Land Use and Development Control Plan - 2025

for Asansol Sub-Division

Final Report

May 2015

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1. Introduction to the Planning Area

Asansol Durgapur Planning Area (ADPA) is spread over 1603 sqkm and covers Asansol and Durgapur Sub-divisions excluding Galsi-I C.D. Block. Lying on the western side of the Bardhaman district, ADPA has 22.8 percent of the district's geographical area [Refer Figure 1.1]. Population of ADPA was 25.52 lakhs in 2001, which was 37 percent of the district population. ADPA is highly urbanized as more than 60 percent of its population lives in urban areas. As a result it was found that 77 percent of the urban population of the district in 2001 resided in ADPA. There are 2 Municipal Corporations, 3 Municipalities and 8 C.D. Blocks within ADPA and it is the second largest urbanized region in the state of West Bengal, after Kolkata Metropolitan Area.

Asansol Sub-division, lies on the western side of the Asansol Durgapur Planning Area. It has an area of 831 sqkm and had a population of 14.87 lakhs in 2001. Population density was 1788 persons/sqkm for Asansol Sub-division in 2001 as compared to 1592 persons/sqkm for ADPA - implying that this part of ADPA is more densely populated than the eastern half consisting of Durgapur Sub-division. The share of urban population was 68 percent which is also higher than that of ADPA (60 percent) in 2001.

The population growth rate in ADPA was 39 percent between 1991 and 2001, whereas it was 65 percent for Asansol Sub-division in the same decade. Population of Asansol Urban Agglomeration(AUA) (comprising of the urban population within Asansol Sub-division residing in 3 Municipalities i.e. Kulti, Jamuria and Raniganj, and 1 Municipal Corporation i.e. Asansol) has grown at the rate of around 14.5 percent between 2001 and 2011. Bardhaman district was growing at the rate of 13.96 percent between 1991 and 2001, and 12.01 percent in between 2001 and 2011. This makes Asansol Sub-division one of the fastest growing regions in the entire state of West Bengal during 1991-2001 - albeit the growth rate has dropped significantly in the recent decade i.e. during 2001-2011. [A part of high growth rate observed in 1991-2001 is due to annexation of rural areas into urban fold][1]

Very high levels of population density, urbanisation as well as growth rate is observed in ADPA, and within Asansol Sub-division in particular, due to predominance of large scale mining and industrial activities within its local economy. Asansol sub-division lies over a huge coal reserve, containing the best type of non-coking coal reserves in the country. Mining activity started in this region as early as 1774, but systematic extraction started in the second half of the nineteenth century. Initially known as 'Raniganj Coalfield', a vast number of private collieries extracted coal from this reserve until all of non-coking coal mines were nationalized in 1975 and renamed as 'Eastern Coalfields Limited (ECL)'[2].

Till date Raniganj Coalfield has the second highest coal reserve in India, after Talcher reserve. There are two blocks in Raniganj Coalfield: Raniganj measures and Barakar measures. Coal from Raniganj measures has high volatile content, long flame, quick ignition and high heat value which makes it preferable to high heat intensive industries, particularly glass, ceramics, fertilizers, refractories, forging etc. Raniganj Coalfield stretches over 444 sqkm, and is presently estimated to have over 30 Billion Tonnes of coal. In general, 2/3rd of the coal reserve is available within 300 metres from the ground level in these measures. A large share of the workforce is engaged in mining and related activities, though the share has dipped in the last decade[3]. Apart from the coal reserves, this area has also exhibited great prospects for extraction of

[1] http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/India2/Table_3_PR_UA_Citiees_1Lakh_and_Above.pdf
[2] http://www.easterncoal.gov.in/corporate.html#history
[3] Socio-economic Survey Report of Asansol Sub-division - 2010 and Socio-economic and Demographic Profile of the people in Asansol-Durgapur Planning Area, 2000-01

Coal Bed Methane (CBM). CBM Block area stretching 350 sqkm with estimated reserve of 43 Billion Cum. has already been allocated to ONGC-CIL[4] for extraction.

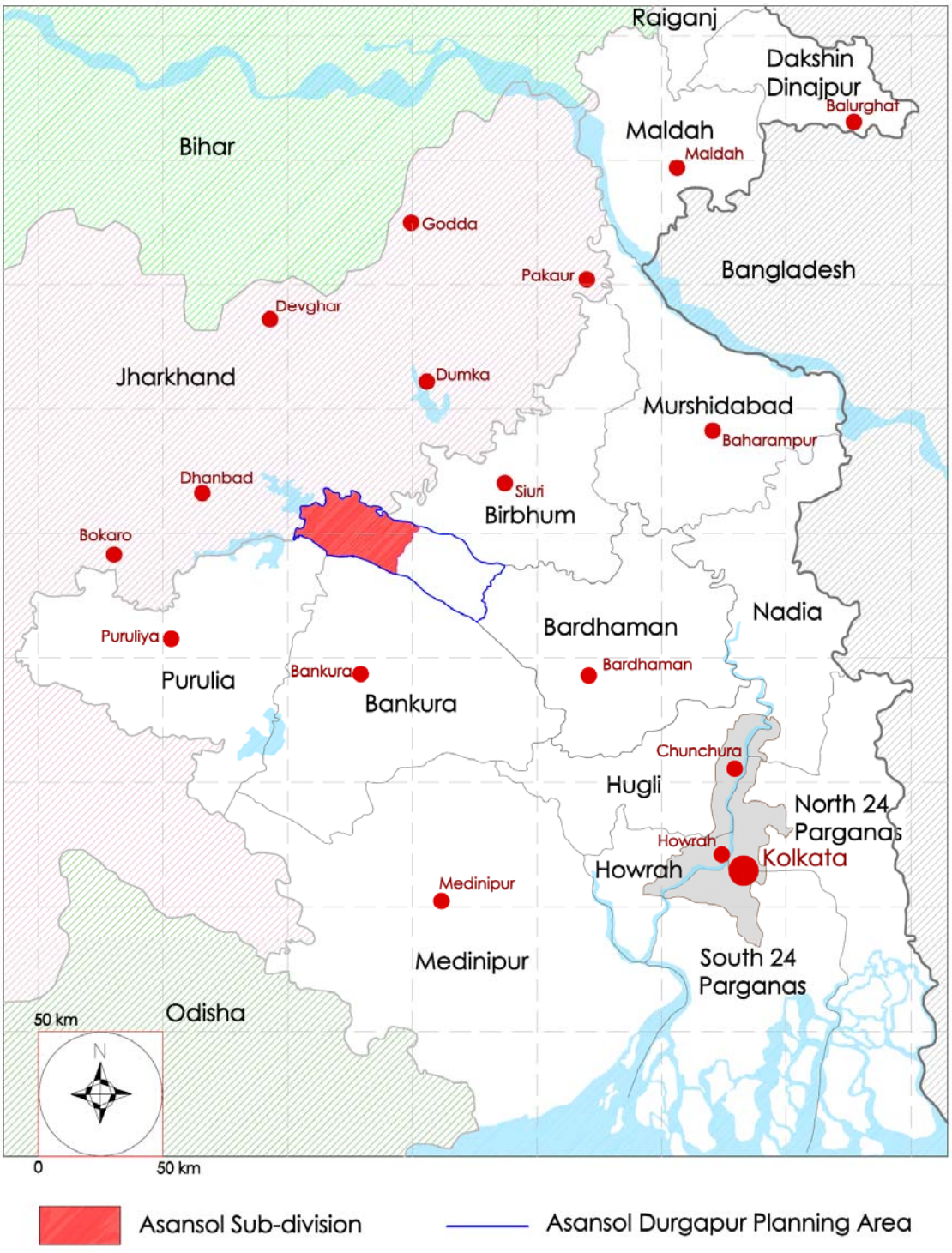


Figure 1.1: Location of Asansol Sub-division in ADPA and Bardhaman District

[4] http://fossil.energy.gov/international/Publications/cwg_nov05_cbm_kanchan.pdf

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. In addition to this, other extraction-based industries, heavy engineering works, refractories, distilleries, chemical industries etc. have located themselves in this region. Some of the most noted ones were the IISCO plant in Kulti and Burnpur, Chittaranjan locomotive factory, Hindustan cables factory in Chittaranjan, and Sen-Raleigh cycle manufacturing unit etc. However, over time obsolescence of production technology has led to slump in industrial activities within Asansol - leading to closure of many significant manufacturing units. In recent times, fresh investments, both public and private, have been instrumental in rejuvenating the industrial climate. 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.

Asansol has also developed as a trade and commerce destination encompassing a catchment area of Purulia, Bankura, Birbhum, Dhanbad and Bardhaman district. Most of the trading takes place in whole sale format. However, the retail trade volume is equally high as this region has very high monthly disposable household income levels, owing to comparatively high mining and industrial wages. High volumes of trading, both retail and wholesale, are evident from the revenue earned from the sales and excise tax sources.

According to *RK Swamy BBDO Guide to Urban Markets*, prepared by Dr. I. Natarajan, formerly a chief economist with National Council of Applied Economic Research (NCAER), which covered 784 towns (Class I and II), Asansol ranked 28th among them in terms of Market Potential Value (MPV)[5].

MPV is a function of: i) the size of the consumer base in the town, ii) means available to the consumers, iii) consumption behaviour and their awareness levels (which is depended on the exposure to media and extent of female literacy), and iv) the extent of market supporting infrastructure. Kolkata has ranked 3rd, Silliguri 75th and Durgapur 83rd, in the same study. This clearly reveals the importance and the potential of Asansol as a trade and commerce hub within the region and within the South-Western part of West Bengal. In one of the recent findings of the City Mayors 2011 survey 'The world's largest Cities and their Mayors', Asansol was ranked 42nd fastest growing cities/urban areas between 2006 and 2020, with an expected average annual growth rate of 3.11 percent. There were only nine Indian cities which ranked higher than Asansol in terms of sustained growth potential[6].

In future, Asansol Sub-division is anticipated to grow at a rapid rate owing to its expanding mining base, accelerated industrial investment in the region and expanding trade and commerce functions. However, such high level of growth in population and local economy had some adverse impacts - and if not managed efficiently and equitably, it has the potential to impede the growth of local economy and quality of life of its inhabitants in the region.

The impact of mining activities has been profound in many aspects - both by opencast and underground mining. Though the practice of opencast mining is in decline due to stringent environmental regulatory control, substantial numbers are still active (24 out of 105 ECL mines are open cast). Large tracts of land used for open cast mines has led to destruction of topographical landscape, degradation of ecological communities, agricultural and forest land, and they require intensive land rehabilitation procedures. The

[5] As published in The Marketing White book, 2005 by Business World

[6] http://www.citymayors.com/statistics/urban_growth1.html

operational opencast pits are major source of air and noise pollution and pose serious threat to water quality[7].

Land subsidence is one of the major adverse impacts of mining activities in this region - a result of improper closure of old mines, as well as illegal and unauthorised extraction. Subsidence has damaged a large amount of housing stock, public utilities and amenities, road and rail infrastructure. In recent times a section of NH-2 alignment had to be shifted because its pavement was severely damaged due to major subsidence near Asansol. In addition to this, coal fire in Raniganj Coalfield is also rampant which is either because of fire infection from adjacent fire-affected coal seams or anthropogenic activities or spontaneous combustion of coal[8]. Large number of land parcels has been identified as unstable locations and, resettlement and rehabilitation of the affected settlements are ongoing.

A Master Plan dealing with fire, subsidence, rehabilitation and diversion of surface infrastructure in Raniganj Coalfield, within the leasehold of Eastern Coalfields Limited (ECL) at an estimated investment of Rs. 2629.21 crores for Raniganj Coalfield, excluding amount sanctioned earlier for various Schemes under Environmental Measures & Subsidence Control (EMSC) Schemes, has been approved by the Government of India, in August 2009. For implementation of the Master Plan, Asansol Durgapur Development Authority (ADDA) has been notified as implementing agencies by the State Government of West Bengal[9].

On the other hand, the industrial activities which came up in this region are mainly extraction-based activities relying on the high quality coal. Predominance of iron and steel units, heavy engineering works, coal briquette units, foundries and refractories etc. point out to the fact that this region has always attracted highly polluting industries, which are mostly categorised as RED and SPECIAL RED category of industries according to the list prepared by West Bengal Pollution Control Board based on pollution potential. Along with surface mining activities, polluting industries in Asansol Sub-division has taken severe toll on the local environment of many urban and rural settlements. Moreover, as accessibility is key to industrial location, most of the new industries have tried to locate in and around NH-2 corridor or other important regional roads - where most of the higher order human settlements are also located, bringing settlements and polluting industries in hazardous proximity.

It is evident that an active intervention is necessary to direct the spatial location of environmentally polluting economic activities taking into account the structure of the existing and future human settlements - so that the adverse impacts of the economically productive yet polluting activities i.e. mining and manufacturing can be minimised. Growth of existing settlements as well as identification of new settlements should take into account the location of coal reserves, existing and old mining areas, as well as unstable locations identified. The location of future industries should also be guided by the existing and new settlement pattern to reduce incompatibility.

Trade and commerce functions, which are concentrated in the urban centers i.e. Raniganj, Asansol, Barakar, Jamuria has posed a new set of challenges - often acting as detriment to the quality of life in these urban centers. These trading functions has congested the urban core, creating severe traffic bottlenecks, unsustainable population densities, exorbitant land values and no scope of expansion of the trading as well as other urban functions. Unless rejuvenation of the existing urban cores with complete renewal of urban infrastructure is carried out, decadence of trade and commerce is bound to take place. Alternative new locations with commensurate infrastructure is also necessary to provide the scope to

[7] http://www.easterncoal.gov.in/corporate.html#HISTORY

[8] http://www.iisc.ernet.in/currsci/jan102005/21.pdf

[9] http://pib.nic.in/newsite/erelease.aspx?relid=56379

expand the central business district functions and create opportunity for other tertiary functions to flourish.

Asansol Durgapur Development Authority, the nodal agency formed in 1980 to undertake the urban and regional level planning and implementation of urban development programmes, have taken cognisance of these issues. It has taken a series of planning initiatives to provide a direction to the development activity in this region. One of the most significant steps was to prepare a Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025 in 2007, which provided a long term strategic plan for the planning area. This document has taken a holistic and multi-sectoral perspective of the growth potential and recommended short-term, medium-term and long-term actions to be taken. It is an indicative planning document where:

a. Future demographic profile and socio-economic changes has been anticipated
b. Future course of economic development and their location allocation has been discussed
c. Future settlement pattern has been proposed along with allocation of population taking into account the land availability, growth prospects and environmental sustainability
d. Improvement in traffic and transportation, housing, physical infrastructure, social infrastructure, local environment, development management and finance etc. has been dealt with in an integrated framework.

However, this perspective plan document has taken a holistic and multi-sectoral perspective, as it is essentially a long term and broad level plan covering the entire ADPA. Several medium term plans and key sectoral plans have been also prepared by ADDA, incorporating the planning strategies and recommendations of the Perspective Plan. A Comprehensive Development Plan (CDP) has been prepared as part of the JNNURM (Jawaharlal Nehru National Urban Renewal Mission) which has emphasised on the comprehensive renewal of physical infrastructure, particularly in the urban centers of ADPA. A Comprehensive Mobility Plan (CMP) has been prepared within the framework of National Urban Transport Policy (NUTP), to improve the traffic and transportation infrastructure of the urban centers in ADPA along with regional connectivity between urban centers.

A specific need has also been felt by the Development Authority to plan for future utilisation of the land resources within the planning area. It will take into account all the planning strategies and recommendations provided in all other planning exercises taken up before. It will also make detailed assessment of the future land requirements for undertaking various activities i.e. residential, commercial, manufacturing, institutional, recreational, conservation and primary sector activities within urban areas and in the region. This will help control the usage of land within the planning area in coherent and consistent manner under the regulatory control of the Development Authority. In absence of such plan, it will be extremely difficult on part of the authority, whose task includes providing permission to development over land as:

a. It will be excessive time-consuming and resource intensive – leading to delay in decision-making as each case has to be evaluated in isolation;

b. It might often lead to a situation where it is difficult to regulate incompatible land uses;

c. Decisions over a time period might not appear consistent or coherent or even may appear haphazard;

Apart from controlling the usage of land, a detailed set of development control guidelines is necessitated to manage the intensity of development according to the characteristics of the settlement pattern envisaged in the Perspective Plan.

Any plan, which will regulate the usage of land and control the development intensity within a planning area, must have the statutory power so that it can be implemented in an efficiently, equitably, orderly, timely and in a consistent, coherent and non-partisan manner.

The West Bengal Town and Country (Planning and Development) Act, 1979 [West Bengal Act XIII of 1979] has provided a mandate to prepare and enforce a Land Use and Development Control Plan by every Development Authority within a specified time frame. The objective is primarily to prepare a future land use zoning and development control guidelines.

In this context, Asansol Durgapur Development Authority has decided to prepare a Land Use and Development Control Plan (LUDCP) for Asansol Sub-division within ADPA. The plan period adopted for this task is upto Year 2025 as it is concurrent with Perspective Plan and other recent planning exercises.

Preparation of this report has extensively borrowed the findings and recommendations of the earlier planning initiatives, particularly Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025, City Development Plan for Asansol Urban Area, Comprehensive Mobility Plan for Asansol Urban Area - 2025, Socio-economic Survey Report of Asansol Sub-division - 2000 & 2010. To understand the report on Land use and development control plan in full complexity, it would be helpful to supplement the reading with these aforementioned documents.

Apart from that, it has generously used data and findings provided by various Government and Non-Government sources, published academic findings and professional documents. Some of the findings published in the world wide web has also been used - most of them are either official websites of reputed organisations or peer reviewed material.

2. Approaches to Land Use and Development Control Plan

Land use planning and development control, which is delineation and/or restrictions of rights over land within certain spatial confines, is widely regarded as key instrument of planning regulation and can be seen as environmental regulation in its broadest sense. Land use planning assigns and restricts rights to the development and, use of land and improvements. Development control intervenes in the processes of land development, construction, occupancy and use, to enable and constrain transactions in accordance with prescribed rights and rules[10].

Literature review suggests that much of the legislation for land use zoning had the stated intent of promoting the 'health, safety, morals, order, convenience, prosperity and general welfare, as well as efficiency and economy in the process of development'.

The task of land use planning has three key objectives:

a. To separate incompatible land uses, which generate negative externalities to harm each other;

b. To integrate compatible land uses, which generate positive externalities so that they are mutually beneficial; and

c. To interject public goods like roads and open space in suitable location.

Land use planning is meant to prevent the natural state of random distribution of activities over space, and hence associated chaos. Land use zoning is supposed to group compatible activities into classes i.e. land use zones, and arrange land use zones spatially in land use map with the purpose of preventing uses which are mutually incompatible to each other.

Assigning use or property rights on land is a sovereign task. As land use planning and its implementation through regulation and development control involves commands (laws, rules and regulations) that can only be issued and enforced by the state, it is essentially a task which can be exercised by a public agency enabled with adequate legislative support. Land use and development control plan is essentially an intervention to the land market – which can be viewed as the market's institutional environment.

The economic rationale behind land use planning and development control lies in the fact that land and property markets are imperfect and the outcomes are often inefficient. Inefficiency in allocation of land uses is based on Pareto efficiency, where it is believed that some people could be made better off in terms of allocation of land resources without making others worse off.

For example, land markets, may not be able to control or regulate nuisances generated from incompatible land uses. The negative externalities (i.e. adverse impacts not absorbed by the producer or the consumer such as smoke from a factory) generated out of consumption or production of private goods will remain unaccounted and it implies that social cost of production or consumption will be often be higher than market price or cost of production.

On the other hand, certain type of combination of public-private goods will not be produced which are socially beneficial – as the market is not in a position to value and absorb the positive externalities (i.e. desirable impacts not absorbed by producer or consumer, such as leaving space on side of buildings so

[10] Lawrence Lai Wai Chung, 1994: The economics of land use zoning: a literature review and analysis of the work of Coase; Town Planning Review, vol. 65, pp 77-98

that neighbours can get adequate light, ventilation and privacy). This is because the willingness to pay for production or consumption of such combinations is lower than the social benefit it generates.

Moreover, provision or supply of public goods (goods of non-rival and non-excludable nature), i.e. roads, open spaces etc., will not happen as markets do not have any incentive to supply them.

In this context, the Pigouvian planning theory (initiated in 1920s by Arthur Pigou in his treatise named The Economics of Welfare) recognises it as 'market failures' where maximisation of social welfare is not possible. This makes a case for public intervention to regulate the market for maximisation of the social welfare arising out of allocation of land resources among competing land uses. The role of the government/state/public is seen as a force outside the economic system altogether which has come to rectify the distortions which unhindered and inhibited market forces can bring, and create conditions for market failures.

However, the Pigouvian social welfare approach to allocation of land resources has been heavily criticised, mostly by the Coasian planning theory (initiated by Ronald Coase in 1960s in his Nobel prize winning article named The Problem of Social Cost) which revisits the role of state and market in allocating land uses. Coasian approach rests on the premise that in well-operating markets the allocation of land to various uses will be exactly same as the one derived by maximisation of social welfare. Therefore the cost of regulation i.e. institutional costs to enact and enforce the regulation is unnecessary and is a burden on the society. It practically says that Pigouvian approach might have outcome efficiency i.e. efficiency in producing a desirable outcome in terms of land utilisation, but it lacks process efficiency as it imposes a social burden in arriving at that outcome through regulation and enforcement, which are often resource intensive. However, this approach is wise enough to point out that markets cannot operate efficiently where transaction costs are very high. Transaction costs are costs spent on legal, administrative and information-gathering tasks associated during a market transaction, say buying and selling a parcel of land. Land markets essentially have very high transactions costs, particularly in India, mostly due to two reasons:

a. Information is scarce and gathering them is more difficult [information can be on ownership, use restrictions specified by multiple agencies, land prices prevailing for various types of uses, future investments in and around, government's intention and policies, procedural information on sanctions, permits, fees, charges etc]

b. High asset specificity i.e. a kind of inter-dependence where investment in land is tied to many other things, both spatially and temporally [investment in land and landed property is for considerable duration, which means it has greater lock-in period; market value[11] of any development is also dependent on what developments will take place in vicinity; so any investments on land or landed property will be subjected to a kind of inter-dependence spatially and temporally, for which people often do not have adequate and reliable information leading to uncertainty.]

Coasian planning approach recommends intervention of state through minimal regulation to reduce the transaction costs of land markets, so that markets can efficiently allocate the land to various uses – aiming at both outcome efficiency and process efficiency. Put in another way, the role of state is not as an outside actor in deciding the final allocation of land uses and completely replacing the role of market, but

[11] The land value represents the monetary assessment of the development potential of the land. To estimate the land parcel's development potential, one needs to know not only its prospective uses and their intensity, but also the demand for alternative forms of development which is critically dependent on existing and future adjacent land uses.

to work as a governance institution choosing those set of legal rules and procedures and administrative mechanism which will help land market to allocate land uses and maximise the social welfare.

Land use zoning plan and development control guidelines will have a significant impact on the land market – particularly in reducing the transaction costs in the land market. It supplies one of the essential public goods i.e. authentic and consistent information, about the future land use allowed on land, the kind of development intensity permitted, locations of public infrastructure proposed, procedures to be followed to carry on development activities etc. Information of such kind will reduce the uncertainty and will be available at very little cost – thus reducing the transaction costs in land market.

Absence of such information leads to a land market where there is no certainty about which land use can come in which location. As some people tend to have inside information or educated knowledge or experienced intuition about public infrastructure projects, large private investments and any other information which might influence the land market, land buying and selling takes place in imperfect market due to asymmetric information among buyers and sellers. Land transactions are frequently subjected to opportunism and misrepresentation in a viciously speculative environment – where a large number of people become vulnerable. As in India, a large amount of household income and wealth is invested in land and landed property; it has the potential to create an exploitative land market where few will make fortune at the cost of many.

American planning system has been greatly influenced by Coasian approach where markets play a greater role in deciding the allocation of land. On the contrary, European planning system, particularly British planning, have been greatly influenced by Pigouvian approach, where state occupies a greater role in deciding land use and intensity of development. Indian planning has always been deeply influenced by British planning system and bestows great responsibility on state for deciding future utilisation of land.

The discussion in this section has clearly pointed out that there might be certain problems with the regulation but it will be difficult to completely abandon it. Any planning initiative in contemporary times also must encourage the desirable market forces in shaping the future urban and regional structure – but also check the undesirable market conditions and outcomes.

The West Bengal Town and Country (Planning and Development) Act, 1979 [West Bengal Act XIII of 1979] provided the legislative framework where Development Authority will play a key role in preparing the Land Use and Development Control Plan for its planning area. The Development Authority has considerable autonomy to choose the nature of land use zoning plan and regulatory framework for development control as it finds suitable. In this present exercise, efforts will be made to keep these key issues, discussed in this section, under consideration while preparing the land use zoning plan and framing the development control guidelines.

3. Legal Framework of Plan Preparation

In this section, a general introduction to the legislative framework has been provided along with the issues concerned with preparation of existing land use map and register, preparation of land use and development control plan along with the implementation framework prescribed within the Act.

3.1 Introduction to the Act

Land Use and Development Control Plan of Asansol Sub-division is prepared u/s of The West Bengal Town and Country (Planning and Development) Act, 1979 [West Bengal Act XIII of 1979].

This Amendment Act is based on The West Bengal Town and Country (Planning and Development) Act, 1979 [West Bengal Act XIII of 1979], which came into force on 1st April, 1980 vide Notification No. 1873-T & T & CP/1R-6/80, dated 17.3.1980 and was amended subsequently in 1986, 1994, 2006,2008 and 2010.

In this section, the legal underpinnings of the plan preparation exercise will be explored which will include the purpose, scope, content and the process to be adopted during this exercise. A brief about the implications of this plan while in implementation will also be provided - highlighting a variety of issues which may frequently arise during the enforcement of the plan.

The basic purpose behind this legislation was to enact ".....An Act to provide for the planned development of the rural and urban areas in West Bengal and for matters connected therewith or incidental thereto.....whereas it is expedient in the public interest....." as mentioned clearly in the opening lines of this legislative document.

This Act created provisions for declaration of Planning Areas and constitution of Development Authorities (Chapter III, Section 9 and 11 of the Act). In the same chapter (Section 13 (ii) of the Act), it details out the powers and functions of the Development Authorities - some of the relevant ones are listed following[12]:

i. to prepare present Land Use Map

ii. to prepare and enforce a Land Use and Development Control Plan

iii. to prescribe use of land within its area

[12] The existing Amendment Act has substituted the need of preparing 'Outline Development Plan' by the 'Land Use and Development Control Plan' and omitted the need of preparing 'Detailed Development Plan' as specified in previous Acts.

Land Use and Development Control Plan is more specific in nature and detailed in scale when it comes to prescribe the future utilization of land within the planning area as compared to the Outline Development Plan. On the other hand, Detailed Development Plan is very detailed in its scope, prescribing the activities at a micro-level - often making the regulatory framework inflexible.

Moreover, preparing the Detailed Development Plan is very much time and resource intensive, which can only be adopted for small areas within the planning area. (The scope of the Detailed Development Plan will be compared with the Land Use and Development Plan in the following sections).

iv. to regulate building operation within the Planning Area (Section 13A of the Act)[13]

v. to carry out or cause to be carried out such works as are contemplated in the Land Use and Development Control Plan

3.2 Preparation of the Present Land Use Map and Register

One of the prime functions outlined by the Act is preparation of Present Land Use Map and a Land Use Register - preferably within one year after its constitution or within such time as the State Government may, from time to time, extend in such form as the Development Authority may think fit, indicating the present use of land in the Planning Area. Development Authority may prepare the Map and the Register of any portion of the Planning Area, but it is recommended to complete it for the entire Planning Area (Section 28 of the Act).

The Present Land Use Map and Register should consider the predominant use of land as the present land use to which the land is put on the date of the preparation of the Map. Land use classification and unit of land parcel at which level the land use map will be prepared is left to the decision of the Development Authority[14].

After preparation of the Map and the Register, the Development Authority shall publish a public notice of the preparation of the Map and the Register and of the place or places where copies of the same may be inspected - inviting objections in writing from any person with respect to the Map and the Register within thirty days of the publication of such notice (Section 29 of the Act).

The Development Authority will allow reasonable opportunity of hearing to the objectors, if any, after the expiry of the period of thirty days, and make modifications in the Map or the Register or both as it considers proper and adopt the Map and the Register with such modifications, if any.

The Development Authority shall publish a public notice of such adoption of the Map and the Register and the place or places where copies of the Map and the Register may be inspected and shall submit copies of the same to the State Government. A copy of such notice shall also be published in the Official Gazette - as it shall be the conclusive evidence that the Map and the Register have been duly prepared and adopted. Following the legal procedure stated above, Present Land Use Map and Register has been prepared (Refer Memo No. ADDA/ASL/241/XII/19-A dated 24th May, 2012) and a copy of the notification is presented in Annexure-I.

3.3 Preparation of Land Use and Development Control Plan

After preparation of the Present Land Use Map and the Register, the Development Authority shall prepare a Land Use and Development Control Plan for the Planning Area, for the whole or of any

[13] Regulation of the building operation has entered the Act in amendment made in 2006 (West Bengal Act III of 2006), w.r.e.f. 14.12.2005]

[14] In this exercise, land use is updated at Revisional Survey (R.S.) Plot level in Revenue Village Map and land use classification suggested by Urban Development Plan Formulation and Implementation (UDPFI) Guidelines is followed. This will be discussed in detail in following sections of the Report.

portion within a specific time period (Section 31 of the Act). The Plan should be a written statement formulating the policy and the general proposals including maps of the Development Authority in respect of the development and general use of land in that area including measures for the improvement of the physical environment. It shall contain or be accompanied by such maps, diagrams, illustration and descriptive matters as 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 part of the plan.

The Land Use and Development Control Plan may also -

a. (i) indicate broadly the manner in which the Development Authority proposes that land in such area should be used;

(ii) indicate areas or 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 such other purposes as the Development Authority 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 linkage 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, waste disposal, generation and distribution of electric power and distribution of gas, etc.;

d. include 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 such other issues as may be considered appropriate by the Authority;

e. locate cluster of villages and huts and designate land for haats, 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 area and control of natural disaster;

g. designate land as subject to land acquisition for any public purpose.

[Note: However, this Act has omitted the need for preparation of Detailed Development Plan in the amendment made in 1994. The scope of the detailed development plan included the scope of the Land Use and Development Control Plan in addition to the relevant ones listed following:

a. indicate major road and street network and traffic circulation pattern for present and future requirements along with major road and street improvements

b. (i) indicate all such matters including planning standards, gross and net densities and guiding principles as the Development Authority may consider expedient to be indicated, defined and provided in a Development Plan;

(ii) indicate detailed development of specific areas for housing, shopping centres, industrial areas, civic centres and educational and cultural institutions;

(iii) indicate detailed redevelopment or renewal of specific areas for housing, shopping centres, industrial areas, civic centres and educational and cultural institutions and other related purposes;

(iv) a phased development programme along with the stages of development of the plan proposed together with financial implications of each stage;

c. designate land as subject to acquisition for any public purpose, and in particular, but without prejudice to the generality of this provisions, for the purpose of -

(i) the Union of India, the State or the local authority or any other authority established by the law and public utility concerns;

(ii) dealing satisfactorily with the areas of bad layout or obsolete development and slum area and provisions for relocation of population;

(iii) the provisions for open spaces, parks and playgrounds;

(iv) securing the use of land in the manner specified in the development plan;

A complete shift in planning paradigm led to the omission of these above mentioned scope from the Act during the amendment in 1994. It was felt that too detailed a plan might often be inflexible and rigid to implement or enforce.

A need for more broad and flexible land use planning was put in place, to incorporate the market forces to do the detailed allocation, whereas regulatory framework can control the incompatible uses. Moreover, Land Use and Development Control Plan consciously made a departure from being a complete planning document encompassing all sectors (i.e. from multi-sectoral plan to phasing of development and financial outlay planning etc.) to primarily a plan which concentrated on the manifestations of the future proposals on land i.e. its location, quantity, quality, and to create a land management framework to control the utilisation of land and regulatory control of built-up development on it.

The shift in attitude towards land acquisition is also worth noting as it has removed the specific/particular clauses for acquisition in the Land Use and Development Control Plan i.e. for the purpose of slum eviction/relocation, redevelopment of old/congested area, securing land for proposals mentioned in development plan etc. Given the growing social and political impedance often attached to land acquisition exercise, it will further deter using involuntary acquisition as a tool to implement future proposals, even for public purpose, unless direly necessitated.]

After preparation of the Land Use and Development Control Plan, the plan is submitted to the State Government for any modifications, if any, as the State Government thinks fit. After modifications made by the Development Authority, it 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 plan within a period of sixty days from the date of publication of the public notice in the Official Gazette or local newspaper or whichever is later (Section 35 & 36 of the Act).

It is important to note that, the notice of preparation of the Land Use and Development Control Plan shall, notwithstanding anything contained in the Land Acquisition Act, 1894, be deemed to be declaration duly made under Section 4 of the said Act.

After the expiry of the period for inviting objections, the Development Authority shall appoint a Committee, consisting three of its members, to consider the objections regarding Land Use and Development Control Plan and present a report within a period fixed by the Development Authority. The Committee has the power to invite any other person who will have right to take part in the discussion but shall not have a right to vote at a meeting and shall not be a member for any other purpose.

The Committee shall afford reasonable opportunity of being heard, to any person, including representatives of Government Departments, or local authorities who has filed any objection, and who has or have made a request for being so heard.

The Development Authority shall consider the report submitted by the Committee and may make modifications in the Land Use and Development Control Plan as it considers proper. Subsequently, the Development Authority will submit the report, with or without modifications, with the report of the Committee to the State Government.

The State Government may either approve the Land Use and Development Control Plan with or without modifications or return the Plan to the Development 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 (Section 37 of the Act).

After the approval from the State Government, the Development Authority shall publish a public notice in the Official Gazette and in the local newspaper or newspapers, of the approval of the Land Use and Development Control Plan and the place or places where copies of the Plan may be inspected.

The publication of the notice in the Official Gazette of the approval of the Plan shall, notwithstanding anything contained in the Land Acquisition Act, 1894, be deemed to be a declaration duly made under Section 6 of the said Act (Section 38 of the Act).

Any land required, reserved or designated in a Land Use and Development Control Plan shall be deemed to land needed for a public purpose within the meaning of the Land Acquisition Act, 1894, and may be acquired under the said Act (Section 43 of the Act).

The Land Use and Development Control Plan shall come into operation from the date of publication of the aforesaid notice in the Official Gazette. 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 situated, to enforce the regulatory measures such as the zoning and sub-division regulations contained in the Land Use and Development Control Plan, in supersession of the rules and regulations, if any, applicable to such area or zone (Section 38 of the Act).

The Act has a provision where 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, within one month of the Plan coming into operation. The validity can be questioned on the following grounds (Section 39 of the Act):

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 Plan

The High Court, after giving an opportunity of hearing to the Development Authority and the State Government,

a. may stay, until the final determination of the proceedings, the operations of any provisions contained therein so far it affects any property of the applicant; and

b. if satisfied that the Plan or any of its provision is not within the powers conferred by the Act, or that the interest of the applicant has been substantially prejudiced by a failure to comply with any requirement of this Act, may quash the Plan or any provision contained therein generally or in so far as it affects any property of the applicant.

However, apart from it, a Land Use and Development Control Plan cannot be questioned in any manner, in any legal proceedings whatsoever, either before it or after it has been approved (Section 39 of the Act).

Any time after the Land Use and Development Control Plan comes into operation, and at least once in ten years after being in operation, the Development Authority shall, after carrying out fresh surveys as may be considered necessary, prepare and submit to the State Government an Amendment of the Land Use and Development Control Plan for any alterations or additions considered necessary. The process of approval for Amendment of Land Use and Development Control Plan is similar as new Plan (Section 40 of the Act).

Changes in the Land Use and Development Control Plan after coming to operation, as may be necessitated by topographical and cartographical errors and omissions, details of proposals not fully indicated in Plan or changes arising out of the implementation of the proposals in the Plan, can be made by the Development Authority with the previous approval of the State Government, provided that, all changes are made in public interest and such changes are notified to the public (Section 41 of the Act).

Annulment of the Land Use and Development Control Plan may be done by the State Government in public interest or any other sufficient reason, either entirely or a portion or a provision contained therein. A public notice shall be published by the State Government immediately after the annulment.

While the Land Use and Development Control Plan is in preparation (before the plan has become operative), the Development Authority, in the exercise of its functions and powers with respect to any area under it, shall have regard to the provisions which, in its opinion, will be required to be included for securing the proper planning of the concerned area (Section 56 of the Act).

3.4 Implementation of Land Use and Development Control Plan

After coming into operation of the Land Use and Development Control Plan, no person shall use, or permitted to use any land or carry out any development in that area otherwise than in conformity with

the Plan. However, the Development Authority may allow the continuance, for a period not exceeding 7 years, of the use, upon such terms and conditions as may be imposed by the Development Authority, on any land for the purpose and to the extent, for and to which it is being used on the date on which such Plan comes into operation (Section 44 of the Act).

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 may be prescribed.

On such application and payment of development charge as may be assessed, the Development Authority may grant permission either unconditionally or subject to conditions it may think fit, or may also refuse permission. The Development Authority shall have to regard the provisions of the Land Use and Development Control Plan and the regulations, if any, made under section 139 of the Act and applicable to the land on which the development is intended to be carried out, the building rules, if any, of a Panchayat or Municipality in so far as they are not inconsistent with the regulations as aforesaid and are applicable to such land, the provisions of the Land Use and Development Control Plan as forwarded to the State Government under Section 31 or as modified thereafter, and any other material consideration (Section 46 of the Act).

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

Every permission granted under this Act shall remain in force for a period of one year from the date of such permission, which may be extended on application to the Development Authority for such times as it may think proper, but the total period shall in no case exceed three years (Section 48 of the Act).

After giving the permission for development, the Development Authority has the power to revoke or modify the permission, if it appears to the Development Authority that it is expedient, provided where already development has been completed or change of land use has taken place (Section 51 of the Act).

Any applicant aggrieved by an order passed, regarding grant of permission subject to conditions or refusal of permission, may appeal within one month of the communication of the order or after the expiry of three months from the date of submitting the application, as the case may be, in the manner and accompanied by such fees as may be prescribed, to the State Government or any officer of the State Government appointed on this behalf (Section 47 of the Act).

If appeal by the aggrieved results in refusal of permission or granting permission subject to conditions, he may serve on the State Government a notice (referred as acquisition notice), within three months and the manner prescribed, requiring the State Government to acquire his interest in the land and copy of the notice shall at the same time be served on the Authority. This acquisition notice is based on the claim that the land has become incapable of reasonably beneficial use in the existing state, or that the land, in case where permission to develop has been granted subject to conditions, cannot be rendered capable of reasonably beneficial use by carrying out the permitted development in accordance with the conditions (Section 49 of the Act).

After receiving the notice, the State Government shall appoint a person, who shall, after providing reasonable opportunity of hearing to the person serving the notice and the Development Authority, submit his report to the State Government. The State Government, on consideration of the report, shall pass an order refusing or confirming the notice. If within the period of one year from the date on which acquisition notice is served, the State Government does not pass any order to refuse or confirm, the

acquisition notice shall be deemed to have been confirmed, and subsequently the State Government shall proceed to acquire the land or that part of any land for which the notice has been confirmed (Section 49 of the Act).

If appeal by the aggrieved results in refusal of permission or granting permission subject to conditions, he may claim compensation from the Development Authority on certain grounds (Section 50 of the Act). When a claim is received by such officer appointed by the Development Authority, he shall, after giving an opportunity of hearing to the applicant, submit report to the Authority. The Development Authority shall consider it and assess the amount of compensation, and if the owner does not accept the amount, the entire matter shall be referred for adjudication of the Court, whose decision will be final and binding.

In case of a department of the Central or the State Government or any local authority intending to carry out any development other than operational construction (as listed in Section 2 (17) of the Act, which is always outside the purview of the Development Authority), on any land, the concerned department or authority as the case may be, shall notify in writing to the Development Authority of the intention to do so, giving full particulars thereof and accompanied by such documents and plans as may be directed by the State Government from time to time, at least, one month prior to the undertaking of such development. In case of any objection raised by the Development Authority, the department or the authority can make necessary modifications in the proposals for development or the case will be forwarded to the State Government for decision. No development shall be undertaken until State Government has finally decided on the matter (Section 46 of the Act).

After Land Use and Development Control Plan coming into operation, any person who, whether at his own instance or at the instance of any other person, commences undertaking or carries out development, or changes use of any land or building, which is unauthorised , shall be punishable (Section 52 of the Act). Unauthorised development includes development, or change in land or building,

a. in contravention of Land Use and Development Control Plan;

b. without obtaining certificate regarding development charge;

c. without permission;

d. in contravention of any condition subject to which permission was granted;

e. after the permission for development has been revoked;

f. in contravention of the permission which has been modified.

Moreover, continuation of use of land in contravention to the Land Use and Development Control Plan without being allowed by the Development Authority or after the expiry of the period for which it was being allowed to continue, shall be punishable (Section 52 of the Act).

A notice will be served by the Development Authority for unauthorised development or use otherwise than in conformity to the Land Use and Development Control Plan, to restore the land to its condition before the said development, or to pay development charge, or to secure compliance with the conditions imposed or with the permission as modified, as the case may be (Section 53 of the Act).

Any person aggrieved by such notice may further appeal to the Development Authority in this regard, for which an officer appointed by the authority will take a decision as he/she may think fit.

In case of non-compliance to the notice served against unauthorised development, the Development Authority has the power to remove such person and all assistants and workmen from the land with the

help of local police (Section 54 of the Act). And if it is found expedient in the interest of the proper planning of its area, the Development Authority has the power to remove unauthorised development or use (Section 55 of the Act).

Such is the legal framework provided in the Act for preparation of the Present Land Use Map and Register as well as Land Use and Development Control Plan, and its implementation. This legal framework has been adhered completely in preparation of the Land Use and Development Control Plan for Asansol Sub-division.

4. Characteristics of the Planning Area

In this section, a brief understanding has been provided on the administrative setting and regional setting of the planning area, physical characteristics, settlement pattern, demographic and socio-economic characteristics, housing characteristics and living condition, issues related to regional and local transport, provisions of social and physical infrastructure, conditions of local environment as well as development priorities revealed by household surveys.

4.1 Administrative setting

Asansol Sub-division is one of the six Sub-divisions in the district of Bardhaman. It is divided into eight administrative units - four C.D. Blocks, three municipalities and one Municipal Corporation. Each C.D. Block has a Panchayat Samity. There are 35 Gram Panchayats and 349 Gram Sansads within Asansol Sub-division. There are 50 municipal wards under Asansol Municipal Corporation. Other three municipalities have 78 municipal wards under them. There are 369 mouzas in this Sub-division, of which 211 mouzas are rural and 158 urban [Refer Table 4.1 and Figure 4.1]. Asansol Durgapur Planning Area comprises of Asansol and Durgapur Sub-division, excluding Galsi-I C.D. Block in Durgapur Sub-division.

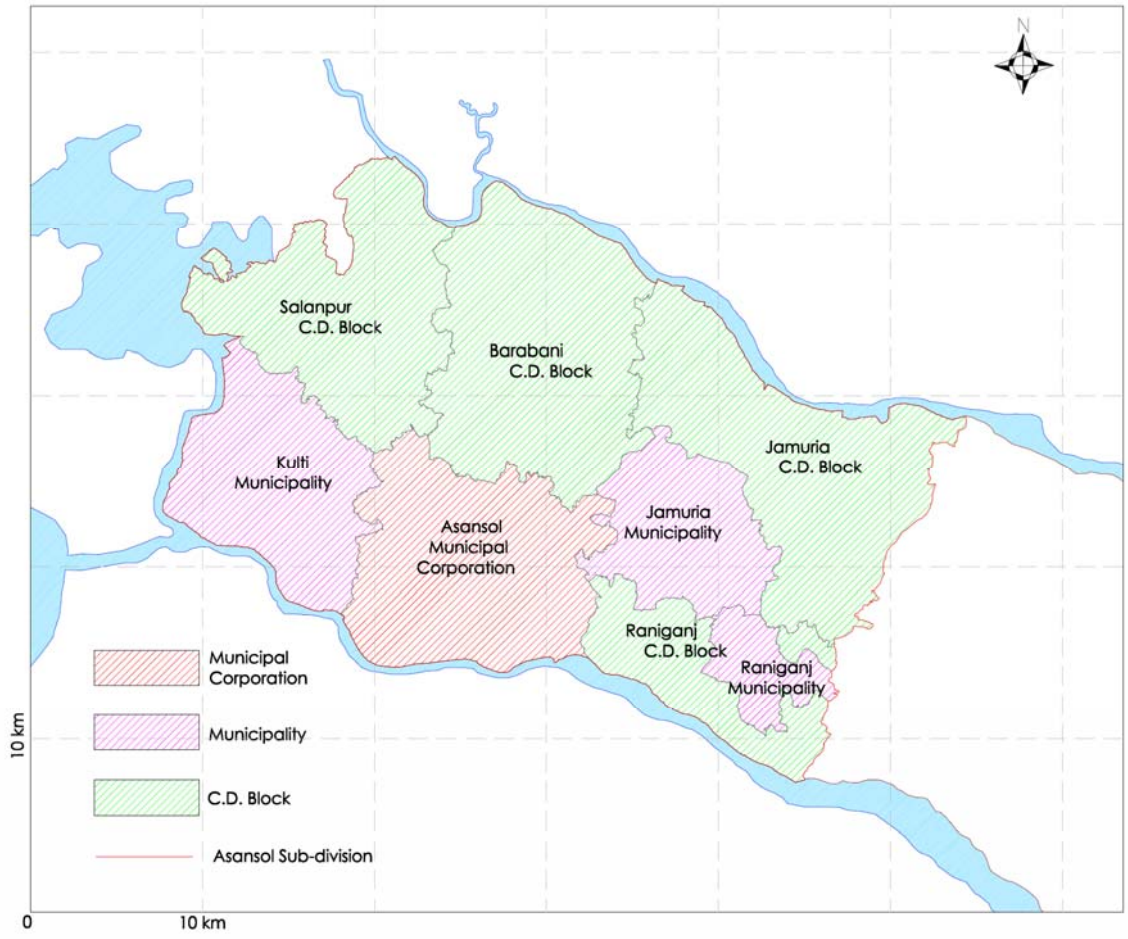


Figure 4.1: Administrative division of Asansol Sub-division

Table 4.1: Administrative Setting in Asansol Sub-division						
C.D. Block / Municipal Area	Police Station	No. of units				
		Panchayat Samity	Gram Panchayat	Gram Sansad	No. of Wards	No. of Mouzas
Barabani	Barabani	1	8	89		52
Jamuria	Jamuria	1	10	98		49
Raniganj	Raniganj	1	6	79		25
Salanpur	Salanpur & Chittaranjan	1	11	83		85
Rural			35	349		211
Kulti (M)	Kulti & Hirapur				35	69
Raniganj (M)	Raniganj				21	6
Jamuria (M)	Jamuria				22	25
Asansol (MC)	Asansol & Hirapur				50	58
Urban						158
Total		4	35	349	128	369

(Source: a) District Statistical Handbook, 2005 for Burdwan, published by Bureau of Applied Economics and Statistics, Government of West Bengal; Section II Area and Population; Table 2.1, Page no. 5; b)Census 2001; c) Block Development Office Records; Also refer LUMR Notification Memo No. ADDA/ASL/241/XII/19-A dated 24th May, 2012 presented in Annexure-I and for detailed listing of Mouza's in Asansol Sub-division in Annexure-II)

4.2 Regional setting

Asansol Sub-division lies on the western border of Bardhaman district and of West Bengal. Three rivers create natural boundary to the planning area: Damodar river in the south, Barakar river in the west and Ajay river in the north. Birbhum district lies on the north side of the Sub-division, Bankura and Purulia district in the south, and Dhanbad district of Jharkhand in the west. Many major settlements lie within its hinterland. In the northern side, urban centers of Birbhum district, North Bengal and Bihar are connected to Asansol Sub-division via NH-60. This same link also connects Asansol with the important urban centers from the south in Bankura and West Midnapore district, and Orissa. Durgapur, Bardhaman and Kolkata Metropolitan Area are connected by NH-2 on the eastern side. On the western side, NH-2 provides direct linkage to major urban centers in Jharkhand, Bihar and also to the National Capital Region. Asansol Sub-division is also well connected through Eastern Railway route connecting Howrah to Delhi, as well as with South-Eastern route connecting it to Adra, Bankura, Kharagpur and to urban centers lying on the east coast of South India [Refer Figure 4.2].

4.3 Physical characteristics

Asansol is part of the Chotanagpur plateau which consists of the meta-sedimentary rocks of precambrian age, Gondwana sedimentary rocks, Rajmahal basalts and upper tertiary sediments. Laterite has developed on these older rocks as well as on early Quaternary sediments [Refer Figure 4.3]. In general, the topography resembles a promontory jutting out from the hill ranges of Chotanagpur plateau and consists of barren, rocky and rolling country with a laterite soil rising into rocky hillocks, the highest being 227 m - breaking the otherwise monotonous landscape and lending a special charm to the skyline around Asansol subdivision[15].

[15] http://bardhaman.nic.in/geography.html

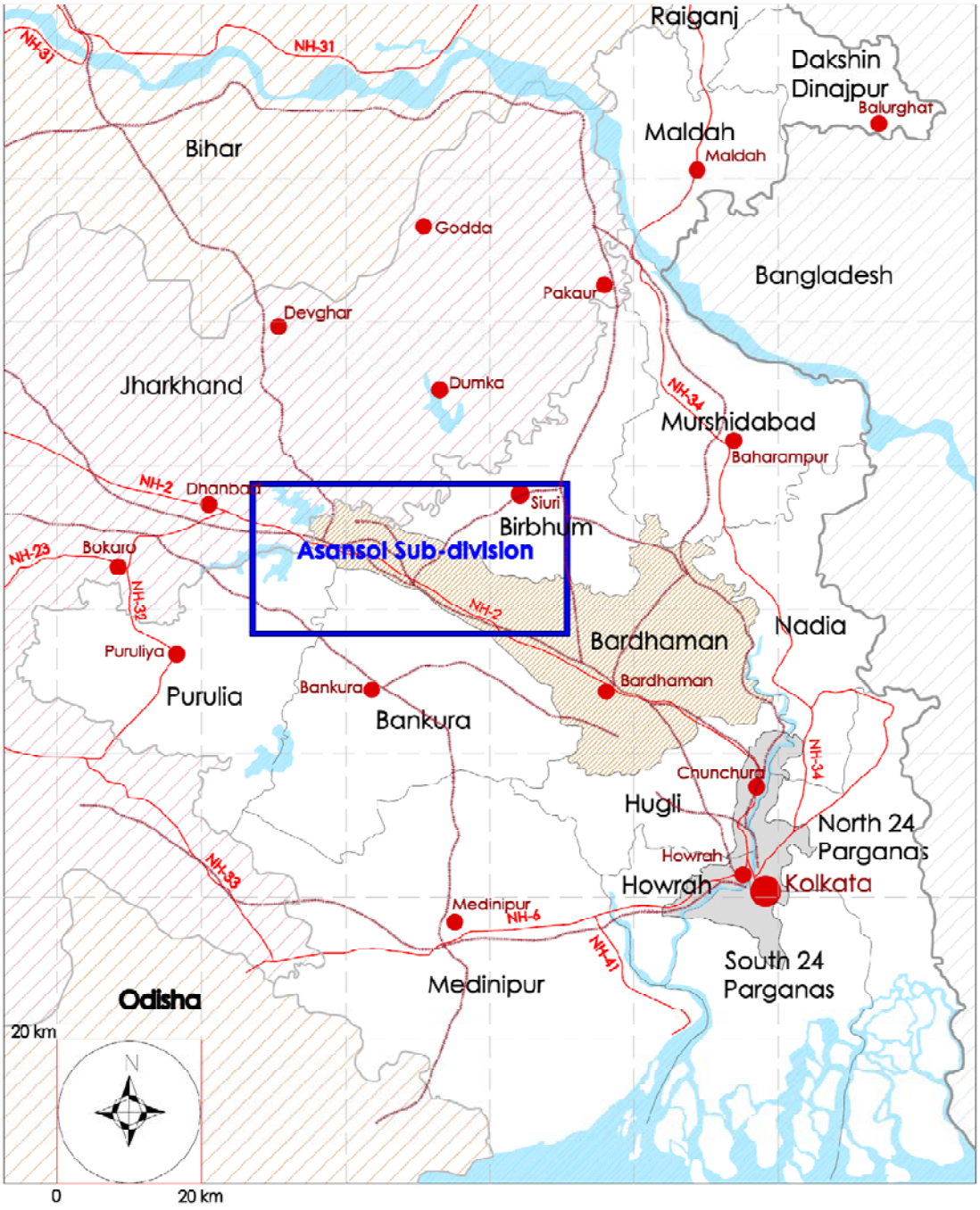


Figure 4.2: Regional setting of Asansol Sub-division

The Ajay-Barakar divide is a convex plateau, with average altitude being 150 m. The gradient is westerly to the west and to the east it is northerly towards Ajay river and southerly towards Damodar river. The Ajay- Damodar inter-stream tract is made up of several stows consisting of vales and low convex spurs which run in almost all directions except north-east and thus lends a very complicated character to local relief [Refer Figure 4.4].

