (in sq.km)	84.87	97.80	155.97	279.44	154.2

Source: Author

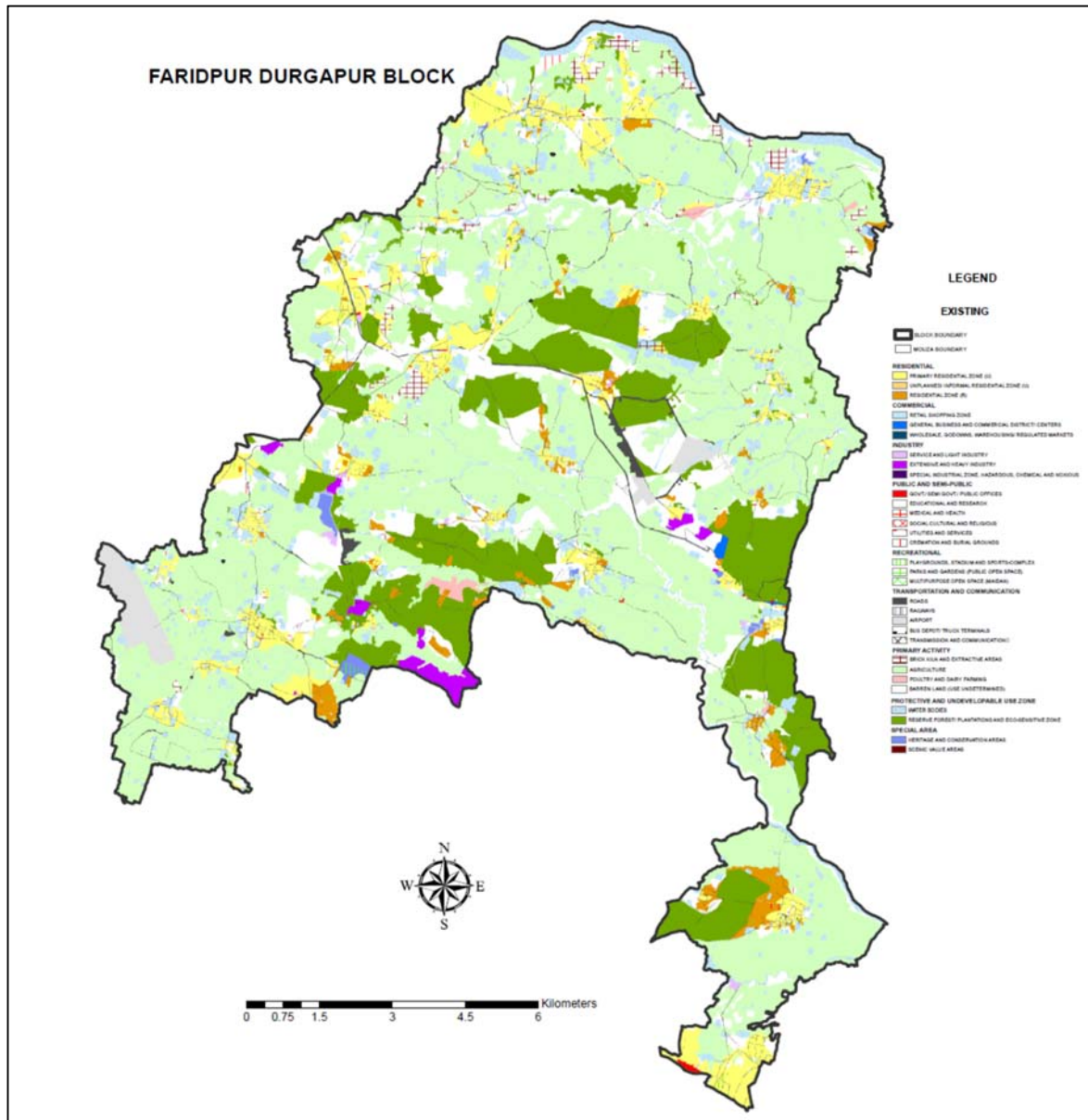
More than half of the land in Andal Block is under barren land category, either derelict mine site or wasteland where farming is not profitable. On the western side, a large industrial zone belonging to polluting and heavy industries is located on the south of NH-19. On the north of this development, a new airport

More than 52 percent of the land in Faridpur-Durgapur Block is under agriculture. Apart from that 13 percent is under forest cover and 12 percent belong to barren land category. Some outgrowth of Durgapur Municipal Corporation in the northern side has led to industrial and residential development in this Block.

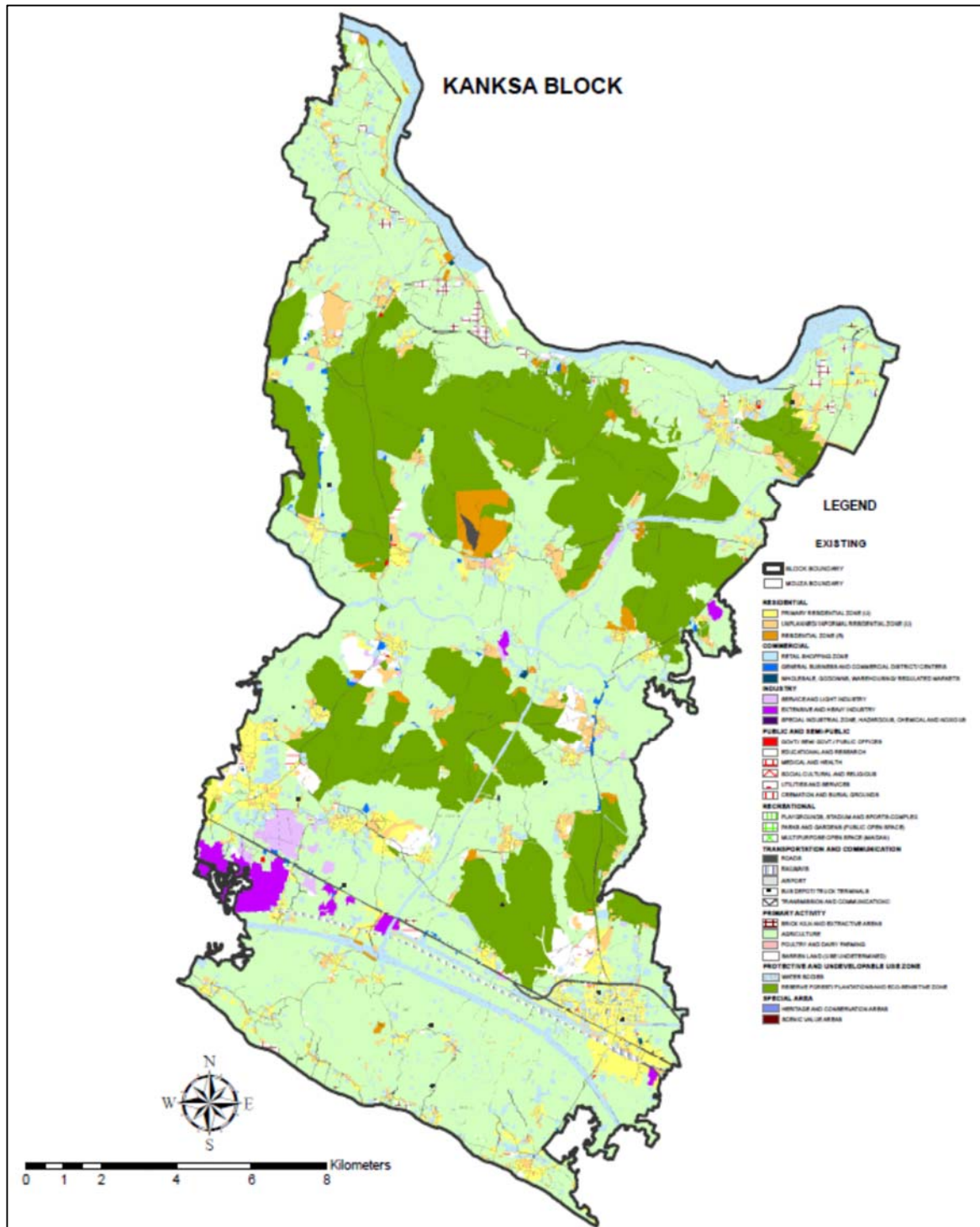
Around half of the land in Kanksa Block is under agriculture and another 26.3 percent under forest cover. Most of the forest cover is in the northern side and at the middle of the Block. Industrial development is restricted only close to Rajbandh-Panagarh stretch along the NH-19. Large residential settlements are also close to this regional corridor. Protecting the forest cover and retaining the farm base will be a priority in the LU&DCP.



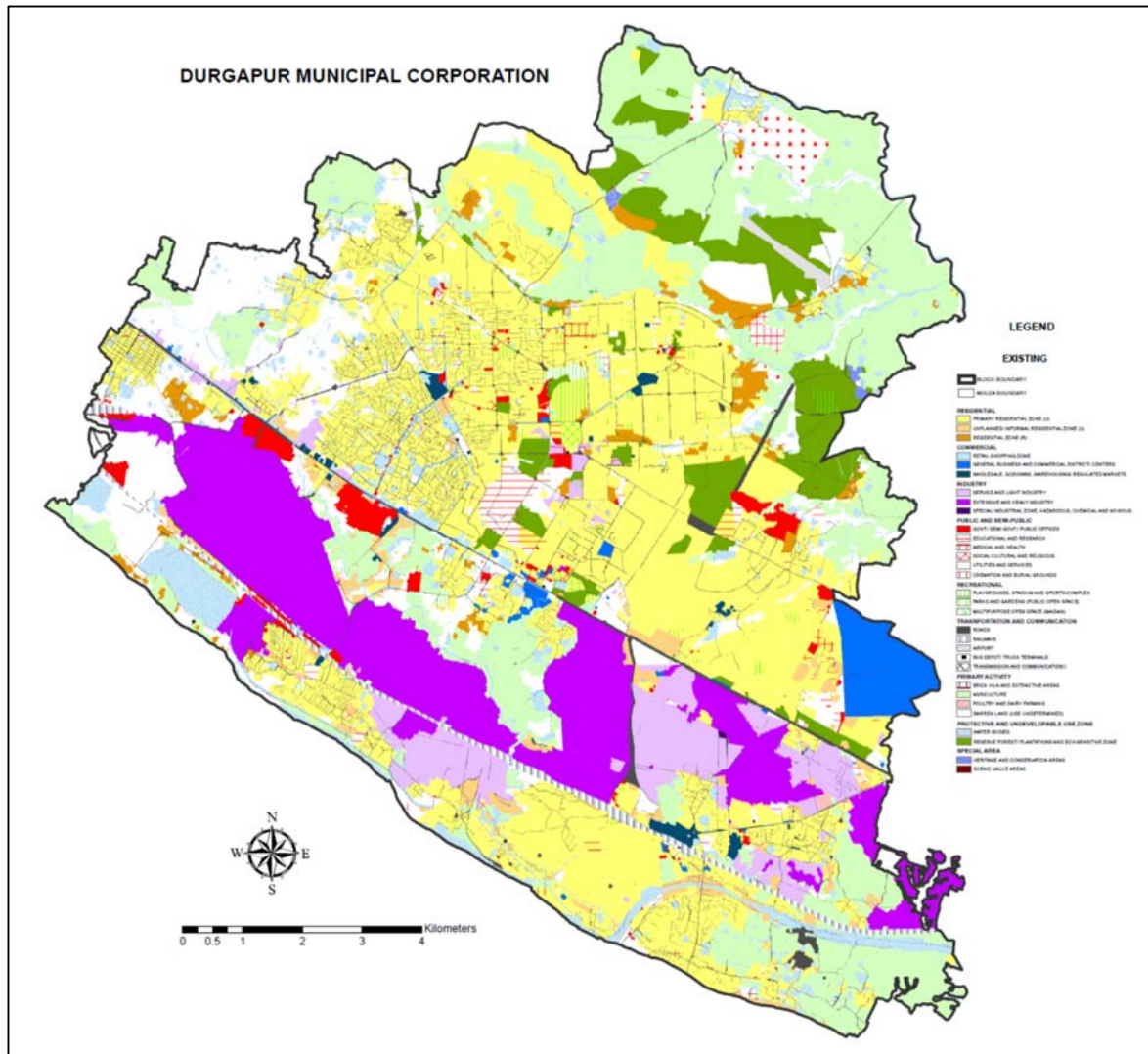
Map 7.2: Land Use Map of Pandabeswar Block (Source: Author)



Map 7.3: Land Use Map of Faridpur-Durgapur Block (Source: Author)



Map 7.4: Land Use Map of Kanksa Block (Source: Author)



Map 7.5: Land Use Map of Durgapur Municipal Corporation (Source: Author)

Around 17.5 percent of land in Durgapur Municipal Corporation is under agriculture and 11.7 percent under barren land. Most of the agricultural land is located on the northern side – close to Faridpur-Durgapur Block, whereas barren lands are close to Andal Block on the eastern side. They can be used in future for expansion of residential, commercial, recreational, institutional activities as well as for infrastructure development.

On the southern side of the NH-19, lies the industrial complex of Durgapur and most of them belong to heavy industries category. They are also RED category industries involving steel, cement, coke-oven, thermal power plant, chemicals etc. It would be prudent to manage their needs for expansion on this side of the highway – close to rail and road corridor as well as close to River Damodar and its canal system for water supply.

8.0 PLANNING PROCEDURE

8.1 Plan Period

The Land Use and Development Control Plan for Durgapur Sub-division is proposed for a period of ten years (from the date of its coming into operation). Two Blocks namely Andal and Pandabeswar are dependent on extensive mining and manufacturing activities and a large share of population lives in numerous Census Towns within these Blocks. Recent development such as Andal airport based Aerotropolis (which is an integrated township based on joint partnership of WBIDC and Changi Airports International Pte Ltd) has added new impetus to the growing urban way of living in these Blocks. On the other hand, two remaining Blocks namely Faridpur - Durgapur and Kanksa are still agrarian in nature – though some southern parts of Kanksa Block around Panagarh has seen rapid urban and industrial development. Durgapur Municipal Corporation is the second largest urban centre in South Bengal after Kolkata and lot of its development has spilled over to the neighbouring Blocks.

Mining subsidence is an area of prime concern primarily in Andal and Pandabeswar Block. This has not only led to restricted use of land but also created a need for resettlement of the vulnerable population. Haphazard urban growth as well as weak enforcement of regulations concerning land development control, especially in peri-urban and rural areas, often degrades the quality of living environment and creates severe constraints for future development. The outcome of this organic development has been the proliferation of the built up spaces along the major road corridors especially National Highways.

Keeping this in mind, with the help of Land Use and Development Control Plan, it is expected that the Development Authority will be better equipped to manage and regulate the development in Durgapur Sub-Division.

8.2 Planning Directives

The main objective of Land Use and Development Control Plan is to allocate land uses to ensure public welfare and better standard of living, while retaining the predominant character of this planning area. The land use distribution is based on compatibility of uses. The development control plan manages and regulates land development and ensures that all developments conform to a pre-determined set of objectives, policies or standards. Thus the Land Use and Development Control Plan must be inclusive of the physical, environmental, economic, social and aesthetic aspects.

To prepare this plan certain planning directives were followed.

1. Land use plan shall respond to the topography, geology, hydrology, ecology, etc.
2. The land use shall show location of existing rural settlements and it will earmark agricultural land, forest land, coastal zone, streams and canals, water bodies.
3. Conversion of land under water bodies is strictly prohibited. Future activities that threaten the health of the natural drains, streams, canals, rivulets, rivers will not be allowed.
4. No development especially which requires construction activity should not be allowed in vicinity to unstable locations. Unstable locations due to mining subsidence has been identified for this purpose.

5. Farm land in Kanksa Block is multi-cropping, and shall be protected to the maximum extent.
6. Medium and Large polluting industries are allowed in Asansol Durgapur Planning Area by West Bengal Pollution Control Board – but permitted only within designated Industrial Zone.
7. Priority aspects regarding planning projects must be decided as per the 'Development priorities' obtained in the stakeholder interaction and socio-economic data analysis.
8. While allocating public infrastructure, priority will be given to the land under the possession of the Government. Land under possession of West Bengal Govt. has been identified for this purpose.
9. Provision of public facilities and infrastructure like health, education, government, recreation, community development, will be made as per the URDPFI Guidelines as far as found appropriate to the local needs.
10. Areas of Heritage value will be given due importance and incorporated in the plan.



Map 8.1: Location of land under ownership of Government of West Bengal (Source: Author)

8.3 Planning Inputs from Past Studies

Several past studies have been conducted for Asansol and Durgapur Sub-division to regulate the urban development in the Asansol and Durgapur Municipal Corporation as well as the adjoining municipalities and Blocks.

The oldest of them being Outline Development Plan, prepared by the Development Authority in 1980s, which attempted to regulate the existing developments of Asansol Durgapur Planning Area.

The Perspective Plan for Asansol Durgapur Planning Area: Vision-2025 was prepared in 2005-06. Its main goal was to supplement the already matured mining and industry based local economy with service sector activities – primary focus given on providing higher education and health services, trade and commerce, banking, real estate, ITES etc. In this way it can become an attractive regional center in South Bengal to act as counter-magnet to Kolkata Metropolitan Area.

The City Development Plan (CDP) prepared in the year 2006 as part of the JNNURM, focused on the pressure on the existing infrastructure, necessitating planned interventions in the urban areas.

The Mobility Improvement Plan was prepared in the year 2008 – which focused on improvement of regional and local connectivity of the urban areas. This study also suggested new road links to connect various rural Blocks with the large urban areas.

The Land Use and Development Control Plan for Asansol Sub-division was notified in 2019 which covered Asansol Municipal Corporation, Kulti, Jamurai and Raniganj Municipality, and adjoining four Blocks. Owing to similarity of the Durgapur Sub-division with Asansol Sub-division especially in terms of extensive coal mining activities, large industries, problems such as mining subsidence etc. – a lot of lessons have been drawn from it for preparing this document.

8.4 Methodology/Approach

Without the knowledge of the existing situation, future proposal for land use and development control cannot be prepared. The first step in the preparation of the plan is updating the existing land use. After that, present situation is analyzed considering socio-economic characteristics and other relevant information about the planning area. Projections are made for required infrastructure facilities and past proposals are considered for preparation of conceptual broad zoning. Then, draft LU&DCP is prepared with detailed zoning regulations and development control guidelines. After considering stakeholders' objections/ suggestions, final LU&DCP will be submitted. The detailed steps for preparation of LU&DCP are shown in Figure No. 8.1. The Image No.1 shows snapshots of the stakeholders' meeting arranged in the Office of ADDA, Durgapur Unit on 2nd of May 2022 for discussion on Draft LU&DCP. Prior to that several discussions have taken place with various stakeholders during 2018 and 2019 regarding the major problems faced and development priorities. The stakeholders consisted of the representatives from executive members of the nodal agencies concerning land records, public works, ECL etc. along with the elected/executive members of the rural/urban local government.

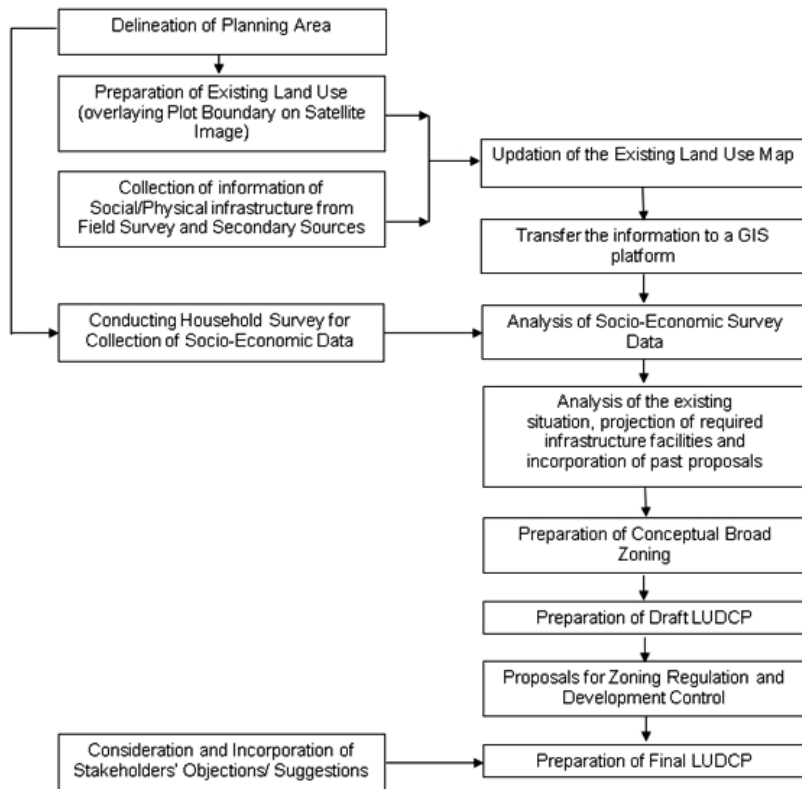


Figure No. 8.1: Methodology adopted for preparation of LU&DCP



Image No. 1: Participatory Workshop on LU&DCP for Durgapur Sub-division (2nd May, 2022)

8.4.1 Inputs from Various Participatory workshops with stakeholder

Participatory meetings, presentations, workshops, interactions etc. occurred in various stages during the plan preparation. The major issues raised by the stakeholders are listed following.

Unstable locations across Andal and Pandabeswar Block were a major concern raised by the elected representatives as large number of buildings, part of roads etc were affected due to mining subsidence in past years. This is a direct result of improper closure of very old mines as well as illegal mining which is rampant in these parts. Relocation and resettlement of the vulnerable population is the only way out and Eastern Coalfields Ltd has already committed to fund the programme of resettlement to safe sites. Concern was raised regarding sites chosen for relocation as well as the livelihood opportunities in these locations.

The stakeholders have also expressed their concern on control on development/construction/expansion permission provided in existing settlements close to unstable locations. Most of them were in favour of complete ban on any construction activities in vicinity once any signs of instability is identified with immediate action for relocation – as it is a matter of public safety and precautionary principle seems to be the prudent approach. However, some of them has expressed that such drastic measures will call for massive relocation immediately for which the local bodies are not equipped. They recommended permission on case to case basis where site-specific development permission will be based on detailed geo-technical investigation.

Stakeholders in Pandabeswar Block has expressed concern on land taken up for coal mining by ECL which necessitate large scale relocation and resettlement. Choice of appropriate site for relocation of the population often becomes an obstruction to such land acquisition. It was requested if LU&DCP can provide resettlement locations from which the affected population can choose – based upon proximity to original settlement location and livelihood opportunities (jobs in non-farm sector to be specific).

Stress of environmental pollution due to open cast mining was also raised by stake holders in Pandabeswar Block. Issues regarding rehabilitation of land under derelict mines and how they can be made economically productive over time was also discussed. Commercial forestry was suggested along with other primary sector activities.

Air pollution from large polluting industries, especially in Andal Block and Durgapur Municipal Corporation was raised by stakeholders – particularly from the elected representatives from the settlements close to industrial complexes in those areas. The complaint was non-adherence of the air pollution norms by switching off the air pollution control devices during night time. The condition becomes severe during the winter months.

A large number of population in all four Blocks live in Census Towns. A common concern in these dense settlements is of lack of access roads, inadequate road width and lack of open space in many parts of the settlement. As development control of built-up environment in these areas are under Gram Panchayats and still guided the building regulations applicable for low density rural areas, they are inadequate to control the aspiration of urban like built-environment. More than 80 percent of the population in Durgapur Sub-division live in Municipal Corporation or Census Towns. Inadequacy of the building rules to guide built-up development in most parts of the Sub-division was unanimously expressed.

Northern parts of the Kanksa Block and large parts of Faridpur-Durgapur Block wanted to have better connectivity to Durgapur Town. Large reserves of protected forests also create barrier for intra-Block connectivity – therefore, additional focus should be given to integrate those settlements located in the northern parts of the Sub-division.

Specific need to control the development along the NH-19 (which is part of the Golden Quadrilateral) especially along the newly operational Panagarh bypass was expressed. Haphazard development of small residential enclaves with widespread land speculation is observed by the elected representatives. They expressed concern regarding their inability to control and regulate the development along the corridor.

8.5 Summary of major development proposals for LU&DCP

Vision-2025: Perspective Plan for Asansol Durgapur Planning Area provided a detailed set of recommendations regarding future development under each Blocks, keeping in mind the four types of Development Zone it has prescribed – namely Restricted Development Zone, Eco-Sensitive Zone, Intensive Development Zone and Extensive Development Zone.

All the mouzas in Durgapur Sub-division has been classified into these four type of development zones. The detailed mouza list is provided in Section 4. For four Blocks and Durgapur Municipal Corporation, Table 9.1 provides a detailed list of proposed development activities along with their predominant characteristics. These proposed activities are in line with the Vision-2025 as well as the recent development initiatives taken up by the State Government and interest shown by private investors.

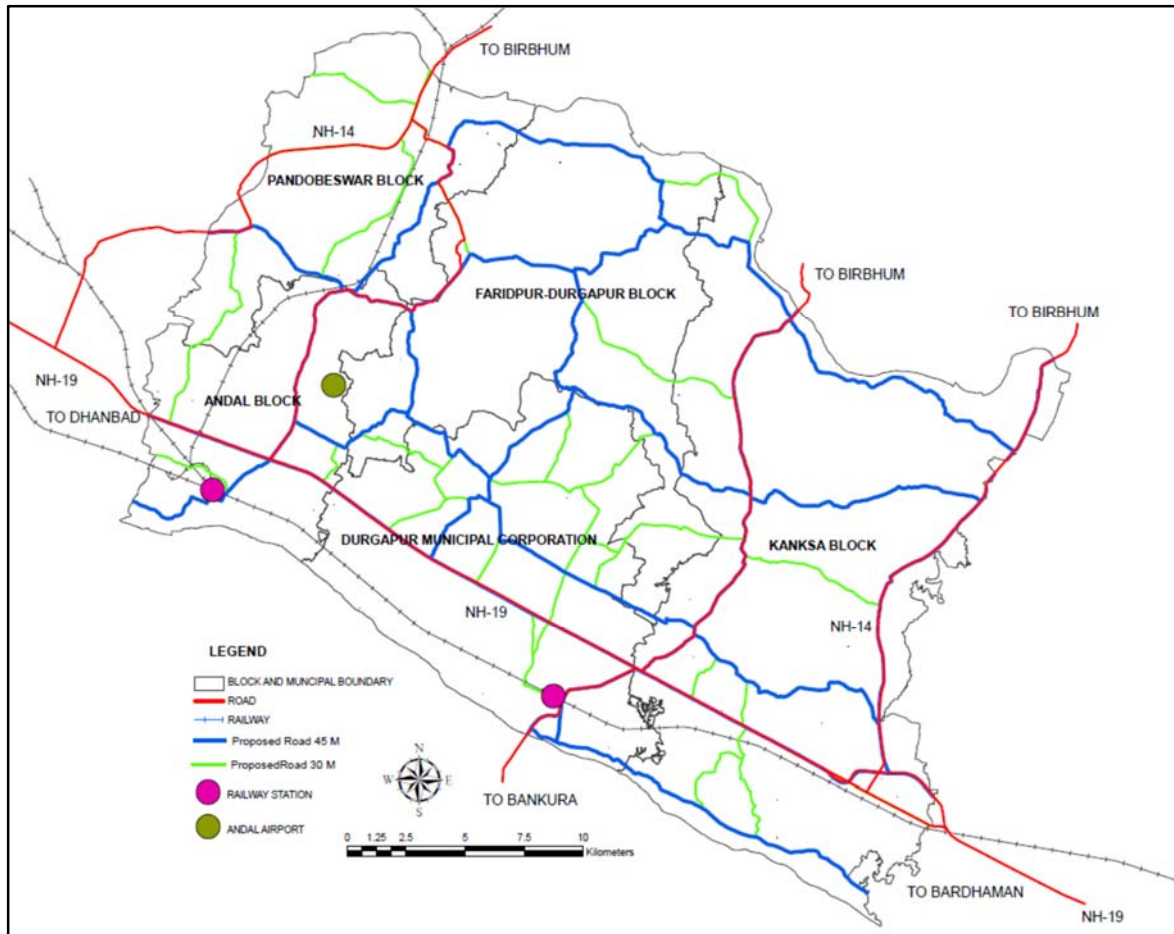
Table 9.1: Development Zone-wise summary of existing characteristics and proposed development activities

Unit	Type of Development Zone	Existing Characteristics	Proposed development activities
Durgapur Municipal Corporation	Eco-Sensitive Development zone	Vast land under Reserve forest with rich flora and fauna;	Natural growth of settlements; Freeze future land conversions; Cottage industries; Cultivation of cash crops and medicinal plants; Training institutes for cottage industries; Camping site and day-care facilities; Bio-technology park; Botanical and Zoological garden; Water retention basins; Remarks: Sustaining the natural environment; Utilization of natural resource endowments for tourism;
	Extensive Development zone	Aligned along the National Highway corridor; Pull factor towards Bardhaman and Kolkata; Proximity to existing infrastructure;	New housing; Building material industries; Automobile service industries; Modular furniture industries; Educational institutes on the edges of Eco-sensitive Development zone; River-based recreational activities; Remarks: Gateway to industrial portal of the Planning Area;
	Intensive Development zone	Industrial townships; Low-density scattered planned townships;	Revival of Sick Industries; Shift to non-polluting industries; ITES and BPOs;

Unit	Type of Development Zone	Existing Characteristics	Proposed development activities
		Under-utilized urban infrastructure; Concentration of highly polluting heavy industries; Undergone massive industrial recession during 1980, but partly recovered in last two decades; Growth of tertiary activities i.e. ITES, Higher education, Services etc.;	Higher Educational Institutes; Health City and Convention centers; Promotion of Hospitality industry;
Faridpur-Durgapur Block	Eco-Sensitive Development zone	Vast land under Reserve forest with rich flora and fauna; Fertile Agricultural land; Weak connectivity;	Natural growth of settlements; Freeze future land conversions; Cottage industries; Cultivation of cash crops and medicinal plants; Training institutes for cottage industries; Eco-tourism; Camping site and day-care facilities; Botanical and Zoological garden; Water retention basins; Remarks: Sustaining the natural environment and existing tribal population; Utilization of natural resource endowments for tourism;
	Extensive Development zone	Surrounded by 3 zones of distinct development type – Eco-sensitive, Restrictive and Intensive; Strong connectivity;	Automobile industries; Agro-based industries; New Housing; Resettlement Housing; Educational Institutes on the edge of eco-sensitive locations; Remarks: Becomes obvious location for surplus population from Intensive zone; Relocation from Restricted development zone and supplementary activities to Eco-sensitive development zone;
	Intensive Development zone	Spillover growth from Durgapur; Ribbon development along National Highway; Close to Andal Aerotropolis;	Airport and allied development; ITES and BPOs; Educational Institutes; Health City and Convention centers; Promotion of Hospitality industry;
	Restricted Development zone	Conglomeration of mining towns; Subsidence prone locations; Strong north-south linkages via road and rail links;	Improve social infrastructure; Low rise-Low density settlement with possible sites for relocation from subsidence-prone sites; Remarks: Increase in mining activity is expected in future, leading to environmental degradation;
Andal Block	Extensive Development zone	Surrounded by 3 zones of distinct development type – Eco-sensitive, restrictive and intensive; Close to Andal Aerotropolis; Strong connectivity;	Airport and allied development; Automobile industries; Agro-based industries; New Housing; Educational Institutes on the edge of eco-sensitive locations; Remarks: Regional context is adequately considered in the proposals; Becomes obvious location for surplus population from Intensive Zone, relocation from Restricted zone and supplementary activities to Eco-sensitive zone;
	Intensive Development zone	Industrial townships; Concentration of highly polluting heavy industries; Close to Andal Aerotropolis;	Airport and allied development; Revival of Sick Industries; ITES and BPOs; Educational Institutes; Health City and Convention centers; Promotion of Hospitality industry;

Unit	Type of Development Zone	Existing Characteristics	Proposed development activities
	Restricted Development zone	Conglomeration of mining towns; Extensive mining activity; Subsidence prone locations; Strong north-south linkages via road and rail links	Enhance mining activity; Improve social infrastructure; Low rise-Low density settlement with possible sites for relocation from subsidence-prone sites; Remarks: Ownership of land lies with ECL and other para-statal agencies; Increase in mining activity is expected in future, leading to environmental degradation; Acting as gateway to planning area from the north i.e. Birbhum
Pandebeswar Block	Restricted Development zone	Conglomeration of mining towns; Extensive mining activity; Subsidence prone locations; Strong north-south linkages via road and rail links	Enhance mining activity; Improve social infrastructure; Low rise-Low density settlement with possible sites for relocation from subsidence-prone sites; Remarks: Ownership of land lies with ECL and other para-statal agencies; Increase in mining activity is expected in future, leading to environmental degradation; Acting as gateway to planning area from the north i.e. Birbhum
Kanksa Block	Eco-Sensitive Development zone	Vast land under Reserve forest with rich flora and fauna; Fertile Agricultural land; Strong connectivity with north;	Natural growth of settlements; Freeze future land conversions; Cultivation of cash crops and medicinal plants; Eco-tourism; Camping site and day-care facilities; Bio-technology park; Botanical and Zoological garden; Water retention basins; Remarks: Sustaining the natural environment and existing tribal population; Utilization of natural resource endowments for tourism;
	Extensive Development zone	Aligned along the National Highway corridor; Pull factor towards Bardhaman and Kolkata; Proximity to existing infrastructure;	New housing; Building material industries; Automobile service industries; Modular furniture industries; Educational institutes on the edges of Eco-sensitive Zone; River-based recreational activities; Remarks: Gateway to industrial portal of the Planning Area;
	Intensive Development zone	Concentration of highly polluting old vehicle dismantling and spare parts industries; Undergone change due to new bypass alignment; Led to growth of tertiary activities i.e. Higher education, Services etc.;	Relocation of existing vehicle repair-dismantling activities; Shift to non-polluting industries; Educational Institutes; Health City and Convention centers; Promotion of Hospitality industry;

The connectivity among the rural and urban settlements were a major concern in Asansol Durgapur Planning Area. A detailed network of intra-regional road network was recommended to connect villages, census towns and the city through a network of proposed road alignments with 30 m and 45m ROW. This proposed road network is shown in Map 8.2 and this created the spatial framework around which future land use zones were allocated.



Map No. 8.2: Proposed Road Network in Durgapur Sub-division (Source: Author)

The local economy of Andal and Pandabeswar Block was driven by mining and large scale industrial investments. However, these two Blocks are also facing the challenges of land instability due to mining subsidence. In future this will call for extensive relocation and resettlement programmes for the vulnerable population to safe areas. It is of conventional wisdom to rehabilitate the population in vicinity to the original site. Faridpur-Durgapur Block and some parts of the Andal Blocks (which lied outside the Restricted Development Zone) with large availability of undeveloped land under ownership of Government of West Bengal makes an attractive proposition.

Recently Andal airport has helped create a greenfield airport city under Bengal Aerotropolis Projects Limited (BAPL). It is supported by the Government of West Bengal's Industrial Development Corporation (WBIDC) and Changi Airports International Pte. Ltd. (CAI).

It is a privately owned and managed Greenfield Airport City with an Airport, an Industrial zone, a Logistics Hub and a supporting Township. The total area of the township is 1978 acres of which Industrial share is 493 acres, Residential share is 472 acres, and Institutional share is 258 acres.

Aerotropolis is recognized as an Industrial Township Authority by the State Government and can help set up business on a fast-track basis. The aerotropolis is to feature an industrial park & logistics hub with green & sustainable industrial and commercial activities, agro-based processing and packaging, warehouses etc.

A multi-specialty hospital in the Aerotropolis project is under advanced stages of construction. Few nationally reknowned schools have already opened their campus. The residential component will have affordable housing for the masses in collaboration with private developers to set up residential properties for LIGs. It also promises 80 acres within Aerotropolis identified for rehabilitation of people in Raniganj Coal Field Area by Coal India Ltd. Rehabilitation area to include residential blocks, playground, school, hospital, post office, a community hall and a daily market. In future it intends to have an autonomous urban local body - Golden City Industrial Township Authority (GCITA). [Source: BAPL website]

Andal, Pandabeswar and Faridpur – Durgapur as well as Durgapur Municipal Corporation are all going to be influenced by Aerotropolis project. As a large part of the Andal and whole of Pandabeswar Block is within Restricted Zone – most of the new development has been proposed in Intensive and Extensive Development Zones of Faridpur-Durgapur and Andal Block.

Durgapur Municipal Corporation is expected to draw more investments in manufacturing and service sector. The expansion of the existing industries as well as development of new industries has been restricted to south of the Delhi-Kolkata Golden Quadrilateral link – in proximity to the existing industrial zone. The institutional development as well as urban development has been directed to the north with improved road connectivity.

Some of the surplus industrial and institutional development has been directed towards Kanksa Block along the Delhi-Kolkata Golden Quadrilateral link – towards Rajbandh-Panagarh. Recently Government of West Bengal has initiated a programme to develop Panagarh and adjoining areas as future industrial hub.

A large portion of land along the bank of River Ajoy and Damodar has been earmarked as No Development and Construction Zone (NDCZ) under River Regulatory Zone (RRZ) guidelines issued by Town and Country Planning Organization, Ministry of Housing and Urban Affairs, Government of India.

8.5.1 Proposed Land Use Categories

In order to manage the future urban development of Durgapur Sub-division, eight broad land use Categories are proposed. The proposed land use classification has been designed considering The West Bengal Town and Country (Planning and Development) Act, 1979 and the URDPFI Guidelines, 1996, Ministry of Urban Affairs and Employment, Government of India. In addition, the notified LU&DCP for Asansol Sub-division prepared by the Asansol Durgapur Development Authority has been taken into account to maintain consistency and coherence in approach.

The land use categories as per the 'Surveyed Land Use' have been distributed amongst the 'Proposed Land Use' categories. The land use classification adopted for the Land Use and Development Control Plan has been elaborated in Table No. 8.2. The detail list of activities under each land use zone has been included in the Zoning Regulations given in Chapter 9.

Table No. 8.2: Proposed Land Use Zone Classification

S. No.	Proposed Land use Zones
1	Proposed Residential Zone
2	Proposed Commercial Zone
3A	Proposed Light Industrial Zone
3B	Proposed Heavy Industrial Zone
4	Proposed Aerotropolis Zone
5	Proposed Public & Semi Public Zone
6	Proposed Primary Sector Activities Zone
7	Proposed Arterial Roads (45 M) & Sub Arterial Roads (30 M)
8	No Development and Construction Zone

Source: Author

Aerotropolis has been kept as a separate Land Use Category for two reasons. First, it is supposed to be developed as a separate township under the patronage of joint collaboration between WBIDC and Changi Airport International (CAI). It might have a separate regulatory body to take care of its regulatory functions. Secondly, being in proximity to the airport, all kinds of development/construction activity will be regulated by AAI norms [Refer Annexure – VIII].

Before proceeding into the distribution of land under each land use zones, a brief schematic outline for each type of zone is presented.

A. Proposed Residential zone

The primary use intended in this zone is residential in nature. However, all other non-residential activities which are required to support a residential zone are also allowed within this zone. They include commercial activities, institutional activities, manufacturing activities, recreational activities, transport activities along with some farming and plantations. However, there is a scale upto which these activities are allowed so that the zone does not loose its residential character.

B. Proposed Commercial Zone

The primary use in this zone is of commercial nature - specifically higher level commercial functions i.e. central business district functions, large scale whole sale and retail trading complexes, logistic hub, warehousing and storage functions etc. This proposed commercial zone is not intended to take care of the neighbourhood level shopping needs but of higher order trade and commerce functions provided at city or regional level. Along with commercial activities, some residential of specific nature, institutional, recreational, manufacturing and transport related activities has been also allowed in this zone.

C. Proposed Industrial Zone (Light and Heavy)

The primary use in this zone is of industrial activity of both small & medium and large scale enterprises – also both polluting and non-polluting types. Associated residential, commercial, institutional, recreational and other transport infrastructure related activities has also been allowed.