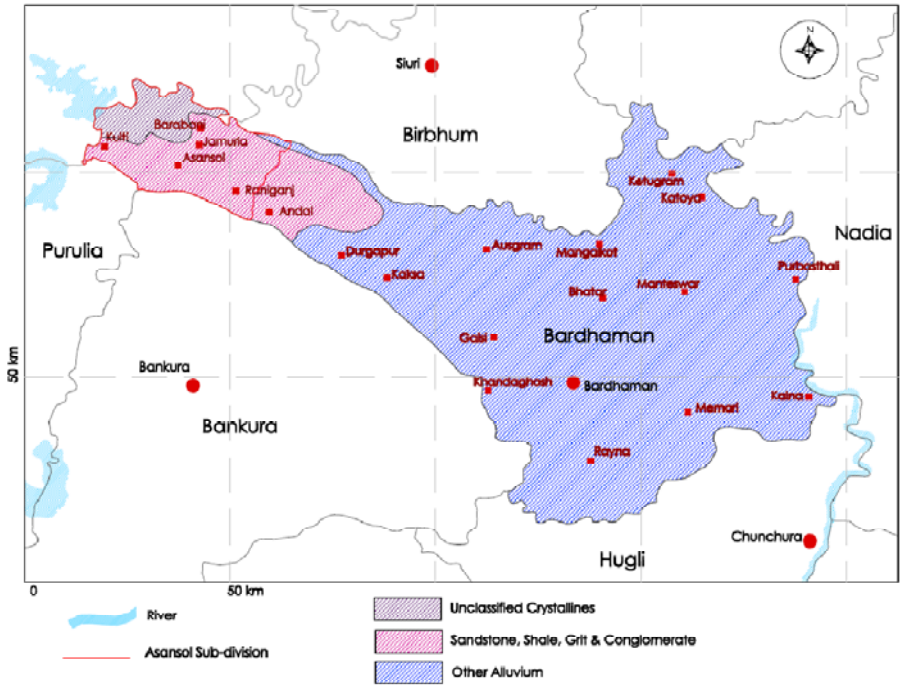


Figure 4.3: Rock classification map of Asansol Sub-division (with respect to Bardhaman district)

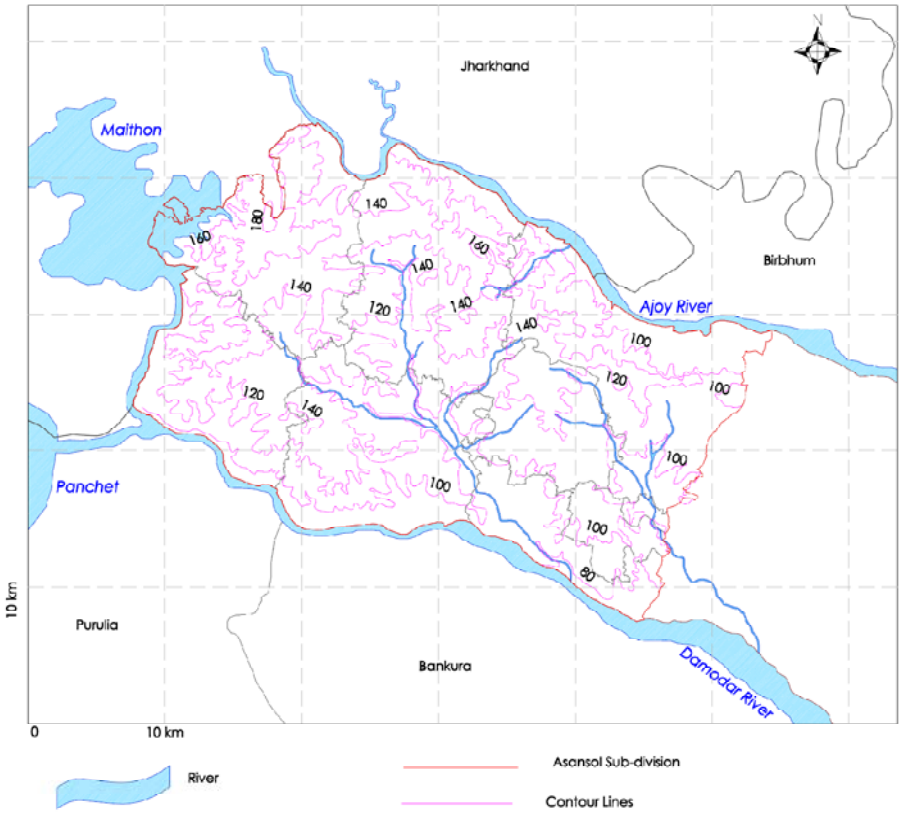


Figure 4.4: Contour map of Asansol Sub-division

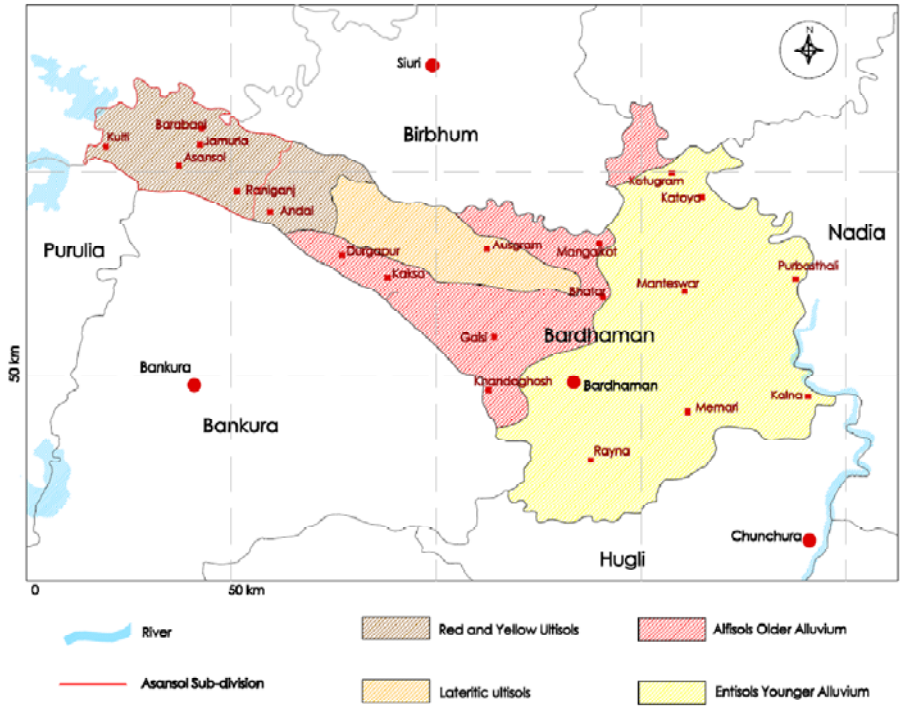


Figure 4.5: Soil Classification map of Asansol Sub-division (with respect to Bardhaman district)

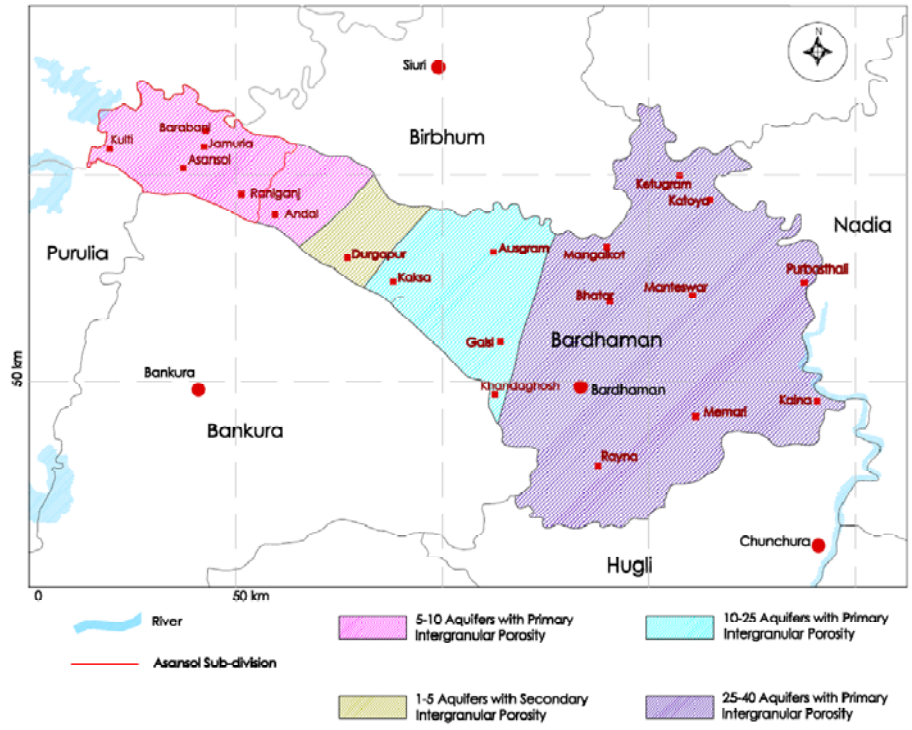


Figure 4.6: Sub-surface water resources map of Asansol Sub-division (with respect to Bardhaman district)

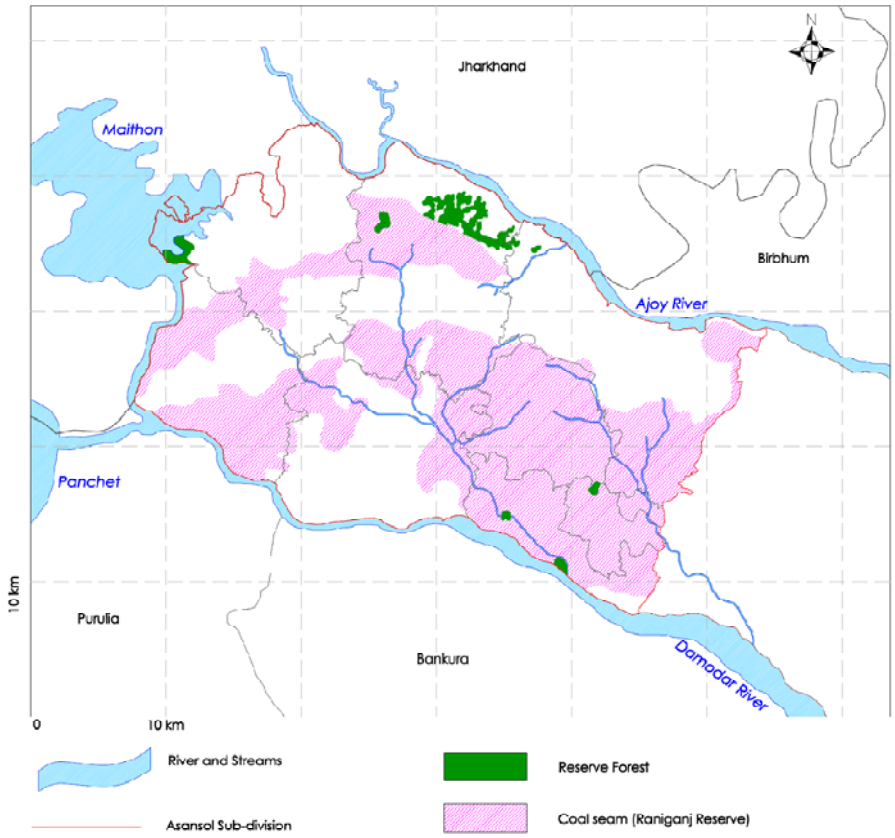


Figure 4.7: Natural resource map of Asansol Sub-division

The river system in Asansol Sub-division includes Ajay river and its tributaries in the north and Dwarakeswar and Damodar river and its branches in the south-west. Besides, there are innumerable Khals and old river beds all over the area. Asansol Sub-division is dotted with many tanks (with varying sizes) and nullahs. The Durgapur barrage and Maithon dam have formed two large reservoirs in vicinity of the planning area.

Asansol Sub-division has coarse gritty soil blended with rock fragments which are formed from the weathering of pegmatites, quartz veins and conglomeratic sandstones, where as sandy soil characteristic of granitic rocks and sandstones.

The soil has only Red and Yellow Ultisols - product of continuous weathering of minerals in a humid, temperate climate without new soil formation. This soil is of reddish colour, medium to coarse in texture, acidic in reaction, low in nitrogen, calcium, phosphate and other plant nutrients - as a result it cannot be used for sedentary agriculture without the aid of lime and other fertilizers, such as superphosphate. Water holding capacity of this soil increases with depth as well as with the increase of clay portions [Refer Figure 4.5].

Asansol Sub-division is well known for its mineral resources [Refer Figure 4.7]. The Raniganj coalfield was the birth place of the Indian coal industry. Besides coal, important minerals found in the district are, iron ores, calcium carbonate, abrasives, silica bricks and moulding sands, glass sands, building materials, manganese, bauxite, laterite etc.

The district experiences a climate which is CWg3 type, 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 in 44°C while the minimum winter temperature is 5°C. Average rainfall is around 140.8 cm [Refer Figure 4.8, 4.9 & 4.10].

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.

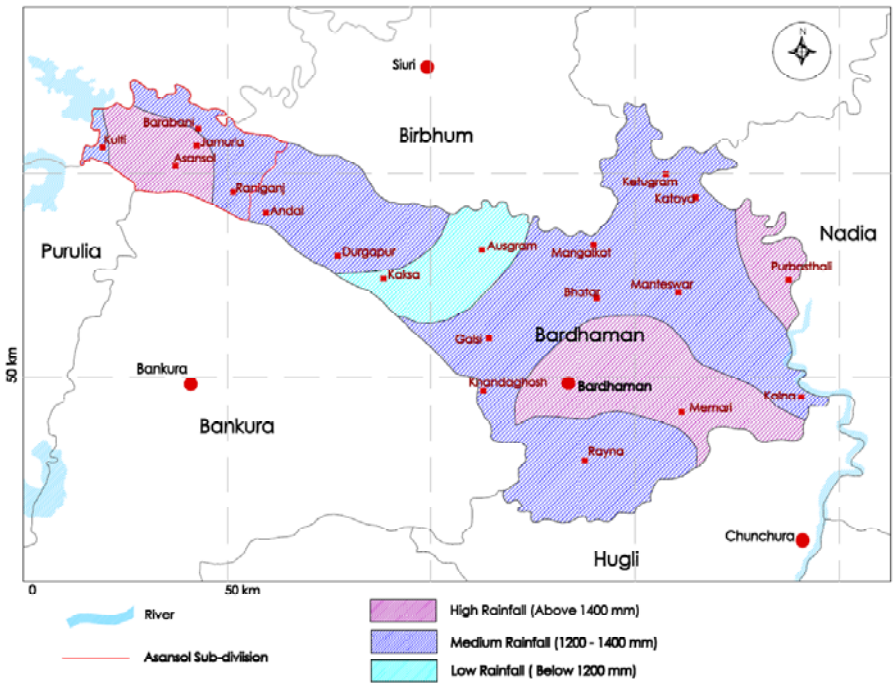


Figure 4.8: Climate classification map of Asansol Sub-division (with respect to Bardhaman district)

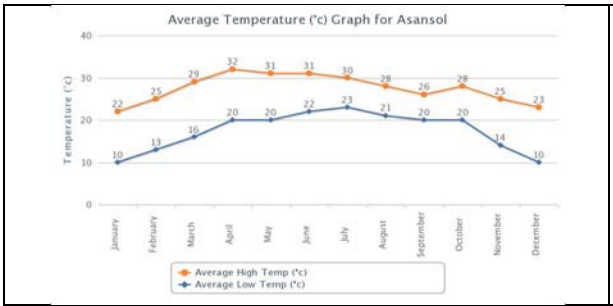


Figure 4.9:Variation of Av. Temperature in Asansol

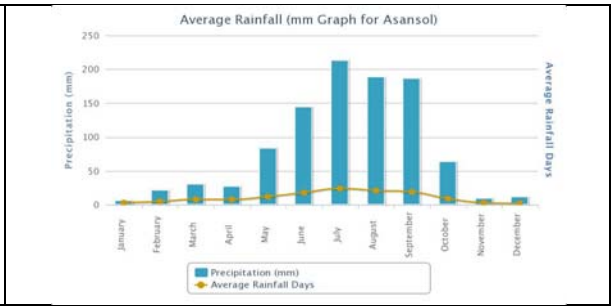


Figure 4.10: Variation of Av. Rainfall in Asansol

(Source: http://www.worldweatheronline.com/Asansol-weather-averages/West-Bengal/IN.aspx)

Asansol subdivision has considerable amount of forest reserves and its forest areas form a part of the forest area of Dumka district of Jharkhand. 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.

4.4 Settlement pattern

There are 195 inhabited settlements within Asansol Sub-division, with a total population of 14.9 lakhs (in 2001) dispersed over land area of 825.66 sqkm. There are 13 un-inhabited settlements spread across an area of 6.3 sqkm. Asansol Municipal Corporation is the largest settlement with population of 4.75 lakhs followed by Kulti Municipality with population of 2.89 lakhs. Distribution of settlements according to population size is presented in Table 4.2.

There are 4 Class I town within this Sub-division where more than 66 percent of the total population resides. There are no Class II towns, only 2 no.s of Class III towns, and 4 no.s of Class IV towns (going strictly by the population threshold definition for towns). There are 17 settlements with population more than 5,000 but less than 10,000 - most of which are declared as Census Towns. There are 23 Census Town in this Sub-division; 14 no.s in Raniganj C.D. Block, 3 no.s in each in Jamuria, Salanpur and Barabani C.D. Block.

There are 21 settlements having population between 5000 and 20,000 with population share of 10.8 percent; 168 settlements with population less than 5,000 - with population share of around 17.5 percent. The distribution of the cumulative settlement population share with its cumulative share of area is presented in Figure 4.11. Settlement population density diminishes with size of the settlement - maximum density observed to around 34 persons per hectare.

Table 4.2: Distribution of settlement within Asansol Sub-division

Settlement Size	No. of Settlement	Aggregate Settlement		Aggregate Share (in percent)		Density (per/ha)	Remarks
		Population	Area (in ha)	Population	Area		
More than 200000	2	765342	22744	51.1	27.5	33.7	Asansol & Kulti
100000 to 199999	2	240600	9667	16.1	11.7	24.9	Jamuria & Raniganj
50000 to 99999	None			0.0	0.0		
20000 to 49999	2	68111	2355.0	4.5	2.9	28.9	Chittaranjan & Hindustan Cables Town
10000 to 19999	4	50914	2773.9	3.4	3.4	18.4	Kenda, Jemari, Raniganj(OG) & Domahoni
5000 to 9999	17	110756	7587.4	7.4	9.2	14.6	
2000 to 4999	49	149849	16764.8	10.0	20.3	8.9	
1000 to 1999	53	75392	11740.5	5.0	14.2	6.4	
Less than 1000	79	37875	8934.0	2.5	10.8	4.2	13 un-inhabited
Total	208	1498839	82566.6	100.0	100.0	18.2	

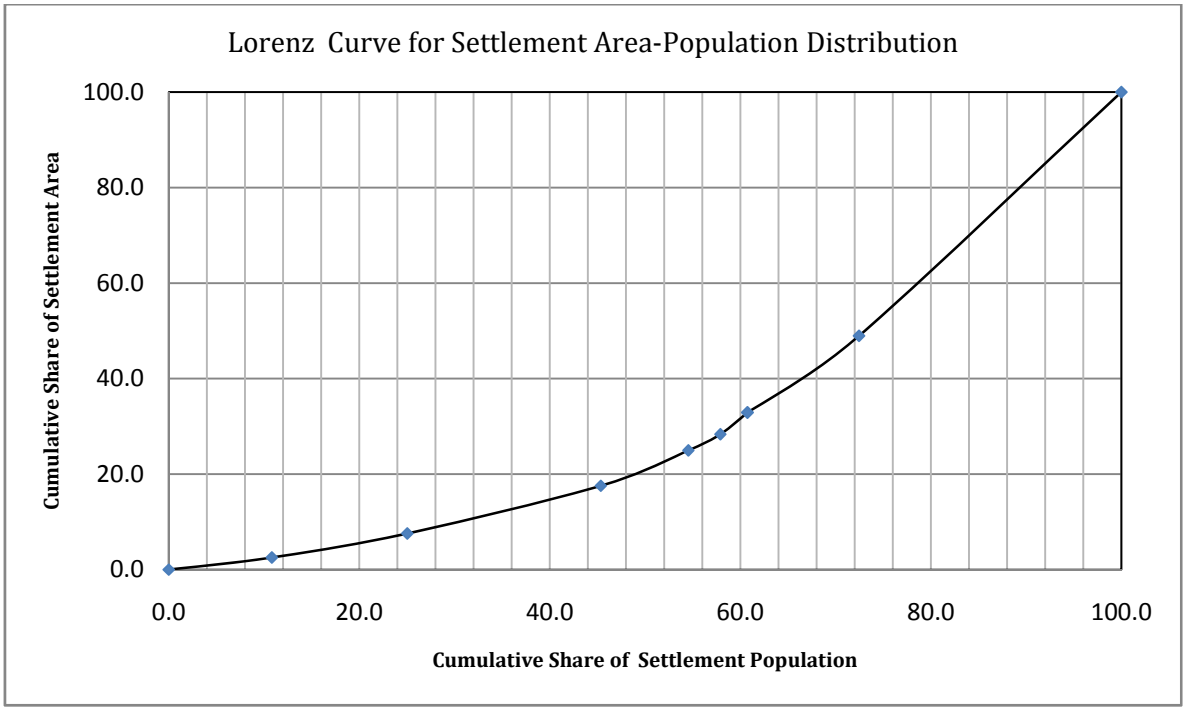


Figure 4.11: Distribution of cumulative settlement population with area in Asansol Sub-division

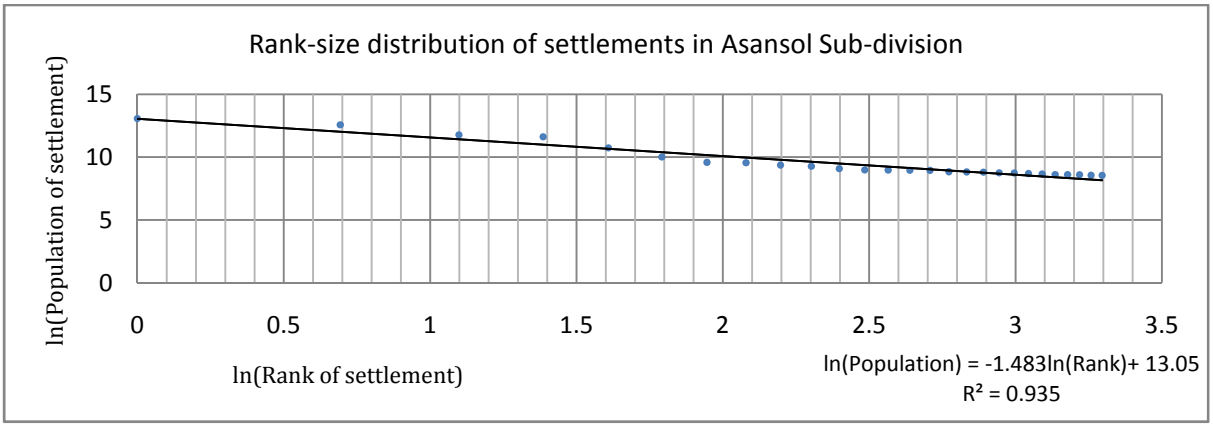


Figure 4.12: Rank-size distribution of settlements in Asansol Sub-division (with population more than 5,000)

Settlement size distribution for settlements with population size more than 5,000 is carried out following Zipf's method for 2001. Figure 4.12 shows that emperical rank-size distribution is far away from the theoretical rank-size rule as postulated by Zipf. The slope of the line (which is 1.483, ignoring the negative sign) is well above the theoretical value of 1.0. Slope of the line is interpreted as the ratio of forces of diversification and forces of unification working in the urban system. In a balanced urban system, the value of 1.0 is expected where forces of unification and diversification balance each other. As the value is more than 1.0, it implies that forces of unification are much stronger than forces of diversification. This will lead to large concentration of population in few urban centers - as is clearly evident from that fact that only two largest centers have more than half of the region's population. Asansol Sub-division has very less reliance on agriculture. Though mining is a key sector in the local economy, the share of employment in mining and other primary sector activities have declined to half in the last decade. Secondary and Tertiary sector activities are the prime sources of employment - both concentrated in and around large urban centers namely Asansol, Raniganj, Kulti and Jamuria.

[Note: Zipf postulated that size and number of settlements in region is guided by two kinds of forces - forces of unification and diversification. Forces of diversification moves the population out to sources of raw materials i.e. farmlands, mineral resources, forest resources etc. where a large number of small, scattered settlement pattern will emerge with less interaction between them. On the other hand, forces of unification moves the population to the consumption centers - where production requires diversity of raw materials are along with increased need for market infrastructure and variety of tertiary activities. This results in emergence of few large settlements.]

The spatial distribution of settlements also provides key insights into the emerging settlement pattern. All the settlements with population more than 1,00,000 population is located along the NH-2, which is the key regional link passing through the Asansol Sub-division. Settlements which are between 10,000 and 1,00,000 tend to settle either along NH-2 or NH-60 - mostly small mining or industrial towns. The settlements with population less than 5,000 is scattered mostly on the northern sides of the sub-division where inter-regional and intra-regional connectivity is low. More settlements are located on the western side of Salanpur and Barabani C.D. Block –large number of them is concentrated around Chittaranjan and Hindustan Cables Township [Refer Figure 4.13].

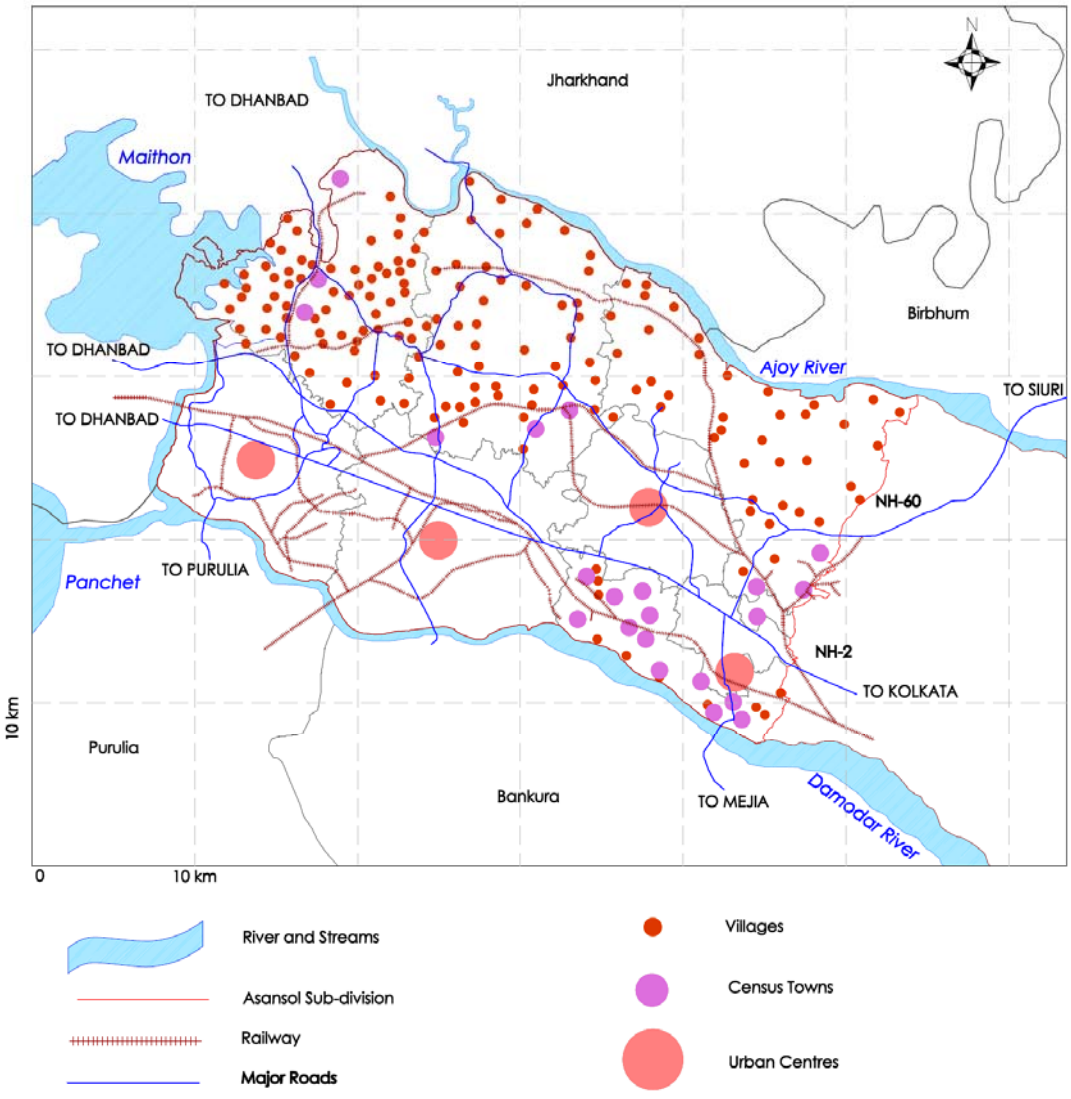


Figure 4.13: Spatial distribution of settlements in Asansol Sub-division

The ratio of the top two settlements population i.e. Asansol and Kulti, is less than 2.0 - which means there is no clear primacy in the settlement system. However, a closer look into the Kulti Municipal area reveals that there are four distinct urban centers within it - Niyamatpur, Kulti, Barakar and Dishergarh, of which some were Notified Areas (NA) before all of them came under one municipality. The largest of the four settlements is Kulti, which had population less than 70,000 in 2001. It implies that the second largest settlement within Asansol Sub-division will now be Raniganj Municipality or Jamuria Municipality, both having population slightly more than 1,00,000, and population of Asansol is roughly four times than that - indicating a very high level of primacy. Absence of any settlement between 50,000 and 1,00,000, and very few settlement from 20,000 to 50,000, also points to the fact that the urban hierarchy is fragmented. High levels of primacy as well as absence settlements of certain size in the hierarchy may be a barrier to the economical flow of surplus value (i.e. goods, services, labour etc.) in the region[16].

With increasing reliance on secondary and tertiary sector activities for employment as well as economic output, such inequities in the urban system will be aggravated - attracting large amount of population to few select urban centers. This might lead to a disproportionate rise in cost of living (higher land and housing rents), higher levels of congestion, environmental degradation and deteriorating quality of life in urban centers. There is a need to consciously expand the capacity of higher order urban centers i.e. Asansol, Kulti, Jamuria but also to create alternative nodes in vicinity of these centers to attract secondary and tertiary sector activities. Complete decentralization of economic activities and unidirectional march towards balanced regional development might not be the pragmatic path forward, but creating enabling environment though large public investments in infrastructure at few strategically selected locations (may be rapidly growing lower order centers) will help reduce the pressure in urban cores as well as provide opportunities for alternative nodes of future development.

4.5 Demography and socio-economic characteristics

The population of Asansol Sub-division was 14.87 lakhs in 2001, of which 10.05 lakhs lived in urban areas. The rate of urbanization was 67.58 percent which was much higher than 47 percent in 1991 (partly due to formation of Jamuria Municipality). The decadal growth rate observed for the Sub-division was 64.6 percent, for 1991-2001, which is very high. Most of growth in this decade has taken place in the urban areas as the growth rate of rural areas is abnormally low (partially due to annexation of some rural areas into urban areas). The growth rate of the urban areas between 2001 and 2011 is much lower compared to the urban growth of the previous decade [Refer Table 4.3].

[For detailed discussion on the population profile since 1951, refer Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025, prepared by Department of Architecture and Regional Planning, IIT Kharagpur, 2007]

Nuclear family is the dominant type of households observed both for rural and urban areas in Asansol Sub-division [Refer Table 4.4]. Nuclear family and joint family households account for more than 95 percent of the households within the Sub-division. The average household size for Asansol Sub-division is 4.9. Average household size is observed to be higher for urban areas compared to rural areas. Highest household size is observed in Jamuria Municipality and lowest in Salanpur C.D. Block. The average household size has declined for each area when compared to the figures reported in last socio-economic survey (Year 2000-01).

[16] Raju J. Das, Ashok K. Dutt: Rank-size distribution and primate city characteristics in India — A temporal analysis; GeoJournal, Volume 29, Issue 2, February 1993, pp 125-137

Table 4.3:Distribution of population within Asansol Sub-division							
C.D. Block / Municipal Area	Population			Decadal Growth rate (in percent)		Area (in sqkm)	Density (persons/ sqkm) (2001)
	(2011*)	(2001)	(1991)	(2001-2011)	(1991-2001)		
Barabani		110393	100355		10.0	156.35	706.1
Jamuria		112893	99856		13.1	158.1	714.1
Raniganj		101626	127813		-20.5	58.28	1743.8
Salanpur		156320	142597		9.6	135.05	1157.5
Rural		481232	470621		2.3	507.78	947.7
Kulti (M)	313977	289903	108518	8.3	167.1	99.57	2911.5
Raniganj (M)	128624	111116	61997	15.8	79.2	23.44	4740.4
Jamuria (M)	144971	129484	NA	12.0	NA	73.23	1768.2
Asansol (MC)	564491	475439	262188	18.7	81.3	127.87	3718.1
Urban	1152063	1005942	432703	14.5	132.5	324.11	3103.7
Total		1487174	903324		64.6	831.89	1787.7

* Provisional Census data, 2011(data only available for urban areas)

Population density of urban areas is not very high - as large tracts of vacant land are observed within the municipal limits. Raniganj C.D. Block has shown comparatively higher density within the sub-division.

Table 4.4: Distribution of households according to household type						
C.D. Block / Municipal Area	Average Household Size	Share of HHs(%)				
		Single member	Nuclear family	Joint family	Extended family	Total
Barabani	4.8	1.0	73.0	25.4	0.6	100.0
Jamuria	5.0	0.2	71.8	27.6	0.3	100.0
Raniganj	5.0	0.6	69.7	26.5	3.2	100.0
Salanpur	4.4	1.4	72.4	26.1	0.1	100.0
Kulti (M)	5.0	1.6	64.5	32.7	1.2	100.0
Raniganj (M)	4.9	1.1	68.3	26.4	4.2	100.0
Jamuria (M)	5.1	0.5	64.9	33.3	1.3	100.0
Asansol (MC)	4.8	1.2	65.9	32.6	0.3	100.0
Rural	4.8	0.9	71.8	26.4	0.9	100.0
Urban	4.9	1.2	65.7	32.0	1.1	100.0
Total	4.9	1.1	67.7	30.1	1.0	100.0

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

The distribution of the population according to their social groups i.e. Scheduled Caste or Scheduled Tribe or Other Backward Castes are presented in Table 4.5. Nearly 23 percent of the population in Asansol Sub-division belong to Scheduled Castes, around 6 percent belong to Scheduled Tribes and approximately 7 percent belong to Other Backward Castes. The incidences of these social groups are higher in rural areas compared to urban areas. Highest concentration of under-privileged population is observed in Jamuria, Barabani, and Raniganj C.D. Block, and Kulti and Jamuria Municipality and lowest in Raniganj Municipality. Concentration of tribal population in Salanpur C.D. Block is also noteworthy.

Table 4.5 also presents the distribution of population lying below poverty line. Nearly 24 percent i.e. one out of four persons in Asansol Sub-division belong to a BPL household. The share of BPL households is marginally lower for rural areas when compared to urban areas of Asansol Sub-division. Jamuria Municipality has reported highest share of BPL households in this Sub-division whereas Salanpur C.D. Block has lowest share of BPL households.

Table 4.5: Distribution of population according to social and economic groups				
C.D. Block / Municipal Area	Share of population (%)			
	Scheduled Class	Scheduled Tribe	Other Backward Classes	Below Poverty Level
Barabani	29.9	7.2	5.9	35.0
Jamuria	34.2	4.5	10.1	22.2
Raniganj	27.8	2.9	2.2	28.4
Salanpur	19.9	11.2	7.0	16.4
Kulti (M)	28.0	5.6	3.5	19.0
Raniganj (M)	10.2	2.5	3.1	20.0
Jamuria (M)	29.9	7.2	5.9	32.2
Asansol (MC)	16.8	5.9	10.4	27.6
Rural	27.5	6.8	6.4	24.5
Urban	21.0	5.6	7.0	24.9
Total	23.2	6.0	6.8	24.8

(Source: Socio-economic Survey Report of Asansol Sub-division - 2010)

Table 4.6: Distribution of households according to religion				
C.D. Block / Municipal Area	Share of HHs (%)			
	Hindu	Muslim	Christian	Others
Barabani	96.0	3.7	0.2	0.0
Jamuria	90.9	8.7	0.2	0.2
Raniganj	96.6	2.6	0.0	0.9
Salanpur	95.2	3.2	0.6	1.0
Kulti (M)	90.9	8.8	0.0	0.3
Raniganj (M)	77.4	21.3	0.4	1.0
Jamuria (M)	83.1	13.0	0.2	3.7
Asansol (MC)	84.3	14.5	0.9	0.3
Rural	94.6	4.5	0.3	0.6
Urban	85.2	13.5	0.5	0.8
Total	88.4	10.4	0.5	0.7

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.7: Age-Sex distribution									
C.D. Block / Municipal Area	Sex Ratio	Sex	Age group (in years)						
			0 – 6	7 - 14	15 – 29	30 - 44	45 - 59	60 - 69	70 +
Barabani	819.1	M	8.5	15.1	32.4	22.7	15.2	4.8	1.4
		F	9.7	15.8	29.1	24.6	14.8	4.2	1.8
Jamuria	795.3	M	8.9	13.3	32.6	22.0	17.1	4.7	1.4
		F	7.7	14.8	28.3	26.5	17.6	4.2	1.0
Raniganj	864.0	M	9.7	12.3	33.8	23.1	13.5	5.2	2.5
		F	8.4	11.6	34.7	24.6	13.1	5.6	2.0
Salanpur	833.6	M	7.1	12.9	30.0	22.6	20.5	4.8	2.1
		F	7.3	12.1	33.2	28.7	14.8	2.8	1.2
Kulti (M)	862.0	M	9.1	13.9	31.7	22.1	15.5	5.5	2.1
		F	9.0	15.0	30.8	23.8	15.0	4.6	2.0
Raniganj (M)	890.4	M	8.2	14.6	31.9	22.2	16.4	4.8	2.0
		F	8.3	14.7	34.8	23.2	13.7	3.5	1.7
Jamuria (M)	818.1	M	7.8	13.8	37.3	19.6	14.8	5.1	1.5
		F	9.3	12.6	35.1	20.1	17.9	4.0	1.0
Asansol (MC)	920.4	M	9.3	14.1	30.1	21.3	16.8	5.5	2.8
		F	9.8	14.0	30.7	23.0	15.0	5.4	2.3
Rural	827.5	M	8.4	13.3	32.0	22.6	16.9	4.9	1.9
		F	8.2	13.4	31.5	26.4	15.1	4.1	1.5
Urban	886.4	M	8.9	14.1	31.7	21.4	16.1	5.4	2.3
		F	9.3	14.2	31.7	22.9	15.2	4.8	2.0
Total	866.6	M	8.8	13.8	31.8	21.8	16.4	5.2	2.2
		F	9.0	13.9	31.6	24.0	15.2	4.6	1.8

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

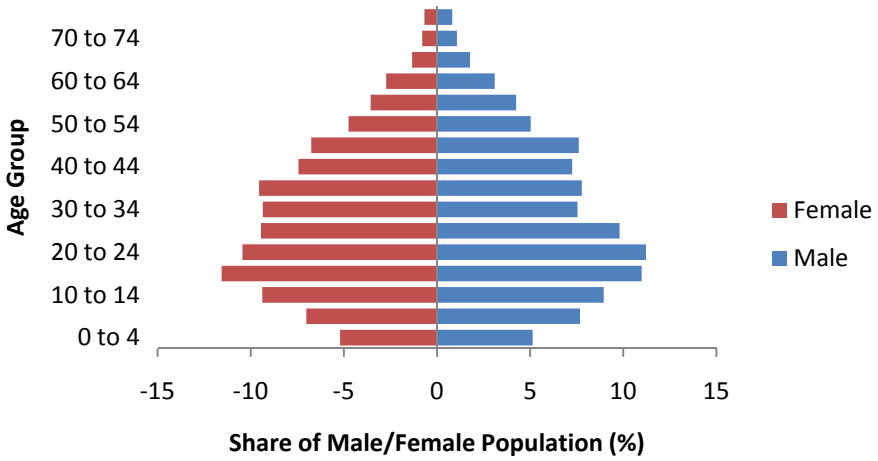


Figure 4.14: Age-Sex pyramid of rural areas of Asansol Sub-division

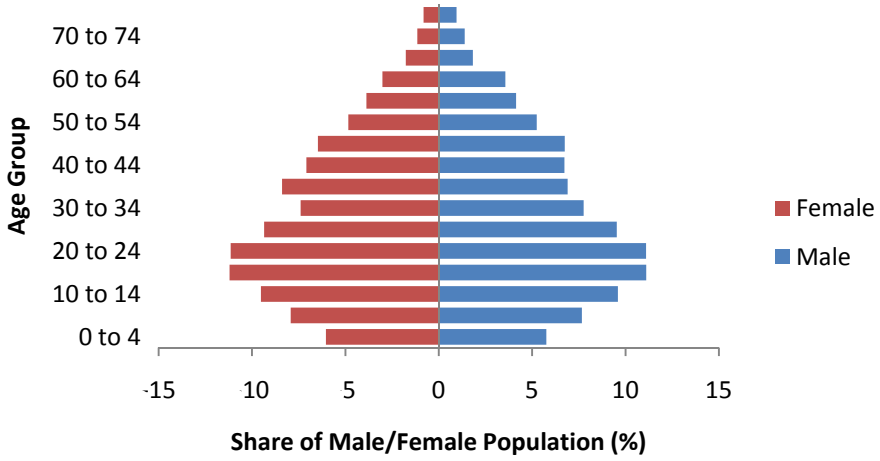


Figure 4.15: Age-Sex pyramid of urban areas of Asansol Sub-division

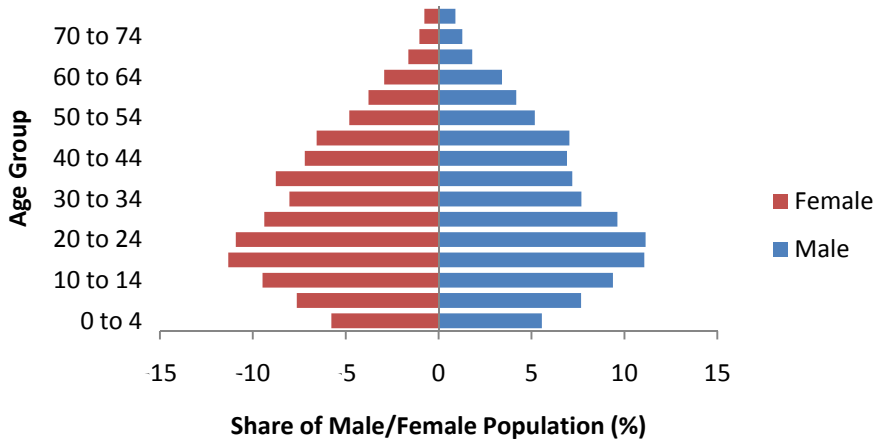


Figure 4.16: Age-Sex pyramid of Asansol Sub-division

The predominant religion practiced by the households in Asansol Sub-division is Hinduism, followed by Islam. Urban areas have greater share of non-Hindu households compared to the rural parts. In Raniganj Municipality, more than one-fifth of the households follow Islam [Refer Table 4.6].

Share of male and female population pertaining to various age groups has been represented in Table 4.7 and age-sex pyramid has been drawn for urban and rural areas of Asansol Sub-division. The shape of the age-sex pyramid has the characteristics of expanding demographic profile where high proportion of dependent population is observed at low age bracket.

The sex-ratio reported for the entire sub-division is around 866 – far lower than the national or the state average [Refer Table 4.7]. Interestingly, as indicated by Table 4.7, the rural parts have reported lower sex-ratios compared to the urban areas. Jamuria C.D. Block has reported lowest sex-ratio within the Sub-division.

Average age of marriage is observed to be around 24 years for male and 19 years for female. Average age of marriage is higher for urban males compared to rural males but marginally lower for urban females compared to rural females.

General Fertility Rate (GFR) which is defined as number of births in last 365 days per 1000 females in the age group of 15-44 years has been reported to be around 54 for Asansol Sub-division, which is lower than the GFR of West Bengal which is around 65. Urban areas generally exhibit much lower GFR values, therefore, with higher ratio of urban population in Asansol Sub-division the results are conforming to the trend. Moreover, there has been a rapid decline in GFR as compared to the figures reported in previous socio-economic survey (i.e. for Year 2000-2001), which is also along expected lines.

Table 4.8: Distribution of population according to literacy rate

C.D. Block / Municipal Area	Share of literate population (%)		
	Male	Female	Total
Barabani	82.6	72.1	77.6
Jamuria	90.2	69.6	81.1
Raniganj	82.0	67.6	75.4
Salanpur	88.1	81.4	85.1
Kulti (M)	81.0	70.0	75.9
Raniganj (M)	86.0	77.0	81.8
Jamuria (M)	89.6	76.2	83.6
Asansol (MC)	81.8	73.3	77.7
Rural	86.0	73.3	80.2
Urban	83.0	73.1	78.4
Total	84.0	73.1	79.0

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

More than 79 percent of the population is literate in Asansol Sub-division. Male literacy rate is around 84 percent compared to female literacy rate of 73 percent. Higher male and female literacy have been observed for rural areas compared to urban areas [Refer Table 4.8]. The literacy figures for Asansol Sub-division are marginally higher than the provisional figures released by Census 2011 for the Bardhaman district - which are 83.44 percent for male, 70.47 percent for female and 77.15 percent for overall population.

More than 77 percent of the households within the Asansol Sub-division have stayed more than 25 years - however, around 11 percent of the households have migrated to this Sub-division in last decade. More than 30 percent of the households in Salanpur C.D.Block have migrated in last decade. The rural areas have received more migration compared to the urban areas.

Table 4.9: Distribution of households according to duration of stay					
C.D. Block / Municipal Area	0-5 years	5-10 years	10-25 years	Above 25 years	Total
Barabani	3.4	2.6	9.7	84.3	100.0
Jamuria	0.6	0.8	3.3	95.4	100.0
Raniganj	2.7	4.3	5.6	87.3	100.0
Salanpur	17.1	13.7	15.1	54.1	100.0
Kulti (M)	2.4	3.4	7.6	86.6	100.0
Raniganj (M)	5.2	4.9	13.2	76.8	100.0
Jamuria (M)	3.4	3.2	9.0	84.4	100.0
Asansol (MC)	7.6	7.7	15.3	69.4	100.0
Rural	7.1	6.3	9.1	77.5	100.0
Urban	5.4	5.6	12.1	76.9	100.0
Total	6.0	5.8	11.1	77.1	100.0

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.10: Distribution of households according to original place of stay							
C.D. Block / Municipal Area	Rural	Urban	Bardhaman	West Bengal	Other State	Other Country	Total
Barabani	99.3	0.7	93.5	1.4	4.6	0.5	100.0
Jamuria	99.4	0.6	94.7	3.6	1.6	0.1	100.0
Raniganj	97.7	2.3	92.1	6.1	1.4	0.4	100.0
Salanpur	74.9	25.1	76.0	15.3	6.7	1.9	100.0
Kulti (M)	80.7	19.3	79.9	4.7	15.3	0.0	100.0
Raniganj (M)	78.2	21.8	79.7	10.6	9.7	0.0	100.0
Jamuria (M)	95.0	5.0	81.0	3.8	13.4	1.8	100.0
Asansol (MC)	85.6	14.4	65.5	12.0	19.5	3.0	100.0
Rural	87.4	12.6	86.9	7.8	4.3	0.9	100.0
Urban	87.9	12.1	70.6	9.9	17.3	2.2	100.0
Total	87.6	12.4	76.9	9.1	12.3	1.7	100.0

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.11: Distribution of households according to reason for changing place of stay				
C.D. Block / Municipal Area	Partition	For Employment	Others	Total
Barabani	0.8	52.7	46.6	100.0
Jamuria	2.2	93.5	4.3	100.0
Raniganj	9.1	54.5	36.4	100.0
Salanpur	1.0	98.8	0.2	100.0
Kulti (M)	0.6	68.8	30.6	100.0
Raniganj (M)	1.8	76.4	21.8	100.0
Jamuria (M)	5.6	91.3	3.1	100.0
Asansol (MC)	6.7	90.4	2.9	100.0
Rural	1.1	94.1	4.8	100.0
Urban	5.1	85.4	9.4	100.0
Total	3.2	89.5	7.2	100.0

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Most of the people have migrated from rural areas and from within the district. However, large number of households from outside the district has settled in Salanpur C.D Block, Kulti, Raniganj and Jamuria Municipality, and Asansol Municipal Corporation. Most of the households have expressed that they have migrated due to employment related reasons. [Refer Table 4.9, 4.10 & 4.11].

4.6 Employment Characteristics

The distribution of population according to main-worker, marginal-worker and non-worker category shows that nearly 29 percent of the total population are main-workers in Asansol Sub-division and they are employed for nearly 288 days in a year. There is marginal difference in share of main-worker among rural and urban population – however urban main-workers have much higher number of work-days compared to rural main-workers. Nearly 50 percent of the male population in the Sub-division is main-workers whereas only 6 percent of the female population is main-workers. The share of population engaged as marginal-workers is less than 2 percent of the population in this Sub-division [Refer Table 4.12].

Table 4.12: Distribution of population according to class of worker

C.D. Block / Municipal Area		Share of population employed as (%)			Average workdays for Main-Workers
		Main-Workers	Marginal-Workers	Non-Workers	
Barabani	Male	74.3	7.9	17.9	287.1
	Female	5.6	0.2	94.2	
	Total	43.3	4.4	52.2	
Jamuria	Male	47.7	0.7	51.6	269.5
	Female	3.3	0.0	96.7	
	Total	28.0	0.4	71.6	
Raniganj	Male	52.4	3.2	44.4	288.6
	Female	6.6	0.8	92.6	
	Total	31.2	2.1	66.7	
Salanpur	Male	40.6	10.2	49.2	246.5
	Female	4.4	1.7	93.9	
	Total	23.9	6.3	69.8	
Kulti (M)	Male	50.8	0.7	48.5	295.4
	Female	5.7	0.2	94.0	
	Total	30.0	0.5	69.6	
Raniganj (M)	Male	45.7	2.2	52.2	289.9
	Female	8.1	0.6	91.3	
	Total	28.0	1.4	70.6	
Jamuria (M)	Male	48.2	0.7	51.1	287.6
	Female	7.8	0.1	92.1	
	Total	30.1	0.4	69.5	
Asansol (MC)	Male	50.4	1.5	48.1	300.5
	Female	6.3	0.7	93.0	
	Total	29.3	1.1	69.6	
Rural	Male	52.4	5.8	41.8	273.7
	Female	4.9	0.8	94.3	
	Total	30.8	3.5	65.7	
Urban	Male	49.7	1.2	49.1	296.2
	Female	6.5	0.5	93.0	
	Total	29.4	0.9	69.7	
Total	Male	50.6	2.7	46.6	288.5
	Female	6.0	0.6	93.4	
	Total	29.9	1.7	68.4	

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.13 provided the distribution of population according to three broad categories of skill level. Nearly 86 percent of the male population and 97 percent of the female population do not possess any professional skill – either with or without formal training.

Table 4.13: Distribution of population according to skill level

C.D. Block / Municipal Area		Share of population (%)		
		With no Skill	Skilled without formal training	Skilled with formal training
Barabani	Male	76.3	20.8	3.0
	Female	89.2	10.1	0.6
Jamuria	Male	93.9	5.4	0.8
	Female	99.5	0.4	0.1
Raniganj	Male	93.3	3.5	3.2
	Female	98.4	0.6	1.0
Salanpur	Male	91.4	7.9	0.7
	Female	98.8	1.2	0.1
Kulti (M)	Male	93.4	3.2	3.4
	Female	99.1	0.1	0.8
Raniganj (M)	Male	97.9	1.3	0.8
	Female	99.8	0.1	0.2
Jamuria (M)	Male	32.0	63.0	5.0
	Female	68.3	30.0	1.7
Asansol (MC)	Male	81.1	12.9	6.0
	Female	95.5	2.5	2.0
Rural	Male	91.2	7.1	1.8
	Female	98.6	1.0	0.4
Urban	Male	84.5	11.0	4.5
	Female	96.8	1.9	1.4
Total	Male	86.3	9.9	3.8
	Female	97.2	1.7	1.1

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Distribution of the worker population according to National Industrial Classification (NIC) is presented in Table 4.14. Industry indicates the nature of economic activity. All industries are grouped in nine classes with code numbers according to National Industrial Classification, 1987[17]. Data on sex-ratio among the workers and share of main worker is also provided.

Only 10 percent of the workers in Asansol Sub-division are reported to be employed in agrarian activities. Among rural areas, only Barabani and Salanpur C.D. Block show large share of employment in these activities. On the other hand, mining, quarrying and manufacturing employs more than 14 percent of the workers. Apart from that, construction related activities are source of employment to more than 17 percent of workers. A look at the tertiary sector activities show that wholesale/retail trade, restaurants and hotels have accommodated 17 percent of the employment whereas financing, insurance, real estate and business services, community, social and personal services sector have accommodated another 20 percent of employment. Highest participation of female is also observed in financing, insurance, real estate and business services, community, social and personal services sector.