D. Proposed Aerotropolis Zone

The primary use in this zone is of airport related passenger and freight logistics, airport related institutional activities, warehouse and business functions, trade and commerce, processing and packaging activities along with residential activities. The main focus is to create enabling environment for economic development to reap the benefits of proximity to an airport. This includes areas in and around the Andal Airport including BAPL township and neighbouring areas who will be affected by the development of the Aerotropolis.

E. Proposed Public and Semi-Public Zone

The primary use in this zone is of public and semi-public nature i.e. govt. and semi-govt. offices, education and research facilities, health and medical facilities, public utilities of various kinds etc. Apart from that, some associated residential, commercial, recreational and transport related activities has also been allowed in this zone.

F. Proposed Primary Sector Activity Zone

The primary nature of this zone can be of various kinds - but all belonging to some form of primary sector activities. These activities primarily include mining and extractive activities along with conventional farming activities, horticulture, floriculture, pisciculture, aqua-culture, forestry/plantation, agro-forestry etc. Along with these, some type of residential, commercial, institutional, recreational and transport related activities are allowed with specific conditions.

E. Proposed Arterial Roads (45 M) & Sub Arterial Roads (30 M)

The primary purpose is to provide connectivity at the Asansol Durgapur Planning Area level as well as connecting various parts of the Durgapur Municipal Corporation and its periphery to make it accessible to development activities. Most of the proposals are augmentation of the existing road alignment, whereas some of them are new alignments.

F. No Development and Construction Zone (NDCZ)

The primary purpose of this zone is to regulate development along the River Damodar and Ajoy as per River Centric Urban Planning Guidelines, recommended by Town and Country Planning Organization, Ministry

of Housing and Urban Affairs, Government of India, May 2021 (Refer Annexure –VI) are applicable. The specific regulations ask for designating No Development and Construction Zone (NDCZ) in those areas with separate zoning and development control restrictions. Both River Damodar and Ajoy have embankments and an area of 500m from the embankment line has been delineated as NDCZ. The list of Mouzas falling under NDCZ is provided in Section 4 of this Report.

Zoning will protect existing village settlements, agricultural land and ecologically sensitive zones from the pressure of conversion to land uses having adverse social and environmental impacts. At the same time, it also aims to promote the orderly development of economically productive land use in certain areas – to generate employment, boost local economy and reduce harmful effects on human settlements. The proposed land use maps for each administrative unit are presented in Map 8.3A to 8.3E.

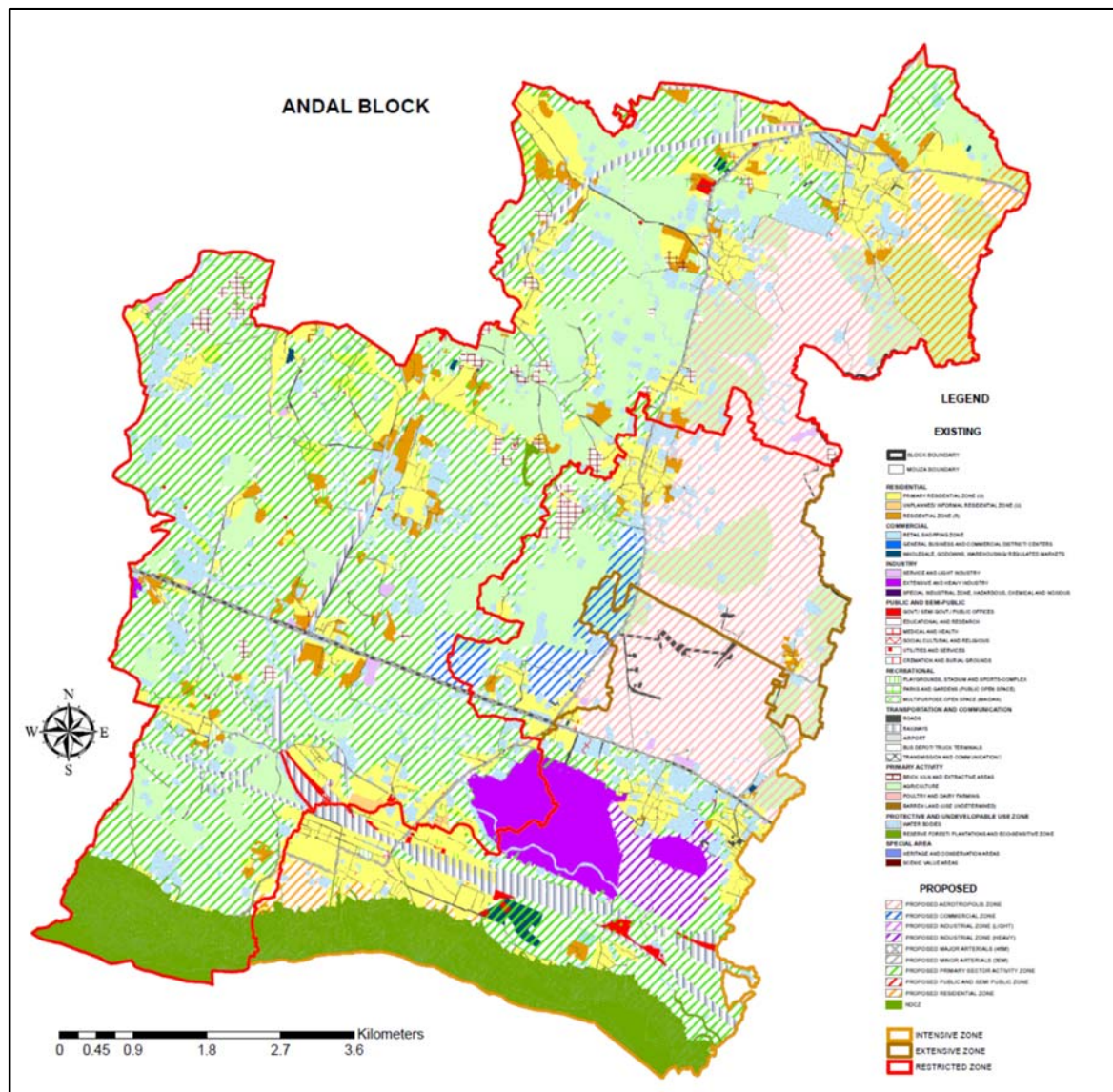
Zoning is not retrospective. It does not prohibit the uses of land and buildings that are lawfully established prior to the coming into effect of the zoning regulations. If these uses are contrary to the newly proposed uses, they are termed as non-conforming uses and are gradually eliminated over years without inflicting unreasonable hardship upon the property owners.

Following tables describe the distribution of land earmarked within different Proposed Land Use Zones and Existing Land Use Categories.

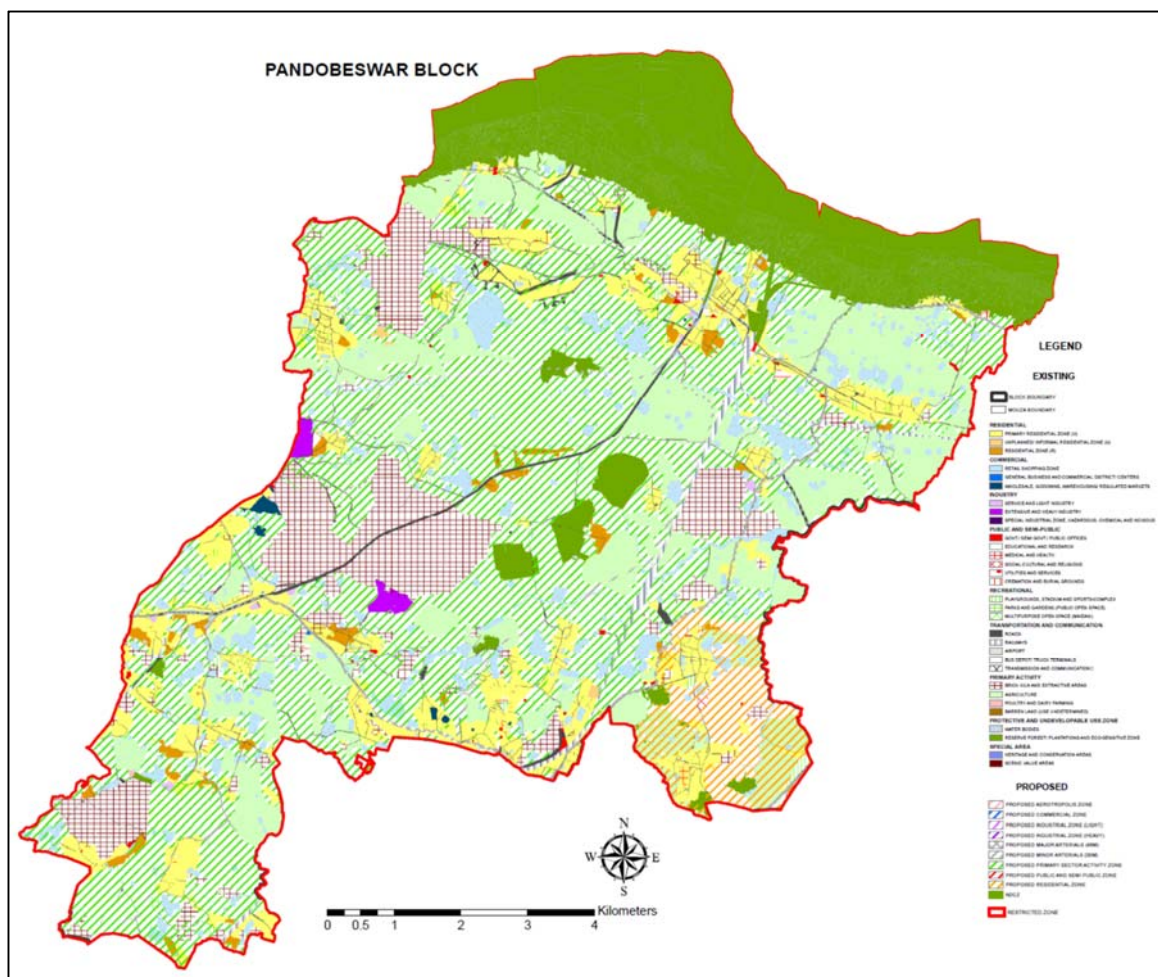
Table No. 8.3: Area under various Proposed Land Use Zone among units of Durgapur Sub-division

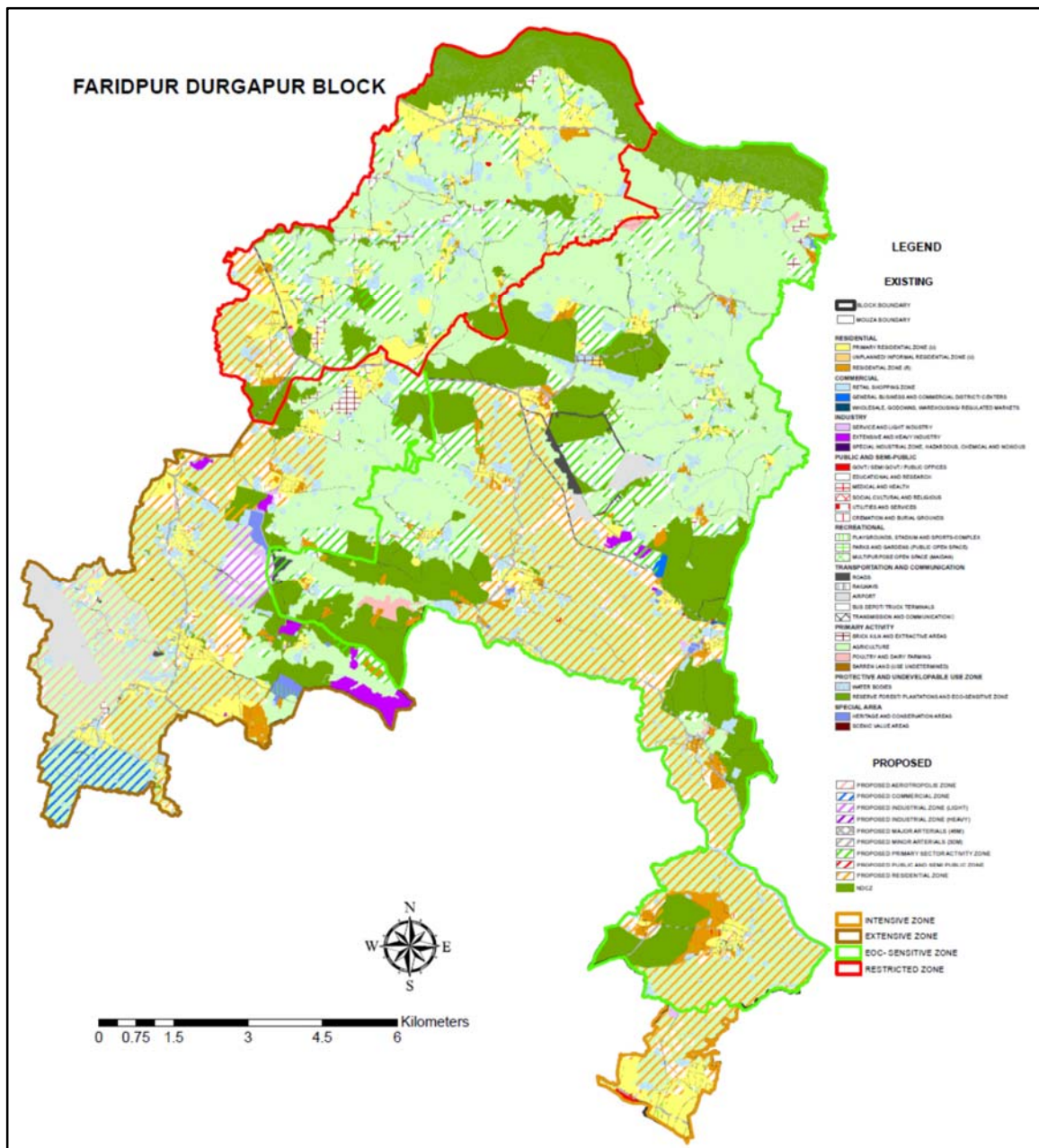
Type of Land Use Zone	Land area (in sq.km) allocated under Proposed Land Use Zone type					
	Andal Block	Pandebeswar Block	Faridpur-Durgapur Block	Kanksa Block	Durgapur Municipal Corporation	Total
Proposed Residential Zone	3.28	4.01	34.76	20.19	20.17	82.43
Proposed Aerotropolis Zone	13.48	0.00	4.00	0.00	0.00	17.49
Proposed Commercial Zone	1.42	0.00	2.08	2.23	2.34	8.08
Proposed Public And Semi-Public Zone	0.00	0.00	0.00	3.59	2.06	5.65
Proposed Industrial Zone (Light + Heavy)	1.00	0.00	1.26	7.22	4.01	13.49
Proposed Primary Sector Activity Zone	29.85	44.81	13.09	3.35	7.71	98.81
Proposed Minor Arterials (30m)	6.69	9.41	7.20	11.05	31.43	65.78
Proposed Major Arterials (45m)	2.90	5.82	14.67	56.11	27.44	106.94
NDCZ	6.45	15.19	7.83	34.06	12.87	76.41
Total (Proposed)	49.05	48.82	55.20	36.60	36.29	225.96

Source: Author

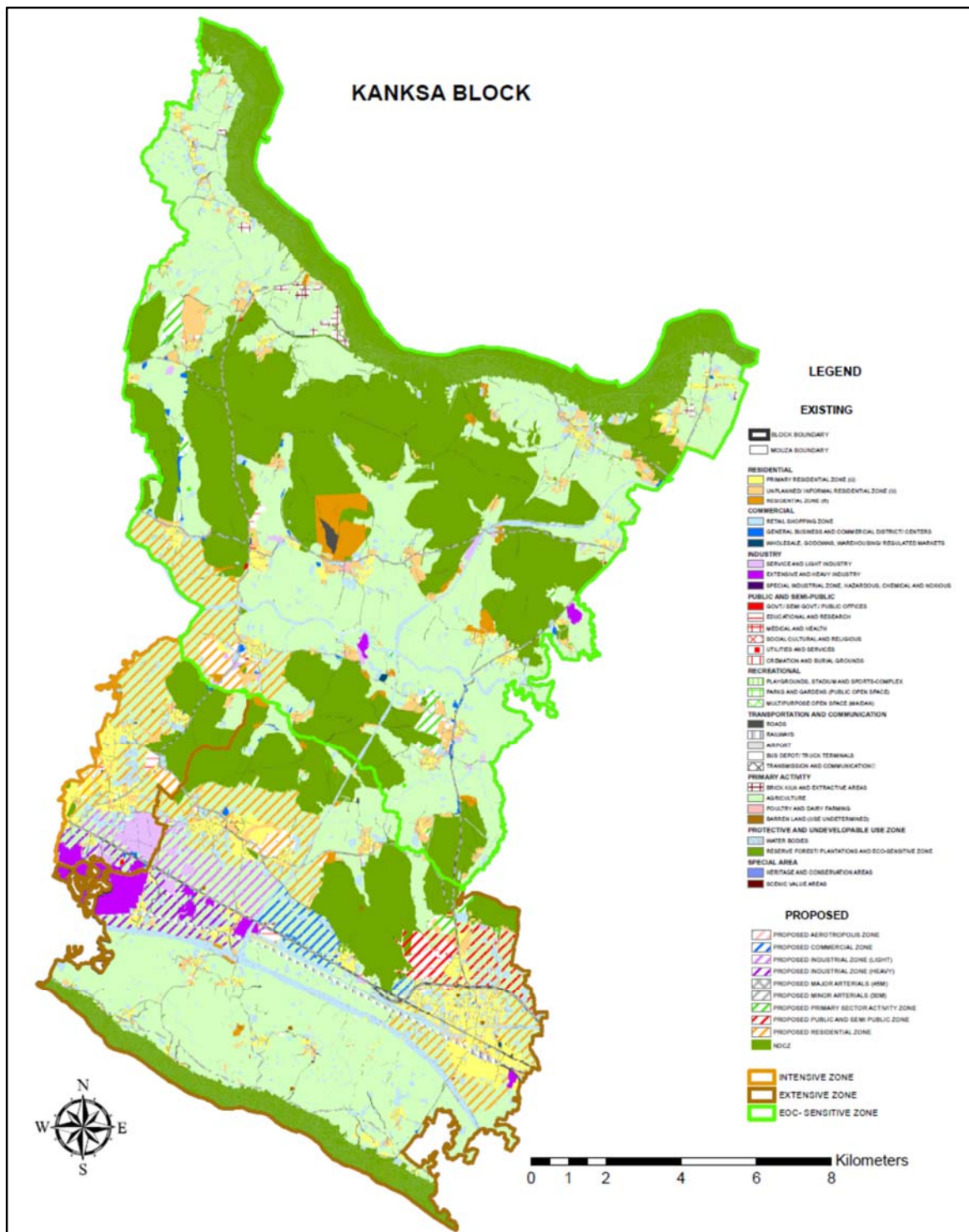


Map 8.3A: Proposed Land Use Zoning Map for Andal Block (Source: Author)

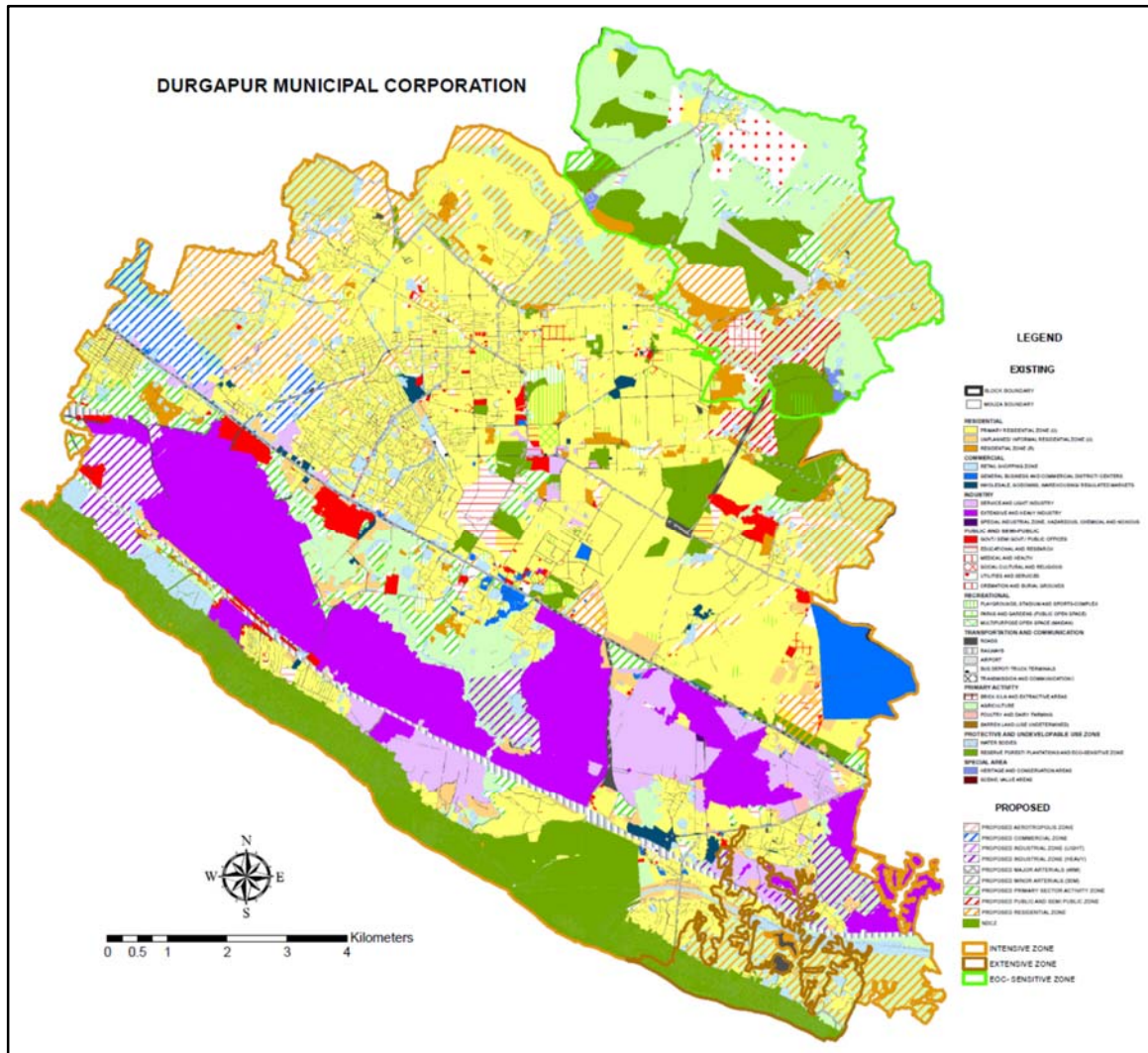




Map 8.3C: Proposed Land Use Zoning Map for Faridpur-Durgapur Block (Source: Author)



Map 8.3D: Proposed Land Use Zoning Map for Kanksa Block (Source: Author)



Map 8.3E: Proposed Land Use Zoning Map for Durgapur Municipal Corporation (Source: Author)

Table No. 8.4: Share of land under various Existing Land Use type and Proposed Land Use Zones among units of Durgapur Sub-division

Existing Land Use Type / Proposed Land Use Zone Type	Share of land (%) allocated under Existing Land Use/ Proposed Land Use Zone type					
	Andal Block	Pandebeswar Block	Faridpur-Durgapur Block	Kanksa Block	Durgapur Municipal Corporation	Total
Residential (Existing)	13.52	12.17	9.59	8.15	36.45	15.12
Commercial (Existing)	0.50	0.33	0.08	0.22	2.57	0.70
Light industry (Existing)	0.23	0.04	0.10	0.70	4.92	1.27
Heavy industry (Existing)	2.70	0.36	0.60	1.09	11.38	3.10
Public & Semi-Public (Existing)	0.42	0.31	0.39	0.37	3.41	0.97
Recreational (Existing)	0.29	0.30	0.18	0.08	0.46	0.23
Transportation & Communication (Existing)	4.34	2.48	2.77	2.00	2.36	2.54
Agriculture (Existing)	10.90	16.49	30.08	39.50	7.14	25.14
Other Primary Sector Activities# (Existing)	0.94	9.94	1.28	0.52	0.05	1.84
Water Bodies (Existing)	8.94	12.92	7.52	8.27	4.82	8.11
Forest (Existing)	0.05	1.57	13.18	26.38	4.68	13.37
Special Area (Existing)	0.00	0.00	0.52	0.00	0.11	0.13
Total (Existing)	42.83	56.91	66.29	87.27	78.34	72.53
Proposed Residential Zone	3.87	3.83	21.21	7.00	12.45	10.21
Proposed Aerotropolis Zone	15.77	0.00	2.50	0.00	0.00	2.21
Proposed Commercial Zone	1.65	0.00	1.29	0.79	1.47	1.02
Proposed Public And Semi-Public Zone	0.00	0.00	0.00	1.25	1.21	0.69
Proposed Industrial (Light + Heavy) Zone	1.19	0.00	0.79	2.53	2.61	1.72
Proposed Primary Sector Activity Zone	34.69	39.26	7.91	1.17	3.93	11.62
Proposed Minor Arterials (30m)	0.33	0.97	0.34	0.33	0.74	0.50
Proposed Major Arterials (45m)	1.66	0.87	1.34	1.75	1.45	1.48
NDCZ	7.29	13.61	4.63	9.20	7.62	8.32
Total (Proposed)	57.17	43.09	33.71	12.73	21.66	27.47
Total (Existing +Proposed)	100.00	100.00	100.00	100.00	100.00	100.00

It includes Brick kiln + Extractive activities + Animal Husbandry

(Source: Author)

8.5 Resource Mobilization Options

It is primarily understood that to accommodate a population of approximately 15.7 lakhs by 2031 within Durgapur Sub-division, Asansol Durgapur Development Authority will have to initiate infrastructure development schemes conforming to the land use zones proposed in this Land use and Development Control Plan. The budgetary requirement for such development needs to be mobilized and Development Authority must prepare itself to incur such expenditure and must decide to levy certain charges to mobilize

the resources. Development Authority would need to use the potential non-conventional means of resource mobilization, apart from reforming and strengthening the conventional means of resource mobilization.

Development Charges: As per the provisions in West Bengal Town & Country (Planning and Development) Act, 1979 (West Bengal Act XIII of 1979), Section 102, the Asansol Durgapur Development Authority can, through a notification, levy 'Development Charge' on carrying out of any development or change of use of land for which permission is required.

The rate of charges may be fixed up for the following:

1. For the institution of the use (for example - residence, commerce, industry)
2. For change of use (for example - agriculture to residence, agriculture to industry, residence to industry, residence to commerce, etc.). However, the permission for the change of use shall be given as per the discretion of the Development Authority or of the Competent Authority.
3. For carrying out any other development under the West Bengal Town & Country (Planning and Development) Act, 1979.

As per the provisions in West Bengal Town & Country (Planning and Development) Act, 1979 (West Bengal Act XIII of 1979), Section 106A, the Asansol Durgapur Development Authority may, by notification, also levy a 'Civic amenity charge' for extending civic amenities in the whole or part of the planning area. Apart from the above, the Development Authority may also charge a fee for division and sub-division of land parcels.

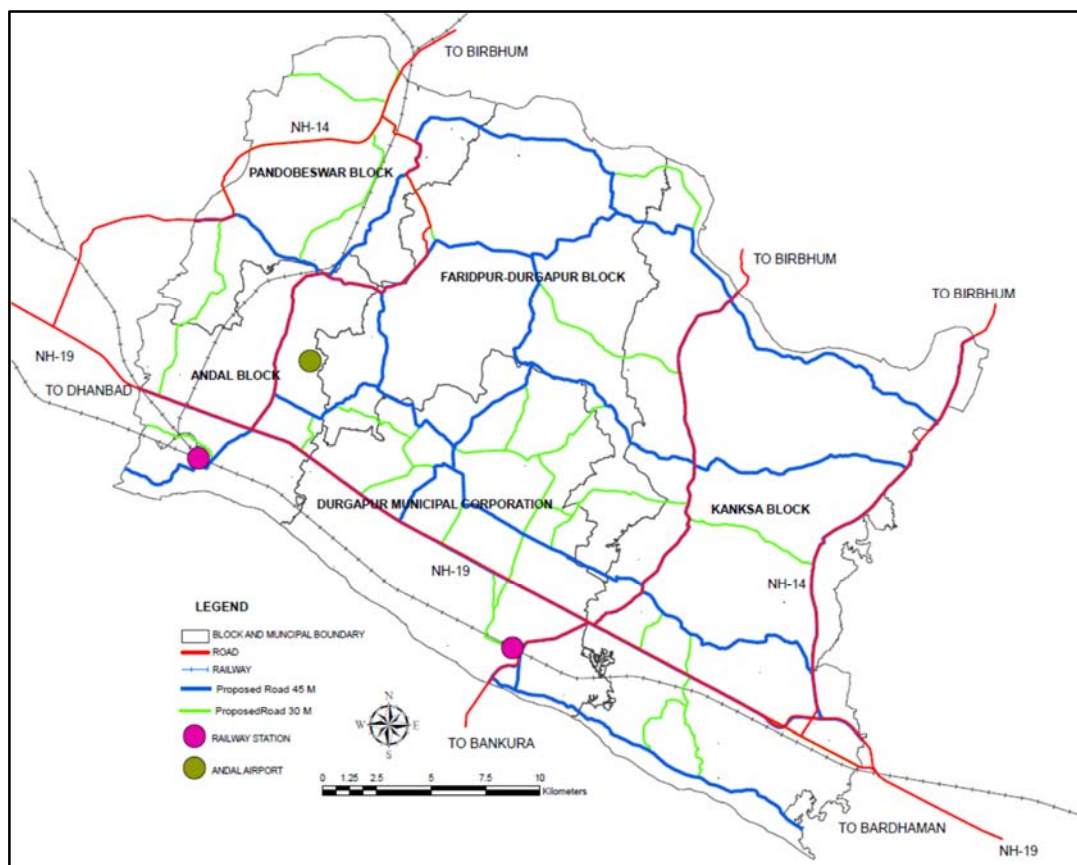
The Asansol Durgapur Development Authority with necessary approval from Government of West Bengal can use land under its ownership for generating revenue, which may be put forth on lease for private uses. Any use, other than public infrastructure construction or government related project on government land, shall be made chargeable and the lease period should be as per the guidelines of Development Authority. The decision to renew the lease shall rest on the discretion of the Development Authority.

8.6 Proposed Development Projects

Few development projects are recommended for improving the local economy, housing condition with emphasis on relocation and resettlement, mobility and overall quality of life in Durgapur Sub-division. These include key road development projects, relocation and resettlement projects, development of Institutional areas, creation of logistics park and wholesale commercial market etc. The details of the project i.e. location and other features are listed following [also Refer Map No. 8.2 and Table No. 8.5].

- A. New road alignments and upgradation of existing links for improving intra-regional mobility within Durgapur Sub-division as well as within Asansol Durgapur Planning Area [Refer Map 8.2]
 - a. East-west major arterial road parallel to existing Golden Quadrilateral link with ROW of 45 m connecting the northern parts of the Asansol Durgapur Planning Area [Refer Map 8.2]

- b. Capacity augmentation of existing North-South Links connecting the existing Golden Quadrilateral with the proposed East-West Corridor parallel to River Ajoy [Refer Map 8.2]
- c. Road connecting Durgapur Municipal Corporation with its neighbouring Blocks for better connectivity to the Urban Centre via minor arterial road with ROW of 30 m [Refer Map 8.2]



Map No. 8.2: Proposed Road Network in Durgapur Sub-division (Source: Author)

- B. Relocation and Resettlement housing projects for affected population from unstable locations in Andal and Faridpur-Durgapur Block. The chosen sites are outside Restricted Development Zone and close to Andal Aerotropolis. This will ease the rehabilitation process as Aerotropolis is expected to generate a large number of employment opportunities with various levels of skill requirement.
 - a. Residential Zone in Andal Block [in Ukhra (JL-18) mouza]
 - b. Residential Zone in Faridpur-Durgapur Block [in Ichapur (JL-50), Sarpi (JL-35) and Patsaora (JL-53) mouza]
- C. Industrial zones
 - a. In Andal Block close to the existing Heavy industrial complex [in Andal (JL-52) mouza]
 - b. Expansion of industrial zone in Durgapur Municipal Corporation [in Angadpur (JL-89), Raturia (JL-90), Gopinathpur (JL-84) and Sajaria (JL-63) mouza]

- c. Industrial park in Kanksa Block [Bamunara (JL-58), Gopalpur (JL-65), Banskopa (JL-61) and Amlajora (JL-64) mouza]
- D. Warehousing and logistic facilities
 - a. In Kanksa Block [Manikara (JL-77) and Birudiha (JL-76) mouza]
 - b. In Andal Block [Dignala (JL-43) and Bhadur (JL-42) mouza]
- E. Business Park
 - a. In Faridpur-Durgapur Block close to Aerotropolis as well as Durgapur Municipal Corporation in close proximity to NH-19 [in Arati (JL-54) mouza]
- F. Recreational facilities
 - a. Riverfront based recreational facilities along River Ajoy in Kanksa Block following the zoning and development control guidelines as per No Development and Construction Zone (NDCZ) [in Gourangapur (JL-28) mouza close to large reserve forest in Bistupur (JL-44) mouza in the northern part of the Block]

Table No. 8.5: Details of Proposed Road alignment projects in Durgapur Sub-division

Type of Proposed Road alignment	Location of the Proposed Road Alignment (w.r.t. Block/M.C. and Mouza name)
45 m ROW	Andal Block 1. Tiarmana – Madanpur – Dignala – Bhadur 2. Bhadur – Dakshinkhanda – Tamala Pandabeswar Block 1. Haripur – Banbahal – Shankarpur 2. Chak Bankhola – Konardihi – Joalbhanga – Mahal – Konda – Deshlopa Faridpur-Durgapur Block 1. Mandarbani – gogala – Maheshpur – Shrikrishnapur – Jot Balaram 2. Nabaghanpur – Laudoha – Madhaiganja – Shrikrishnapur 3. Jamgara – Kalikapur – Pratappur – Nachan 4. Sarpi – Kendha – Ichhapur – Banshol Kanksa Block 1. Akandara – Malandighi – Rakshitpur – Jamdoba – Ragunathpur 2. Bamunara – Gopalpur – Bandra – Rajkusum – Garadaha - Dhobaru 3. Binodpur – Dubrajpur – Ranipur – Kajaldihi – Gourangapur - Radhamohanpur Durgapur Municipal Corporation 1. Bhiringi – Faridpur – Phuljhuri 2. Benachiti – Kamalpur – Parulia
30m ROW	Andal Block 1. Bauisol – Harishpur - Kajora Pandabeswar Block 1. Paraskhol – Bahula – Chhora 2. Shakarpur – Hansdiha – Sonpur 3. Kendrakhottadi - Ramnagar Faridpur-Durgapur Block 1. Madhaiganja – Kendul - Gopdanga Kanksa Block 1. Kuldiha – Keshabpur - Domra Durgapur Municipal Corporation 1. Kujurua – Amrai – Benachiti – Bhiringi – Faridpur – Radhamadhabpur – Parulia – Chak Gopalpur - Mahiskapuri

(Source: Author)

9.0 ZONING REGULATION

The aim of this section is to enable the implementation of the Land Use Plan by providing specific regulations regarding the allowable uses of land under the purview of this Plan. These regulations are forwarded to preserve the characteristics of the various land use zones proposed, while resolving compatibility issues of the various activities. It is expected that the zoning regulations will promote and protect public health, safety, convenience, general welfare and the natural environment of the planning area.

9.1 Activities 'Permitted', 'Permissible', 'Prohibited'

The zoning regulations elaborates the activities that are generally permitted within each of the land use categories (Table No. 9.1 to 9.12). No person shall construct, or move a building, and no person shall establish a new use of land or expand or intensify an existing use unless it conforms to the permitted uses provided in the zone district or conforms to a permit and regulations authorizing a discretionary use in the zone district in which the land is located. All construction, alteration, reconstruction or enlargement of buildings and all uses of buildings and land shall comply with all provisions of this chapter except as otherwise provided for nonconforming structures and uses. Such use/activity is termed as Permissible on Application to Competent Authority (with conditions). The uses/activities which are otherwise not allowed in a particular use zone are termed as Activities/Uses Prohibited in certain use zones.

For the purpose of levying Development Charges for the institution of the use, as per the provisions in West Bengal Town & Country (Planning and Development) Act, 1979 (West Bengal Act XIII of 1979), Section 102, the activities listed under the Broad use (specified in first column of Table 9.1 to 9.12) - Residential shall be charged as 'Residential', whereas the activities listed under the Broad use - Commercial, Public Semi-Public, Transportation & Communication and Recreational, shall be charged as 'Commercial', and the activities listed under the Broad use - Industrial shall be charged as 'Industrial'.

However, for levy, assessment and recovery of Development charges (as outlined in Chapter IX, Section 102, 103, 104, 105 and 106 of the Act), all activities listed under 'Residential use' in the Land Use and Development Control Plan, under taken in any land, will be accounted as 'residence' for fixing the rates of development charges for the institution of use or for change of use.

All activities listed under 'Commercial use', 'Public and Semi-public use', 'Recreational use' and 'Transportation use' in the Land Use and Development Control Plan, under taken in any land, will be accounted as 'commerce' for fixing the rates of development charges for the institution of use or for change of use.

All activities listed under 'Industrial use' the Land Use and Development Control Plan, under taken in any land, will be accounted as 'industry' for fixing the rates of development charges for the institution of use or for change of use.

All activities related to farming, forestry and animal husbandry listed under 'Primary sector activities' (i.e. Agriculture; High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture,

horticulture, floriculture, community garden farming; Orchards, nurseries, grazing pastures, wet lands, barren land and water bodies; Community forestry, plantation, agro-forestry, riparian buffer; Dairy and cattle farms, piggeries and poultry farms and any kind of animal husbandry and livestock rearing) in the Land Use and Development Control Plan, undertaken in any land, will be accounted as 'agriculture' for fixing the rates of development charges for the institution of use or for change of use.

All other activities listed under 'Primary sector activities' (i.e. Storage, processing and sale of farm produce; Brick kilns, quarrying and removal of clay, gravel, sand or stone up to 3 m depth; Mining activities; Land reclamation activities in derelict mining sites and unstable locations) in the Land Use and Development Control Plan, undertaken in any land, will be accounted as 'commercial' for fixing the rates of development charges for the institution of use or for change of use.

No development charge shall be levied on development, or change of use, of any land vested in or under the control or possession of the Central Government, the State Government or any local authority (Section 102 of the Act).

9.2 Proposed Land Use Zones

There are seven broad categories of land use zones proposed in the Land Use Zoning Plan – broadly following the existing LU&DCP of Asansol Sub-division. For each type of proposed land use zones three different sets of uses/activities are specified under following heads:

- a. For Extensive Development Zone and Intensive Development Zone
- b. For Restricted Development Zone
- c. For Eco-Sensitive Development Zone

Areas under Eco-Sensitive Development zone, as well as Restricted Development zone has a different list of uses/activities as compared to areas under Extensive and Intensive Development zones within Durgapur Sub-division.

[A detailed list of mouzas falling under Extensive, Intensive, Restricted and Eco-Sensitive Development Zone for each administrative unit within the Durgapur Sub-division is provided in Section 4 of this Report.]

Before proceeding into the detailed list of activities for each land use zones, a brief schematic outline of the zoning regulation adopted for each type of zone is presented.

A. Proposed Residential zone

The primary use intended in this zone is residential in nature. However, all other non-residential activities which are required to support a residential zone are also allowed within this zone. They include commercial activities, institutional activities, manufacturing activities, recreational activities, transport activities along with some farming and plantations. However, there is a scale upto which activities are allowed. A limit on plot area or floor area or operational unit to control the intensity and extent of such non-residential activities has been placed.

B. Proposed Commercial Zone

The primary use in this zone is of commercial nature - specifically higher level commercial functions i.e. central business district functions, large scale whole sale and retail trading complexes, warehousing and storage functions etc. This proposed commercial zone is not intended to take care of the neighbourhood level shopping needs but of higher order trade and commerce functions provided at city or regional level. Along with commercial activities, some residential of specific nature, institutional, recreational, manufacturing and transport related activities has been also allowed in this zone.