[17] Refer National Industrial Classification (NIC)

Table 4.14: Distribution of population according to nature of economic activity

C.D. Block / Municipal Area		Share of population employed in (%)							
		Agriculture, Hunting, Fishing and Forestry	Mining, Quarrying and Manufacturing	Electricity, Gas and Water	Construction	Wholesale and Retail Trade and Restaurants and Hotels	Transport, Storage and Communication	Financing Insurance, Real Estate and Business Services Community, Social and Personal Services	Activities Not Adequately Defined
Barabani	Total	27.6	3.4	0.3	48.1	5.7	1.2	3.2	10.6
	Sex Ratio	30.1	49.2	0.0	82.1	19.2	0.0	35.1	64.5
	Main Worker	25.6	3.7	0.3	50.0	6.3	1.2	3.4	9.5
Jamuria	Total	53.8	21.0	0.2	4.2	5.4	1.3	4.6	9.6
	Sex Ratio	41.8	64.8	0.0	61.2	135.6	0.0	117.6	34.5
	Main Worker	53.4	21.3	0.2	4.1	5.4	1.3	4.5	9.7
Raniganj	Total	3.1	18.8	1.6	20.5	9.5	3.8	18.7	23.9
	Sex Ratio	24.4	109.6	0.0	95.2	75.6	159.1	72.3	206.0
	Main Worker	3.1	19.4	1.7	20.3	10.0	3.9	19.6	22.0
Salanpur	Total	11.7	5.9	6.2	8.6	14.5	12.5	28.5	12.3
	Sex Ratio	152.9	76.9	72.9	100.0	75.6	77.3	117.4	114.1
	Main Worker	9.0	6.1	7.4	10.6	14.3	14.1	26.0	12.5
Kulti (M)	Total	4.5	34.3	3.6	20.9	36.8	13.8	65.9	52.9
	Sex Ratio	153.8	74.6	90.9	68.4	69.1	81.9	111.7	137.6
	Main Worker	1.6	14.9	1.6	8.9	15.8	6.0	28.5	22.8
Raniganj (M)	Total	0.8	12.5	1.9	10.3	23.9	9.3	26.4	14.9
	Sex Ratio	0.0	174.6	375.0	232.3	48.1	111.1	223.5	230.8
	Main Worker	0.7	12.4	1.9	10.1	24.7	9.5	26.7	14.0
Jamuria (M)	Total	5.4	19.9	0.2	27.2	15.1	2.4	20.2	9.6
	Sex Ratio	241.9	161.9	0.0	117.1	101.5	93.8	119.2	150.0
	Main Worker	5.1	20.0	0.2	27.3	15.1	2.3	20.4	9.6
Asansol (MC)	Total	3.1	16.1	1.5	15.9	25.1	10.5	21.0	6.9
	Sex Ratio	146.9	75.6	70.4	103.7	51.3	30.1	192.8	757.3
	Main Worker	2.1	16.5	1.4	15.7	25.8	10.7	21.0	6.8
Rural	Total	23.2	11.1	2.1	22.3	8.9	4.9	13.8	13.8
	Sex Ratio	50.9	81.3	56.5	85.8	71.0	79.7	97.5	122.2
	Main Worker	22.7	11.8	2.3	23.5	8.9	5.0	12.8	13.1
Urban	Total	2.8	15.8	1.4	14.8	21.0	8.0	23.6	12.6
	Sex Ratio	165.4	96.7	111.9	109.3	59.3	52.8	158.7	267.8
	Main Worker	2.2	16.1	1.3	14.7	21.4	8.1	23.7	12.6
Total	Total	10.1	14.1	1.6	17.5	16.7	6.9	20.0	13.1
	Sex Ratio	69.7	92.3	85.3	98.4	61.5	59.5	143.0	208.4
	Main Worker	9.2	14.6	1.7	17.7	17.1	7.0	20.0	12.8

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

4.7 Housing characteristics and living environment

There were nearly 2.77 lakhs of households in Asansol Sub-division and the distribution of households and their average household size is represented in Table 4.15. The average household size is lower in rural areas compared to the urban areas - and both are declining over time. In this section, key housing characteristics of Asansol Sub-division has been highlighted[18].

[18] For detailed discussion refer to the Socio-economic Survey Report of Asansol Sub-division - 2010, prepared by Department of Architecture and Regional Planning, IIT Kharagpur, 2007.

Table 4.15: Distribution of number of households and household size		
C.D. Block / Municipal Area	No. of HHs (2001)	Average Household Size
Barabani	20089	
Jamuria	22180	4.8
Raniganj	20239	5.0
Salanpur	31176	5.0
Rural	93684	4.4
Kulti (M)	51249	5.0
Raniganj (M)	20368	4.9
Jamuria (M)	23433	5.1
Asansol (MC)	89243	4.8
Urban	184293	4.8
Total	277977	4.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Nearly 79 percent of the households within Asansol Sub-division live in their own houses – both in rural and urban areas. The share of households living in their own houses has increased significantly in comparison to the figures available from previous socio-economic study (Year 2000-01). It is also interesting to find that a large share also resides in office quarters provided by their employer or in rented houses – both in rural and urban areas. The distribution of households according to type of possession has been presented in Table 4.16.

Table 4.16: Distribution of dwelling units according to type of possession				
C.D. Block / Municipal Area	Share of HHs living in different kinds of accommodation (%)			
	Own House	Relative's House	Rented House	Office Quarters
Barabani	90.2	1.7	1.5	6.6
Jamuria	85.7	0.1	2.7	11.5
Raniganj	95.0	1.0	3.3	0.7
Salanpur	54.8	2.0	18.4	24.8
Kulti (M)	87.8	0.5	2.6	9.1
Raniganj (M)	81.5	1.0	14.3	3.2
Jamuria (M)	78.0	0.5	1.9	19.6
Asansol (MC)	76.4	1.0	13.4	9.2
Rural	78.4	1.3	7.8	12.5
Urban	80.3	0.8	9.0	9.8
Total	79.7	1.0	8.6	10.7

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

A brief look at Table 4.17, showing the usage pattern of the buildings used for residential purpose, indicate that most of them are used for their own accommodation with only a minor share renting it to other households. The tendency to rent out for housing is much larger in urban areas – highest observed in Raniganj Municipality closely followed by Asansol Municipal Corporation. A miniscule share of residential buildings is used for mixed use i.e. having a non-residential activity such as commercial or manufacturing, office etc. within it.

Table 4.18 indicates that more than 95 percent of the households in Asansol Sub-division live in plotted houses. The share is marginally lower in urban areas when compared to rural parts. Most of residential structures are also single storied. Nearly 86 percent of the housing stock is single storied and only 12 percent are double storied. This also clearly explains the low share of the apartment housings within the Sub-division.

Table 4.17: Distribution according to usage pattern of residential buildings								
C.D. Block / Municipal Area	Percentage share of buildings used as (%)							
	Own Accommodation	Rented Accommodation	Shop	Education Premises	Manufacturing Activity	Government Office	Private Office	Others
Barabani	94.6	2.2	3.1	0.0	0.0	0.0	0.0	0.1
Jamuria	97.9	1.2	0.6	0.0	0.0	0.0	0.4	0.0
Raniganj	94.4	4.4	0.7	0.1	0.0	0.0	0.1	0.2
Salanpur	96.3	2.5	0.5	0.0	0.2	0.0	0.2	0.3
Kulti (M)	90.8	6.3	2.2	0.0	0.1	0.0	0.0	0.5
Raniganj (M)	77.2	15.6	5.6	1.3	0.0	0.0	0.0	0.3
Jamuria (M)	94.8	3.0	1.6	0.1	0.0	0.0	0.5	0.0
Asansol (MC)	82.5	15.2	1.7	0.0	0.1	0.0	0.3	0.3
Rural	95.8	2.6	1.2	0.0	0.0	0.0	0.2	0.2
Urban	85.6	11.3	2.3	0.2	0.1	0.0	0.2	0.3
Total	88.7	8.7	2.0	0.1	0.0	0.0	0.2	0.3

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.18: Distribution of dwelling units according to housing typology						
C.D. Block / Municipal Area	Share of Plotted houses (%)	Share of Apartment housing (%)	Share of houses as per number of storey (%)			
			Single Storey	Double Storey	Triple Storey	Four or more storey
Barabani	96.8	3.2	86.9	13.1	0.0	0.0
Jamuria	88.6	11.4	92.3	7.7	0.0	0.0
Raniganj	100.0	0.0	86.2	11.3	2.5	0.0
Salanpur	99.7	0.3	90.9	8.3	0.9	0.0
Kulti (M)	94.5	5.5	87.4	12.2	0.3	0.0
Raniganj (M)	98.2	1.8	88.3	9.9	1.6	0.3
Jamuria (M)	87.1	12.9	89.7	8.7	1.4	0.2
Asansol (MC)	95.1	4.9	80.7	16.1	2.5	0.7
Rural	96.5	3.5	89.3	9.8	0.8	0.0
Urban	94.3	5.7	84.5	13.4	1.7	0.4
Total	95.0	5.0	86.1	12.2	1.4	0.3

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Distribution of households according to average plot-sizes has been presented in Table 4.19 which indicates that average plot-size is around 2.2 cottah for urban areas and 2.7 cottah for rural parts. Lowest average plot-size is observed in Raniganj Municipality and highest in Salanpur C.D. Block. More than 2/3rd of the households in rural parts of Asansol Sub-division accommodate within 3 cottah plot sizes i.e. around 200 sq.m, whereas 4/5th of the urban households manage with that much plot area.

Distribution of households according to dwelling units is also presented in Table 4.19 which indicates that nearly 11 percent of the households are still residing in dwelling units having area less than 250 sq.ft. The average built-up area per dwelling unit in urban area is observed to be around 890 sq.ft compared to 555 sq.ft for rural areas.

The inequality in distribution of plot areas as well as built-up areas for total, urban and rural components can be observed the Gini coefficients in Table 4.19.

A large portion of the households staying in their own houses do not have clear title of land ownership. Only 50 percent of the rural households and 67 percent of the urban households staying within their own houses have clear title of ownership. Average land prices as expressed by the owners indicate that residential land in urban areas is nearly 2.5 times costlier than rural areas. Average residential land price in

Asansol Sub-division is almost INR 60,000 per cottah in 2001. Highest land prices are observed in Asansol Municipal Corporation followed by Raniganj Municipality. Lowest land prices are observed in Barabani C.D. Block followed by Salanpur C.D. Block.

Table 4.19: Distribution of households according to plot size and built-up area, land ownership title and land price

C.D. Block / Municipal Area	HHs with Title of Ownership (%)	Avg. Land Price (in '000 INR)	Avg. Plot Size (Cottah*)	Avg. Built-up Area (sq. ft)	Gini coefficient	
					Plot Size	Built-up Area
Barabani	45.40	23.4	3.1	637.5	0.36	0.30
Jamuria	62.80	24.7	2.3	523.2	0.23	0.18
Raniganj	85.34	51.9	2.6	760.3	0.27	0.28
Salanpur	21.37	29.4	4.4	392.9	0.33	0.32
Kulti (M)	72.45	49.0	2.0	855.6	0.29	0.23
Raniganj (M)	72.79	89.0	1.8	788.5	0.22	0.17
Jamuria (M)	31.17	36.2	2.4	861.3	0.25	0.30
Asansol (MC)	73.98	96.9	2.4	958.2	0.29	0.36
Rural	50.19	31.9	2.7	555.8	0.41	0.31
Urban	67.49	74.4	2.2	895.9	0.28	0.31
Total	61.35	59.2	2.4	773.9	0.33	0.33

*One Cottah is 1.654 decimal (80 sq.yard or 720 sq.ft)
(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.20: Distribution of dwelling units according to structural condition

C.D. Block / Municipal Area	Share of HHs (%)							
	Type of Structure			Age of Structure 'X' (in years)				Dwelling in poor structures (%)
	Pucca	Semi-Pucca	Kutcha	0<X≤5	5<X≤10	10<X≤25	25<X	
Barabani	42.4	20.3	37.3	4.5	3.6	46.2	45.8	67.8
Jamuria	49.5	43.0	7.6	0.8	2.5	37.3	59.4	32.6
Raniganj	52.5	29.1	18.5	2.0	6.9	13.5	77.6	43.0
Salanpur	60.1	3.3	36.6	2.1	13.4	12.8	71.8	21.0
Kulti (M)	53.4	26.0	20.6	2.9	9.0	16.6	71.5	28.5
Raniganj (M)	54.8	34.0	11.2	4.2	11.8	27.9	56.0	30.6
Jamuria (M)	51.1	26.1	22.9	2.3	3.7	35.5	58.5	42.9
Asansol (MC)	57.7	31.7	10.7	4.7	10.2	26.9	58.2	21.1
Rural	52.2	21.9	25.9	2.3	7.3	25.9	64.5	38.6
Urban	55.3	29.6	15.1	3.9	9.2	25.1	61.7	27.0
Total	54.3	27.0	18.7	3.3	8.6	25.4	62.7	30.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Around 54 percent of the dwelling units are pucca and nearly 27 percent are semi-pucca in Asansol Sub-division. Only 18 percent of the dwelling units are observed to be kutcha in the Sub-division. Share of kutcha house is more in rural parts compared to urban areas but there is marginal difference in share of pucca houses. A large share of houses (more than 1/5th) in Kulti and Jamuria Municipality are kutcha in nature [Refer Table 4.20].

[Note: Pucca dwelling unit refers to the structures which have used permanent materials for both wall (i.e. brick or stone) and roof (i.e. concrete). Semi-kutcha dwelling unit has permanent wall material but temporary roof material (i.e. tin, asbestos, thatch, plastic etc.), whereas Kutcha dwelling unit will have temporary material both for wall (i.e. mud, bamboo, thatch/cane etc.) and roof.]

More than 87 percent of the dwelling units in Asansol Sub-division are more than ten years old and 62 percent of them have crossed 25 years. As per the head of the household's opinion, more than 30 percent of the total households in this Sub-division stay in poor structures. The share of households living in poor

structures is 67 percent in Barabani C.D. Block. The structural conditions are reported to be much better in urban areas compared to the rural areas. As an exception, more than 42 percent of households in Jamuria Municipality have expressed living in dwelling units with poor structural conditions, which also have a very high share of kutcha houses.

Distribution of household according to wall material and roofing material used in dwelling unit has been presented in Table 4.21. Most of the dwelling units have used brick/stone as the wall material (more than 80 percent) whereas around 53 percent have RCC roof in Asansol Sub-division. Nearly 32 percent used tiles for roofing in this Sub-division.

Table 4.21: Distribution of dwelling units according to materials of construction

C.D. Block / Municipal Area	Share of HHs (%)							
	Wall material		Roofing Material					
	Brick/ Stone	Mud/ Bamboo	RCC	Tin	Tiles	Asbestos	Thatch	Plastic
Barabani	67.3	32.7	40.1	4.5	40.7	9.1	5.3	0.4
Jamuria	86.1	13.9	46.3	13.3	14.1	20.4	5.7	0.1
Raniganj	80.4	19.6	49.0	8.7	30.4	10.5	1.1	0.2
Salanpur	62.5	37.5	60.9	0.7	37.6	0.6	0.2	0.0
Kulti (M)	78.0	22.0	52.3	2.4	35.9	8.1	1.0	0.3
Raniganj (M)	86.4	13.6	54.8	7.1	27.5	9.2	0.9	0.5
Jamuria (M)	81.5	18.5	50.5	5.2	25.7	16.6	1.8	0.1
Asansol (MC)	87.6	12.4	56.9	1.2	33.4	8.3	0.1	0.1
Rural	73.0	27.0	50.4	6.2	31.1	9.2	2.8	0.2
Urban	84.0	16.0	54.6	2.7	32.5	9.4	0.7	0.2
Total	80.3	19.7	53.2	3.9	32.0	9.3	1.4	0.2

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Construction cost of more than 45 percent of the dwelling units in Asansol Sub-division are less than INR 1,00,000 – out of which nearly 19 percent are within INR 50,000. In rural areas, more than 51 percent live in dwelling units which can be constructed within INR 1,00,000. [For detailed discussion on distribution of plot size, built-up area, land price, construction cost details, refer Socio-economic Survey Report of Asansol Sub-division - 2010]

Distribution of the households according to availability of habitable rooms in their dwelling units reveal that around 48 percent of households in Asansol Sub-division stay in dwelling units with two habitable rooms. It is also observed that more than 16 percent of the households have only one habitable room where average size of these households is 4.6.

The conditions of overcrowding within the dwelling units, can be seen from per-capita built-up area for living available, which is 124 sqft for rural population and much lower than 217 sqft available for urban population. More than 20 percent of the rural population and 9 percent of urban population have per capita dwelling space of less than 50 sqft.

Assessment of the living environment for the households has been carried out by studying the open space provisions, animal husbandry practices, cooking provisions and fuel usage, illumination source and proximity to water bodies.

Nearly 52 percent of the households in Asansol Sub-division do have some kind of open space within its premises. Table 4.22 reveals that rural households are better off than urban households in terms of open space provision within house. Within urban areas, 65 percent of the households in Asansol municipal Corporation have reported having open space within whereas such provision are available to only 22 percent of households in Jamuria Municipality.

Table 4.22: Distribution of households based on open-space provisions and possession of livestock					
C.D. Block / Municipal Area	Share of HHs (%)				
	Open space within premises	Livestock within premises	Place of stay for livestock		
	Yes	No	Inside the house	Separate arrangements	Open space
Barabani	48.3	47.6	6.9	88.6	4.5
Jamuria	87.0	63.8	2.3	68.1	29.7
Raniganj	42.4	69.3	24.1	72.2	3.7
Salanpur	45.5	82.8	31.9	67.0	1.1
Kulti (M)	42.5	82.2	28.3	60.6	11.1
Raniganj (M)	39.6	93.2	26.1	33.7	40.2
Jamuria (M)	22.2	84.5	34.7	61.0	4.2
Asansol (MC)	65.2	85.7	11.9	78.1	10.0
Rural	55.2	67.8	13.1	75.9	11.0
Urban	50.6	85.4	21.8	65.7	12.5
Total	52.2	79.5	17.3	71.0	11.7

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

More than 85 percent of the urban households and 67 percent of the rural households do not have livestock within their premises. If they have livestock, separate arrangement for their stay are available to 75 percent of the rural households and 65 percent of the urban households. It is also interesting to note from Table 4.22 that in some C.D. Blocks and Municipal areas a large portion of the households possessing livestock keep it within house – which can become a possible source of nuisance to household health and hygiene.

Table 4.23: Distribution of households according to provision of cooking space in dwelling units				
C.D. Block / Municipal Area	Share of HHs (%)			
	Separate arrangements	Inside the house	Veranda	Open space
Barabani	45.8	14.5	26.0	13.7
Jamuria	48.9	24.9	24.1	2.0
Raniganj	42.2	26.8	26.2	4.7
Salanpur	26.1	43.6	19.6	10.6
Kulti (M)	41.7	26.4	24.7	7.3
Raniganj (M)	44.2	26.1	24.0	5.7
Jamuria (M)	36.5	45.9	14.3	3.3
Asansol (MC)	49.9	19.1	26.3	4.6
Rural	39.1	29.6	23.4	7.9
Urban	45.3	25.3	24.1	5.3
Total	43.2	26.7	23.9	6.2

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

More than 43 percent of the households in Asansol Sub-division have separate space arrangements for cooking – but 26 percent still continue to cook inside the house (but not having kitchen) as revealed in Table 4.23. Cooking inside the house severely affects the indoor air quality. Highest share of households who cook inside the house is observed in Jamuria Municipality i.e. more than 45 percent - closely followed by Salanpur C.D. Block.

Table 4.24: Distribution of households according to types of cooking fuel used								
C.D. Block / Municipal Area	Share of HHs (%)							
	Firewood	Coal	Cow dung Cake	Kerosene	Electricity	LPG	Gobar Gas	Others
Barabani	24.4	92.9	61.2	54.9	0.7	10.3	0.1	0.2
Jamuria	2.9	100.0	20.1	5.6	10.6	2.1	0.0	9.0
Raniganj	16.9	88.5	7.0	3.1	0.0	12.7	0.0	0.5
Salanpur	30.8	62.4	52.2	56.8	1.4	50.9	0.1	0.5
Kulti (M)	8.0	80.7	19.9	4.6	1.3	17.7	2.2	0.4
Raniganj (M)	7.1	68.6	4.9	3.1	1.0	27.6	0.6	1.5
Jamuria (M)	8.6	85.4	55.0	54.0	4.6	20.5	0.2	0.5
Asansol (MC)	14.0	61.5	17.8	6.2	2.7	37.6	0.2	0.6
Rural	19.8	83.5	36.8	32.7	3.1	22.4	0.1	2.5
Urban	10.9	70.7	21.7	11.5	2.3	28.8	0.8	0.7
Total	13.9	75.0	26.8	18.6	2.6	26.6	0.5	1.3

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Coal is the predominant cooking fuel as 75 percent of the urban households and 83 percent of the rural households use it. Nearly 36 percent and 32 percent of rural households use cow dung cakes and kerosene respectively as cooking fuel. Only 26 percent of the total households in Asansol Sub-division use LPG as cooking fuel as evident from Table 4.24. Coal, cow dung cake and kerosene used as cooking fuel can severely affect indoor air quality, if adequate measures are not taken.

Table 4.25: Distribution of households according to source of illumination in dwelling units				
C.D. Block / Municipal Area	Share of HHs (%)			
	Electricity	Kerosene	Gobar Gas	Others
Barabani	73.5	72.0	0.5	0.4
Jamuria	34.5	72.5	0.6	12.4
Raniganj	87.2	9.2	0.0	0.7
Salanpur	69.6	41.3	0.0	0.0
Kulti (M)	81.0	23.1	0.2	0.5
Raniganj (M)	79.7	22.4	0.4	0.0
Jamuria (M)	68.1	68.7	0.5	3.8
Asansol (MC)	85.8	24.5	0.1	0.4
Rural	65.9	48.3	0.2	3.2
Urban	81.6	29.5	0.2	0.8
Total	76.3	35.9	0.2	1.6

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

More than 76 percent of the households in Asansol Sub-division use electricity as source of illumination but 35 percent of households still rely on kerosene. Table 4.25 shows that electricity is available to only 65 percent of the households for illumination and more than 48 percent of the rural households have indicated usage of kerosene as source of illumination.

Table 4.26: Distribution of households according to presence of water body close to dwelling unit					
C.D. Block / Municipal Area	Share of HHs (%)				
	Type of water body present near house			Mosquito net required at night	River within 1 km of house
	Pond	Open drains	Marshy Land	Yes	Yes
Barabani	37.8	30.5	3.0	70.8	3.4
Jamuria	13.0	3.5	3.3	32.5	81.3
Raniganj	49.0	6.2	7.5	83.1	21.2
Salanpur	8.8	5.8	3.8	83.3	4.8
Kulti (M)	10.5	9.0	3.5	83.8	24.3
Raniganj (M)	35.2	66.4	1.8	97.2	0.3
Jamuria (M)	9.8	11.1	1.4	60.8	1.6
Asansol (MC)	16.7	35.3	4.9	89.8	6.4
Rural	24.7	10.6	4.3	68.6	26.1
Urban	16.1	28.3	3.7	85.8	10.2
Total	19.0	22.4	3.9	79.9	15.6

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

More than 85 percent of the urban households and 68 percent of the rural households have reported usage of mosquito nets as shown in Table 4.26. Nearly 45 percent of the households in Asansol Sub-division have some kind of pond or open drain or marshy land near their house – which can become a possible place for vector breeding. Only 15 percent of the households in Asansol Sub-division do have any river within 1km despite having three important rivers along its boundaries i.e. Damodar, Barakar and Ajay.

4.8 Regional and Urban Mobility

In this section, issues pertaining to regional mobility, transit characteristics, trip characteristics, vehicle ownership, pedestrian facilities, parking, traffic safety, urban mobility etc has been discussed in brief. For detailed analysis on these topics, refer Comprehensive Mobility Plan for Asansol Urban Area, prepared by Department of Architecture and Regional Planning, IIT Kharagpur in 2008.

4.8.1 Regional Mobility

4.8.1.1 Road linkages

The major link which connects all the urban centers within Asansol Sub-division as well as with other urban centers outside the planning area is NH-2. It is a segment of the Golden Quadrangle, and is one of the most important road links in the region. This link connects the planning area with Kolkata in the eastward and Dhanbad in the westward direction. This vital road link provides the east-west connectivity in the ADPA region – whereas other road links provide north-south connectivity.

NH-60 (previously SH-5) aligned in north-south direction connects Suri via Pandebeswar and meets NH-2 at Raniganj. This road connects the planning area with NH-6 and NH-5 while passing thorough the settlements i.e. Bankura, Kharagpur and Balasore. Apart from these major linkages, the planning area has access to Purulia district from Disergarh side,
and Dhumka from Rupnarayanpur side through major district roads.

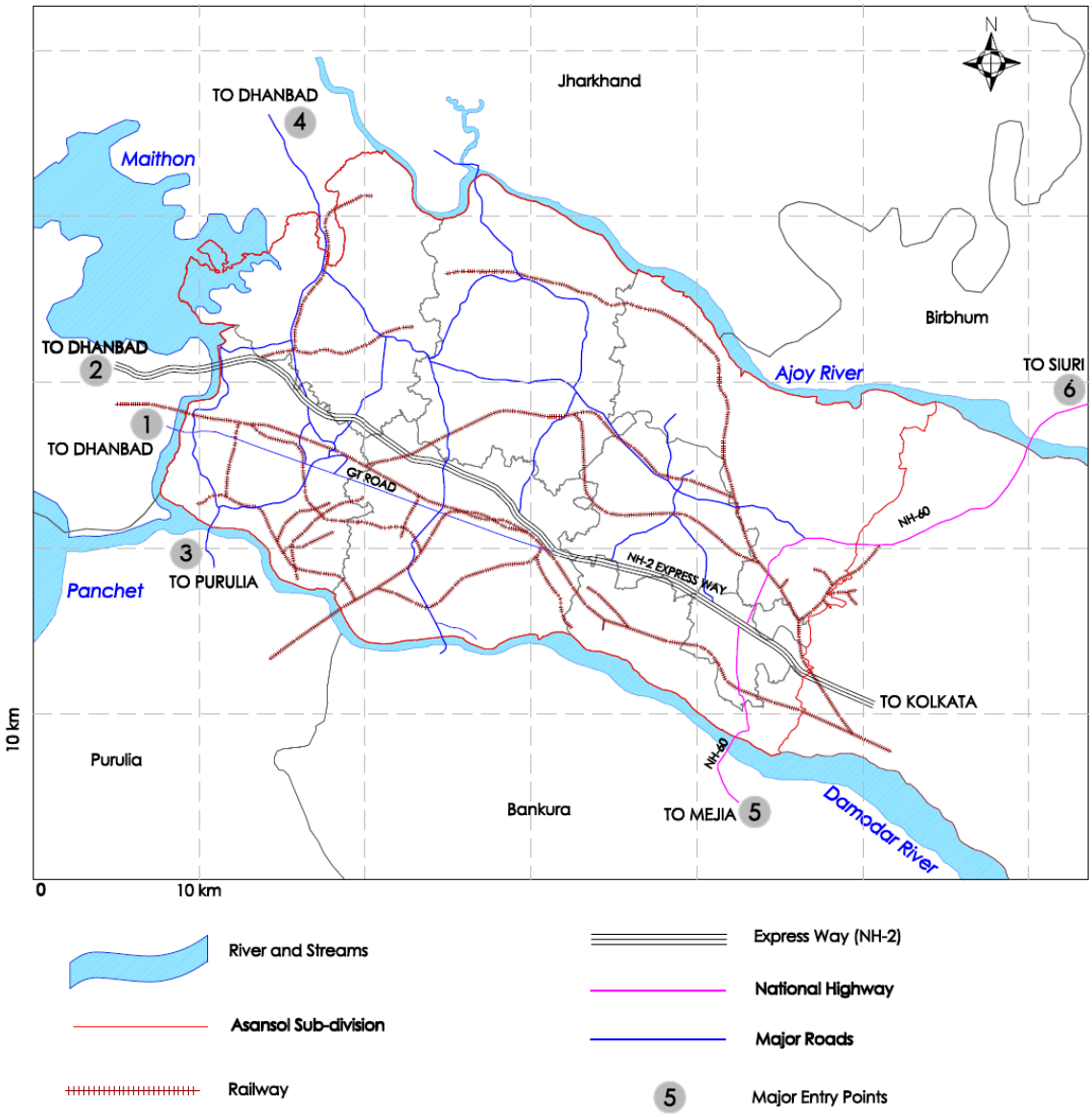


Figure 4.17: Regional road linkages in Asansol Sub-division

Road traffic enters/exits Asansol Sub-division through six points. The entry points are shown in the Figure 4.17 and the traffic volume is represented in Table 4.27. It is evident that most of the traffic enters and exists through the NH-2 (more than 50 percent).

Traffic volume along the NH-2 alignment has a mix of regional traffic and local traffic, particularly generated due to interaction between settlements within the planning area. However, there is a predominance of through regional traffic over intra-regional traffic in this inter-state corridor. It is also evident that the traffic flow along the NH-2 keeps on increasing as one move from west to east towards Durgapur from Kulti. This trend is going to grow in future, exerting immense traffic load on NH-2 due to increasing inter-urban mobility along NH-2.

The modal composition of the inter-regional traffic volume at the entry/exit points clearly indicates the dominance of goods movement over passenger movement. Goods movement mainly takes place by two-axle and multi-axle trucks with the share of the later type increasing.

The composition of the goods entering/exiting Asansol Sub-division through these points indicates that building materials comprise more than 1/3rd of the goods traffic, whereas food grains, coal, mineral ore constitute another 25 percent.

Table 4.27: Regional linkages and traffic volume

Name of link	Type of Road	No. of lanes	Daily Traffic Volume (PCU)	Morning peak (PCU/hr)	Evening peak (PCU/hr)
From Bankura via Mejia (NH-60)	NH	Double	15522	1497	1090
From Suri-Moregram (NH-60)	NH	Double	22248	1913	1795
From Rupnarayanpur (Chittaranjan side)	ODR	Single	9820	883	1572
From Dhanbad (via NH-2)	NH	Four	22122	1509	2178
From Dhanbad (via GT Road)	MDR	Intermediate	15950	1708	1482
From Dishergarh	MDR	Intermediate	15486	1234	1347
From Durgapur (via NH-2)	NH	Four	39240	3064	3476

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

Regional level road traffic and transportation system in Asansol Sub-division suffers from the following problems.

1. Ribbon development along NH-2 is the biggest threat to its operational efficiency. Congestion sets in due to mixing of local traffic with through traffic and high accident rate is observed due to pedestrian-vehicular conflict.

2. Lack of parallel alignment to NH-2 in east-west direction puts excess load of intra-regional traffic on NH-2 – thereby reducing the level of service in the inter-state corridor.

3. Lack of regional level parking/terminal facilities in planning area leads to on-street parking of goods vehicle on major regional linkages – thereby reducing the effective width of the carriageway and increasing travel delay. Moreover, logistic hub functions with warehouse facilities, loading/unloading facilities, and truck terminal facilities with other amenities at strategic locations are missing.

4. Most of the north-south connectors are either intermediate lane or double lane carriageway. The road surface condition is appalling in some of the sections.

5. Rural settlement in some portions of the planning area is missing, especially in rural parts along the bank of Ajoy river. Besides this, it is observed that road surface of existing village roads deteriorates severely in monsoon months – making them inaccessible.

4.8.1.2 Rail and Air linkages

Howrah-Delhi Eastern Rail link passes through the Asansol Sub-division in east-west alignment. On the eastward direction lie Durgapur and Dhanbad lies in the westward direction. Another important rail link between Asansol Junction and Adra junction via Burnpur provides vital connectivity between the Eastern

Railway and the South-eastern Railway. Eastern Rail chord line between Andal and Sainthia provides rail connectivity with the important urban centers of Birbhum district.

Several other railway links also exist to provide rail connectivity to the mining sites around Raniganj C.D. Block and the industrial sites around Asansol and Kulti. The most important of them are Andal-Kunustoria–Gourandih link, Andal–Kenda–Haripur link, Andal–Topsi–Jamuria–Barmondia–Ramjibanpur loop in the northern side of the Howrah-Delhi Eastern Rail link. On the southern side, the important ones are Asansol loop line, Chinakuri loopline, Methani loop line, Adra–Ranipur link, Adra-Sheetalpur link. Some of them were frequently used to move coal out of the mining site – but presently the links and the loop lines in and around Asansol and Kulti are rarely used.

All the major urban settlements are on the Howrah-Delhi Eastern Rail link – providing inter regional rail connectivity. However, it has been observed that the goods movement through rail dominates over the passenger movement.

Asansol and Raniganj are the most important railway stations in Asansol Sub-division. More than 80 percent of the daily passenger movement and 40 percent of the goods movement in Asansol Durgapur Planning Area takes place through Asansol station. The inflow and out flow of goods clearly indicates that there has been rise in the good inflow whereas the goods outflow has decreased since 1989-90. It is to be noted that reduction has been drastic at Asansol station. This reflects the decadence of the bulk good producing industrial activities in Kulti and Asansol area. Granulated slag and imported coal are the major goods moving out of the region. On the contrary, food grains, salt and soda, iodized salt are the major goods moving in the region [Refer Table 4.28].

Table 4.28: Volume of freight movement via rail within Asansol Sub-division

	1989-90		1995-96		2005-2006	
Station	Goods Loaded (000' MT)	Goods Unloaded (000' MT)	Goods Loaded (000' MT)	Goods Unloaded (000' MT)	Goods Loaded (000' MT)	Goods Unloaded (000' MT)
Asansol	157.9	78.4	118.8	98.5	51.6	141.1
Raniganj	82	6.6	76.1	49.5	65	137.4

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

Table 4.29: Comparative assessment of facilities in the rail stations within Asansol Sub-division

Facilities	Asansol	Raniganj	Burnpur	Barakar
Type of station	Junction	-	-	-
Passenger volume	50,000-55,000	8,000-10,000	7,000-8,000	3,000-3,500
All weather passenger waiting facilities	Adequate	Partially adequate	Partially adequate	Inadequate
Ticketing facilities	Unacceptable queuing during peak hours	Acceptable	Acceptable	Acceptable
Toilet and Drinking water	Adequate	Inadequate	Inadequate	Inadequate
Night time lighting facilities	Adequate	Partially adequate	Adequate	Inadequate
Cycle/2 wheeler parking space	Adequate	Inadequate	Adequate	Inadequate
Rickshaw availability	High	High	High	High
Auto Rickshaw availability	High	High	High	High
Taxi availability	High	Moderate	High	Low
Local bus availability	High	High	High	Not available
Regional bus availability	Not available	High	Not available	Not available

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

The passenger flow data at the major stations in Asansol Sub-division is indicated in Table 4.29 along with comparative assessment of facilities. The passenger movement through Asansol station, which is the largest among rail stations in the planning area, comprises high share of long distance inter-state passenger trips.

Modal shift of goods traffic from rail to road is one of the major constraints observed which hinders the regional connectivity of the planning area. Capacity constraint at Asansol-Burnpur section is another hindrance to regional rail connectivity. Moreover, poor intra-regional rail transit facilities have often led to low passenger ridership – thus putting greater stress on road based intra-regional movement.

Asansol Sub-division has a captive airstrip – at Burnpur under the ownership of IISCO. However, it is not open for general passenger usage. Airport facilities are coming up in Andal, where an Airport City is proposed. At present, people of Asansol Sub-division depend on Kolkata for Air travel facilities.

4.8.2 Transit Facilities

Mass transit facilities dominate over para-transit facilities for intra-regional and inter-regional movement. Buses mostly cater to the inter-regional passenger demand whereas minibuses and trekkers cater to the intraregional passenger demand. Rail transit is preferred for long distance trips.

Inter-regional level bus services are either privately operated or operated by South Bengal State Transport Corporation (SBSTC). Privately operated inter-regional bus services mostly originate from either Asansol or from Durgapur [Refer Table 4.30].

Table 4.30: Important bus and minibus rotes in Asansol Sub-division

Bus routes	Minibus routes
Asansol to Barakar via GT Road	Asansol to Chittaranjan Via Ethora, Samdih
Durgapur to Barakar Via GT Road	Asansol to Chittaranjan Via Salanpur
Asansol to Chittaranjan via Salanpur, Niyamatpur	Asansol to Parulberiaghat Via Gourandih, Runakuraghat
Asansol to Barakar via Dishergarh	Asansol to Maithon Via Kalyaneswari
Asansol to Bardhaman Via GT road	Asansol to Barakar Via Kulti
Asansol to Sainthia Via Suri	Asansol to Chinakuri via Niyamatpur
Chittaranjan to Bardhaman via Asansol, Salanpur, Suri	Asansol to Dishergarh Via Sitalpur
Chittaranjan to Bankura Via Durgapur	Asansol to Chinakuri via Mithani
Chittaranjan to Guskara Via Salanpur, Bardhaman	Asansol to Haripur Via Domahoni
Asansol to Bardhaman Via GT Road	Asansol to Churuliya Via Domahoni
	Asansol to Ukhra Via Chanda, Jamuria

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

Both motorised and non-motorised para-transit facilities are extensively used in various location within planning area. Cycle rickshaw is the most prevalent mode for short distance intra-urban movement. Van rickshaws are also used for large share of school trips. Trekker and auto rickshaw are the dominant form of para transit with multiple users. Various areas are extensively covered by this share-type para transit services. This particularly includes parts of Kulti and Jamuria. In Jamuria, trekker services are the backbone of public transit facilities as large capacity buses and minibuses shy away from the low trip density areas. In many scattered mining and industrial settlements in Kulti, auto rickshaw and trekker services cater to the transit demands for similar reasons. Some areas within Kulti has chosen auto rickshaw as public transit mode as large vehicles cannot negotiate the narrow lanes and by-lanes. In short, modal choice for para transit in these areas has been modal response to the inadequacy of the public transport system and physical constraints to mobility.

In Asansol Sub-division, taxi/jeeps also form a significant part of the para transit fleet – however their usage is restricted to hire basis. There are many large taxi stands – mostly in front of rail stations i.e. Asansol, Burnpur, Sitarampur and Raniganj. In addition to this, large number of taxi/jeep parking is also observed in Barakar Bazar area.

Bicycle is the dominant private transit mode in all the urban centers in AUA. Most of the road links within AUA is observed to have a significant share of bicycle movement. A large number of the links and intersections warrant separate cycle tracks and crossing based on IRC norms. However, due to unavailability of such segregation, bicycle movement comes in frequent conflict with the fast moving vehicles – not only slowing them down but increasing the accident risk [Refer Table 4.31].

Among motorised transit modes, two-wheelers are receiving much more patronage than four-wheelers due to low capital as well as operational cost.

Table 4.31: Transit user characteristics

Sl.No.	Description	Para-Transit			Public Transit		Private Transit		
		Auto-rickshaw	Trekker	Cycle rickshaw	Bus	Rail	Bicycle	Two-wheeler	Car
1	Average trip length (km)	2.4	6.8	1.6	14.7	34.5	2.7	4.1	3.9
2	Average trip time (mins)	15	25	15	44	70	24	18	28
3	Average trip cost (Rs.)	4.75	11.5	7.5	8.5	5.5	20	570	1560
4	Patronage share by income group (%)								
a	HH income less than Rs. 1999	1	1	0	13	31	26	0	0
b	Rs. 2000 - 3999	2	5	1	27	23	31	1	0
c	Rs. 4000 - 5999	17	24	4	24	19	22	2	0
d	Rs. 6000 - 9999	37	31	17	19	11	12	6	0
e	Rs. 10000 - 14999	23	20	23	9	10	6	18	0
f	Rs. 15000 - 19999	16	14	31	6	4	3	39	6
g	More than Rs. 20000	4	5	24	2	2	0	34	94
5	Average distance to nearest boarding/alighting/parking location	0.15 km	0.3 km	0.05 km	0.35 km	1.2 km	0 - 30 m	0 - 100 m	0 - 200 m
6	Mode preferred to arrive at bus stop	Walk (97%)	Walk or cycle (95%)	Walk (100%)	Walk (91 %)	Walk or cycle (88 %)			
7	Average waiting time (peak)	5 mins	10 mins	2-3 mins	5 - 10 mins	15 mins			
8	Average waiting time (off - peak)	15 mins	30 mins	5 mins	15 - 25 mins	45 mins			

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

4.8.3 Vehicular stock and ownership pattern

A brief look at the vehicle registration records in AUA for last five years reveals that there has been a tremendous rise in two-wheelers [Refer Table 4.32] – often cited as the main reason for eating away the road capacity and increasing congestion. The implications of this rapid growth on capacity of the urban road network are a matter of serious concern in years to come. The growth of four wheelers (private transit) is low compared to the two-wheeler growth but will exert significant pressure on the urban roads as well as the parking facilities.

Growth of vehicle stock – both transport and non-transport has been presented in Table 4.32. It is evident that 4/5th of the vehicular stock comprises of two-wheelers, whereas four-wheeler constitutes only 7 percent of the stock [Refer Figure 4.18]. Freight vehicles have a large share as the regional economy is predominantly based on mining and industrial activity. The share of transit vehicles – both motorised para transit as well as bus/minibus is also quite high compared to urban areas of similar size.

Table 4.32: New vehicle registration records for Asansol Sub-division (Year 2003-2008)

Year	Two wheeler	Four wheeler	Auto-rickshaw	Taxi	Minibus	Bus	Goods	Others	Total
2003-04	24182	1251	156	239	79	115	3358	251	29631
2007-08	23559	1647	64	370	27	161	2621	552	29001
Addition in last five years	129207	6882	937	1804	348	686	14973	1893	156730
Vehicle stock in 2003	143668	17737	2084	5659	4332	6745	35222	4028	219475
Vehicle stock in 2008	272875	24619	3021	7463	4680	7431	50195	5921	376205
Compounded Average Annual Growth Rate (%)	13.69	6.78	7.71	5.69	1.56	1.96	7.34	8.01	11.38

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

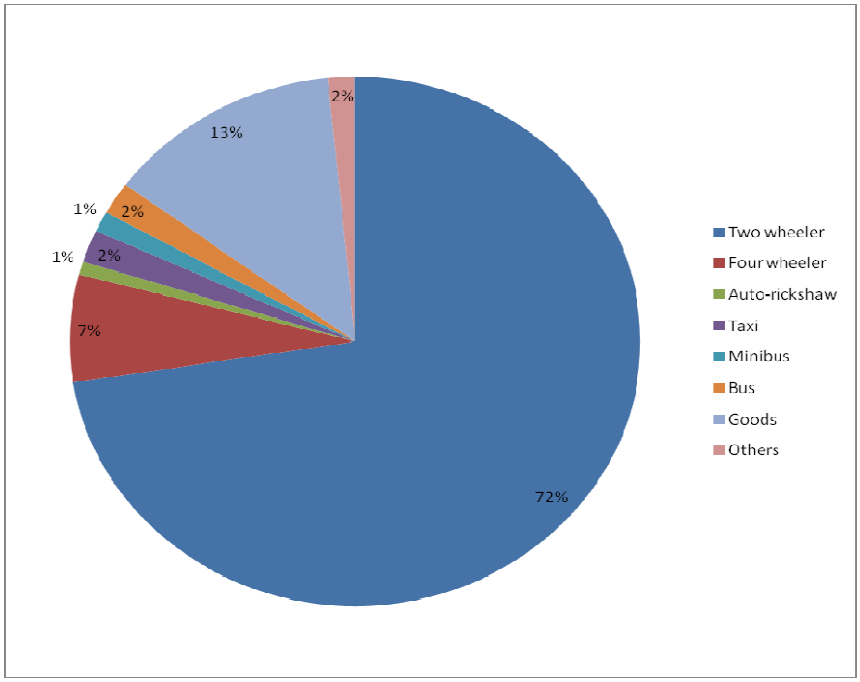


Figure 4.18: Share of various vehicle types in Asansol Sub-division (Year 2008**)**

Table 4.33 presents the vehicle ownership pattern at household level for Asansol Sub-division. Bicycle is owned by 75 percent of the households and two-wheeler is owned by 27 percent of the households in Asansol Sub-division. It must be noted that bicycle and two-wheeler ownership is marginally higher in rural households compared to urban households. Car ownership is very less within the sub-division and is highly concentrated among urban households.

Table 4.33: Vehicle ownership pattern among households

C.D. Block / Municipal Area	Share of HHs (%)										
	Cycle	2-wheeler	Car	Jeep	Lorry	Matador	Tractor	Bullock cart	Trolley	Rickshaw	Others
Barabani	79.8	22.8	0.7	0.2	0.5	0.2	0.5	1.6	0.0	0.1	0.4
Jamuria	94.9	21.9	0.2	0.1	0.0	0.0	0.5	2.1	0.0	0.1	0.0
Raniganj	69.1	20.4	0.2	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.0
Salanpur	68.6	38.7	0.7	0.0	0.1	0.2	0.2	1.2	0.1	0.1	0.2
Kulti (M)	75.8	25.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.9
Raniganj (M)	86.2	21.6	2.0	0.2	0.4	0.0	0.2	0.1	0.0	0.6	0.4
Jamuria (M)	72.7	23.9	1.2	0.3	0.1	0.1	0.0	0.1	0.1	0.0	0.0
Asansol (MC)	72.5	31.1	2.5	0.0	0.0	0.1	0.1	0.1	0.1	0.7	0.2
Rural	81.2	28.8	0.5	0.1	0.1	0.1	0.3	1.4	0.0	0.1	0.1
Urban	74.9	27.6	1.9	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.7
Total	75.7	27.5	1.4	0.1	0.1	0.1	0.1	0.5	0.1	0.4	0.5

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

4.8.4 Trip Characteristics

The trip generation rates have been presented for all the four urban centres within Asansol Sub-division, namely Asansol, Kulti, Jamuria and Raniganj. Dominant share of trips are work related followed by educational trips. It is interesting to note that urban centres tend to have higher share of vehicular trips as trip length is higher. The average trip length is dependent on the size of the urban area as well as the dispersion of urban functions. Asansol Municipal Corporation area has highest trip length followed by Jamuria Municipal area. A large share of the trips has trip length less than 2 km – which is easily manageable by non-motorised modes [Refer Table 4.34 & 4.35].

Table 4.34: Per capita trip generation rates

	Asansol		Kulti		Raniganj		Jamuria	
Purpose	Total	Motorised	Total	Motorised	Total	Motorised	Total	Motorised
Work	0.67	0.42	0.58	0.47	0.50	0.39	0.46	0.34
Education	0.23	0.11	0.22	0.07	0.21	0.05	0.21	0.05
Others	0.28	0.14	0.19	0.10	0.20	0.11	0.17	0.12
All	1.18	0.67	0.99	0.64	0.91	0.55	0.84	0.51

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

Table 4.35: Trip length distribution in AUA

Name of urban area	Less than 2 km	2-4 km	4-6 km	6-8 km	8-10 km	More than 10 km	Total	Average Trip Length (km)
Asansol	45.0	27.1	15.0	7.1	4.0	1.8	100.0	3.1
Kulti	55.7	22.9	13.2	5.0	2.1	1.1	100.0	2.6
Raniganj	59.1	21.0	12.1	5.9	1.2	0.7	100.0	2.4
Jamuria	51.1	23.4	15.4	5.0	3.9	1.2	100.0	2.9

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

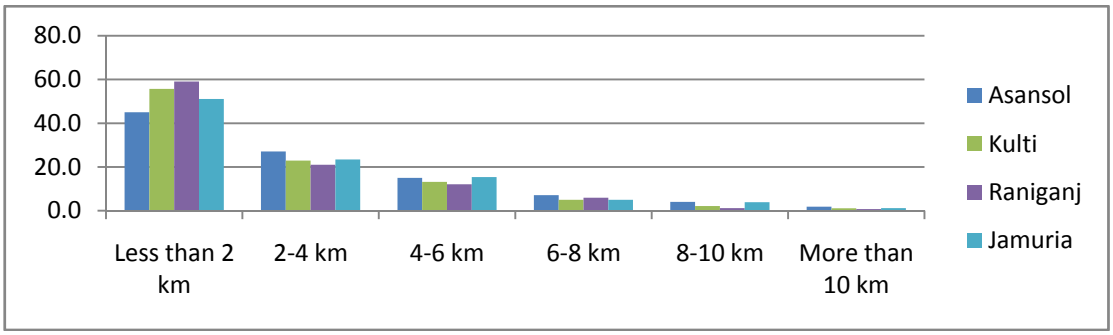


Figure 4.19: Trip length distribution within various urban centres of Asansol Sub-division

Table 4.36: Mode choice of according to trip purpose

C.D. Block / Municipal Area	Type of trip	Trip purpose						
		Work	Education	Shopping		Health & Recreation	Access to Public transport terminal	
				Daily	Monthly		Bus	Train
Barabani	Motorized	16.4	51.8	15.4	46.0	77.9	3.0	97.8
	Non-motorized	39.6	17.5	57.4	35.0	8.9	9.8	1.7
	Pedestrian	44.0	30.6	27.2	19.1	13.2	87.3	0.5
Jamuria	Motorized	25.1	52.1	4.0	33.1	94.8	2.4	100.0
	Non-motorized	52.6	6.3	17.6	65.4	2.8	0.0	0.0
	Pedestrian	22.3	41.6	78.4	1.5	2.3	97.6	0.0
Raniganj	Motorized	13.2	46.4	8.1	32.8	44.6	17.8	70.4
	Non-motorized	35.9	13.5	23.8	22.0	6.6	14.6	23.6
	Pedestrian	50.9	40.0	68.1	45.2	48.7	67.5	6.1
Salanpur	Motorized	27.7	32.5	4.7	44.2	58.2	9.4	41.0
	Non-motorized	33.2	46.8	17.2	25.2	21.5	32.3	31.9
	Pedestrian	39.2	20.8	78.1	30.6	20.3	58.4	27.1
Kulti (M)	Motorized	17.2	54.3	5.0	20.8	78.2	3.9	59.5
	Non-motorized	30.9	8.0	8.9	19.2	8.5	10.1	19.8
	Pedestrian	52.0	37.7	86.1	60.1	13.4	85.9	20.7
Raniganj (M)	Motorized	15.1	35.5	8.5	14.8	20.1	1.0	59.6
	Non-motorized	41.7	20.9	16.7	27.6	31.7	11.6	22.9
	Pedestrian	43.2	43.6	74.9	57.6	48.2	87.4	17.5
Jamuria (M)	Motorized	22.3	48.9	4.3	20.2	87.5	7.1	94.8
	Non-motorized	36.7	4.9	26.3	48.2	3.5	8.3	0.7
	Pedestrian	41.0	46.2	69.5	31.6	9.1	84.5	4.6
Asansol (MC)	Motorized	25.5	45.0	7.2	29.9	57.8	7.9	70.0
	Non-motorized	35.4	13.0	12.8	15.7	9.3	5.1	17.3
	Pedestrian	39.1	42.0	80.0	54.4	32.9	87.0	12.6
Rural	Motorized	20.8	42.3	7.6	39.0	80.1	5.8	87.9
	Non-motorized	39.8	23.1	27.4	41.1	8.0	9.8	7.8
	Pedestrian	39.4	34.5	65.0	19.8	11.9	84.4	4.3
Urban	Motorized	21.8	46.8	6.3	23.6	68.4	5.9	71.6
	Non-motorized	34.9	11.8	13.9	23.6	9.3	7.8	15.0
	Pedestrian	43.2	41.5	79.7	52.7	22.4	86.3	13.4
Total	Motorized	21.5	46.1	6.7	28.5	72.0	5.9	78.0
	Non-motorized	36.5	14.4	18.6	29.2	8.9	8.4	12.1
	Pedestrian	42.0	39.5	74.7	42.3	19.1	85.7	9.8

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

The choice for modes among motorized modes, non-motorized modes and walking for each trip purpose has been presented in Table 4.36. Reliance on non-motorized and pedestrian modes for work and

education trips is very high. Nearly 2/5th of the works trips are by walking and another 1/3rd is by non-motorized modes – both for urban and rural areas.

Choice of mode within the urban centres of Asansol Sub-division varies widely – mostly due to urban structure and affordability. Bus and minibus is the most dominant mode chosen for vehicular trips for all urban centres in the Sub-division [Refer Table 4.37]. On the other hand non-motorised modes i.e. walking, bicycle and rickshaw have a share of nearly 35 percent – primarily due to low trip lengths. Two-wheeler and car still occupies a small portion in overall choice of mode for travel. This clearly reflects the dependence of the urban mobility on the public transit modes within the planning area.

Table 4.37: Mode choice for home based trips in urban areas

Mode	Share of Home based trips (%)			
	Asansol	Kulti	Raniganj	Jamuria
Walk	18.7	17.4	21.3	19.4
Bicycle	11.0	14.0	7.1	12.6
Cycle Rickshaw	4.1	4.1	6.3	4.7
Auto-rickshaw	2.4	9.1	2.4	6.1
Two-wheeler	5.3	3.7	9.0	4.1
Car	2.0	1.2	1.4	0.7
Bus/Minibus	51.2	46.7	47.9	52.4
Rail	5.3	3.7	4.7	0.0
Total	100.0	100.0	100.0	100.0

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

4.8.5 Traffic safety

The number of road accidents, injury and deaths has grown steadily in Asansol Sub-division as evident from Figure 4.20, especially in urban centres and along NH-2. The trend analysis of fatality ratio (i.e. occurrence of death per accident) reveals that it is increasing with time. In 2005, the incidence of accident was nearly 50 percent higher than the 1998 figures – the death figures higher than even 100 percent.

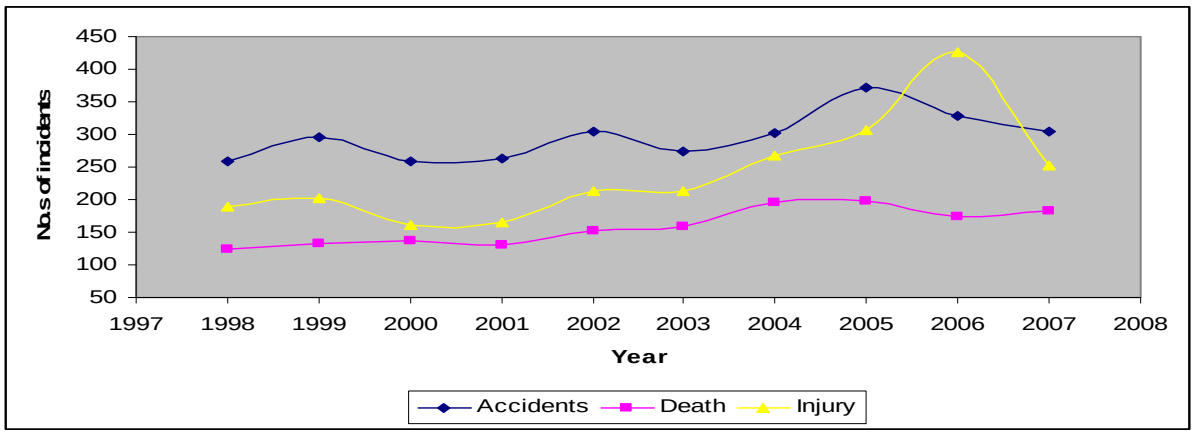


Figure 4.20: Trend analysis of incident of accident, death and injury in Asansol Sub-divison

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

Table 4.38: Traffic accidents and Safety index in Asansol Sub-division						
Name of urban area	No. of deaths in road accidents		Population (in lakhs)		Safety Index (1/death per lakh population)	
	2001	2007	2001	2007	2001	2007
Asansol	38	53	4.75	6.06	0.13	0.11
Kulti	18	26	2.89	3.18	0.16	0.12
Raniganj	14	31	1.11	0.88	0.08	0.03
Jamuria	22	38	1.29	1.35	0.06	0.04

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

A look at the Safety Index, which is estimated from number of deaths related to road accident per lakh population shows that Kulti and Asansol municipal areas are the most accident prone areas – mostly due to movement of heavy freight vehicles within the dense settlement areas. As evident from Figure 4.21, nearly 2/5th of accidents are caused by trucks and trailers – the outcome being often fatal in nature.

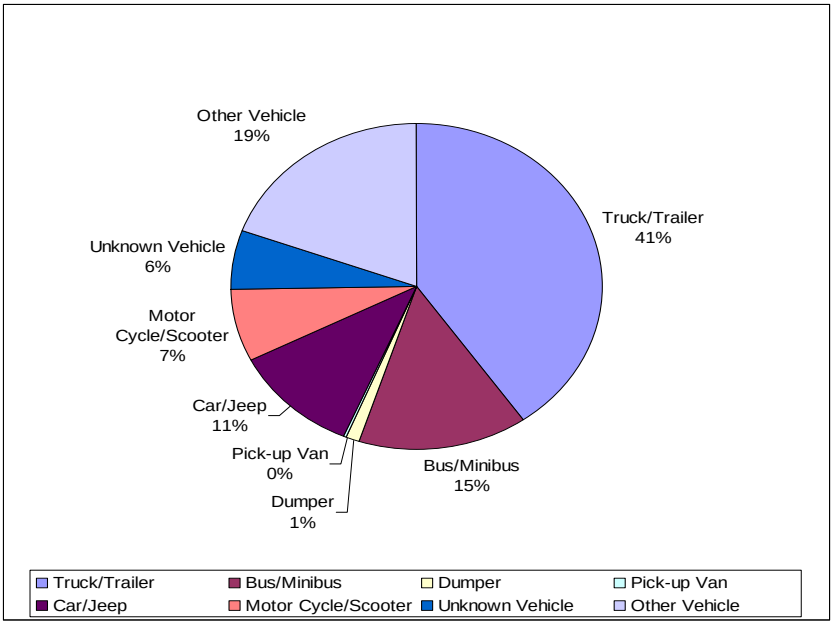


Figure 4.21: Distribution of accidents according to type of vehicle involved

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

4.8.6 On street parking and pedestrian facilities

A brief look at the on-street parking and pedestrian facilities for four urban centres in Asansol Sub-division has been presented in Table 4.39. It can be seen that footpath facilities are not present in most of the urban centers - particularly absent in Asansol which is an important urban center in the region and having large pedestrian traffic movement. A small share of roads have been observed to have on-street parking facility. However, the parking demand in those locations is so high, that on-street parking interferes with the vehicular movement in these road stretches i.e. GT road in Asansol and Barakar, NH-60 within Raniganj town etc.

Table 4.39: Footpath and on-street parking facilities		
Name of urban area	Availability of foot path (%)	Availability of road length for on-street parking (%)
Asansol	27.5	19.9
Kulti	38.5	26.8
Raniganj	25.9	16.8
Jamuria	16	13.1

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

4.8.7 Intra-regional Connectivity

The spatial allocation of human settlements in Asansol Sub-division has been guided by the development of road network. Most of the major urban settlements are located along the NH-2, as inter-regional and intra-regional accessibility is very high in these locations. A group of mining settlements lies on the south of NH-2 as well as on the north of NH-2 (within 5-6 kms of travel distance). Besides these, the large settlements at Chittaranjan, Barabani, Salanpur, Sripur are also connected through district roads with the NH-2 (travel distance within 20 kilometers). The spatial dispersion of village settlements with more than 1000 population indicates that some settlements along the bank of Ajoy river in Jamuria C.D. Block have a travel distance of 8-10 kilometers to reach any district roads. However, most of the villages are already being linked by all weather roads under Pradhan Mantri Gram Sadak Yojana – but the surface conditions deteriorate badly during monsoon months. It is observed that the overall village level connectivity is less for the villages in the north of Asansol Sub-division compared to the ones in the south. A detailed distribution of the road network across various urban and rural units of the planning area is presented in Table 4.40.

Table 4.40: Distribution of road length according to various categories of roads in Asansol Sub-division						
Name of C.D. Block/ Municipal area	National Highway & State Highway (in Km)	Arterial roads / MDR / ODR (ROW > 60 ft) (in Km)	Sub-arterial roads / ODR (ROW 20 - 50 ft) (in Km)	Collector roads (ROW< 20ft) (in Km)	Kutcha roads (Fair weather) (in Km)	Total roads (in Km)
Salanpur	4.5	158.7	17.4	166.8	241.0	592.9
Baraboni	0.0	2.3	77.7	68.0	271.4	419.5
Raniganj	1.0	0.0	5.1	93.7	112.1	212.8
Jamuria	6.5	6.1	121.8	18.9	404.2	564.0
Rural	12.0	167.2	222.1	347.4	1028.7	1789.29
Asansol (MC)	27.5	8.6	130.4	273.2	180.9	648.3
Kulti (M)	25.1	0.0	38.6	220.6	197.5	506.9
Raniganj (M)	13.8	4.9	31.8	44.7	48.4	157.5
Jamuria (M)	8.6	8.5	2.2	139.1	98.6	265.8
Urban	75.1	22.1	203.1	677.6	525.5	1578.44
Total	87.0	189.2	425.1	1025.1	1554.2	3367.7

Kulti, Asansol, Raniganj and Jamuria municipal areas has higher road density attributed to dense urban development. Agglomeration of mining settlements in Raniganj C.D. Block has led to dense road network pattern. On the other hand, Salanpur, Barabani, Jamuria C.D. Block has lower road density. The

population densities in these blocks are comparatively low. Half of the roads in Asansol Sub-division are fair weather roads and nearly 2/3rd of the all weather roads have ROW less than 20 ft (around 6 m). Share of highways is very high in urban areas as they are the main regional linkages, whereas rural areas generally depend on Major District Roads (MDR) and Other District Roads (ODR) for regional connectivity.

4.8.8 Mobility issues in Asansol

All important activities within the town is located along the GT Road – which was previously the regional corridor connecting Kolkata with Delhi. Excessive centralisation of commercial and institutional functions in form of ribbon development has taken place along this alignment.

Creation of bypass has diverted the regional traffic but wholesale and warehousing activities are still located along the GT Road. The city bus stand is also located on the GT Road – which is long overdue for relocation.

Table 4.41:Average speed and congestion in selected links of Asansol

Sl. No.	Description	Speed (kmph)	Peak hour V/C ratio
1	Bhagat Singh More to BNR More	28.6	1.08
2	BNR More to Girija More	25.0	1.30
3	Girija More to Bus Stand More	21.2	0.84
4	Bus Stand More to Station More	17.0	0.99
5	Station More to Kalla More	24.0	1.44
6	Kalla More to Durga Mandir	26.0	0.84
7	Durga Mandir to Mohisila More	27.0	0.86
8	Mohisila More to Asansol Entry	39.0	1.02
9	Court More to Ghari More(Court More)	23.0	2.41
10	Ghari More (Court More) to St. Jude's School	26.0	2.04
11	St. Jude's School to Kalibari	23.0	2.89
12	Hospital More to Mohisila More	21.0	0.95
13	Bhagat Singh More to Jubilee More	33.0	1.27
14	Station More to Dhadka More	14.8	1.25
15	Kalla More (G.T Road) to Kalla More (NH-2)	12.8	1.06
16	Kalibari to Hospital More (Mahisila)	22.0	2.83
17	Bhagat Singh More to Niyamatpur	45.0	1.24
18	Bhagat Singh More to Court More	20.0	1.30
19	Ghari More to BNR More	16.0	2.12
20	Girija More to St. Jude School	15.0	1.23
21	Bus Stand More to Kalibari	15.0	2.10
22	Asansol Entry to Kalla More(NH-2)	65.0	0.34
23	Kalla More (NH-2) to Dhadka More	64.0	0.36
24	Dhadka More to Jubilee More	69.0	0.25
25	Jubilee more to Dhuburdih	72.0	0.28
26	Jubilee More to Domahoni	31.0	1.47
27	Kalla More (NH-2) to Kalla	28.0	0.77
28	St Jude's School to E.R Loop line	23.0	1.98
29	Court More to Riverside	30.0	1.63

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

The urban structure has been greatly influenced by the existing rail alignments. The growth of this town has been restrained by rail lines on its three sides – Eastern Rail Main line, Eastern Rail Loop line and Asansol-Burnpur line. There are only two grade separated crossing which allow movement of heavy vehicles (like bus and truck) – ROB at Rabindra Bhawan along GT Road and underpass near Kanyapur

along Burnpur (Sen Raleigh) Road. Other two underpasses along Kalla and Dhadka road are too narrow for large vehicles. Most of the recent urban growth has preferred the direction which allow unconstrained grade separated movement over rail lines - i.e. along GT Road (towards Kulti) and Burnpur Road (towards Kanyapur and NH-2).

The goods movement from IISCO Burnpur plant (presently under SAIL) as well as the whole sale and warehousing hub located along the GT Road takes place through the heart of the city. At present there is temporal restriction in place on entry of freight vehicles – allowing their movement only in the night. However, looking at the expansion plans of IISCO plant as well as rapid growth of whole sale trade and commerce, the present solution appears to be unsustainable and damaging to the local economy.

4.8.9 Mobility issues in Kulti

Most of the urban population as well as important urban functions are located in four nodes. Three of them are along the GT Road (namely Niyamatpur, Kulti and Barakar), while Sanctoria is on the Dishergarh Road connecting Purulia district.

Most of the nodes have developed around intersections of strategic importance – adding to the congestion along these arterials. Niyamatpur has become excessively congested, which has severely affected the regional movement along Dishergarh Road. Similar type of congestion is experienced in Begunia More - choking the flow of movement in Barakar. In Kulti, the development has followed ribbon development pattern along the GT Road. Such road-centric development is a direct outcome of the fact that very few land parcels within Kulti municipal area has requisite connectivity or transit accessibility except alongside these major roads.

Table 4.42: Average speed and congestion in selected links of Kulti

Sl. No.	Description	Speed (kmph)	Pear hour V/C ratio
1	Niyamatpur More to Municipality More	18.0	1.25
2	Niyamatpur More to Sanctoria More	28.0	0.61
3	Bhagat Singh More to Niyamatpur More	34.0	1.24
4	Municipality More to Chittaranjan More	26.0	0.64
5	Municipality More to College more	23.0	1.07
6	College More to Sanctoria Crossing	19.0	0.88
7	Sanctoria Crossing to Township More	22.0	0.99
8	Township More to Workshop More	21.0	0.92
9	Workshop More to Sanctoria More	24.0	0.66
10	Workshop More to Begunia More	28.0	1.35
11	Begunia More to Duburdih	24.0	0.70
12	Begunia More to Barakar Bridge	14.0	1.45
13	Begunia More to Sanctoria	26.0	0.37
14	Duburdih to Chittaranjan	51.0	1.02
15	Duburdih to Dhanbad (along NH-2)	60.0	0.31
16	Chittaranjan More to Jubilee More (NH-2)	63.0	0.27
17	Sanctoria to Purulia	39.0	1.05

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

A significant portion of this town is under the threat of mining related subsidence. This will eventually lead to reorganising the settlement pattern in the areas free from subsidence threat. Creation of new links will have to play active role in opening up new developable land – easing the reorganisation of the urban structure.

NH-2, GT Road as well as Eastern Rail routes connecting Kolkata and Delhi (both via Dhanbad and Patna) pass through subsidence prone zones. Recently a portion (nearly a kilometre) of the NH-2 has subsided near Asansol leading to accidents with fatalities and necessitating reconstruction of the road stretch.

4.8.10 Mobility issues in Raniganj

Most of the urban functions has developed along the Netaji Subhas Bose Road (i.e. NH-60 stretch within the town) – in form of ribbon development. Public institutions, commercial establishments, hospitals, schools as well as mixed residential functions have all developed in a dense way along this corridor, as clearly evident from the density distribution. This kind of urban pattern has interfered with the regional movement along NH-60 – particularly due to the intermixing of the slow moving local traffic with regional traffic. The ROW of this arterial is capacity constrained (due to very limited potential of horizontal expansion as well as huge on-street parking activities).

Table 4.43: Average speed and congestion in selected links of Raniganj

Sl. No.	Description	Speed (kmph)	Peak hour V/C ratio
1	Raniganj Bypass	16.6	1.47
2	Amrasota More to Panjabi More	61.5	0.74
3	Amrasota More to Bansra More	68.8	0.62
4	Bansra More to Mangalpur More	74.2	0.62
5	Panjabi More to Raniganj Town	46.2	1.16
6	NSB Road near Rajbari More	48.9	1.77
7	Rajbari More to Sishubagan More	38.7	1.91
8	Sishubagan More to Tarabangla More	30.6	1.74
9	Tarabangla More to Marwari hospital	19.3	2.13
10	NSB Road near Marwari hopital	18.9	2.32
11	Marwari Hospital to Municipality	13.8	1.85
12	Municipality to Rail station	15.0	1.54
13	Municiplaity t Bus stand	33.0	1.12
14	Amrasota More to Rajbari More	27.0	1.06
15	Bansra More to Rajbari More	23.0	0.35
16	Mangalpur More to Marwari hospital	24.0	1.16
17	Bus stand to Mejia	39.0	1.27
18	Jamuria More to Asansol	61.0	0.72
19	Mangalpur More to Andal	67.0	0.64
20	Amrasota More to Siuri	32.0	1.63
21	Jamuria More to Jamuria	31.0	1.09
22	Mangalpur More to Haripur	34.0	0.39
23	Panjabi More to Jamuria More	61.0	0.77

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

Huge volume of freight movement, mainly coal passes through this corridor destined to Mejia thermal power station. At present, temporal restriction on freight vehicle entry is in place to reduce the magnitude of conflict. An alternative bypass alignment exists but it is not preferred due to poor surface condition, huge detour and narrow rail underpass limiting movement of large freight vehicles.

A very large part of the town is under severe threat of mining related subsidence and the alignment of NH-2, NH-60 as well as Eastern rail route alignment passes through this zone.

4.8.11 Mobility issues in Jamuria

The population of Jamuria as well as other functions has concentrated at the intersection of few regional connections – namely Jamuria-Haripur link, Jamuria-Barabani link, Jamuria-Chanda link and Jamuria-Raniganj link. The development has been completely organic and incremental in nature. The central core consists of wholesale hub flanked by important institutions and retail trading activities in a ribbon format along each of the important links. Most of the roads are single lane with no scope for capacity augmentation.

The industrial development has been initiated along the Jamuria-Haripur Link where large number of industries are coming up in an industrial estate set up by ADDA. This industrial development has increased interaction of freight traffic via Jamuria-Haripur Link. This however, does not interfere with the existing settlement base within municipal limits.

Table 4.44: Average speed and congestion in selected links of Jamuria

Sl. No.	Description	Speed (kmph)	Peak hour V/C ratio
1	Panjabi More to Jamuria More	61.0	0.85
2	Jamuria More to Chanda More	55.6	0.74
3	Chanda More to Akhalpur	36.8	0.83
4	Chanda More to Asansol	54.4	0.83
5	Akhalpul to Jamuria Bazar	24.7	1.35
6	Akhalpur to Panjabi More	32.4	0.86
7	Jamuria Bazar Road	18.5	1.12
8	Jamuria Bazar Road	24.0	1.44
9	Jamuria Bazar Road	18.8	2.80
10	Jamuria Bazar to Taltor	23.0	0.44
11	Jamuria Bazar to Baraboni	25.0	0.73
12	Jamuria Bazar Road	18.3	1.90
13	Industrial zone approach	32.0	0.42
14	Bus stand approach	30.0	1.72
15	Bus stand approach	18.0	0.50
16	Bus stand approach	24.0	1.12

(Source: Comprehensive Mobility Plan for Asansol Urban Area, 2008)

Jamuria is the only settlement which lies far away from the NH-2 alignment. This lack of connectivity has limited the integration of its local economy with that of AUA – probably one of the principle causes of its impoverishment. Jamuria has the lowest per capita HH income/expenditure as well as fares poorest in terms of every indicators of human development (i.e. literacy rate, morbidity, infant mortality, levels of access to safe drinking water and sanitation, housing conditions etc.).
Two rail lines pass through the town area – however, movement along them has been minimal as movement of coal gradually shifted to road based movement instead of rail. Large chunk of land remain as 'brown field' within the municipal area, occupied by defunct rail siding yards and other facilities.

4.9 Physical infrastructure

In this section, the existing level of service related to water supply and distribution, sanitation and drainage, solid waste management, provisions of electricity and access to road is provided.

4.9.1 Water supply and distribution

In this section, we discuss about the sources of water available to households, ownership of the sources, and distance to source from household, frequency of supply, scarcity, and water quality issues.

More than 85 percent of the households have access to tap water supply in Asansol Sub-division – either through community taps or house connection as revealed from Table 4.45. In rural areas, tap water supply is available to 71 percent of households whereas it is available to 93 percent of urban households. Reliance on private well and tube-well is very low.

Table 4.45: Distribution of households according to access to source of water

C.D. Block / Municipal Area	Share of HHs (%)				
	House Connection	Community Tap	Tube-well	Well	Others
Barabani	6.6	66.5	20.1	13.0	1.5
Jamuria	13.1	51.4	50.7	12.3	5.2
Raniganj	4.9	87.3	3.1	10.2	0.0
Salanpur	38.4	22.5	21.7	34.2	0.3
Kulti (M)	14.5	77.5	4.2	8.8	2.6
Raniganj (M)	20.6	72.8	2.3	11.3	0.1
Jamuria (M)	15.1	71.3	28.6	11.5	0.6
Asansol (MC)	28.2	67.5	1.5	13.4	2.5
Rural	18.3	52.8	24.2	19.3	1.7
Urban	21.9	71.3	5.8	11.6	2.1
Total	20.7	65.1	12.0	14.2	1.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

More than 60 percent of the households in Asansol Sub-division rely on single source of water – whereas as another 30 percent has access to more than two sources. Reliance on single source is much higher for rural households compared to urban households as evident from Table 4.46. More than 72 percent of the households, be it in rural or urban areas, rely on community sources. Only 1/4th of the rural or urban households have own sources.

Table 4.46: Distribution of households based on access to multiple water-sources and ownership

C.D. Block / Municipal Area	Share of HHs (%)					
	Number of sources available			Ownership of source		
	Single	Double	More than two	Owned	Shared	Community
Barabani	91.5	8.3	0.3	11.6	2.6	85.8
Jamuria	68.3	30.7	1.0	2.7	3.3	94.0
Raniganj	94.5	5.5	0.0	10.7	3.1	86.2
Salanpur	57.0	0.6	42.4	57.0	0.6	42.4
Kulti (M)	18.2	5.0	76.8	18.2	5.0	76.8
Raniganj (M)	22.0	8.1	69.9	22.0	8.1	69.9
Jamuria (M)	12.3	0.6	87.1	12.3	0.6	87.1
Asansol (MC)	87.4	12.1	0.4	31.0	2.5	66.5
Rural	75.2	10.4	14.4	25.9	2.2	72.0
Urban	52.4	8.3	39.3	24.2	3.5	72.3
Total	60.3	9.0	30.7	24.7	3.1	72.2

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Nearly 58 percent of the urban households and 49 percent of the rural households receive water once in a day. Only 11 percent of the urban households have reported continuous water supply as indicated in Table 4.47. More than 63 percent of the rural households have reported problems of water scarcity during

summer months compared to 52 percent of urban households. Maximum problem due to water scarcity is reported in Jamuria C.D. Block and Jamuria Municipality.

Source of water is available within 100m from house for 62 percent of the urban households and 58 percent of rural households. Table 4.48 also indicates that more than 9 percent of the households in Asansol Sub-division still have to travel more than 500 m to access water.

Table 4.47: Distribution of households according to frequency of water supply and scarcity

C.D. Block / Municipal Area	Share of HHs (%)						
	Frequency of water supply (per day)				Quantity of water supply		
	Once	Twice	Thrice	Continuous	Adequate	Scarcity only during summer	Inadequate
Barabani	77.6	20.2	0.2	2.0	3.4	60.6	36.1
Jamuria	65.6	23.9	2.2	8.2	3.0	85.2	11.7
Raniganj	44.3	43.4	12.2	0.2	9.6	72.9	17.5
Salanpur	23.9	51.9	18.6	5.7	50.0	44.1	5.9
Kulti (M)	35.8	38.4	6.4	19.4	14.1	63.7	22.3
Raniganj (M)	33.2	51.9	12.7	2.1	6.9	73.0	20.1
Jamuria (M)	65.5	28.8	0.8	4.9	4.7	77.4	17.8
Asansol (MC)	74.9	8.4	6.8	9.9	37.1	35.0	27.9
Rural	49.4	37.1	9.6	3.9	20.9	63.7	15.4
Urban	58.0	24.0	6.7	11.2	23.5	52.3	24.3
Total	55.9	27.3	7.5	9.4	22.6	56.1	21.3

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.48: Distribution of households according to distance to source of water supply

C.D. Block / Municipal Area	Share of HHs travel-distance to source of water (%)			
	0 – 100m	100 – 500m	500m – 1km	>1 km
Barabani	51.0	40.3	4.6	4.1
Jamuria	24.1	71.6	4.3	0.0
Raniganj	84.1	15.7	0.1	0.0
Salanpur	72.2	24.4	3.3	0.2
Kulti (M)	57.8	30.5	6.3	5.4
Raniganj (M)	74.5	20.6	0.5	4.4
Jamuria (M)	35.5	55.0	9.0	0.4
Asansol (MC)	68.8	25.6	4.1	1.5
Rural	58.9	37.1	3.2	0.9
Urban	62.0	30.3	5.0	2.7
Total	60.9	32.5	4.4	2.1

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.49: Distribution of households according to problems related to water quality

C.D. Block / Municipal Area	Share of HHs facing different types of problems (%)					
	Hardness	Iron	Turbidity	Odour	Arsenic	Others
Barabani	5.9	16.7	3.2	2.5	0.1	15.7
Jamuria	47.0	25.1	19.2	0.0	0.1	4.6
Raniganj	0.1	1.6	5.7	6.4	0.0	2.1
Salanpur	0.0	28.2	0.0	2.5	0.2	0.1
Kulti (M)	0.5	4.4	2.5	0.9	0.0	12.8
Raniganj (M)	1.2	3.9	6.8	3.0	2.0	3.3
Jamuria (M)	12.0	19.8	11.0	2.8	0.0	6.1
Asansol (MC)	20.8	8.0	28.1	3.3	1.1	38.5
Rural	12.4	19.3	6.4	2.7	0.1	5.0
Urban	8.2	7.1	11.5	2.0	0.6	16.6
Total	9.7	11.5	9.7	2.3	0.4	12.4

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.49 indicates the type of water quality related problems reported from Asansol-Sub-division. Hardness, presence of iron and turbidity emerges as the most prominent water quality problems. Nearly 47 percent of the households in Jamuria C.D. Block have reported problems of hardness – another 25 percent and 19 percent of households have reported problems due to presence of iron and turbidity respectively. Rural households have reported higher share of water quality problems compared to urban households. Exception to that, Asansol Municipal Corporation and Jamuria Municipality has reported large share of households facing water quality problems.

4.9.2 Sanitation and Drainage

Distribution of households according to type of defecation system used reveal that 38 percent of the households in Asansol Sub-division still rely on open defecation. Open defecation is practiced by nearly 49 percent of the rural households and around 33 percent of urban households as indicated in Table 4.50. In Barabani C.D. Block more than 68 percent of the households still rely on open area for defecation. Septic tank system is the predominant system of toilet used – but very less proportion of them use soak pit.

Table 4.50: Distribution of households according to type of toilet

C.D. Block / Municipal Area	Share of HHs using (%)				
	Septic Tank with soak pit	Septic Tank	Pit privy	Open area for defecation	Others
Barabani	13.8	15.8	1.6	68.3	0.5
Jamuria	1.7	63.7	0.0	34.5	0.0
Raniganj	6.7	29.8	3.3	59.9	0.4
Salanpur	32.0	26.9	0.8	40.3	0.0
Kulti (M)	7.2	43.5	3.6	44.7	1.0
Raniganj (M)	13.9	61.0	4.3	19.4	1.3
Jamuria (M)	17.9	31.4	3.5	45.4	1.8
Asansol (MC)	22.9	43.5	7.1	25.6	0.9
Rural	16.9	32.1	1.4	49.4	0.2
Urban	17.0	43.6	5.4	33.0	1.1
Total	17.0	40.0	4.2	38.1	0.8

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.51: Distribution of households according to type of ownership and number of toilets

C.D. Block / Municipal Area	Share of HHs using (%)			Share of HHs with (%)		
	Own Toilet	Shared Toilet	Community Toilet	1 toilet	2 toilets	More than 2 toilets
Barabani	90.8	1.3	7.8	82.5	15.1	2.4
Jamuria	96.3	0.5	3.2	99.5	0.3	0.3
Raniganj	53.4	3.9	42.7	88.3	11.7	0.0
Salanpur	57.2	0.9	41.9	94.9	4.7	0.4
Kulti (M)	55.7	3.1	41.2	92.7	6.9	0.5
Raniganj (M)	68.8	12.6	18.7	82.1	17.0	0.9
Jamuria (M)	89.1	0.7	10.2	96.8	3.0	0.2
Asansol (MC)	62.0	10.5	27.5	93.5	5.5	1.0
Rural	65.0	1.5	33.4	93.4	6.1	0.5
Urban	63.2	7.8	29.1	92.5	6.7	0.8
Total	63.6	6.1	30.2	92.7	6.6	0.7

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

A brief look at Table 4.51 which presents the distribution of households according to ownership of toilets indicates that 63 percent of the households own toilet and another 30 percent rely on community toilets in Asansol Sub-division. More than 92 percent of the urban or rural households having access to own toilet facilities have only one toilet. Reliance on community toilets is very high in Raniganj and Salanpur C.D. Block as well as in Kulti Municipality.

Nearly 38 percent of the households in Asansol Sub-division do not have access to drain abutting house but 59 percent of the households are connected to drains for their domestic outlet. It is interesting to find out from Table 4.52 that 53 percent of the rural households have drains abutting house and 54 percent of rural households have domestic outlet connected to drains. On the contrary, only 31 percent of the urban households have abutting drains but more than 61 percent of urban households are connected to drains. More than 70 percent of the households in Raniganj Municipality are not connected to drains. Pucca but uncovered drains are the predominant type of drains abutting households in Asansol Sub-division.

Table 4.52: Distribution of households according to type of drains and connectivity

C.D. Block / Municipal Area	Share of HHs (%)				
	With no drain abutting house	Type of drains abutting house			Connected to drains
		Pucca and covered	Pucca	Kutchha	
Barabani	63.4	7.3	62.2	30.4	35.7
Jamuria	53.7	22.0	57.8	20.1	69.0
Raniganj	63.5	6.1	84.0	9.9	52.5
Salanpur	40.2	12.3	59.3	28.5	56.2
Kulti (M)	35.1	9.1	77.2	13.8	56.7
Raniganj (M)	18.5	9.6	84.0	6.4	70.7
Jamuria (M)	51.2	7.8	65.6	26.6	47.3
Asansol (MC)	26.0	28.1	64.0	7.9	66.5
Rural	53.4	12.6	62.8	24.6	54.0
Urban	31.0	18.8	70.2	11.1	61.8
Total	38.6	16.9	67.9	15.2	59.1

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.53: Distribution of households reporting problems related to drainage and maintenance

C.D. Block / Municipal Area	Share of HHs (%)					
	With no water logging in front of house	Duration of water logging in months for water logged areas				Receiving regular maintenance of drains
		0-5	6-10	11-30	30+	
Barabani	66.6	61.5	26.3	0.0	12.2	8.8
Jamuria	91.0	67.4	32.6	0.0	0.0	3.0
Raniganj	60.7	55.6	39.8	3.4	1.2	18.8
Salanpur	74.8	24.3	37.4	37.4	0.9	68.0
Kulti (M)	78.0	88.6	8.4	2.3	0.7	10.3
Raniganj (M)	81.9	72.1	11.7	16.2	0.0	37.8
Jamuria (M)	89.6	8.6	1.2	0.1	0.1	7.8
Asansol (MC)	67.4	90.6	5.3	2.8	1.3	47.7
Rural	73.8	48.0	34.8	13.2	3.9	30.1
Urban	74.7	89.0	6.7	3.3	1.0	31.2
Total	74.4	75.8	15.7	6.5	2.0	30.8

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.53 points out that more than 26 percent of the urban households and 27 percent of the rural households have reported problems of water logging during monsoon months. However, duration of water logging is reported to be less than 5 days for majority of the households, both for rural and urban

areas. Only 30 percent of the households have reported periodic maintenance of drains in Asansol Sub-division and there is marginal difference in rural and urban areas regarding maintenance.

Nearly 60 percent of the urban households and 69 percent of the rural households use open space for dumping solid waste generated at household level. Only 18-19 percent of the urban/rural households do access dustbin facilities. Solid waste collection from household is reported from 16 percent of the urban households. Only 2 percent of rural households have access to household level collection facilities. Table 4.54 shows that Asansol Municipal Corporation has reported 22 percent collection of solid waste from households – highest within the Sub-division.

Table 4.54: Distribution of households according to type of solid waste disposal and frequency

C.D. Block / Municipal Area	Share of HHs (%)					
	Place of disposal of solid waste					Regular collection of solid waste
	Collection from HHs	Road	Drain	Dustbin	Open space	Yes
Barabani	0.4	21.1	0.0	1.4	77.0	4.5
Jamuria	0.0	0.7	4.2	2.3	92.9	7.7
Raniganj	12.4	7.9	3.0	12.2	64.5	36.0
Salanpur	0.1	2.2	2.1	45.6	50.0	49.6
Kulti (M)	0.9	0.9	0.4	13.9	83.8	12.7
Raniganj (M)	18.6	2.3	0.6	38.3	40.1	54.3
Jamuria (M)	6.3	0.4	0.4	11.5	81.3	10.7
Asansol (MC)	26.4	5.8	1.0	19.9	46.9	61.0
Rural	2.8	7.0	2.3	18.9	69.0	27.0
Urban	16.0	3.4	0.7	19.1	60.7	40.5
Total	11.6	4.6	1.3	19.0	63.5	35.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

4.9.3 Electricity

More than 17 percent of the households in Asansol Sub-division do not have access to electricity. The difference between urban and rural areas in terms of household level access is only 3 percent. More than 75 percent of the urban households and 63 percent of the rural households having access to electricity own metering facility as evident from Table 4.54.

Table 4.55: Distribution of households according to access to electricity

C.D. Block / Municipal Area	Share of HHs (%)			
	Electric Connection	Metering type		
	No	Owned	Shared	None
Barabani	21.6	54.2	1.0	44.9
Jamuria	13.4	46.2	1.9	51.9
Raniganj	8.7	55.5	2.9	41.6
Salanpur	28.8	95.4	4.0	0.6
Kulti (M)	12.7	62.4	7.3	30.3
Raniganj (M)	16.2	79.7	11.8	8.5
Jamuria (M)	27.3	42.6	3.1	54.3
Asansol (MC)	14.0	89.5	5.8	4.7
Rural	19.3	63.9	2.5	33.7
Urban	16.0	75.5	6.6	17.9
Total	17.1	71.6	5.2	23.2

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Around 70 percent of the urban households have reported load shedding duration less than 3 hours and another 28 percent between 3 - 6 hours. On the other hand, Table 4.56 shows that 58 percent of the rural households have reported duration of load shedding less than 3 hours and another 34 percent between 3 to 6 hours.

Table 4.56: Distribution of households according to duration of power failure

C.D. Block / Municipal Area	Duration of load shedding (in hours) per day			
	0 – 3	3 – 6	6 – 12	>12
Barabani	82.4	17.2	0.3	0.0
Jamuria	38.2	61.5	0.4	0.0
Raniganj	94.5	5.0	0.5	0.0
Salanpur	39.8	40.4	19.7	0.1
Kulti (M)	46.8	51.1	2.1	0.1
Raniganj (M)	84.7	12.7	2.3	0.3
Jamuria (M)	52.8	47.2	0.0	0.0
Asansol (MC)	89.1	10.7	0.2	0.0
Rural	58.0	34.2	7.8	0.0
Urban	70.4	28.5	1.0	0.1
Total	65.7	30.7	3.6	0.0

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Average monthly expenditure on electricity for household with metered connection is reported to be around INR 247 for urban households and INR 201 for rural households. However, majority of households, i.e. 74 percent in rural areas and 59 percent in urban areas, spend less than INR 200 per month for electricity consumption.

4.10 Social infrastructure

To appraise the level of social infrastructure available within Asansol Sub-division, access to health facilities, education facilities, open spaces, playgrounds, banking and postal services, market facilities has been presented in this section. Apart from that, type of access road as well as street lighting facilities available at neighbourhood level has also been presented.

Table 4.57: Distribution of households according to proximity to public health facilities

C.D. Block / Municipal Area	Share of HHs with distance from (%)				
	0 – 100 m	100 – 500 m	500 – 1 km	1 – 2 km	>2 km
Barabani	2.8	16.9	14.7	12.5	53.1
Jamuria	2.7	6.9	1.0	6.4	83.0
Raniganj	14.2	8.7	29.8	24.1	23.2
Salanpur	11.0	16.8	12.3	30.3	29.6
Kulti (M)	6.5	12.8	17.3	15.8	47.6
Raniganj (M)	9.4	14.7	23.3	26.4	26.2
Jamuria (M)	4.5	11.0	5.6	5.1	73.8
Asansol (MC)	7.0	18.8	19.9	21.7	32.7
Rural	8.0	12.7	13.9	19.5	45.9
Urban	6.8	15.7	17.7	18.5	41.4
Total	7.2	14.7	16.4	18.8	42.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Around 43 percent of the households in Asansol Sub-division travel more than 2 km to avail public health facilities. However, the situation is worst in Jamuria C.D. Block as well as Municipality - where 74 and 83 percent of the households travel more than 2 km to avail public health facilities, for Municipality and C.D. Block respectively [Refer Table 4.57].

Table 4.58: Distribution of households according to proximity to education facilities						
C.D. Block / Municipal Area	Education facilities	Share of HHs with distance from (%)				
		0 – 100m	100 – 500 m	500 – 1 km	1 – 2 km	>2 km
Barabani	Primary School	14.0	56.4	21.3	5.9	2.4
	High Sec. School	2.3	7.9	10.4	10.6	68.8
Jamuria	Primary School	6.9	78.8	9.5	4.2	0.7
	High Sec. School	3.0	33.1	13.1	23.1	27.6
Raniganj	Primary School	31.0	56.4	8.0	1.2	3.3
	High Sec. School	6.8	15.6	25.7	11.3	40.5
Salanpur	Primary School	17.4	58.1	12.6	7.7	4.3
	High Sec. School	8.0	8.5	5.1	31.9	46.5
Kulti (M)	Primary School	30.8	34.5	15.2	11.8	7.8
	High Sec. School	14.4	24.4	18.3	19.3	23.6
Raniganj (M)	Primary School	28.2	38.2	18.2	13.5	1.9
	High Sec. School	12.1	23.6	27.5	15.2	21.5
Jamuria (M)	Primary School	12.6	48.8	13.5	23.7	1.4
	High Sec. School	1.6	19.9	16.5	17.0	45.0
Asansol (MC)	Primary School	23.5	46.5	23.3	5.3	1.5
	High Sec. School	10.5	33.1	24.3	17.0	15.1
Rural	Primary School	17.1	62.3	12.7	5.1	2.8
	High Sec. School	5.3	15.8	12.6	20.8	45.5
Urban	Primary School	24.6	42.6	19.2	10.3	3.2
	High Sec. School	10.6	28.0	22.0	17.4	22.0
Total	Primary School	22.1	49.2	17.0	8.6	3.1
	High Sec. School	8.8	23.8	18.8	18.6	29.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.59: Distribution of households according to proximity to recreational open space						
C.D. Block / Municipal Area	Recreational open space	Share of HHs with distance from (%)				
		0 – 100 m	100 – 500 m	500 – 1 km	1 – 2 km	>2 km
Barabani	Playgrounds	18.1	46.8	17.2	4.9	13.0
	Open spaces	44.2	41.3	7.3	0.9	6.3
Jamuria	Playgrounds	22.7	74.3	2.9	0.0	0.1
	Open spaces	27.1	53.9	14.7	0.9	3.5
Raniganj	Playgrounds	52.2	20.3	3.9	2.6	20.9
	Open spaces	49.9	35.5	9.2	2.2	3.2
Salanpur	Playgrounds	17.2	63.1	10.3	3.4	6.0
	Open spaces	20.9	53.1	5.6	18.6	1.8
Kulti (M)	Playgrounds	24.4	14.5	7.6	1.9	51.6
	Open spaces	45.5	19.0	13.8	3.3	18.4
Raniganj (M)	Playgrounds	45.5	18.9	17.0	10.7	7.8
	Open spaces	57.1	19.2	10.6	3.8	9.4
Jamuria (M)	Playgrounds	36.3	34.8	22.6	5.1	1.3
	Open spaces	47.9	16.8	24.9	4.4	6.1
Asansol (MC)	Playgrounds	32.7	36.0	17.7	9.1	4.6
	Open spaces	60.5	23.8	7.7	3.9	4.1
Rural	Playgrounds	26.3	53.0	8.6	2.7	9.3
	Open spaces	33.5	47.0	8.9	7.1	3.4
Urban	Playgrounds	32.2	28.0	15.4	6.7	17.6
	Open spaces	54.3	21.1	11.9	3.8	8.9
Total	Playgrounds	30.2	36.4	13.1	5.4	14.8
	Open spaces	47.3	29.8	10.9	4.9	7.1

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Most of the households can avail primary education facilities within 0.5 km in Asansol Sub-division, both for rural and urban areas. Access to higher secondary school facilities is far worse in rural areas compared to urban areas, particularly in Barabani C.D. Block [Refer Table 4.58]

Access to open space based recreational facilities is better in rural areas compared to urban areas, as expected. Access to open spaces is higher than playground, for both urban and rural areas. Around 40 percent of the urban households have to travel more than 0.5 km to reach a playground [Refer Table 4.59].

Table 4.60: Distribution of households according to proximity to social infrastructures

C.D. Block / Municipal Area	Banking & Postal services	Share of HHs with distance from (%)				
		0 – 100 m	100 – 500 m	500 – 1 km	1 – 2 km	>2 km
Barabani	Post Office	2.8	19.1	21.0	13.5	43.6
	Bank	2.5	10.8	11.5	10.9	64.3
	ATM	0.3	0.3	1.6	0.6	97.3
Jamuria	Post Office	4.2	32.5	6.9	24.5	32.0
	Bank	0.1	0.1	0.1	4.2	95.5
	ATM	0.1	0.3	0.5	3.9	95.2
Raniganj	Post Office	13.8	42.3	31.0	8.9	4.0
	Bank	6.5	29.1	12.3	15.1	36.9
	ATM	0.1	36.0	4.3	13.9	45.7
Salanpur	Post Office	11.2	2.9	11.6	27.7	46.6
	Bank	10.5	1.3	9.6	27.9	50.7
	ATM	6.2	2.3	13.7	19.7	58.0
Kulti (M)	Post Office	13.2	21.8	20.9	22.8	21.2
	Bank	6.9	10.3	17.1	38.0	27.8
	ATM	6.1	9.6	15.0	32.4	37.0
Raniganj (M)	Post Office	8.9	20.3	20.4	19.1	31.3
	Bank	9.9	23.0	16.6	24.7	25.7
	ATM	9.6	23.7	22.3	22.6	21.8
Jamuria (M)	Post Office	2.6	30.5	12.4	6.7	47.8
	Bank	2.0	8.2	4.4	4.3	81.2
	ATM	0.6	1.9	1.3	2.8	93.4
Asansol (MC)	Post Office	7.8	22.4	25.7	29.8	14.3
	Bank	4.9	14.0	23.3	24.4	33.4
	ATM	6.1	14.2	20.8	20.7	38.2
Rural	Post Office	8.0	20.7	15.8	20.5	35.0
	Bank	5.5	9.0	8.4	15.9	61.2
	ATM	2.2	8.8	6.0	10.7	72.3
Urban	Post Office	8.7	23.0	22.1	23.8	22.4
	Bank	5.6	13.2	18.4	25.6	37.1
	ATM	5.8	12.4	16.9	21.8	43.1
Total	Post Office	8.5	22.3	20.1	22.7	26.5
	Bank	5.6	11.8	15.0	22.4	45.2
	ATM	4.6	11.2	13.2	18.1	52.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.61: Distribution of households according to proximity to market facilities

C.D. Block / Municipal Area	Market facilities	Share of HHs with distance from (%)				
		0 – 100 m	100 – 500 m	500 – 1 km	1 – 2 km	>2 km
Barabani	Daily Market	2.4	39.2	6.4	23.2	28.8
	Higher Order Market	3.3	4.5	0.9	0.6	90.7
Jamuria	Daily Market	7.7	63.5	18.3	6.5	4.1
	Higher Order Market	3.2	1.1	1.0	4.3	90.4
Raniganj	Daily Market	23.8	47.2	9.1	9.0	11.0
	Higher Order Market	2.5	25.5	19.6	10.8	41.6
Salanpur	Daily Market	10.2	10.6	21.7	18.3	39.2
	Higher Order Market	4.8	9.7	21.2	20.1	44.2
Kulti (M)	Daily Market	22.6	45.0	15.1	11.8	5.5
	Higher Order Market	11.5	11.0	13.2	14.0	50.3
Raniganj (M)	Daily Market	25.5	36.4	17.4	6.6	14.0
	Higher Order Market	14.4	24.9	18.3	9.7	32.7
Jamuria (M)	Daily Market	16.6	35.4	13.0	25.5	9.5
	Higher Order Market	2.0	2.6	4.7	5.2	85.5
Asansol (MC)	Daily Market	32.2	37.1	14.3	8.0	8.5
	Higher Order Market	4.9	17.7	7.6	13.6	56.2
Rural	Daily Market	10.9	37.1	14.9	14.5	22.6
	Higher Order Market	3.6	10.0	11.7	10.2	64.5
Urban	Daily Market	26.8	39.0	14.7	11.1	8.3
	Higher Order Market	7.4	14.7	9.9	12.2	55.8
Total	Daily Market	21.4	38.4	14.8	12.3	13.1
	Higher Order Market	6.1	13.1	10.5	11.6	58.7

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Table 4.60 & 4.61 presents the distribution of households according to proximity to post office, bank, ATM, daily market and higher order markets. In Asansol Sub-division, nearly 73 percent of households travel less than 2 km to reach a post office and 45 percent of the households travel more than 2 km to reach a bank. For daily market facilities, the travel distance is less than 2 km for 82 percent of the households but 58 percent of them travel more than 2 km for higher order market facilities. Access to any kind banking facilities is abnormally low for both Jamuria C.D. Block and Municipality.

Proximity to metal road within 100 m is only available to 35 percent of urban households and 22 percent of rural households. Not much of disparity is observed between urban and rural areas regarding accessibility to metal roads – except Barabani C.D. Block where nearly 24 percent of the households have to travel more than 2 km to access a metal road as shown in Table 4.62.

Table 4.62: Distribution of households according to proximity to metal road					
C.D. Block / Municipal Area	Share of HHs with distance from metal road (%)				
	0 – 100 m	100 – 500 m	500 – 1 km	1 – 2 km	>2 km
Barabani	35.6	22.7	10.8	6.7	24.1
Jamuria	21.8	63.0	12.6	0.8	1.8
Raniganj	79.6	15.4	1.6	1.2	2.2
Salanpur	61.2	17.8	15.9	1.0	4.1
Kulti (M)	55.0	27.8	9.3	4.5	3.3
Raniganj (M)	70.7	26.9	1.4	0.0	1.0
Jamuria (M)	38.1	58.3	3.1	0.3	0.2
Asansol (MC)	63.5	27.6	7.8	0.8	0.3
Rural	50.5	29.1	10.9	2.2	7.2
Urban	58.6	31.5	6.9	1.7	1.2
Total	55.9	30.7	8.3	1.9	3.2

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Nearly 59 percent of the urban households and 53 percent of the rural households in Asansol Sub-divison have access road width less than 10ft – indicating restrictive vehicular entry. It is also reflected in Table 4.63 that 98 percent of the rural and urban households have access road width less than 15ft. Presence of street lighting has been reported by 67 percent of the urban households and 54 percent of the rural households.

Table 4.63: Distribution of households according to the type of access road					
C.D. Block / Municipal Area	Share of HHs (%)				
	With width of road adjoining house				Having street lighting in neighbourhood
	0 – 10 ft	10 – 15 ft	15 – 20 ft	>20 ft	
Barabani	85.0	11.7	3.0	0.4	11.9
Jamuria	75.2	24.1	0.7	0.0	95.2
Raniganj	41.9	56.7	1.4	0.1	62.1
Salanpur	24.2	75.1	0.5	0.2	49.3
Kulti (M)	77.1	22.1	0.6	0.1	58.8
Raniganj (M)	42.2	54.2	3.5	0.1	84.7
Jamuria (M)	57.3	42.3	0.3	0.0	11.8
Asansol (MC)	52.4	45.5	1.8	0.3	82.3
Rural	53.0	45.6	1.2	0.2	54.9
Urban	59.1	39.3	1.4	0.2	67.0
Total	57.0	41.5	1.3	0.2	62.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

4.11 Quality of Life

4.11.1 Health attainment

Information on child birth for last five years, collected at household level, shows that, more than 93 percent of the births in Asansol Sub-division are live births while only 6 percent are still births. However, percentage share of live births in rural areas were only 86 percent whereas it was around 97 percent for urban areas - clearly pointing out at the rural urban divide in health attainment.

In this Sub-division, nearly 23 percent of the deliveries take place under untrained dai or family members. However, 60 percent of the deliveries take place in health institutions. There is marginal difference in levels of medical assistance between rural and urban areas.

Distribution of child-birth according to place of birth indicates that most of the urban areas rely on their own health infrastructure whereas rural areas depend heavily on closest urban areas. Nearly 40 percent of the child-births take place in Asansol Municipal Corporation. Jamuria and Raniganj C.D. Block rely heavily on Raniganj Municipality for child-births.

Information on incidence of illness, collected for last 365 days at household level, indicate that flu or fever is the most prevalent disease as more than 40 percent of the sick population was affected by it – which included both male and female almost equally. Incidence of heart related ailments among male population as well as gynaecological problems among female population were also significant.

More than 70 percent, have either visited a doctor or went to public hospital (OPD) for treatment. Share of untreated or treatment under self/untrained person is very less, both for urban and rural areas.

More than 68 percent of the people who had fallen sick did recover and another 24 percent partially recovered. Recovery rate is nearly 70 percent for urban population compared to only 44 percent in rural areas. More than 91 percent of the cases of sickness received allopathic treatment in Asansol Sub-division. Homeopathic treatment is used only for 7 percent of the cases. Other methods of treatment are rarely found to be used.

Female life expectancy is higher than males and rural population reported higher life expectancy figures compared to urban counterparts in Asansol Sub-division. Old age and sickness and disease are the predominant causes of death in Asansol Sub-division – accounting for nearly 74 percent of deaths.

4.11.2 Educational attainment

The distribution of population according to level of general education is presented in Table 4.64. Nearly 21 percent of the population is illiterate – female illiteracy is higher than males. More than 3/5th of the population has education level below secondary. Less than 10 percent of the population has education equal or above graduation level. Only 5-6 percent of the population does have any kind of technical education.

Table 4.64: Distribution of population according to General education level

C.D. Block / Municipal Area		Share of population (%)				
		Illiterate	Literate below Primary	From Primary to Secondary Level	From Secondary to Higher Secondary Level	From Graduate Level and above
Barabani	Male	17.4	4	44.9	28.8	4.9
	Female	27.9	5.7	48.2	16.8	1.4
	Total	22.4	4.8	46.5	23.1	3.1
Jamuria	Male	9.8	9.6	49.7	26.6	4.3
	Female	30.4	13.1	45.1	10.6	0.8
	Total	18.9	11.1	47.7	19.5	2.8
Raniganj	Male	18	9.7	39.3	26.4	6.6
	Female	32.4	10.6	37.8	16	3.1
	Total	24.6	10.1	38.7	21.6	5
Salanpur	Male	11.9	8.5	31.9	31.9	15.9
	Female	18.6	9.7	32.8	26.7	12.1

	Total	14.9	9.1	32.3	29.5	14.1
Kulti (M)	Male	19	7.8	36.6	25.8	10.7
	Female	30	11.7	34.8	18.2	5.2
	Total	24.1	9.6	35.8	22.4	8.2
Raniganj (M)	Male	14	10.8	40.2	26	9
	Female	23	11.6	39.7	20	5.7
	Total	18.2	11.2	39.9	23.2	7.5
Jamuria (M)	Male	10.4	7.3	49.6	23.8	8.9
	Female	23.8	9.4	45.2	18.3	3.3
	Total	16.4	8.3	47.6	21.3	6.4
Asansol (MC)	Male	18.2	8.3	34.9	25	13.4
	Female	26.7	10.4	34	21.2	7.7
	Total	22.3	9.3	34.5	23.2	10.7
Rural	Male	14	8.1	41	28.6	8.5
	Female	26.7	9.7	40.5	18.2	4.8
	Total	19.8	8.8	40.8	23.8	6.8
Urban	Male	17	8.3	37.9	25.3	11.7
	Female	26.9	10.8	36.2	19.9	6.3
	Total	21.6	9.5	37.1	22.7	9.1
Total	Male	16	8.2	38.9	26.4	10.5
	Female	26.9	10.4	37.6	19.3	5.8
	Total	21	9.3	38.3	23.1	8.3

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

[For detailed discussion on health and education attainment refer to Socio-economic Survey Report of Asansol Sub-division - 2010, prepared by Department of Architecture and Regional Planning, IIT Kharagpur]

4.11.3 Economic attainment

Distribution of monthly household income as presented in Table 4.65 show that average monthly household income in Asansol Sub-division is INR 9,542 in 2010. Monthly household income for urban household is INR 10,007 and it is significantly higher than rural monthly household income of INR 8,628. Monthly household income is reported lowest in Barabani C.D. Block and highest in Raniganj Municipality. The inequality of household income distribution can be observed from the Gini-coefficients reported in Table 4.65.