C. Proposed Industrial Zone [Light and Heavy]

The primary use in this zone is of industrial activity of both large and medium scale of enterprises. Associated residential, commercial, institutional, recreational and other transport infrastructure related activities has also been allowed.

D. Proposed Aerotropolis Zone

The primary use in this zone is of airport related passenger and freight logistics, airport related institutional activities, warehouse and business functions, trade and commerce, processing and packaging activities along with residential activities. The main focus is to create enabling environment for economic development to reap the benefits of proximity to an airport.

E. Proposed Public and Semi-Public Zone

The primary use in this zone is of public and semi-public nature i.e. govt. and semi-govt. offices, education and research facilities, health and medical facilities, public utilities of various kinds etc. Apart from that, some associated residential, commercial, recreational and transport related activities has also been allowed in this zone.

F. Proposed Primary Sector Activity Zone

The primary nature of this zone can be of various kinds - but all allowing some form of primary sector activities. These activities primarily include mining and extractive activities along with conventional farming activities, horticulture, floriculture, pisciculture, aqua-culture, forestry/plantation, agro-forestry etc. Along with these, some type of residential, commercial, institutional, recreational and transport related activities are allowed with specific conditions.

E. No Development and Construction Zone (NDCZ)

The primary purpose of this zone is to regulate developemt along the River Damodar and Ajoy as per River Centric Urban Planning Guidelines, recommended by Town and Country Planning Organization, Ministry of Housing and Urban Affairs, Government of India, May 2021 (Refer Annexure –VI) are applicable. The

specific regulations ask for designating No Development and Construction Zone (NDCZ) in those areas with separate zoning and development control restrictions. Both River Damodar and Ajoy have embankments and an area of 500m from the embankment line has been delineated as NDCZ. The list of Mouzas falling under NDCZ is provided in Section 4 of this Report.

9.3 Procedure to find relevant Zoning regulations

To use the zoning regulations in an efficient way, following steps are recommended.

Step 1: To identify the mouza in which the plot is located and find out the Proposed Land Use Zone specified for it in the mouza level Proposed Land Use Map or Register. If nothing is proposed, it is allowed to carry out the Existing Land Use recorded in the same Map or Register.

Step 2: To find out the Type of Development Zone specified for that mouza from Section 4 [i.e. whether it belongs to Intensive/Extensive Development Zone OR Restricted Development Zone OR Eco-Sensitive Zone], which lists all the mouzas according to Block/Municipal Corporation and Type of Development Zone applicable. Separate Zoning regulations are recommended depending upon the Type of Development Zone.

Step 3: Find out the list of uses/activities permitted or permissible or prohibited for the Proposed Land Use Zone and for the Type of Development Zones in this Section (Table 9.1 to 9.12).

The zoning regulations are not only applicable for proposed land use zones, but also for existing land uses. [For existing land uses, permission for improvement in that land parcel will be guided by the zoning regulations of adjoining proposed land use zones to which the nature and scale of existing or proposed change is compatible.]

Table 9.1: Development Control for 'Proposed Residential Zone + Existing Residential Zone'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use (more than 50 percent of the total area)	<p>Uses permitted: Plotted housing (detached, semi-detached), group housing; Service apartments, boarding and lodging houses, hotels and guest houses; Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups; Housing for resettlement and rehabilitation, and for economically weaker section; Residential use as listed above should cover less than 5000 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Plotted housing (detached, semi-detached); Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups; Housing for resettlement and rehabilitation, and for economically weaker section; Residential use as listed in above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No residential use should be permitted within 300 m of any unstable location, as listed in</p>	<p>Uses permitted: Plotted housing (detached, semi-detached); Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups; Housing for resettlement and rehabilitation and for economically weaker section; Residential use as listed in above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		Present Land Use Map and Register or identified thereafter.	
Commercial use	<p>Uses permitted: Retail commercial shops, departmental stores (floor area of each shop not exceeding 100 sqm); Eateries and restaurants (without bar facilities); Banks, financial institutions and private offices;</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Retail commercial shops, departmental stores (floor area of each shop not exceeding 100 sqm); Eateries and restaurants (without bar facilities); Banks, financial institutions and private offices;</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No commercial use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Retail commercial shops, departmental stores (floor area of each shop not exceeding 100 sqm); Eateries and restaurants (without bar facilities); Banks, financial institutions and private offices;</p> <p>Commercial uses as listed above should cover less than 250 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Public and Semi-public use	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres; Health facilities as listed above should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases</p> <p>Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly; Places of public assembly as listed above should have design occupancy less than 300 people.</p> <p>Places of public worship, religious buildings, welfare institutions, clubs, cultural centres/ institutions Social/cultural facilities as listed above covering floor area less than 500 sqm at one location</p> <p>Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.);</p>	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres; Health facilities as listed above should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases</p> <p>Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly; Places of public assembly as listed above should have design occupancy less than 300 people.</p> <p>Places of public worship, religious buildings, welfare institutions, clubs, cultural centres/ institutions Social/cultural facilities as listed above covering floor area less than 500 sqm at one location</p> <p>Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.);</p>	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres; Health facilities as listed above should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases</p> <p>Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly; Places of public assembly as listed above should have design occupancy less than 300 people.</p> <p>Places of public worship, religious buildings, welfare institutions, clubs, cultural centres/ institutions Social/cultural facilities as listed above covering floor area less than 500 sqm at one location</p> <p>Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		<p>Uses Prohibited: No institutional use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter. All activities not listed in 'Permitted' column.</p>	<p>municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Recreational use	<p>Uses permitted: Tot-lots, parks, playgrounds, gardens, multi-purpose open spaces, gymnasium; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Tot-lots, parks, playgrounds, gardens, multi-purpose open spaces, gymnasium; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Tot-lots, parks, playgrounds, gardens, multi-purpose open spaces; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Industrial use	<p>Uses permitted: Only micro enterprises and small enterprises as specified in The Micro, Small and Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Industries listed under "EXEMPTED" & "GREEN" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Only micro enterprises and small enterprises as specified in The Micro, Small and Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Industries listed under "EXEMPTED" & "GREEN" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No industrial use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Only micro enterprises and small enterprises as specified in The Micro, Small and Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Industries listed under "EXEMPTED" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Transportation use	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No transport infrastructure development (except roads railway lines and water navigation facilities) should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture, horticulture, floriculture, community garden farming; Agricultural activities (as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/plantation, riparian buffers;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture, horticulture, floriculture, community garden farming; Agricultural activities (as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/plantation, riparian buffers;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture, horticulture, floriculture, community garden farming; Agricultural activities (as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/plantation, riparian buffers; Storage, processing and sale of farm produce;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Table 9.2: Development Control for 'Proposed Commercial Zone + Existing Commercial Zone'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	<p>Uses permitted: Service apartments, boarding and lodging houses, hotels and guest houses; Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with trade and commercial activities; Housing for resettlement and rehabilitation and for economically weaker section; Residential use as listed above should cover less than 2500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Service apartments, boarding and lodging houses, and guest houses; Hostels, dormitories and any kind of accommodation for under privileged social groups; associated with trade and commercial activities; Housing for resettlement and rehabilitation, and for economically weaker section; Residential use as listed above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No residential use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Housing for resettlement and rehabilitation and for economically weaker section; Residential use as listed above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Commercial use (more than 33 percent of the total area)	<p>Uses permitted: Retail commercial shops/departmental stores, retail shopping complex/malls; Whole sale commercial shops, whole sale commercial/trading complex; Eateries, restaurants, banquet halls Banks, financial institutions, private/corporate offices; Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials); Commercial use as listed above should cover less than 5000 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Retail commercial shops/departmental stores, retail shopping complex/malls; Whole sale commercial shops, whole sale commercial/trading complex; Eateries, restaurants, banquet halls Banks, financial institutions, private/corporate offices; Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials); Commercial use as listed above should cover less than 2500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No commercial use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Retail commercial shops/departmental stores, retail shopping complex/malls; Whole sale commercial shops, whole sale commercial/trading complex; Eateries, restaurants, banquet halls Banks, financial institutions, private/corporate offices; Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials); Commercial use as listed above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Public and Semi-public use	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 100 beds), diagnostic centres; Health facilities as listed above should not exclusively treat contagious diseases. Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly Places of public assembly as listed above should have design occupancy less than 500 people. Welfare institutions, clubs, cultural centres/ institutions; Electrical distribution facilities/ services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 100 beds), diagnostic centres; Health facilities as listed above should not exclusively treat contagious diseases. Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly Places of public assembly as listed above should have design occupancy less than 500 people. Welfare institutions, clubs, cultural centres/ institutions; Electrical distribution facilities/ services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No institutional use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 100 beds), diagnostic centres; Health facilities as listed above should not exclusively treat contagious diseases. Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly Places of public assembly as listed above should have design occupancy less than 500 people. Welfare institutions, clubs, cultural centres/ institutions; Electrical distribution facilities/ services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages;</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
			Uses Prohibited: All activities not listed in 'Permitted' column.
Recreational use	Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon); Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon); Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon); Uses Prohibited: All activities not listed in 'Permitted' column.
Industrial use	<p>Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED" & "GREEN" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED" & "GREEN" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No industrial use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Transportation use	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle),</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Highway amenities i.e. weigh bridges, check posts and toll plaza Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>transmission and communication lines Highway amenities i.e. weigh bridges, check posts and toll plaza Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming; Agricultural activities as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/plantation, riparian buffers;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming; Agricultural activities as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/plantation, riparian buffers;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming; Agricultural activities as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/plantation, riparian buffers;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Table 9.3A: Development Control for 'Proposed Industrial Zone [Light] + Existing Service and Light Industry Zone'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	<p>Uses permitted: Group housing appurtenant to the industrial activities Boarding and lodging houses, guest houses Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities Housing for resettlement and rehabilitation and for economically weaker section Residential use as listed above should cover less than 2500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Boarding and lodging houses, guest houses; Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities; Housing for resettlement and rehabilitation and for economically weaker section; Residential use as listed above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No residential use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Boarding and lodging houses, guest houses; Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities; Housing for resettlement and rehabilitation and for economically weaker section; Residential use as listed above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Commercial use	<p>Uses permitted:</p>	<p>Uses permitted: Storage/ warehousing (involving perishable, inflammable, explosive</p>	<p>Uses permitted:</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Storage/ warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials); Retail commercial shops (floor area of each shop not exceeding 100 sqm); Eateries and restaurants; Banks and financial institutions;</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>or other kinds of hazardous materials); Retail commercial shops (floor area of each shop not exceeding 100 sqm); Eateries and restaurants; Banks and financial institutions;</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No commercial use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Retail commercial shops (floor area of each shop not exceeding 100 sqm); Eateries and restaurants; Banks and financial institutions;</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Public and Semi-public use	<p>Uses permitted: Government/semi-government offices and institutions; R&D institutions, experimental and testing laboratories; Health clinics, dispensaries; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Government/semi-government offices and institutions; R&D institutions, experimental and testing laboratories; Health clinics, dispensaries; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No institutional use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Government/semi-government offices and institutions; Health clinics, dispensaries; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Recreational use	<p>Uses permitted: Parks, gardens; (including incidental buildings thereon); Multi-purpose open spaces</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Parks, gardens; (including incidental buildings thereon); Multi-purpose open spaces</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Parks, gardens; (including incidental buildings thereon); Multi-purpose open spaces</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Industrial use (more than 50 percent of the total area)	<p>Uses permitted: Industries listed under "EXEMPTED", "GREEN", and "ORANGE" category of WBPCB</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Industries listed under "EXEMPTED", "GREEN" and "ORANGE" category of WBPCB</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No industrial use should be permitted within 500 m of any</p>	<p>Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted.</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		unstable location, as listed in Present Land Use Map and Register or identified thereafter.	<p>Uses permitted: Industries listed under "EXEMPTED" and "GREEN" category of WBPCB</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Transportation use	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use	<p>Uses permitted: Urban forestry/plantation, riparian buffers; Agro-forestry;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Urban forestry/plantation, riparian buffers; Agro-forestry;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Urban forestry/plantation, riparian buffers; Agro-forestry; Storage, processing and sale of farm produce;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

(Note: Please Refer to Annexure-IV for Listing according to Category of Industries)

Table 9.3B: Development Control for 'Proposed Industrial Zone [Heavy] + Existing Extensive and Heavy Industry Zone + Special Industrial Zone, Hazardous, Chemicals and Noxious'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	<p>Uses permitted: Group housing appurtenant to the industrial activities Boarding and lodging houses, guest houses Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities Housing for resettlement and rehabilitation and for economically weaker section</p>	<p>Uses permitted: Boarding and lodging houses, guest houses; Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities; Housing for resettlement and rehabilitation and for economically weaker section;</p>	<p>Uses permitted: Boarding and lodging houses, guest houses; Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities; Housing for resettlement and rehabilitation and for economically weaker section;</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	Residential use as listed above should cover less than 2500 sqm of plot area. Uses Prohibited: All activities not listed in 'Permitted' column.	Residential use as listed above should cover less than 500 sqm of plot area. Uses Prohibited: All activities not listed in 'Permitted' column. No residential use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Residential use as listed above should cover less than 500 sqm of plot area. Uses Prohibited: All activities not listed in 'Permitted' column.
Commercial use	Uses permitted: Storage/ warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials); Retail commercial shops (floor area of each shop not exceeding 100 sqm); Eateries and restaurants; Banks and financial institutions; Commercial uses as listed above should cover less than 500 sqm of floor area at one location. Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Storage/ warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials); Retail commercial shops (floor area of each shop not exceeding 100 sqm); Eateries and restaurants; Banks and financial institutions; Commercial uses as listed above should cover less than 500 sqm of floor area at one location. Uses Prohibited: All activities not listed in 'Permitted' column. No commercial use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Retail commercial shops (floor area of each shop not exceeding 100 sqm); Eateries and restaurants; Banks and financial institutions; Commercial uses as listed above should cover less than 500 sqm of floor area at one location. Uses Prohibited: All activities not listed in 'Permitted' column.
Public and Semi-public use	Uses permitted: Government/semi-government offices and institutions; R&D institutions, experimental and testing laboratories; Health clinics, dispensaries; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages; Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Government/semi-government offices and institutions; R&D institutions, experimental and testing laboratories; Health clinics, dispensaries; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages; Uses Prohibited: All activities not listed in 'Permitted' column. No institutional use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Government/semi-government offices and institutions; Health clinics, dispensaries; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages; Uses Prohibited: All activities not listed in 'Permitted' column.
Recreational use	Uses permitted: Parks, gardens; (including incidental buildings thereon); Multi-purpose open spaces Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Parks, gardens; (including incidental buildings thereon); Multi-purpose open spaces Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Parks, gardens; (including incidental buildings thereon); Multi-purpose open spaces Uses Prohibited: All activities not listed in 'Permitted' column.

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	
Industrial use (more than 50 percent of the total area)	<p>Uses permitted: Industries listed under "ORDINARY RED" and "SPECIAL RED" category of WBPCB</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Industries listed under "ORDINARY RED" and "SPECIAL RED" category of WBPCB</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No industrial use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: None</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Transportation use	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use	<p>Uses permitted: Urban forestry/plantation, riparian buffers; Agro-forestry;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Urban forestry/plantation, riparian buffers; Agro-forestry;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Urban forestry/plantation, riparian buffers; Agro-forestry; Storage, processing and sale of farm produce;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

(Note: Please Refer to Annexure-IV for Listing according to Category of Industries)

Table 9.4: Development Control for 'Proposed Aerotropolis Zone'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	Uses permitted:	Uses permitted:	Not Applicable

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Service apartments, boarding and lodging houses, hotels and guest houses; Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with trade and commercial activities; Housing for resettlement and rehabilitation and for economically weaker section</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Service apartments, boarding and lodging houses, hotels and guest houses; Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with trade and commercial activities; Housing for resettlement and rehabilitation and for economically weaker section Residential use as listed above should cover less than 2500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No residential use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	
Commercial use	<p>Uses permitted: Retail commercial shops/departmental stores, retail shopping complex/malls; Whole sale commercial shops, whole sale commercial/trading complex; Eateries, restaurants, banquet halls Banks, financial institutions, private/corporate offices; Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Retail commercial shops/departmental stores, retail shopping complex/malls; Whole sale commercial shops, whole sale commercial/trading complex; Eateries, restaurants, banquet halls Banks, financial institutions, private/corporate offices; Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials);</p> <p>Commercial use as listed above should cover less than 2500 sqm of plot area</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No commercial use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	Not Applicable
Public and Semi-public use	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 300 beds), diagnostic centres; Health facilities as listed above should not exclusively treat contagious diseases.</p> <p>Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly; Welfare institutions, clubs, cultural centres/ institutions; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.); Other public distribution services (e.g. postal services etc.);</p>	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 300 beds), diagnostic centres; Health facilities as listed above should not exclusively treat contagious diseases.</p> <p>Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly; Places of public assembly as listed above should have design occupancy less than 300 people.</p> <p>Welfare institutions, clubs, cultural centres/ institutions; Electrical distribution facilities/services, telecommunication; facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.);</p>	Not Applicable

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Fuel refuelling stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Other public distribution services (e.g. postal services etc.); Fuel refuelling stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No institutional use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	
Recreational use	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	Not Applicable
Industrial use	<p>Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED" & "GREEN" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED" & "GREEN" category of WBPCB</p> <p>Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No industrial use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	Not Applicable
Transportation use	<p>Uses permitted: Roads, railway lines and station facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-</p>	<p>Uses permitted: Roads, railway lines and station facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines;</p>	Not Applicable

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc.;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types), logistic facilities, inland container depot etc.;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	
Farm use	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities as listed above should be covering plot area less than 0.1 ha.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities as listed above should be covering plot area less than 0.1 ha.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	Not Applicable

Table 9.5: Development Control for 'Proposed Public & Semi-Public Zone + Existing Public & Semi-Public Zone (Govt./Semi Govt./Public Offices + Education + Medical & Health + Socio-cultural and Religious)'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	<p>Uses permitted: Group housing appurtenant to the institutional activities; Service apartments, boarding and lodging houses, hotels (up to 3 star category) and guest houses; Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups; Housing for resettlement and rehabilitation and for economically weaker section;</p> <p>Residential use as listed above should cover less than 2500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Boarding and lodging houses, and guest houses; Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups; Housing for resettlement and rehabilitation and for economically weaker section;</p> <p>Residential use as listed above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No residential use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Housing for resettlement and rehabilitation and for economically weaker section;</p> <p>Residential use as listed above should cover less than 500 sqm of plot area.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Commercial use	<p>Uses permitted: Retail commercial shops/ departmental stores (floor area of each shop not exceeding 100 sqm);</p>	<p>Uses permitted: Retail commercial shops/ departmental stores (floor area of each shop not exceeding 100 sqm);</p>	<p>Uses permitted: Retail commercial shops/ departmental stores (floor area of each shop not exceeding 100 sqm);</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Eateries and restaurants (without bar facilities); Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Banks, financial institutions and private offices; Commercial uses as listed above should cover less than 5000 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Eateries and restaurants (without bar facilities); Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Banks, financial institutions and private offices; Commercial uses as listed above should cover less than 2500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No commercial use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Eateries and restaurants (without bar facilities); Banks, financial institutions and private offices; Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Public and Semi-public use (more than 25 percent of the total area)	<p>Uses permitted: Government/semi-government offices and institutions; Head quarters/reserve lines/training academies for police, para military, defence personnel, detention centres and correction homes; Nursery crèches, pre-primary schools, primary schools, secondary schools, higher secondary schools, residential schools, tutorial institutions, colleges, universities, vocational training institutions, technical education institutions, public libraries and reading rooms; R&D institutions, experimental and testing laboratories, meteorological observatories;</p> <p>Health clinics, dispensaries, diagnostic centres, nursing homes, health centres, hospitals, rehabilitation centres, sanatoria and other medical and public health institution; Health facilities as listed above should not exclusively treat contagious diseases. Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly Places of public assembly as listed above should have design occupancy less than 1000 people.</p> <p>Places of public worship, religious buildings welfare institutions, clubs, cultural centres/institutions, exhibition and art galleries, museums, science centres, convention centres, archives, commemorative complexes/grounds, public squares/plazas Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection</p>	<p>Uses permitted: Government/semi-government offices and institutions; Head quarters/reserve lines/training academies for police, para military, defence personnel, detention centres and correction homes; Nursery crèches, pre-primary schools, primary schools, secondary schools, higher secondary schools, residential schools, tutorial institutions, colleges, universities, vocational training institutions, technical education institutions, public libraries and reading rooms;</p> <p>Health clinics, dispensaries, diagnostic centres, nursing homes, health centres; Health facilities as listed above should not exclusively treat contagious diseases.</p> <p>Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly</p> <p>Places of public assembly as listed above should have design occupancy less than 500 people.</p> <p>Places of public worship, religious buildings welfare institutions, clubs, cultural centres/institutions, exhibition and art galleries, museums, science centres, convention centres, archives, commemorative complexes/grounds, public squares/plazas Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.) Other public distribution services (e.g. postal services etc.)</p>	<p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, pre-primary schools, primary schools, secondary schools, higher secondary schools, residential schools, tutorial institutions, colleges, universities, vocational training institutions, technical education institutions, public libraries and reading rooms;</p> <p>Health clinics, dispensaries, diagnostic centres, nursing homes, health centres; Health facilities as listed above should not exclusively treat contagious diseases.</p> <p>Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly</p> <p>Places of public assembly as listed above should have design occupancy less than 500 people.</p> <p>Places of public worship, religious buildings welfare institutions, clubs, cultural centres/institutions, exhibition and art galleries, museums, science centres, convention centres, archives, commemorative complexes/grounds, public squares/plazas Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	yards and other municipal public facilities (i.e. public toilets etc.) Other public distribution services (e.g. postal services etc.) Fuel refuelling stations, automobile repairing workshops/garages Uses Prohibited: All activities not listed in 'Permitted' column.	Fuel refuelling stations, automobile repairing workshops/garages Uses Prohibited: All activities not listed in 'Permitted' column. No institutional use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	municipal public facilities (i.e. public toilets etc.) Other public distribution services (e.g. postal services etc.) Fuel refuelling stations, automobile repairing workshops/garages Uses Prohibited: All activities not listed in 'Permitted' column.
Recreational use	Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools, golf course, indoor and outdoor stadium, sports complexes/training facilities, organised recreational complexes/amusement parks, eco parks; (including incidental buildings thereon) Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools, golf course, indoor and outdoor stadium, sports complexes/training facilities, organised recreational complexes/amusement parks, eco parks; (including incidental buildings thereon) Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location (depending upon the plot size of unstable locations and extent of instability), as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools, golf course, sports complexes/training facilities, organised recreational complexes/amusement parks, eco parks; (including incidental buildings thereon) Uses Prohibited: All activities not listed in 'Permitted' column.
Industrial use	Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. Uses permitted: Industries listed under "EXEMPTED" & "GREEN" category of WBPCB Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable Uses Prohibited: All activities not listed in 'Permitted' column.	Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. Uses permitted: Industries listed under "EXEMPTED" & "GREEN" category of WBPCB Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable Uses Prohibited: All activities not listed in 'Permitted' column. No industrial use should be permitted within 500 m of any	Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. Uses permitted: Industries listed under "EXEMPTED" category of WBPCB Note: Permission should be given subject to: a. Maximum power consumption for industrial operations up to 10 HP (power required for air conditioning, lifts and computers are excluded from power consumption limit specified above) b. Noise generation limited to ambient noise level prescribed by the Ministry of Environment and Forest, Government of India. c. Adherence to the fire safety norms laid down in Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses Prohibited: All activities not listed in 'Permitted' column.
Transportation use	Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus); Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus); Uses Prohibited: All activities not listed in 'Permitted' column. No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus); Uses Prohibited: All activities not listed in 'Permitted' column.
Farm use	Uses permitted: High density farming/ vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming Agricultural activities as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/ plantation, riparian buffers; Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: High density farming/ vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities as listed above should be covering plot area less than 1.0 ha. Agro-forestry, urban forestry/ plantation, riparian buffers; Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: High density farming/ vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming; Agro-forestry, forestry/ plantation, riparian buffers; Storage, processing and sale of farm produce; Uses Prohibited: All activities not listed in 'Permitted' column.

Table 9.6: Development Control for 'Utilities and Services + Cremation and Burial grounds'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Public and Semi-public use (more than 50 percent of the total area)	Uses permitted: Burial grounds, crematorium; Fire stations, Electrical distribution facilities, electric grid station, telecommunication facilities, exchanges, water/sewage pumping stations, water reservoirs, solid waste collection yards and other public facilities; Water treatment plants, sewage treatment plants, solid waste treatment units, solar power installations, rain water harvesting installing, alternative energy installations;	Uses permitted: Burial grounds, crematorium; Fire stations, Electrical distribution facilities, electric grid station, telecommunication facilities, exchanges, water/sewage pumping stations, water reservoirs, solid waste collection yards and other public facilities; Water treatment plants, sewage treatment plants, solid waste treatment units, solar power installations, rain water harvesting installing, alternative energy installations;	Uses permitted: Burial grounds, crematorium; Fire stations, Electrical distribution facilities, electric grid station, telecommunication facilities, exchanges, water/sewage pumping stations, water reservoirs, solid waste collection yards and other public facilities; Water treatment plants, sewage treatment plants, solid waste treatment units, solar power installations, rain water harvesting installing, alternative energy installations;

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Fuel stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Fuel stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>harvesting installing, alternative energy installations; Fuel stations, automobile repairing workshops/garages;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Transportation use	<p>Uses permitted: Roads, railway lines, transmission and communication lines; Terminal facilities for para-transit modes, bus stand/shelter facilities;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, railway lines, transmission and communication lines; Terminal facilities for para-transit modes, bus stand/shelter facilities;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Roads, railway lines, transmission and communication lines; Terminal facilities for para-transit modes, bus stand/shelter facilities;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use	<p>Uses permitted: Farming, pisciculture, aquaculture, horticulture, floriculture, agro-forestry; Community forestry/plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Farming, pisciculture, aquaculture, horticulture, floriculture, agro-forestry; Community forestry/plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Farming, pisciculture, aquaculture, horticulture, floriculture, agro-forestry; Community forestry/plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Table 9.7: Development Control for 'Playground/Stadium/Sports complex'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	<p>Uses permitted: Group housing appurtenant to the institutional activities; Hostels, dormitories, service apartments, boarding and lodging houses, hotels and guest houses;</p> <p>Residential use as listed above should cover less than 2500 sqm of plot area and should be ancillary to the recreational activities.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Group housing appurtenant to the institutional activities; Hostels, dormitories, service apartments, boarding and lodging houses, hotels and guest houses;</p> <p>Residential use as listed above should cover less than 2500 sqm of plot area and should be ancillary to the recreational activities.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Group housing appurtenant to the institutional activities; Hostels, dormitories, service apartments, boarding and lodging houses, hotels and guest houses;</p> <p>Residential use as listed above should cover less than 2500 sqm of plot area and should be ancillary to the recreational activities.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Commercial use	<p>Uses permitted: Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm);</p>	<p>Uses permitted: Retail commercial shops/departmental stores (floor</p>	<p>Uses permitted: Retail commercial shops/departmental stores</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Eateries and restaurants (without bar facilities);</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>area of each shop not exceeding 100 sqm); Eateries and restaurants (without bar facilities);</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>(floor area of each shop not exceeding 100 sqm); Eateries and restaurants (without bar facilities);</p> <p>Commercial uses as listed above should cover less than 500 sqm of floor area at one location.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Public and Semi-public use	<p>Uses permitted: Government/semi-government offices and institutions; Post offices, police post, electricity offices, telecommunication offices, public toilets;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Government/semi-government offices and institutions; Post offices, police post, electricity offices, telecommunication offices, public toilets;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Government/semi-government offices and institutions; Post offices, police post, electricity offices, telecommunication offices, public toilets;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Transportation use	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Terminal facilities for passenger (i.e. bus, mini bus);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Terminal facilities for passenger (i.e. bus, mini bus);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Terminal facilities for passenger (i.e. bus, mini bus);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Recreational use (more than 50 percent of the total area)	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools, golf course, indoor and outdoor stadium, sports complexes/ training facilities, organised recreational complexes/ amusement parks, eco parks; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools, golf course, indoor and outdoor stadium, sports complexes/ training facilities, organised recreational complexes/ amusement parks, eco parks; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in</p>	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools, golf course, indoor and outdoor stadium, sports complexes/ training facilities, organised recreational complexes/ amusement parks, eco parks; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		Present Land Use Map and Register or identified thereafter.	
Farm use	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming Agricultural activities as listed in above should be covering plot area less than 1.0 ha.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming Agricultural activities as listed in above should be covering plot area less than 1.0 ha.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: High density farming/vertical farming/stacked green house farming, pisciculture/ aquaculture, horticulture, floriculture, community garden farming Agricultural activities as listed in above should be covering plot area less than 1.0 ha.</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Table 9.8: Development Control for 'Proposed Major & Minor Arterial Roads + Existing Roads + Railway Track'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Transportation use	<p>Uses permitted: Roads, terminal facilities for para-transit modes, bus stand/shelter facilities, bus/truck lay-bye facilities, loading/unloading bays, transmission and communication lines; Railway lines and station facilities, Railway yards/car shed;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, terminal facilities for para-transit modes, bus stand/shelter facilities, bus/truck lay-bye facilities, loading/unloading bays, transmission and communication lines; Railway lines and station facilities, Railway yards/car shed;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Roads, terminal facilities for para-transit modes, bus stand/shelter facilities, bus/truck lay-bye facilities, loading/unloading bays, transmission and communication lines; Railway lines and station facilities, Railway yards/car shed;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use	<p>Uses permitted: Plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Table 9.9: Development Control for 'Transport Terminal'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	<p>Uses permitted: Hostels, dormitories, service apartments, boarding and lodging houses, hotels and guest houses;</p> <p>Residential use should cover less than 2500 sqm of plot area and should be ancillary to the recreational activities.</p> <p>Uses Prohibited:</p>	<p>Uses permitted: Hostels, dormitories, service apartments, boarding and lodging houses, hotels and guest houses;</p> <p>Residential use should cover less than 500 sqm of plot area and should be ancillary to the recreational activities.</p> <p>Uses Prohibited:</p>	<p>Uses permitted: Hostels, dormitories, service apartments, boarding and lodging houses, hotels and guest houses;</p> <p>Residential use should cover less than 500 sqm of plot area and should be ancillary to the recreational activities.</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	All activities not listed in 'Permitted' column.	All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	and should be ancillary to the recreational activities Uses Prohibited: All activities not listed in 'Permitted' column.
Commercial use	Uses permitted: Retail commercial shops/departmental stores; Eateries and restaurants (without bar facilities); Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Retail commercial shops/departmental stores; Eateries and restaurants (without bar facilities); Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Retail commercial shops/departmental stores; Eateries and restaurants (without bar facilities); Uses Prohibited: All activities not listed in 'Permitted' column.
Public and Semi-public	Uses permitted: Government/semi-government offices/institutions; Post offices, police post, electricity offices, telecommunication offices, public toilets; Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Government/semi-government offices/institutions; Post offices, police post, electricity offices, telecommunication offices, public toilets; Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Government/semi-government offices/institutions; Post offices, police post, electricity offices, telecommunication offices, public toilets; Uses Prohibited: All activities not listed in 'Permitted' column.
Transport and Communication	Uses permitted: Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles, logistic facilities, weighbridge facilities; Roads, railway lines and station facilities, terminal facilities for para-transit modes, off-street/multi-level parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles, logistic facilities, weighbridge facilities; Roads, railway lines and station facilities, terminal facilities for para-transit modes, off-street/multi-level parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.	Uses permitted: Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles, logistic facilities, weighbridge facilities; Roads, railway lines and station facilities, terminal facilities for para-transit modes, off-street/multi-level parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Uses Prohibited: All activities not listed in 'Permitted' column.
Farm use	Uses permitted: Gardens, plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir); Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Gardens, plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir); Uses Prohibited: All activities not listed in 'Permitted' column.	Uses permitted: Gardens, plantation, riparian buffers; Water bodies (ponds, lakes, canal, irrigation channel, reservoir); Uses Prohibited: All activities not listed in 'Permitted' column.

Table 9.10: Development Control for 'Proposed Primary Sector Activities + Existing Agriculture + Existing Brick Kiln and Extractive areas'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	<p>Dwellings within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register;</p> <p>Uses permitted: Farm houses, associated buildings and other uses less than 500 sqm of floor area for the farmer's own use (minimum plot area not less than 1.0 ha); Housing for resettlement and rehabilitation and for economically weaker section; Transient visitors camp;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Dwellings within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register;</p> <p>Uses permitted: Farm houses, associated buildings and other uses less than 500 sqm of floor area for the farmer's own use (minimum plot area not less than 1.0 ha);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No residential use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Dwellings within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register;</p> <p>Uses permitted: Farm houses, associated buildings and other uses less than 500 sqm of floor area for the farmer's own use (minimum plot area not less than 1.0 ha); Transient visitors camp;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Commercial use	<p>Commercial activities should be within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register</p> <p>Uses permitted: Daily or weekly markets; Storage and sale of farm products; Retail commercial shops/eateries (floor area of each shop not exceeding 25 sqm and not more than 10 shops at one location); Banks and financial institutions (with floor area not exceeding 250 sqm);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Commercial activities should be within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register</p> <p>Uses permitted: Daily or weekly markets; Storage and sale of farm products; Retail commercial shops/eateries (floor area of each shop not exceeding 25 sqm and not more than 10 shops at one location); Banks and financial institutions (with floor area not exceeding 250 sqm);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No commercial use should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Commercial activities should be within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register</p> <p>Uses permitted: Daily or weekly markets; Storage and sale of farm products; Retail commercial shops/eateries (floor area of each shop not exceeding 25 sqm and not more than 10 shops at one location); Banks and financial institutions (with floor area not exceeding 250 sqm);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Public and Semi-public use	<p>Institutional facilities listed below should be within a radius of 500 m from the existing village settlement as earmarked in the Present Land Use Map and Register)</p> <p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres</p> <p>Health facilities as listed above should cover floor area less than 500 sqm at one location and should</p>	<p>Institutional facilities listed below should be within a radius of 500 m from the existing village settlement as earmarked in the Present Land Use Map and Register)</p> <p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres</p> <p>Health facilities as listed above should cover floor area less than 500 sqm at one location and should</p>	<p>Institutional facilities listed below should be within a radius of 500 m from the existing village settlement as earmarked in the Present Land Use Map and Register)</p> <p>Uses permitted: Government/semi-government offices and institutions; Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions; Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>not exclusively treat contagious diseases.</p> <p>Multi-purpose community halls, (with design occupancy less than 300 people) Places of public worship, religious buildings, welfare institutions, clubs Social/cultural facilities as listed above covering floor area less than 500 sqm at one location.</p> <p>Other public distribution services (e.g. postal services, public toilets, water posts etc.); Fuel refuelling stations, automobile/farm machineries repairing workshops/garages; Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>not exclusively treat contagious diseases.</p> <p>Multi-purpose community halls, (with design occupancy less than 300 people) Places of public worship, religious buildings, welfare institutions, clubs Social/cultural facilities as listed above covering floor area less than 500 sqm at one location.</p> <p>Other public distribution services (e.g. postal services, public toilets, water posts etc.); Fuel refuelling stations, automobile/farm machineries repairing workshops/garages; Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No institutional use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Health facilities as listed above should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases.</p> <p>Multi-purpose community halls, (with design occupancy less than 300 people) Places of public worship, religious buildings, welfare institutions, clubs Social/cultural facilities as listed above covering floor area less than 500 sqm at one location.</p> <p>Other public distribution services (e.g. postal services, public toilets, water posts etc.); Fuel refuelling stations, automobile/farm machineries repairing workshops/garages; Electrical distribution facilities/services, telecommunication facilities/exchanges, water/sewage pumping stations, water works and reservoirs, solid waste collection yards and other municipal public facilities (i.e. public toilets etc.);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Recreational use	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces (within a radius of 500 m from the existing village settlement as earmarked in the Present Land Use Map and Register);</p> <p>Zoological gardens, botanical gardens, eco-park, animal sanctuary, camping sites, shooting range, nature trail, eco-tourism activities, adventure sports, organised recreational complexes, golf course and any open space based land intensive recreational activities; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces (within a radius of 500 m from the existing village settlement as earmarked in the Present Land Use Map and Register);</p> <p>Zoological gardens, botanical gardens, eco-park, animal sanctuary, camping sites, shooting range, nature trail, eco-tourism activities, adventure sports, organised recreational complexes, golf course and any open space based land intensive recreational activities; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 300 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Parks, playgrounds, gardens, multi-purpose open spaces (within a radius of 500 m from the existing village settlement as earmarked in the Present Land Use Map and Register);</p> <p>Zoological gardens, botanical gardens, eco-park, animal sanctuary, camping sites, shooting range, nature trail, eco-tourism activities, adventure sports, organised recreational complexes, golf course and any open space based land intensive recreational activities; (including incidental buildings thereon)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Industrial use	Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises	Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises	Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	<p>Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED", "GREEN" and "ORANGE" category of WBPCB (all industries should be farm based or related to food processing activities)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED", "GREEN" and "ORANGE" category of WBPCB (all industries should be farm based or related to food processing activities)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No industrial use should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Enterprises Development Act, 2006, will be permitted.</p> <p>Uses permitted: Industries listed under "EXEMPTED", "GREEN" and "ORANGE" category of WBPCB (all industries should be farm based or related to food processing activities)</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Transportation use	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi, trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines; Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza; Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types);</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use (more than 50 percent of the total area)	<p>Uses permitted: Agriculture, pisciculture/aquaculture, horticulture, floriculture; Orchards, nurseries, grazing pastures, wet lands, barren land and water bodies; Community forestry, plantation, agro-forestry, riparian buffer; Dairy and cattle farms, piggeries and poultry farms and any kind of animal husbandry and livestock rearing;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Agriculture, pisciculture/aquaculture, horticulture, floriculture; Orchards, nurseries, grazing pastures, wet lands, barren land and water bodies; Community forestry, plantation, agro-forestry, riparian buffer; Dairy and cattle farms, piggeries and poultry farms and any kind of animal husbandry and livestock rearing;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Agriculture, pisciculture/aquaculture, horticulture, floriculture; Orchards, nurseries, grazing pastures, wet lands, barren land and water bodies; Community forestry, plantation, agro-forestry, riparian buffer; Dairy and cattle farms, piggeries and poultry farms and any kind of animal husbandry and livestock rearing;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Table 9.11: Development Control for 'Existing Water Bodies'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Recreational use	<p>Uses permitted: Water-side promenade, Botanical garden, Boating facility;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Water-side promenade, Botanical garden, Boating facility;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column</p>	<p>Uses permitted: Water-side promenade, Botanical garden, Boating facility;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column</p>
Transport and Communication	<p>Uses permitted: Roads, railway lines, transmission and communication lines; Roads, Bridges, Culverts, Highway amenities;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, railway lines, transmission and communication lines; Roads, Bridges, Culverts, Highway amenities;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Roads, railway lines, transmission and communication lines; Roads, Bridges, Culverts, Highway amenities;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>
Farm use	<p>Uses permitted: Water bodies (river, ponds, lakes, canal, irrigation channel), Reservoirs; Plantation, riparian buffer, marshy land, barren land and water sheet;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>	<p>Uses permitted: Water bodies (river, ponds, lakes, canal, irrigation channel), Reservoirs; Plantation, riparian buffer, marshy land, barren land and water sheet;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column. No built up development should be permitted within 500 m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter.</p>	<p>Uses permitted: Water bodies (river, ponds, lakes, canal, irrigation channel), Reservoirs; Plantation, riparian buffer, marshy land, barren land and water sheet;</p> <p>Uses Prohibited: All activities not listed in 'Permitted' column.</p>

Table 9.12 Development Control for 'No Development and Construction Zone'

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Public and Semi-public use/ Recreational	<p>Uses permitted: Parks/Gardens, playgrounds, sports facilities including stadium, swimming pools, burial cemeteries and crematoria may be permitted under this category.</p> <p>Open air theatres, indoor recreational uses, dwelling for watch and ward, sports clubs, water front tourism development projects, libraries, milk booths, Horticultural Producers' Cooperative Marketing and Processing Society (HOPCOMS), public toilets.</p> <p>Uses Prohibited: Hospitals, nursing homes, and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood; Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response</p>	<p>Uses permitted: Parks/Gardens, playgrounds, sports facilities including stadium, swimming pools, burial cemeteries and crematoria may be permitted under this category.</p> <p>Open air theatres, indoor recreational uses, dwelling for watch and ward, sports clubs, water front tourism development projects, libraries, milk booths, Horticultural Producers' Cooperative Marketing and Processing Society (HOPCOMS), public toilets.</p> <p>Uses Prohibited: Hospitals, nursing homes, and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood; Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response</p>	<p>Uses permitted: Parks/Gardens, playgrounds, sports facilities including stadium, swimming pools, burial cemeteries and crematoria may be permitted under this category.</p> <p>Open air theatres, indoor recreational uses, dwelling for watch and ward, sports clubs, water front tourism development projects, libraries, milk booths, Horticultural Producers' Cooperative Marketing and Processing Society (HOPCOMS), public toilets.</p> <p>Uses Prohibited: Hospitals, nursing homes, and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood; Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response</p>

Broad nature of use	Type of uses/activities Permitted/Permissible and Prohibited		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	activities before, during, and after the flood; Structures or facilities that produce, use, or store highly volatile, inflammable, explosive, toxic, and/or water-reactive materials Public semi-public facilities like sewage and water treatment plants (STP/ WTP); power plants and stations; bus depot; metro stations/ depot etc which form the life line infrastructures for any city Commercial extraction of ground water by non-government / private agencies shall not be permitted with in NDCZ in any category of the river.	activities before, during, and after the flood Structures or facilities that produce, use, or store highly volatile, inflammable, explosive, toxic, and/or water-reactive materials Public semi-public facilities like sewage and water treatment plants (STP/ WTP); power plants and stations; bus depot; metro stations/ depot etc which form the life line infrastructures for any city Commercial extraction of ground water by non-government / private agencies shall not be permitted with in NDCZ in any category of the river.	activities before, during, and after the flood Structures or facilities that produce, use, or store highly volatile, inflammable, explosive, toxic, and/or water-reactive materials Public semi-public facilities like sewage and water treatment plants (STP/ WTP); power plants and stations; bus depot; metro stations/ depot etc which form the life line infrastructures for any city Commercial extraction of ground water by non-government / private agencies shall not be permitted with in NDCZ in any category of the river.