Table 4.65: Distribution of households according to monthly household income

C.D. Block / Municipal Area	Avg. Monthly Income (INR)	Gini Coefficients	Monthly Income (in INR)						
			0 - 2000	2001 - 5000	5001 - 10000	10001 - 15000	15001 - 30000	30001 - 60000	60000+
Barabani	6059	0.41	7.8	56.8	22.3	7.6	4.8	0.6	0.2
Jamuria	8591	0.37	1.4	44.8	23.6	10.8	18.8	0.3	0
Raniganj	7708	0.41	6.9	41.8	29	12.4	8.4	1.1	0.2
Salanpur	10916	0.52	19.9	15	22	15.5	21.6	4.7	1.5
Kulti (M)	9951	0.40	4.2	30.2	32.2	17.4	13.2	2.6	0.3
Raniganj (M)	12863	0.64	9.5	44.3	28.3	9.6	6.5	1.6	0.2
Jamuria (M)	9117	0.43	9.9	34.4	23.5	14	16.5	1.3	0.4
Asansol (MC)	9624	0.44	7.9	36.7	27.5	10.1	14.4	2.9	0.4
Rural	8628	0.46	10.1	36.9	23.9	12	14.5	2	0.6
Urban	10007	0.47	7.3	35.4	28.4	12.6	13.5	2.5	0.4
Total	9542	0.47	8.2	35.9	26.9	12.4	13.8	2.3	0.5

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

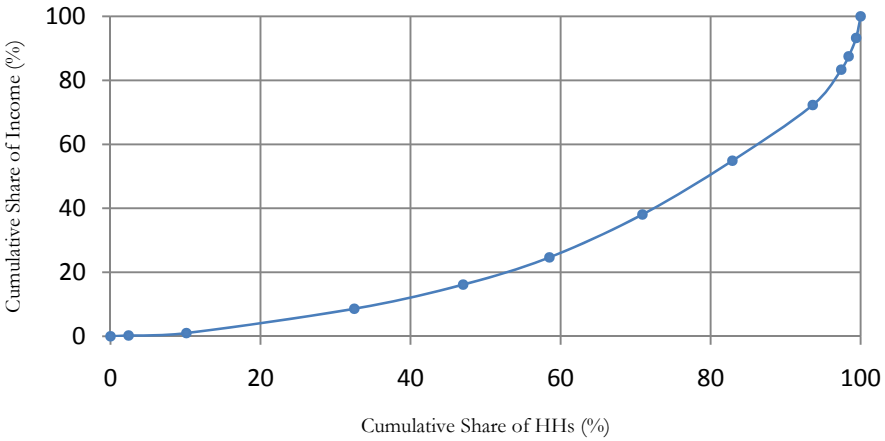


Figure 4.22: Lorenz Curve for HH income distribution in rural areas

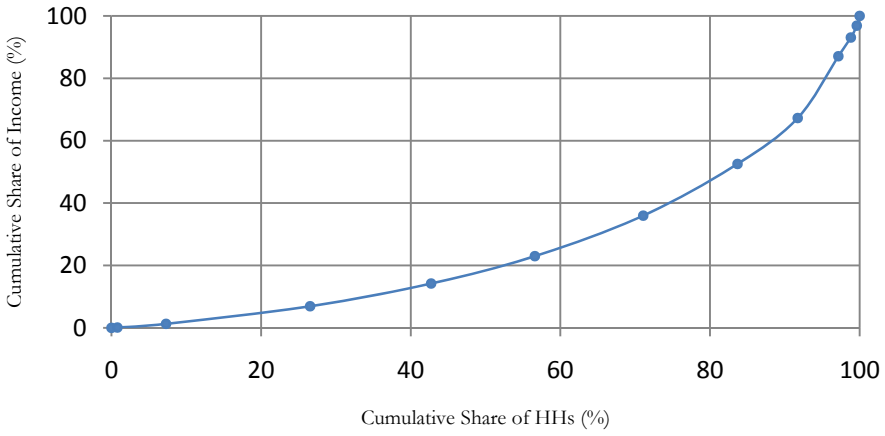


Figure 4.23: Lorenz Curve for HH income distribution in urban areas

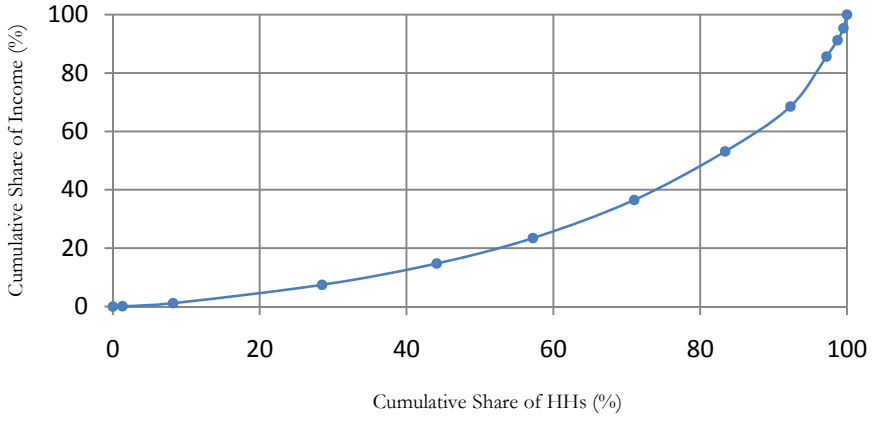


Figure 4.24: Lorenz Curve for HH income distribution in Asansol Sub-division

Average monthly expenditure on several items i.e. education, health care, transportation, clothing, telecommunications, house repair and maintenance as well as other miscellaneous expenses are presented as share of monthly household income in Table 4.66.

Table 4.66: Distribution of household level debt

	Expenditure as share of monthly income (%)						
	Education	Health care	Clothing	Transportation	Telecom.	House maintenance	Miscellaneous
Rural	6.1	4.6	6.0	2.8	2.2	7.3	17.4
Urban	8.9	4.5	5.6	3.1	2.1	13.6	10.7
Total	8.0	4.6	5.7	3.0	2.1	11.4	12.4

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Around 8 percent of the monthly household income is spent on education – considerably higher in urban households compared to rural households. On health, only 4 - 5 percent of the monthly household income is spent and there is no rural-urban disparity. A large part of the income is spent on house repair and maintenance – highest among low income categories and mostly among rural households. This may be for expenditure due to availability of funds from centrally sponsored schemes. It is noteworthy that all items of expenditure except food are around 46-48 percent of the monthly household income – indicating the residual income to be either spent on food or saved, the share varying across income groups.

Table 4.67 presents the distribution of homestead land under possession for each household in Asansol Sub-division. Average homestead land holding is 2.8 cottah in the Sub-division. Rural households have greater homestead land holding compared to urban households. Largest land holding is observed in Salanpur C.D. Block and lowest in Raniganj Municipality.

Holding pattern of agricultural land at household level shows that on an average a household in Asansol Sub-division has around 41 Cottah of agricultural land. Urban households tend to have much higher possession of agricultural land compared to the rural households.

Table 4.67: Possession of land and household assets

C.D. Block/ Municipal Area	Share of HH owning (%)								
	Homestead land (in Cottah)	Agricultural Land (in Cottah)	Pond	Orchard	Livestock & Poultry				
					Cattle	Goat	Pig	Poultry	None
Barabani	3.2	15.7	6.7	1.2	40.4	12.2	2.2	13.5	47.6
Jamuria	2.4	39.0	1.2	0.6	32.2	7.3	0.3	1.2	63.8
Raniganj	2.5	28.0	1.7	1.7	22.9	9.4	0.0	5.4	69.3
Salanpur	4.7	26.6	1.4	2.6	14.8	6.3	1.4	3.4	82.8
Kulti (M)	2.2	127.1	0.5	0.6	9.1	6.4	0.4	5.8	82.2
Raniganj (M)	1.9	N.R	1.0	0.9	6.0	1.7	0.4	1.8	93.2
Jamuria (M)	2.4	24.6	1.6	2.2	12.0	4.1	0.3	1.3	84.5
Asansol (MC)	2.7	63.0	2.3	3.4	10.2	4.6	0.4	4.7	85.7
Rural	3.3	28.2	2.6	1.6	27.5	8.9	1.1	5.8	67.8
Urban	2.5	67.9	1.6	2.2	9.7	4.8	0.4	4.2	85.4
Total	2.8	41.6	1.9	2.0	15.2	6.0	0.6	4.7	79.5

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

A miniscule share of households has pond or orchard in Asansol Sub-division. Most of the households, both urban and rural, do not have any livestock. Possession of live stock is higher for rural households compared to urban ones. Most of them prefer cattle and goat compared to poultry birds and pigs.

Table 4.68: Ownership of movable household assets

C.D. Block/ Municipal Area	Share of HHs owning (%)											
	Newspaper Subscription	Radio	Tape Recorder	TV (B/W)	TV(Color)	Telephone / Cell phone	Sewing Machine	Refrigerator	Washing Machine	Computer	Air conditioner	Others
Barabani	4.5	1.5	0.7	18.5	40.6	44.9	1.5	8.3	0.4	1.1	0.2	0.4
Jamuria	0.9	23.3	3.6	24.1	61.0	68.0	1.2	5.1	0.1	0.2	0.1	15.1
Raniganj	5.4	9.7	5.3	20.4	50.2	17.2	3.7	8.6	0.7	0.5	0.0	14.5
Salanpur	19.1	5.4	3.9	5.3	50.4	41.1	9.8	32.5	9.2	3.9	0.5	1.0
Kulti (M)	11.4	9.4	5.3	15.0	58.8	50.6	3.4	20.5	0.9	1.8	0.7	2.0
Raniganj (M)	17.6	19.7	3.2	17.0	63.0	29.4	1.0	17.0	1.0	2.2	0.0	0.7
Jamuria (M)	11.1	4.6	2.6	11.2	52.6	50.2	3.9	12.4	1.0	1.4	0.5	5.4
Asansol (MC)	15.1	6.7	11.6	13.0	64.9	70.8	9.6	30.9	5.6	6.1	1.4	2.0
Rural	9.1	10.2	3.6	16.7	53.3	45.3	4.9	16.4	3.5	1.8	0.3	7.5
Urban	13.8	8.6	7.7	13.8	61.4	58.0	6.2	24.1	3.2	3.9	0.9	2.3
Total	12.1	9.0	6.3	14.5	57.8	53.0	5.7	21.3	3.2	3.1	0.7	3.9

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Among movable assets highest level of ownership is observed for television followed by telephone/cell phone as indicated in Table 4.68. Television has replaced reliance on radio and tape recorder. More than 72 percent of the households have a television either colour or B/W. More than 53 percent of the households also own a telephone or a cell phone. Refrigerator is possessed by 21 percent of the households in entire Asansol Sub-division and where only 16 percent of the rural households own it.

Table 4.69: Level of access to financial institutions by households

C.D. Block/ Municipal Area	Share of HHs having (%)							
	Bank A/C	P. Office A/C	No Insurance Policy	Different Types of Insurance				
				Life	Health	Property	Car	Others
Barabani	38.8	30.4	56.3	98.6	0.3	0.0	0.8	0.3
Jamuria	53.7	67.8	62.3	95.2	0.6	0.0	3.6	0.6
Raniganj	45.8	34.5	70.9	97.9	0.4	0.0	1.3	0.4
Salanpur	65.8	24.3	56.1	97.6	0.2	0.0	1.8	0.4
Kulti (M)	62.7	31.9	49.4	95.3	0.4	0.1	3.7	0.6
Raniganj (M)	50.4	29.1	64.4	98.5	0.7	0.4	0.4	0.0
Jamuria (M)	56.9	27.0	59.3	99.0	0.5	0.0	0.3	0.3
Asansol (MC)	63.6	33.5	49.4	75.9	1.0	0.3	20.8	1.9
Rural	52.8	38.1	60.8	97.4	0.3	0.0	1.9	0.4
Urban	61.1	31.7	52.3	85.9	0.8	0.2	11.9	1.2
Total	58.3	33.9	55.2	89.3	0.6	0.2	8.9	1.0

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

More than 61 percent of the urban households and 52 percent of the rural households have a bank account – whereas only 31 percent of urban households and 38 percent of rural households have post office accounts [Refer Table 4.69]. Possession of bank accounts has increased after it has become mandatory for beneficiaries in several centrally funded schemes to transfer money directly to the bank account.

More than 57 percent of the urban households and 39 percent of the rural households do have insurance of some kind. Life insurance is the predominant type of insurance. More than 97 percent of the rural household insurance and 85 percent of the urban household insurance are related to life insurance [Refer Table 4.70]

Table 4.70: Distribution of household level debt

	Share of HHs (%)								
	Loans taken	Loans repaid	Avg. Value of loan taken		Amount of loan in INR				
					0 to 25000	25001 to 50000	50001 to 100000	100001 to 200000	Above 200000
Rural	7.7	2.6	74873	Avg. Value	8077	41324	77786	166571	427792
				HH Share (%)	54.0	12.2	15.1	10.1	8.6
Urban	10.2	19.0	91734	Avg. Value	10264	43644	89786	171487	490000
				HH Share (%)	45.1	17.4	16.1	12.4	8.9
Total	9.3	8.7	86616	Avg. Value	9515	43100	86310	170201	471568
				HH Share (%)	47.8	15.8	15.8	11.7	8.8

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Around 9 percent of the households have taken loans in last five years. For both rural and urban households most of the loans are less than INR 25,000. However, nearly 20 percent of the loans are also more than INR 1,00,000. Loan repayment rates are much higher in urban households compared to rural households.

Table 4.71: Source of loans

	Share of HH (%)					
	Govt. Organization	Bank	Govt. Scheme	Neighbor	Relative	Others
Rural	13.5	28.1	3.6	19.0	29.6	6.2
Urban	16.7	32.5	3.2	20.1	15.1	12.4
Total	15.8	31.3	3.3	19.8	19.1	10.7

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Banks are the predominant source of loans followed by neighbours and relatives as reflected from Table 4.71. Nearly 38 percent of the loans are from taken from neighbours and relatives. Bank sources offer around 31 percent of the loans. Other formal sources provide another 19 percent of the loan source. In simple words, half of the loans are from formal sources and rest from informal sources through personal agreements.

Table 4.72: Purpose of loans

	Share of HHs (%)						
	Home loans	Improving services	Increasing income	Health	Social ceremony	Losses	Others
Rural	19.5	7.3	14.1	33.2	18.3	3.4	4.2
Urban	23.8	2.5	20.8	15.4	16.0	5.8	15.7
Total	22.6	3.8	19.0	20.3	16.6	5.1	12.6

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

Most of the money is loaned for health expenditures, home loans, investment purpose and social ceremonies. In rural households every third loan is for health related reasons and for urban households every fourth loan is a home loan [Refer Table 4.72].

4.12 Local Environment

In this section, a brief understanding about the surface water quality and environmental air quality will be presented for Asansol Sub-division as they are the key determinants of the local environment.

4.12.1 Surface water

Damodar river serves as the life-line in Asansol Sub-division. Since ground water is scanty and difficult to reach, the sole source of water for catering the complete industrial, commercial and domestic demand is dependent upon Damodar River. Unchecked industrialization and urbanization in this belt along the banks of the Damodar river has affected its water quality. Every day large volumes of BOD is being released into the river due to the domestic and diverse industrial activities.

Damodar river mainly receives industrial pollutants through storm water drains i.e. Nunia Nalah in Asansol, in addition to the discharge through some drains from Iron and Steel Co (Burnpur) and other polluting industrial plants. Due to the absence of proper sewage system and treatment plants, the domestic wastes from almost all places find their way to the Damodar River.

Apart from mining and mineral processing units, coke oven plants and collieries which are concentrated in close proximity to the river are also discharging their effluents into it. The water in the collieries often contains large quantities of coal fines in the form of suspended solids with very high COD and TSS. The TSS and BOD_5 in the effluents of the thermal power stations, coal washeries, paper mills and distillery is very high[19].

Table 4.73: Analytical quality control exercise results on river water quality

Location	Water Quality Parameters				
	TSS (ppm)	TVS (ppm)	DO (ppm)	BOD_5 (ppm)	COD (ppm)
Damodar u/s Panchet Dam	20	10	6.6	1	20
Damodar d/s Panchet Dam	30	12	7.2	1.2	27
Damodar u/s Santaldih power station	150	2822	5.8	8	1109
Damodar u/s Bengal Paper Mill	20	1.9	6.2	1.6	12
Nunia Nallah	1900	540	5.8	1.8	35
Damodar d/s Nunia Nallah	710	114	5.7	1.0	47

(Source: Feasibility Report of Pollution Abatement of Damodar River, NEERI, 1994)

[19] Source: Environmental Management plan for Asansol-Durgapur Industrial Corridor, Govt. of WB and WBPCB, 1997

Fly ash is the main pollutant from the thermal power stations. The river stretch in the Asansol receives discharge from the thermal power stations in Santaldih and Dishergarh. The river stretch has two major steel plants namely Indian Iron and Steel Company (IISCO) and Hindustan steels. It has been established that the iron and steel industry contributes more than half of the particulate matter load. The effluent discharge from these diverse industries adds much to the deteriorating quality of the surface water resources of this region.

The quality of river water in Damodar, along the southern boundary of ADPA is also found contaminated with chemicals and heavy metals including the conventional polluting parameters. In the entire stretch of the river, heavy metals such as Chromium, Lead and Cadmium have been found consistently higher than USEPA Aquatic Life Standard by about 5-40 times.

It is reported that the BOD_5 level of river water is 2-3 times higher than the Indian Standards to be maintained for using river water for drinking purposes with conventional water treatment facilities. The results shows that Damodar river water quality deteriorates as the river flows from Patratu of Bihar towards Durgapur and in all stretches the water quality is rated as highly polluting [Refer Table 4.73].

4.12.2 Ground Water

It is observed from the ground water level monitoring in April 2000 of Barddhaman district, that the average depth of water level in alluvium area lies in the depth of 7-9 m below ground level[20]. So, it is clear that the water level was too deep to reach, but still not lowered to an alarming level. As the surface water sources are polluted in this area, as confirmed from the status of water quality in the Damodar River, many are forced to rely on ground water sources.

In many areas, the ground water quality is not within the acceptable limits making even water from well unfit for drinking. A large section of the population is reported to rely on contaminated water from well (around 13 percent in Asansol) - mostly due to lack of adequate water supply.

Table 4.74: Ground water quality at Asansol-Burnpur Station

Location	Month	Nitrate Nitrogen	pH	Fecal Coliform	Conductivity	Ammonia Nitrogen	Fluoride
Burnpur Town, near IISCO	Apr. 2009	1.438	7.58	0	1088	0.025	0.135
Burnpur Town, near IISCO	Oct. 2009	0.31	7.17	NIL	1079	0.013	--
Mine Pit water, Asansol	Apr. 2009	1.168	8.65	30	701	0.014	0.402
Mine Pit water, Asansol	Oct. 2009	0.235	8.27	80	752	0.002	--

(Source: Environmental Pollution Abatement Action Plans for the Industrial Clusters in West Bengal; Comprehensive Action Plan for Asansol, 2012)

[20] Environmental Management plan for Asansol-Durgapur Industrial Corridor, Govt. of WB and WBPCB, 1997

4.12.3 Air pollution

The Asansol-Durgapur area has been declared by the Central Pollution Control Board (CPCB) as one of the 22 critically polluted areas of the country. This situation is an outcome of widespread industrialization in the area without adequate environmental considerations.

Air pollution problems arise from the confluence of atmospheric contaminants, adverse meteorological conditions, and certain topographical features. The meteorological conditions often direct and restrict the dispersion of contaminants, causing them to accumulate at harmful levels..

Large number of air polluting industries are located with Asansol Sub-division. It is known that primarily from industrial process, airborne particulates exerts a significant influence on atmospheric phenomena, plants, property and, human and animal health. These industries are expected to have their own arrangement for reducing air pollution to meet the prescribed standards. The control devises include gravitational settling chambers, centrifugal collectors, wet collectors, electrostatic precipitators and fabric filters, the selection of which depends on a number of factors.

But, observing and sensing the quality of the air, the dusty and smoky environment which prevails especially during morning time; it is felt that the air quality is affected by industrial and vehicular pollution.

A detailed investigation was carried out for the assessment of ambient air quality with respect to suspended particulate matter (SPM), sulphur dioxide (SO_2) and oxides of nitrogen (NO_X) at four sites RGC, SRS, BBC and BCC in the Raniganj-Asansol area[21].

RGC (Raniganj Girls College) and BBC (B.B. College) sites are near to the Grand Trunk Road. The SRS (Searsol Raj High School) site is near the NH-2 bypass road and the BCC (B.C. College) site is near the IISCO Burnpur Works and the Burn Standard Company.

The meteorological data with respect to wind-speed and wind direction are represented in the form of Wind Rose Diagram in Figure 4.25 for three seasons. It can be seen that during the summer period (March-June), the dominant wind direction is towards S/NW/SE with low calm conditions (5.7%). The dominant wind speeds are generally in the 4-6 km/hr range, but intensify as the summer progresses and are very often in the 8-10 km/hr range. As monsoon approaches, the predominant wind direction changes to NE/ESE/SE quadrants and the percent of calm periods increases to 17.3 with predominant wind speed in the range of 2-4 km/hr and 6-8 km/hr. The dominant wind direction during the winter period (November-February) is towards NW/N/NE and the dominant wind speed is in the range of 2-4km/hr. The percentage share of calm periods observed during the period is about 11.3. The highest temperature attained was during the month of May (44°C) and the lowest in the month of January (6°C). The period between June to November experiences high relative humidity of 50% all through the day. The maximum and minimum relative humidity is almost constant during the period December-February. The highest temperature in the area during the summer months often reaches 44°C, whereas during the winter months the same may drop to 8°C or even below.

Suspended Particulate Matter (SPM)

It was observed that the 95th percentile values of SPM levels exceed the limits (200 µg m^{-3}) at RGC, SRS and BBC sites and is within the limit of 500 µg m^{-3} at the BCC sites. The average SPM concentration was found to be much higher during winter (November-February) in comparison with the summer (March-

[21] Ambient Air Quality Status in Raniganj- Asansol Area, India, by G.S. Reddy and Biswajit Ruj, Published in Environmental Monitoring and Assessment Journal, December 2003

June) and monsoon (July-October) in all the four monitoring stations. In winter, anti- cyclonic conditions prevail, which is characterized by calm or light winds and restricted mixing depth due to a stable or inversion atmospheric lapse rate, resulting in little dispersion or dilution of pollutants, which, in turn, helps in the build-up of pollution concentrations to higher level. Monsoon experiences the lowest SPM levels at the four monitoring sites, which is because of the wash out of dust by intermittent precipitation. It is also observed that in general the SPM levels tend to decrease with the increasing relative humidity. It was also seen that the SPM concentration was higher during the day than during the night. This is mainly attributed to the hectic industrial, mining and other community activities, as also to increased vehicular traffic during the day period.

Sulphur Dioxide (SO_2)

The 95th percentile values of SO_2 levels did not exceed the reference level (80 µg m^{-3}) at any of the monitoring site. The average SO_2 levels were relatively higher in winter than in summer and monsoon. Lower levels of SO_2 during monsoon can be attributed to the removal of SO_2 by precipitation.

Relatively high levels of SO_2 during winter can be attributed to the increased burning of coal by the local people in the cold weather conditions. Lower levels of SO_2 values during summer can be attributed to the prevalence of high wind speeds due to which better dispersion of the pollutants takes place, resulting in reduced SO_2 levels

Oxides of Nitrogen (NO_x)

The 95th percentile values of NO_x are found to be exceeding the limit (80 µg m^{-3}) at RGC, SRS and BBC sites but is within the prescribed limit of 120 µg m^{-3} at the BCC site. The annual average NO_x concentration levels did not cross the reference levels of 80/120 µg m^{-3} at any of the four sampling sites. Vehicles are the dominant transportation source of NO_x in this region. The relatively high concentration of NO_x at all these sites (annual average 56.85 - 60.42 µg m^{-3}) is due to the proximity of the sites to busy highways. Apart from industrial/mining activities, continuous heavy traffic flow on the roads contributes significantly to the increased levels of NO_x.

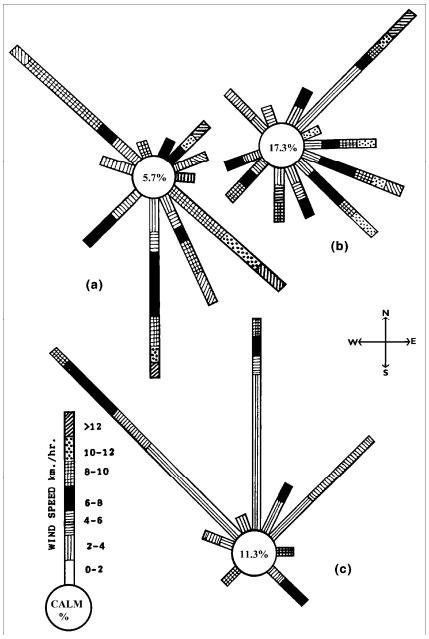


Figure 4.25: Wind rose diagram for three seasons (a) summer, (b) monsoon, (c) winter.

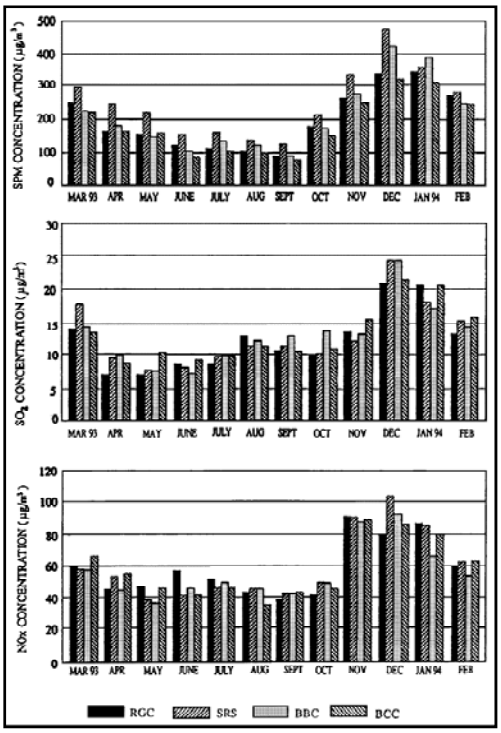


Figure 4.26: Monthly variation of SPM, SO_2 and NO_x.

(Source: Ambient Air Quality Status in Raniganj- Asansol Area, India, by G.S. Reddy and Biswajit Ruj, Published in Environmental Monitoring and Assessment Journal, December 2003)

In recent times a study on environmental air quality reveals that the air quality has worsened in terms of respiratory particulate matter counts - exceeding the ambient level manifold. The concentration of oxides of sulphur and nitrogen are still within the prescribed limits as seen in Table 4.75.

Table 4.75: Environmental air quality observed in Raniganj and Asansol

Station	Month	RPM ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)
Asansol	Nov. 2009	178	9.0	56.3
	Dec. 2009	300	10.9	76.2
	Apr. 2010	137	9.0	73.8
	May. 2010	76	8.2	67.8
Burnpur	Nov. 2009	224	8.5	52.9
	Dec. 2009	267	10.0	71.1
	Apr. 2010	173	8.5	70.3
	May. 2010	82	8.0	65.0
National Standard		100	80	80

(Source: Environmental Pollution Abatement Action Plans for the Industrial Clusters in West Bengal; Comprehensive Action Plan for Asansol, 2012)

4.13 Development Priorities

The priorities attached by the households to various aspects of development for next 10 years, as revealed in the Socio-economic Survey Report for Asansol Sub-division - 2010, is presented in Table 4.76 & 4.77. Table 4.76 represents the share of households opting for the 'highest priority issue for development' whereas Table 4.77 represents the weighted vale of top five priorities chosen by households.

Table 4.76: Development priorities for next 10 years – Highest priority

C.D. Block/ Municipal Area	Share of HHs (%)											
	Accessibility & Communication	Health Facilities	Education Facilities	Water Supply	Drainage and MSW Management	Open space conservation	Environmental Pollution	Agriculture and irrigation facilities	Employment generation	Public Distribution System (PDS)	Preparedness against natural disasters	Others
Barabani	21.2	11.0	7.6	22.6	1.5	0.5	1.4	6.9	20.2	3.2	0.0	4.0
Jamuria	22.7	2.4	0.7	64.7	1.2	0.1	0.2	0.7	4.0	3.2	0.1	0.1
Raniganj	10.0	15.0	7.5	27.7	10.0	6.2	2.0	0.7	12.3	6.8	0.7	1.1
Salanpur	20.0	21.1	14.4	5.7	2.1	0.2	3.3	5.9	25.5	1.7	0.1	0.2
Kulti (M)	5.3	5.7	5.6	49.3	6.0	0.6	0.8	0.4	19.8	5.5	0.7	0.2
Raniganj (M)	10.5	8.5	10.4	45.1	8.8	1.7	3.0	0.1	9.2	2.0	0.2	0.5
Jamuria (M)	5.4	3.2	2.0	54.2	3.2	0.0	1.0	0.2	26.3	4.2	0.0	0.2
Asansol (MC)	9.5	8.1	6.5	27.1	6.3	0.7	3.2	0.8	23.6	10.8	0.3	3.0
Rural	18.7	13.2	8.2	28.0	3.5	1.5	1.9	3.8	16.4	3.5	0.2	1.2
Urban	7.9	6.9	6.1	38.7	6.1	0.7	2.2	0.6	21.3	7.5	0.4	1.6
Total	11.5	9.0	6.8	35.1	5.2	1.0	2.1	1.6	19.7	6.2	0.3	1.4

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

It is observed that provision of water supply is the highest priority for development followed by employment generation – both for rural and urban households. Issues of accessibility and communication were also looked as highest priority for considerable share of households.

It is also interesting to note that improvement in water supply has received more than half of the total household responses in Jamuria and Raniganj C.D. Block as well as Kulti and Jamuria Municipality – providing them absolute and unequivocal majority even if one follows the 'first past the post' system or any other.

Table 4.77: Development priorities for next 10 years – Weighted priority

C.D. Block/ Municipal Area	Share of HHs (%)											
	Accessibility & Communication	Health Facilities	Education Facilities	Water Supply	Drainage and MSW Management	Open space conservation	Environmental Pollution	Agriculture and irrigation facilities	Employment generation	Public Distribution System (PDS)	Preparedness against natural disasters	Others
Barabani	12.8	13.6	11.0	17.2	6.8	2.7	4.7	6.4	14.4	4.8	0.4	5.2
Jamuria	11.6	8.8	5.6	26.4	10.9	0.3	0.5	6.4	11.4	13.1	1.4	3.6
Raniganj	7.8	11.8	10.5	18.8	15.7	4.6	8.8	1.8	9.8	6.4	2.2	1.7
Salanpur	9.6	14.2	16.6	13.2	8.6	5.7	8.0	4.9	13.8	3.3	1.7	0.2
Kulti (M)	7.8	11.9	9.2	22.4	14.2	3.6	4.4	1.4	14.3	8.9	1.1	0.8
Raniganj (M)	7.7	9.7	9.8	23.8	16.3	6.0	8.8	1.5	9.5	4.9	0.8	1.2
Jamuria (M)	11.2	13.3	5.4	26.3	8.9	0.7	3.6	0.9	17.3	9.5	0.5	2.4
Asansol (MC)	7.2	12.0	9.8	16.9	11.2	3.4	6.3	1.4	17.2	11.1	0.9	2.6
Rural	10.4	12.3	11.5	18.4	10.3	3.6	5.7	4.9	12.5	6.6	1.5	2.4
Urban	7.9	11.9	9.1	20.4	12.3	3.4	5.7	1.3	15.5	9.6	0.9	1.9
Total	8.7	12.0	9.9	19.7	11.7	3.5	5.7	2.6	14.5	8.6	1.1	2.1

(Source: Socio-economic Survey Report of Asansol Sub-division – 2010)

According to weighted priority of development, improvement in water supply emerges as the most important development priority for the Asansol Sub-division – both for rural and urban households [Refer Table 4.77]. Employment generation is the second highest priority – both for rural and urban households. Improvement in health facilities ranked third for the overall Sub-division as well as for the rural households – but for urban households improvement in drainage and sanitation overtook it. Improvement in education facilities is unequivocally the fourth priority for both rural and urban households. Other priorities i.e. improvement in public distribution system as well as accessibility and communication also emerged as important development priorities at the household level.

5. Land Use Zoning Plan

Land use and Development Control Plan has two distinct components: Land Use Zoning Plan and Development Control Guidelines. In this section, the methodology and the detailed framework of land use zoning plan will be discussed. Land use zoning plan is about finding the right amount of land for various uses and providing them at right location.

5.1 Methodology

The broad methodology adopted for preparation of Land Use Zoning Plan for Asansol Sub-division is presented in this section. The following tasks were performed, in a chronological manner to arrive at the Land Use Zoning Plan.

Step 1:

Delineation of the planning area has been carried out; along administrative lines as well as according to development zones and planning units; and to arrive at a workable unit which provides a common platform to address the administrative issues as well as planning consideration.

Step 2:

Existing Land Use Map and Register has been prepared as it is a pre-requisite to the preparation of proposed land use plan for the planning area; the key issues were deciding on the level/scale at which the land use will be recorded and the land use classification adopted for this task.

Step 3:

Analysis of the utilisation of existing land under various land uses; identification of developable land available for future activities.

Step 4:

Identification of land under public ownership, their nature of spatial distribution, and understanding of the extent of undeveloped land under public ownership which will be available for future development activities. Allocation of the land intensive activities and public activities will be guided by quantum of developable land available under public ownership and their spatial distribution.

Step 5:

Analysis of spatial distribution of land already identified as unstable locations due to mining subsidence; identification of the major settlements which are under the threat of subsidence. Allocation of future population, other important non-residential activities as well as infrastructure, should take care of these identified unstable locations.

Step 6:

Analysis of detailed planning inputs from Perspective Plan for Asansol Durgapur Planning Area: Vision-2025, for each planning units; Land Use Zoning Plan, which is a medium term plan, needs to incorporate the directions and proposals of the Perspective Plan, which is a long term planning document already adopted for the planning area.

Step 7:

Detailed allocation of population within the planning area based on the broad population allocation adopted in the Perspective Plan for Asansol Durgapur Planning Area: Vision-2025; the key issues were to decide on the rehabilitation component due to threat from mining subsidence and spatial distribution of the additional population (due to both natural growth and migration).

Step 8:

Classification of the future land use zones and assessing the demand for land under various proposed land use zones - for both residential and non-residential use at various levels.

Step 9:

Arriving at the proposed regional network for connectivity, at various levels within the planning area i.e. inter-regional and intra-regional; adopting a conceptual spatial structure of development based on the proposed regional network, the existing settlement structure, planning inputs from Perspective Plan as well availability of land for development.

Step 10:

Specification of the detailed planning principles/guidelines to be adopted for preparing detailed land use zoning map based on conceptual spatial structure.

Step 11:

Preparation of the detailed Land Use Zoning Map based on the conceptual spatial structure and detailed planning guidelines/principle adopted; detailing the proposed utilization of the land within the planning area.

5.2 Delineation of the Planning Zone (Asansol Sub-division)

The process of land use zoning plan starts with appropriate delineation of the planning area - according to administrative jurisdictions and planning zones. The planning area i.e. Asansol Sub-division is divided into eight administrative divisions: four rural and four urban. Among four urban units, there is a Municipal Corporation i.e. Asansol, and three municipalities i.e. Kulti, Jamuria and Raniganj. The four rural units are C.D. Blocks i.e. Baraboni, Salanpur, Jamuria and Raniganj.

On the other hand, 'Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025' adopted by Development Authority for Asansol Durgapur Planning Area (ADPA), which covers Asansol and Durgapur Sub-division excluding Galsi-I C.D. Block, has been divided into four broad types of development zones based on detailed understanding of the existing situation and future trends in ADPA (as listed in detail in pp-165-167, in Volume - I of the 'Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025).

These four types of development zones (as detailed out spatially in Map 12.1 in Volume - I of the 'Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025) [Refer Figure 5.1] are:

a. Restricted Development Zone: all land which has coal seam beneath - where mining activity has taken place or will take place in future, and where there are perceptible threat of land instability due to mining related subsidence and fire.

b. Eco-sensitive Development Zone: land with extensive natural forest cover and with susceptibility to soil erosion. Natural forest cover mostly exists in the northern part of the ADPA along Ajoy river.

c. Intensive development Zone: all land under existing development but not under Restricted or Eco-sensitive development zone, where more population and urban functions will be allocated through process of infill development, redevelopment or renewal resulting in re-densification

d. Extensive development Zone: land where new development can come up on vacant or agricultural land not within Restricted development or Eco-sensitive development zone.

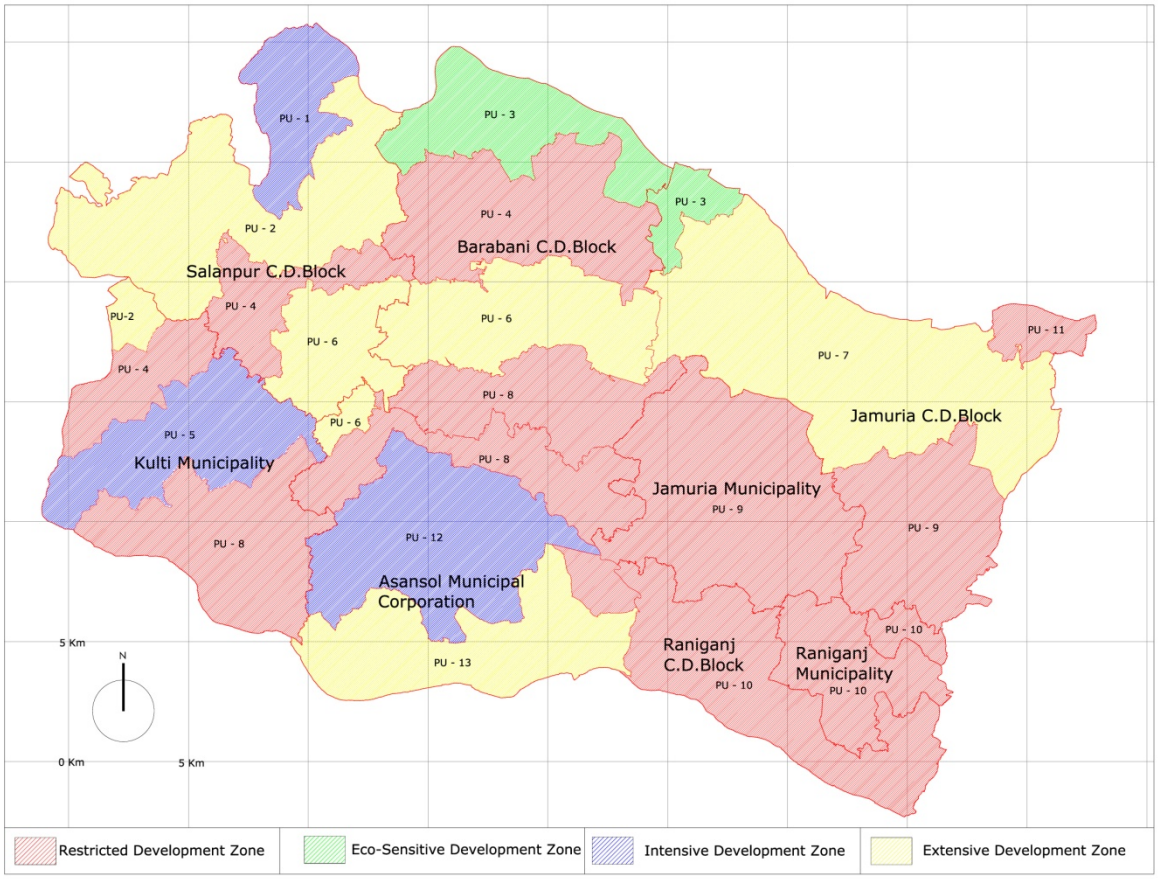


Figure 5.1: Development Zones and Planning Units (PU) in Asansol Sub-division

Juxtaposition of the administrative units and the recommended type of development zone shows that there is no clear overlap. There are administrative zones where more than one type of development has been recommended. Hence, there is a need to further sub-divide the administrative zones into operational units where development zones can be identified into distinct administrative units.

The planning area has both rural areas and urban areas. Rural C.D. Blocks are generally divided into Gram Panchayat and Gram Sansad areas, whereas urban areas are divided into wards, both for municipal corporation or municipalities. But the boundaries of these administrative units, particularly for municipal wards, change very often. It would not be prudent to base the Land Use Zoning Plan on such administrative units which are transient in nature. On the contrary, the revenue village or mouza maps

have remained stable over long time and they clearly merge with the physical boundaries of urban/rural local bodies. Moreover, unlike municipal wards, detailed mouza maps are available which provide details up to Revisional Survey (RS) plot level. Therefore, all the administrative units which are divided into revenue village or mouza level are overlapped with the Development Zones. The detailed allocation of mouzas according to administrative unit and development zone has been presented in Table 5.1. [Refer Annexure - I for detailed list of mouzas under each administrative unit and development zones as well as planning units]

Table 5.1: Administrative and Planning units in Asansol Sub-division for LUDCP

Name of Administrative Unit	Type of Development	Planning Unit (PU)
Barabani C.D. Block (52 no.s)	Eco-sensitive Development Zone (10 no.s)	PU-3 (10 no.s)
	Restricted Development Zone (27 no.s)	PU-4 (14 no.s)
		PU-8 (13 no.s)
	Extensive Development Zone (15 no.s)	PU-6 (15 no.s)
Jamuria C.D. Block (49 no.s)	Eco-sensitive Development Zone (4 no.s)	PU-3 (4 no.s)
	Restricted Development Zone (15 no.s)	PU-9 (13 no.s)
		PU-11 (2 no.s)
	Extensive Development Zone (30 no.s)	PU-7 (30 no.s)
Raniganj C.D. Block (25 no.s)	Restricted Development Zone (25 no.s)	PU-10 (25 no.s)
Salanpur C. D. Block (85 no.s)	Restricted Development Zone (12 no.s)	PU-4 (12 no.s)
	Extensive Development Zone (63 no.s)	PU-2 (49 no.s)
		PU-6 (14 no.s)
	Intensive Development Zone (10 no.s)	PU-1 (10 no.s)
Kulti Municipality (69 no.s)	Restricted Development Zone (42 no.s)	PU-4 (14 no.s)
		PU-8 (28 no.s)
	Extensive Development Zone (3 no.s)	PU-2 (3 no.s)
	Intensive Development Zone (24 no.s)	PU-5 (24 no.s)
Raniganj Municipality (6 no.s)	Restricted Development Zone (6 no.s)	PU-10 (6 no.s)
Jamuria Municipality (25 no.s)	Restricted Development Zone (25 no.s)	PU-9 (25 no.s)
Asansol Municipal Corporation (58 no.s)	Restricted Development Zone (25 no.s)	PU-8 (25 no.s)
	Extensive Development Zone (14 no.s)	PU-6 (2 no.s)
		PU-13 (12 no.s)
	Intensive Development Zone (19 no.s)	PU-12 (19 no.s)

(Note: Values mentioned in parenthesis indicate the numbers of mouzas in each unit)

Apart from specifying type of development intended within the ADPA, 'Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025' also outlined the detailed planning proposals across 17 distinct Planning Units - 11 of such planning units are there in Asansol Sub-division. Table 5.1 also shows the further subdivision of specified 'Type of Development Zone' into relevant 'Planning Units' as mentioned in 'Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025'. Planning Units are incorporated in the delineation framework as strategic proposals in the Perspective Plan document varies even within the same type of Development Zone.

[Note: For Example, Barabani C.D. Block, with 52 no.s of mouzas, has three type of development zone specified within it:

a. Eco-sensitive Development Zone, covering 10 no.s of mouzas and covered by Planning Unit - 3
b. Restricted Development Zone, covering 27 no.s of mouzas, of which 14 no.s are in Planning Unit - 4 and rest 13 no.s are in Planning Unit - 8
c. Extensive Development Zone, covering 15 no.s of mouzas, covered by Planning Unit - 15 no.s
d. There are no Intensive Development Zone within Barabani C. D. Block.]

5.3 Preparation of the Land Use Map and Register (LUMR)

Preparation of the existing Land Use Map and Register (LUMR) is a pre-requisite to preparation of the Land Use and Development Control Plan (LUDCP). LUMR provides detailed spatial allocation of the existing activities and also provides a broad understanding about the present utilization of land for different uses in the planning area.

Two major issues emerged while preparing the LUMR for Asansol Sub-division - first choosing the spatial unit at which the predominant land use will be recorded and second is arriving at the land use classification to be adopted.

As there are no legal specificity on what should be the spatial unit or land parcel size for recording the existing land use, it was felt prudent to use the R.S. plot i.e. Revisional Survey plot boundary in revenue village map i.e. mouza - partly because the operational transactions in land deal at that level, and partly because of its statutory nature of existence. Moreover, the land records regarding ownership and other details are easy to avail and interpret at R.S. plot level.

For land use classification, UDPFI guidelines has been adopted[22]. Both Level-I and Level-II classification of Simplified Urban Land Use Classification has been taken with minor alteration to make it more specific to the context of the planning area i.e. inclusion of detailed categories of land use for various type of mining operation and extraction activities as they are predominant in Asansol Sub-division. The land use classification has been listed in Table 5.2 for reference.

The task of recording the land use has been carried out by Asansol Durgapur Development Authority (ADDA) under necessary instructions from Department of Architecture and Regional Planning, IIT Kharagpur. Three agencies were appointed by the ADDA for preparing the LUMR for Asansol Sub-division - each were given a share of urban and rural areas.

[22] Refer UDPFI Guidelines, Ministry of Urban Affairs and Employment, Govt. of India, 1996, Annexure - C, pp-175-6

Table 5.2: Land Use Classification used for recording predominant land use in LUMR for Asansol Sub-division					
		Level-I		Level-II	Remarks (mainly noting the deviations from UDPFI Guidelines)
N* Code	A-N* Code	Use Zone	A-N* Code	Use Zone	
1	R	Residential	R-1	Pucca Residential (Less than G+2)	Primary Residential has been divided according to height; Unplanned/Informal housing has been divided into slums and squatters; Village settlement has been added;
			R-2	Pucca Residential (G+2 and Above)	
			R-3	Registered Slum	
			R-4	Temporary Residential/Squatter	
			R-5	Mixed Use (Commercial cum Residential)	
			R-6	Village Settlement	
2	C	Commercial	C-1	Retail Shopping Zone	None
			C-2	General Business and Commercial District/Centers	
			C-3	Wholesale Godowns, Warehousing, Regulated Markets	
3	M	Manufacturing	M-1	Service and Light Industry	None
			M-2	Extensive and Heavy Industry	
			M-3	Special Industrial Zone, Hazardous, Chemicals and Noxious	
4	PS	Public and Semi-Public	PS-1	Govt./Semi Govt./Public Offices	None
			PS-2	Govt. Land (Use undetermined)	
			PS-3	Educational and Research	
			PS-4	Medical and Health	
			PS-5	Social, Cultural and Religious	
			PS-6	Utilities and Services	
			PS-7	Cremation and Burial Grounds	
5	P	Recreation	P-1	Playgrounds, Stadium and Sports Complex	None
			P-2	Parks and Gardens (Public open space)	
			P-3	Special Recreational Zone	
			P-4	Multi-purpose Open Space	
6	T	Transportation and Communication	T-1A	National Highways	Detailed classification of roads according to hierarchy and ROW; Terminal facilities separated for passenger and goods;
			T-1B	State Highways	
			T-1C	Arterial Roads/Major District Roads/Other District Roads (ROW above 60ft)	
			T-1D	Sub-Arterial Roads (ROW 20 - 60 ft)	
			T-1E	Collector Roads (ROW less than 20 ft)	
			T-1F	Kutcha Roads (Fair Weather Road)	
			T-2A	Railways	
			T-2B	Railway with Stations	

			T-3	Airport	
			T-4A	Bus Depots/Terminal	
			T-4B	Truck Terminal	
			T-5	Transmission and Communication	
7	A	Agriculture	A-1	Agriculture	Detailed classification of extractive activities i.e. mining, quarrying etc.; Segregation of static and flowing water bodies; Segregation of organised and unorganised animal husbandry activities; Vacant/barren/unproductive land has been added.
			A-2	Forest	
			A-3A	Brick Kilns	
			A-3B	Open Cast Mine	
			A-3C	Coal Mine (Under Ground)	
			A-3D	Colliery Pit Head	
			A-3E	Stone Quarry	
			A-3F	Sand Quarry	
			A-3G	Coal Bed Methane	
			A-4A	Pond/Lake/Reservoir	
			A-4B	Rivers/Streams/Natural Drain	
			A-5A	Unorganised Dairy/Farm/Khatal	
			A-5B	Poultry/Animal Husbandry/Dairy Farm	
			A-6	Vacant/Unproductive/ Barren Land	
8	S	Special Area	S-1	Heritage and Conservation Areas	
			S-2	Scenic value areas	

*N- Code: Numeric Code; A-N Code: Alpha-Numeric Code

Following broad steps were undertaken, in chronological order, for preparing the LUMR for Asansol Sub-division:

Step 1: Digitisation of the revenue village/mouza maps in AutoCAD platform

Step 2: Conducting field survey for recording pre-dominant land use at R.S. plot level

Step 3: Preparation of the Existing Land Use Map following the Land Use Classification adopted for this task.

Step 4: Preparation of the Existing Land Use Register in MS Excel platform, recording the RS plot level detail of predominant and other land uses located in a plot.

Step 5: Field level sample cross checking of the LUMR submitted by the appointed agencies by ADDA and necessary modification

Step 6: Notification, objection hearing, modification and adoption of the Existing Land Use Map and Register in manner specified in the Act (as discussed in earlier sections)

The maps were prepared at mouza level and these maps were aggregated to arrive at maps at the Planning Unit level and Administrative Unit level i.e. C.D. Block and Municipality/Municipal Corporation level [Refer Map 5.1 to 5.9]. Some errors have remained as mouza map boundaries do not match exactly. In this regard no correction and alteration has been done to the mouza maps which are statutory documents,

during the process of aggregation, as jointly decided by ADDA and the consultant. [Refer to the soft copy of drawings for mouza level, attached to the Report]

Often it has been found that more than one land use exists in large plots, occupying considerable extent of land. As per the provisions, only the predominant land use is supposed to be recorded, but it was felt necessary to record upto three dominant land use in a plot, in case if any. In the Existing Land Use Map, concept of 'Sub-Plot' has been introduced to demarcate the boundary of more than one land use in a large plot, as felt relevant. These sub-plot boundaries do not have any statutory status and must be taken as elements introduced for better understanding of existing land utilisation.

The task of preparing LUMR for Asansol Sub-division started in January 2010 and the notification for adoption of LUMR for Asansol Sub-division, in Official Gazette took place by August 2012.

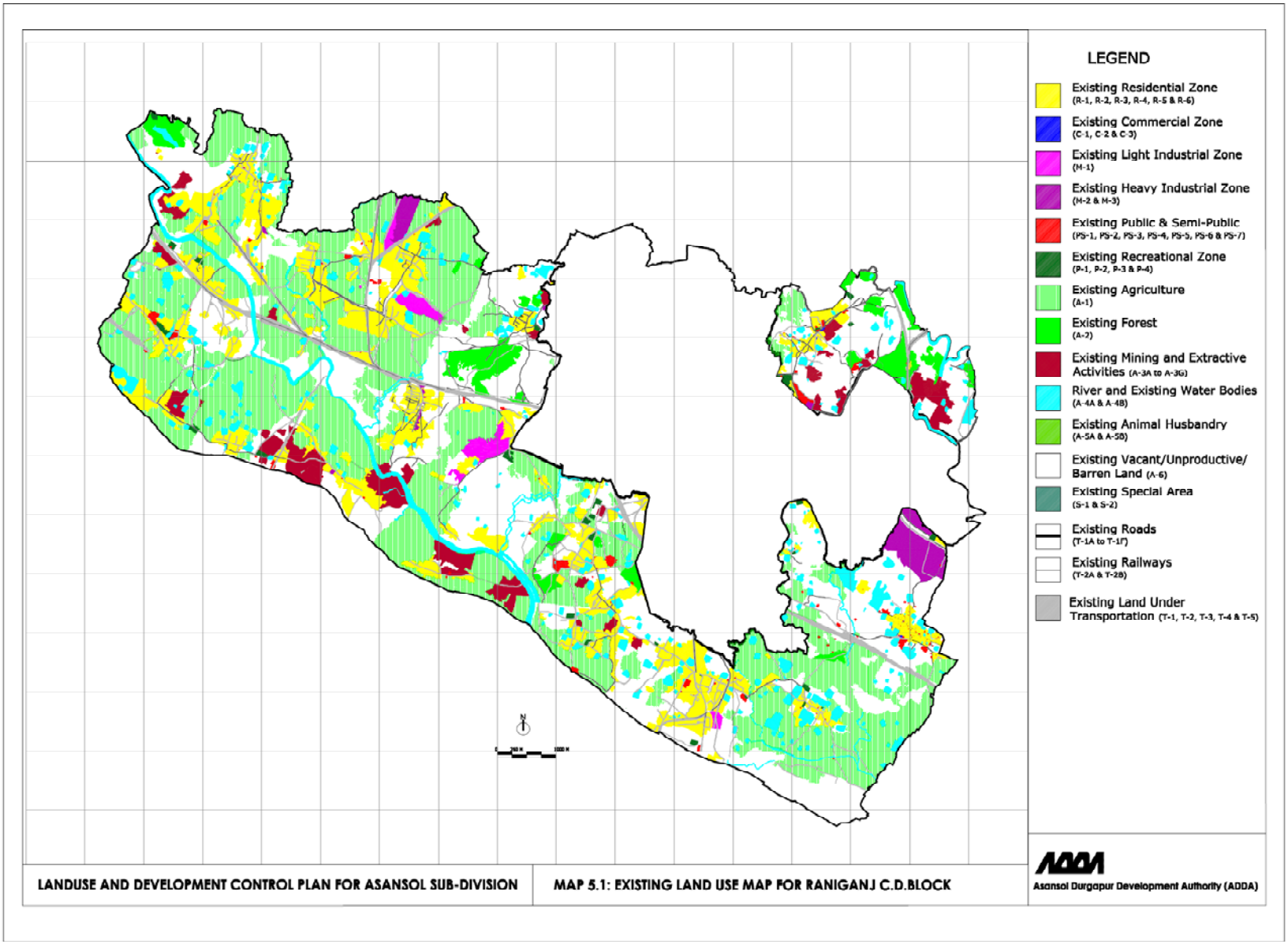
5.4 Existing utilisation of land

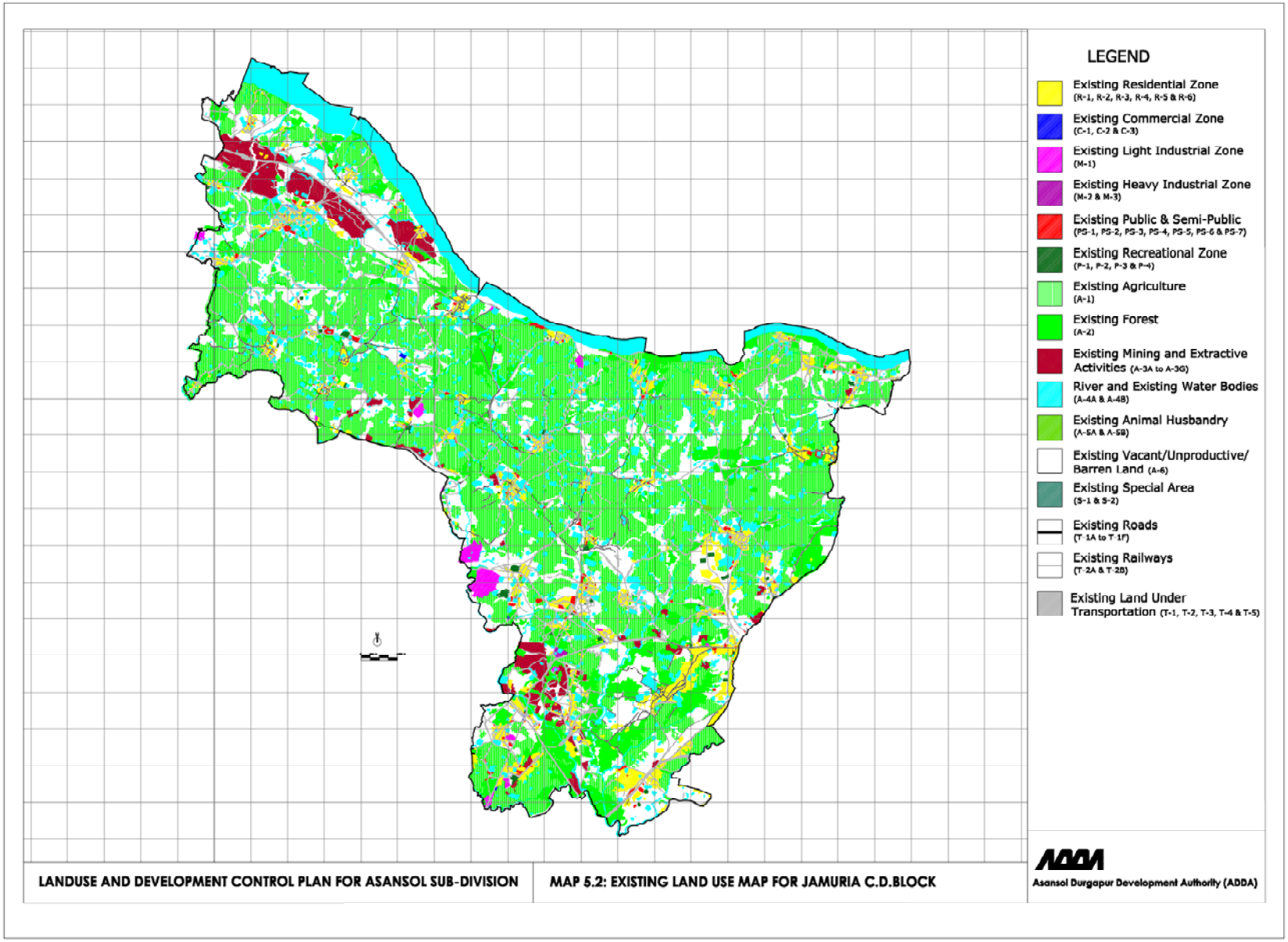
A brief look at the land use composition for various exiting land uses as presented in Table 5.3 provides important understandings about the utilisation of land in Asansol Sub-division. Only 20 percent of the land in Asansol Sub-division falls under developed land, which includes residential, commercial, manufacturing, public & semi-public uses, recreational and transportation activities - urban share of developed land being around 31 percent, and rural share is 13 percent. Asansol Municipal Corporation is the most developed amongst urban areas. There is marginal difference in developed land share between Jamuria Municipality and, Raniganj and Salanpur C.D. Block.

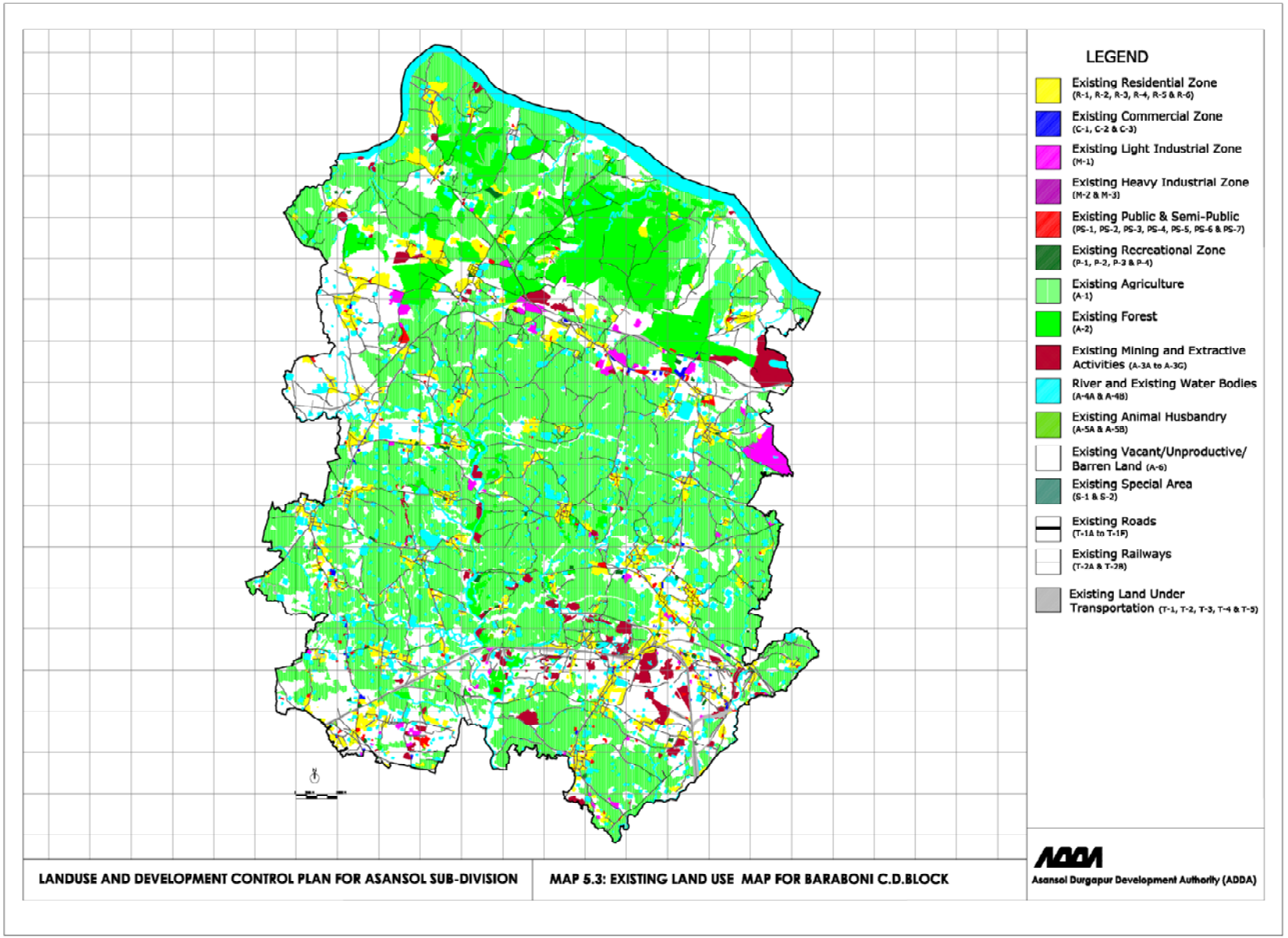
Around 60 percent of the developed land in Asansol Sub-division is under residential land use - higher share in rural areas compared to urban centers. Manufacturing areas occupy 8-10 percent of the developed land - with greater share in extensive and heavy industries having larger concentration in Asansol Municipal Corporation. Land area dedicated for Traffic and transportation is low - around 5-7 percent of total land in urban areas. However one must account for very low share of developed urban land while considering land share dedicated to traffic and transportation.

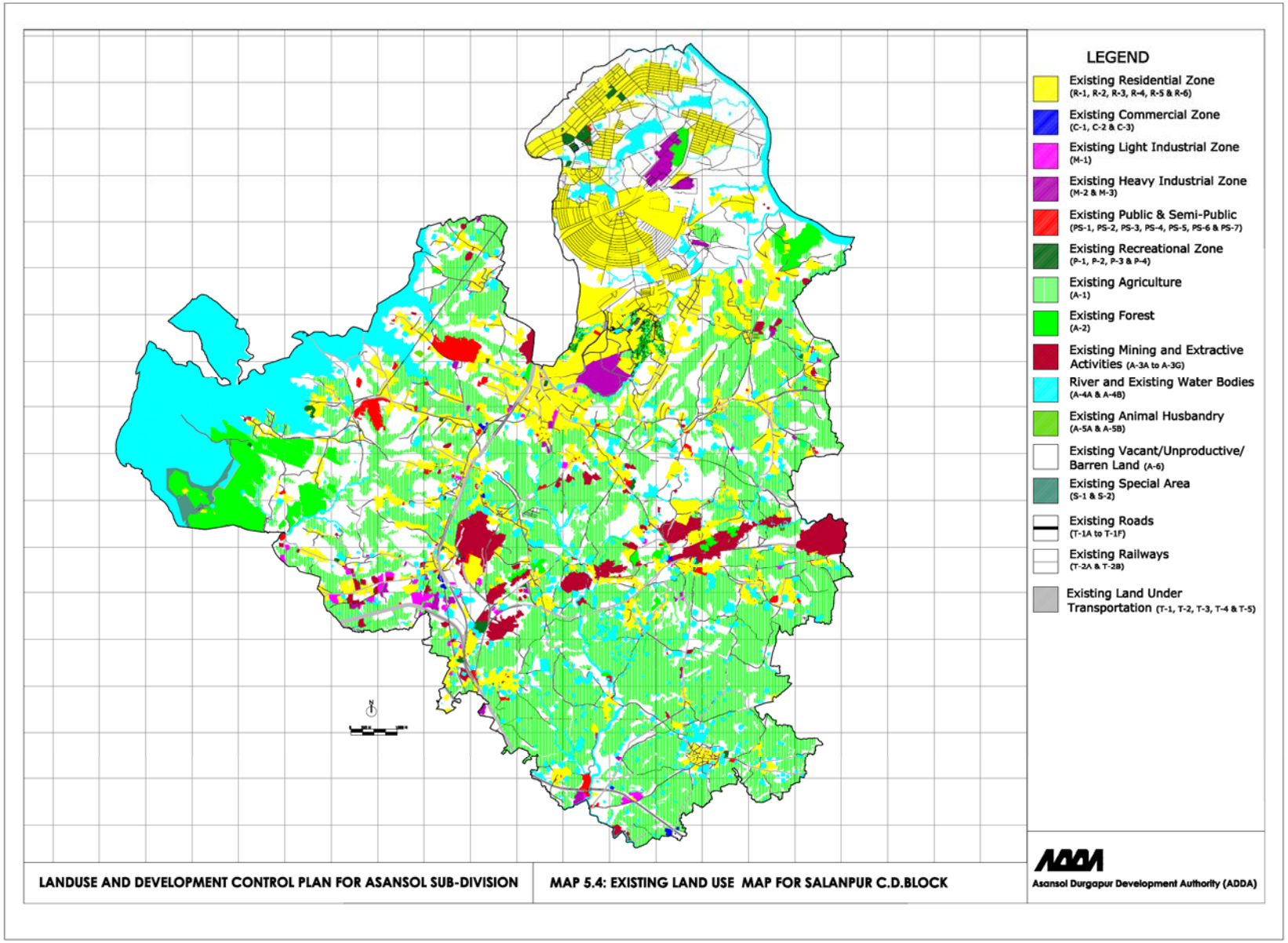
A large amount of area in Asansol Sub-division is under mining and extractive activities. Kulti and Raniganj Municipality have largest share of land under mining among urban areas - whereas Raniganj and Jamuria C.D. Block are the front-runners in rural areas.

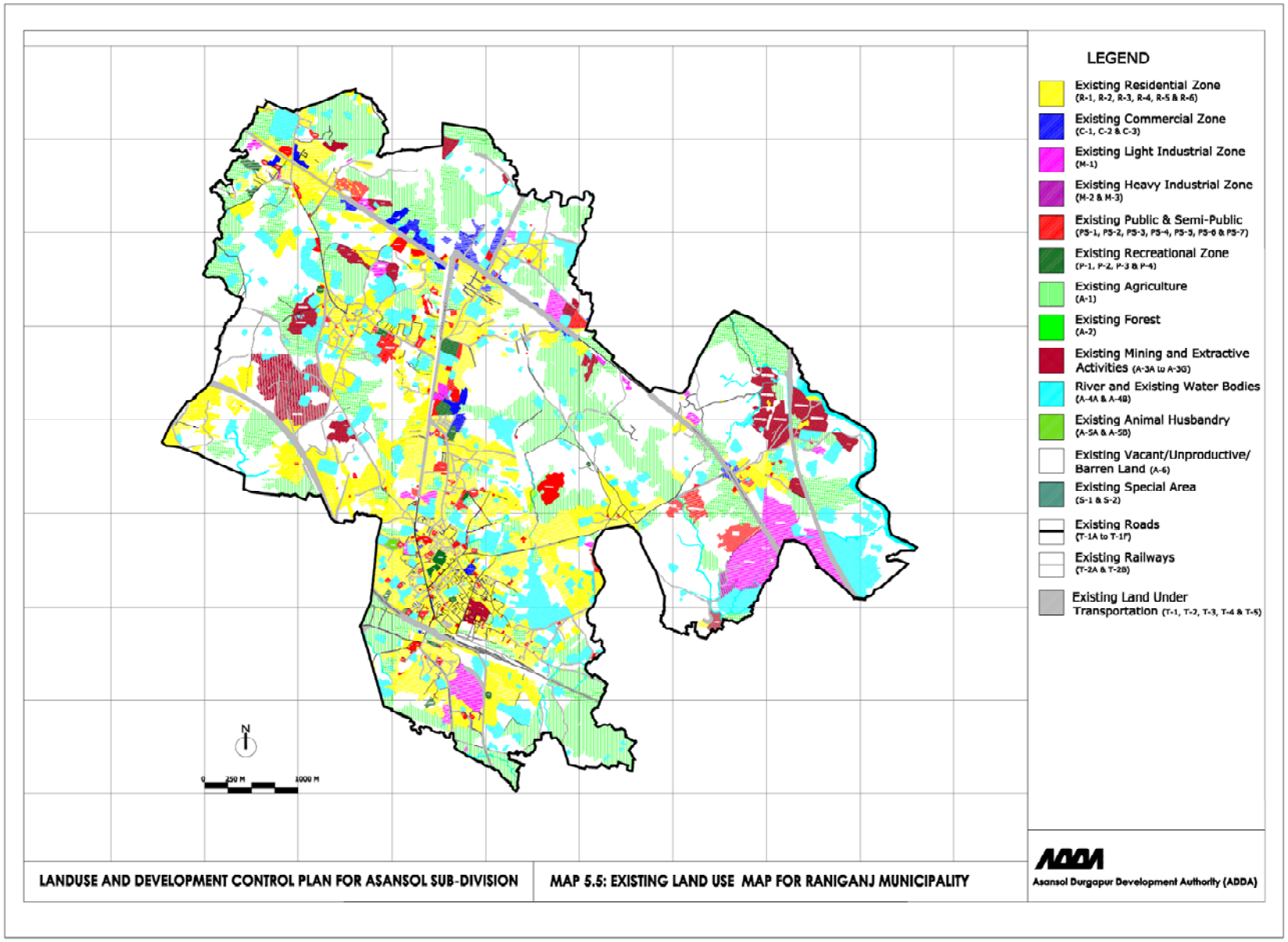
Despite having large share of land undeveloped (4/5th of geographical area) in Asansol Sub-division, land dedicated to agriculture is only around 36 percent. Forest and plantations cover another 18 percent, though the share is much high in Barabani C.D. Block. Surface water resources cover around 8 percent of land - rural areas having higher share than urban areas. Around 27 percent of the land in Asansol Sub-division has been observed to be vacant/barren i.e. absence of any economic activities on it - urban share is more than 30 percent which is higher than rural share of around 25 percent. Most of the land is unsuitable for farming due to poor soil condition and lack of irrigation. Some areas coal seam is too close to ground surface where even plantations are difficult to come. The existing land under agriculture also has much lower yield compared to other parts of the district (aman rice, which is the major produce in Asansol Sub-division has yield around 2/3rd of that in other parts of the Bardhaman district) - as a result there is less incentive to go for intensive farming practice. Agriculture and allied activities have very low level of influence in the local economy and its employment potential is also very low. Most of the population resides in urban centres and are engaged in non-agricultural occupations.


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
ADDA
Asansol Durgapur Development Authority (ADDA)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.1: EXISTING LAND USE MAP FOR RANIGANJ C.D.BLOCK


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.2: EXISTING LAND USE MAP FOR JAMURIA C.D.BLOCK
ADDA
Asansol Durgapur Development Authority (ADDA)


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.3: EXISTING LAND USE MAP FOR BARABONI C.D.BLOCK
ADDA
Asansol Durgapur Development Authority (ADDA)


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.4: EXISTING LAND USE MAP FOR SALANPUR C.D.BLOCK
Asansol Durgapur Development Authority (ADDA)


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
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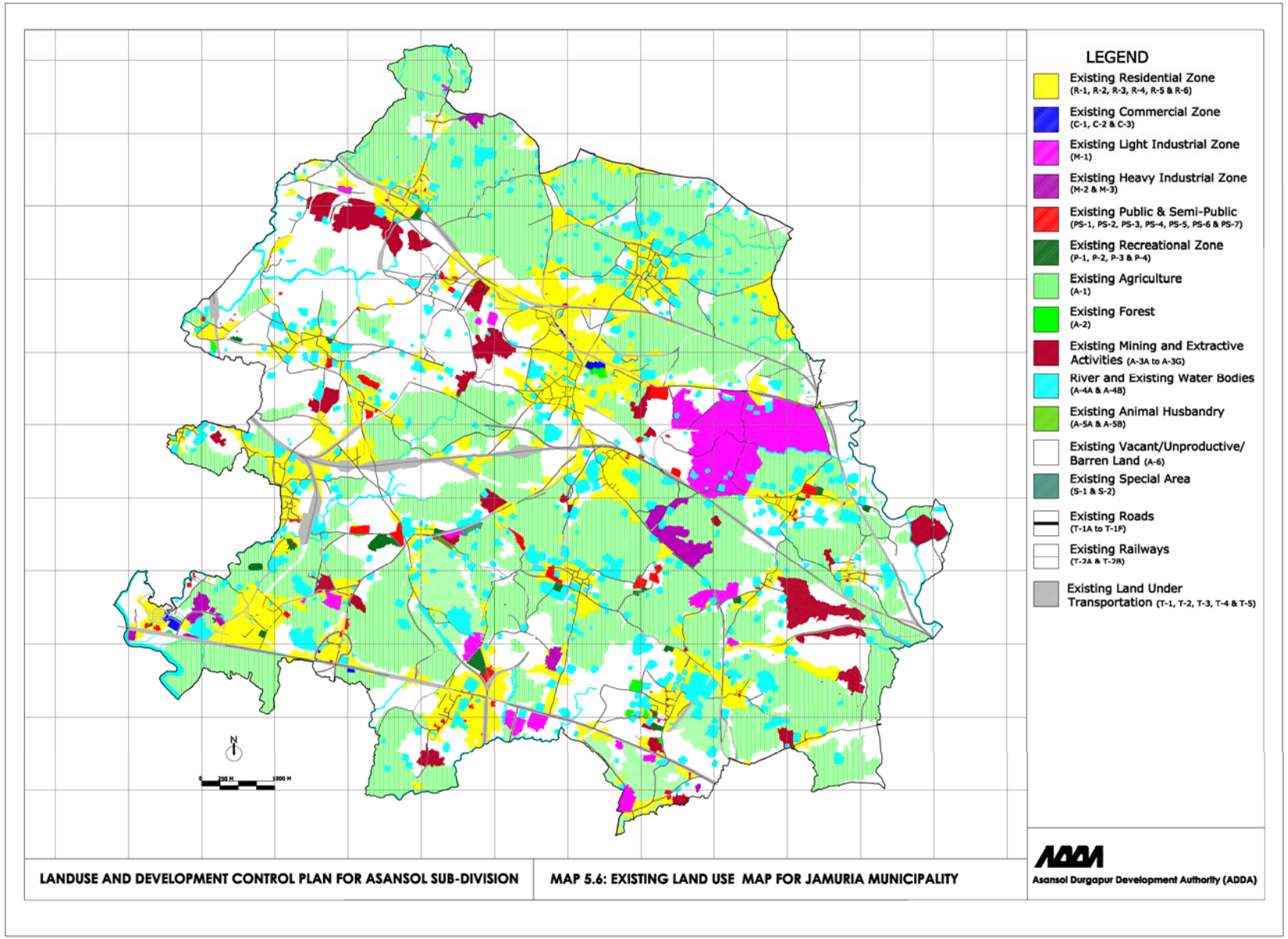
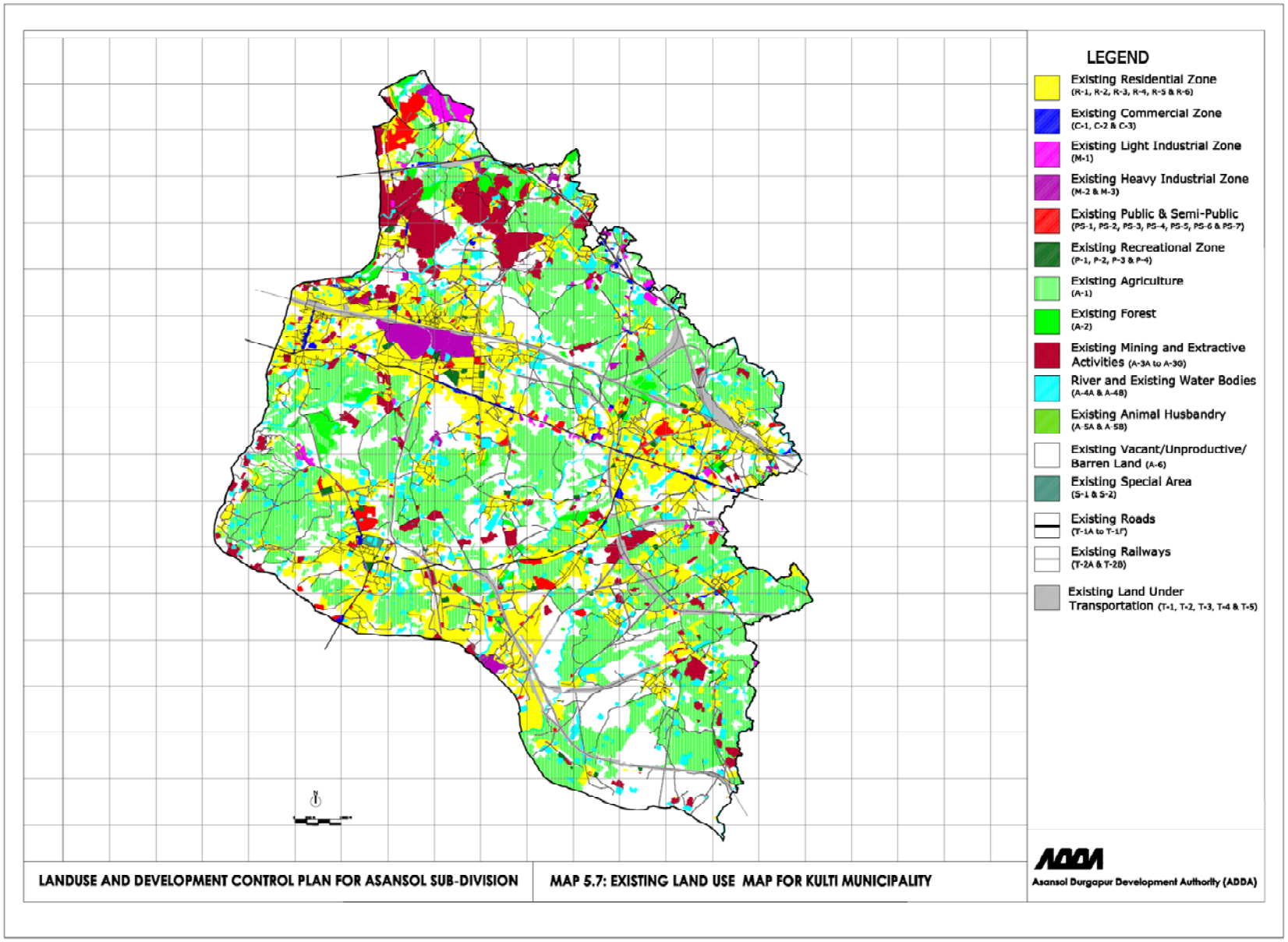
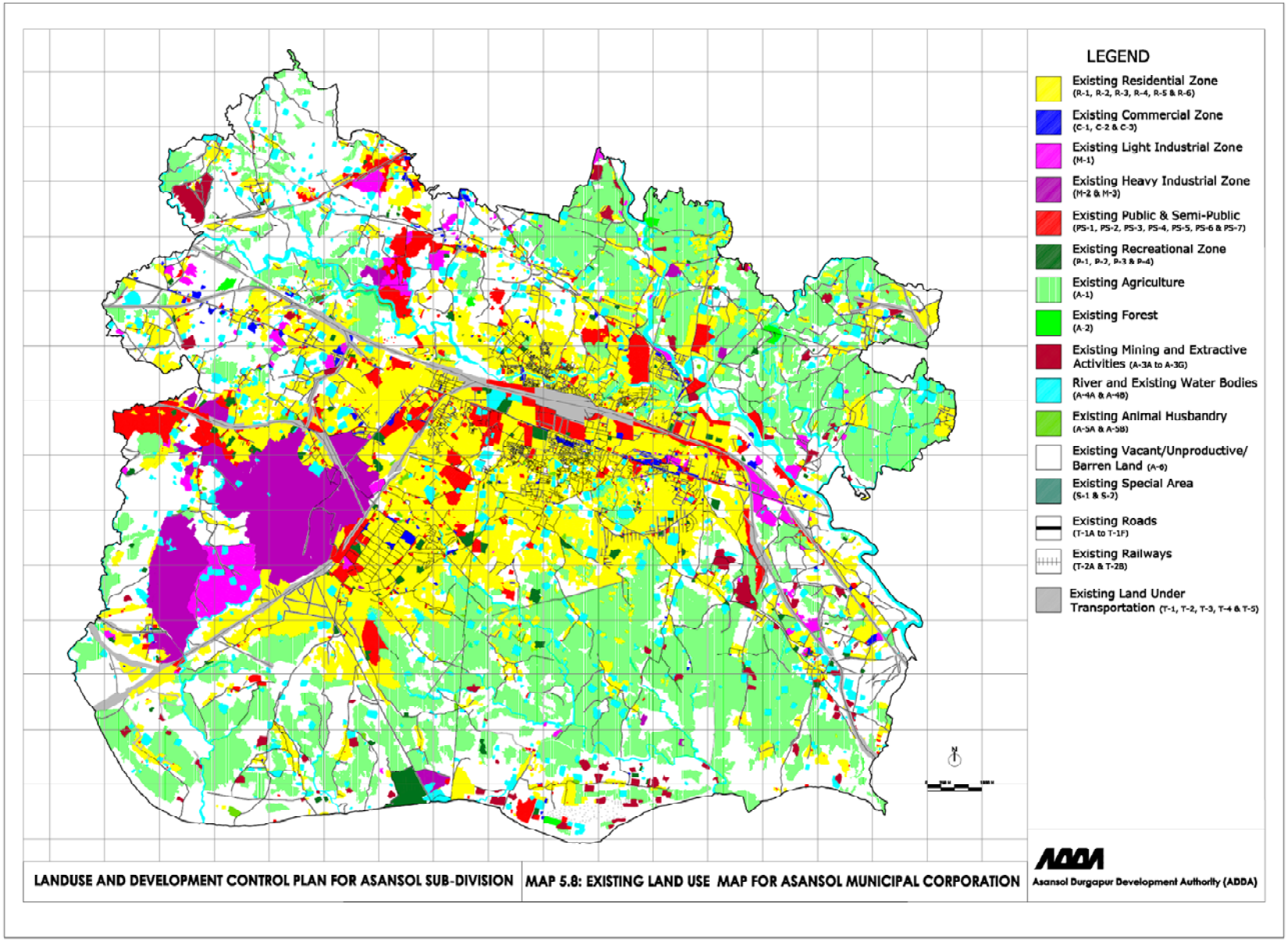
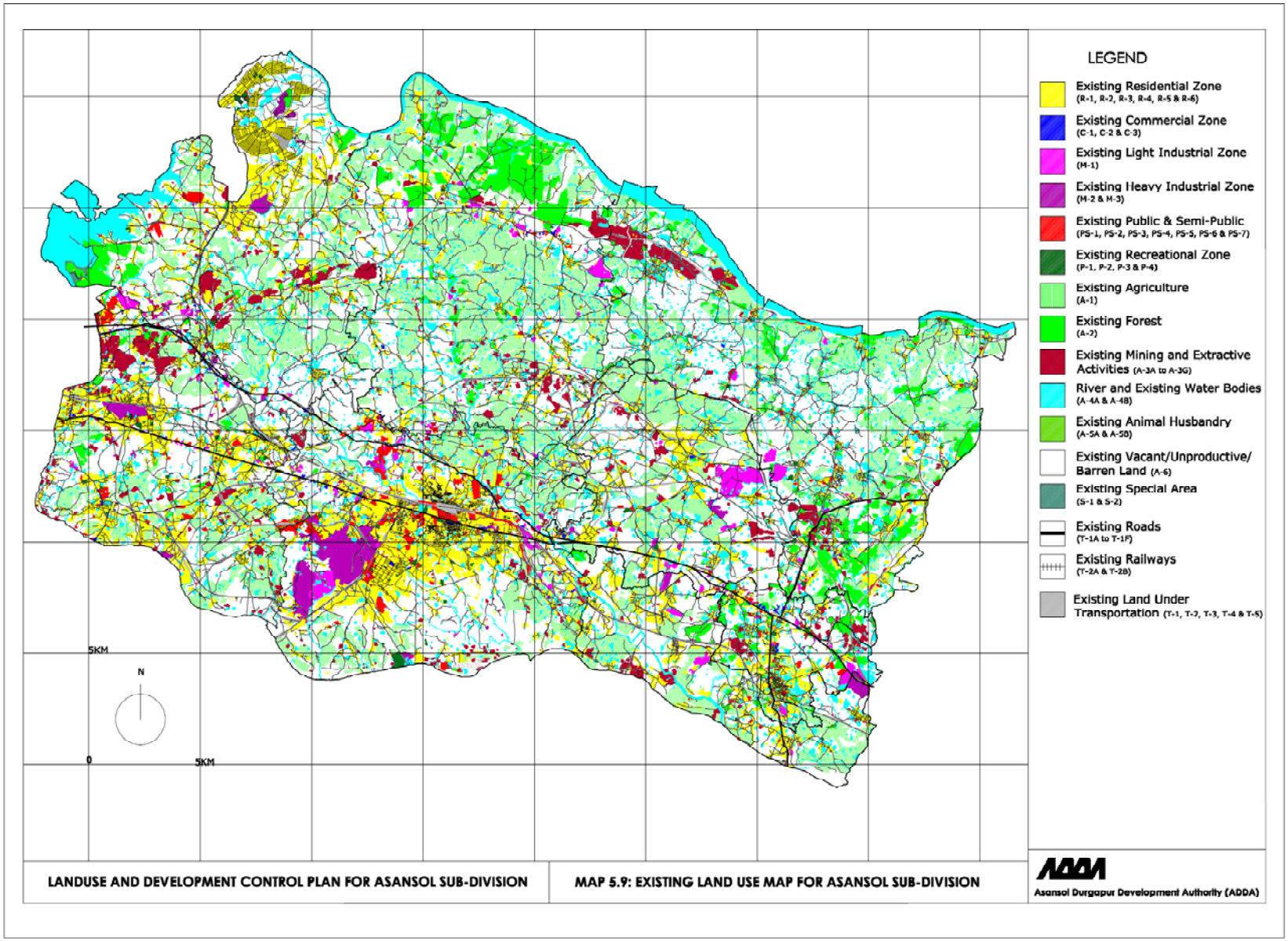
0 250 M 1000 M
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.5: EXISTING LAND USE MAP FOR RANIGANJ MUNICIPALITY
ADDA
Asansol Durgapur Development Authority (ADDA)


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
N
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.6: EXISTING LAND USE MAP FOR JAMURIA MUNICIPALITY
Asansol Durgapur Development Authority (ADDA)


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
ADDA
Asansol Durgapur Development Authority (ADDA)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.7: EXISTING LAND USE MAP FOR KULTI MUNICIPALITY


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.8: EXISTING LAND USE MAP FOR ASANSOL MUNICIPAL CORPORATION
Asansol Durgapur Development Authority (ADDA)


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Existing Animal Husbandry (A-5A & A-5B)
Existing Vacant/Unproductive/ Barren Land (A-6)
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
5KM
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0
5KM
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.9: EXISTING LAND USE MAP FOR ASANSOL SUB-DIVISION
ADDA
Asansol Durgapur Development Authority (ADDA)

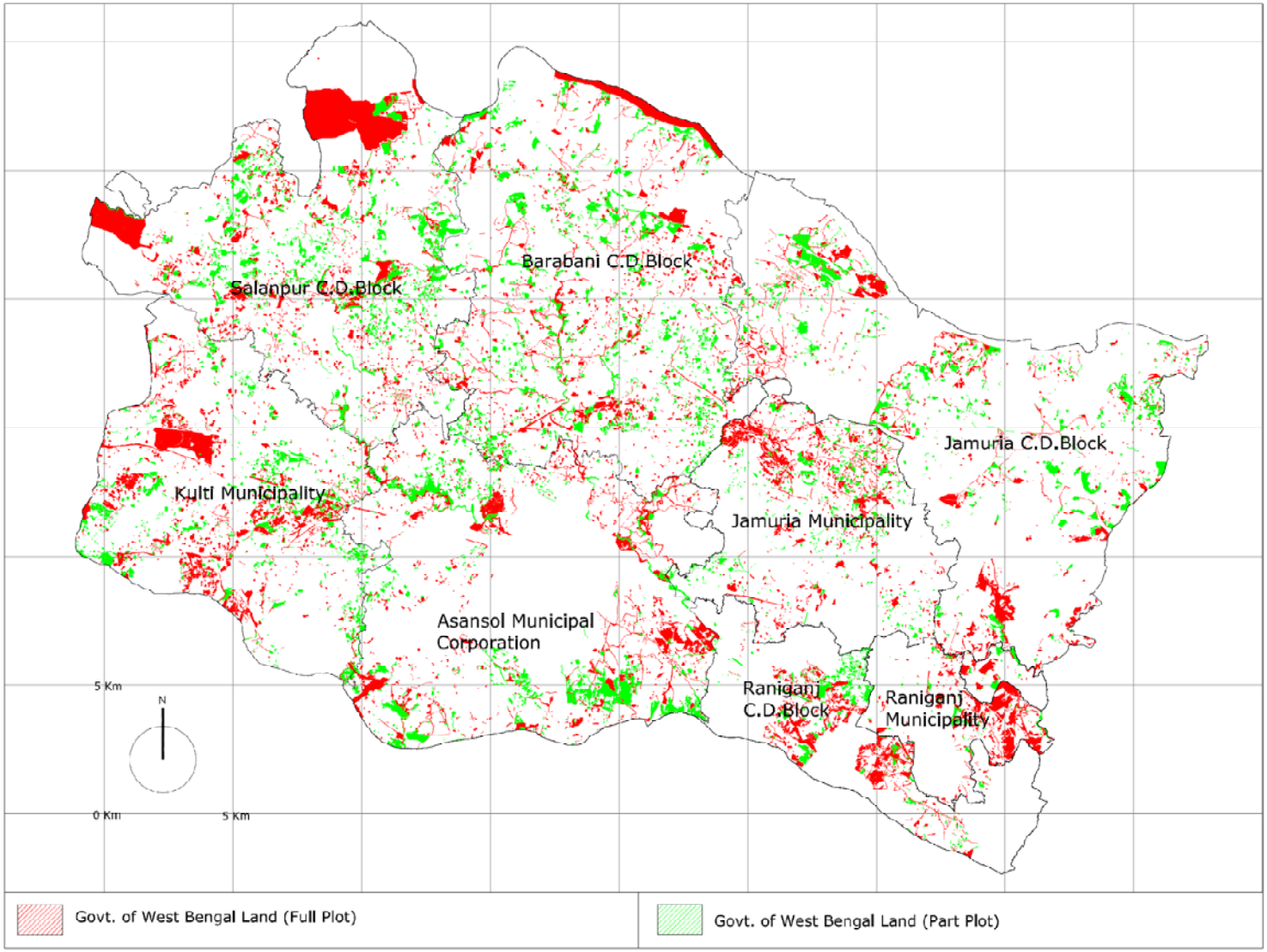


Figure 5.2: Distribution of land under ownership of Govt. of West Bengal in Asansol Sub-division

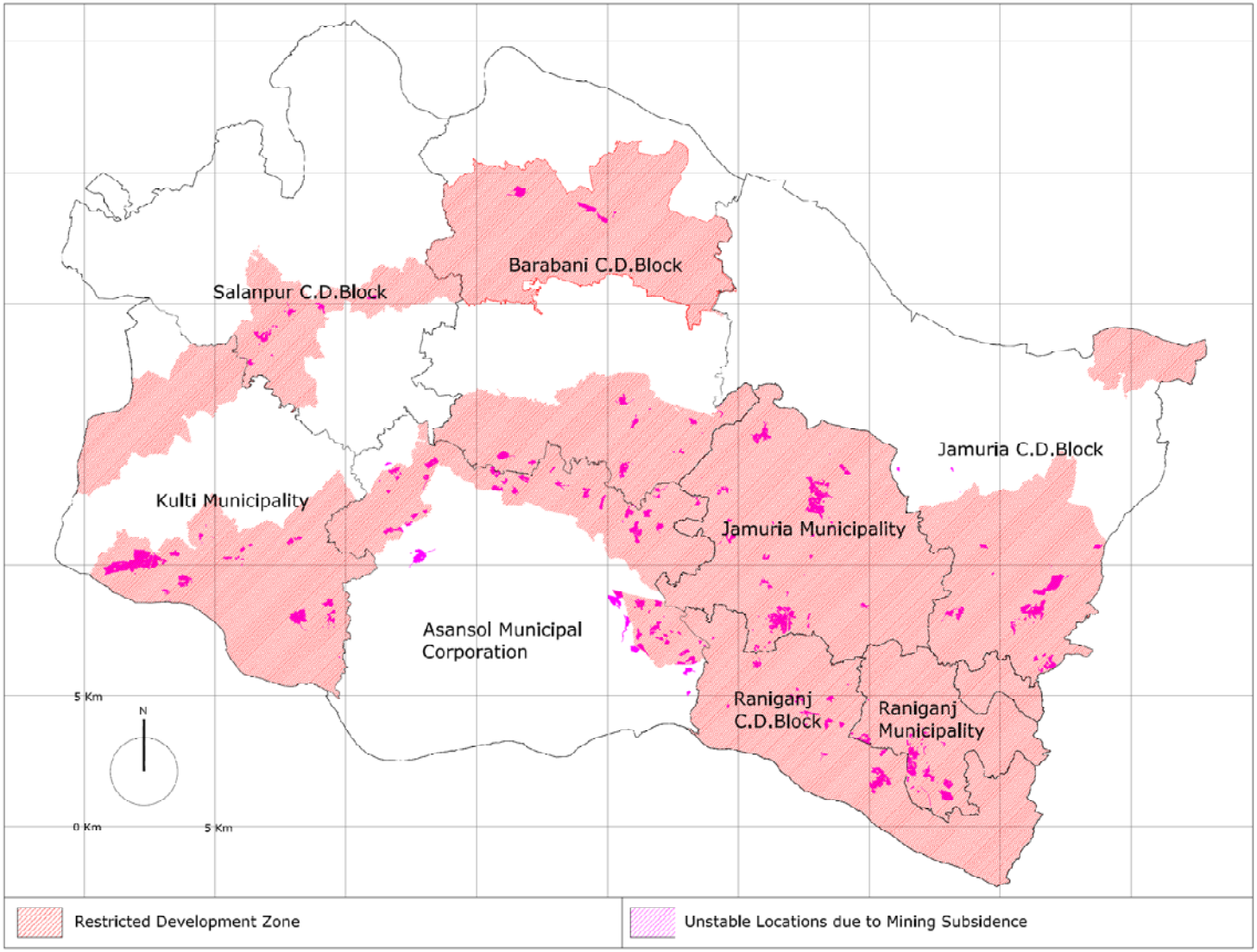


Figure 5.3: Distribution of unstable land due to mining subsidence in Asansol Sub-division

Table 5.3: Land use distribution for Asansol Sub-division

Land Use and Code	Share of land to total land (in percent)										
	Raniganj C.D. Block	Jamuraia C.D.Block	Barabani C.D. Block	Salanpur C.D. Block	Rural	Raniganj Municipality	Jamuria Municipality	Kulti Municipality	Asansol Municipal Corporation	Urban	Total
Residential (R)	12.87	5.58	5.07	14.09	8.50	19.49	12.19	18.08	19.99	17.87	12.22
Commercial (C)	0.01	0.04	0.12	0.06	0.07	0.99	0.10	0.49	0.47	0.45	0.22
Manufacturing M)	2.21	0.39	0.92	1.32	1.02	2.79	3.78	1.91	5.11	3.76	2.11
Light Industrial (M-1)	*0.83*	*0.36*	*0.92*	*0.34*	*0.59*	*2.68*	*3.10*	*0.60*	*0.60*	*1.25*	*0.85*
Heavy Industrial (M-2& M-3	*1.39*	*0.03*	*0.00*	*0.98*	*0.43*	*0.11*	*0.68*	*1.32*	*4.51*	*2.50*	*1.25*
Public & Semi-public (PS)	1.66	0.46	0.41	0.82	0.68	2.25	0.65	1.71	4.14	2.61	1.45
Education and Research (PS-3)	*1.36*	*0.21*	*0.09*	*0.11*	*0.28*	*0.73*	*0.17*	*0.34*	*0.86*	*0.57*	*0.40*
Medical and Health (PS-4)	*0.03*	*0.04*	*0.03*	*0.04*	*0.03*	*0.28*	*0.01*	*0.10*	*0.32*	*0.19*	*0.10*
Social, Cultural and Religious (PS-5)	*0.12*	*0.09*	*0.13*	*0.21*	*0.14*	*0.22*	*0.18*	*0.18*	*0.40*	*0.28*	*0.19*
Utilities and Services (PS-6)	*0.05*	*0.07*	*0.06*	*0.40*	*0.15*	*0.48*	*0.18*	*0.49*	*0.12*	*0.27*	*0.20*
Recreational (P)	0.44	0.28	0.19	0.29	0.27	0.49	0.28	0.48	0.91	0.63	0.42
Primary Sector Activities (A)	78.92	91.87	90.15	78.76	86.37	67.57	78.33	70.73	63.37	68.74	79.37
Agriculture (A-1)	*34.26*	*47.02*	*46.12*	*31.10*	*41.07*	*12.63*	*39.97*	*29.56*	*25.21*	*28.38*	*36.03*
Forest (A-2)	*2.82*	*8.74*	*82.31*	*2.87*	*29.94*	*8.33*	*0.12*	*1.37*	*0.12*	*1.11*	*18.49*
Mining and extractive activities (A-3)	*3.45*	*3.58*	*1.83*	*2.65*	*2.77*	*3.54*	*2.61*	*4.93*	*1.08*	*2.67*	*2.73*
Water bodies (A-4)	*6.89*	*12.03*	*8.53*	*12.81*	*10.49*	*10.65*	*7.68*	*5.53*	*5.68*	*6.42*	*8.87*
Vacant land (A-6)	*31.49*	*20.47*	*25.43*	*29.31*	*25.67*	*32.38*	*27.94*	*29.33*	*31.12*	*30.08*	*27.42*
Transportation (T)	3.89	1.38	3.12	4.67	3.09	6.43	4.68	6.60	6.00	5.95	4.22
Unstable Location Due To Mining Subsidence	1.15	0.67	0.45	0.20	0.54	2.69	2.02	1.52	1.20	1.57	0.95
W.B. Govt. Plot	9.09	10.91	11.35	19.31	13.00	12.47	9.70	12.79	15.42	13.32	13.12
Full Plot	*6.87*	*5.60*	*6.06*	*13.17*	*7.86*	*10.86*	*6.54*	*8.22*	*12.37*	*9.92*	*8.68*
Part Plot	*2.22*	*5.30*	*5.29*	*6.14*	*5.14*	*1.62*	*3.17*	*4.57*	*3.05*	*3.39*	*4.45*
Total Area	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

5.4.1 Land identified as unstable due to mining subsidence

More than 870 hectares of land in Asansol Sub-division has been identified as unstable locations due to mining subsidence. This data has been recorded in LUMR, at plot level, for ease in identification. Distribution of unstable land across the Sub-division shows that 573 hectares of urban land and 297 hectares of rural land is affected from mining subsidence. Most of unstable locations are located in urban areas, particularly in and around existing settlements - mainly due to greater incidence of reporting. Raniganj Municipality is worst hit due to mining subsidence followed by Jamuria Municipality - most of them located amidst dense residential settlements. All the planning units are not affected by subsidence as evident from the distribution of unstable locations - most of them are located in Restricted Development Zones [Refer Table 5.3 & 5.4].

Table 5.4: Land under Govt. of W.B. and unstable land in Asansol Sub-division

Name of Administrative Unit	Type of Development	Planning Unit (PU)*	Unstable land identified (in ha)		Govt. of W.B. land (in ha)	
Barabani C.D. Block (52 no.s)	Eco-sensitive Development Zone (10 no.s)	PU-3 (10 no.s)	Nil	78.9	309.1	1069.4
	Restricted Development Zone (27 no.s)	PU-4 (14 no.s)	34.2		267.3	
		PU-8 (13 no.s)	44.7		224.8	
	Extensive Development Zone (15 no.s)	PU-6 (15 no.s)	Nil		268.2	
Jamuria C.D. Block (49 no.s)	Eco-sensitive Development Zone (4 no.s)	PU-3 (4 no.s)	Nil	112.6	236	938.2
	Restricted Development Zone (15 no.s)	PU-9 (13 no.s)	111		271.2	
		PU-11 (2 no.s)	Nil		11.9	
	Extensive Development Zone (30 no.s)	PU-7 (30 no.s)	1.6		419	
Raniganj C.D. Block (25 no.s)	Restricted Development Zone (25 no.s)	PU-10 (25 no.s)	77.3	77.3	460.9	460.9
Salanpur C. D. Block (85 no.s)	Restricted Development Zone (12 no.s)	PU-4 (12 no.s)	29.1	29.1	85.9	1886.5
	Extensive Development Zone (63 no.s)	PU-2 (49 no.s)	Nil		651.7	
		PU-6 (14 no.s)	Nil		98	
	Intensive Development Zone (10 no.s)	PU-1 (10 no.s)	Nil		1051	
Kulti Municipality (69 no.s)	Restricted Development Zone (42 no.s)	PU-4 (14 no.s)	Nil	158.2	189.2	856.6
		PU-8 (28 no.s)	158.2		348	
	Extensive Development Zone (3 no.s)	PU-2 (3 no.s)	Nil		24.4	
	Intensive Development Zone (24 no.s)	PU-5 (24 no.s)	Nil		294.9	
Raniganj Municipality (6 no.s)	Restricted Development Zone (6 no.s)	PU-10 (6 no.s)	76.6	76.6	308.7	308.7
Jamuria Municipality (25 no.s)	Restricted Development Zone (25 no.s)	PU-9 (25 no.s)	145.1	145.1	469.6	469.6
Asansol Municipal Corporation (58 no.s)	Restricted Development Zone (25 no.s)	PU-8 (25 no.s)	148.6	193.4	368.2	1989.3
	Extensive Development Zone (14 no.s)	PU-6 (2 no.s)	1.5		25.1	
		PU-13 (12 no.s)	26.3		129.4	
	Intensive Development Zone (19 no.s)	PU-12 (19 no.s)	17		1466.6	

[*Refer Table 5.1]

5.4.2 Land under ownership of Govt. of West Bengal

Ownership of land is one of the most important element in the plan preparation process, particularly knowledge of land under public ownership - as many of the key public infrastructure and other public

facilities which will not be provided by market forces since they are often less or non-remunerative in nature.

Land under ownership has been analysed from Mouza wise land records provided by ADDA, as collected from Department of Land and Land Reforms, Bardhaman District. Land under Govt. of West Bengal has been identified for this plan making process and its approximate distribution across the sub-division has been listed in Table 5.3 & 5.4. Land parcels under Govt. of West Bengal has also been marked in the LUMR document for ease in identification.

There are also land under other public agencies i.e. Central Govt., Public Sector Undertakings, Railways etc. which has not been taken into account as ADDA will have less or no control over rights of development on those land parcels.

Around 8-9 percent of the land in Asansol Sub-division is under the ownership of Government of West Bengal - which is more than 7900 hectares. Majority of the land owned by the state government is in urban areas. There is partial ownership in another 4-5 percent of land as evident from land records. Distribution of public land shows that Salanpur C.D.Block and Asansol Municipal Corporation has a very high share of land owned by the state government. This provides a huge land base under public ownership which can be utilised for locating various public infrastructure, institutional and recreational activities.

5.5 Planning Inputs

Inputs from the planning exercises conducted before must be considered and incorporated in the process of preparation of Land Use and Development Control Plan. Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025 is one of the most recent planning initiative which has undertaken holistic and integrated multi-sectoral approach to provide strategic proposals for the Asansol Durgapur Planning Area. This document has taken an indicative planning approach, where future direction of development, proposed spatial pattern, broad nature of future development, tentative location of public infrastructure has been identified. The spatial manifestations of those proposals on land need to be detailed out in proposed land use map.

The delineation of the planning area i.e. Asansol Sub-division has been carried out based on the perspective plan. The broad nature of future development for each planning units within the planning area is represented in Table 5.5 (Refer Table 3.2a, 3.2b & 3.2c in Volume 2 of Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025). As LUDCP is a medium term planning document, this has been completely based on the proposals prescribed in the Perspective Plan, which is essentially a long term planning task.