Source: Author

10.0 REGULATORY FRAMEWORK

In the previous sections, Land Use Zoning Plan for Durgapur Sub-division has been presented along with the Zoning Regulations, which will help determine to find out what kind of activities can come up at which location within the sub-division. In this section, Development Control Regulations will be presented which will help regulate the intensity of development for various activities specified in proposed land use zones. This has been prepared following the regulatory framework proposed in LU&DCP of Asansol Sub-division which has been notified in official Gazette (on 2nd January 2019) and is in operation for last few years.

As per The West Bengal Town and Country (Planning and Development) Act, 1979, development control regulations deal with height, number of storeys and size of buildings and other structures, and access to land and sub-division of land, and the street alignments, set-back distances and such other issues as may be considered appropriate by the Authority.

Before we proceed into the development control regulations, some important aspects will be discussed which will help understand the proposed regulations in better perspective.

Durgapur Sub-division has five administrative units – there is one Municipal Corporation and four Blocks. At present, the building activity in urban areas is regulated by The West Bengal Municipal (Building) Rules, 2007, whereas the rural areas are covered under The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004. Given the nature of industrialisation and urbanisation in Durgapur Sub-division, extensive development activities take place, both in urban and rural areas. In this context, the existing building control regulations for rural areas are found to be grossly inadequate - necessitating more stringent provisions to control the nature of development activity, particularly in those rural parts where signs of urban way of living is prominent. Given the mandate of The West Bengal Town and Country (Planning and Development) Act, 1979, development control regulation proposed in LU&DCP can address this issue to a great extent.

A large part of the Durgapur Sub-division falls under the threat of land instability due to mining subsidence. Areas which are prone to such threat has been delineated as Restricted Development Zone, falling within three Blocks – Andal, Pandabeswar and Faridpur-Durgapur. Development control of building construction activity needs to be much more specific in those areas than that prescribed in The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004. The development control guidelines in LU&DCP offers that scope to incorporate these aspects into the regulatory framework within Durgapur Sub-division.

On the other hand, the urban areas are already regulated by a set of building rules, necessary to acquire building permission from urban local bodies. To propose a development control regulation in Land Use and Development Control Plan, completely overlooking the municipal building rules, might create multiple set of regulatory framework – one needed to acquire development permission from Development Authority and another to acquire building permission from urban local bodies. Though the building regulations proposed by Land Use and Development Control Plan supersedes the municipal building rules by the power conferred by The West Bengal Town and Country (Planning and

Development) Act, 1979, it would prudent to frame the development control regulations for Land Use and Development Control Plan duly considering the existing framework of building rules already in operation within urban areas of the Sub-division.

Lastly, it must be borne in mind that the development regulations recommended in LUDCP are supposed to be fulfilled for obtaining development permission on a piece of land. Though the regulations suggested in LUDCP supersede the municipal building rules, it should not be used as a replacement to the existing building rules. The scope of building rules is much more when it comes to regulating various aspects within the building i.e. dimensions and quality of internal spaces, specifications related to design of building components, building services, materials, workmanship and all other aspects associated with building construction and occupancy. The proposed development regulations for Durgapur Sub-division offers a broad set of rules which tends to regulate only the intensity of building activity, and not to encompass all aspects of building construction activity. Rural areas in Durgapur Sub-division needs specific set of building rules to control the building construction activity in much more detail than as specified by The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004.

Keeping these issues in mind, the development control regulations for Durgapur Sub-division was prepared. Development control regulations mentioned hereafter must be fulfilled to obtain permission for development on a piece of land. The key parameters of the development control regulations are discussed following:

- a) General conditions
- b) Provisions of access to land
- c) Permissible ground coverage
- d) Permissible height of building
- e) Provisions for tall buildings
- f) Minimum open space provisions
- g) Permissible floor area ratio
- h) Parking provisions
- i) Provisions for Government approved schemes
- j) Miscellaneous provisions
- k) Provisions for townships

Before moving to the detailed development control regulations, a list of definitions has been listed for better understanding. These has been adopted from the definitions used in existing municipal/corporation building rules in West Bengal and National Building Code.

1. "Addition to a building" means addition to the cubic content or to the floor area of a building
2. "Area", in relation to a building, means the superficies of a horizontal section thereof made at the plinth level, inclusive of the external walls and such portion of the party-walls as belongs to the building
3. "Alteration" means change from one occupancy to another, or a structural change, such as an addition to the area or height, or the removal of part of a building, or any change to the structure,

such as, the construction of, cutting into or removal of any wall, partition, column, beam, joist, floor or other support, or a change to the fixture or equipment

4. "Apartment" means part of a property having a direct exit to a street or a passage or to a common area leading to such street or passage which together with its undivided interest in the common areas and facilities forms an independent unit
5. "Applicant" means owner of the land and includes authorised representative of the owner or anybody having construction right in accordance with law and shall also include the transferee
6. "Architect" means a person who is registered as an Architect by the Council of Architecture under the Architects Act, 1972 (20 of 1972)
7. "Balcony" means a semi open space including horizontal projection with a handrail or balustrade to serve as passage or sitting out place
8. "Basement or cellar" means the lower storey of a building partly or wholly below the ground level or the abutting road level, whichever is higher
9. "Building plan" means a plan for permission for erection, or re-erection, or addition to, or alteration of, a building
10. "Building services" or "services", in relation to a building, means lighting and ventilation, electrical installations, air-conditioning and heating, acoustics and sound insulation, installation of lifts, travelators and escalators, water supply, sewerage and drainage, gas supply, fire fighting arrangements, solid waste management, electronic, telecommunication and telephone installations
11. "Chajja or cornice" means a sloping, horizontal or structural, overhung usually provided over openings on external walls to provide protection from the sun and rain
12. "Chimney" means the construction by means of which a flue is formed for the purpose of carrying the products of combustion to the open air, and includes chimney stack and flue-pipe
13. "Covered area" means the ground area covered by building immediately above plinth level considering all the floors at all levels, but does not include the space covered by:
 - (a) garden, boundary, well and well structure, plant nursery, water pool, swimming pool (if not covered), platform round a tree, tank, fountain or bench,
 - (b) drainage, culvert, conduit, septic tank or soak pit,
 - (c) compound wall and gate, and area covered by chajja
14. "Depth", in relation to a plot, means the distance from the front to the rear line of the plot
15. "Drain" includes sewer, a house drain, or a drain of any other description, a tunnel, a culvert, a ditch, a channel and any other device for carrying off sullage, sewage, offensive matter, polluted water, rain water or subsoil water
16. "Drainage" means the removal of any liquid by a system provided for the purpose
17. "Dwelling unit" means an independent housing unit with separate living, cooking and sanitary facilities
18. "Engineer" means a person having minimum Bachelor degree in Civil Engineering or in Construction Engineering of a recognised University or Institute

19. "Escalator" means a mechanical device to transport persons between two or more levels in an inclined direction by means of guided moving steps
20. "Floor" means the lower surface in a storey, after the finishing of which one normally walks in a building
21. "Floor Area Ratio" or "FAR." (being the abbreviation of the whole words "Floor Area Ratio") means the quotient obtained by dividing the total floor area of all the floors of a building by the area of the plot
22. "Framed building" means a building where the dead load and superimposed load are transferred to foundation through framed members with rigid joints, which may be of R.C.C., pre-stressed concrete, steel, timber, or the like, such members at the transfer of loads being not only experienced with directional stress but also bending stress and sheer stress as well
23. "Geo-technical Engineer" shall mean a person who having a minimum Bachelors degree in civil or construction engineering from a recognized university, institute or an equivalent engineering qualification recognized by the Government and having not less than five years experience in soil investigation work and formulation of basis for design and construction of different types of foundation
24. "Ground coverage" is the percentage of the largest covered area as per roof plan of building/buildings against the area of the plot including the area of the water bodies, if any, within the plot
25. "Ground level" means the level at a height of 15 cm above the average level of the centre line of the street or passage to which the plot abuts
26. "Height of a building" shall mean vertical distance measured from the ground level, to the highest point of the building, in case of flat roofs and in the case of sloped roofs, the mid-point between the eaves level and the ridge
27. "Ledge" or "Tand" means a shelf-like projection, supported in any manner except by means of vertical supports, within a room itself but not having projection wider than 0.60 metre, for being used only as storage space;
28. "Licensed Building Surveyor (LBS)" means a qualified surveyor who has been licensed under appropriate rules;
29. "Lift" means an appliance designed to transport persons or materials between two or more levels in a vertical or substantially vertical direction by means of guided car platform
30. "Loft" means an intermediary floor between two floors or a residual space in a pitched roof above normal floor level which is constructed or adopted for storage purposes
31. "Means of access" means a public or private street or passage open to the sky, as shown in the survey map or other records of the Municipality or Present Land Use Map and Register and includes a passage which may not be open to the sky in the case of partition of an existing building
32. "Open space" means an area, forming an integral part of the site, at the ground level open to the sky
33. "Parapet" means a low wall or railing built along the edge of a roof or a floor;

34. "Parking space" means an area enclosed or unenclosed, covered or open, sufficient in size to part vehicles with a driveway connecting the parking space with a street or alley and permitting ingress and egress of vehicle
35. "Passage" implies a means of access which is not a private or public street and which provides access to not more than three plots, and includes footway and drains attached to the passage and also includes all lands up to the property line of the plots abutting the passage
36. "Plinth" means the part of a wall or structure between the ground level and the level of the lowest floor of a building above ground level
37. "Principal occupancy" means highest occupancy among the different use of a building/buildings but not less than 50 % of the total usable area.

The classification of buildings on the basis of occupancy shall include:

(a) "Residential building" means, any building in which sleeping accommodation is provided for normal residential purpose as the principal use with cooking facility or dining facility or both; such building shall include one or two or multi-family dwellings, hostels, apartment houses and flats; in case of hostels or dormitories attached to educational institutions there may or may not be any cooking facilities

(b) "Educational building" means, any building used for school, college, or day-care purposes involving assembly for instruction, education or recreation incidental to educational buildings

(c) "Institutional building" means, any building or part thereof ordinarily providing sleeping accommodation for occupants and used for the purposes of medical or other treatment or care of persons suffering from physical or mental illness, disease or infirmity, care of infants, convalescents or aged persons and for penal or correctional detention in which the liberty of the inmates is restricted; such buildings shall include hospitals, clinics, dispensaries, sanatoria, custodial institutions and penal institutions like jails, prisons, mental hospitals and reformatories

(d) "Assembly building" means, any building or part thereof where group of people congregate or gather for amusement or recreation or for social, religious, patriotic, civil, travel, sports, and similar other purposes; such buildings shall include theatres, motion picture houses, drive-in theatres, city halls, town halls, auditoria, exhibition halls, museums, skating rinks, gymnasium, restaurant, seating houses, hotels, boarding houses, lodging or rooming houses, guest-houses, dormitories, places of worship, dance halls, club rooms, gymkhanas, passenger stations and terminals of air, surface and other public transportation services, recreation piers, multiplex and stadia

(e) "Business building" means any building or part thereof used for transaction of business for keeping of accounts and records or for similar purposes; such buildings shall include offices, banks, professional establishments and court houses and libraries for the principal function of transaction of public business and keeping of books and

records, and shall also include office buildings (premises) solely or principally used as an office or for office purposes

Explanation:

i) The expression "office purpose" shall include the purpose of administration and clerical work (including telephone and telegraph and computer operating), and

ii) The expression "clerical work" shall include writing, book-keeping, sorting papers, typing, filing, duplicating, punching cards or tapes, machine calculating, drawing of matter for publication, and editorial preparation of matter for publications;

(f) "Mercantile building" means, any building or part thereof used as shops, stores or markets for display or sale of merchandise, either wholesale or retail, or for office, storage and located in the same building; such building shall include establishments wholly or partly engaged in wholesale trade, manufacturer's wholesale outlets (including related storage facilities), warehouses and establishments engaged in truck transport (including truck transport booking agency)

(g) "Industrial building" means, any building or structure or part thereof in which products or materials of all kinds and properties are fabricated, assembled or processed as in assembly plants; such buildings shall include laboratories, power plants, smoke houses, refineries, gas plants, mills, dams, factories, workshops, automobile repair garages, and printing presses

(h) "Storage building" means, any building or part thereof used primarily for the storage or sheltering of goods, wares or merchandise as in warehouses; such building shall include cold storages, freight depots, transit sheds, store houses, public garages, hangars, truck terminals, grain elevators, barns and stables

(i) "Hazardous building" means, any building or part thereof used for the storage, handling, manufacture or processing of highly combustible or explosive materials or products which are liable to burn with extreme rapidity or which may produce poisonous fumes or explosions during storage, handling, manufacture or processing or which involve highly corrosive, toxic or noxious alkalis, acids or other liquids or chemicals producing flames, fumes, explosions or mixtures of dust which result in the division of matter in to fine particles subject to spontaneous ignition

38. "Mixed occupancy" shall mean those buildings in which more than two compatible occupancies are intended to be present in different proportions and none of the occupancies are intended to be exceed 50% of total floor area and which shall have mixed use rules in the matter of means of access, occupancy distribution, permissible use of open space, FAR, car parking and height of building for the purposes of these rules

39. "Row housing" means a row of houses with only front open space and rear open space and interior open space where applicable
40. "Service rooms" means rooms and covered spaces meant primarily for purposes other than human habitation such as for the purpose of using it for parking, air-conditioning plant room or room for the other machines used for any building service or for other purposes such as space for a stand-by generator for power supply, storage space for household or other goods of non-inflammable nature, strong room or bank cellar, and dark room
41. "Set back line" means a line usually parallel with the centre line of a road or street, laid down by a competent authority beyond which nothing can be constructed towards the road
42. "Single building" means a building having single block or multiple blocks connected at any level including basement where mandatory open spaces are considered in respect of the tallest block;
43. "Site" or "building site" means the entire area covered by a building with out-houses, and includes the land at the front or in the sides of, and pertaining to, such building and the land required by rules to be left open
44. "Storey" means the portion of a building included between the surface of any floor and the surface of the floor next above it, or if there be no floor above it, then the space between any, floor and the top of roof next above it
45. "Stair cover" means a structure with a covering roof over a staircase and its landing built to enclose only the stair for the purpose of providing protection from weather and not used for human habitation
46. "Structural engineer" shall mean an engineer having a minimum bachelor degree in civil engineering or structural engineering from a recognized university or an equivalent engineering qualification recognized by the Government having at least five years experience in the field of design and construction of structure of the building of different types with at least 5 years experience in structural designs
47. "To construct a building" with its grammatical variation means:
- (i) to construct a new building, or (ii) to re-construct a building, or (iii) to convert a building or any part of a building, not being a flat or block, into a flat or block;
48. "Tenement" means an independent dwelling unit with a kitchen
49. "Width of a street" means the whole extent of space, including the roadway over any public bridge or flyover, footway and drains attached to such street, within the boundaries of the street as specified in the survey map or other records of a Municipality or Present Land Use Map and Register

Words and expressions used but not otherwise defined shall have the same meaning as in Section (2) of The West Bengal Municipal (Building) Rules, 2007, as the proposed regulations have largely followed the same framework.

10.1 General conditions

The general conditions which must be met by any development for the purpose of obtaining permission are listed following.

Conformity to the Land Use Zoning Plan

No piece of land shall be used as a site for erection, re-erection, addition to or alteration of, any building or use except in accordance with Land Use Zoning Plan for Durgapur Sub-division [Please Refer Section 9 of the Report].

Site drainage conditions

No piece of land shall be used for development activity unless the land is capable of being well-drained by means of drainage facilities leading to existing public drains or drainage channels, as found appropriate by the Development Authority.

Soil testing and stability report for Restricted Zone

No piece of land in Restricted Development Zone (for which the list of mouza's has been provided in Section 4) shall be used as a site for the erection, re-erection, addition to or alteration of any building - unless the Development Authority is satisfied on a Soil Investigation Report from a Geo-Technical Engineer based on testing of soil by a Government recognised testing organisation, giving design parameter on the basis of the condition of the soil at site with specific consideration for soil instability due to mining subsidence and accepted by a Structural Engineer that the site is, from engineering point of view, fit to be built upon.

However, no such Soil Investigation Report shall be necessary in the case of a new building or addition to and alteration of an existing building not exceeding 7.0 m. in height.

[Note: In case of Durgapur Sub-division, a large amount of land has already been identified as unstable locations and huge amount of damage to property and people has taken place – forcing Government to take proactive measures in resettlement and rehabilitation. The location of unstable sites is mostly concentrated in the Andal, Pandabeswar and Faridpur-Durgapur Block. This provisions are adopted from existing LU&DCP of Asansol Sub-division as applicable for its Restricted Development Zone.]

Distance from Electric lines

No building, or verandah, or balcony or projection in any building shall be permitted to be erected, re-erected, added to or altered, in any case where the distance between such construction and any overhead electric lines, in accordance with the provision of the Electricity Act, 2003 (36 of 2003), is less than that specified below in Table 10.1.

Table 10.1: Distance from electric lines

Type of electric lines	Vertical clearance	Horizontal clearance
Low and medium voltage lines including service lines	2.5 m	1.2 m
High voltage lines upto 11,000 volts	3.7 m	1.2 m
High voltage lines above 11,000 volts and upto 33,000 volts	3.7 m	2.0 m
For extra high voltage lines beyond 33,000 volts	3.7 m plus 0.3 m for every additional 33,000 volts or parts thereof	2.0 m plus 0.3 m for every additional 33,000 volts or parts thereof

Source: Author

Developments in vicinity of Airport

No structure shall be constructed or erected, or any tree planted or grown on any land within a radius not exceeding twenty kilometers from the Aerodrome Reference Point of the civil and defence aerodromes, as specified in Schedule III to Schedule VII, without obtaining a No Objection Certificate for the height clearance, except in cases specified in subrule (2) of rule 7, stated in Ministry of Civil Aviation (Height Restrictions for Safeguarding of Aircraft Operations) Rules, 2015, dated 30th September, 2015 [Refer Annexure-VIII].

Development on large plots

For any development in plots measuring more than 5000 sq. m. in area, no objection certificate from the Director of West Bengal Fire services and West Bengal Pollution Control Board in respect of the proposed construction is required and it has to be submitted along with the application for development permission.

Requirements for Planning, Design and Structural Stability for building/structure

Every person who intends to erect, re-erect, add to or alter any building shall engage—

- (a) for all buildings below 11.5 meter in height, a technical personnel not below the rank of a Licensed Building Surveyor for planning, design and construction of the building structure and the foundation
- (b) for all buildings from 11.5 meter to 14.5 meter in height and/or for erection involving pile works, deep foundation works or construction of basement or any other underground structure thereto, a Licensed Building Surveyor and/or an Architect and a Structural Engineer, for planning, design and construction of the building including foundation
- (c) for all other buildings above 14.5 meter in height and/or for erection involving pile works, deep foundation works or construction of basement or any other underground structure thereto

or separately, a Licensed Building Surveyor and/or an Architect, a Structural Engineer and a Geo-technical Engineer for planning, design and construction of building

In case where a person intends to erect, re-erect, add to or alter any building in a **Restricted Development Zone**, shall engage for all other buildings above 7.0 meter in height and/or for erection involving pile works, deep foundation works or construction of basement or any other underground structure thereto or separately, a Licensed Building Surveyor and/or an Architect, a Structural Engineer and a Geo-technical Engineer for planning, design and construction of building.

The Licensed Building Surveyor, the Architect, the Structural Engineer and the Geo-technical Engineer will work in association with one another and they will be individually or collectively responsible for ensuring the safety of the building structure and its foundation.

Developments adjacent to Major Arterials/National Highway

No new development should be permitted along National Highway or any proposed Major Arterial (with ROW 45m or higher) within urban or rural areas which takes direct access from the vehicular carriageway.

Permission to development in urban areas or rural areas along National Highway or any proposed Major Arterial (with ROW 45 m or higher) should only be provided if access is taken from the service road and setback of 6 m is left for any building activities from ROW of National Highway or any proposed Major Arterial (with ROW 45 m or higher).

If service road is not provided along National Highway or any proposed Major Arterial (with ROW 45m or higher) in rural or urban areas then, development can be permitted on following conditions.

- a. building line of 40 m from centreline of the road on either side should be constituted where no development activity will be permitted
- b. control line of 75 m from the centreline of the road should be constituted where only business buildings, industrial and storage buildings should be allowed
- c. no development, except highway amenities i.e. toll plaza etc., should be allowed which have plot size less than 10,000 sqm

[Note: Provisions are based on recommendation from the Indian Roads Congress, and also adopted in existing LU&DCP for Asansol Sub-division.]

10.2 Provisions of access to land

Every plot, which shall be used as a site for erection, re-erection, addition to or alteration of, any building or use, shall abut a means of access which may be a public street or private street or passage.

No new building shall be allowed on a plot unless the plot abuts a street which is not less than 10.0 m in width at any part, or there is access to the plot from any such street by a passage which is not less than 10.0 m in width at any part, with certain exceptions noted below.

- (i) in case of a residential building with other occupancies, if any, of less than 10% of the total floor area of the building, the width of such street or passage shall not be less than 2.4 m at any part,
- (ii) in case of a residential building with educational occupancy of 10% or more of the total floor area of the building, the width of such street or passage shall not be less than 7.0 m at any part,
- (iii) in case of an educational building with residential occupancy the width of such street or passage shall not be less than 7.0 m at any part,
- (iv) in case of an educational building with other occupancy or occupancies not being residential of less than 10% of the total covered area of the building the width of such street or passage shall not be less than 7.0 m at any part;

However, Development Authority may allow:

- (i) residential building up to a maximum height of 7.0 m and FAR of 0.8 may be allowed on a plot abutting a means of access of not less than 1.8 m in rural areas of width at any part. Provided such means of access is in long existence and is recorded in the settlement records and/or LUMR accordingly.
- (ii) residential buildings up to a maximum height of 7.0 m and FAR of 0.8 may be allowed on a plot abutting a means of access not less than 1.2 m in urban areas, provided such means of access is in long existence and is recorded in the settlement records and/or Municipal records and/or LUMR accordingly.

Any building which in full or part is put to assembly occupancy for the purpose of theatre, motion picture house, city hall, skating rink, auditorium, exhibition hall or for similar other purposes shall not be allowed on a plot located within 50.0 m of junction of two streets, the width of each of which is 15.0 m or more.

Every building on a plot containing more than one building which does not abut on means of access shall abut an internal road connecting the means of access of the plot.

The minimum width of such internal roads shall be 3.5 m. Where internal road of 3.5 m in width is not possible to be provided due to an existing building constructed prior to the enforcement of these rules, a building of not more than 7.0 m in height may be allowed, provided that the width of the internal road shall not be less than 1.20 m.

The minimum width and maximum length of all internal roads on plots abutting means of access less than 10.0 m, shall be guided by Table 7.2. [Only residential and educational buildings are allowed in plots which has means of access less than 10.0 m]

Table 10.2: Width and length of internal roads with width less than 10.0 m

Width of means of access	Maximum length of the means of access (in m)	
	Closed at one end	Open at both ends
3.5 m and above but not more than 7.0m	25.0	75.0
Above 7.0 m but not more than 10.0 m	50.0	150.0

Source: Author

Table 10.3: Width and length of internal roads with width more than 10.0 m

Width of means of access	Maximum length of the means of access (in m)	
	Residential buildings	Assembly, Business, Mercantile, Educational, Institutional, Industrial and Storage buildings
Above 10.0 m to 15.0 m	400	200
Above 15.0 m to 20.0 m	800	400
Above 20.0 m to 24.0 m	1000	600
Above 24.0 m	Above 1000	Above 600
If development in only one side, width may be reduced to 1m for residential buildings		

Source: Author

On the other hand, the minimum width and maximum length of all internal roads on plots abutting means of access more than 10.0 m shall be guided by Table 10.3. Length of means of access has varied for residential development and non-residential development as they attract large crowd and should be provided better means of access.

10.3 Permissible ground coverage

Ground coverage means the maximum area of the building footprint at the ground level, considering all horizontal projections in all floors, excluding the cornices, chajjas and architectural features projecting upto 0.6 m from the outer building line.

The maximum permissible ground coverage for building, when a plot contains a single building, shall depend on the plot size and the use of the building as given in Table 10.4.

In case there are more than one building within a plot having same or different type of building, the maximum permissible ground coverage will be calculated from Table 10.4 by considering the whole plot size (i.e. plot size containing more than one building).

Table 10.4: Maximum permissible ground coverage

Type of building	For plot size upto 200 sqm	For plot size more than 500 sqm	For plot size more than 5000 sqm
Residential	60	50	45
Educational	50	45	40
Institutional	40	40	35
Assembly	40	40	35
Mercantile	40	40	35

Industrial	40	40	35
Storage	40	40	35
Business	40	40	35
Mixed	40	40	35

Note: For any other size of the plot, in between the plot size of 201 to 500 sqm, the percentage of coverage shall be calculated by direct interpolation.

Source: Author

For mercantile buildings (retail) and assembly buildings on plots measuring 5000 sqm or more, the additional ground coverage to the extent of 15% may be allowed for car parking and building services. The additional ground coverage of 15% will be exclusively utilized for car parking, ramps, staircase, lift for upper level car parking and for building services such as air conditioned plant room, generator room, fire fighting equipments, electrical equipments not exceeding 5% out of such 15% shall be used, subject to compliance of other relevant building rules.

10.4 Height of buildings

Height of a building shall be the vertical distance measured from the average level of the centre line of the adjoining street or passage on which the plot abuts to the highest point of the building, whether with flat roof or sloped roof.

The following appurtenant structure shall not be included in the height of the building, provided the aggregate area of the structures mentioned below shall not exceed one-third of the area of the roof upon which these are erected.

- (i) stair cover not exceeding 2.4 m in height
- (ii) lift machine rooms as per the latest edition of the National Building Code
- (iii) roof tanks and their supports, the height of support not exceeding 1.0 m
- (iv) chimneys
- (v) parapet walls not exceeding 1.5 m in height
- (vi) ventilating, air conditioning and other service equipments
- (vii) height above mid-point between eaves level and ridge level
- (viii) toilet at roof level upto a height of 3.0 m subject to maximum floor area of 3.0 sqm
- (ix) garden cover with permeable material not exceeding 3.0 m in height
- (x) equipments for communication such as Microwave Antenna, Towers, Dish Antenna as well as room for installing the said equipments or their support equipments subject to a maximum area of 20 sqm and further subject to permission of the same from Competent Authority.

In case of more than one building in a plot, the maximum permissible height of any building on a plot shall be determined by the width of the means of access on which the plot abuts according to Table 10.5.

Table 10.5: Maximum permissible height of building

Width of means of access	Maximum permissible height of building (in m)
2.4 m to 3.5 m	8.0
above 3.5 m to 7.0 m	11.0
above 7.0 m to 10.0 m	14.5
above 10.0 m to 15.0 m	18.0
above 15.0 m to 20.0 m	24.0
above 20.0 m to 24.0 m	36.0
above 24.0 m	1.5 times (width of means of access + required width of front open space)

Source: Author

There will be no restriction in height of buildings for plots abutting means of access above 10.0 m in width subject to free gifting of strip of land as per prescribed street alignment. However, this increase in height as mentioned above shall be permissible provided the minimum area of the plot is 2500 sqm and minimum frontage of the plot abutting the main road is 30.0 m.

In case of such additional height by free gifting the strip of land as mentioned herein above, the applicant will get FAR of original road width only. However, the applicant will be given benefit of FAR and ground coverage of the portion gifted to the urban/rural local bodies (i.e. Municipal Corporation or Panchayat).

The Development Authority may, if necessary, restrict the height of building in any area within the municipal area, below the permissible height for reasons to be recorded in writing.

10.5 Provisions for tall buildings

Buildings which exceeding 14.5 m in height are called tall buildings. For tall buildings, Development Authority, for reasons to be recorded in writing and with the previous approval/recommendation of the Superintending Engineer of the Development Authority may sanction them as special cases if not otherwise covered by any law for the time being in force.

The Superintending Engineer will make his recommendation on the basis of Structural Stability Certificate given by the empanelled LBS/Architect and Structural Engineer and Geo-technical Engineer, of the concerned municipal area before giving such approval.

The building plan should be submitted to the Development Authority along with the application for development permission, and it should show the following details.

- (a) special requirements as to access, circulation, building services and safety, human health and Fire based on occupancies or use group as laid down in National Building Code of India, and in the West Bengal Fire Services Act, 1950; Act XVIII of 1950
- (b) parking layout plan showing parking spaces, driveways together with ingress or egress arrangements

- (c) width of main and alternate staircases along with balcony approach, corridor, ventilated lobby approach
- (d) location and details of lift enclosures
- (e) location and size of fire lift
- (f) smoke-stop lobby or door, where provided
- (g) details of exits including provision of ramps in the case of hospitals and for special risks
- (h) location of smoke exhaustor and fan
- (i) location of smoke exhaustor in basement
- (j) details of fire alarm network
- (k) location of centralized control connecting the alarm system, built-in fire protection arrangements and public address system
- (l) location and dimensions of static water storage tank and pump room along with fire service inlets for mobile pump and water storage tank
- (m) location and details of fixed fire protection installations such as sprinklers, wet risers, hose reels, drenchers and carbon dioxide installation
- (n) location and details of first aid equipment
- (o) special requirements, if any, of occupancies for residential building, educational building, institutional building, assembly building, business building, mercantile building, storage building, industrial building and hazardous building under these rules
- (p) location for installation of a sub-station for electric supply, transformer, generator and switch gear room
- (q) location of the air-conditioning plant room, if any
- (r) plan for installation of boilers, if any
- (s) refuse chutes and refuse chamber, if any
- (t) location for signs and outdoor display structures, if any
- (u) conveniences for physically challenged personnel

10.6 Minimum open space for buildings

Every building shall have exterior open spaces comprising front open space, rear open space and side open spaces. The minimum width prescribed for front open space, rear open space and side open spaces shall be provided along the entire front, rear and side faces of the building respectively. For this purpose, the front of the building shall be that face of the building which faces the means of access of the building and the rear of a building shall be deemed to be that face of the building which is farthest from the means of access. These provisions shall also be applicable to each individual building separately when a plot contains more than one building. In the case of a corner plot located at the crossing of more than one street or passage, the rear of the building shall be deemed to be that face of the building which is farthest from the widest of all such streets and/or passages.

Open spaces prescribing to one side cannot be taken for another side. No building shall at any time be erected on any open space prescribed in these rules for a building and form part of the site thereof, nor

shall such open space be taken into account in determining the area of any open space required under these rules for any other building.

The minimum open spaces with respect to height and Category of buildings shall be as per Table 10.6, 10.7, 10.8 and 10.9.

Table 10.6: Minimum open spaces for residential buildings

Height of the building	Front open space (in m)	Open space on Side 1 (in m)	Open space on Side 2 (in m)	Rear open space (in m)
Upto 8.0 m	1.2	1.2	1.2	2.0
Above 8.0 m upto 11.0 m	1.2	1.2	1.2	3.0
Above 11.0 m upto 14.5 m	1.5	1.5	2.5	4.0
Above 14.5 m upto 18.0 m	3.5	3.5	3.5	5.0
Above 18.0 m upto 24.0 m	5.0	5.0	5.0	7.0
Above 24.0 m upto 36.0 m	6.0	6.5	6.5	9.0
Above 36.0 m upto 60.0 m	8.0	8.0	8.0	10.0
Above 60.0 m upto 80.0 m	10.0	15% of the height of the building	15% of the height of the building	12.0
above 80.0 m	12.0	15% of the height of the building	15% of the height of the building	14.0

Source: Author

Table 10.7: Minimum open spaces for educational buildings

Height of the building	Front open space (in m)	Open space on Side 1 (in m)	Open space on Side 2 (in m)	Rear open space (in m)
Upto 11.0 m (land area upto 500 sqm)	2.0	1.8	4.0	3.5
Upto 11.0 m (land area above 500 sqm)	3.5	3.5	4.0	4.0
above 11.0 m upto 14.5 m	3.5	4.0	4.0	5.0
above 14.5 m upto 21.0 m	5.0	5.0	5.0	6.0
above 21.0 m	20% of the height of the building or 6.0 m, whichever is more			

Source: Author

Table 10.8: Minimum open spaces for institutional, assembly, business, mercantile and mixed use building

Height of the building	Front open space (in m)	Open space on Side 1 (in m)	Open space on Side 2 (in m)	Rear open space (in m)
Upto 11.0 m (land area upto 500 sqm)	2.0	1.8	4.0	4.0
Upto 11.0 m (land area above 500 sqm)	3.0	3.5	4.0	4.0
Above 11.0 m upto 18 m	4.0	4.0	4.0	5.0

Above 18.0 m upto 24.0 m	5.0	5.0	5.0	9.0
Above 24.0 m upto 36.0 m	6.0	6.5	6.5	9.0
Above 36.0 m	8.0	9.0	9.0	10.0

Source: Author

Table 10.9: Minimum open space for industrial and storage building

Height of the building	Front open space (in m)	Open space on Side 1 (in m)	Open space on Side 2 (in m)	Rear open space (in m)
Upto 11.0 m	5.0	4.0	4.0	4.5
Above 11.0 m upto 18.0 m	6.0	6.5	6.5	10.0
Above 18.0 m	6.0 m or 20% of the height of the building, whichever is more			

Source: Author

For buildings on plots of size not more than 65 sqm, minimum side open space of 0.9 m may be allowed on each side, provided that the building height does not exceed 8.0 m.

The minimum distance across the side open space from every new building to an existing building with a door or window opening shall be 1.8 m;

In the case of a building more than 24.0 m in depth on a plot abutting any street, a passage along the entire depth of the building shall be provided and the minimum width of such passage shall be 4.0 m.

[Note: The setback allowed in building within rural areas are often found inappropriate to meet the open space requirements commensurate for dense developments. As large parts of the rural areas in Durgapur Sub-division is proposed for extensive development activities, the provision of minimum open spaces has been extended to rural areas.]

In case of more than one building in a plot, the joint open space shall be provided in between two buildings.

If the height of one of such building exceeds the height of 14.5 m whether belongs to the same owner or not, the minimum open space between buildings as follows:

- (i) 7.0 m - if height of both the buildings exceeds 14.5 m
- (ii) If one of the buildings exceeds 14.5 m in height, then -
 - (a) 4.5 m - if height of the other building is above 11.0 m but does not exceed 14.5 m
 - (b) 3.5 m - if height of the other building is above 8.0 m but does not exceed 11.0 m
 - (c) 3.0 m - if height of the other building does not exceed 8.0 m

If any of the buildings has basement, the minimum Joint Open Space against the basement line shall be kept as 7.0 m.

The rule of joint open space shall not be applicable in case the adjoining structure is not exceeding 5.0 m in height.

For one or more building on large plots, special provision for open space shall be as follows:

(a) for plots measuring more than 5000 sqm in area, provision of 8% of the total area of the plot is to be kept as public open space. The width of each such open space shall not be less than 10.0 m and each such open space shall abut a street having a width of not less than 7.0 m. The minimum area of each of such open space in one parcel shall be 400 sqm. This open space shall be in addition to the land required for providing the means of access to the individual plots.

(b) for plots measuring more than 25000 sqm in area provision of 7% of the total area of the plot shall be reserved for use for facilities like school, health centres, market, police outpost with booth, post office, power sub-station, transport terminal, water treatment plant, sewerage treatment plant as well as the provisions for green cover and free gift of land for economically weaker section housing and the like, such land shall abut a street having a width of not less than 10.0 m. and also include the land necessary for means of access and for open spaces sanctioned for plots measuring more than 5000 sqm, as mentioned in previous clause.

10.7 Floor Area Ratio

Floor Area Ratio (FAR) means the quotient obtained by dividing the total floor area on all floors of a building by the area of the plot.

$$FAR = \frac{\text{Total Floor Area}}{\text{Area of the Plot}}$$

where, floor area means the covered area of a building at any floor level.

While calculating the floor area the following shall not be included:

(i) stair cover not exceeding 2.4 m in height and stair case with landing upto the extent of the width of the stairway in each floor including ramp, if there be any

(ii) lift machine room as per latest edition of the National Building Code, lift landing lobby with a maximum area of 6 sqm in all floors including roof, if any

(iii) roof tanks and their support, the height of support not exceeding 1.0 m

(iv) chimneys, ventilating, air-conditioning and service equipment attached to the building:

The aggregate area of these structures mentioned at (i) to (iv) above shall not exceed one-third area of the roof upon which these are erected.

(v) the actual area under covered car parking space and area of basement used for car parking as prescribed in norms for parking requirements

(vi) areas of loft, ledge or tank and areas of cupboards or wardrobes upto a maximum extent of 3% of total floor area but shall include the area of mezzanine floor

(vii) area of service floor

(viii) the areas for garden covered with permeable material, pergola, expanded or similar other materials at the roof level, up to 5% of the total roof area or 10 sqm whichever is more, subject to adoption of adequate structural safety measures

The maximum permissible floor area ratio for any building within a plot shall be guided by the width of the means of access and type of building as presented by Table 10.10. In case of more than one building in a plot, the floor area ratio shall be calculated on the basis of the width of means of access on which the plot abuts.

Table 10.10: Maximum permissible Floor Area Ratio

Width of means of access	Residential buildings	Educational building	Industrial, Storage and Hazardous buildings	Assembly, Institutional, Business, Mercantile, including mixed use
Below 2.4 m	0.8*	nil	nil	nil
Above 2.4 m to 3.5 m	1.0	nil	nil	nil
Above 3.5 m to 7.0 m	1.5	nil	nil	nil
Above 7.0 m to 10.0 m	1.75	1.75	nil	nil
Above 10.0 m to 15.0 m	2.25	2.25	2.0	2.0
Above 15.0 m to 20.0 m	2.5	2.5	2.0	2.25
Above 20.0 m to 24.0 m	2.75	2.75	2.0	2.5
Above 24.0 m	3.0	3.0	2.0	2.75

[* Development Authority may allow any residential building up to a maximum height of 7.0 m and FAR of 0.8 on a plot abutting a means of access of not less than 1.2 m in width in urban areas and 1.8 m in width in rural areas of width at any part, provided such means of access is in long existence and is recorded in the settlement records and /or in the municipal records and/or LUMR accordingly]

Source: Author

10.8 Parking provisions

No off-street parking space shall be less than

- (a) 12.5 sqm (2.5 m in width and 5.0 m in length) for a motor car with a minimum head room of 2.2 m if parked in a covered area;
- (b) 37.5 sqm (3.75 m in width and 10.0 m in length) for a truck and bus with a minimum head room of 4.75 m if parked in a covered area.