Table 5.5: Details of recommendations for Planning Units within Asansol Sub-division				
Name of the C.D. Block/ Municipal Area	Type of Development Proposed	Planning Unit No.*	Existing Nature of Development	Proposed Development activities (according to Vision 2025)
Salanpur C.D. Block	Restricted Development Zone	PU-4	A. Extensive open-cast mining B. Threat from subsidence	A. Settlements only to support natural out-growth B. Continuing mining activities with modernization and adherence to strict environmental norms
	Extensive Development Zone	PU-2	A. Low Density rural settlements B. Large pasture lands C. Threat from soil erosion	A. Non-polluting industries B. Fodder cropping and Animal husbandry C. Food processing and Dairy
		PU-6	A. Low density rural settlements B. Located between two restricted zones below and above	A. Settlements to support natural outgrowth as well as rehabilitated population from adjoining restricted areas
	Intensive Development Zone	PU-1	A. Chittaranjan Locomotive Works and other sick manufacturing units located with their townships B. Underutilized urban infrastructure	A. Renewal of existing infrastructure through modernization and diversification B. Re-densification and utilisation of existing infrastructure C. Utilisation of townships for training campus for para-military and police forces
Barabani C.D. Block	Eco-sensitive Development Zone	PU-3	A. Vast land under reserve forests with rich flora and fauna B. Concentration of tribal settlements dependent on forests	A. Preserving the natural environment B. Sustainable development of tribal settlements C. Utilisation of natural resources for tourism
	Restricted Development Zone	PU-4	A. Extensive open-cast mining B. Threat from subsidence	A. Settlements only to support natural out-growth B. Continuing mining activities with modernization and adherence to strict environmental norms
		PU-8	A. Extensive mining activity B. Threat from subsidence C. Sparse agriculture and thin vegetation	A. Continuing mining activities with modernization and adherence to strict environmental norms B. Limited settlement growth
	Extensive Development Zone	PU-6	A. Low density rural settlements B. Located between two restricted zones below and above	A. Settlements to support natural outgrowth as well as rehabilitated population from adjoining restricted areas
Jamuria CD Block	Eco-sensitive Development Zone	PU - 3	A. Vast land under reserve forests with rich flora and fauna B. Concentration of tribal settlements dependent on forests	A. Preserving the natural environment B. Sustainable development of tribal settlements C. Utilisation of natural resources for tourism
	Restricted Development Zone	PU - 9	A. Sporadic settlement pattern B. Extensive mining activity C. Threat from subsidence D. Unplanned allocation of large scale polluting industries	A. Continuing mining activities with modernization and adherence to strict environmental norms B. Redevelopment of derelict mining sites for social asset creation
		PU - 10	A. Strategically located near NH-2 and NH-60 crossing B. Developed as medium order trade and commerce centre C. Highway oriented ribbon development	A. Develop as regional centre for trade and commerce B. Controlled growth of population in future as large parts are under threat of subsidence
	Extensive Development Zone	PU - 7	A. Low density rural settlement B. Unplanned growth of polluting industries	A. Develop as future industrial centre for polluting industries
Raniganj CD Block	Restricted Development Zone	PU - 10	A. Mining activities, Administrative units and Residential settlements for mining workers B. Threat from subsidence C. Northern part located near NH-2 and NH-60 crossing D. Developed as medium order trade and commerce centre E. Highway oriented ribbon development	A. Controlled growth of population in future as large parts are under threat of subsidence B. Develop as regional centre for trade and commerce
Raniganj Municipality	Restricted Development Zone	PU - 10	A. Mining activities, Administrative units and Residential settlements for mining workers B. Threat from subsidence C. Located near NH-2 and NH-60 crossing D. Developed as medium order trade and commerce centre	A. Controlled growth of population in future as large parts are under threat of subsidence B. Develop as regional centre for trade and commerce

			E. Highway oriented ribbon development	
Jamuria Municipality	Restricted Development Zone	PU- 9	A. Scattered settlement pattern B. Extensive mining activity C. Threat from subsidence D. Unplanned allocation of large scale polluting industries	A. Continuing mining activities with modernization and adherence to strict environmental norms B. Redevelopment of derelict mining sites for social asset creation
Kulti Municipality	Restricted Development Zone	PU-4	A. Extensive open-cast mining B. Threat from subsidence	A. Settlements only to support natural out-growth B. Continuing mining activities with modernization and adherence to strict environmental norms
		PU-8	A. Extensive mining activity B. Threat from subsidence C. Sparse agriculture and thin vegetation	A. Continuing mining activities with modernization and adherence to strict environmental norms B. Limited settlement growth
	Extensive Development Zone	PU-2	A. Low Density rural settlements B. Large pasture lands C. Threat from soil erosion	A. Non-polluting industries B. Fodder cropping and Animal husbandry C. Food processing and Dairy
	Intensive Development Zone	PU-5	A. Underutilized urban infrastructure B. Close proximity and high level of interaction with Asansol	A. Development as satellite residential township of Asansol B. Development of recreational activities in old colonial buildings and areas
Asansol Municipal Corporation	Restricted Development Zone	PU-8	A. Extensive mining activity B. Threat from subsidence C. Sparse agriculture and thin vegetation	A. Continuing mining activities with modernization and adherence to strict environmental norms B. Limited settlement growth
	Extensive Development Zone	PU-6	A. Low density rural settlements B. Located between two restricted zones below and above	A. Settlements to support natural outgrowth as well as rehabilitated population from adjoining restricted areas
		PU-13	A. Low Density under developed land B. Lacks connectivity	A. Provision of Ring road along the southern periphery of Asansol B. Development as new township to accommodate future demand of Asansol C. Recreational activities and river side development
	Intensive Development Zone	PU-12	A. Urban core with old historic areas and buildings B. Highly developed trade and commerce node C. High order Administrative node D. Location of IISCO Plant and Township E. Severe congestion and other infrastructure bottlenecks	A. Renewal of urban core B. Improvement in accessibility and transport infrastructure C. Revival and expansion if IISCO Burnpur D. Improvement in logistic functions

[*Refer Table 5.1]

5.6 Future population allocation and proposed settlement pattern

Population projection for the planning area i.e. Asansol Sub-division, has been detailed out in the Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025, Vol. 1 & 2. Future population projections has been based on analysis of the past population data as well as developing three alternative scenario's for development resulting out of demographic and economic perspective of the region. It was anticipated that Asansol Durgapur Planning Area will have population of around 44.5 lakhs in 2025, of which 23.5 lakhs will be in Asansol Subdivision. (Refer Chapter 2 and 3 of Volume 2, Perspective Plan for Asansol Durgapur Planning Area: Vision - 2025). The distribution of the future population has been allocated in eight administrative units for 2025, presented in Table 5.6.

A brief look at the population allocation for 2025 reveals that areas which are largely under Restricted Development Zone have been allocated very low population - as it is expected that existing as well as natural increase of population will be accommodated in adjoining areas falling under extensive or intensive development zones.

Table 5.6: Spatial allocation of future population in 2025 within Asansol Sub-division			
Name of Unit	Type of unit	Population in 2001 (in lakhs)	Population in 2025 (projected) (in lakhs)
Barabani	Community Development Block	1.11	2.0
Jamuria	Community Development Block	1.12	2.5
Raniganj	Community Development Block	1.01	2.0
Salanpur	Community Development Block	1.56	3.5
Rural		4.81	10.0
Kulti (M)	Municipality	2.89	4.0
Raniganj (M)	Municipality	1.11	0.5
Jamuria (M)	Municipality	1.29	1.5
Asansol (MC)	Municipal Corporation	4.75	7.5
Urban		10.05	13.5
Total		14.87	23.5

In the Land Use and Development Control Plan preparation exercise, we have adopted these broad level population figures provided in the Perspective Plan. The detailed population allocation for each administrative zone within the various planning units has been carried out and the final outcome is presented separately for eight administrative zones, in tabular form [Refer Table 5.7 to 5.14].

Table 5.7: Detailed population allocation and development nodes in Barabani C.D. Block

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025[#1]	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Barabani C.D. Block Design Population 2,00,000(A)	Eco-sensitive Development Zone	PU-3	11742	18522			18522
	Restricted Development Zone*	PU-4	30779	48552	(-) 12138		36414
		PU-8	38134	60154	(-) 15039		45116
	Extensive Development Zone	PU-6	29738	46910	(+) 27177	(+)25861	99948
Total			110393	174138 (B)	27177	25861 (A-B)	200000

*Subsidence prone Mouzas are:
PU-4: Panuria (14 ha), Jamgram (19 ha);
PU- 8: Monoharbahal (12.7 ha); Majiara(10.5 ha); Barabani (8 ha); Bhanowara (7 ha), Charanpur (4.6 ha);
Anticipated that around 25 percent of the population needs to be rehabilitated by 2025.

[#1] Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Existing Growth Node** in:

PU-3	NA
PU-4	Jamgram, Panuria
PU-8	Panchgechhia, Majiera, Bhanowara
PU-6	Kelejora, Domohani

**Settlements which are Census Towns or having expected population of 5,000 or more in 2011, or having strategic importance has been identified as Growth nodes.

Note:
a. It is expected that natural increase of existing population base will lead to population of 1.74 lakhs.
b. Rehabilitated population of 0.27 lakhs from PU-4 & 8 has been relocated to PU-6
c. Design population for Barabani C.D. Block is 2.0 lakhs for 2025; which means that population of around 0.26 lakhs which will be surplus of natural growth, has been allocated in PU-6 (as it is in extensive development zone).

Table 5.8: Detailed population allocation and development nodes in Salanpur C.D. Block

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025#1	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Salanpur C.D. Block Design Population 3,50,000(A)	Restricted Development Zone	PU-4	25235	39807	(-) 9952		29855
	Extensive Development Zone	PU-2	50333	79397		(+)70000	149397
		PU-6	12641	19940	(+) 9952	(+)20048	49940
	Intensive Development Zone	PU-1	68111	107441		(+)13366	120807
Total			156320	246586 (B)		103414 (A-B)	350000

*Subsidence prone Mouzas are:
PU- 4: Salanpur(15ha), Banbirdi (5ha), Alkusha (5ha), Shyamdi (2ha)
Anticipated that around 25 percent of the population needs to be rehabilitated by 2025.

#1 Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Existing Growth Node** in:

PU - 4	Salanpur, Khudka, Jemari, Shyamdi
PU - 2	Benagarya
PU - 6	Ethora
PU - 1	Chittaranjan, Hindustan Cables Town

**Settlements which are Census Towns or having expected population of 5,000 or more in 2011, or having strategic importance has been identified as Growth nodes.

Note:
a. It is expected that natural increase of existing population base will lead to population of 2.47 lakhs.
b. Rehabilitated population of 0.1 lakhs from PU-4 has been relocated to PU-2 & 6
c. Design population for Salanpur C.D. Block is 3.5 lakhs for 2025; which means that population of around 1.03 lakhs which will be surplus of natural growth, has been allocated in PU-1 (intensive development zone), PU-2 & 6 (extensive development zone); the distribution of surplus population is guided by available land suitable for development and strategic importance in regional spatial settlement pattern.

Table 5.9: Detailed population allocation and development nodes in Jamuria C.D. Block

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025#1	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Jamuria C.D. Block Design Population 2,50,000(A)	Eco-sensitive Development Zone	PU - 3	2880	4543			4543
	Restricted Development Zone	PU - 9	47729	75290	(-)18822		56468
		PU - 11	6332	9988	(-)2497		7491
	Extensive Development Zone	PU - 7	55952	88261	(+)21320	(+)71918	181498
			112893	178082 (B)	21320	71918 (A-B)	250000

*Subsidence prone Mouzas are:
PU-9: Kenda (76 ha); Parasia (16 ha); Tapsi (13 ha) and Dhasala (3ha) and Dobrana (3ha);
Anticipated that around 25 percent of the population needs to be rehabilitated by 2025.

#1 Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Existing Growth Node** in:

PU - 3	NA
PU - 9	Kenda, Parashia, Kunustoria
PU - 11	NA
PU - 7	Churulia, Hijalgara, Nimsa, Chichuriya

**Settlements which are Census Towns or having expected population of 5,000 or more in 2011, or having strategic importance has been identified as Growth nodes.

Note:
a. It is expected that natural increase of existing population base will lead to population of 1.78 lakhs.
b. Rehabilitated population of 0.21 lakhs from PU-9 & 11 has been relocated to PU-7
c. Design population for Jamuria C.D. Block is 2.5 lakhs for 2025; which means that population of around 0.72 lakhs which will be surplus of natural growth, has been allocated in PU-7 (extensive development zone)

Table 5.10: Detailed population allocation and development nodes in Raniganj C.D. Block

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025#1	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Raniganj C.D. Block Design Population 2,00,000(A)	Restricted Development Zone	PU-10	101626	160309 (B)	Will be rehabilitated within the same planning unit i.e. PU-10	39691 (A-B)	200000

*Subsidence prone Mouzas are:
PU-10: Egara (40 ha), Murgathaul (13 ha), Belebathan (6 ha), Kumardiha (5 ha)
Anticipated that around 25 percent of the population needs to be rehabilitated by 2025 - but within Raniganj C.D. Block itself
#1 Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Existing Growth Node** in:

PU - 10	Ratibati, Chapui, Jemeri, Amkula, Banshra, Rafhunathchak, Ballavpur

**Settlements which are Census Towns or having expected population of 5,000 or more in 2011, or having strategic importance has been identified as Growth nodes.

Note:
a. It is expected that natural increase of exiting population base will lead to population of 1.6 lakhs.
b. Rehabilitated population of 0.4 lakhs to be relocated within Raniganj C.D. Block itself
c. Design population for Raniganj C.D. Block is 2.0 lakhs for 2025; which means that population of around 0.4 lakhs which will be surplus of natural growth, has been allocated within it.

Table 5.11: Detailed population allocation in Raniganj Municipality

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025#1	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Raniganj Municipality Design Population 50,000(A)	Restricted Development Zone	PU-10	111116	175279 (B)		(-) 125279 (A-B)	50000

*Subsidence prone Mouzas are:
PU-10: Raniganj (48 ha)
Anticipated that most of the existing population rehabilitated by 2025 - most of them outside Raniganj Municipal area as it does not adequate land to relocate them; though 0.5 lakhs has been relocated in relatively safe mouza's.

#1 Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Note:
a. It is expected that natural increase of existing population base will lead to population of 1.75 lakhs.
b. Rehabilitated population of 1.25 lakhs to be relocated outside - mostly in adjoining areas; A large share of remaining 0.5 lakhs population will be relocated within the remaining five mouza's of Raniganj Municipality.

Table 5.12: Detailed population allocation in Jamuria Municipality

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025#1	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Jamuria Municipality Design Population 1,50,000(A)	Restricted Development Zone	PU-9	129484	204253 (B)		(-)54253 (A-B)	150000

*Subsidence prone Mouzas are:
PU-9: Bagra (50 ha), Jamuria (38 ha), Shibpur (16 ha)
Anticipated that most of the existing population rehabilitated by 2025 - most of them outside Jamuria municipal area as it does not adequate land to relocate them

#1 Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Note:
a. It is expected that natural increase of existing population base will lead to population of 2.04 lakhs.
b. Rehabilitated population of 0.54 lakhs to be relocated outside - mostly in adjoining areas

Table 5.13: Detailed population allocation in Kulti Municipality

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025#1	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Kulti Municipality Design Population 4,00,000(A)	Restricted Development Zone	PU - 4	85483	134844	(-)67422		67422
		PU - 8	106568	168105	(-)84052		84052
	Extensive Development Zone	PU - 2	8751	13804			13804
	Intensive Development Zone	PU - 5	89101	140552	(+) 94170		234722
	Total		289903	457305 (B)	151475	(-) 57305 (A-B)	400000

*Subsidence prone Mouzas are:
PU-8: Sanctoria (64 ha), Disergarh (22 ha), Aluthiya (17 ha), Sitarampur (14ha), Bharatchak (6ha)

Anticipated that around 50 percent of the population needs to be rehabilitated by 2025.
#1 Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Note:
a. It is expected that natural increase of existing population base will lead to population of 4.57 lakhs
b. Rehabilitated population of 1.51 lakhs from PU-4 & 8 has been partially relocated to PU-5
c. Design population for Kulti Municipality Block is 4.0 lakhs for 2025; which means that population of around 0.57 lakhs which is excess of population to be rehabilitated, must be allocated outside Kulti municipal area

Table 5.14: Detailed population allocation in Asansol Municipal Corporation

Name of C.D. Block/Municipal Area	Type of Development	Planning Unit No.	Existing Population 2001	Projected Population 2025[#1]	Population to be Rehabilitated*	Surplus Population	Design Population for 2025
Asansol Municipal Corporation Design Population 7,50,000(A)	Restricted Development Zone	PU - 8	47758	75335	(-ve)56502	0	18834
	Extensive Development Zone	PU - 6	1500	2366		4525	6891
		PU - 13	64485	101721		40000	141721
	Intensive Development Zone	PU - 12	361696	570554	(-ve)3000	12000	582554
	Total		475439	749977	(-ve) 59502	56525	750000

*Subsidence prone Mouzas are:
PU-8: Kalipahari (27 ha); and most of other mouza's with total area under subsidence around 167 ha
PU-13 Mohisika (20 ha)
PU-12: Narasamuda (17 ha)
Anticipated that around 75 percent of the population needs to be rehabilitated by 2025.

[#1] Population considering natural increase at 20 percent decadal rate over population of 2001
(-) indicates that population will be rehabilitated from this planning unit;
(+) indicates that population will be rehabilitated in this planning unit;

Note:
a. It is expected that natural increase of existing population base will lead to population of 7.5 lakhs approximately
b. Rehabilitated population of 0.56 lakhs from PU-8 has been relocated to PU-12 & 13

5.7 Demand Assessment for land under residential and associated activities

One of the prime objective of land use zoning plan is to provide right quantum of land for various uses. Residential use consumes largest share of developed land and it will continue to do so in future for Asansol Sub-division. On the other hand, amount of land supplied for non-residential activities often decide the quality of life in an urban area.

The demand assessment for land particularly for residential activity has followed the steps listed below.

Step1: To find the quantum of land allocated for existing residential use and existing population for each planning unit;

Step 2: To find out the design residential population of each planning units [Refer Section 5.6];

Step 3: To estimate the net residential density for residential areas in each planning units and adopting design net residential density for 2025.

Step 4: To find out the amount of land that will be required for net residential activity in 2025 - from the design population and design density;

Step 5: To find out the net amount of land required by considering the existing residential land and also the land under threat from subsidence;

The net residential land required in 2025 for each planning units in Asansol Sub-division has been presented in Table 5.15.

In the proposed settlement pattern for Asansol Sub-division, it has been assumed that future population will be spatially allocated in clusters, with population size varying from 15,000 to 30,000. In a residential cluster, land will be needed for residential activities as well as non-residential activities which are needed to support the residential functions. This is akin to the concept of neighbourhood where all facilities desirable at that scale is provided within the neighbourhood. In the following Table 5.16, an attempt has been made to estimate the residential and non-residential land required for design population cluster of 15,000 to 30,000. The non-residential activities include, educational facilities, health facilities, socio-cultural facilities, social amenities and services, physical infrastructure provisions and land required for internal circulation. The design and space standards are adopted from UDPFI and TCPO guidelines, tailored according to our needs. As most of the residential clusters will be around existing population nodes, it is necessary to allocate land more than needed for the future population as there is often a deficit in the provision of land for non-residential activities for existing population.

Table 5.15: Demand assessment for land needed for residential use

Name of C.D. Block/ Municipal Area	Type of Development	Planning Unit No.	Net Residential land in 2011 (in ha)	Net Residential density in 2011 (persons/ha)	Design Population density adopted for 2025 (persons/ha)	Net residential Land required in 2025 (in ha)	Gross Residential land required in 2025 (in ha)
Barabani C.D. Block	Eco-sensitive Development Zone	PU-3	85.1	166	150	38.4	57.6
	Restricted Development Zone*	PU-4	240.1	154	150	62.7	94.0
		PU-8	227.9	201	150	129.8	194.8
	Extensive Development Zone	PU-6	201.9	177	150	464.4	696.6
		Total	755	175		695.3	1043.0
	Note: Approximately 120 ha of residential land in PU-4 & 8 is assumed to under direct subsidence or adjoining them closely, and therefore cannot be used for residential functions in future.						
Salanpur C.D. Block	Restricted Development Zone	PU-4	195.3	155	150	42.5	63.7
	Extensive Development Zone	PU-2	1057.7	57	100	436.3	654.4
		PU-6	103	147	150	229.9	344.9
	Intensive Development Zone	PU-1	566.8	144	175	123.5	185.3
		Total	1922.8	98		832.2	1248.3
	Note: Approximately 39 ha of residential land in PU-4 is assumed to under direct subsidence or adjoining them closely, and therefore cannot be used for residential functions in future.						
Jamuria C.D. Block	Eco-sensitive Development Zone	PU - 3	22.8	152	150	7.5	11.2
	Restricted Development Zone	PU - 9	362	158	150	230.4	345.7
		PU - 11	41.1	185	150	29.6	44.4
	Extensive Development Zone	PU - 7	400	168	150	810.0	1215.0
		Total	825.9	164		1077.5	1616.3
	Note: Approximately 95 ha of residential land in PU-9 & 11 is assumed to under direct subsidence or adjoining them closely, and therefore cannot be used for residential functions in future.						

Raniganj C.D. Block	Restricted Development Zone	PU-10	756.2	161	150	827	1240.7
	Note: Approximately 250 ha of residential land in PU-10 is assumed to under direct subsidence or adjoining them closely, and therefore cannot be used for residential functions in future.						
Raniganj Municipality	Restricted Development Zone	PU-10	492	271	170	94.1	141.2
	Note: Only 200 ha of residential land in PU-10 is assumed to be used for residential functions in future.						
Jamuria Municipality	Restricted Development Zone	PU-9	912	170	170	696	867
	Note: Only 300 ha of residential land in PU-9 is assumed to be used for residential functions in future.						
Kulti Municipality	Restricted Development Zone	PU - 4	381.1	269	170	110.8	166.2
		PU - 8	723	177	150	198.8	298.3
	Extensive Development Zone	PU - 2	58.2	180	150	33.8	50.7
	Intensive Development Zone	PU - 5	628.3	170	200	545.3	818.0
	Total		1790.6	194		888.8	1333.1
	Note: Approximately 95 ha and 360 ha of residential land in PU-4 & 8 respectively, is assumed to under direct subsidence or adjoining them closely, and therefore cannot be used for residential functions in future.						
Asansol Municipal Corporation	Restricted Development Zone	PU - 8	405.4	141	100	82.9	124.4
	Extensive Development Zone	PU - 6	12.7	142	150	35.7	53.6
		PU - 13	450.7	172	200	307.9	461.9
	Intensive Development Zone	PU - 12	1710.1	254	300	261.7	392.6
	Total		2578.9	221		688.3	1032.5
	Note: Approximately 300 ha, 50 ha and 30 ha of residential land in PU-8, 12 & 13 respectively, is assumed to under direct subsidence or adjoining them closely, and therefore cannot be used for residential functions in future.						

This exercise is mainly done to estimate the proportion of non-residential land to net residential land - for design population clusters of 15,000 to 30,000. If sum of residential land and associated non-residential land is termed as gross residential land, it is evident from Table 5.16 that an addition amount of 50 percent land to net residential land is adequate quantum as gross residential land needed for our design population cluster of 15,000 to 30,000. In Table 5.15, the demand estimation of gross residential land is carried out by multiplying the demand for net residential land with a factor of 1.5.

Table 5.16: Demand assessment for land needed for residential and non-residential use at Residential Zone level

Activities	Cluster Size			
	15000 population		30000 population	
	No.s	Area (Ha)	No.s	Area (Ha)
Residential land (assuming net residential density of 150 persons per ha)		100.0		200.0
Educational facilities		6.88		13.76
Pre-primary school (per 2500 persons @ 0 .08 Ha per facility)[1]	*6*	*0.48*	*12*	*0.96*
Primary school (per 5000 persons @ 0.4 Ha per facility)	*3*	*1.2*	*6*	*2.4*
Senior Secondary school (per 7500 persons @ 1.6 Ha per facility)[1]	*2*	*3.2*	*4*	*6.4*
Higher Secondary school (per 15000 persons @ 2.0 Ha per facility)[2]	*1*	*2*	*2*	*4*

Health facilities		0.3		1.4
Dispensary (per 5000 persons @ 0.1 Ha per facility)[2]	*3*	*0.3*	*6*	*0.6*
Health Centre (per 20000 persons @ 0.4 Ha per facility)[2]	*Nil*	*Nil*	*2*	*0.8*
Socio-cultural facilities		1.7		8.5
Community room (per 5000 persons @ 0.066 Ha per facility)[1]	*3*	*0.2*	*6*	*0.4*
Community hall and library (per 15000 persons @ 0.2 Ha per facility)[1]	*1*	*0.2*	*2*	*0.4*
Community hall and library (per 25000 persons @ 0.75 Ha per facility)[2]	*Nil*	*Nil*	*2*	*1.5*
Religious Building (per 3000 persons @ 0.1 Ha per facility)[2]	*5*	*0.5*	*10*	*1*
Auditorium (per 20000 persons @ 0.4 Ha per facility)[2]	*Nil*	*Nil*	*10*	*4*
Burial Ground (per 10000 persons @ 0.4 Ha per facility)[2]	*2*	*0.8*	*3*	*1.2*
Social amenities and services		0.65		1.6
Post and Telegraph Office (per 10000 persons @ 0.1 Ha per facility)[2]	*2*	*0.2*	*3*	*0.3*
Police Post (small) (per 10000 persons @ 0.2 Ha per facility)[2]	*2*	*0.4*	*3*	*0.6*
Filling Station (per 15000 persons @ 0.05 Ha per facility)[2]	*1*	*0.05*	*2*	*0.1*
Filling Station cum Service (per 25000 persons @ 0.1 Ha per facility)[2]	*Nil*	*Nil*	*6*	*0.6*
Commercial facilities		0.78		3.06
Required commercial centre per 1000-4000 persons (@housing cluster level-220 sq mt per 1000 person)[1]		*0.33*		*0.66*
Required commercial centre per 5000-20000 persons (@sector level-300 sq mt per 1000 person)[1]		*0.45*		*0.9*
Required commercial centre per 25000-100000 persons (@community level-500 sq mt per 1000 person)[1]	*Nil*	*Nil*		*1.5*
Open space based recreational facilities		8.5		16.8
Tot lot (per persons 500 @ 0.05 Ha per facility)[2]	*30*	*1.5*	*60*	*3*
Children's Park (per 2000 persons @0 .2 Ha per facility)[2]	*8*	*1.6*	*15*	*3*
Neighbourhood Play ground (per 1000 persons @ 0.2 Ha per facility)[2]	*15*	*3*	*30*	*6*
Neighbourhood Park (per 5000 persons @ 0.8 Ha per facility)[2]	*3*	*2.4*	*6*	*4.8*
Roads for internal circulation and transport infrastructure (@ of 10-15 percent of the net residential area)		15		34
Physical infrastructure i.e. water supply and distribution, sewerage, solid waste management, electricity distribution and communication lines (@ 5-7 percent of net residential area)		5		7
Total Land required to provide social and physical infrastructure for new residential cluster		38.81		86.12
Design Land requirement for non-residential activities in a newly designed residential cluster (taking into account the land for new settlement as well as land to compensate the deficit in infrastructure provisions for existing residential settlement)		50.0		100.0

[1]Requirement adopted as per UDPFI Guidelines; [2]Requirement adopted as per TCPO Guidelines

Apart from the land required for residential activity and non-residential activities (i.e. land for all uses to be provided in a residential zone), additional land is also required for higher level non-residential functions, which are not provided at the residential zone level. Table 5.17 provides the land requirement for higher order non-residential functions, for each of the administrative zones in Asansol Sub-division. Higher order non-residential activities include commercial, socio-cultural, recreational (open space based), education and health facilities, other social amenities, which will not be provided in residential zones with population threshold of 30,000. The space and design standards have been adopted from UDPFI guidelines and TCPO guidelines, modified according to specific needs of Asansol Sub-division. Detailed list of design specifications has been listed following for reference.

Table 5.17: Demand assessment for land required for non-residential land use at higher level						
Name of C.D. Block/Municipal Area	Land Requirement (in ha)					
	Commercial activities	Recreational facilities(open space based)	Educational facilities	Health and medical facilities	Socio-cultural facilities	Social amenities
Salanpur	30.80	160	56.00	45.20	33.50	10.24
Barabani	17.60	80	32.00	16.90	17.50	6.70
Jamuria	22.00	120	40.00	30.90	24.75	8.22
Raniganj	17.60	80	32.00	16.90	17.50	6.70
Kulti (M)	35.20	160	64.00	45.50	35.00	11.90
Jamuria (M)	13.20	80	24.00	16.60	16.00	4.04
Raniganj (M)	4.40	40	8.00	0.60	1.85	0.32
Asansol (MC)	66.00	320	120.00	84.70	68.50	22.14
Asansol Sub-Division	206.80	960	388.00	220.30	254.50	129.14

Design standards adopted for higher level non-residential functions:

1. Commercial activities:
   Required commercial centre (district level facility for 125000-500000 persons @ 880 sqm per 1000 person)[1]
2. Open space based Recreational activities:
   Regional Park (per 100000 persons @ 40.0 Ha per facility)[2]
3. Educational facilities:
   College (per 50000 persons @ 3.0 Ha per facility)[2]
   Technical Institution (per 50000 persons @ 5.0 Ha per facility)[2]
   Technical Education Center (per 1000000 persons @ 4.0 Ha per facility)[1]
4. Health and medical facilities
   Nursing Home, Child Welfare and Maternity Centre (per 45000 persons @ 0.3 Ha per facility)[1]
   Poly Clinic (per 100000 persons @ 0.3 Ha per facility)[1]
   Intermediate hospital Category A (per 100000 persons @3.7 Ha per facility)[1]
   Intermediate hospital Category B (per 100000 persons @1.0 Ha per facility)[1]
   General Hospital (per 250000 persons @ 6.00 Ha per facility)[1]
   District Tuberculosis Center (per 1000000 persons @ 2.0 Ha per facility)[2]

5. Socio-cultural
   Recreational Club (per 100000 persons @ 1.0 Ha per facility)[1]
   Music dance &Drama (per 100000 persons @ 0.1 Ha per facility)[1]
   Meditation/Spiritual (per 100000 persons @ 0.5 Ha per facility)[1]
   Cinema Theatre (per 20000 persons @ 0.35 Ha per facility)[2]
   Swimming pool (per 100000 persons @ 0.8 Ha per facility)[2]
   Stadium (per 100000 persons @ 3.0 Ha per facility)[2]
   Open Air Theatre (per 50000 persons @ 0.8 Ha per facility)[2]
   Socio Cultural Center (per 1000000 persons @ 15.0 Ha per facility)[2]
   Crematorium (per 500000 persons @ 0.2 Ha per facility)[2]

6. Social amenities and Govt. offices
   Telephone Exchange (per 100000 persons @ 0.2 Ha per facility)[2]
   Police Post (per 40000 persons @ 0.16 Ha per facility)[1]

Police Station (per 90000 persons @ 1.5 Ha per facility)[1]
District Office and Battalion (per 1000000 persons @ 4.8 Ha per facility)[1]
Police Line (per 2000000 persons @ 6.0 Ha per facility)[1]
District Jail (per 1000000 persons @ 10.0 Ha per facility)[1]
Civil Defence and Home Guard (per 1000000 persons @ 2.0 Ha per facility)[1]
Fire Station (per 200000 persons @ 1.0 Ha per facility)[1]

[1]Requirement adopted as per UDPFI Guidelines; [2]Requirement adopted as per TCPO Guidelines

5.8 Classification of proposed land use zones

As stated before, the basic objective of the Land Use Zoning Plan is to find the right quantity of land and locate them in appropriate location. After assessing the quantum of land required for various uses, the next logical step towards preparing the land use zoning plan is to group compatible uses in land use zone. This is required for allocating the land use in right locations where nuisances arising out of incompatible activities can be minimised and advantages can be reaped mutually by placing complimentary activities in proximity.

Six broad land use zones has been conceived for the proposed land use zoning plan for Asansol Sub-division. They are:

a. Proposed Residential Zone
b. Proposed Commercial Zone
c. Proposed Light Industrial Zone
d. Proposed Heavy Industrial Zone
e. Proposed Institutional Zone
f. Proposed Primary Sector Activity Zone

In proposed residential zone, residential uses as well as non-residential activities commensurate for residential population size upto 30,000 has been considered. Non-residential activities include lower level commercial functions, public and semi-public facilities i.e. education, health, socio-cultural, other amenities, open space based recreational facilities, micro and small scale non-polluting enterprises, internal roads and transport infrastructure, physical infrastructure i.e. water supply and distribution facilities, sewerage, solid waste management, electricity distribution facilities etc.

In proposed commercial zone, higher order commercial functions involving trade and commerce, central business district functions, whole sale trading functions, warehousing, storage etc. has been incorporated. It must be noted that commercial functions commensurate to residential cluster level have already been included at the proposed residential zone. This proposed commercial zone will exclusively deal with city and region level commercial functions and associated activities.

As Asansol Sub-division has always established itself as the manufacturing centre of the state as well the eastern India, it is evident that manufacturing activity will acquire a prominent place in the future land utilisation policy. Looking at the present trend of industrial investment in the region, emphasis has been placed both on light as well as heavy industries.

In proposed light industrial zone, industrial enterprises upto medium category and with pollution potential upto ORANGE category has been incorporated. The basic idea was to create industrial enclaves/estates where clean manufacturing will be promoted in medium scale setup - as they attract lot of investments, generate relative higher employment and need much centralised industrial infrastructure, which can only be provided in a spatially clustered location.

On the other hand, proposed heavy industrial zone has been conceived for large scale extensive manufacturing often with high pollution potential. To create such zones is to restrict the polluting industrial activities in particular location so that the nuisance from this activities can be minimised.

In proposed institutional zone, all kinds of higher order education, health, public and semi-public institutions, recreational activities, physical infrastructure, social amenities has been located. There is a need to isolate the higher level institutional functions from the lower level provided at proposed residential zone, as these higher order functions are often under supplied or located at sub-optimum location if not dealt separately and comprehensively at a regional level.

In proposed primary sector activity zone, all activities which are related to farming, mining and extraction, animal husbandry, forestry, surface water sources etc. have been clubbed together. The reasons for this grouping is manifold. Large tracts of land close to unstable locations within restricted development zone should allow only activities i.e. urban forestry, community plantation, farming etc., as it is unsafe for any use/activities necessitating built-up development. On the other hand, available vacant land which is excess of land required to be developed should be kept as future reserve for development and only primary sector activities i.e. farming, plantation, horticulture, animal husbandry etc. can be allowed. Vacant land along the bank of river or streams has been reserved for primary sector activity zone as it will act as riparian buffer. Apart from that, to provide contiguity to scattered forests or extensive farming activity, vacant land has been earmarked for similar type of activity. Proposed primary sector activity zone also comprises of types of future land uses which should be kept away from being developed.

The basic objective behind this classification is to allow flexibility in the Land Use Zoning Plan. It does not specify a particular activity to a parcel of land, but offers him a broad spectrum of possibilities to choose from - but within the basic scheme of activity-location planning.

5.9 Concept level land use zoning plan

A brief look at the spatial distribution of the existing settlement pattern shows that most of the settlements have clustered along the NH-2 and NH-60 - as they offer better regional connectivity. However, higher concentration of settlements along the regional corridors impedes regional through traffic and reduces the level of service. Large areas in north of the planning area has very few settlement or any other economic activities due to lack of connectivity. This issue has been addressed in the Perspective Plan where a east-west alignment has been conceived parallel to the NH-2 and Ajoy river - connecting large parts of the Jamuria, Barabani and Salanpur C.D. Block. Recommendations were made to have adequate north-south linkages at regular intervals to link the east-west alignments. The broad allocation of the activities for each planning units has been based on this anticipated structure of future road connectivity.

In this exercise, the spatial allocation of various land use zones in planning units has been guided by the proposed regional network. As Land Use Zoning Plan is about providing right quantity of land for various uses at right locations, most importantly public goods i.e. roads, the conceptual spatial structure of the land use zoning plan has emerged from the layout of future roads. Three category of roads has been conceived in the proposed land use zoning plan, which are listed following.

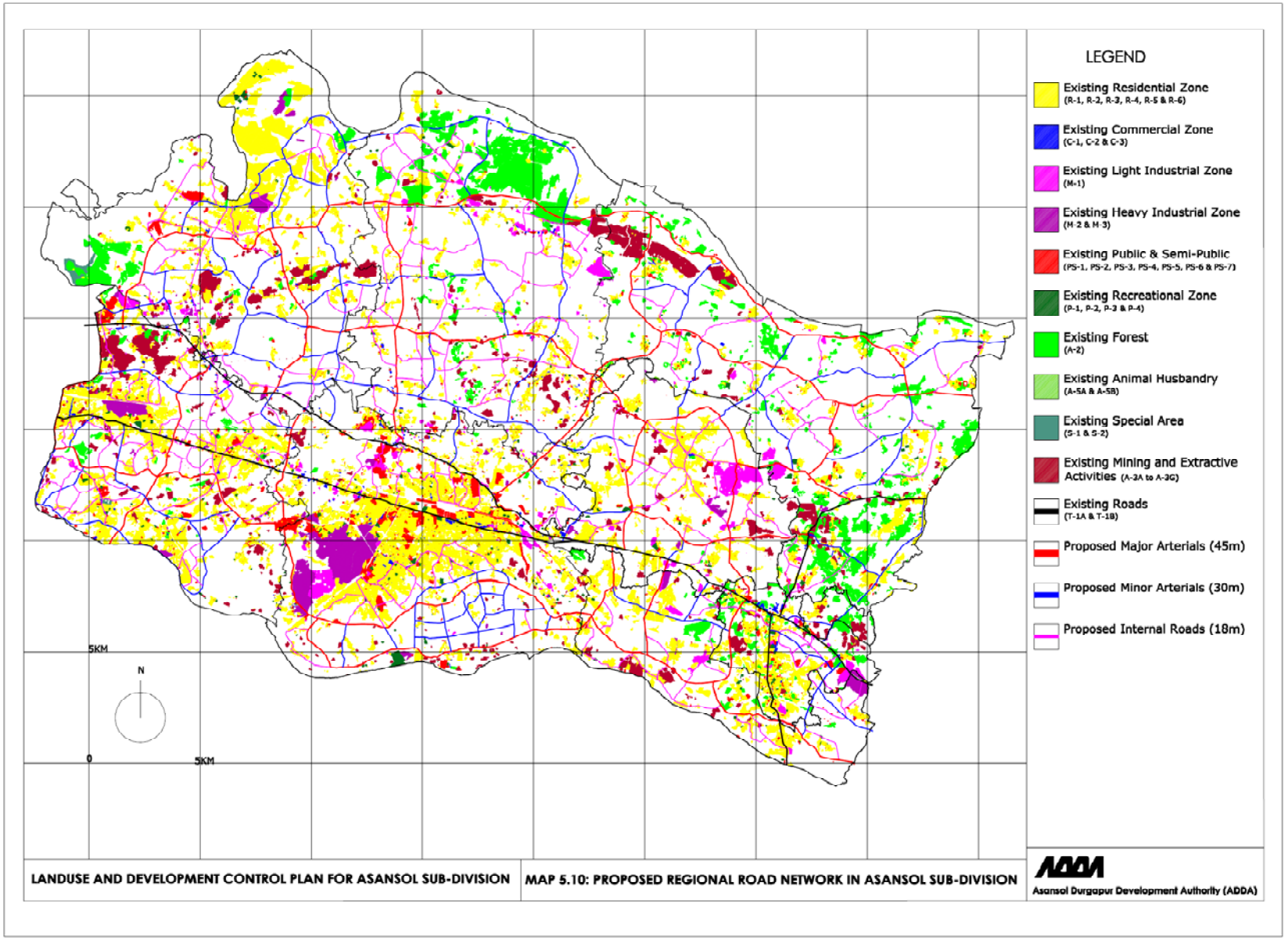
a. Major arterials: These roads, with ROW of 45m, are expected to provide connectivity across the planning area and change the basic structure of future road network. The proposed alignment of these roads has tried to follow existing road alignments wherever possible - but main focus was to provide a balance in regional connectivity to the areas which lacked it. Most of the large development nodes i.e. industrial, institutional, commerce etc. which require regional level interaction may be allocated around these roads. In general, settlement nodes should be avoided from such alignments as they may trigger ribbon type development along these corridors. Several development control guidelines have also been framed to control the activities which can come within a certain distance from these corridors.
b. Minor Arterials: These roads, with ROW of 30m, is expected to provide intra-regional connectivity i.e. within various important nodes of the planning area. The alignment of minor arterials has been guided by the layout of major arterials. Most of the large residential settlements has been guided by the alignment of minor arterials. In general, where major arterials provide connectivity across C.D. Blocks and municipal areas, minor arterials provide connectivity within these administrative units.
c. Internal roads: These roads, with ROW of 18m, is expected to provide internal connectivity within the proposed and existing settlements. Most of the alignments have followed the existing road alignments.

The proposed regional road network has been shown in Map 5.10 and the detailed provision of the various category of roads has been proposed in Table 5.18.

Table 5.18: Distribution of various category of roads in proposed road network

Name of C.D. Block/Municipal area	Length of roads (in km)			
	Proposed major arterials (ROW 45 m)	Proposed minor arterials (ROW 30 m)	Proposed internal roads (ROW 18 m)	Total roads
Salanpur	24.3	60.9	51.9	137.1
Baraboni	41.9	51.9	92.8	186.6
Raniganj	27.5	16.2	36.5	80.3
Jamuria	52.1	47.3	47.9	147.3
Rural	145.8	176.4	229.1	551.29
Asansol (MC)	44.9	46.0	60.5	151.4
Kulti (M)	38.2	47.2	98.4	183.8
Raniganj (M)	5.2	9.1	13.0	27.2
Jamuria (M)	30.2	11.8	42.3	84.3
Urban	118.6	114.1	214.2	446.84
Total	264.4	290.5	443.3	998.1

In the following part, concept plan for eight administrative units has been elaborated with basic structure of land use zone allocation, with reference to the proposed regional road network.


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Existing Commercial Zone (C-1, C-2 & C-3)
Existing Light Industrial Zone (M-1)
Existing Heavy Industrial Zone (M-2 & M-3)
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Existing Forest (A-2)
Existing Animal Husbandry (A-5A & A-5B)
Existing Special Area (S-1 & S-2)
Existing Mining and Extractive Activities (A-3A to A-3G)
Existing Roads (T-1A & T-1B)
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
5KM
N
0
5KM
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.10: PROPOSED REGIONAL ROAD NETWORK IN ASANSOL SUB-DIVISION
ADDA
Asansol Durgapur Development Authority (ADDA)

5.9.1 Concept Plan for Raniganj C.D. Block

As Raniganj C.D. Block falls completely under Restricted Development Zone (Planning Unit -10), spatial allocation of future land use zones is largely guided by availability of land away from unstable locations. Settlements i.e. Egara, Murugathol, Belebathan, Kumardih, Chalbarpur have large tracts of land which unstable due to mining subsidence.

To improve the regional connectivity of this portion of the planning area, a major arterial (45 m ROW) has been proposed parallel to NH-2 along the bank of Damodar river - along east-west orientation. Several minor arterials criss-crosses Raniganj C.D. Block along north-south orientation connecting the NH-2 and NH-60 with the proposed river bank arterial.

Five settlement clusters has been contemplated as proposed residential zones. They are:

1. Narankuri, Sahebganj, Raghunathchak, Ballavpur and Napur;
2. Chakbrindabanpur and Baktarnagar;
3. Belebathan, Chalbalpur and Jemeri;
4. Chelad, Ratibati and Chapui;
5. Amkula (relatively small)

Large institutional zone has been contemplated in Harabhanga and Tirat, close to Belebathan-Chalbalpur-Jemeri residential cluster - and another one is close to Amkula.

Two large commercial zones have been located close to NH-2; one near Chapui-Saora, the other near Chakjanadhara.

Light industrial zones are located near Bansra and Jemeri - both close to NH-2 and contiguous to existing industrial activities.

Agriculture and primary sector activity zone has been allocated along the Damodar river - where plantation, farming and other farm based activities will be allowed. Apart from that, large contiguous tracts of farms lands have been preserved between settlement. Vacant land close to settlements with large quantum of unstable locations has been allocated for primary sector activities.

5.9.2 Concept Plan for Jamuria C.D. Block

Most part of the Jamuria C.D. Block is under Extensive Development Zone and Restricted Development Zone - though some Eco-sensitive Development Zone is present in the north-west tip, along the bank of Ajoy river. Most of the restricted development zone is in the southern side of C.D. Block - covering Kenda, Parasia and Kunustoria as these settlements are affected by mining subsidence.

NH-60 passes through the southern part i.e. the restricted development zone. East-west regional linkages parallel to the NH-2 alignment has been proposed through the Jamuria C.D. Block, connecting the proposed industrial zones and residential zones. A large part of the Jamuria C.D. Block lacked regional

connectivity and proposal of such east-west regional connection parallel to NH-2 and Ajoy river has been proposed in the Perspective Plan for Asansol Durgapur Planning Area: Vision-2025.

Four large residential zones has been proposed within Extensive Development Zone (Planning Unit -7), namely Churulia, Hijalgara, Chichuria, Nimsa; two residential zones has been allocated around Kenda and Kunustoria within Restricted Development Zone (Planning Unit -9).

Large light industrial zone has been proposed in following locations:

1. Taltor, Shakeri and Sattar;
2. Chichurbil and Churulia;
3. Kumardiha and Patharchur;
4. Bijoynagar and Bahadurpur;
5. Hijalgara

Along with the light industrial activities, extensive areas have been proposed for heavy industrial activities in following locations.

1. Madantor;
2. Jayantipur and Sattar;
3. Darbardanga and Patharchur;
4. Sidhpur, Benashol and Khamarshol

Heavy industrial zone, where extensive industries of polluting nature can come up, is located only in this region within the Asansol Sub-division. In fact, West Bengal Pollution Control Board has issued a specific siting instructions, which allows ORDINARY RED and SPECIAL RED category industries only near Jamuria Industrial estate in Bardhaman district.

Institutional zones within the Block has been proposed near Jamshol-Hijalgara (having large area), Churulia, Kenda, Kunustoria, Andhira-Baguli and Nimsa.

A large commercial zone has been proposed near Taltor industrial zone, whereas another large commercial area is adjoining the proposed institutional and residential zone in Jamshol-Hijalgara.

Agriculture, forests and primary sector activities has been allocated largely in the northern side of the Block along the banks of Ajoy river, in places around the industrial zones to provide buffer from air-borne industrial pollutants, as well as in places where land is prone to mining subsidence.

5.9.3 Concept plan for Barabani C.D. Block

There are four planning units within Barabani C.D. Block - two of them under restricted development zone, and one eco-sensitive and extensive development zone. Jamgram and Panuria in Planning Unit-4, and Barabani, Manoharbahal, Majiyara and Charanpur in Planning Unit-8 is affected by mining

subsidence. Planning Unit-8 lies close to the NH-2; and Planning Unit-6 i.e. extensive development zone is sandwiched between Planning Unit-4 & 8.

There are no major regional connectors within this C.D. Block. As a result it has been proposed in Perspective Plan for Asansol Durgapur Planning Area: Vision-2025, to provide east-west connectivity in the northern side of NH-2, running parallel to Ajoy river. Two regional arterials have been proposed in east-west alignment, one passing through the proposed industrial zones and residential zones in Planning Unit-4 and another through the Planning Unit-6, through proposed residential and institutional zones. Apart from that, a regional connector has been provided in north-south alignment passing through proposed development nodes.

Three large residential zones has been proposed in Planning Unit-6, which falls under extensive development zone, namely Kelejhora-Domahani in the east, Taldanga-Lalganja-Baliyapur and Bijari-Raghunathchak-Raniganj in the west. Within Planning Unit-4, residential zone has been proposed in Andiha-Khayerbad and Kapistha; whereas Kanyapur in proposed in Planning Unit-8 - all within restricted development zone.

Light industrial zone has been proposed in Chotkara-Bardanga; Jamgram-Sarsthali-Madanpur within Planning Unit-4 which is contiguous to industrial zones in Jamuria C.D. Block; and Chichuria-Napara in Planning Unit-8.

Proposed commercial zones have located in Raniganja mouza, close to proposed residential zone in Raghunathchak. Institutional zone has been proposed in Lalganja-Kelejhora, Chichuria, Kanyapur-Panchgechiya, Domahani, and Khayerbad.

Large tracts of land has been allocated for primary sector activities i.e. plantations, contiguous to existing forest resources - in eco-sensitive development zone. Vacant lands within restricted development zone has been preserved for primary sector activities. Large tracts of agriculture in mid portions of the Barabani C.D. Block has been retained in the proposed plan.

5.9.4 Concept Plan for Salanpur C.D. Block

There two extensive development zones, i.e. Planning Unit-2 and 6, one restricted development Zone, i.e. Planning Unit-4, and one intensive development zone, i.e. Planning Unit-1. Extensive mining subsidence is observed in Salanpur, Banbirdi, Alkusha and Dendua.

There are large existing settlements in Chittaranjan and adjoining area - which falls under Planning Unit-1, i.e. intensive development zone. Large part of areas in the west of the Salanpur C.D. Block is submerged in water (part of Maithan dam) and covered with forest.

A regional corridor has been proposed along the east-west alignment as recommended by the Perspective Plan for Asansol Durgapur Planning Area: Vision-2025. In addition to this, another regional arterial has been proposed along north-south alignment - connecting NH-2 with Chittaranjan.

Two large residential settlements has been proposed in Planning Unit-6, one near Ethora-Angaria, another near Bolkunda-Parbatpur. Residential zones has been proposed around Chittaranjan, in Ghiadoba-Uttar Rampur-Kusumkanali in the eastern side, and Pithakiari-Benagarya-Rupnarayanpur-

Harishadi-Achra in the south and western side, contiguous with intensive residential development in Planning Unit-1.

Large institutional areas have been proposed in Talberia and Madhaichak (near Ethora-Angaria), Achra, Jemari, Dendua, Ramchandrapur, Namakeshia, Amladahi - most of them around large proposed settlements along the proposed regional arterials.

Commercial zones have been proposed at various locations in Salanpur C.D. Block - Barmuri in Planning Unit-1, Rupnarayanpur in Planning Unit-2, Basudebpur, Nekrajuri and Talberia (near NH-2) in Planning Unit-6.

Several industrial zones have been proposed in Nekrajuri-Maheshpur-Barabai, Dharma-Talberia-Bara Pattabara-Milakhola, Bolkunda-Sadhna, Manahara, Harishadi, and Kalya-Kirtanshala.

Large tracts of vacant land in the western parts near Maithon dam and adjoining forests (restricted development zone in Planning Unit-4) has been allocated primary sector activities for future land use. Agriculture has been allowed to continue in large tracts of contiguous land in the middle and lower regions of the C.D. Block.

5.9.5 Concept Plan for Raniganj Municipality

Raniganj Municipality is located within Restricted Development Zone (Planning Unit-10). Large open cast mining activities take place in Siarshol (southern side). All of the Raniganj mouza is affected by mining related subsidence. Incidentally, most of the existing population is located in it which requires relocation and resettlement in adjoining mouzas and outside municipal area. No residential development has been proposed in this mouza.

NH-2 and NH-20 passes through Raniganj Municipality - as a result Panjabi More and Raniganj Bazar has emerged as one of the busiest commercial nodes in Asansol Sub-division. A large commercial zone has been allocated near Panjabi More in Amrasota mouza. Raniganj Bazar needs phase wise relocation as most of the structures are extremely close to unstable locations.

Most of future population has been allocated in Ronai and North of Siarshol (close to NH-2). A large institutional zone has been proposed near Ronai, Amrasota and Mangalpur. Large light industrial zone has been contemplated in Mangalpur - on northern side of NH-2, close to existing industrial activities.

Vacant land close to mining location near Siarshol has been allowed to continue with primary sector activities i.e. urban forestry etc.

5.9.6 Concept Plan for Jamuria Municipality

This zones lies completely within Restricted Development Zone (Planning Unit - 9). Bagra, Jamuria and Shibpur are worst affected by mining subsidence. Most of the existing population as well as the urban functions of Jamuria Municipality is located within Jamuria mouza. The entire municipal area is scattered with small settlements, brick kilns, mines and industrial estates.

NH-2 passes through south side of Jamuria Municipality - which has led to a lot of ribbon-type development along the regional corridor in Ningha, Chanda and Bagra. To provide more accessibility to the urban core of Jamuria from NH-2 and adjoining region, a ring road system has been proposed around the urban core. At present all the connectors with Jamuria Municipality passes through the urban core in Jamuria mouza which is extremely congested and severely affected by subsidence. [This is adopted from the recommendations of Comprehensive Mobility Plan for Asansol Urban Area, 2008.]

Residential activities in Jamuria Municipality have been proposed in the following clusters:

1. Pariharpur and west of Jamuria mouza;

2. Khoshkula and Ningha;

3. Nandi

A large industrial base already exists in Mandalpur-Ikra node. Light industrial zone has been proposed next to the existing industrial node in Balanpur, Katyagara, Satgram, Mandalpur, Ikra, Sarthakpur and Mamudpur - whereas heavy industrial zone is proposed in Ikra. This will create a large contiguous industrial zone in the eastern periphery of the municipal area.

Institutional zones has been proposed in Kundalia-Shripur, Chanda-Khoshkula-Bagra, Banali-Satgram and Shibpur-Kaithi - mostly where large concentration of public land is available or vacant land is available at strategic locations.

Large amount of land has been kept for continuation of farm activities, preservation of forests/plantations and other primary sector activities - largely as buffer for industrial activities as well as for utilisation of vacant land prone to subsidence.

5.9.7 Concept plan for Kulti Municipality

There are two restricted development zones, covering Planning Unit-4 and 8, along with a large intensive development zone i.e. Planning Unit-5. A small extensive development zone exists in the north-west tip with only three mouzas.

A large number of mouzas in Planning Unit-8 is affected by mining subsidence -namely Sanctoria, Dishergarh, Chota Dhemu, Shitalpur, Bidyanandapur, Sodepur, Radhanagar, Bharatchak, Aluthiya and Patmohona. This part of the municipal area has been extensively mined for last hundred years and more, and still large parts are under active mining.

Existing settlements are located around four clusters in Kulti Municipality - Niyamatpur-Kumardiha, Sanctoria-Dishergarh-Chinakuri-Asanbani-Shitalpur-Manoharchak, Kulti-Kuldi-Petana-Kendua and Barakar-Manberia-Balitara.

An east-west regional arterial has been proposed parallel to G.T. Road on the southern side, providing connectivity to vast stretches of land between G.T. Road and Damodar river. Another north-south regional arterial has been proposed to connect the southern fringes of the municipal area with NH-2 bypass.

Future residential settlements has been located at many place within the municipal area as listed following:

1. Hatinal, Narayanchak, Bolodi and Jashaidi;

2. Badirchak, Mahutdi, Shipur and Namagarara;

3. Kalikapur;

4. Duburdih

Institutional zones are proposed in Kamalpur (along G.T. Road), Niyamatpur, and Narayanpur-Bolodi.

Light Industrial zones are proposed in Mahatdi-Namgara-Gangutia, and scattered along NH-2 in Duburdi, Digari and Sabanpur.

Nine mouzas has been identified as proposed coal block - covering around 2063.19 acre in Chalbalpur, Lachmanpur, Punuri, Dedi, Badrichak, Rampur, Kultora, Bhanra and Kulti.

No development activities has been proposed in vicinity of nearly 1.0 km from the earmarked zone. Only Primary sector activities will be permitted as these area may be affected by significant air and water pollution as well as from future threat of land subsidence.

Primary sector activities, forest cover and agricultural activities has been retained in large tracts of land, mostly in restricted development zone and where contiguous farming practices exists.

5.9.8 Concept Plan for Asansol Municipal Corporation

The urban core of Asansol Municipal Corporation falls under intensive development zone. Restricted development zone lies on the northern side of the municipal area, falling in Planning Unit-8. On the southern side lies large extensive development zone - along the bank of river Damodar.

Most of the mouzas in restricted development zone, lying on the northern side of NH-2 bypass alignment is affected by subsidence. Three mouzas lying on the south of G.T. road i.e. Kalipahari, Mohisika and Ghosik are affected by subsidence.