The minimum width of circulation driveway to be provided for adequate manoeuvring of vehicles shall be 4.0 m for cars and 5.0 m. for trucks exclusive of parking space.

The parking layout plan shall be so prepared that the parking space for each vehicle becomes directly accessible from driveway or circulation driveway or aisles. However, stack car parking arrangement will

be allowed in such a way that every car can be moved by shifting not more than one car. This stack car parking will be allowed only on the basement and ground floor levels.

For building with different uses, the area of parking space shall be worked out on the basis of respective uses separately and parking space to be provided for the total number of vehicle thus required.

In case of a plot containing more than one building, parking requirement for all buildings shall be calculated on the basis of consideration the area of respective use or uses.

In calculating the areas of different occupancies in the same building or different units of same occupancy in a building, the areas of common spaces of any floor which is included in the calculation of the FAR as per provision of these rules shall be distributed proportionately amongst the different units or occupancies. However, in case of residential use, the actual floor area of the tenements shall be considered excluding the areas of the common space. The requirements of car parking spaces shall be calculated accordingly.

The minimum open spaces required for a building as well as the driveway shall not be treated for meeting parking space requirements prescribed below. However, open car parking may be allowed on the mandatory open space, provided that a clear driveway of 4.0 m width is maintained.

For the purpose of calculation of number of car park nearest whole number is to be considered.

The parking space requirements for different categories of buildings are provided below.

A. Residential

Building with single tenement -

- (a) For a building having one tenement of less than 100 sqm in floor area – no car parking space
- (b) For a building having a tenement of 100 sqm or more but less than 200 sqm of floor area – one car parking space
- (c) For a building having one tenement of 200 sqm or more of floor area – one car parking space for every 200 sqm

Buildings with multiple tenements -

- (i) Tenement with less than 50 sq. m. of floor area –
 - (a) Up to 5 such tenements – no car parking space
 - (b) For 6 such tenements – one car parking space
 - (c) For every additional 6 of such tenements – one additional car parking space
- (ii) Tenement with more than 50 sqm but less than 75 sqm of floor area –
 - (a) Up to 3 such tenements – no parking space
 - (b) For 4 such tenements – one car parking space
 - (c) For every additional 4 of such tenements – one additional parking space

(iii) Tenement with more than 75 sqm but less than 100 sqm for every two such tenement additional one car parking space

(iv) Tenement with more than 100 sqm floor area – one car parking space for 100 sqm and one car parking space for every additional 100 sqm

(v) Tenements of different sizes in a building – car parking space shall be calculated on the basis of each size-group

Where no car parking space is necessary under provisions listed in (i), (ii), (iii) and (iv), at least one car parking space shall be necessary for more than 300 sq. m. of the total covered area in the building irrespective of number of sizes of tenements.

B. Education

For all educational buildings, one car parking space and one bus parking space are to be provided for every 500 sqm of floor area and part thereof (exceeding 50%). However, at least one car parking space is to be provided for every educational building.

C. Institutional

For hospitals and other health care institutions run by Government, statutory bodies or local authorities

- (i) one car parking space up to 20 beds and one car parking space for every additional 20 beds
- (ii) one car parking space for every 100 sqm of floor area where beds are not provided

For hospitals and other health care institutions not run by the Government, statutory bodies or local authorities – one car parking space for every 75 sqm of floor area, subject to a maximum of 500 parking spaces.

D. Assembly

For theatres, motion picture houses, auditorium or similar other halls - one car parking space for every 15 seats or for every 75 sqm of floor area, whichever is more, shall be required. However, at least one car parking space is to be provided for such buildings even having less than 75 sqm of floor area;

For town hall or city halls and similar other halls - one car parking space for every 50 seats or for every 200 sqm of floor area, whichever is more, shall be required. However, at least one car parking space is to be provided for such halls even having less than 200 sqm of floor area.

For exhibition halls - one car parking space for every 200 sqm of floor area, whichever is more, shall be required. However, at least one car parking space is to be provided for such halls even having less than 200 sqm of floor area;

For restaurant, eating houses, bars, clubs, gymkhana – no car parking space shall be necessary up to a floor area of 50 sqm. For floor area of more than 50 sqm, one car parking space for every 50 sqm. or part thereof shall be necessary.

For hotels and boarding houses –

- (i) one car parking space for every two guest rooms shall be necessary for star hotels.

(ii) One car parking space for every four guest rooms or part thereof shall be necessary for other hotels and boarding houses.

(iii) Additional car parking space for areas, to be used as restaurant, dining hall, shopping halls, seminar halls, banquet halls and other purposes – one car parking space for every 50 sqm of floor area or part thereof shall be necessary.

For other assembly buildings like place of worship, gymnasium, sports stadium, railway or bus passenger station, airport terminal or any other places where people congregate or gather - requirement of parking space shall be determined by the Development Authority.

D. Business

For floor area up to 1500 sqm – one car parking space for every 75 sqm of floor area.

For floor area above 1500 sqm, in addition to the number of car parking spaces as required in terms of clause above, additional one car parking space for every 100 sq. m. of floor area beyond 1500 sqm of floor area.

E. Mercantile (Retail)

For floor area up to 50 sqm - no car parking space

For floor area above 50 sqm - one car parking space plus an additional car parking space for every 75 sqm of floor area.

[Note: For plots up to 50 sqm, as in the case of shops, parking spaces need not be insisted upon (as per NBC)]

F. Industrial, Storage and Mercantile (Wholesale)

For floor area up to 200 sqm - no car parking space.

For floor area above 200 sqm - one car parking space for every 200 sqm and one truck parking space for every 1000 sqm subject to a minimum of one truck parking space.

In no case the required car parking space shall exceed 50 and the required truck parking space shall exceed 50.

10.9 Regulations for Electric Vehicle Parking and Charging provisions

The specific regulations for Electric Vehicle Parking and Charging shall be guided by Electric Vehicle Policy, 2021 by Power Department, Government of West Bengal notified vide Notification No. 189-POW-2021 dated 3rd June, 2021 (Refer Annexure – V) where it calls for implementation of City and Building codes in Section 8.8 as per the Ministry of Housing and Urban Affairs, Government of India, amendments made to Model Building Byelaws 2016 & Urban and Regional Development Plans Formulation and Implementation Guidelines 2014. Relevant portion of the amendment is provided in Annexure – V.

10.10 Provisions for Government approved schemes

In the case of buildings constructed by Governments, or any of the statutory bodies under any Government approved scheme, for residential use of persons belonging to low income group or of industrial workers, the minimum size of a plot in these cases shall not be less than 30 sqm and the maximum size of the plot shall not be more than 65 sqm.

The following provisions shall be complied with for the construction of buildings under Government approved schemes as mentioned above.

- (a) no building shall be constructed on a plot if the width of the means of access to the site is less than 1.2 m
- (b) no building exceeding 8.0 m in height shall be allowed on a plot if the width of the means of access to the site is less than 3.5 m
- (c) the maximum permissible ground coverage shall be 75% of the area of the plot
- (d) the maximum height of the building shall be 10 m
- (e) the minimum front open space for a building shall be 0.8 metre
- (f) the minimum rear open space for a building shall be 1.0 metre
- (g) the maximum FAR allowed is 1.75
- (h) the buildings may be of the row housing type with common wall and the maximum length of the buildings in a row shall be 50 m. After every 50 m of length of the building in a row, there shall be an open space of not less than 2.5 m in width for the entire depth of the building, provided that such open space shall not be necessary if there is a street or passage at such location, the minimum width of which is 2.5 m
- (i) no parking space within the plot shall be necessary

10.11 Miscellaneous provisions

Following regulations has been recommended to improve the quality of development with respect to the provision for electricity, rain water harvesting, barrier free design, and energy efficient design. Most of them are also adopted in existing LU&DCP of Asansol Sub-division.

Requirements as to electricity

Any building with floor area 5,000 sqm or more should have an electrical power distribution drawing with anticipated load demand. The electricity drawing must be approved by an Electrical Engineer or an Energy Manager or a certified Energy Auditor or a person duly qualified by the appropriate authority and holding a supervisory license.

Every building with a load demand of 50 KW or more or a building with floor area of more than 5,000 sqm should provide an open space for commissioning a transformer. The land must be kept free for the utility and no construction work will be allowed to be carried on the space. The space should be well accessed by 3.0 m wide roads for normal truck/lorry movement for loading and unloading of transformer and accessories for erection and maintenance.

In respect of any building having floor area of 20,000 sqm or more and used for commercial purpose and where the connected load is expected to be 500 KW or more, a certified Energy Auditor should approve the electrical power distribution plan of the building.

Any building with high load demand may ask for HT supply and in such case the local power utility will take the final decision of HT supply depending upon the nature of the building.

Rooftop Rain Water Harvesting (RWH)

Rooftop RWH system shall form a part of the building and shall have to be included in the plan, either for direct use of the rain water or for ground water recharging or both, in case of:

- (i) new building/buildings or any housing complex as per Environmental Impact Assessment Guidelines issued by State Government/Government of India.
- (ii) expansion of any existing building/buildings or housing complex as per Environmental Impact Assessment Guidelines issued by State Government/Government of India

This system shall also comply with Central and State statutory requirements laid down in the relevant acts and bye-laws.

Waste water recycling

Waste water recycling system shall be incorporated in all buildings including group housing as per Environmental Impact Assessment Guide lines issued by State Government/Government of India.

[Note: The West Bengal Pollution Control Board have imposed a condition to the effect that all new housing projects (of more than 100 dwelling units and a super-built area of 60,000 sqft) should obtain Consent to Establish by the State Board prior to sanction of the building plan by competent authorities.]

Tree Cover

Provision for tree cover should be included in the plan for building sites for any project covering plot area of 10000 sqm or more. The applicant should arrange for raising and maintenance of tree cover at his own cost which should be at least 15% of the land area within the premises.

Provisions for physically handicapped/disabled persons

Notwithstanding anything contained elsewhere in these rules, there shall be provisions in all building plans of public utility buildings for disabled friendly devices like ramps with railing, toilet and drinking water facilities. Braille or auditory signals shall be provided in all lifts in accordance with the provisions of Disabilities Act, 1995.

Provision for use of solar energy

Provision for use of solar energy in the form of solar heater and/or solar photo cells shall be included in building plans in case of any new building whose height is to exceed 14.5 m or expansion of any existing building if its height is to exceed 14.5 m.

10.12 Provisions for development of townships

For development of townships of various nature covering land area beyond a certain limit, it is recommended that they follow The West Bengal Town and Country Planning (Development of Township Projects) Rules, 2008 notified vide Notification No. 2255-T&CP/C-2/IC-3/2005(II) dated 27th October, 2008 (Refer Annexure -VII).

The site area for the township project needs to be at least 40 acres for Residential Townships, at least 30 acres for Special Category Townships, and at least 100 acres for Integrated Townships.

Annexure -VII provides elaborate set of guidelines regarding accessibility to the site, land area allocation to various uses, development control guidelines i.e. allowable FAR, Ground Coverage, minimum no. of dwelling units etc, process of permission and time limit for completion of the project.

10.13 Regulations for development in River Regulatory Zone (RRZ)

The specific regulations for No Development and Construction Zone (NDCZ) is as per the River Centric Urban Planning Guidelines, recommended by Town and Country Planning Organization, Ministry of Housing and Urban Affairs, Government of India, May 2021 (Refer Annexure –VI). The list of Mouzas falling under NDCZ is provided in Section 4 of this Report.

The Parking for the activities permitted shall be provided as per the provisions of the Master Plan and up to 2% of the total land area with FAR of 0.50 and G+1 structure may be permitted for ancillary uses required to support the main activity such as eating joints/ restaurants, stalls, sheds for storage etc.

For uses permissible under special circumstance by the Competent Authority the ground coverage for such use shall not exceed 5% of the total area with required parking facility and shall not be more than G+1 floor in any case.

10.14 Adherence to Existing regulatory measures

All other prevailing Guidelines, Rules, Acts enacted by the State Government or the Central Government are applicable unless specified otherwise in this Report.

10.15 Process for development permission

Any person or body (excluding a department of the Central or the State Government or any local authority) intending to carry out any development or township project on any land shall make an application in writing to the Development Authority for permission in such form and containing such particulars and accompanied by such documents and plans as has been prescribed by the Development Authority.

On such application having been duly made, and payment of the development charge as may be assessed under Chapter IX of The West Bengal Town and Country (Planning and Development) Act, 1979,

a) the Development Authority may pass order - i) granting permission unconditionally; or ii) granting permission subject to such conditions as it may think fit; or iii) refusing permission;

b) without prejudice to the generality of clause (a), the concerned authority may impose conditions - i) to the effect that the permission granted is only for a limited period and that after expiry of that period, the land shall be restored to its previous condition or the use of the land permitted shall be discontinued; ii) for regulating the development of use of any other land under the control of the applicant or for carrying out works on any such land as may appear to the authority expedient for the purpose of the permitted development.

When permission is granted subject to conditions or is refused, the grounds of imposing such conditions or such refusal shall be recorded in the order and the order shall be communicated to the applicant.

In case of a department of the central or the State Government or the local authority intending to carry out any development other than operational constructions (as listed in The West Bengal Town and Country (Planning and Development) Act, 1979 and which are always outside the purview of Development Authority), on any land, the concerned department or authority as the case may be, shall notify in writing to the Development Authority of its intention to do so, giving full particulars thereof and accompanied by such document and plans as may be directed by the State Government from time to time, at least, one month prior to undertaking of such development. Where the concerned Development authority raises any objection in respect to the conformity of the proposed development, it will be addressed according to the provisions mentioned in Section 46 (6) & (7) of The West Bengal Town and Country (Planning and Development) Act, 1979.

Annexure I: LUMR Notification for Durgapur Sub-division

Registered No. WB/SC-247

No. WB(Part-I)/2019/SAR-4



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WEDNESDAY, JANUARY 2, 2019

[SAKA 1940

PART I—Orders and Notifications by the Governor of West Bengal, the High Court, Government Treasury, etc.

ASANSOL DURGAPUR DEVELOPMENT AUTHORITY

(A Statutory Authority of the Government of West Bengal)

Durgapur Office :

1st Administrative Building, City Centre

Durgapur - 713216,

Ph. No. (0343) 2546716, 2546815

Fax No. : (0343) 2545793

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Asansol Office :

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ceoadda.ud@gmail.com

Website : www.addaonline.in

Ref. No. ADDA/DGP/PC-170/13-14/429

Dated: 31.12.2018

NOTIFICATION

Whereas, Asansol-Durgapur Development Authority (hereinafter called ADDA), in exercise of the powers conferred under section 28 of the West Bengal Town & Country (Planning & Development) Act, 1979 in respect of Land Use and Development Control Plan (LUDCP) and rules framed there under, as amended from time to time, had published the Map and Register after preparation of the Present Land Use for the entire land within the 246 Mouzas under Durgapur Sub-Division in dailies like Aajkal (Bengali Daily) and The Indian Express (English Daily) vide memo no. of Public Notice being ADDA/DGP/NOC/PC 170/13-14/938 dated- 28/11/2017.

And whereas objections were received as per rule and those objections were disposed off by allowing a reasonable opportunity of being heard and after verification of the suggested modifications, the same were reflected in the Map and Register.

And now, in pursuance of sub-section (3) of section 29 of the West Bengal Town & Country (Planning & Development) Act, 1979 the modified Map & Register have been adopted and whereas ADDA has hereby published a Public Notice of such adoption of the Map & Register and copies of the same have been submitted to the State Government under memo no. ADDA/DGP/PC-170/13-14/08 dated 10/05/18 of Asansol-Durgapur Development Authority, Durgapur.

And whereas the Department of Urban development and Municipal Affairs, Town and Country Planning Branch has accorded the administrative approval on the publication of the official Gazette of LUMR of Durgapur Subdivision as per the provisions of Section 29(6) of WBT&CP (P&D) Act 1979 vide memo no. 2585-T&CP/2C-4/09 dated 4th October 2018.

Now, therefore, as per provisions of sub-section (6) of section 29 this notice is being published in the Official Gazette for such adoption.

S. ARUN PRASAD, I.A.S.
Chief Executive Officer
Asansol Durgapur Development Authority

Annexure II: Poverty Line Estimation

(Adopted from District Human Development Report for Bardhaman – 2011)

A comprehensive study on poverty measure has been made by the Department of Panchayats and Rural Development, Government of West Bengal based on 'Rural Household Survey'. This survey covered all households in rural areas of West Bengal and canvassed a short questionnaire covering 12 indicators of human necessities and well-being, namely (i) effective land holding (including land cultivated as registered *bargaholder*) of the household, (ii) housing condition, (iii) clothing, (iv) food security, (v) consumer durables, (vi) education status, (vii) earning capability status, (viii) livelihood, (ix) child education, (x) indebtedness, (xi) migration nature and (xii) special vulnerability. Data have been collected on a five-point scale depending on the status of the respondent household in respect of each indicator See Table 4.1

So, the total score for each household may vary from lowest 12 to highest 60 as its living condition improves. The State Govt. to estimate urban poverty in the municipal corporations and municipalities has conducted a more or less similar survey at household level. Now as per the State Govt.'s guidelines, all households who have scored less than or equal to 33 have been treated as BPL (Below Poverty Line) families. Using the results of Household Survey for BPL list we have analyzed the incidence of poverty in different blocks and municipalities/municipal corporations in Bardhaman district.

The published BPL list of the State has been criticized by many. **Correct estimation of poverty using 12 indicators as per the Central Govt.'s recommendation necessarily depends on** (i) participation of the people in reporting their objective conditions honestly and (ii) supervision of the community at the Gram Sansad/Municipality level for checking correctness of the recorded scores. In the survey of covering all households, like this Household Survey for BPL list certain anomalies are unavoidable when unskilled and low-paid investigators are employed to collect data. But the genuine limitation of this BPL list is perhaps the determination of cut-off point. To maintain parity between the poverty estimates of the Household Survey for BPL list (30.27%) and the 55th Round of NSSO (31.7%) for the State as a whole it was initially decided that the cut-off point of the scores obtained by each household for the BPL list would be 32 which was later on revised to 33 to include more families in the BPL list, though the incidence of poverty in West Bengal, as per the 61st Round of NSSO, declined to 28.5%. However, this change in cut-off point may lead to variation in the figures of absolute poverty, but the relative poverty of the blocks/municipalities (i.e., their relative positions or rankings) could be expected to be little affected by it and the emphasis is generally given to these relative positions in any documents of Human Development with a long-run planning perspective.

- (i) Knowledge deprivation, P1 [which is the weighted average of total illiteracy rate and proportion of children in the 5-13 years age group not attending schools when the weights are 2/3 and 1/3 respectively]
- (ii) health services deprivation, P2 [which is simply the proportion of non-institutional deliveries]
- (iii) provisioning deprivation, P3 [which is the arithmetic mean of (a) the proportion of households having no electricity connection, (b) the proportion of households having no toilet facilities and (c) the proportion of households having no access to safe drinking water]. But practically the second component of P3 apparently appears to be redundant in our study because presently every rural or urban household in the District enjoys the toilet facility as a part of *Nirmal Zilla Programme* (but it has a depressing effect on HPI). Further, unlike the earlier studies we have not included the 'proportion of children not fully immunized' as a component while computing P2, on the consideration that here some parents usually avoid child immunization programme not due to economic reasons, but due to social or religious reasons [discussed in chapter 6 and 7].

Next we have constructed the human poverty index, H for each block/municipality using the methodology suggested by Anand and Sen (2003). Here H is defined as:

$$H = [(1/3) P_1^\alpha + (1/3) P_2^\alpha + (1/3) P_3^\alpha]^{1/\alpha}$$

Table 4.1 : Indicators of Poverty Measure Through Rural Household Survey, 2005

Serial No.	Criteria	Scores**				
		1-Point	2-Point	3-Point	4-Point	5-Point
1	Effective Land-holdings of the household (together with land cultivated as registered Bargaholder)	No land	Irrigated land < 1 acre or non-irrigated land (N.I.L.) < 2 acres	Irrigated land > 1, < 2 acre or N.I.L. > 2, < 4 acres	Irrigated land > 2 < 4 acres or N.I.L. > 3 acres, < 6 acres	Irrigated land > 3 acres or N.I.L. > 6 acres
2	Housing Conditions	Houseless	Hut with only 1 room	Hut with ? 2 rooms	Partially pucca house	Pucca house
3	Clothing	No. of garments < 2	> 2, < 4 but no winter garments	> 2, < 4 with winter garments	> 4, with winter garments, but < 6	> 6
4	Food Security	Can manage < 1 square meal a day during the major part of a year	Can generally manage 1 square meal a day but sometimes fails	Can generally manage 2 square meals a day but sometimes fails	Can manage at least 2 square meals during all seasons	No shortage of food security
5	Consumer Durables*	No ownership	Owns at least 1	Owns at least 2	Owns at least 3	Owns all or any of the items*
6	Education Status of the head of the family	Illiterate	Primary, < =class V	Class VI to X	Upto graduate level/professional diploma	Masters' degree/ professional degree
7	Earning capability status	All members are infants/old/children/ no regular earner	All members are women and/or child labourers	Only adult male & women labourers, no child labour.	Only adult male labourers	Others
8	Livelihood	Daily/agricultural/ other physical labour	Agriculture and provides own labour at field	Self-employed rural artisan/hawker, those who do not employ others.	Labour oriented regular job in the unorganized sector	Others viz. job in organized sector, medical practitioner, advocate, own business, production agency.
9	Education of children	Never goes to school	School dropout and work outside with others	School dropout and work at home	School dropout and not employed	No school dropout
10	Indebtedness	Loans from familiar persons for everyday needs	Loans from familiar persons for production needs	Loans from an agency for some particular purpose	Loans from a recognized agency	No loan
11	Nature of migration	Temporary employment	Seasonal employment	Any other means of livelihood	Reasons other than income	Does not have to go out to earn
12	Special Vulnerability	Permanently disabled and without any social or govt. assistance	Aged, without assistance	Women head of the family	Expenses more than household income due to treatment of one of the household members from an incurable disease	None of the above

Annexure III: Surveyed Land Use' Classification

Level - I	Level - II	Level - III
BUILT-UP	Commercial	Retail Shopping Zone
		Wholesale Market/Godowns/Warehouse/Regulated Market
	Public & Semi Public	Govt./Semi-Govt./Public Office
		Education & Research
		Medical & Health
		Socio-Cultural and Religious
		Utilities and Services
		Cremation and Burial Grounds
	Recreation	Playground/Stadium/Sports Complex
	Residential	Primary Residential Zone
		Mixed Residential Zone
		Unplanned/ Informal Residential Zone
	Transportation and Communication	Major Roads
		Railway Track
		Bus Depots / Truck Terminals / Freight Complexes
		Transportation and Communication
	Others	Brick Kiln and Extractive areas
NON-BUILT-UP	Agriculture	Agriculture Land
		Forests
	Water bodies	Water bodies
BARREN LAND	Barren Land	Barren Land

Annexure IV: List of Industries under various categories as per West Bengal pollution Control Board (WBPCB)

List of Industries under "EXEMPTED" category of WBPCB

Source: <http://www.wbpcb.gov.in/writereaddata/files/Category-Order%2030-6-2016.pdf>

1. Agarbati manufacturing and packaging
2. Assembly of domestic electrical appliances, servicing & repairing
3. Atta chakkis (wheat grinding)
4. Auto emission testing centre
5. Ball pen refill
6. Bamboo and cane products (only dry operation)
7. Biogas plant
8. Black smithy (should not be allowed in congested areas)
9. Boarding and lodging
10. Book binding
11. Cable TV network
12. Candles manufacturing
13. Colour/black and white studio
14. Cushions/pillows and quilts manufacturing
15. Cyber café
16. Diesel generator sets (≤ 1 MVA) for residential buildings, commercial buildings and health care organisation etc.
17. Gold and silver smithy (excluding purification/polishing with any acid and smelting operation)
18. Handicraft products like conchshell, coconutshell, dokra, cane and bamboo products, baluchari saree, stone carving, wood carving, batik, sola work etc.
19. Handmade paper
20. House hold decorative (interior and exterior) involving coloured artificial flowers, sola, palms, jute etc. (without dyeing and bleaching of flowers and other items)
21. Building and construction projects upto 20,000 sq.mtr. built up area
22. Leather cutting and stitching (≤ 10 machines and without any motor)
23. Leather footwear and leather products (excluding tanning and hide processing) (cottage scale only)
24. Manual brass painting
25. Manufacture of steel trunks and suitcases
26. Manufacturing and packaging of 'alta' and packaging of 'sindoor'
27. Manufacturing of umbrella (only assembling)
28. Mushroom plantation and spawn
29. Musical instrument manufacturing
30. Optical frames
31. Optical lens manufacturing (without furnace)

32. Photo framing
33. Plant tissue culture laboratory
34. PP and PE bag (only cutting and sealing)
35. Radio assembling, servicing and repairing work
36. Repairing & servicing of bicycles, baby carriage and other non-motorised
37. Repairing and servicing of electronic equipment
38. Shoelace manufacturing
39. Soft toys, wooden toys manufacturing (except electronic and mechanical toys)
40. Software development for information and technology industry
41. Sports goods manufacturing
42. Storage and distribution of LPG cylinders less than threshold storage quantity at a time, as per rules
43. Tailoring and garment stitching/garment and apparel manufacturing
44. Tank calibration centre
45. Weigh bridge (not manufacturing)
46. Wooden block making for printing
47. Xerox and photocopying
48. Zari embroidery work
49. Automobile fuel outlet (only dispensing)
50. E-waste collection Centre
51. Rubber goods industry (without boiler)

List of Industries under "GREEN" category of the West Bengal pollution Control Board

Source: <http://www.wbpcb.gov.in/writereaddata/files/Category-Order%2030-6-2016.pdf>

The following industries under Green category can be permitted with adequate pollution control measures subject to the site clearance by local body.

1. Aluminium utensils from aluminium circles by pressing only (dry mechanical operation)
2. Ayurvedic and homeopathic medicines (without boiler)
3. Bakery / confectionery / sweets products (with production capacity <1tpd (with oil, gas or electrical oven)
4. Bi-axially oriented PP film along with metalizing operations [including adhesive coating, viscose / polyester coated brass, glass yarn]
5. Biomass briquettes (sun drying) without using toxic hazardous wastes
6. Blending of melamine resins & different powder, additives by physical mixing [including simple mixing and mould / coating compound by mixing, versatile master batch / polymer compound using talc, calcite, pigment, additives, polymer etc. as raw material]
7. Brass and bell metal utensils manufacturing from circles (dry mechanical operation without re-rolling facility)

8. Candy
9. Cardboard or corrugated box and paper products (excluding paper or pulp manufacturing and without using boilers)
10. Carpentry & wooden furniture manufacturing (excluding saw mill) with the help of electrical (motorized) machines such as electrical wood planner, steel saw cutting circular blade, etc. [including modular wooden furniture from particle board, MDF, sawn timber etc., ceiling tiles / partition board from saw dust, wood chips etc. and other agricultural waste using synthetic adhesive resin, wooden box making (without boiler)]
11. Cement products (without using asbestos / boiler / steam curing) like pipe, pillar, jafri, well ring, block / tiles etc. (should be done in closed covered shed to control fugitive emissions)
12. Ceramic colour manufacturing by mixing & blending only (not using boiler and wastewater recycling process)
13. Chilling plant, cold storage and ice making (including only chilling of fish)
14. Coke briquetting (sun drying)
15. Cotton spinning and weaving (small scale)
16. Dal Mills
17. Decoration of ceramic cups and plates by electric furnace
18. Digital printing on PVC Clothes
19. Facility of handling, storage and transportation of food grains in bulk
20. Flour mills (dry process)
21. Glass, ceramic, earthen potteries, tile and tile manufacturing using electrical kiln or not involving fossil fuel kiln (including activity not involving kiln)
22. Glue from starch (physical mixing) with gas / electrically operated oven / boiler
23. Gold and silver smithy (purification with acid, smelting operation and sulphuric acid polishing operation) (using ≤ 1 litre of sulphuric acid / nitric acid per month)
24. Heat treatment with any of the new technology like ultrasound probe, induction hardening, ionization beam, gas carburizing etc. (including heat treatment using electrical heater)
25. Insulation and other coated papers (excluding paper or pulp manufacturing)
26. Leather foot wear and leather products (excluding tanning and hide processing except cottage scale)
27. Lubricating oil, greases or petroleum based products (only blending at normal temperature)
28. Manufacturing of pasted veneers using gas fired boiler or thermic fluid heater and by sun drying
29. Oil mill ghani and extraction (no hydrogenation / refining)
30. Packing materials manufacturing from non-asbestos fibre, vegetable fibre yarn
31. Phenyl / toilet cleaner formulation and bottling
32. Polythene and plastic processed products manufacturing (virgin plastic)
33. Poultry, Hatchery and Piggery
34. Power looms (without dyeing and bleaching)
35. Puffed rice (muri) (using oil, gas or electrical heating system)
36. Pulverization of bamboo, scrap wood, rice husk, groundnut, soya waste, coconut shell

37. Ready mix cement concrete
38. Reprocessing of waste cotton including dhania mill & cotton from scrap cloth
39. Rice mill (Rice hullers only)
40. Rolling mill (gas fired) and cold rolling mill
41. Rubber goods industry (with oil / gas operated baby boiler \leq 2 TPH steam generation capacity)
42. Saw mills
43. Soap manufacturing (handmade without steam boiling / boiler)
44. Spice grinding (\leq 20 HP motor)
45. Spice grinding (>20 HP motor)
46. Steel furniture without spray painting
47. Steeping and processing of grains
48. Tyres and tube retreating (without boilers)
49. Ice making without using ammonia
50. CO₂ recovery (including core CO₂ manufacturing)
51. Distilled water (without boiler) with electricity as source of heat
52. Hotels (up to 20 rooms) without boilers or with electrical / gas fired boiler / heater / oven etc. having ≤ 10 KLD waste water generation and only restaurants with capital investment on land, building, plant and machinery up to 30 lac
53. Manufacturing of optical lenses (using electrical furnace)
54. Mineralized water (including water softening and demineralization plant)
55. Tamarind powder manufacturing
56. Cutting, sizing and polishing of marble stone
57. Emery powder (fine dust of sand) manufacturing
58. Fly ash export, transport & disposal facilities
59. Mineral stack yard / railway sidings
60. Oil and gas transportation pipeline
61. Seasoning of wood in steam heated chamber
62. Synthetic detergent formulation (excluding LABSA manufacturing)
63. Tea processing (without boiler)
64. Thermocol manufacturing (without boiler)
65. Industrial estates / parks / complexes / areas / export processing zones / SEZs / biotech parks / leather complex (Only for Green Category member industries)
66. Common Effluent Treatment Plant and effluent conveyance project (Only for Green Category member industries)
67. Any industry / industrial activity which is not covered in category lists, using oil / gas fired boiler of capacity <2 tph

List of Industries under "ORANGE" category of the WBPCB

Industries mentioned in the list of Orange category can be permitted with adequate pollution control measures. The consideration for siting of these industries will be decided by the West Bengal Pollution Control Board.

1. Dismantling of rolling stocks (wagons / coaches)
2. Bakery / confectionery / Sweet production units with capacity >1 TPD [with oven / furnaces], units with solid fuel fired oven of any capacity
3. Chanachur and laddoo from puffed and beaten rice (muri and chira) using husk coal / wood fired oven
4. Coated electrode manufacturing
5. Compact disc, computer floppy and cassette manufacturing / Reel manufacturing
6. Flakes from rejected PET bottles
7. Food and food processing including fruits and vegetable processing
8. Jute processing without dyeing
9. Manufacturing of silica gel
10. Manufacturing of tooth powder, toothpaste, talcum powder and other cosmetic items
11. Printing or etching of glass sheet using hydrofluoric acid
12. Silk screen printing, saree printing by wooden blocks
13. Synthetic detergents and soaps (excluding formulation) having waste water generation <100 KLD
14. Thermometer manufacturing
15. Cotton spinning and weaving (medium and large scale)
16. Almirah, grill manufacturing (dry mechanical process and with painting)
17. Aluminium and copper extraction from scrap using oil fired furnace (dry process only)
18. Railway locomotive workshops / integrated road transport workshop / Automobile servicing, repairing and painting having waste water generation <100 KLD) (excluding only fuel dispensing)
19. Ayurvedic and homeopathic medicine [with boiler]
20. Brickfields (excluding fly ash brick manufacturing using lime process)
21. Building and construction projects >20,000 sq.mtr. built up area (waste water generation <100 KLD)
22. Ceramic, Refractories (coal consumption <12 MT / day)
23. Coal washeries
24. Dairy and dairy products (small scale)
25. DG set of capacity >1 MVA but <5 MVA
26. Dry coal processing / mineral processing, industries involving ore sintering, pelletization, grinding, pulverization
27. Fermentation industry having waste water generation <100 KLD [including manufacture of yeast, beer, distillation of alcohol (Extra Neutral Alcohol)]

28. Ferrous and non-ferrous metal extraction (≤ 1 MT / hour production and excluding metal extraction from Lead) involving different furnaces through melting, refining, reprocessing, casting and alloy making
29. Fertiliser (granulation / formulation / blending only)
30. Fish feed, poultry feed and cattle feed
31. Fish processing and packing [excluding chilling of fish]
32. Forging of ferrous and non-ferrous metal (using oil or gas fired furnaces)
33. Formulation / pelletization of camphor tablets, naphthalene balls from camphor / naphthalene powders [including pesticide formulation]
34. Glass, ceramic, earthen potteries and tile manufacturing using oil or gas fired kiln, coating on glasses using cerium fluoride, magnesium fluoride etc. [including cement products like pipe, pillar, concrete sleeper using oil fired boiler]
35. Gravure printing, digital printing on flex, vinyl
36. Heat treatment using oil fired furnace (excluding cyaniding)
37. Hot mix plants
38. Hotels (<3 star) or hotels having >20 rooms and <100 rooms having waste-water generation <100 KLD and >10 KLD, and / or having boiler / heater / oven etc. [including restaurants with capital investment on land, building, plant and machinery >30 lac]
39. Ice cream
40. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule IV of Hazardous Wastes (M, H & TBM) Rules, 2008 and its amendments: items namely Paint and ink Sludge / residues
41. Copper Oxide Mill Scale, Copper Reverts, Cake & Residues, Waste Copper and copper alloys in dispersible form, Slags from copper processing for further processing or refining, Insulated Copper Wire, Scrap / copper with PVC sheathing including ISRI-code material namely "Druid", Jelly filled Copper cables, Zinc Dross-Hot dip Galvanizers SLAB, Zinc Dross-Bottom Dross, Zinc ash / Skimming arising from galvanizing and die casting operations, Zinc ash / Skimming / other zinc bearing wastes arising from smelting and refining, Zinc ash and residues including zinc alloy residues in dispersible form
42. Industry or process involving foundry operations (foundries having capacity <5 MT/hr requiring coal / coke consumption <500 kg/hr)
43. Lime manufacturing (using lime kiln)
44. Liquid floor cleaner, black phenyl, liquid soap, glycerol monostearate manufacturing
45. Manufacturing of glass (excluding solid fuel fired kiln and excluding lead glass)
46. Manufacturing of iodized salt from crude / raw salt
47. Manufacture of mirror from sheet glass
48. Manufacturing of mosquito repellent coil
49. Manufacturing of starch / sago
50. Mechanized laundry using oil fired boiler

51. Modular wooden furniture from particle board, MDF, sawn timber etc., ceiling tiles / partition board from saw dust, wood chips etc. and other agricultural waste using synthetic adhesive resin, wooden box making (with boiler)
52. New highway construction projects
53. Non-alcoholic beverage (soft drink) and bottling of non-alcoholic products with waste water generation <100 KLD
54. Paint blending and mixing (ball mill) including construction chemicals manufacturing by mixing
55. Paints and varnishes (mixing and blending)
56. Plyboard manufacturing (including veneer and laminate) with oil fired boiler / thermic fluid heater (without resin plant)
57. Potable alcohol (IMFL) by blending, bottling of alcoholic products (Waste water generation <100 KLD)
58. Printing ink manufacturing
59. Printing press
60. Reprocessing of waste plastic (including PVC)
61. Rolling mill (oil or coal fired)
62. Spray painting, paint baking, paint stripping
63. Steel and steel products using various furnaces like blast furnaces / open hearth furnace / induction furnace / arc furnace / submerged arc furnace / basic oxygen furnace [not attracting EIA (Notification) 2006 as amended]
64. Stone crushers
65. Surgical and medical products involving prophylactics and latex
66. Teflon based products
67. Thermocol manufacturing (with boiler)
68. Tobacco products including cigarettes and tobacco / opium processing
69. Transformer repairing / manufacturing (dry processing only)
70. Tyres and tubes vulcanization / hot retreading
71. Vegetable oils including solvent extraction and refinery / hydrogenated oils having waste water generation <100 KLD [including manufacturing of citronella oil (herbal aromatic chemical), bio-diesel from vegetable oil by trans-esterification process, jute batching oil and oil for sizing in paper industries from waste vegetable oil]
72. Wire drawing and wire netting [including bailing straps, wire drawing by cold process only]
73. Dry cell battery (excluding manufacturing of electrodes) and assembling and charging of acid lead battery in micro scale
74. Pharmaceutical formulation and related R&D
75. Synthetic resins
76. Synthetic rubber excluding moulding [including reclamation of rubber, manufacture of rubber solution containing mineral naphtha and rubber wastes]
77. Cashew nut processing
78. Coffee seed processing

79. Parboiled rice mills (Waste Water <100 KLD and fuel <12MTD)
80. Foam manufacturing
81. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule IV of Hazardous Wastes (M,H & TBM) Rules, 2008 and its amendments : Used Oil – As per specifications prescribed from time to time
82. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule IV of Hazardous Wastes (M,H & TBM) Rules, 2008 and its amendments : Waste Oil – As per specifications prescribed from time to time
83. Producer gas plant using conventional up-drift coal gasification (linked to rolling mills, glass and ceramic industry, refractories for dedicated fuel supply)
84. Airports and commercial air strips (waste water generation <100 KLD)
85. Tea processing with boiler
86. CETP and effluent conveyance project, (only Orange category member industries)
87. Health care establishment (as defined in BMW Rules) having waste water generation ≤100 KLD and without incinerator
88. Industrial estates / parks / complexes / areas / export processing zones / SEZs / biotech parks / leather complex (only Orange category member industries)
89. Heavy engineering (investment on plant and machinery ≤10 crore)
90. Waste to Energy plants ≤15 MW capacity
91. Handicraft products like terracotta work, sculptures (plaster of paris and fibre glass)
92. Infrastructure development project
93. Any industry / industrial activity which is not covered in category lists, using oil / gas fired boiler of capacity >2 TPH and ≤5 TPH

List of Industries under “RED” category of the WBPCB

1. Isolated storage of hazardous chemicals (as per schedule of manufacturing, storage of hazardous chemicals rules, 1989 as amended)
2. Automobile manufacturing (integrated facilities) and heavy engineering including ship building (with investment on plant and machinery >10 crores)
3. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule iv of HW (M, H & TBM) rules, 2008 - Items namely - Spent cleared metal catalyst containing copper, Spent cleared metal catalyst containing zinc
4. Manufacturing of lubricating oils, grease and petroleum based products
5. DG Set of capacity >5 MVA
6. Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black
7. Lead acid battery manufacturing (excluding assembling and charging of lead - acid battery in micro scale)
8. Phosphate rock processing plant (including grinding)
9. Power generation plant (including Waste to Energy plants >15 MW capacity which attract provisions of EIA Notification, 2006 as amended) [except Wind and Solar renewable power

plants of all capacities and Mini Hydel power plant of capacity <25 MW] (Other than Thermal Power Plants)

10. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule-IV of HW (M, H& TBM) Rules, 2008 - Items namely - Spent catalyst containing nickel, cadmium, Zinc, copper, arsenic, vanadium and cobalt
11. Processes involving chlorinated hydrocarbons [including rigid PVC pipe manufacturing]
12. Sugar (excluding Khandsari)
13. Fibre glass production and processing (excluding moulding) [including glass wool and rock wool production, manufacturing of mica based electrical insulating products using thinners/solvents]
14. Fire crackers manufacturing and bulk storage facilities
15. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule iv of HW (M, H & TBM) rules, 2008 - Items namely - Dismantlers Recycling Plants -- Components of waste electrical and electronic assemblies comprising accumulators and other batteries included on list A, mercury-switches, activated glass cullets from cathode-ray tubes and other activated glass and PCB-capacitors, or any other component contaminated with Schedule 2 constituents (e.g. cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they exhibit hazard characteristics indicated in part C of this Schedule.
16. Milk processes and dairy products (integrated project)
17. Phosphorous and its compounds
18. Pulp & Paper (waste paper based without bleaching process to manufacture Kraft paper)
19. Coke making, liquefaction, coal tar distillation or fuel gas making
20. Manufacturing of explosives, detonators, fuses including management and handling activities [including manufacturing of safety match]
21. Manufacturing of paints varnishes, pigments and intermediate (excluding blending / mixing)
22. Organic Chemicals manufacturing [including phenolic products, rubber chemicals]
23. Airports and Commercial Air Strips (waste water generation >100 KLD.)
24. Asbestos and asbestos based industries
25. Basic chemicals and electro chemicals and its derivatives including manufacturing of acid
26. Cement
27. Chlorates, per-chlorates & peroxides
28. Chlorine, fluorine, bromine, iodine and their compounds
29. Dyes and Dye-Intermediates
30. Health-care Establishment (as defined in BMW Rules) for waste water generation >100 KLD or with incinerator or both
31. Hotels (3 star and above) and hotels having ≥ 100 rooms or waste-water generation ≥ 100 KLD
32. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule iv of HW (M, H & TBM) rules, 2008 - Items namely - Lead acid battery plates and other lead scrap / ashes / residues not covered under Batteries (Management and Handling) Rules, 2001. [* Battery scrap, namely: Lead battery plates covered by ISRI, Code word "Rails"]

Battery lugs covered by ISRI, Code word "Rakes". Scrap drained / dry while intact, lead batteries covered by ISRI, Code word "rains"

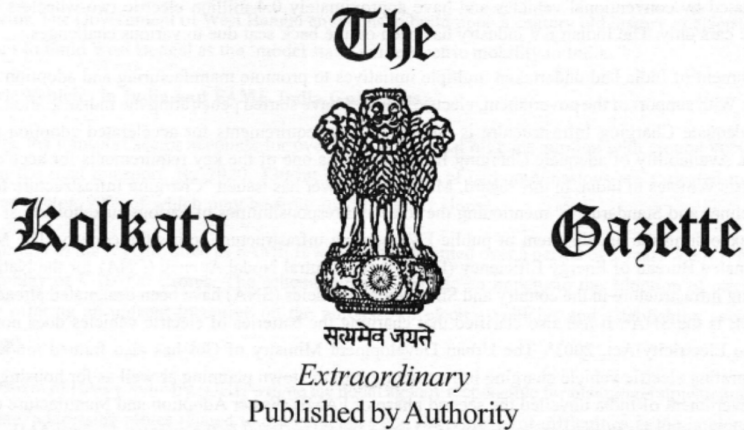
33. Industries engaged in recycling / reprocessing / recovery / reuse of Hazardous Waste under schedule iv of HW (M, H & TBM) rules, 2008 - Items namely - Integrated Recycling Plants -- Components of waste electrical and electronic assemblies comprising accumulators and other batteries included on list A, mercury - switches, activated glass cullets from cathode -ray tubes and other activated glass and PCB -capacitors, or any other component contaminated with Schedule 2 constituents (e.g. cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they exhibit hazard characteristics indicated in part C of this Schedule
34. Manufacturing of glue and gelatin [excluding glue from starch and including manufacturing of synthetic adhesives, shellac processing, rubber based adhesives, industrial adhesives using paraffin wax and resin powder (for polishing leather goods, shoes etc.)]
35. Mining and ore beneficiation
36. Nuclear power plant
37. Pesticides (technical) (excluding formulation)
38. Photographic film and its chemicals
39. Railway locomotive work shop / Integrated road transport workshop / service centers having waste-water generation ≥ 100 KLD
40. Yarn / Textile processing involving any effluent / emission generating processes including bleaching, dyeing, printing and colouring [including composite woolen mill, dewaxing of raw wool and raw silk, manufacturing of woolen blanket from woolen fibre]
41. Chlor Alkali
42. Ship Breaking Industries
43. Oil and gas extraction including CBM (offshore & on-shore extraction through drilling wells)
44. Industry or process involving metal surface treatment or process such as pickling / electroplating / paint stripping / heat treatment using cyanide bath / phosphating or finishing and anodizing / enamellings / galvanizing
45. Tanneries
46. Ports and harbour, jetties and dredging operations
47. Synthetic fibers including rayon, tyre cord, polyester filament yarn [including natural fibre, raw wool, raw silk, cellophane paper, cellulose nitrate]
48. Thermal Power Plants
49. Slaughter house (as per notification S.O.270 (E) dated 26.03.2001) and meat processing industries, bone mill, processing of animal horn, hoofs and other body parts
50. Aluminium Smelter
51. Copper Smelter
52. Fertilizer (basic) (excluding formulation / granulation / blending only)
53. Iron & Steel (involving processing from ore / integrated steel plants) and or Sponge Iron units
54. Pulp & Paper (waste paper based units with bleaching process to manufacture writing & printing paper)

55. Zinc Smelter
56. Oil Refinery (Mineral Oil or Petro Refineries)
57. Petrochemicals Manufacturing (including processing of Emulsions of oil and water)
58. Pharmaceuticals (Basic Drugs) and related R & D
59. Pulp & Paper (Large-Agro & wood), Small Pulp & Paper (agro based-wheat straw / rice husk) [including straw board, grey board, duplex board and de-inking, bleaching activity]
60. Distillery (molasses / grain / yeast based) including Fermentation industry with waste water generation ≥ 100 KLD (including blending, bottling of alcoholic products with waste water generation ≥ 100 KLD)
61. Ceramic, Refractories having coal consumption ≥ 12 MT / day
62. Common treatment and disposal facilities (CETP, TSDF, E-waste recycling, CBMWTF, effluent conveyance project, incinerators, solvent / acid recovery plant, MSW sanitary landfill sites, STP)
63. Ferrous and Non-ferrous metal extraction > 1 MT/hr involving different furnaces through melting, refining, reprocessing, casting and alloy making and including metal extraction from Lead [including gold and silver smithy using greater than 1.0 litre sulfuric acid / nitric acid per month, forging with coal fired boilers and smelting, lead, zinc and other metals]
64. Industrial estates / parks / complexes / areas / export processing zones / SEZs / biotech parks (For Red Category member industries)
65. Industry or process involving foundry operations(foundries having capacity ≥ 5 MT/hr and requiring coal / coke consumption ≥ 500 kg/hr)
66. Manufacturing of glass (bulb, lamp, optical lens etc.) using coal / wood fired kiln including manufacturing of lead glass
67. Parboiled rice mills (Waste Water generation ≥ 100 KLD or fuel ≥ 12 MTD or both)
68. Synthetic detergents and soaps (excluding formulation) waste water generation ≥ 100 KLD
69. Vegetable oils including solvent extraction and refinery / hydrogenated oils having waste water generation ≥ 100 KLD.
70. Non-alcoholic beverage (soft drink) and bottling of non-alcoholic products with waste water generation ≥ 100 KLD
71. Building and construction projects $> 20,000$ sq.mtr. built up area (waste water generation ≥ 100 KLD)
72. Cleaning / washing of old PVC and MS drums using mineral turpentine oil, kerosene oil and water
73. Steel and steel products using various furnaces like blast furnaces / open hearth furnace / induction furnace / arc furnace / submerged arc furnace / basic oxygen furnace [industries attracting EIA (Notification) 2006 as amended]
74. Any industry / industrial activity (irrespective of category), having solid fuel fired boiler / Thermic Fluid Heater (TFH) irrespective of capacity or oil / gas fired boiler > 5 TPH

Annexure V: Electric vehicle Parking-Charging Guidelines

Registered No. WB/SC-247

No. WB(Part-I)/2021/SAR-234



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THURSDAY, JUNE 03, 2021

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PART I—Orders and Notifications by the Governor of West Bengal, the High Court, Government Treasury, etc.

POWER DEPARTMENT GOVERNMENT OF WEST BENGAL

No.: 189-POW-2021

Date: 03rd June, 2021

Electric Vehicle Policy 2021

1. Preamble

The transport sector accounts for 18% of total energy consumption in India. This translates to an estimated 94 million tonnes of oil equivalent (MTOE) energy. If India were to follow the current trends of energy consumption, it would require an estimated 200 MTOE of energy supply annually, by the year 2030 to meet the demand of this sector. At the moment, this demand is being met mostly through imported crude oil, which therefore makes this sector vulnerable to the volatile International crude oil prices. Moreover, the sector also contributes estimated 142 Million Tonnes of CO₂ emissions annually, out of which 123 million tonnes is contributed by the road transport segment alone.

Keeping in view the climate change commitments made by Government of India during the COP21 Summit held at Paris to reduce emission intensity by 33-35% by 2030 from 2005 levels, it is pertinent to introduce alternative means in the transport sector which can be coupled with India's rapid economic growth, rising urbanization, travel demand and country's energy security. Electric mobility presents a viable alternative in addressing these challenges, when packaged with innovative pricing solutions, appropriate technology and support infrastructure and thus, has been on the radar of Government of India.

Most importantly, electric mobility will enhance electricity demand which is seriously affecting our Discoms and also contribute to balancing energy demand, energy storage and environmental sustainability. Electric vehicles could help diversify the energy needed to move people and goods thanks to their reliance on the wide mix of primary energy sources used in power generation, greatly improving energy security. They could help support the uptake of clean electricity, enabling greater use of variable renewable in electricity production. If coupled with the decarbonization of the power sector, electric vehicles would also provide major contributions to keep the world on track to meet its shared climate goals.

The Electric Vehicle industry in India is far behind, with less than 1% of the total vehicle sales. Currently, Indian

roads are dominated by conventional vehicles and have approximately 0.4 million electric two-wheelers and a few thousand electric cars only. The Indian EV industry has been on the back seat due to various challenges.

The Government of India had undertaken multiple initiatives to promote manufacturing and adoption of electric vehicles in India. With support of the government, electric vehicles have started penetrating the Indian market. However, availability of adequate Charging Infrastructure is one of the key requirements for accelerated adoption of electric vehicles in India. Availability of adequate Charging Infrastructure is one of the key requirements for accelerating the adoption of electric vehicles in India. In this regard, Ministry of Power has issued "Charging Infrastructure for Electric Vehicles - Guidelines and Standards"^{1&2)} mentioning the roles and responsibilities of various stakeholders at Central & State level, for expediting the development of public EV charging infrastructure across the country. The Ministry of Power has designated Bureau of Energy Efficiency (BEE) as the Central Nodal Agency (CNA) for the National-level rollout of charging infrastructure in the country and State Nodal Agencies (SNA) have been designated already. For our State, WBSEDCL is the SNA³. It has also clarified that charging the batteries of electric vehicles does not require a licence under the Electricity Act, 2003⁴. The Urban Development Ministry of GoI has also framed model building byelaws for integrating electric vehicle charging infrastructure into the town planning as well as for housing colonies⁵. Recently, the Government of India unveiled the second phase of FAME (Faster Adoption and Manufacture of (Hybrid and) Electric Vehicles) scheme to promote adoption of Electric Vehicles (EVs) in the country. Under FAME-II scheme, INR 10,000 crores has been allocated to promote EV adoption in the country.

West Bengal is India's sixth-largest state in terms of economic size, with a gross state domestic product (GSDP) of INR 10trillion in 2017-18, estimating an average annual GSDP growth rate from 2011-12 to 2018-19 of about 12.06%. West Bengal accounted for 6.3% of India's cumulative GSDP. The state boasts a per capita GSDP of INR 117,704 (US\$ 1,681.49) compared to India's per capita GDP of INR 138,253 (US\$ 1,975.05).⁶⁾

Geographically, West Bengal is the 13th largest state with an area of 88,752 square km and accounts for almost 7.5% of the India's population. With an average density of 1,029 people per square km, West Bengal is the 4th largest state in terms of population.⁷ The state of West Bengal shares international borders with Bangladesh, Bhutan and Nepal with the Bay of Bengal in the south of the state. West Bengal is situated in eastern India and shares its borders with five Indian states Jharkhand, Bihar, Odisha, Sikkim and Assam. Location advantage makes the state a traditional market for eastern India, the Northeast, Nepal and Bhutan. It is also a strategic entry point for markets in South-East Asia.

West Bengal has a history to be associated with electrification of transportation systems. Kolkata, the capital of West Bengal was the first city in the entire Asia, that introduced public transportation system running on electricity in 1902 and has also been the first to introduce electric buses for public transport in the city. Currently it has a low electric vehicle population of only 5,895 petrol hybrid, 4,254 diesel hybrid, 35,999 e-Rickshaws, 1,240 two-wheelers, 93 four-wheelers, 93 buses and 24 trucks out of 93.36 lakh non transport and 10.07 lakh transport vehicle population in the State⁸. The introduction of electric mobility represents a unique opportunity to leverage the electricity infrastructure for accelerated and cost-effective mobility deployment.

As an economic powerhouse of India, the state of West Bengal while understanding the technical, commercial and social impact of the electric mobility sector, has felt the need to provide a strategic direction to the emerging electric

1 "Charging infrastructure for Electric Vehicles (EVs)-Revised Guidelines and Standards" issued on 01.10.2019 (web-link)

2 Amendment in the revised Guidelines and Standards for Charging Infrastructure for Electric Vehicles June 2020 - https://powermin.gov.in/sites/default/files/uploads/Amendment_in_Revised_Guidelines.pdf(link is external)

3 State Nodal Agencies under the provision of "Charging Infrastructure for Electric Vehicles Guidelines and Standards" issued by Ministry of Power on 14.12.2018

4 Regulation regarding delicensing the sale of electricity at charging stations April 2018 - https://powermin.gov.in/sites/default/files/uploads/Clarification_EV.pdf(link is external)

5 Guidelines issued by Ministry of Housing and Urban Affairs (MoHUA), 2016 - [http://mohua.gov.in/upload/whatsnew/5c6e472b20d0aGuidelines%20\(EVCI\).pdf](http://mohua.gov.in/upload/whatsnew/5c6e472b20d0aGuidelines%20(EVCI).pdf)(link is external)

6 IBEF - <https://www.ibef.org/states/west-bengal.aspx>

7 Census of India 2011

8 Transport Department, WB figures for January 2021

mobility sector. The Government of West Bengal envisions to build upon a century old history of electric transportation and envisions to build West Bengal as the 'model state' in the electric mobility in India.

2. Electric Vehicles in India and FAME India Guidelines

In India, the transport sector accounts for over 40% of the total oil consumption with around 90% of the demand arising from the road transport. By 2020, 330 mt (million tons) of carbon emissions are expected to arise from the transportation sector, 90% of which may be from road transport alone⁹.

The phase II of the scheme titled as FAME II will be implemented over a period of 3 years w.e.f. 1st April 2019, with an overall outlay of ₹ 10,000 Crores. The scheme aims to provide an impetus to the adoption of electric and hybrid vehicles by offering an upfront incentive on the purchase of electric vehicles and establishing necessary charging infrastructure.

Department of Heavy Industry (DHI) will be the nodal agency responsible for planning, implementation and review of the scheme, addressing issues related to the guidelines and for removal of difficulties in the implementation of the scheme. DHI will also issue guidelines as and when necessary to meet the objectives of the scheme.

The proposed verticals of the scheme and breakup of fund allocation are listed below:

Table 1: FAME II scheme components (All amounts are in ₹ Crore)

S.No	Component	2019-20	2020-21	2021-22	Total fund requirement
1.	Demand incentives	822	4,587	3,187	8,596
2.	Charging infrastructure	300	400	300	1,000
3.	Administrative expenditure including publicity, ICE (Information, Communication and Education) activities	12	13	13	38
	Total allocation for FAME-II	1,134	5,000	3,500	9,634
4.	Committed expenditure of Phase-I	366	0	0	366
Total		1,500	5,000	3,500	10,000

Following categories of vehicles are eligible for demand incentives under the FAME II scheme -

- Buses (only Electric Vehicle technology)
- Four Wheelers (Electric (EV), Plug-in Hybrid (PHEV) and Strong Hybrid (SHEV))
- Three-wheeler (Electric) including Registered E-Rickshaws
- Two Wheelers (Electric)

Keeping in view the fact that cost of batteries is one of the significant factors of difference in acquisition price of EVs and ICE vehicles, the demand incentives will be based on battery capacity (i.e. energy content measured in kWh).

With greater emphasis on providing affordable and environmentally friendly public transportation options for the masses, the scheme will apply mainly to vehicles used for public transport or those registered for commercial purposes in 3W, 4W and Bus segments. However, privately owned registered 2Ws will be covered under the scheme considering them as a mass segment.

⁹ International Energy Agency (IEA) - World Energy Outlook 2018

Vehicle segment wise approximate amount of incentives, an initial target number of vehicles and other details are listed below:

Table 2: Incentive allocation and guidelines in the scheme

S. No.	Vehicle Segment	Maximum number of vehicles to be supported	Approx. size of battery in kWh	Total approx. incentive @ 10,000/ kWh for all vehicles and 20,000/ kWh for buses and trucks	Maximum ex-factory price to avail incentive	Total fund supported by DHI
1.	e-2wheelers	10,00,000	2 kWh	₹ 20,000	₹ 1.5 Lakhs	₹ 2,000 Crore
2.	e-3wheelers (including e- rickshaws)	5,00,000	5 kWh	₹ 50,000	₹ 5 Lakhs	₹ 2,500 Crore
3.	e-4wheelers	35,000	15 kWh	₹ 1,50,000	₹ 15 Lakhs	₹ 525 Crore
4.	4W strong hybrid vehicle	20,000	1.3 kWh	₹ 13,000	₹ 15 Lakhs	₹ 26 Crore
5.	e-bus	7,090	250 kWh	₹ 50 Lakhs	₹ 2 Crore	₹ 3,545 Crore
Total Demand Incentive						₹ 8,596 Cr

3. Vision of the Policy

Leverage on the history of electric mobility transportation ecosystem implementation in West Bengal to lead India's future of electric mobility.

4. Mission

The Power Department, Government of West Bengal has identified Electric Mobility as the need of the hour and an eminent transformation of the transportation ecosystem. The Power Department aims to place West Bengal as a frontrunner in building a sustainable transportation infrastructure by promoting the Electric Mobility Ecosystem in state thereby promoting, sustainability, and energy efficiency.

5. Objective

- Promote innovation actively through grants and venture funds to research organizations, incubators, and start-ups working on next generation battery technology, fuel cell technologies, EV power trains and EV electronics.
- Enable investment into charging/battery swapping infrastructure and hydrogen generation and fuelling station development.
- Promote usage of EVs to enable transition to environmentally friendly cities.

6. Targets

- Government of West Bengal has set for itself an ambitious target to be one amongst the top three best states in India in terms of the electric mobility penetration by the end of FAME II implementation year 2022 And further, the state will target to be the best State in electric mobility penetration by 2030.
- Target is to have 10 lakh EVs, combined across all segment of vehicles, during the policy implementation.
- Target to have 1,00,000 public, semi-public charging stations during the policy implementation.

- Achieve an Electric vehicle/public charge point ratio of 8 by the implementation of the policy. Create robust infrastructure for electric vehicles including adequate power supply and network of charging points with favourable power tariff.
- Recycle and reuse used batteries and dispose the rejected batteries in an environment friendly manner to avoid pollution.

7. Strategy

- Charging Infrastructure
- Demand creation for EVs
- Research & Development

8. Policy Measures

The Power Department, Government of West Bengal will focus on policy interventions intended to encourage EV adoption in the State. Further, it is envisaged that network and diffusion effects shall spur early market creation through demand side incentives and creation of charging infrastructure will promote the culture of EV usage in the State. Through the announcement of such progressive policy initiatives, West Bengal could eventually lead the race to zero emission vehicles (ZEVs) in the run-up-to COP26 and beyond. The State's approach to each class of vehicles will be as follows:

8.1. Establishment of an 'EV Accelerator Cell

- An EV Accelerator Cell will be established as a nodal-entity for implementing the electric mobility programme within the state. The Cell shall work with following objectives and suggested functions, which can expand over time:
- Facilitating inter-departmental coordination on framing regulatory mechanism and progressive policies to enhance uptake.
- Enabling faster decision-making, enhanced investments, and accelerated implementation of the West Bengal Electric Vehicle Policy so as to support cities' and the state's ambition towards electric mobility.
- The proposed EV Accelerator Cell could be housed within the Department of Transport/ Department of Power, Government of West Bengal, comprising of staff possessing relevant technical expertise to exclusively deal with all matters related to electric mobility in the state.
- EV Accelerator Cell shall facilitate ICE vehicles phasing-out plan across all vehicle segments including 2Ws, 3Ws, 4Ws passenger cars and vans, and buses (including inter-city fleets) for which the 'State EV Fund' could be utilised (refer to clause no. 8.2 below). It will further enable sustainability of the proposed EV Accelerator Cell.
- Setting up of EV Charging Infrastructure Working Group under the Cell to facilitate faster creation of charging points.
- Setting up 'EV Forum' possibly comprising of representatives from State Government Departments, businesses, industry associations, research organisations, think tanks, and international players, will be created within the EV Accelerator Cell for facilitating the EV transition.

8.2. State-level EV Awareness

- State-level EV awareness campaigns and intensive public outreach programmes could be formulated. The following areas could be focused upon with an aim that:
- These programs could focus on driving knowledge regarding the benefits of adopting EVs and key elements of the State EV policy.

- A dedicated EV awareness web-portal and mobile app with State-level Charge-points Registry and journey planner maybe developed.

8.3. Innovative Pilot Projects for showcasing Sustainable Mobility

- Exploring Pilot projects such as Clean Street Test-Bed, Zero-Emission Vehicle Zones, Wireless EV charging, Smart & Intelligent Clean Energy Management System, Pop-up chargers for cities to integrate renewable energy, electric vehicles, and storage through IoT, big data analytics for integrating electric mobility within transport planning, innovative e- mobility solutions in times of COVID.
- Twinning of cities from West Bengal with the cities from the EV-leading countries, for knowledge exchange, sharing of best practices and research collaboration in the field of electric mobility.
- Setting up 'Innovation Challenge Fund' and organizing Hackathons to boost EV innovation and enhance scalability of affordable & innovative solutions.

8.4. Charging Infrastructure

- Facilities will be provided to setup swapping stations in the form of a kiosk to service 2 and 3 wheelers.
- Existing private buildings such as malls and other commercial buildings will be incentivized to setup charging/battery swapping stations.
- DISCOM shall release supply to charging/battery swapping stations within 48 hours of application.

8.5. Facilitating Charging Points Installation and Enabling a Digital Operational Framework

- Charge-point Operators (CPOs) will be invited to set-up EV charging facilities and battery swapping stations across the State in multiple phases through 'Concessional Locations' for charging stations. The following points relate to their implementation and proposed digital operation:
- The 'Concessional Locations' for charging stations at bare minimum lease rentals will be carved-out from existing public parking zones and other locations
- A list of Concessional Locations for the first phase of rollout will be identified by the EV Charging Infrastructure Working Group under the EV Accelerator Cell.
- An open, publicly owned data-base/ State charge-point registry powered by Big Data (AI & ML-driven) will be developed which can provide real-time information on public charging infrastructure.
- The state-level charge-points registry can be accessed freely by in-vehicle navigations systems and various charge-point apps/ maps. A unified access and payment interface (UPI) for ease of utilisation for EV charging services from different service providers will be developed. This can be further improvised through the introduction of a state-level Smart Mobility Card.

8.6. Facilitating Public Charging Infrastructure for EVs through DISCOMs

- Electricity Distribution Utilities (DISCOMs) could be encouraged to establish public EV charging stations in their respective license areas within the state (as well as in the designated highways/ expressways corridors) and expenditure for the same can be allowed to pass through in the ARR until there is a significant impact on retail tariff
- Provisions as laid-down under the Section-51 of the Electricity Act maybe followed as revenue earned by those public charging stations and the benefits could be passed on to the consumers (with a justification of tariff reduction)
- Tariff for EV charging (or, input electricity tariff for the public charging station) could be in- around INR 6/ kWh (per Unit) single part tariff so as to keep the end-user service charge from those public charging stations attractive for EV owners (it will reduce operating/ running cost of an EV).

8.7. A Comprehensive and Smart Technology-based EV Charging Framework

- A framework for setting-up of EV charging stations including home charging, workplace charging and EV-ready parking (including those for taxis) schemes will be developed.
- Smart Energy Management (future ready grid) with smart charging features (including Vehicle-to-Grid), use of renewable energy with storage and power banking will also be explored.
- Both locally produced RE (such as solar rooftop) as well as RE power procured through Power Purchase Agreement (PPAs) and open-access will be encouraged.

8.8. City & Building codes

Implementation of the Ministry of Housing and Urban Affairs Government of India amendments to the Model Building Byelaws 2016 & Urban Regional Development Plans Formulation and Implementation Guidelines 2014 for Establishing EV Charging Infrastructure as well as the Energy Conservation Rules would be taken up with the concerned Government Departments.

8.9. Energy sale

- Public charging high tension (HT) and low tension (LT) station points shall be governed by a promotional single part tariff not exceeding 6/ kVAh for the next two years.
- Third party EV charging infrastructure providers will be allowed to procure power from DISCOM at regulator determined tariff and will be allowed to provide the charging service to EVs.
- Cloud charging features will be encouraged in order to have all metering and transactions done digitally with payment apps, NFC enabled devices, RFID tags etc. while keeping it flexible and customer friendly.

8.10. Hydrogen Generation and Refuelling Infrastructure

- The first few Hydrogen generation and refuelling stations will be developed by government
- Private developers will be allowed to setup hydrogen stations
- In coordination with GOI, GoWB will also list out all the safety standards that need to be adhered to by developers of hydrogen generation and refuelling stations.
- Developers of Private Hydrogen Generation and Re-fuelling Infrastructure will be eligible for - 100% net SGST, accrued to the state, as reimbursement for purchase of machinery for Hydrogen generation and refuelling stations.

8.11. Model E-visionary Electric Mobility (EM) cities

- The cities of Kolkata, Asansol, Darjeeling and Howrah will be declared as model EM cities with phase-wise goals to adopt EVs, charging & hydrogen refuelling infrastructure and new EV enabling building codes.
- New Town Kolkata will be the pilot city for all new initiatives
- Smart city proposals to the central government will include support for charging infrastructure and hydrogen fuelling stations. Identified areas will be designated as "Green zones" with entry only to non-fossil fuel-based vehicles.
- These cities will develop specific goals of charging and Hydrogen refuelling infrastructure density within a defined timeline linked to target for deployment of EVs. These cities will create mobility blueprints and make provision in infrastructure needs to support the charging stations and EV only zones.
- Multiple government offices and public areas will be chosen for installing public charging equipment that can be used by all.
- GoWB will support CSR initiatives in the Electric mobility ecosystem, as per the guidelines of GOI
- Inter-city electrification green routes will be declared with a target to promote inter-city electric mobility penetration for the Kolkata-Asansol and Kolkata-Digha routes. Rapid chargers will be deployed at an average distance of 25 kms, catering to electric buses and heavy-duty vehicles.

9. Research & Innovation Oriented Industrial Development**9.1. R&D Grants**

- A research grant will be announced to fund the most innovative solutions in the mobility space. Public or private research labs, incubators, start-ups that work on products and solutions in electric mobility space will also be provided land and office space to quickly setup their facility.
- Research scholars who move to the state to work for research in electric mobility and its components will be offered one-time grant and incentivized via accommodation and transportation benefits.

9.2. Innovation & Collaboration Landscape

- A Centre of Excellence or, an 'EV Innovation Centre' will be established. This Centre will have the following focus-areas and objectives:
- Industry-oriented research on battery technology development, re-cycling & re-use of batteries, battery management system, charging infrastructure, efficient controllers and powertrains.
- Setting up of 'Battery Industrialisation Hub' within EV Innovation Centre to fast track development of cost-effective, high-performance, durable, safe and recyclable batteries.
- Design of affordable EVSEs suitable to Indian conditions and needs.

9.3. Testing and Quality control labs

- In coordination with National automotive testing and R&D Infrastructure (NATRiP), GoWB shall strive to set-up quality testing center for EVs.
- These facilities would be accessible to all manufacturers in the sector.

9.4. Skill-Development & Workforce Training

- Setting up of an Intelligent Mobility Skill Centre (IMSC) to impart training for creating new green jobs in the EV sector
- Vocational/ ITI courses will be designed to train EV drivers, mechanics, charging station staff, and EV entrepreneurs
- Creating a cohort of women drivers/ owners of three wheelers for last mile connectivity
- International Exchange Programme on 'EV skilling' will also be considered

10. Scope and Validity of the Policy

The policy shall be effective from the date of its notification in the official Gazette. This policy shall remain applicable for a period of 5 years unless repealed or substituted with a new policy, whichever is earlier. The monitoring committee shall periodically review the progress under the policy and recommend any change required to meet all its objectives.

By order of the Governor,

GOMA LHAMU TSHERING

*Joint Secretary
Power Department
to the Government of West Bengal.*

**Amendments in
Model Building Bye-Laws
(MBBL - 2016)
for
Electric Vehicle Charging Infrastructure**

**Town and Country Planning Organization
Ministry of Housing and Urban Affairs
Government of India**

February, 2019

Preamble

To address the quantum of emissions from the "Transport" sector powered by fossil fuels, "electric vehicle" is considered a viable option for short distance / inter-city trips with adequate "charging stations" available. It is necessary to make provisions for establishing Public Charging Stations (PCS) in the local areas including urban CBDs for vehicle re-fuelling / recharging.

Hence, amendments are required for addition of norms for charging Infrastructure provisions in Development Control Regulations and enabling provisions for installing "*Charging Infrastructure*" in the building premises and core urban areas of the cities.

Based on available charging technologies and their evolution, type of vehicles, the types of chargers, indicating number of charging points required for setting up adequate PCS within the local urban areas including the building premises of all building types and with the long term vision of implementing 'electric mobility' during the next 30 years, amendments are made in the relevant sections (Chapter 10) of the Model Building Bye-laws, 2016.

Amendments to Model Building Bye-Laws, 2016

In Chapter 10: Sustainability and Green Provisions

After section 10.3 "Various Guidelines for Green Rating Systems".

Provision of "Electric Vehicle Charging Infrastructure" to be added at clause 10.4

10.4 Electric Vehicle Charging Infrastructure (EVCI):

Based on the occupancy pattern and the total parking provisions in the premises of the various building types, charging infrastructures shall be provided only for EVs, which is currently assumed to be 20% of all 'vehicle holding capacity'/ 'parking capacity' at the premise.

Additionally, the building premise will have to have an additional power load, equivalent to the power required for all charging points (in a PCS) to be operated simultaneously, with a safety factor of 1.25 (refer *Explanatory Note- Annexure III*).

10.4.1 Residential Buildings (plotted house)

Table 1: Charging Infrastructure requirements for individual house/ self-use

Building Type	Plotted House
Ownership of Station	Private (Owner)
Connection and Metering	Domestic meter
Type of Charger	Slow chargers as per owner's specific requirements
Modes of Charging	AC (Single charging gun)
Norms of Provisions	Min. 1 SC and additional provisions as per the owner individual.

Note:

- The charging infrastructure installed by a home owner shall be construed as a Private CI meant for self-use (non-commercial basis) as per the note at clause no 4 of the explanatory note at Annexure III.

10.4.2 All other buildings (including Group Housing)

Any PCS installed at Public/Private areas or building premises of any category that caters to commercial mode of charging of EVs shall be deemed as a Public Charging Station and shall have to install the minimum requirements of chargers as specified in the Guidelines dated 14.12.2018 of Ministry of Power (refer Annexure IV for MoP Guidelines). However, in order to provide sufficient charging points for the EV share in all vehicles (refer clause 3 of the *Explanatory Note- Annexure III*), ratio of types of chargers is recommended in the table below -

Table 2: Charging Infrastructure requirements for PCS (commercial use)

Building Type	Any building type			
Ownership of Station	Service provider			
Connection and Metering	Commercial Metering and Payment			
Types of Charger	as per min. requirements specified in MoP Guidelines (refer Annexure IV)			
Additional chargers	PCS service providers shall install additional number of kiosk/chargers beyond the minimum specified requirements to meet the ratio of charging points as prescribed below (by the type of vehicles).			
Norms of Provisions for charging points	4Ws 1 SC - each 3 EVs 1 FC - each 10EVs	3Ws 1 SC - each 2 EVs	2Ws 1 SC - each 2 EVs	PV (Buses) 1 FC - each 10 EVs

Note:

- Charging bays shall be planned currently at 20% capacity of all vehicles including 2Ws and PVs(cars)
- Open metering and on-spot payment options to be available for all users.
- Provision of FCB CS and BS shall not be mandatory, and will be at the discretion of the service provider.

----- x x x -----

Abbreviations used:

2Ws	-	Two wheelers
3Ws	-	Three wheelers
4Ws	-	Four wheelers / PV(cars)
PVs	-	Passenger Vehicles
EV	-	Electric Vehicle
SC	-	Slow Charger / Slow Charging (AC)
FC	-	Fast Charger / Fast Charging (DC and a few AC ones)
PCS	-	Public Charging Stations
MBBL	-	Model Building Bye-Laws, 2016
FCB CS	-	Fluid Cooled Battery Charging Station
BS	-	Battery Swap

**Amendments in
Urban and Regional Development Plans
Formulation and Implementation Guidelines
(URDPFI - 2014)
for
Electric Vehicle Charging Infrastructure**

**Town and Country Planning Organisation
Ministry of Housing and Urban Affairs
Government of India**

February, 2019

Preamble

To encourage "Electric Vehicles" as a viable option for long distance trips / inter regional trips with adequate "charging stations", it is necessary to make provisions for establishing Public Charging Stations (PCS) in the regional facilities for re-fuelling/recharging of vehicles.

Hence, amendments are required for addition of norms for charging Infrastructure provisions in Development Control Regulations and provide "*Charging Infrastructure*" in the City Master Plans / Regional Plans.

Based on available charging technologies and their evolution, type of vehicles, the types of chargers indicating number of charging points required for setting up adequate PCS as regional facilities and with the long term vision of implementing 'electric mobility' during the next 30 years, amendments are made **Under Chapter 8: Infrastructure Planning, at section 8.4.7 "Distribution Services"**, Table 8.57 – "Norms for Distribution Services" of URDPFI Guidelines, 2014 (Volume I) as detailed in clause 3 of this document.

2. Existing provision in Urban and Regional Development Plans Formulation and Implementation Guidelines (URDPFI, 2014)

Chapter 8: Infrastructure Planning (Volume I of URDPFI Guidelines 2014)

At section 8.4.7 "Distribution Services",

Table 8.57 – "Norms for Distribution Services"

Sr. No.	Category	Population served per unit	Land Area Requirement		Other Control
			Type of facility	Area requirement	
1.	Petrol/Diesel filling and Service Centre				
	Permitted in:		i. Only filling station	30m x 17m	• Shall not be located on road having Right of Way less than 30m.
	Central District		ii. Filling cum service station	36m x 30m	
	Sub central district				• Special cases in old city areas may be considered based on the approval by statutory authorities.
	District centres		iii. Filling cum service station cum workshop	45 x 36m	
	Community Centres (Only Filling Station)			18m x 15m	• Shall be approved by the explosive/ fire department.
	Residential & industrial Use Zone in Urban Areas		iv. Filling station only for two and three wheelers		
	Along National and State Highways				
	Villages identified as growth centres				
	Freight Complex				
	Proposed major roads				
	Police/security forces services (for captive use only) (MPD, pg 125)				
2.	Compressed Natural Gas (CNG)/filling centre				
	Permitted in:		CNG mother station	1080 sqm	• Shall not be located on road having Right of Way less than 30m.
	All use zones (except in Regional Parks and Developed District Parks)		(Including building component - control room/office/dispensing room/store, pantry and W.C.)	(36m x 30m)	
	Along National and State Highways				• Shall be approved by the explosive/fire department.
	Villages identified as growth centres				
	Freight Complex				
	Proposed major roads				
3.	LPG Godown/GasGodown	40,000 to 50,000	Capacity = 500 cylinders or 8000 kg of LPG Area (inclusive of guard room)	520 sqm (26m x 20m)	• The major concern for its storage and distribution is the location, which shall be away from the residential areas and shall have open spaces all around as per the Explosive Rules.
4.	Milk Distribution	5000	Areas inclusive of service area	150sqm	---

3. **Amendments to URDPFI Guidelines 2014:-** Necessary provisions for EV Charging have been incorporated at Sr. No. 1 and Sr. No. 3 of table 8.57. The revised table will be as under:

Table 8.57 – “Norms for Distribution Services”:

Sr. No.	Category	Population served per unit	Land Area requirement	Other controls
		Type of Facility	Area required	
1.	Petrol/Diesel filling/EV charging* and service centre			
	Permitted in:	i. Only filling station	30m x 17m	Shall not be located on road having Right of Way less than 30m.
	Central District	ii. Filling cum service station	36m x 30m	
	Sub central district	iii. Filling cum service station cum workshop	45 x 36m	Special cases in old city areas may be considered based on the approval by statutory authorities.
	District centres	iv. Filling station only for two and three wheelers	18m x 15m	
	Community Centres (Only Filling Station)	v. Public Charging Station (PCS) (minimum requirement as per MoP guidelines)	Min. 13.5m x 5.5m	Shall be approved by the explosive/ fire department.
	Residential & industrial Use Zone in Urban Areas	vi. FCB CS 1 CCS 1 CHAdeMO	Min. 15m x 7m	Charging station and all equipment layout with respect to nearest dispensing unit (DU)/fuel tank to be as per PESO rules.
	Along National and State Highways	vii. Battery Swapping Station (optional)	Earmarking area for "battery fitting"	Equipped with CCE and LCC, as required in addition to requirements of PCS.
	Villages identified as growth centres			Optional addition to PCS by the SP
	Freight Complex			
	Proposed major roads			
	Police/security forces services (for captive use only) (MPD, pg 125)			
2	Compressed Natural Gas (CNG)/filling centre			
	Permitted in:	CNG mother station (Including building component - control room/office/dispensing room/store, pantry and W.C.)	1080 sqm (36m x 30m)	Shall not be located on road having Right of Way less than 30m.
	All use zones (except in Regional Parks and Developed District Parks)			Shall be approved by the explosive/ fire department
	Along National and State Highways			
	Villages identified as growth centres			
	Freight Complex			
	Proposed major roads			

Sr. No.	Category	Population served per unit	Land Area requirement	Other controls	
		Type of Facility	Area required		
3.	Standalone Public Charging Stations (PCS)				
A	Public Charging Stations	Every 25 Kms, both sides along the highways/roads	PCS with charger ratio (minimum requirements of PCS, as per MoP) - 1 FC for every 10 EVs 1 SC for every 3 EVs	Additional area as per total parking capacity at the Restaurants /Eateries.	Equipped with CCE and LCC, as may be required for fast charging.
B	Fast Charging facility / FCB CS (for Long Distance & Heavy Duty EVs)	Every 100 Kms, both sides along the highways/roads	At least 2 chargers 1 CCC type 1 CHAdeMO type (min 100KW each)	Min. 15m x 7m	May be coupled with the PCS at item A above, with CCE and LCC.
C	Battery Swapping Station	Optional provisions as per MoP Guidelines.	Standalone Provided along with FBC charging Stations	Min 5.5m x 2.75m	May be coupled with PCS at item A or FCB CS at item B above.
4	LPG Go down/ Gas Go down	40,000 to 50,000	Capacity = 500 cylinders or 8000 kg of LPG Area (inclusive of guard room)	520 sqm (26m x 20m)	The major concern for its storage and distribution is the location, which shall be away from the residential areas and shall have open spaces all around as per the Explosive Rules
5	Milk Distribution	5000	Areas inclusive of service area	150 sqm	---

* A detailed explanation is given at Appendix 'P' – "Explanatory Note on EVCI" and Appendix 'Q' – "Guidelines issued by Ministry of Power on EVCI, dated 14.12.2018" (in Volume IIA & IIB).

Notes:

- Super Kerosene Oil/Light Diesel Oil storage for industrial uses shall be given separately.
- Large petrol/diesel storage centers to be located outside city limits.
- To be organized by a service provider for connection and metering, available 24x7 for all users.
- Provision of FCB CS & BS shall not be mandatory, and will be at the discretion of the service provider.
- Size recommended for FCB CS is subject to variance as per technical specifications of the SP.
- Fuel filling stations (including COCO outlets) shall conform to specifications and safety norms as per the amendment in Petroleum Rules or, PESO Act and obtain clearances as maybe necessary from the 'Competent Authority', for adding PCS to Retail outlets/ Fuel filling stations.

For Standalone PCS:

- The ratio of provision of charging points (FC/SC) with respect to total parking capacity will be considered for only 20% (i.e. 20% of total parking capacity will be considered EVs & ratio will be applied on them)
- Land allocation is preferably to be contiguous/in close proximity to commercial land of the Mid-way Restaurant.
- "General Conditions of Siting" of Standalone PCS shall follow clause 4.1-4.4 of IRC:12 (latest revision) except for the distance between stations which shall be as per the Guidelines issued by MoP, dated Dec, 2018.

Annexure VI: River Regulatory Zones (RRZ) Guidelines



Ministry of Housing and Urban Affairs
Government of India



RIVER CENTRIC URBAN PLANNING GUIDELINES

TOWN AND COUNTRY
PLANNING ORGANISATION

MINISTRY OF HOUSING AND URBAN AFFAIRS
GOVERNMENT OF INDIA

13. Urban River Zoning Regulations

38. United Nations has on 26 July, 2010 resolved unanimously to declare “right to safe and clean drinking water and sanitation as a human right”. Healthy rivers are essential for realization of the said obligation by India as a Party to the UN. Further, statutory mandate from Section 3, 5 and 6 of the Environment (Protection) Act, 1986 seeks to regulate such activities that are found to be incompatible with maintaining the health of the river systems as dynamic and life sustaining entities. It is thus proposed to frame rules to regulate harmful activities in and around the rivers.

Categorization of urban river stretches

Category I Urbanized stretch shall include stretches of rivers (including their tributaries), with or without embankments, in designated urban areas where infrastructure facilities in the form of roads, buildings (residential, commercial, recreational), temples, ghats etc exist.

Category II Peri urban stretch shall include stretches of rivers (including their tributaries) in suburban and rural areas, with or without embankments, where infrastructure development if any is moderate and the land is primarily under natural vegetation, forestry, agriculture and grazing.

Lateral zonation of river banks

“Active Flood Plain” is defined as High

Flood Line (HFL) which in entrenched / embanked stretches of a river stretch shall be the available space (including the river channel/s) in the valley of entrenched stretch or between two embankments or between existing roads on either side along a river acting as an embankment. In other stretches of the river, HFL/ active flood plain shall be the 100-year flood line.

No Development and Construction Zone (NDCZ): The competent authority shall determine a NDCZ on either bank for each river which shall not be less than the “Active Flood Plain” of the river.

High & medium impact zones: The competent authority shall identify and designate suitable distance/s from the NDCZ on either bank keeping local topographical conditions in mind, to be called as high impact and medium impact zones. In plains, where river topography is relatively flat, these distances shall not be less than 1 and 3 Km respectively from the NDCZ depending on the width of the urban river.

Following public facilities shall not be permitted in active flood plain/ NDCZ:

- Hospitals, nursing homes, and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood,
- Police stations, fire stations, vehicle

and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during, and after the flood,

- Structures or facilities that produce, use, or store highly volatile, inflammable, explosive, toxic, and/or water-reactive materials,

- Public semi-public facilities like sewage and water treatment plants (STP/ WTP); power plants and stations; bus depot; metro stations/ depot etc which form the life line infrastructures for any city,

- Commercial extraction of ground water by non-government / private agencies shall not be permitted with in NDCZ in any category of the river.

The Urban Local Body/ Urban Development Authority shall act as per the directions of Ministry of Environment and Forests to designate the State Environment Impact Assessment Agency (SEIAA) or the State Pollution Control Board (SPCB) to act as the Competent Authority for implementation of these regulations for environmental conservation and preservation, including water bodies, forests and drains, parks, playgrounds, burial and crematoria.

Uses/Activities permitted

Parks/Gardens, playgrounds, sports facilities including stadium, swimming pools, burial cemeteries and crematoria may be permitted under this category. The Parking for these facilities shall be provided as per the provisions of the Master Plan and up to 2% of the total land

area with FAR of 0.50 and G+1 structure may be permitted for ancillary uses required to support the main activity such as eating joints/ restaurants, stalls, sheds for storage etc.

Uses/Activities permissible under special circumstance by the Competent Authority

i. Open air theatres, indoor recreational uses, dwelling for watch and ward, sports clubs, water front tourism development projects, libraries, milk booths, Horticultural Producers' Cooperative Marketing and Processing Society (HOPCOMS), public toilets.

ii. The ground coverage for such use shall not exceed 5% of the total area with required parking facility and shall not be more than G+1 floor in any case.

14. Regulations for Eco-sensitive Zones and Water Bodies

i. Restrictions imposed by the competent authorities are to be maintained as buffers for various eco sensitive zones such as reserve forests/ protected forests etc. Permissions in sensitive areas earmarked on the land use plan shall be considered only by the planning authority.

ii. The buffer for water bodies such as lakes/ streams/ drains shall be governed as per the NGT Orders. In case of water bodies, a 75 meter buffer of No Development and Construction Zone is to be maintained around the lake as per the revenue record with exception of activities associated with lakes. This buffer may be taken into account for reservation of park while sanctioning plans.

iii. Similarly storm water drains that get discharged into the river may be categorized into 3 types namely Primary, Secondary and Tertiary. These drains may have a buffer of 50, 35 and 25 m (measured from the edge of the drains) respectively on either side. In case the buffer has not been marked due to cartographical error for any of the above types of drains, then based on the revenue records buffer and the existing ground situation may be considered by the Authority in all such cases without referring the land use plan while according approval for building/ development/ layout plan.

iv. In addition, any other notifications or directions and applicable buffers which may be issued by the Competent

Authority from time to time for such eco-sensitive areas shall become applicable.

v. In case of any amendment in the existing regulations of the Competent Authority resulting in reduction of the extent of buffer, the land use of the adjoining parcel of land will be the land use for such exempted land parcels.

vi. Within the demarcated buffers for the valley systems excluding the requirements of buffer as per NGT judgment, the following uses are allowed:

(a) Sewerage treatment plants and water treatment plants

(b) Roads, pathways, formation of drains, culverts, bridges etc which will not obstruct the water course, run offs, channels.

vii. If the river portion is a part of the layout/ development plan, then that part of the river zone could be taken into account for reservation of parks and open spaces both in development plan and in sub-division regulations, as the case may be.

viii. Any land falling within the river zone for which permission was accorded by the Authority or Government prior to the date of notification, and then such permission shall be valid irrespective of the land use classification in the Development Plan or Master Plan of the city concerned.

39. While preparing/ revising the master plans, it would be appropriate to categorize the zones as per the environment sensitivity as given below.

Passive recreational zone: These zones are established to provide recreational and leisure facilities and activities in selected areas that have unique features (including visual corridors, environmentally sensitive areas, buffer areas, or are along significant routes). These parks can include recreational commercial or public facilities at the neighborhood, community, and regional level.

Active recreational zone: Are those zones established to provide parks that offer active recreational and sporting activities. While structures within the parks are allowed, the general character of the Active Recreational Zone should remain as green and recreational.

Protected area: These zones are established to conserve and protect the environmentally sensitive areas such as steep slopes and rivers which are rich in nature and biodiversity. These areas are non-developable for other strategic purposes. In the case of highly sensitive areas such as forests and rivers, the zoning for the protected areas shall supersede.

Annexure VII: Township Development Guidelines

Registered No. WB/SC-247

No. WB(Part-I)/2008/SAR-365



Extraordinary
Published by Authority

KARTIKA 9]

FRIDAY, OCTOBER 31, 2008

[SAKA 1930

PART I—Orders and Notifications by the Governor of West Bengal, the High Court, Government Treasury, etc.

GOVERNMENT OF WEST BENGAL

Urban Development Department

‘NAGARAYAN’

DF-8, Sector-1, Bidhannagar, Kolkata - 700 064

NOTIFICATION

No. 2255-T&CP/C-2/IC-3/2005(II)

Kolkata, the 27th October, 2008

In exercise of the power conferred by section 138 of the West Bengal Town and Country (Planning and Development) Act, 1979, the Governor is pleased hereby to make the following rules:-

Rules

1. Short title & commencement:

- (1) These rules may be called the West Bengal Town & Country Planning (Development of Township Projects) Rules, 2008.
- (2) They shall come into force on the date of publication in the Official Gazette

2. Definitions:

In these rules, unless the context otherwise requires,

- a) “the Act” means the West Bengal Town & Country (Planning & Development) Act, 1979 (West Bengal Act XIII of 1979);

- b) "Additional Open Space" means the areas to be provided in the form of greenery, water bodies etc, to be used as a buffer between zones or used to ensure the desired physical environment;
- c) "Applicant" means owner of the land within the planning area and includes authorised representative of the owner or any body having the right to develop the said land in accordance with law and shall also include the transferee;
- d) "Basic urban infrastructure amenities" includes infrastructure to provide the basic utilities and services like roads and transport system including parking facilities, street lighting, street furniture; power supply and distribution system; telecommunication system; necessary system and facilities for potable water supply, drainage, sewerage and sanitation system; solid waste including bio-medical and e-waste management system; organised open space including landscaping, plantation, urban forestry, rainwater harvesting and other relevant urban services;
- e) "Basic urban infrastructure facilities" includes commercial facility, medical facility, educational facility, recreational facility and other infrastructural facilities like post office, fire fighting station, police station/outpost and other relevant facilities;

Explanation - For the purpose of this clause,-

- i) 'commercial facility' shall include premises provided for convenient shops to cater the needs of the township dwellers, market of perishable goods and other establishments or institutions or centres in such activities or such services as compatibly carried out or rendered in the residential area or zone;
- ii) 'medical facility' shall include premises provided for in-patient treatment and out-patient health care unit, dispensary or pharmacy or medical stores and physician's chambers, pathological examination and other diagnostic centres, blood bank, shops of medical equipments & instruments and other alike;
- iii) 'educational facility' shall include the premises for pre-preliminary level school to institutions for higher or specialized learning;
- iv) 'recreational facility' shall include premises for outdoor and indoor games and sports, socio-cultural and religious activities;
- f) "Clause" means the clause under the section of the Act;
- g) "Net Project Area" means the Project Area minus the area to be provided for accommodating basic urban infrastructure amenities, basic urban infrastructure facilities and additional open space;

- h) "Project Area" means the total area of the contiguous parcel of land, covering at least forty(40) hectare of land in case of a residential township, thirty (30) hectare of land in case of any special category of township and one hundred (100) hectare of land in case of an integrated township;
- i) "Section" means the section of the Act;
- j) "Town Planner" means a person with requisite qualification, recognized by the Institute of Town Planners, India with Bachelor Degree in Civil Engineering or Architecture or Planning or equivalent.

3. Accessibility:

- (1) The site of proposed township project shall have an access with a road not less than thirty (30) metres land width (Right of Way), if not abutting an existing road of at least Sub-Arterial category of Road as recommended in Urban Development Plans Formulation and Implementation (UDPFI) guidelines. The land required to develop this access road shall not be included in the project area.
- (2) No internal road within the Project Area shall be of land width less than ten (10) metres.

4. Allocation of Land Area:

The area to be provided for basic urban infrastructure amenities, basic urban infrastructure facilities and additional open space within the township project shall not be less than the following limit:-

Type of Township	Area for Basic Urban Infrastructure Amenities	Area for Basic Urban Infrastructure Facilities	Additional Open Space
Residential	35% of Project Area	10% of Project Area	nil
Institutional	35% of Project Area	10% of Project Area	nil
Industrial	35% of Project Area	10% of Project Area	10% of Project Area
Other Special Category	35% of Project Area	10% of Project Area	nil
Integrated	35% of Project Area	10% of Project Area	5% of Project Area

Note:

- i) In Special Category of township like Information Technology or Information Technology Enabled Services or Health or Sports or alike township. Principal use shall be covering at least two-third of the Net Project Area but not exceeding three-fourth of the Net Project Area and at least one-fourth of the Net Project Area shall be used for residential purpose.

- ii) In Integrated Township at least one-third of the Net Project Area shall be used for residential purpose and at least half of the Net Project Area shall be used for other special purposes like Institutional, Industrial, Commercial Complexes and alike.
- iii) There shall be provision for economic weaker section and low income group category housing in the township as per the stipulation made by the State Government in this regard.
- iv) Principal uses shall also include necessary allied activities exclusively associated with the basic purpose like hostel accommodation, staff quarters; specific outdoor and indoor play areas like football ground, gymnasiums etc. and recreational facilities like auditoriums and open air theatres for exclusive use of the institute or industry.
- v) Adequate provision for residential accommodation for service-population should be considered.

5. Development Control Regulations:

Development Control Regulations for a township Project shall conform to the Land Use and Development Control Plan (LUDCP) of the concerned area. The area where no Floor Area Ratio (FAR) in Land Use and Development Control Plan (LUDCP) has been prescribed, the FAR shall not exceed 2.50. The ground coverage shall not exceed 35% of the project area. The area where no LUDCP exists, the Development Control Regulations for Township Project of West Bengal shall be followed.

6. Number of Dwelling Units:

Every Township shall have at least two hundred (200) dwelling units per hectare of the Net Project Area.

7. Application for Permission for Development of 'Township' Project:

- (1) Subject to the provision of this rule, the applicant shall apply for permission for development of township project to the concerned Planning and Development Authority in the Form appended to this rule.
- (2) The following particulars and documents shall be submitted along with the application:-
 - a) Detailed Project Report / Master Plan of the Township Project
 - b) Schedule of Plots within the Project Area;
 - c) Drawing in Quadruplicate
 - i) An index map on a scale not smaller than 1:10000;

- ii) Site Plan of the Project Area with peripheral dimension showing the surrounding area and the existing access or accesses to the Project Area on a scale not smaller than 1:4000;
 - iii) Layout plan of the Project Area on a scale not smaller than 1:1000 showing the use specific location of the area to be provided for basic urban infrastructure amenities, basic urban infrastructure facilities and additional open space including the schedule of areas of the proposed uses, clearly delineating the different use-zones as far as possible by means of colour, letters and explanatory notes or in some other convenient manner illustrated in the plan;
 - iv) Off site infrastructure;
 - v) Development phasing with project completion schedule;
 - vi) Public Transport Linkage Plan;
 - vii) Details of proposed land showing the contours;
 - viii) Rehabilitation & Resettlement Plan; if required;
 - ix) A detailed plan of all proposed development work showing the plan, section and elevation on a scale not smaller than 1:100;
 - x) Environment Impact Assessment report;
- d) No objection certificate from relevant agencies and appropriate authorities or authorised persons like West Bengal Fire Services, West Bengal Pollution Control Board, Structural Engineer, Geo-Technical Engineer etc;
 - e) An extract or record of rights or property register card or any other relevant document showing ownership of land proposed to be specified;
 - f) The Authority may also call from the applicant in writing any further information that may be required for the purpose of considering the application;
 - g) The Site Plan and Layout plan shall be prepared by a Town Planner and the detailed plan of all proposed development works shall be prepared by a registered Architect or Civil Engineer.
- (3) The Planning or Development Authority may also allow the applicant to submit a proposal for development of a township project with pertinent drawings and documents for provisional permission even prior to application in prescribed format. After scrutiny of the said drawing and documents, the concerned Authority, if satisfied in principle with the proposal, may issue an interim permission valid for a period not exceeding one (1) year, provided the applicant

pays at the rate of Rs. 5000.00 (Rupees five thousand) per hectare of the Project Area as processing charge.

8. Time-limit for completion of Township Project:

The Applicant shall complete the development work in at least one-third of the project area to make it operational within a span of five (5) years from the date of receipt of formal permission from the concerned Authority.

By order of the Governor.

P.K. PRADHAN,

Principal Secretary to the Government of West Bengal

Annexure VIII: Development/Construction Guidelines in vicinity of Airport

MINISTRY OF CIVIL AVIATION

NOTIFICATION

New Delhi, the 30th September, 2015

G.S.R.751 (E).—The Central Government, being of opinion that it is necessary and expedient to do so for the safety of aircraft operations, proposes to make the following certain rules, in exercise of the powers conferred by sub-section (1) and clause (o) and clause (r) of sub-section (2) of section 5 read with section 9A of the Aircraft Act, 1934 (XXII of 1934) (hereinafter referred to as the said Act), and in supersession of the Ministry of Civil Aviation notification number S.O.84(E), dated the 14th January, 2010 published in the Gazette of India, Part II, section 3, sub-section (ii), except as respect things done or omitted to be done before such supersession. The objections or suggestions on the draft S.O. were called from the stakeholders and are considered by the Government to the extent admissible. In the public interest the rules are notified by seeking exemption from putting the rules again in the public domain.

1. Short title and commencement.— (1) These rules may be called the Ministry of Civil Aviation (Height Restrictions for Safeguarding of Aircraft Operations) Rules, 2015.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Application .— These rules shall apply to all civil and defence aerodromes listed in Schedule III to Schedule VII, as amended from time to time.

3. Definitions.— In these rules, unless the context otherwise requires, —

- (i) "Act" means the Aircraft Act, 1934 (XXII of 1934);
- (ii) "aerodrome" includes civil and defence airports, airstrips, communication, navigation and surveillance facilities used for the aeronautical purposes in India;
- (iii) "aerodrome elevation" means the elevation of the highest point of the landing area as specified in Schedule III to Schedule VII;
- (iv) "Authorised officer" means the officer authorised by the defence authorities for the purposes of these rules;
- (v) "Airports Authority" means the Airports Authority of India constituted under section 3 of the Airports Authority of India Act, 1994 (55 of 1994);
- (vi) "Colour Coded Zoning Map" of an airport means the map, prepared and certified by the Airports Authority indicating the areas around the airport in different colour coded grids with the permissible heights above mean sea level for the purpose of aerodrome safeguarding and a model Colour Coded Zoning Map of Navi Mumbai International Airport is given at Schedule IX;
- (vii) "Designated officer" means the officer of Airports Authority of India responsible for processing and/or issuance of No Objection Certificate as specified in Appendix M of Schedule VIII;
- (viii) "No Objection Certificate" means the certificate issued under rule 5;
- (ix) "structure" includes building, mast, tower, chimney, poles, transmission lines, elevated roads or viaducts or bridges and elevated railway lines, wind farms and all other man-made structures;
- (x) Words and expressions used but not defined in these rules shall have the meanings respectively assigned to them in the Act.

4. Restrictions on constructions, erections, trees, etc.— (1) No structure shall be constructed or erected, or any tree planted or grown on any land within a radius not exceeding twenty kilometers from the Aerodrome Reference Point of the civil and defence aerodromes, as specified in Schedule III to Schedule VII, without obtaining a No Objection Certificate for the height clearance, except in cases specified in sub-rule (2) of rule 7.

(2) No structure shall be constructed or erected, or any tree planted or grown on any land within the areas specified in Schedule I of the civil and defence aerodromes, as listed in Schedule III to Schedule VII, except for essential navigational aids and other installations required for aeronautical purposes.

(3) No structure higher than the height specified in Schedule II, shall be constructed or erected and no tree, which is likely to grow or ordinarily grows higher than the height specified in the said Schedule shall be planted on any land within a radius of twenty kilometers from the Aerodrome Reference Point.

(4) The level roads and level railway lines within one kilometer of the airport boundary wall shall also be subject to issuance of the No Objection Certificate.

5. Issuance of No Objection Certificate.— (1) The No Objection Certificate in respect of civil aerodromes shall be issued by the designated officer on behalf of the Central Government in respect of civil aerodromes.

(2) The No Objection Certificate in respect of defence aerodromes shall be issued by the authorised officer in accordance with Schedule I and Schedule II, subject to such other conditions as the said authorised officer may deem fit.

(3) In case of State owned and private aerodromes, licensed by the Directorate General of Civil Aviation, the No Objection Certificate for the protection of obstacle limitation surfaces (OLS) at such airports shall be issued by the designated officer and the procedure in cases of State owned and private aerodromes, not licensed by the Directorate General of Civil Aviation, shall be regulated in the manner as specified in rule 13.

(4) The application for issuance of No Objection Certificate in respect of civil aerodromes, shall be made by the applicant to the designated officer through the No Objection Certificate Application System (NOCAS), accessible on the website of the Airports Authority at www.aai.aero.

6. Issuance of Colour Coded Zoning Map.— The Colour Coded Zoning Maps (CCZM) shall be issued by the Airports Authority based on the latitude & longitude of the area in respect of civil aerodromes which shall indicate through different colour coded grids, the permissible heights in the areas around the airport, falling within the radius not exceeding twenty kilometers from the Aerodrome Reference Point. The CCZM shall be available at AAI website www.aai.aero.

7. Approval for construction of buildings, structures, etc.— (1) After considering the No Objection Certificate issued by the designated officer or the authorised officer, the concerned Local, Municipal or Town Planning and Development Authorities shall approve the construction of buildings or structures not exceeding the Permissible Top Elevation. Local, Municipal or Town Planning and Development Authorities shall also consider the existing building regulations or bye-laws or any other law for the time being in force before approving the construction of buildings or structures.

(2) In cases of aerodromes where the Colour Coded Zoning Maps has been issued, the Local, Municipal or Town Planning and Development authorities shall, in accordance with the height specifications provided in such Colour Coded Zoning Maps, approve the construction of the structures, as per the existing building regulations or bye laws or any other law for the time being in force:

Provided that no such approval shall be given by the Local, Municipal or Town Planning and Development authorities for sites which lies in approach, take off and transitional areas of an airport or in any other area, marked in the Colour Coded Zoning Map for the compulsory obtaining of No Objection Certificate from the designated officer or authorised officer.

(3) The Local, Municipal or Town Planning and Development authorities shall certify on the sanction plan that the Floor Space Index or Floor Area Ratio and the related height of the building or structure is within the permissible elevation as indicated in the Colour Coded Zoning Map for the given site.

(4) The Local, Municipal or Town Planning and Development Authorities shall submit the details of structures approved under sub-rule (1) and sub-rule (2) to the concerned designated officer or the authorised officer within a period of thirty days from the date of such approval.

8. Clearances for siting towers of fixed wireless stations.— (1) The clearances in respect of siting towers of fixed wireless stations shall be issued by the Standing Advisory Committee on Radio Frequency Allocation (SACFA) of the Ministry of Communication & Information Technology, Government of India, taking into consideration the heights above mean sea level specified in the Colour Coded Zoning Map.

(2) The Standing Advisory Committee on Radio Frequency Allocation (SACFA) of the Ministry of Communication, Government of India, shall submit the details of siting towers of fixed wireless stations approved under sub-rule (1) to the concerned designated officer or the authorised officer within a period of thirty days from the date of such approval.

9. Processing of No Objection Certificate cases.— (1) Processing of NOC cases in respect of civil aerodromes shall be carried out at nine Airports Authority offices one each at Delhi, Kolkata, Mumbai, Chennai, Guwahati Hyderabad, Bengaluru, Ahmedabad and Nagpur airports.

(2) The designated officer available at the offices specified in sub-rule (1) shall be responsible for the processing of applications and issue of No Objection Certificate and/or issue authorization for issuance of NOC for height clearance by concerned designated officer with respect to the civil aerodromes.

(3) A Panel of Chartered Engineers and Surveyors may be assigned by the Airports Authority to carry out physical verification of details of Site Elevation and Coordinates as submitted by the applicant. The expenses of the same shall be borne by the applicant.

(4) The officer in-charge of the corporate office at the headquarters of the Airports Authority in New Delhi shall supervise the functioning of the regional and station level offices.

10. Duties of designated officer.— (1) The designated officers, specified in Appendix M of Schedule VIII, shall be responsible for issuance of No Objection Certificate in respect of civil aerodromes and shall co-ordinate with the respective Local, Municipal or Town Planning and Development authorities in granting approval for construction of buildings or structures.

(2) The designated officer shall forward the copy of NOCs issued by him under sub-rule (1) above to the concerned airport operator and respective Local, Municipal or Town Planning & Development authorities.

11. Appellate Committee.— (1) There shall be an Appellate Committee consisting of the following, namely:-

- (a) Joint Secretary (Airports), Ministry of Civil Aviation, Government of India – Chairperson;
- (b) Joint Director General of Civil Aviation (Aerodrome), Directorate General of Civil Aviation – Member;
- (c) Member (Air Navigation Services), Airports Authority of India – Member; and
- (d) One technical expert having knowledge in the field of communication or air traffic management – Member.

(2) If any person or Local, Municipal or Town Planning and Development authorities or any airport operator is aggrieved with the decision of the Designated officer, such person or entity may appeal to the Appellate Committee for redressal of his/their grievances with respect to the height permissible under these rules.

(3) The cases for reference to the Appellate Committee specified in sub-rule (2) shall be received and processed by the corporate office at the headquarters of the Airports Authority in New Delhi.

12. Responsibilities of local authorities and airport operators.— (1) For the effective verification, monitoring and controlling the obstructions around the airports, it shall be the responsibility of the Local, Municipal or Town Planning and Development authorities and the airport operator to ensure that the height of the structures and their locations are in accordance with the approved building plans and the No Objection Certificate issued by the concerned designated officer or the authorised officer.

(2) For the purposes of sub-rule (1), the Local, Municipal or Town Planning and Development authorities and the airport operator shall develop appropriate mechanism with necessary trained manpower and equipment so as to verify the height of the structures, site elevations and site location or coordinates in World Geodetic System 1984 (WGS84).

13. Procedure to be followed in case of State owned and private airports not licensed by Directorate General of Civil Aviation.— (1) In case of State owned or private aerodromes not licensed by the Directorate General of Civil Aviation, the concerned State Government shall be responsible for the protection of obstacle limitation surfaces at such airports:

Provided that the designated officer shall give guidance to the State Government on the protection of obstacle limitation surfaces, whenever such guidance is sought by the concerned State Government.

14. Development and up gradation of aerodromes.— (1) The approved master plan of the aerodromes shall be considered for drawing and protecting the various obstacle limitation surfaces to ensure its development and future expansion or up-gradation.

(2) The designated officer or the authorised officer, before issuing the No Objection Certificate in respect of development or upgradation of any aerodrome (including its runway dimension), shall take into consideration the proposed communication, navigation and surveillance (CNS) facilities and the procedure for Air Navigation Service Operations (PANS-OPS) for height clearance at a given airport.

(3) Necessary consultation with the concerned stakeholders shall be carried out by the airport developer, airport operator or by the Air Navigation Service provider, as the case may be, at the time of development of master plan of a Greenfield airport or planning of major airport expansion or the installation of new communication, navigation and surveillance facilities at the existing airports.

(4) The aerodrome developer or operator and ANS provider, as the case may be, shall submit the approved master plan of the aerodrome and the proposed development or up gradation of any aerodrome (including

its runway dimensions, communication, navigation and surveillance (CNS) facilities and the procedure for Air Navigation Service Operations (PANS-OPS) to the concerned designated officer).

15. Procedure in case of violations.— The cases of violations where the height of any existing building, structure or tree on any land within the limits specified in rule 4 exceeds the height specified in Schedule I and Schedule II, or any other violation arising out of non-compliance of the provisions of these rules, shall be dealt in accordance with the provisions of the Aircraft (Demolition of Obstructions caused by Buildings and Trees etc.) Rules, 1994.

16. Savings.—Nothing in these rules shall affect the height clearances assessed and duly issued under the notifications issued by the Government of India in the Ministry of Civil Aviation *vide* notification numbers S.O. 84(E) dated the 14th January, 2010, and S.O 1589(E) dated the 30th June, 2008, during their assessment validity period of eight years for the buildings and twelve years for the structures such as masts, chimney and towers etc., within which the applicants have to complete the structures and obtain the completion certificate from the concerned authorities:

Provided that in cases where the construction work has not started during the initial validity period of five years for the buildings or within seven years for the structures such as mast, chimney, etc., revalidation shall not be considered and the height of such buildings or structures shall be reassessed in accordance with the provisions of these rules.

SCHEDULE - I

Purpose: Schedule- 1 indicates the No Construction Zones (NCZ) i.e. the areas around the Aeronautical Ground Aids (AGA) and Communication Navigation & Surveillance (CNS) facilities which need to be kept free from all obstructions for the safety and regularity of aircraft operations.

1. Runway

1.1. **Runway Strip:** The Land area specified below shall be completely free from all obstacles as provided hereunder (Refer Appendix-1 of Schedule - I):-

- 1.1.1. The land comprising within the Runway strip of uniform width of 150 meters on either side of centerline which extends to 60 meters beyond each extremity of Runway, along the extended centerline of a Runway of code 3 or code 4, equipped with Instrument Approach Procedure.
- 1.1.2. The land comprising within the Runway strip of uniform width of 75 meters on either side of centerline which extends to 60 meters beyond each extremity of Runway, along extended centerline of the Runway of code 1 or 2, equipped with Instrument Approach Procedure and for non-Instrument runway of code 3 or 4.
- 1.1.3. The land comprising within the Runway strip of uniform width of 40 meters on either side of centerline which extends to 60 meters beyond each extremity of Runway, along extended centerline of the non-Instrument Runway of code 2.
- 1.1.4. The land comprising within the Runway strip of uniform width of 30 meters on either side of centerline which extends to 30 meters beyond each extremity of Runway, along extended centerline of the non-instrument runway of code 1.

1.2. Installation of Extra High Tension, High Tension lines shall not be permitted within 1500 metres of the Inner edge of the approach and take-off climb surface.

2. Frangibility Requirement:

2.1. Any equipment or installation required for air navigation purposes which must be located:

- (a) On that portion of the runway strip within:
 - i) 75 meters of the Runway centerline where the Runway code is 3 or 4 or
 - ii) 45 meters of the Runway centerline where Runway code is 1 or 2; or
- (b) on a runway end safety area, a taxiway strip or within the distances specified in CIVIL AVIATION REQUIREMENTS SECTION-4, SERIES 'B', PART I Aerodrome Design and Operations or
- (c) on a clearway and which would endanger an aircraft in the air,

shall be frangible and mounted as low as possible.

2.2 Any equipment or installation required for air navigation purposes which must be located on or near a strip of precision approach Runway ILS category I, II or III and which-

- (a) is situated on that portion of the runway strip within 77.5 meters of the Runway centerline where the code number is 4 and code letter is F; or
- (b) is situated within 240 meters from the end of the runway strip and within-
 - (i) 60 meters of the extended runway centerline where Runway code is 3 or 4
 - (ii) 45 meters of the extended Runway centerline where Runway code is 1 or 2; or
 - (iii) penetrates the inner approach surface, the inner transitional surface or the balked landing surface,

shall be frangible and mounted as low as possible.

3. Communication, Navigation and Surveillance (CNS) Facilities

- 3.1. **Very High Frequency Omni Range (VOR)/collocated Distance measuring Equipment (DME) and Very High Frequency Direction Finder (VHF DF):** A land area within the 300 meters radius of the facility.
- 3.2. **Localizer or LLZ** (a component of ILS, providing azimuth guidance): the land area bounded by the following namely (Refer diagram at Appendix-L of Schedule VIII) :-
 - 3.2.1. A line 300 meters in the direction of approach or nearest end of the runway, whichever is greater from localizer antenna and perpendicular to the runway.
 - 3.2.2. A line 60 meters from the centerline of localizer antenna on both side and parallel to the runway.
 - 3.2.3. A line containing centre of localizer antennas and perpendicular to the runway; and
 - 3.2.4. Area within circle of 75 meters radius with centre at middle of the antenna system;
- 3.3. **Glide Path** (a component of ILS providing vertical guidance): the area bounded by the following, namely (Refer diagram at Appendix-K of Schedule VIII):-
 - 3.3.1. A line 300 meters in the direction of approach from the glide path facility;
 - 3.3.2. A line containing glide path antenna and perpendicular of runway;
 - 3.3.3. Near edge of the runway from the glide path;
 - 3.3.4. A line 30 meters in the directions away from the runway and parallel to it.
- 3.4. **Locators or Markers Beacons:** The land within a radius of 30 meters of the site of markers and locator beacons.
- 3.5. **Airport Surveillance Radar (ASR):** No structure will be permitted on the land above the level of 3 meters below the pedestal height up to the distance of 500 meters from Radar antenna.
- 3.6. **Air Routes Surveillance Radar (ARSR):** No structure will be permitted on the land above the level of 5 meters below the pedestal height up to the distance of 200 meters from Radar antenna.
- 3.7. **Monopulse Secondary Surveillance Radar/ Secondary Surveillance Radar (MSSR/SSR):** The distance and the height restriction shall be the same as in respect of the Airport Surveillance Radar or Air Routes Surveillance Radar, depending upon operational usage.
- 3.8. **Microwave Link:** On corridor of 30 meters on either side of the direct line of azimuth and 10 meters below from the direct line of sight in the vertical plane;
- 3.9. **Ultra High Frequency (UHF) Link:** On a corridor of 30 meters on either side of the direct line of the azimuth and 10 meters below from the direct line of sight in the vertical plane.
- 3.10. **En-route Beacons:** Land within a radius of 30 meters around the antenna.
- 3.11. **Remote Receiver:** Land within a radius of 1525 meters of the site.

- 3.12. **Stand-alone Distance Measuring Equipment / Automatic Dependence Surveillance – Broadcast (DME/ADS-B):** No structure will be permitted on land above the level of 3 meters below the antenna base up to a distance of 150 meters from the antenna.
- 3.13. **Airport Surface Detection Equipment (ASDE) or Surface Movement Radar (SMR):** No structure will be permitted on the land above the level of 2 meters below the antenna base up to the distance of 200 meters from Radar antenna.
- 3.14. **Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Reference Transmitter:** No structure will be permitted on the land above the level of 5 meters below the antenna base up to the distance of 200 meters from Radar antenna.
- 3.15. **A-SMGCS Multi-Lateration (MLAT):** No structure will be permitted on the land above the level of 2 meters below the antenna base up to the distance of 200 meters from Radar antenna.
- 3.16. **Ground Based Augmentation System (GBAS) Reference Receiver:** No structure will be permitted on land up to the distance of 100 meters from antenna.
- 3.17. **Ground Based Augmentation System VHF Data Broadcast (GBAS VDB) station:** No structure will be permitted on the land up to the distance of 300 meters from antenna.
- 3.18. **GBAS VDB monitoring station:** No structure will be permitted on the land up to the distance of 300 meters from antenna.
- 3.19. **Global Position System (GPS) Pseudolite Restriction:** No GPS Pseudolite shall be used within the approach funnel of any runway or within the airport where GNSS/GBAS based operation has been planned/exist.
- 3.20. **Global Navigation Satellite System (GNSS) repeater restriction:** No GNSS repeater shall be installed/use in approach funnel and within the 500 meter from the basic strip where GNSS/GBAS based operation has been planned/exist.

4. **Definitions and Explanation.-**

Some of the definitions of the terms used in the notifications have been provided below. For other terms, the CIVIL AVIATION REQUIREMENTS SECTION-4, SERIES 'B', PART I Aerodrome Design and Operations, ICAO annex 14, Annex 10 and Doc.8168 may be referred.

- i) **Runway:** A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.
- ii) **Runway end safety area (RESA).** An area symmetrical about the extended runway centre line and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway.
- iii) **“Runway Strip”** A defined area including the runway and stopway, if provided, intended:
 - a) to reduce the risk of damage to aircraft running off a runway; and
 - b) to protect aircraft flying over it during take-off or landing operations.
- iv) **“Runway Code”**, means the Runway Code number specified in column (1), in relation to the Runway length specified in column (2), of the Table below:-

Table 1.1 DIMENSION OF RUNWAY STRIP

RUNWAY		INSTRUMENT RUNWAY		NON-INSTRUMENT RUNWAY	
Runway Code	Aerodrome Reference Field Length (ARFL) in (Meter)	Width Extending laterally on either side of Runway Centre Line (Meter)	Length beyond Runway End/Stop way (Meter)	Width Extending laterally on either side of Runway Centre Line (Meter)	Length beyond Runway End/Stop way (Meter)
(1)	(2)	(3)	(4)	(5)	(6)
1.	<800	75	60	30	30
2.	800<1200	75	60	40	60
3.	1200<1800	150	60	75	60
4.	1800 & above	150	60	75	60

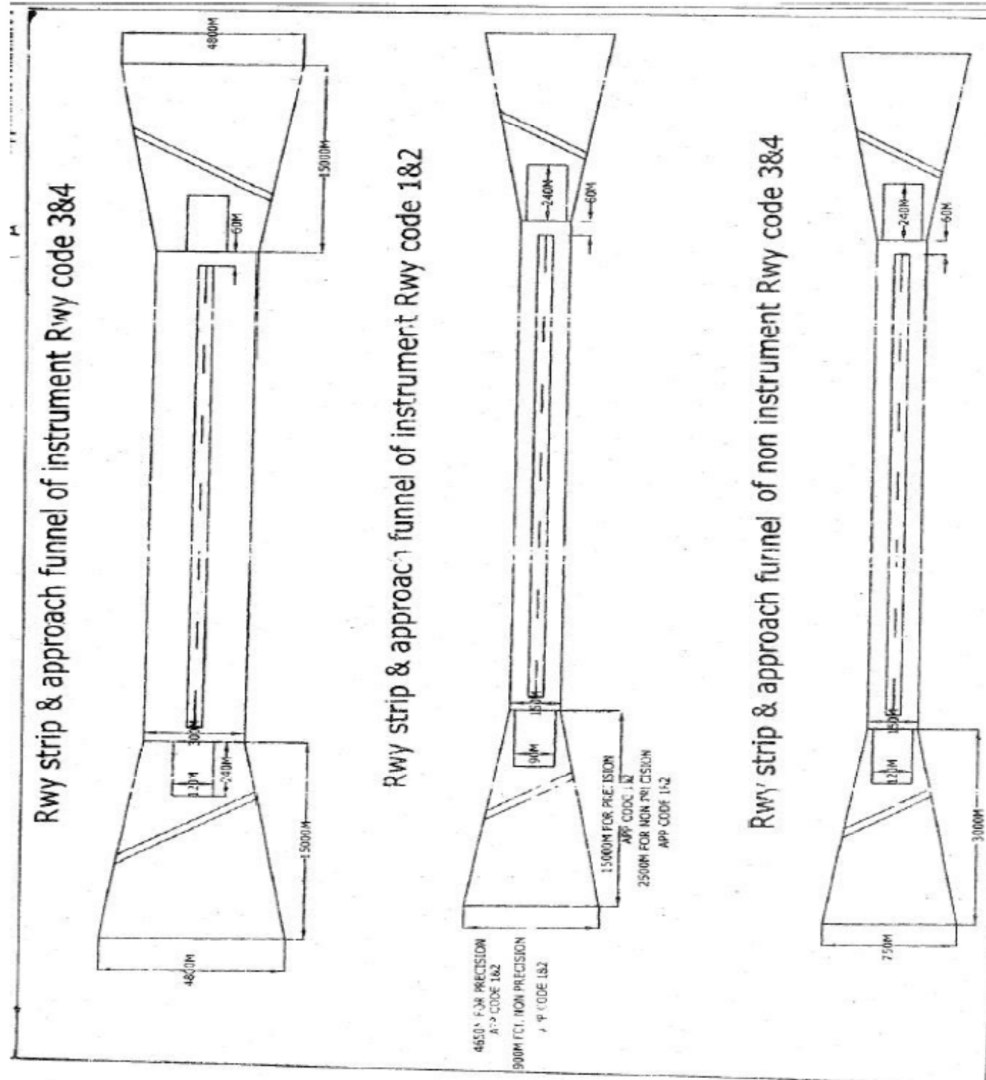
- v) **“Approach funnel”** in relation to (Refer Appendix-1 of Schedule -I):-

- (a) **Instrument Runway Code 3 and 4**, means the area in the shape of an isosceles trapezium having the longer parallel side 4800 meters long (2400 meters on either side of the extended centerline of the runway) and smaller parallel side 300 meters long (150 meters on either side of the extended centerline of the runway), where the smaller and longer parallel sides are placed at a distance of 60 meters and 15060 meters respectively, from the end of the runway and at right angles to the extended centerline;
- (b) **Instrument Runway (Precision) Code 1 and 2**, means the area in the shape of an isosceles trapezium having the longer parallel side 4650 meters long (2325 meters on either side of the extended centerline of the runway) and smaller parallel side 150 meters long (75 meters on either side of extended centreline of the runway) where the smaller and longer parallel sides are placed at a distance of 60 meters and 15060 meters respectively, from the end of the runway and at right angles to the extended centerline;
- (c) **Instrument Runway (Non Precision) Code 1 and 2**, means the area in the shape of an isosceles trapezium having the longer parallel side 900 meters long (450 meters on either side of the extended centerline of the runway) and smaller parallel side 150 meters long (75 meters on either side of the extended centerline of the runway), where the smaller and longer parallel sides are placed at a distance of 60 meters and 2560 meters respectively, from the end of the runway and at right angles to the extended centerline;
- (d) **Non-Instrument Runway Code 3 and 4**, means the area in the shape of an isosceles trapezium having the longer parallel side 750 meters long (375 meters on either side of the extended centerline of the runway) and smaller parallel side 150 meters long (75 meters on either side of the extended centerline of the runway), where the smaller and longer parallel sides are placed at a distance of 60 meters and 3060 meters respectively, from the end of the runway and at right angles to the extended centerline;
- (e) **Non-Instrument Runway Code 2**, means the area in the shape of an isosceles trapezium having the longer parallel side 580 meters long (290 meters on either side of the extended centerline of the runway) and smaller parallel side 80 meters (40 meters on either side of extended centreline of the runway) where the smaller and longer parallel sides are placed at a distance of 60 meters and 2560 meters respectively, from the end of the runway and at right angles to the extended centerline;
- (f) **Non- Instrument Runway Code 1** means the area in the shape of an isosceles trapezium having longer parallel side of 380 meters long (190 meters on either side of the extended centreline of the runway) and smaller parallel side 60 meters (30 meters on either side of extended centreline of the runway) where the smaller and longer parallel sides are placed at a distance of 30 meters and 1630 meters respectively from the end of the runway and at right angles to the extended centreline. The diagrams of runway strip and approach funnel of instrument runway code 1,2,3 and 4 and non-instrument runway code 3 and 4 have been shown in the Appendix-1 of Schedule-I ;
- (vi) **"Instrument Runway"** means a runway served by visual aids and non-visual aids providing directional guidance adequate for a straight in approach and intended for the operation of aircraft using instrument approach procedures;
- (vii) **Non-Precision Approach Runway-** means an instrument runway served by visual aids and a non-visual aid providing at least directional guidance adequate for a straight-in approach;
- (viii) **Precision approach runway, category I** – An instrument runway served by Instrument Landing System and/or MLS and visual aids intended for operations with a decision height not lower than 60 meters and either a visibility not less than 800 meters or a runway visual range not less than 550 meters.
- (ix) **Precision Approach Runway, category II-** An instrument runway served by Instrument Landing System and or MLS and visual aids intended for operations with a decision height not lower than 60 meters but not lower than 30 meters and a runway visual range not less than 350 meters.
- (x) **Precision Approach Runway, Category III-** An instrument runway served by Instrument Landing System (ILS) and/or MLS to and along with surface of the runway and –
 - (a) **ILS CAT IIIA-** intended for operations with a decision height lower than 30 meters, or no decision height and a runway visual range not less than 200 meters.

- (b) **ILS CAT IIIB-** intended for operations with a decision height lower than 15 meters, or no decision height and a runway visual range less than 200 meters but not less than 50 meters.
- (c) **ILS CAT IIIC-** intended for operations with no decision height and no runway visual range limitations.
- xi) **“Non-Instrument Runway”** means a runway intended for operations of the aircraft using visual approach procedure.
- xii) **“Very High Frequency Omni Range, Terminal Very High Frequency Omni Range, And Doppler Very High Frequency Omni Range”** means the facilities operating in the Very High Frequency band of frequencies 112 to 118 MHz, radiate signals whereby an aircraft with the help of an instrument in its cockpit when tuned to the ground equipment frequency automatically gets its direction with respect to the facility and helps an aircraft to navigate on a predetermined course or home to an airport served by the facility.
- xiii) **“Instrument Landing System (ILS)”** means the facility which serves to help an aircraft to make a safe landing on the runway in conditions of poor visibility and comprises of the following component facilities, namely:-
 - (a) **Localizer** facility which radiates Very High Frequency Signals which when picked up by an aircraft guide it onto the centerline of the runway in the horizontal plane and is normally situated about 305 meters from the runway end;
 - (b) **Glide Path** facility radiates Ultra High Frequency signals and is normally situated about 275 meters to 305 meters from the runway threshold and offset about 122 meters to 137 meters from the centerline of the runway and provides the glide angle information to a landing aircraft with the help of an instrument in the cockpit which when tuned to the glide path frequency indicates whether the aircraft is flying up or down or along the correct glide angle;
 - (c) **Outer Marker or Outer Locator** facility operating on 75 MHz in the Very High Frequency band is normally installed along the extended centerline of the runway at a distance between 3.5 and 6 nautical miles (1 nautical mile=1853 meters) and produces radiation pattern to indicate the landing aircraft, the pre-determined distance from the threshold along the Instrument Landing System glide path;
- xiv) **“Radar”** includes-
 - (a) **Airport Surveillance Radar (ASR)** which is a radar facility serving an aerodrome to scan the air traffic within 50 to 60 nautical miles of the aerodrome;
 - (b) **Air Routes Surveillance Radar (ARSR)** or Secondary Surveillance Radar is a high power long-range radar covering a distance of 200 nautical miles approximately and it scans air traffic to a larger distance than Airport Surveillance Radar;
- xv) **Communication and Navigational** facilities include-
 - (a) Microwave Link which is a radio facility whereby mostly intelligence/data is carried to the Air Traffic Control Display site;
 - (b) Ultra High Frequency Link which is a radio relay facility operating in Ultra High Frequency Band;
 - (c) Beacons which are radio transmitters operating in the Medium Frequency band from 200 to 400 KHz radiating omni directionally in the horizontal plane and an aircraft equipped with a suitable cockpit instrument can get its location automatically with respect to this facility.
 - (d) Remote Receivers which are radio receiving stations (HF Band) installed at remote site away from factory or industrial areas to avoid interference link man-made static, etc.

Note: Location of Navigational Aids shall be determined as per the provisions of Annex-10 of International Civil Aviation Organization.

Appendix-1 to Schedule -I



SCHEDULE-II**Purpose:**

The height or permissible elevation for the structure, requiring grant of NOC, shall be calculated based upon the International Civil Aviation Organization (ICAO) Annex 14 Obstacle Restriction and Removal, Annex 10 the Radio Communication, Navigation and Surveillance (CNS) aids and Doc 8168, Vol II defining the operational requirements for minimum altitudes of various segments of published or proposed instrument approach procedures.

This annexure-II defines various OLS surfaces, requirements w.r.t. CNS and PAN-OPS, procedure to be followed while applying and processing the NOC for height clearance.

1. Obstacle Limitation Surfaces (based on ICAO Annex 14 and DGCA India Civil Aviation Requirements (CARs) on Aerodrome Design and Operations) are as under:

1.1 Take-off climb surface-The dimensions of the take-off climb surface shall not be less than the dimensions specified in the table given below except that if a runway is meant for takeoff, a lesser length may be adopted for the takeoff climb surface where such lesser length would be consistent with procedural measures adopted to govern the outward flight of aeroplanes.

**Table 2.1 -Dimensions and Slopes of Obstacle Limitation Surfaces
(Runways Meant for Take-Off)**

Surface and dimension *	Code Number		
	1	2	3 or 4
(1)	(2)	(3)	(4)
TAKE OFF CLIMB			
Length of inner edge	60 meters	80 meters	180 meters
Distance from runway end	30 meters	60 meters	60 meters
Divergence (each side)	10%	10%	12.5%
Final width	380 meters	580 meters	1200 meters 1800 meters**
Length	1600 meters	2500 meters	15000 meters
Slope	5%	4%	2%
* All dimensions are measured horizontally.			
**When the intended track includes changes of heading greater than 15 degree for operations conducted in IMC, VMC by night.			

1.2 Transitional Surface

1.2.1 The outer limit of the transitional surface is determined by its intersection with the plane containing inner horizontal surface and the slopes of transitional surfaces are as given below, namely:-

- | | | |
|-------|---------------------------|---|
| (i) | Precision Approach Runway | 14.3% (1:7) |
| (ii) | Non Precision Runway | 14.3% (1:7) for code 3 & 4
20% (1:5) for code 1 & 2 |
| (iii) | Non-Instrument Runway | 14.3% (1:7) for code 3 & 4
20% (1:5) for code 1 & 2; |

The slope of the transitional surface shall be measured in a vertical plane at right angles to the centre line of the runway;

1.2.2 The elevation of a point on a lower edge shall be –

- (a) along the side of approach surface, equal to the elevation of approach surface at that point; and
- (b) along the strip, equal to the elevation of nearest point on the centre line of the Runway or its extension;

1.3 Approach Surface

1.3.1 The approach surface shall be established for each runway strip in the direction of intended landing of the aeroplanes and the limits and slopes are given table below:

1.3.1.1 Instrument Runway

Inner Edge of Approach Surface:

- Length of Inner edge - 150 meters for Code No. 1 and 2
- 300 meters for Code No. 3 and 4

Distance from runway threshold - 60 meters

Divergence -15% on either side

Length & Slope of Approach Surface: as given in table 2.2

Table 2.2 -Approach Surface Slope of Instrument Runway

Runway		Precision Approach Runway		Non Precision Approach Runway		
Code No.	Aerodrome Reference Field Length (meter)	First Section Length & Slope (Meter)	Second Section Length (Meter) & Slope	First Section Length (Meter) & Slope	Second Section Length (Meter)& Slope	Horizontal Section (Meter)
1.	<800	3000 2.5%	12000** 3%	2500 3.33%	- -	- -
2.	800<1200	3000 2.5%	12000** 3.00%	2500 3.33%	- -	- -
3.	1200<1800	3000 2%	3600 2.5%	3000 2%	3600 2.5%	8400*
4.	1800 and Above	3000 2%	3600 2.5%	3000 2%	3600 2.5%	8400*

* Total length of approach surface for runway code number 3 and 4 with precision and non-precision shall be 15000 meters.

** Total length of approach surface for Precision approach Runway Code number 1 and 2 shall be 15000 meters.

1.3.1.2 Non-Instrument runway

Inner Edge of Approach Surface:

- Length of Inner edge - 60 meters for Code No. 1
- 80 meters for code No. 2
- 150 meters for Code No. 3 and 4

Distance from runway threshold - 30 meters for code 1

- 60 meters for code No. 2, 3 and 4

Divergence

-10% on either side

Length & Slope of Approach Surface: as given in table 2.3

Table 2.3 -Approach Surface Slope of Non-Instrument Runway

Runway		Length and slope of approach surface	
Code No.	Aerodrome Reference Field Length (meter)	Length (Meter)	Section Slope
1.	<800	1600	5%
2.	800<1200	2500	4%
3.	1200<1800	3000	3.33%
4.	1800 & above	3000	2.5%

1.3.1.3 Aerodrome where there are more than one runway with over-lapping approach areas and associated surface, most stringent of the two would be the applicable criteria.

1.3.1.4 For determining the approach, the physical extremities of the runway shall only be considered. In case of displaced threshold the permissible height shall be calculated based on approach surface and transitional surface with respect to the runway extremity or displaced threshold whichever is more restrictive.

1.3.1.5 At Aerodromes, where the proposals for runway extension exist, the requisite surface shall be determined from the proposed extension as well as from the existing runway strip/associated clearway, as applicable and the lower of the two elevations shall be permitted. The elevation of the associated runway extremity/displaced threshold/proposed extension of runway shall be the datum for approach surface.

1.3.1.6 The slope of the approach surface shall be measured in a vertical plane containing the centerline of the runway.

1.4 Inner Horizontal Surface (IHS)

1.4.1 Dimensions and permissible heights of Inner Horizontal Surface are given in the table below:

Table 2.4 -Dimensions and Permissible Heights of Inner Horizontal Surface

Runway		Instrument		Non-Instrument	
Code No.	Aerodrome Reference Field Length (meter)	Radius (Meter)	Height (Meter)	Radius (Meter)	Height above Aerodrome Elevation (Meter)
1.	<800	3500*	45	2000*	45
2.	800<1200	3500*	45	2000*	45
3.	1200<1800	4000**	45	4000**	45
4.	1800 and Above	4000**	45	4000**	45

*For runway code number 1 and 2, radius of IHS shall be measured from the Aerodrome Reference Point (ARP).

** For runway code number 3 and 4, radius of IHS shall be measured from the runway extremity.

1.4.1.1 The reference datum for Inner-Horizontal Surface shall be the aerodrome elevation as defined in clause (g) of the Explanation to this notification.

- 1.4.1.2 For Runway code 3 and 4, the Inner Horizontal Surface shall be a composite pattern, which consists of two circular areas centered at the two ends with a radius of 4000 meters. These areas shall be joined tangentially to form an elliptical shape as shown in Appendix-A of Schedule VIII.
- 1.4.1.3 Where it is required to protect two or more widely spaced long runways, a more complex pattern involving four or more circular areas are formed. These areas should be joined tangentially by straight lines and the Inner Horizontal Surface shall be defined by the external limits of the resulting pattern (Refer Appendix -A of Schedule VIII).
- 1.4.1.4 When two aerodromes are close to each other with overlapping circuits the Inner Horizontal Surface will be drawn as prescribed in para 1.4.1.3. The inner horizontal surface of these two aerodromes shall be joined tangentially to form one common Inner Horizontal Surface.
- 1.4.1.5 In case of common horizontal surface serving two aerodromes, the elevation of the Inner Horizontal Surface will be referenced to the lower of the two aerodromes.

1.5 Conical Surface

1.5.1 The conical surface shall be projected upwards and outwards from the periphery of the Inner Horizontal Surface. The slope 5% (1:20) of the conical surface shall be measured in a vertical plane perpendicular to the Inner Horizontal Surface. The reference datum for Conical Surface shall be the aerodrome elevations (Refer to Appendix -B of Schedule VIII for illustration of the various surfaces including the conical surface).

Note: Where a part of Inner Horizontal Surface and conical surface lies below the approach/take-off climb surface, the permissible heights shall be the lowest of the applicable surfaces.

1.6 Outer Horizontal Surface (OHS)

- 1.6.1 The Outer Horizontal Surface shall extend to 15000 meters from the Aerodrome Reference Point for Aerodrome with runway code 3 and 4.
- 1.6.2 In case of Aerodrome with runway Code 2, the Outer Horizontal Surface shall extend to 14740 meters from Aerodrome Reference Point for Instrument runways and 13740 meters for Non-Instrument runways.
- 1.6.3 Where combined Outer Horizontal Surface is established for two Aerodromes, the Outer Horizontal Surface shall be centered on the Aerodrome Reference Point of the Aerodrome of higher category.
- 1.6.4 Outer Horizontal Surface for Aerodrome with runway code No.1 shall not be established.
- 1.6.5 The Outer Horizontal Surface, would be defined such that the Conical Surface may continue to be extended at 5% slope to a point wherein the permissible maximum height of *300 meters (above aerodrome elevation) is reached and thereafter this surface is maintained upto 15 kilometers from Aerodrome Reference Point. Construction(s) protruding above these surfaces shall normally not be permitted. Obstructions existing in the area should be marked or lighted.

***Note:** In case of Defence Aerodromes, the permissible maximum height in conical and OHS shall be 150 meters above aerodrome elevation.

- 1.6.6 In order to avoid abrupt vertical changes in surfaces, the surfaces beyond the conical surfaces will slope laterally at 1:7 from edges of the approach and take off surfaces between the permissible heights of 150 meters to 300 meters (For illustration refer to Appendix -B of Schedule VIII).
- 1.6.7 The datum for Outer Horizontal Surface shall be the aerodrome elevation.
- 1.7 **The Inner Approach, Inner Transitional and Balked Landing Surfaces** (collectively referred as Obstacle Free Zone or OFZ):
 - 1.7.1 **Obstacles Free Zone** shall be established for a runway equipped with precision approach (ILS) category I, II and III operations. The zone shall be kept free from fixed objects other air navigation aids, which must be near the runway, to perform their function, mounted on light weight frangible fixtures.

Note: Obstacles Free Zone for runway code No. 1 and 2 are not established.

The dimensions and slopes of the Obstacles free zone (Code 3 and 4) are given below.

1.7.1.1 The inner approach surface

Width	120 meters
Distance from Threshold	60 meters
Length	900 meters
Slope	2%

1.7.1.2 The inner transitional surface

Slope	33.3%
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1.7.1.3 Balked Landing Surface

Length of the Inner edge	120 meters
Distance from Threshold	1800 meters
Divergence	10%
Slope	3.33 %

2 Protection of Service volume of various Communication, Navigation and Surveillance Facilities (based on ICAO Annex 10 Navigational Aids)

2.1 Very High Frequency Omni Range (VOR), Terminal Very High Frequency Omni Range (TVOR), and collocated Very High Frequency Omni Range Distance Measuring Equipment (VOR DME) - No structure (located beyond the area of 300M radius as specified in Annexure I) shall subtend a vertical angle greater than 1.5 degree at the centre of the Very High Frequency Omni Range counterpoise from the horizontal plane passing through the counterpoise.

2.2 Stand-alone Distance Measuring Equipment (DME) - No steel towers, power lines, metal buildings (located beyond the area of 150M radius as specified in Annexure I) shall protrude elevation angle of 3 degree measured from the base of Distance Measuring Equipment antenna.

2.3 Localizer

2.3.1 Within ± 10 degrees azimuth in front of LLZ antenna, an object (located beyond the area specified in Annexure I) should not subtend an angle of elevation more than 0.75 degrees at the centre of antenna array.

2.3.2 Within ± 10 degrees to ± 35 degrees LLZ azimuth in front of antenna an object (located beyond the area specified in Annexure I) should not subtend an angle of elevation more than 1.1 degree.

2.3.3 Notwithstanding any thing in para 2.3.1 and 2.3.2, in all airports having/intended to have cat II and cat III ILS, all object in sector of ± 18 degree for medium aperture antenna localizer and ± 15 degree for wide aperture LLZ antenna, upto the distance of 1050M beyond threshold, to be analysed for their potential multipath effects on the performance of ILS.

2.4 Glide Path

Beyond areas specified in Annexure I and within ± 8 degrees azimuth in front of the glide path antenna (in the direction of approach), a building/structure should not subtend an angle of elevation of more than 1.1 degree at antenna base.

2.5 Airport Surveillance Radar (ASR);

2.5.1 Wherever airport is served or proposed to be served by a single ASR, following criteria shall be applicable:

2.5.1.1 Beyond 500 meters from particular Radar site, the height of the permissible structures may be increased at the rate of 0.05 per meter, upto a point wherein the height of the permissible structure does not protrude above the line drawn from a point 10% below the minimum sector altitude at the farthest point (from Radar site) or any other designated MSA at different distance in same sector whichever is closer to horizon, to the centre of antenna pedestal, considering the Minimum Sector Altitude (MSA) in that particular sector. Beyond the above stated point no large object would be permitted to protrude above the line drawn from a point 10% below the minimum sector altitude at the farthest point (from Radar site) or any other designated MSA at different distance in same sector whichever is closer to horizon to the centre of antenna pedestal depending on the minimum Sector Altitude in that particular sector (For illustration refer to Appendix -C of Schedule VIII).

Note: Large object means the structure/s in isolation or collectively subtending azimuth angle of 0.4 degree or above at Radar antenna. In case of cluster of buildings wherein the gap between the two adjacent buildings subtends an azimuth angle of less than 0.4 degree on the antenna pedestal, the entire cluster should be considered as one object.

2.5.2 Wherever airport is served or proposed to be served by Multiple Radars (more than one ASR), operational and integrated, following criteria shall be applicable:

2.5.2.1 In case only one ASR is installed and the proposed ASRs are yet to be operationalized and integrated, the existing ASR will be considered for height calculations as per the provisions of 2.5.1.

2.5.2.2 After multi radar system is operationalized and integrated, the maximum height permissible in the integrated system will be considered for calculation of height to the applicant. However, from the radar performance requirement point of view, the structures are to be examined, as follows, to ensure that there is no degradation of radar performance.

- I. Within one kilometer of any ASR in the system, structures shall be examined from the respective radar as per para 2.5.1.
- II. Between one and two kilometer, the metallic and large structures shall be examined from respective ASR as per para 2.5.1.
- III. Structures which are Non-metallic and are not termed as large objects may be permitted to higher height as per IV below, subject to condition that other structure(s) in vicinity do not form cluster with the structure under examination.
- IV. Objects beyond two kilometer from any one of the ASRs, highest permissible height among integrated & operational ASR sites shall be permitted as per para 2.5.1

Note: Above criterion will not be applicable for wind farms, high tension lines and electromagnetic source of interference.

2.6 Air Route Surveillance Radar (ARSR)

Beyond 200 meters from particular Radar site the height of the permissible structures may be increased at the rate of 0.05 meter per meter, upto a point wherein the height of the permissible structure does not protrude above an angle of elevation of more than 0.5 degree at the antenna pedestal or an angle equal to antenna tilt angle set during last flight inspection whichever is higher. Beyond the above stated point no large object would be permitted to protrude above the line drawn at an angle of 0.5 degree from antenna pedestal or an angle equal to antenna tilt angle set during last flight inspection whichever is higher. Large object means the structure subtending azimuth angle of 0.4 degree or above at Radar antenna. In case of cluster of buildings wherein the gap between the two adjacent buildings subtends an azimuth angle of less than 0.4 degree on the antenna pedestal, the entire cluster should be considered as one object (For illustration refer to Appendix -D of Schedule VIII).

2.6.1 Monopulse Secondary Surveillance Radar / Secondary Surveillance Radar (MSSR/SSR)

Same as Air Surveillance Radar/Air Route Surveillance Radar depending on operational usage.

2.7 Automatic Dependence Surveillance –Broadcast (ADS-B)

Beyond 150m from particular ADS-B site, the height of the permissible structures does not protrude above the line drawn from a point 10% below the minimum sector altitude at the farthest point (from ADS-B site) or any other designated MSA at different distance in same sector whichever is closer to horizon, to the centre of the antenna pedestal of ADS-B.

2.8 Advance Surface Movement Guidance and Control System (A-SMGCS):

No structure should be built on the relevant area of the airport surface which blocks the line of sight between any of the sensors of the Advance Surface Movement Guidance and Control System and the relevant operational area. In case there is an operational or safety/security requirement to add a structure on the airport surface which may obstruct the line of sight between Surface Movement Radar (SMR) antenna/sensors, AAI would augment the system to meet the Advance Surface Movement Guidance and control system operational requirement.

2.8.1 Surface Movement Radar (SMR)

Beyond the distance of 200 M. from SMR antenna, no object should protrude the line of sight to nearest point of designated coverage volume of said SMR.

2.8.2 Beyond the distance of 200 M from A-SMGCS Ref TX no object should protrude the line of sight to nearest point of designated coverage volume of said ref TX and corridor between ref TX and MLAT of 5 Mx5 M.

- 2.8.3 Beyond the distance of 200 M from A-SMGCS MLAT no object should protrude the line of designated coverage volume of said ref TX and a corridor between ref TX and MLAT of 5 Mx5 M.
- 2.9 **Indian Land Uplink Station (INLUS)/Indian National Reference Station (INRES) of GPS Aided Geo Augmented Navigation (GAGAN) System**
No structure will be permitted to protrude the above the plane inclined at elevation angle of 2 degree from the horizontal surface drawn at the level of antenna of Indian Land Uplink Station and Indian National Reference Station of GPS Aided Geo Augmented Navigation system which is a part of Global Navigation Satellite System (GNSS).
- 2.10 **Very High Frequency (VHF)/ Remote Controlled Air to Ground communication (RCAG) –** no structure shall be allowed to protrude above the lowest line of sight of coverage of designated service volume of facility without proper mitigation.
- 2.11 **Wind Turbine Generators/ Wind Farms-** No Wind Turbine Generator/s shall be installed upto a distance of 10 KM in line of sight of the Radar Antenna of all Static Air Defence Radars and upto 8 KM from VOR and Airport Surveillance Radar (ASR).
- 2.12 **Electricity Power Transmission Lines**
- 2.12.1 No High Tension (HT) or Low Tension (LT) line shall be permitted to pass through the sensitive area of Localizer and glide path.
- 2.12.2 All HT lines will not be permitted to the following area until and unless these are shielded by permanent structures:-
- Localizer, with in ± 18 degree, all HT lines will be permitted only up to an angle of elevation of 0.5 degree from the localizer. If these HT line are on the radial, these may be permitted to 0.75 degree elevation. In the sector between ± 18 degree to ± 35 degree line may be permitted up to the elevation angle of 0.75 degree.
 - Glide Path, all HT lines will be permitted only up to an angle of elevation of 0.5 degree from the Glide Path. If the HT line is on the radial, it may be permitted to 0.75 degree elevation.
 - VOR, HT lines shall be permitted below 0.5 degree at counterpoise and if these lines are on the radial, they may be permitted up to 1 degree.
 - RADAR, power line above 11 KVA and up to 100 KVA may not be permitted up to 1 km and above 100 KVA up to 2 KM
3. **Procedure for Air Navigation Services Operation (PANS-OPS) criteria (based on ICAO Document 8168, Volume II):**
- 3.1 In order to achieve the lowest possible operating minima for aircraft operation, it is necessary to protect not only the Annex 14 OLS but also to safeguard the PANS-OPS [ICAO Document 8168] Surfaces. The limit of PANS-OPS surfaces extend up to 30NM from the facility i.e. VOR or NDB serving the aerodrome. Considerations need to be given to the objects which penetrate the PANS-OPS surfaces, regardless whether or not they penetrate Annex 14 OLS. Such obstacle may result in an operational penalty like higher Obstacle Clearance Altitude/Height (OCA/H) and introduction of longer approach segment. Therefore, while examining the cases for issue of NOC from the considerations of Annex 14 and Annex 10 criteria as provided in para 1 and 2 above, the operational criteria needs to be considered based on the provisions of Documents 8168, Vol.-II. It needs to be ensured that the minimum altitudes of the following segments, published or the proposed, are not infringed:
- Minimum Sector Altitude (MSA)
 - Minimum Holding Altitude (MHA)
 - Minimum Vectoring Altitude (MVA)
 - Minimum Altitude of Initial and Intermediate Segments
 - OCA/H (Straight-in-and Circling) for all aircraft categories
 - STARs /SIDs procedure altitude.
 - Basic ILS Surface

3.2 Criterion specified in Doc 8168 Vol. II (PANS-OPS) for designing instrument procedures shall not be used for creating new structures as PANS-OPS surfaces are not intended to replace Annex 14 OLS as planning surfaces for creating new structures."

3.3 For the obstacles located even outside the limits of Annex 14 OLS, it shall be ensured that PANS-OPS surfaces of the published instrument approach procedures are not penetrated.

Note 1: Instrument approach procedures of all the civil aerodromes in India have been published in the AIP India under the section "Aerodrome". In the published procedures, the minimum altitudes of the various segments of instrument approach procedures have been specified.

Note 2: The minimum obstacle clearance criteria are applied as per the provisions of International Civil Aviation Organization (ICAO) Document 8168 Volume II. Normally for minimum sector altitudes (Applicable upto 30 NM from the facility on which procedure is designed), minimum vectoring altitudes, minimum holding altitudes and for the initial approach an obstacle clearance of 1000 feet is applied.

Note 3: Final approach areas of Very High Frequency Omni Radio Range (VOR)/Non Directional Beacon (NDB) have been illustrated in Appendix -E of Schedule VIII).

4. Shielding criteria

The principle of shielding is applicable w.r.t. Natural Terrain, already penetrating one of the obstacle limitation surfaces of an airport and it is not likely to be removed. The shielding criteria as explained below is applicable w.r.t. AGA and CNS surfaces.

4.1 The principle of shielding will not to be applied in:

- I. Transitional surface area,
- II. Approach surface areas, within 4000 meters of the inner edge of approach surface.
- III. Inner Horizontal Surface (IHS), within a distance of 2500 meters from the runway centre line. In case of multiple runways, area encompassed by 2500M from centerline of all runways.

4.2 The following criteria shall be followed for the purpose of applying shielding criteria for the proposed structure with respect to existing natural terrain.

4.2.1 Proposed (shielded) object located beyond a distance of 2500M from runway centerline:

- (i) Draw a line joining the centre point of the plot to the nearest runway end (runway code no. 3 & 4) or ARP (code 1 & 2) as the case may be. Shielding will be applicable w.r.t. applicable terrain within the area bounded by the two lines drawn parallel to the above line, at a distance of 600M on either side. A line, across the highest point of applicable reference (shielding) terrain, perpendicularly to the above parallel lines shall be drawn to delineate the areas for different type of shielding i.e. negative or equal to the horizontal plane passing through top of reference terrain (For the illustrations refer to Appendix-F and Appendix-G of Schedule VIII).
- (ii) If the proposed structure is lying between the aerodrome and the reference terrain, a negative shielding of 10% shall be applicable. The shielding benefit of a horizontal plane, equal to reference terrain height, shall be provided in the area located in the opposite side away from the aerodrome (For the illustrations refer to Appendix-F and Appendix-G of Schedule VIII).

4.3 Communication Navigation Surveillance (CNS) Parameters:

For CNS facilities, shielding benefit could be provided to the structures in cases wherein such structures (shielded) are in the shadow of the highest terrain of permanent nature. Shadow for this purpose is defined as an area falling below a line drawn from the top and both the extremities of the terrain of permanent nature, to the facility and extrapolation of the same plane behind from the said obstacle.

5. Conduct of Aeronautical Study and CNS Simulation Study

5.1 **The Aeronautical Study**, as referred to in the Civil Aviation Requirements Section-4, Series 'B', Part I on Aerodrome Design and Operations and ICAO Annex 14, may be conducted to determine that the existing object or the proposed new object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes in pursuance of the ICAO provisions as given below:

Note 1: New objects or extensions of existing objects should not be permitted above the conical surface and the inner horizontal surface except when, in the opinion of the appropriate authority, after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes.

Note 2: Existing objects above an approach surface, a transitional surface, the conical surface and inner horizontal surface should as far as practicable be removed except when, in the opinion of the appropriate authority, after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes.

- 5.1.1 The request for aeronautical study shall be considered by the Member (Air Navigation Services), Airports Authority of India, on case to case basis.
- 5.1.2 Aeronautical Study shall not be carried out in Approach and Transition surfaces.
- 5.1.3 Aeronautical Study, as per the established guidelines, shall be carried out by AAI, ICAO or any other agency, approved for the purpose by Ministry of Civil Aviation.
- 5.1.4 Based on the Aeronautical Study report, including a revised height clearance if necessary, shall be communicated to the applicant by AAI.
- 5.1.5 Guidelines are available at NOCAS at www.aai.aero.
- 5.2 **Communication Navigation Surveillance (CNS) Simulation study:** In case any structure is required to be made within aerodrome premises (airside and city side) by the Aerodrome Operator which creates obstruction from CNS point of view, a simulation study could be carried out to study the impact of this structure on the performance of the relevant facility and in case the study confirms that the impact would not hamper the operability of the facility, such structure could be permitted within the aerodrome premises.

6. Procedure for determining the maximum permissible heights:

The following steps shall be taken for calculating the maximum permissible heights for cases where there is a requirement of NOC from AAI or from Defence Authorities.

6.1 ICAO Annex 14 Obstacle Limitation Surfaces Criteria:

- 6.1.1 The site of the proposed buildings/installations shall be marked on the zoning map of the aerodrome, prepared by the aerodrome operator, where Annex 14 surfaces have been drawn or plotted on the map generated by NOCAS based on the site co-ordinate(s) in WGS 84 system.
- 6.1.2 If the site location is within the approach/take off surface, the permissible applicable heights in the approach/take off climb surface, transitional surface, Inner Horizontal Surface/conical surface shall be calculated.
- 6.1.3 If the site is located outside the approach/take off climb surface, the height shall be determined as per the location applicable to the relevant surface (Transitional, Inner Horizontal Surface, Conical or Outer Horizontal Surface).

6.2 ICAO Annex 10 Communication, Navigation and Surveillance (CNS) Criteria:

- 6.2.1 Determine the distance of the proposed site from the each communication, navigational and surveillance facility separately and calculate the applicable heights based on the provisions as contained in para 2 of Annexure II.

6.3 The permissible height from the above two criteria shall be the lowest as of 6.1 and 6.2 above.

6.4 Procedure for Air Navigation Service Operations (PAN-OPS) Criteria:

- 6.4.1 After having determined the combined applicable elevation, based on the OLS criteria and CNS criteria, it shall further be ensured that the PANS-OPS surfaces are not infringed and the minimum altitudes of the published/proposed segments of instrument approach procedures are fully protected. This has also been referred to at para 3 of this annexure.
- 6.4.2 The lowest elevation determined as above, based on the OLS, CNS and PANS-OPS criteria, shall be the permissible top elevation of the proposed structure for which No Objection Certificate may be issued by the designated officer of AAI or the Defence Authorities.

6.5 No Objection Certificate Application System (NOCAS) for applying for height clearance w.r.t. Civil Airports:

6.5.1 AAI has introduced "No Objection Certificate Application System (NOCAS)" accessible at the AAI website www.aai.aero for online submission of NOC application for height clearance. NOCAS carries out calculations w.r.t. OLS and CNS criteria based on site coordinates and elevation provided by the applicant. It is mandatory for the applicant to provide surveyed site coordinates in WGS 84 system and site elevation from a Govt. entity or a Govt. approved agency. The applicants are first required to register themselves online and only thereafter, they can submit their applications for NOC. On registering in NOCAS, a NOCAS ID is generated which can be used for future reference including status check of the application. Guidelines for online submission of NOC application for height clearance are available at NOCAS at www.aai.aero.

6.5.2 A table of permissible heights w.r.t. Annex 14 OLS criteria at different distances from the runway (Code 3 or 4 Instrument runway) at an airport are given at Appendix-L of Schedule VIII.

6.6 The permissible heights given therein are only indicative w.r.t. OLS criteria only; detailed calculations w.r.t. CNS and PANS-OPS criteria are needed to arrive at the actual height permissible, which may be lower than the indicated.

7 Definitions and Explanation—

Description of Annex 14 Obstacle Limitation Surface for the purpose of the Schedule II shall be as given hereunder and the illustrations in respect thereof are given in Appendix –H, Appendix-I and Appendix-J of Schedule VIII.

- (a) **Conical Surface** – A surface sloping upwards and outwards from the periphery of the inner horizontal surface.
The limits of the conical surface shall comprise:
 - (i) a lower edge coincident with the periphery of the inner horizontal surface; and
 - (ii) an upper edge located at a specified height above the inner horizontal surface.
 The slope of the conical shall be measured in a vertical plane perpendicular to the periphery of the inner horizontal surface.
- (b) **Inner Horizontal Surface** – A surface located in a horizontal plane above an aerodrome and its environs. The radius of outer limits of the inner horizontal surface shall be measured from a reference point or points established for such purpose.
- (c) **Inner Approach Surface** – A rectangular portion of the approach surface immediately preceding the threshold. The limits of the inner approach surface shall comprise:
 - (i) an inner edge coincident with the location of the inner edge of the approach surface but of its own specified length;
 - (ii) two sides originating at the ends of the inner edge and extending parallel to the vertical plane containing the centerline of the runway; and
 - (iii) an outer edge parallel to the inner edge.
- (d) **Inner Transitional Surface**- A surface similar to the transitional surface but closer to the runway. The limits of an inner transitional surface shall comprise:
 - (i) a lower edge beginning at the end of the inner approach surface and extending down the side of the inner approach surface to the inner edge of that surface, from there along the strip parallel to the runway centerline to the inner edge of the balked landing surface and from there up the side of the balked landing surface to the point where the side intersects the inner horizontal surface; and
 - (ii) an upper edge located in the plane of the inner horizontal surface.
- (e) **Balked Landing Surface** – an inclined plane located at a specified distance after the threshold extending between the inner transitional surfaces. The limits of the balked landing surface shall comprise:

- (i) an inner edge horizontal and perpendicular to the centre line of the runway and located at a specified distance after the threshold;
 - (ii) two sides originating at the ends of the inner edge and diverging uniformly at a specified rate from the vertical plane containing the centre line of the runway; and
 - (iii) an outer edge parallel to the inner edge and located in the plane of the inner horizontal surface.
- (f) **Take-Off Climb Surface (Annex 14)** – The surface shall be established for a runway meant for take-off. The limits of the take-off climb surface shall comprise:
- (i) an inner edge horizontal and perpendicular to the centre line of the runway and located either at a specified distance beyond the end of the runway or at the end of the clear way when such is provided and its length exceeds the specified distance;
 - (ii) two sides originating at the ends of the inner edge of and diverging uniformly at a specified rate from the take-off to specified final width and continuing thereafter at that width for the remainder of the length of the take-off climb surface; and
 - (iii) an outer edge horizontal and perpendicular to the specified take-off track.
- (g) **Aerodrome Elevation**- The elevation of the highest point of the landing area.
- (h) **Aerodrome Reference Point** – The designated geographical location of an Aerodrome.
- (i) **Threshold** – The beginning of that portion of the runway usable for landing.
- (j) **Displaced Threshold** – A threshold-not located at the extremity of a runway.
- (k) **Frangible Object** – An object of low mast designed to break, distort or yield on impact so as to present the minimum hazard to aircraft.
- (l) **Obstacle** – All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for surface movement or aircraft or that extend above a defined surface (indicated in annexure IV) intended to protect aircraft in-flight.
- (m) **Obstacle Free Zone (OFZ)** –The airspace above the inner approach surface, inner transitional surfaces and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than low mast and frangible mounted one, required for air navigation purposes.
- (n) **Runway** – a defined rectangular area on a land aerodrome prepared for the landing and take off of the aircraft.
- (o) **Runway End Safety Area (RESA)** – An area symmetrical about the extended runway centerline and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway.
- (p) **Runway Strip**- A defined area including the runway and stop-way, if provided, intended:-
- (i) To reduce the risk of damage to aircraft running off a runway; and
 - (ii) To protect aircraft flying over it during take off or landing operations.
- (q) **Clearway** – A defined rectangular area on the ground or water under the control of the appropriate authority selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to specified height.
- (r) **Stopway** – A defined rectangular area on the ground at the end of take off run available prepared as suitable area in which an aircraft can be stopped in case of an abandoned take-off.
- (s) **Take-off Runway** – a runway intended for take-off only.
- (t) **Obstacle Clearance Altitude/Height (OCA/H)** – The lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable used in establishing compliance with appropriate clearance criteria.
- (u) **Declared Distances:-**
- (i) **Take Off Run Available (TORA)** – The length of the runway declared available and suitable for the ground run of an aeroplane taking off.

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- (ii) **Take Off Distance Available (TODA)** – The length of take-off run available plus the length of clearway, if provided.
 - (iii) **Accelerate Stop Distance Available (ASDA)** – The length of take-off run available plus the length of stopway, if provided.
 - (iv) **Landing Distance Available (LDA)** – The length of the runway declared available and suitable for the ground run of an aeroplane landing.
 - (v) **Critical Area** – Critical area is an area of defined dimensions about the localizer and glide path antenna where vehicles including aircrafts are excluded during Instrument Landing System (ILS) operations. The critical area is protected because the presence of vehicles and/or aircraft inside its boundary will cause unacceptable discrepancies to the Instrument Landing System (ILS) signal in space.