The urban core of Asansol municipal area is extremely congested - as it has developed only along two major roads i.e. G.T. Road and Sen Raleigh Road. Expansion of the urban core is restricted by railway linkages and IISCO unit.

A ring road has been proposed on the southern periphery of the existing town - from western side of IISCO, along the bank of Damodar river and meeting G.T. Road near the entry to Asansol Municipal Corporation area. [This is based on the recommendations from the Perspective Plan for Asansol Durgapur Planning Area: Vision-2025 as well as by the Comprehensive Mobility Improvement Plan for Asansol Urban Area].

Future residential zones has been proposed along the proposed ring road alignment - namely in Barathol-Mohisika-Kotaldiha-Hirapur-Nabaghanadi-Ismail (all in south), Marichkata in north-west tip of municipal area and Nischinta in north-east of the municipal area. Apart from that infill residential development has been proposed for urban core, which is an intensive zone.

Large commercial zones have been proposed in the southern fringes of municipal area, in Kalajharia, Ismail-Talkunuri, to provide an alternative site for trade and commerce functions in Asansol. Few commercial zones have been proposed near Dihika-Bangram (close to manufacturing locations near IISCO Burnpur), Satpukhuria-Chak Keshabganja-Keshabganja near G.T. Road - NH-2 junction, Baradhemo along G.T. Road and in Sudi-Marichkata along NH-2.

Light industrial zones have been proposed in Chak keshabganja in the eastern side of municipal area, Kuilapur-Purushottampur-Lakrasata-Shanrmara-Baradigari on the west contiguous to IISCO Burnpur unit, Baradhemo, and Ganrul-Nadiha-Palashdiha along NH-2.

A large institutional zone has been proposed near the southern side of the municipal area - in Talkunuri-Dhenua-Kotaldiha and Nabaghanadi-Hirapur. Apart from that some institutional zone has been proposed in Marichkata, Gobindapur-Ganrul along NH-2.

A considerable portion of land adjacent to river Damodar, in the southern fringes has been reserved for primary sector activities - mostly under agriculture and plantation. Tracts of vacant land in the restricted zone with huge areas of unstable locations due to mining subsidence has been allocated for primary sector activities in future.

5.10 Detailed land use zoning plan and proposed utilisation of land

Based on the concept plan, detailed Land Use Zoning Plan, at mouza level, has been prepared for the Asansol Sub-division. The recommendations at the C.D. Block/municipal area level and Planning Unit level has been interpreted for each mouza, generating a Land Use Zoning Plan and register for each mouza of Asansol Sub-division. Following basic guidelines were adopted in detailing out the concept plan at mouza level.

1. No change has been made to the existing land use falling under developed category, except in rare occasions. Most of the proposed development has been restricted to vacant land and agricultural land (land use category A-1 & A-6).

2. Location of the forest cover and surface water bodies has been duly considered while locating future land use. Care has been taken not to allocate any land use which might threaten the vitality of these natural resources. No development zone has been proposed within 100-150m from the existing river edge. Scattered or disjointed forest cover has been connected, to provide contiguity, by proposing land for primary sector activities i.e. forestry etc.

3. Location of subsidence prone land has been taken into serious consideration. No development has been permitted within 300-500m from identified unstable location. These locations are also noted in the map and register for easy reference.

4. Distribution of land owned by state government has been mapped and also noted in the register. Large institutional zones have been proposed where significant share of land is under state government ownership. Smaller parcels of public land within settlement areas have been marked for lower order public and semi-public functions catering to the residential zone. Apart from that, significant reserve of public land has been allocated primary sector activities i.e. social forestry etc.

5. Large parcels of agricultural land have not been disturbed. Farm land has been used for development where scattered farming practices are observed or the land is too important from location stand point.

6. Roads have been aligned is such a way that no developed land is required land to be consumed - particularly for major and minor arterials. As these two category of roads have large ROW, most of them have bypassed existing settlements. On the other hand, internal roads with less ROW, has mainly followed existing road alignments through settlements - wherever possible. Some village settlements have been marginally disturbed due to internal roads, only where there were no other available options - however, such occurrences are few.

7. Land where no development is permitted due to threat from mining subsidence or being close to riverfront has been allocated primary sector activities. If the land already has agriculture or forests or other primary sector functions, it allowed to continue.

8. Vacant land (land use category A-6) which is not required for any use has been allocated primary sector activities. They are development reserve to meet the demand beyond the plan period, or they can be utilised if land is required for unforeseen activities within the plan period.

The proposed utilisation of land for various uses has been summarised in Table 5.19 and 5.20 for each planning units. Around 1/4th of the land area in the Asansol Sub-division has been allotted for residential land use - of which half has been proposed in this land use zoning plan and rest is existing residential land. The share of residential land is higher in urban areas compared to rural areas. Among rural areas Raniganj C.D. Block will have the highest share of residential land as it has been designed to accommodate the rehabilitated population from Raniganj municipal area, where large parts are under threat from subsidence. Among urban areas, Asansol municipal corporation has the highest share followed by Raniganj municipal area. However, most of the existing residential area in Raniganj municipality needs relocation and the land will not be utilised in future.

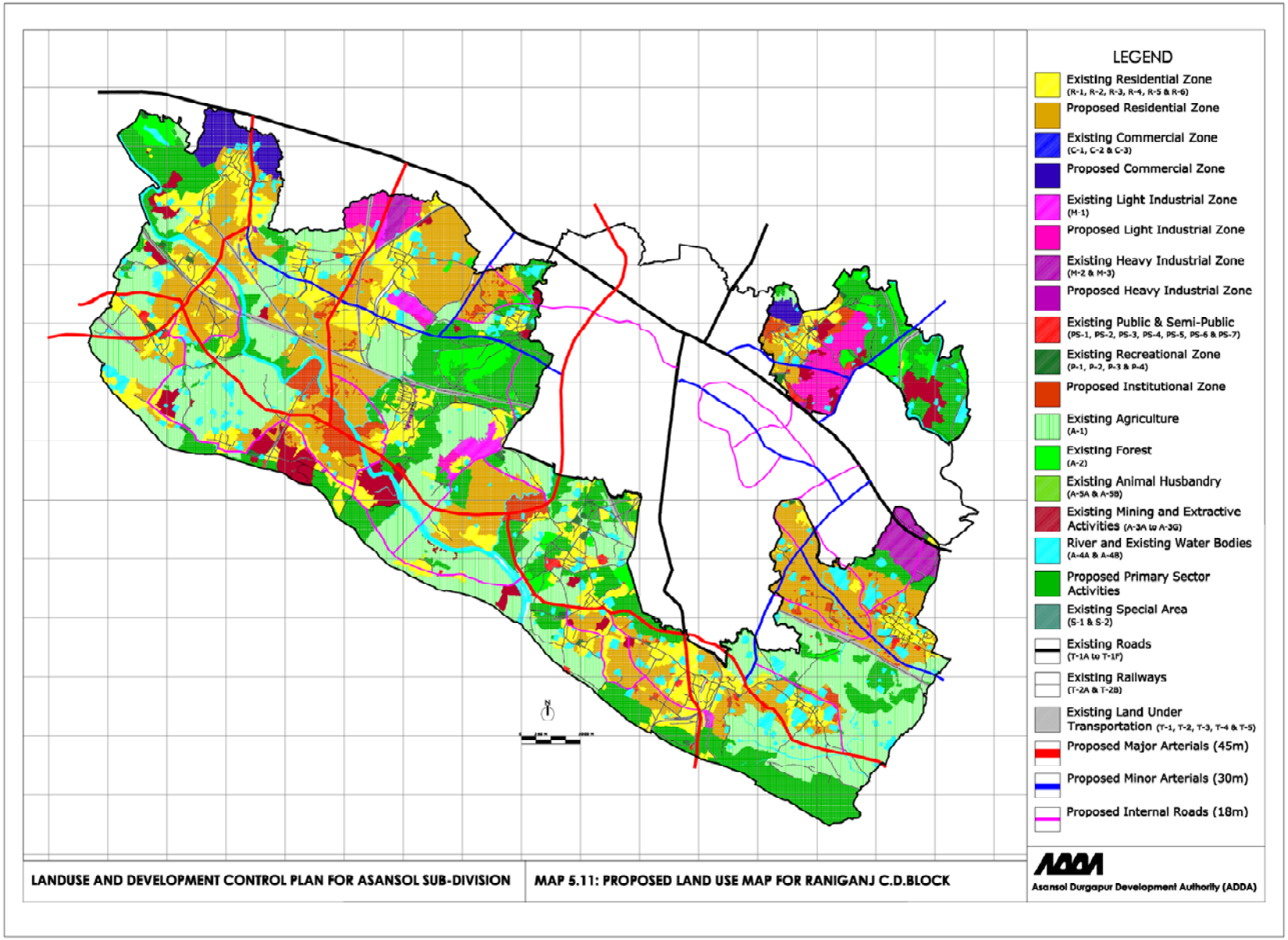
Share of land dedicated to commerce has increased manifold in the proposed plan as this region holds great promise in trade and commerce sector. Urban areas has been provided generous amount of land (2 - 4 percent) for city level commercial functions.

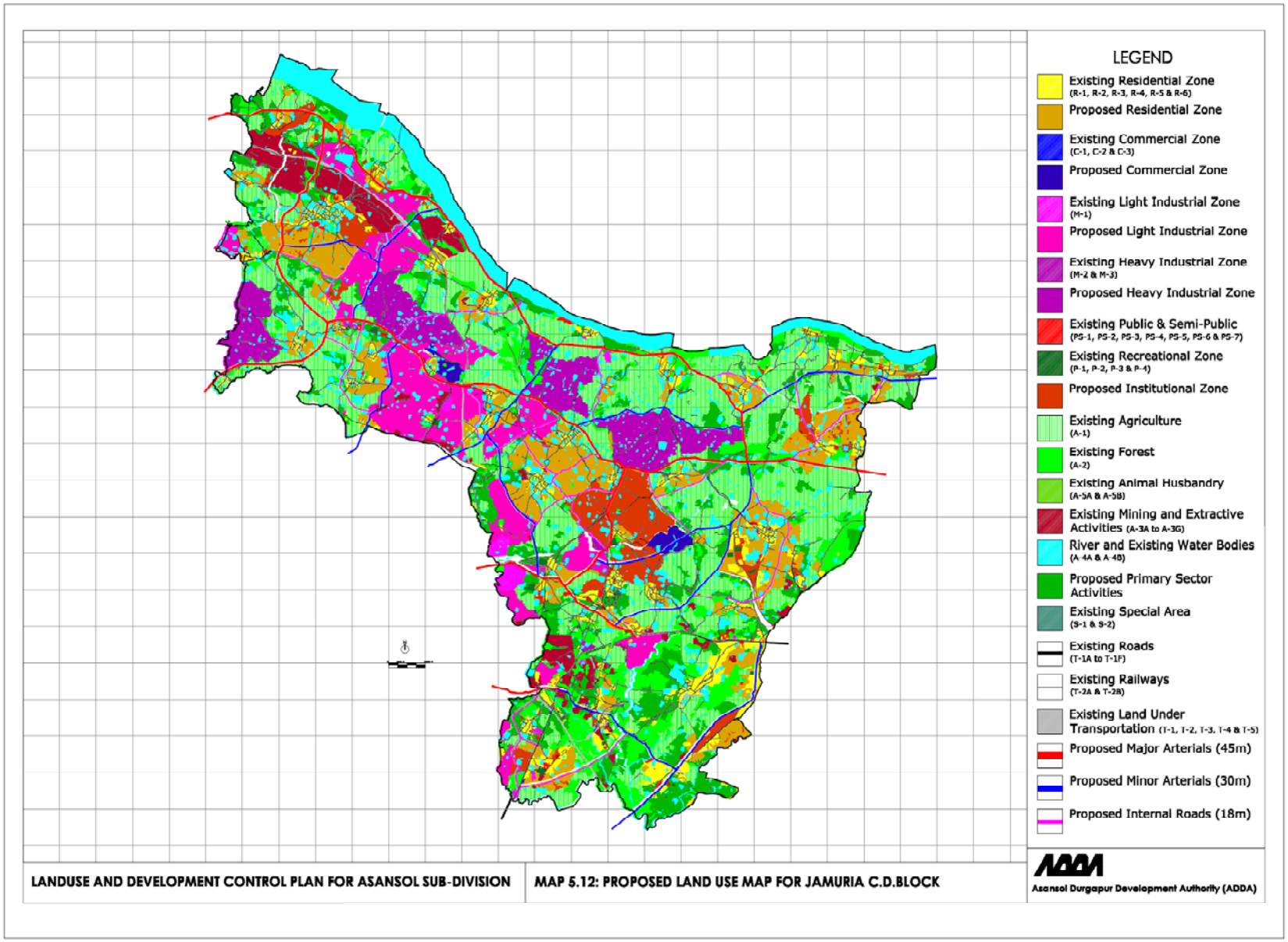
Asansol Sub-division has a large existing heavy industrial base and the equal amount of additional land has been allotted for similar type of activities in the plan period. Most of the land for proposed heavy industrial has been reserved in Jamuria C.D. Block.

On the contrary the share of land for light industrial area has been increased six times. All the C.D. Blocks and municipal areas have been generously provided large industrial zones to promote light manufacturing enterprises upto medium scale within the Sub-division.

Share of land dedicated for institutional and recreational activities have been tripled in rural areas and doubled in urban areas. The proposed plan will have around 8-10 percent of the land in urban areas for such activities.

More than 42 percent of land has been kept undeveloped in urban areas. It consists of farmlands, forest cover, surface water bodies, activities associated with farming, animal husbandry as well as barren land. The share is more than 62 percent for rural areas for similar activities in Asansol Sub-division.


LEGEND
Existing Residential Zone (R-1, R-2, R-3, R-4, R-5 & R-6)
Proposed Residential Zone
Existing Commercial Zone (C-1, C-2 & C-3)
Proposed Commercial Zone
Existing Light Industrial Zone (M-1)
Proposed Light Industrial Zone
Existing Heavy Industrial Zone (M-2 & M-3)
Proposed Heavy Industrial Zone
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Proposed Institutional Zone
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Animal Husbandry (A-3A & A-3B)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Proposed Primary Sector Activities
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
Asansol Durgapur Development Authority (ADDA)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.11: PROPOSED LAND USE MAP FOR RANIGANJ C.D.BLOCK


LEGEND
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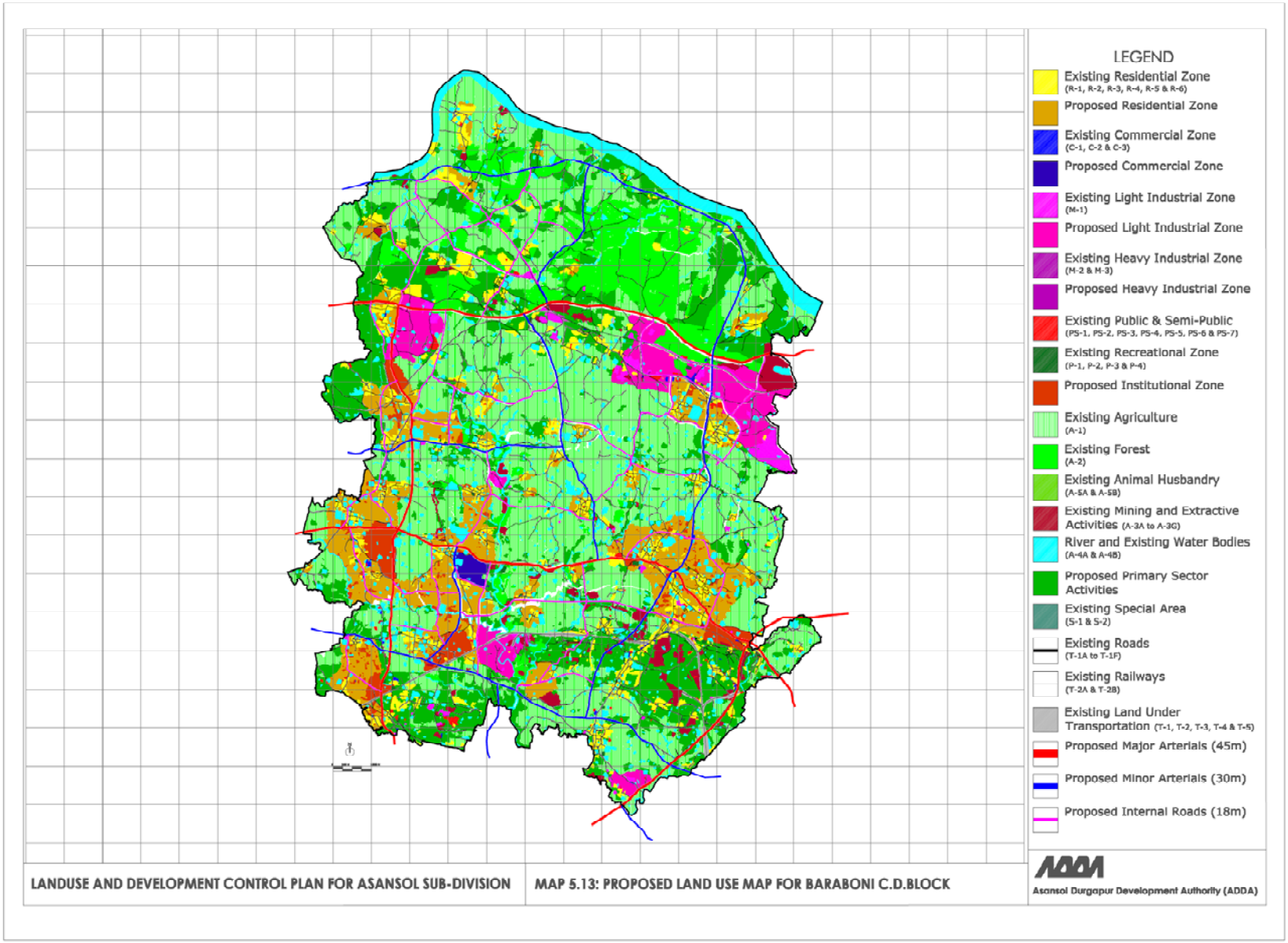
Proposed Residential Zone
Existing Commercial Zone (C-1, C-2 & C-3)
Proposed Commercial Zone
Existing Light Industrial Zone (M-1)
Proposed Light Industrial Zone
Existing Heavy Industrial Zone (M-2 & M-3)
Proposed Heavy Industrial Zone
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Proposed Institutional Zone
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Animal Husbandry (A-3A & A-3B)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Proposed Primary Sector Activities
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.12: PROPOSED LAND USE MAP FOR JAMURIA C.D.BLOCK
ADDA
Asansol Durgapur Development Authority (ADDA)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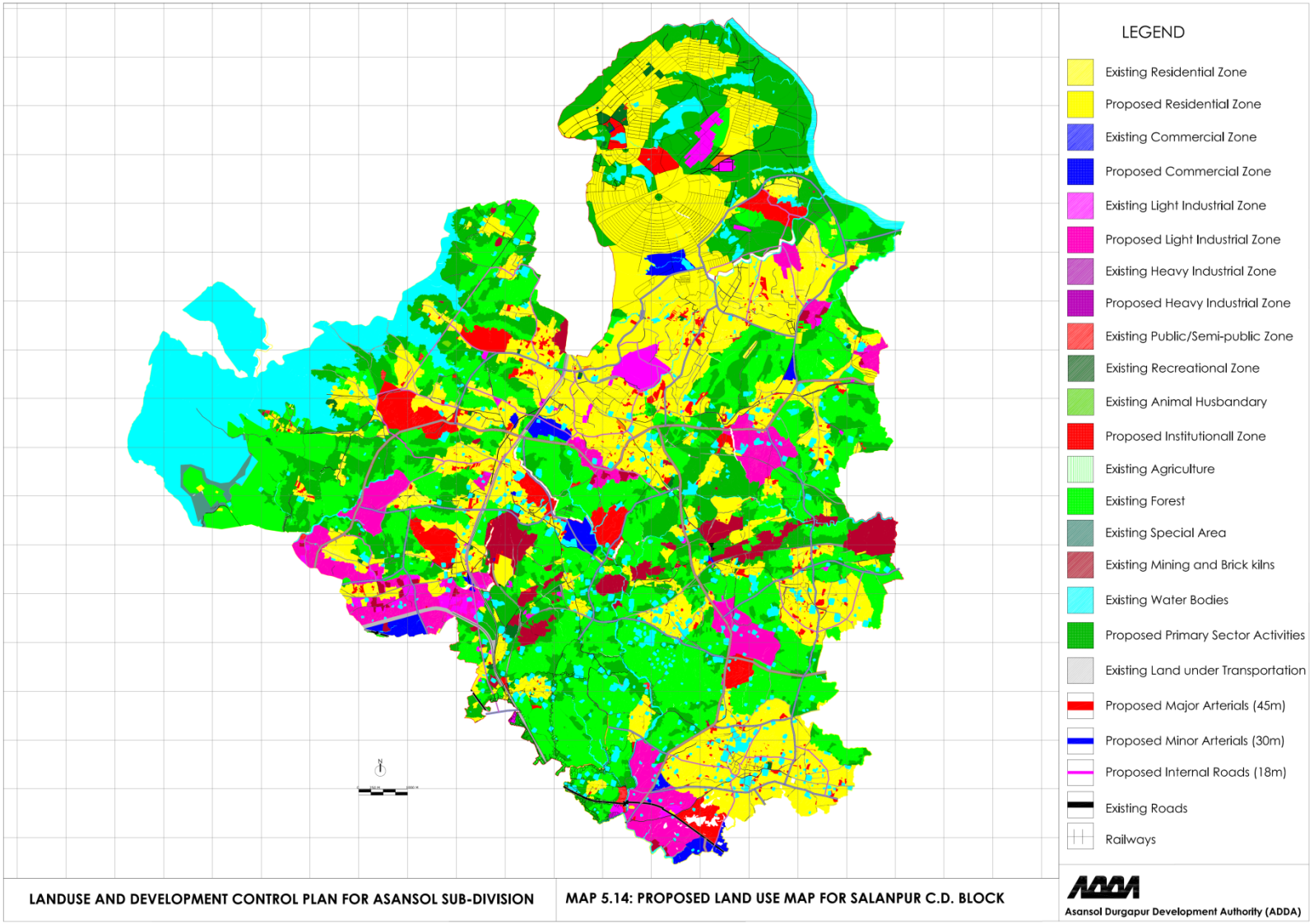
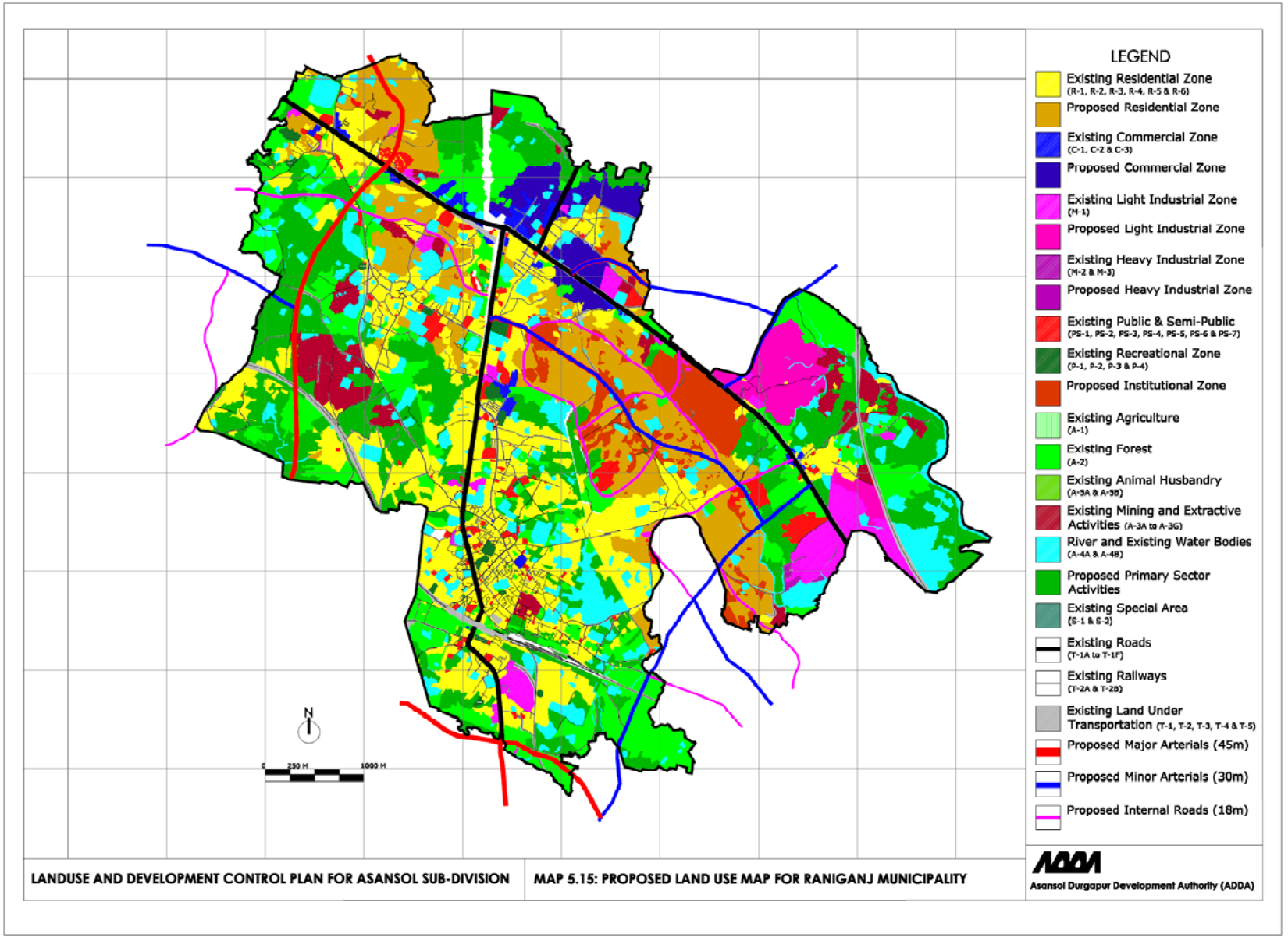
Proposed Residential Zone
Existing Commercial Zone (C-1, C-2 & C-3)
Proposed Commercial Zone
Existing Light Industrial Zone (M-1)
Proposed Light Industrial Zone
Existing Heavy Industrial Zone (M-2 & M-3)
Proposed Heavy Industrial Zone
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Proposed Institutional Zone
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Animal Husbandry (A-5A & A-5B)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Proposed Primary Sector Activities
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
Asansol Durgapur Development Authority (ADDA)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.13: PROPOSED LAND USE MAP FOR BARABONI C.D.BLOCK



LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION

MAP 5.14: PROPOSED LAND USE MAP FOR SALANPUR C.D. BLOCK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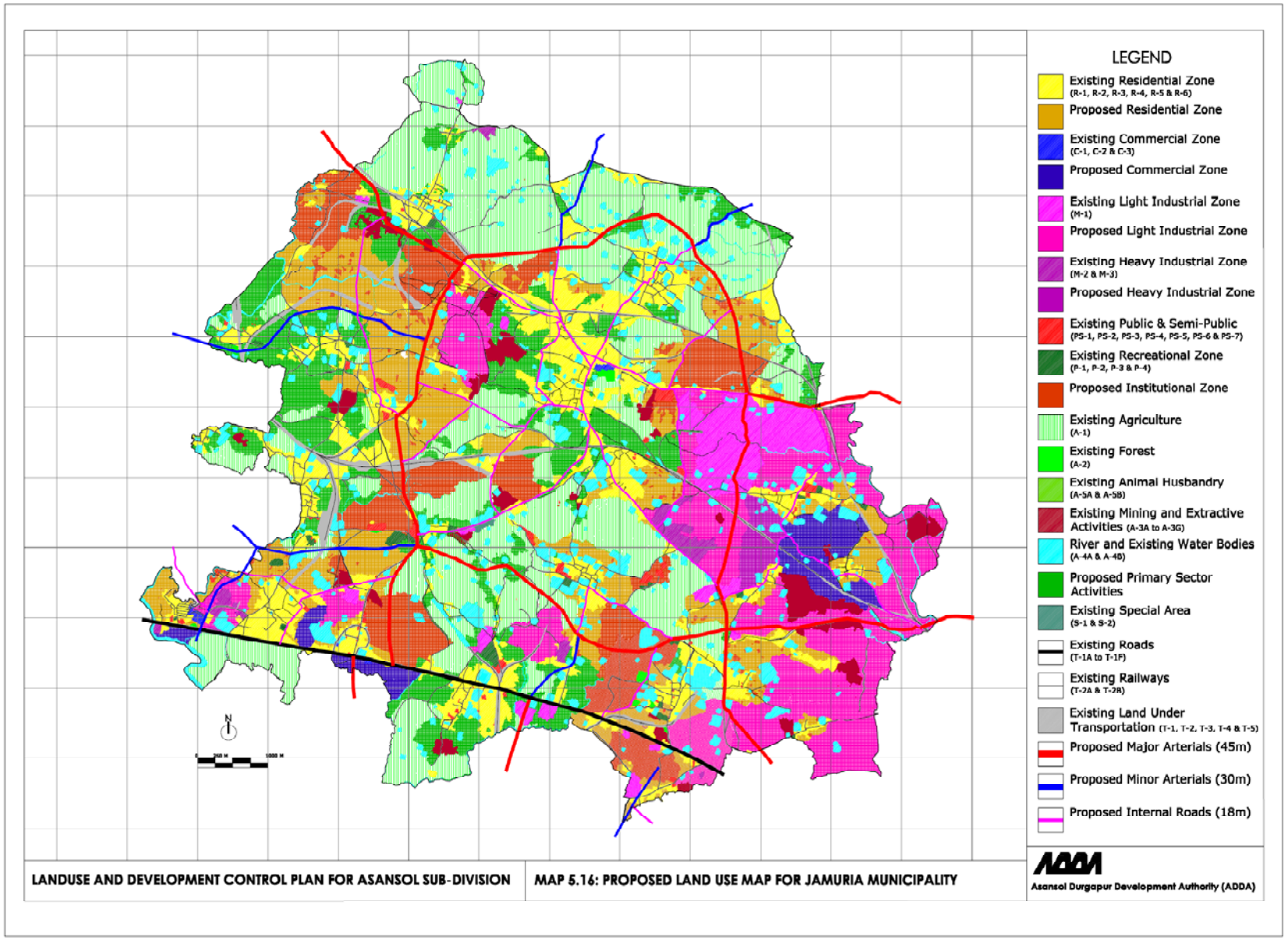
Proposed Residential Zone
Existing Commercial Zone (C-1, C-2 & C-3)
Proposed Commercial Zone
Existing Light Industrial Zone (M-1)
Proposed Light Industrial Zone
Existing Heavy Industrial Zone (M-2 & M-3)
Proposed Heavy Industrial Zone
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Proposed Institutional Zone
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Animal Husbandry (A-3A & A-3B)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Proposed Primary Sector Activities
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
N
0
250 M
1000 M
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.15: PROPOSED LAND USE MAP FOR RANIGANJ MUNICIPALITY
ADDA
Asansol Durgapur Development Authority (ADDA)


LEGEND
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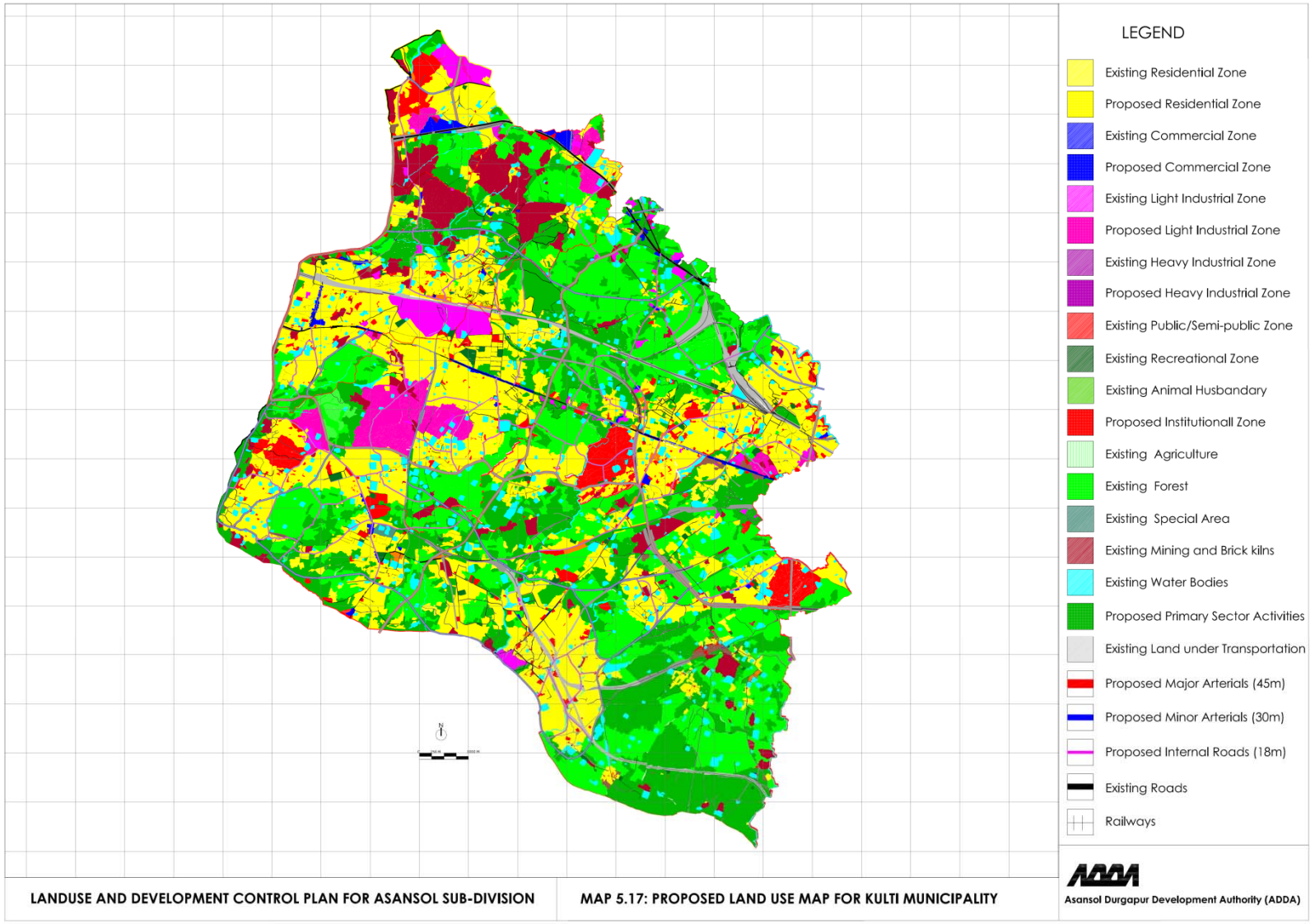
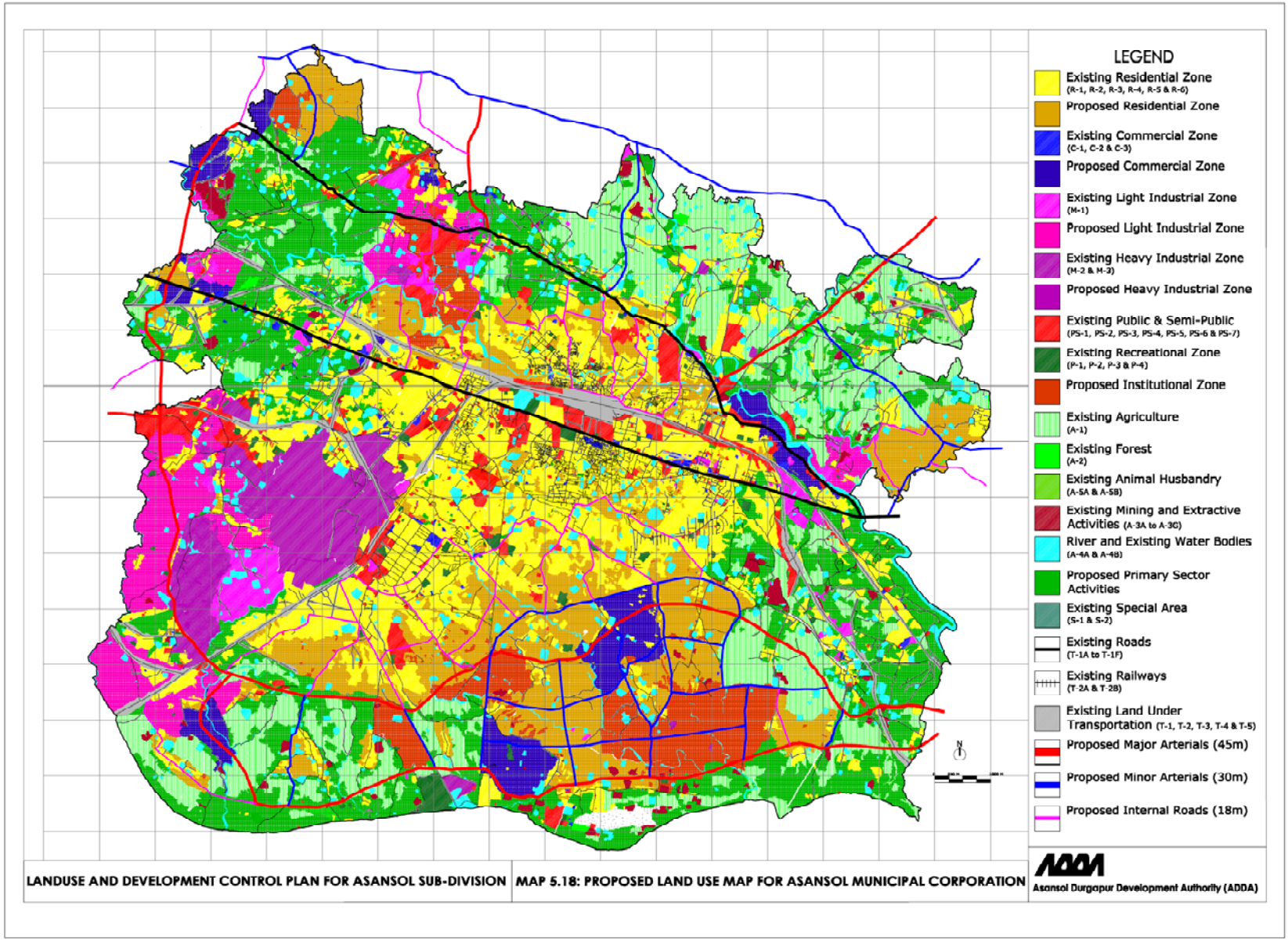
Proposed Residential Zone
Existing Commercial Zone (C-1, C-2 & C-3)
Proposed Commercial Zone
Existing Light Industrial Zone (M-1)
Proposed Light Industrial Zone
Existing Heavy Industrial Zone (M-2 & M-3)
Proposed Heavy Industrial Zone
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Proposed Institutional Zone
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Animal Husbandry (A-5A & A-5B)
Existing Mining and Extractive Activities (A-3A to A-3G)
River and Existing Water Bodies (A-4A & A-4B)
Proposed Primary Sector Activities
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2R)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
Asansol Durgapur Development Authority (ADDA)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.16: PROPOSED LAND USE MAP FOR JAMURIA MUNICIPALITY


LEGEND
Existing Residential Zone
Proposed Residential Zone
Existing Commercial Zone
Proposed Commercial Zone
Existing Light Industrial Zone
Proposed Light Industrial Zone
Existing Heavy Industrial Zone
Proposed Heavy Industrial Zone
Existing Public/Semi-public Zone
Existing Recreational Zone
Existing Animal Husbandary
Proposed Institutionall Zone
Existing Agriculture
Existing Forest
Existing Special Area
Existing Mining and Brick kilns
Existing Water Bodies
Proposed Primary Sector Activities
Existing Land under Transportation
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
Existing Roads
Railways
Asansol Durgapur Development Authority (ADDA)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.17: PROPOSED LAND USE MAP FOR KULTI MUNICIPALITY


LEGEND
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Proposed Residential Zone
Existing Commercial Zone (C-1, C-2 & C-3)
Proposed Commercial Zone
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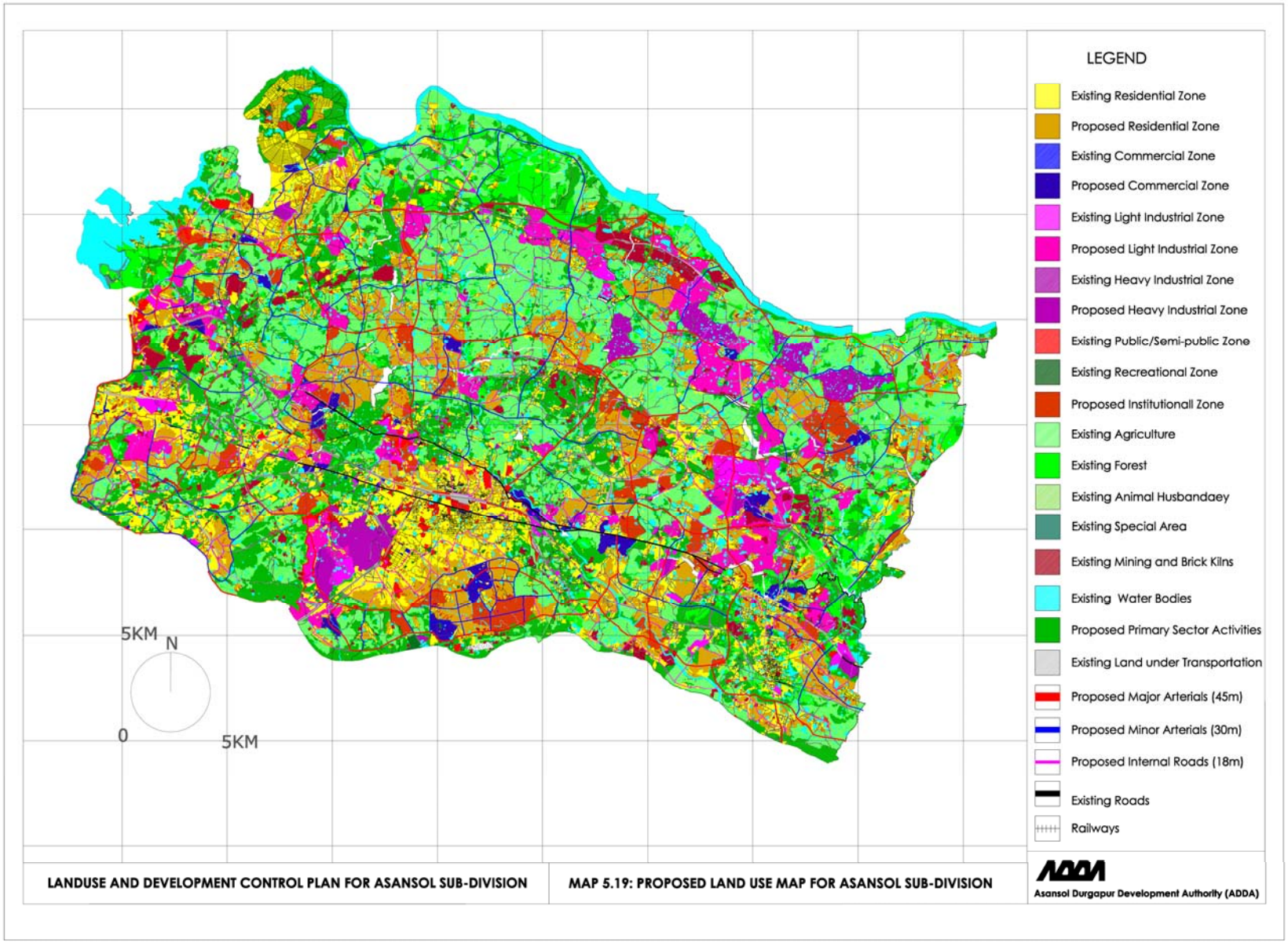
Proposed Light Industrial Zone
Existing Heavy Industrial Zone (M-2 & M-3)
Proposed Heavy Industrial Zone
Existing Public & Semi-Public (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7)
Existing Recreational Zone (P-1, P-2, P-3 & P-4)
Proposed Institutional Zone
Existing Agriculture (A-1)
Existing Forest (A-2)
Existing Animal Husbandry (A-5A & A-5B)
Existing Mining and Extractive Activities (A-3A to A-3C)
River and Existing Water Bodies (A-4A & A-4B)
Proposed Primary Sector Activities
Existing Special Area (S-1 & S-2)
Existing Roads (T-1A to T-1F)
Existing Railways (T-2A & T-2B)
Existing Land Under Transportation (T-1, T-2, T-3, T-4 & T-5)
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.18: PROPOSED LAND USE MAP FOR ASANSOL MUNICIPAL CORPORATION
Asansol Durgapur Development Authority (ADDA)


LEGEND
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Proposed Residential Zone
Existing Commercial Zone
Proposed Commercial Zone
Existing Light Industrial Zone
Proposed Light Industrial Zone
Existing Heavy Industrial Zone
Proposed Heavy Industrial Zone
Existing Public/Semi-public Zone
Existing Recreational Zone
Proposed Institutionall Zone
Existing Agriculture
Existing Forest
Existing Animal Husbandaey
Existing Special Area
Existing Mining and Brick Kilns
Existing Water Bodies
Proposed Primary Sector Activities
Existing Land under Transportation
Proposed Major Arterials (45m)
Proposed Minor Arterials (30m)
Proposed Internal Roads (18m)
Existing Roads
Railways
5KM
N
0
5KM
LANDUSE AND DEVELOPMENT CONTROL PLAN FOR ASANSOL SUB-DIVISION
MAP 5.19: PROPOSED LAND USE MAP FOR ASANSOL SUB-DIVISION
Asansol Durgapur Development Authority (ADDA)

Table 5.19: Proposed Land use distribution for Asansol Sub-division

Land Use and Code		Share of land to total land (%)										
		Raniganj C.D. Block	Jamuraia C.D.Block	Barabani C.D. Block	Salanpur C.D. Block	Rural	Raniganj Municipality	Jamuria Municipality	Kulti Municipality	Asansol Municipal Corporation	Urban	Total
Existing Residential Zone (R)	(ha)	864.1	933.6	895.2	2018.1	4711	554.1	875.7	1883.1	3213.6	6526.5	11237.5
	(%)	14.83	5.91	5.73	14.94	9.28	23.64	11.96	18.91	25.13	20.14	13.51
Proposed Residential Zone	(ha)	1323.2	1807.1	1767.5	1704.7	6602.5	367.6	861	1069.1	2020.1	4317.8	10920.3
	(%)	22.70	11.43	11.30	12.62	13.00	15.68	11.76	10.74	15.80	13.32	13.13
Total Residential Zone	(ha)	2187.3	2740.7	2662.7	3722.8	11313.5	921.7	1736.7	2952.2	5233.7	10844.3	22157.8
	(%)	37.53	17.34	17.03	27.57	22.28	39.32	23.72	29.65	40.93	33.46	26.64
Existing Commercial Zone (C)	(ha)	0.7	6.1	21.8	8.5	37.1	28.1	7.4	51.2	76	162.7	199.8
	(%)	0.01	0.04	0.14	0.06	0.07	1.20	0.10	0.51	0.59	0.50	0.24
Proposed Commercial Zone	(ha)	96.9	89.3	49.5	168.3	404	67.3	148.4	22.7	542.5	780.9	1184.9
	(%)	1.66	0.56	0.32	1.25	0.80	2.87	2.03	0.23	4.24	2.41	1.42
Total Commercial Zone	(ha)	97.6	95.4	71.3	176.8	441.1	95.4	155.8	73.9	618.5	943.6	1384.7
	(%)	1.67	0.60	0.46	1.31	0.87	4.07	2.13	0.74	4.84	2.91	1.66
Existing Light Industrial Zone (M-1)	(ha)	55.5	59.6	163.1	48.8	327	76.2	222.9	62.2	96.2	457.5	784.5
	(%)	0.95	0.38	1.04	0.36	0.64	3.25	3.04	0.62	0.75	1.41	0.94
Existing Heavy Industrial Zone (M-2 &3)	(ha)	93.1	5.5	0.0	139.7	238.3	3.0	48.5	137	725.9	914.4	1152.7
	(%)	1.60	0.03	0.00	1.03	0.47	0.13	0.66	1.38	5.68	2.82	1.39
Proposed Light Industrial Zone	(ha)	137	1437.5	665.2	581.5	2821.2	69.6	819.8	283.2	729.8	1902.4	4723.6
	(%)	2.35	9.09	4.25	4.31	5.56	2.97	11.19	2.84	5.71	5.87	5.68
Proposed Heavy Industrial Zone	(ha)	5.9	1070	0.0	0.0	1075.9	0.0	48.4	0.0	0.0	48.4	1124.3
	(%)	0.10	6.77	0.00	0.00	2.12	0.00	0.66	0.00	0.00	0.15	1.35
Existing Public and Semi-public Zone (PS)	(ha)	111.2	77.7	72.5	117.7	379.1	64	46.4	177.8	666.4	954.6	1333.7
	(%)	1.91	0.49	0.46	0.87	0.75	2.73	0.63	1.79	5.21	2.95	1.60
Existing Recreational Zone (P)	(ha)	29.6	47.3	34.2	41.2	152.3	14	20	49.9	146.6	230.5	382.8
	(%)	0.51	0.30	0.22	0.31	0.30	0.60	0.27	0.50	1.15	0.71	0.46
Proposed Institutional Zone	(ha)	186.4	788.5	409	672.3	2056.2	106.4	632.9	262.2	728.6	1730.1	3786.3
	(%)	3.20	4.99	2.62	4.98	4.05	4.54	8.64	2.63	5.70	5.34	4.55
Agriculture (A-1)	(ha)	1567.9	4482.4	6800.1	3044.8	15895.2	175.6	1608.3	2313.8	2225.2	6322.9	22218.1
	(%)	26.90	28.35	43.49	22.55	31.30	7.49	21.96	23.24	17.40	19.51	26.71
Forest (A-2)	(ha)	189.4	1464.2	1452.9	411.5	3518	236.7	8.4	143	18.9	407	3925
	(%)	3.25	9.26	9.29	3.05	6.93	10.10	0.11	1.44	0.15	1.26	4.72
Extractive and Mining Activities (A-3)	(ha)	196.6	592.4	317.6	378.9	1485.5	96.8	159	513	164.7	933.5	2419
	(%)	3.37	3.75	2.03	2.81	2.93	4.13	2.17	5.15	1.29	2.88	2.91
Water Bodies (A-4)	(ha)	462.6	2013.6	1506.4	1834.5	5817.1	302.9	552.1	575.4	913.1	2343.5	8160.6
	(%)	7.94	12.74	9.63	13.58	11.46	12.92	7.54	5.78	7.14	7.23	9.81
Animal Husbandry & Livestock farming (A-5)	(ha)	0.0	7.0	2.0	3.1	12.1	1.1	0.0	1.1	26.6	28.8	40.9
	(%)	0.00	0.04	0.01	0.02	0.02	0.05	0.00	0.01	0.21	0.09	0.05
Proposed Primary Sector Activities	(ha)	1195.3	1700.8	3017.2	2613.5	8526.8	513.4	729.8	2187.4	2866	6296.6	14823.4
	(%)	20.51	10.76	19.30	19.35	16.79	21.90	9.97	21.97	22.41	19.43	17.82
Total Primary Sector Activity Zone	(ha)	3611.9	10260.4	13096.2	8286.4	35254.9	1326.5	3057.6	5733.7	6214.4	16332.2	51587.1
	(%)	61.97	64.90	83.76	61.36	69.43	56.59	41.75	57.58	48.60	50.39	62.01
Existing land under Transportation (T)	(ha)	260.9	230.5	551.3	669.1	1711.8	182.8	336.4	687	965.2	2171.4	3883.2
	(%)	4.48	1.46	3.53	4.95	3.37	7.80	4.59	6.90	7.55	6.70	4.67
Proposed land under Transportation	(ha)	224.57	654.2	456.2	422.3	1757.27	70.2	108.6	427.3	438	1044.1	2801.37
	(%)	3.85	4.14	2.92	3.13	3.46	2.99	1.48	4.29	3.43	3.22	3.37
Total land under Transportation	(ha)	485.48	884.7	1007.5	1091.4	3469.08	253	445	1114.3	1403.2	3215.5	6684.58
	(%)	8.33	5.60	6.44	8.08	6.83	10.79	6.08	11.19	10.97	9.92	8.04
Total Area	(ha)	5828	15810	15635	13505	50778	2344	7323	9957	12787	32411	83189
	(%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 5.20: Detailed allocation of land in proposed land use zones for planning units in Asansol Sub-division

Administrative Unit	Type of Development			Land allocated (in ha)						
				Proposed Residential Zone	Proposed Commercial Zone	Proposed Light Industrial Zone	Proposed Heavy Industrial Zone	Proposed Institutional Zone	Proposed Primary Sector Activities	Proposed land under Transportation
Raniganj C.D. Block	Restricted	PU - 10	(ha)	1323.2	96.9	137	5.9	186.4	1195.3	224.6
			(%)	12.12	8.17	2.90	0.52	4.92	8.07	8.02
Baraboni C.D. Block	Eco-Sensitive	PU - 3	(ha)	86.8	0	0	0	0.4	626.8	0.9
			(%)	0.79	0.00	0.00	0.00	0.01	4.23	0.03
	Extensive	PU - 6	(ha)	1078.2	49.5	10.4	0	235.2	223.6	170.6
			(%)	9.87	4.18	0.22	0.00	6.21	1.51	6.09
	Restricted	PU - 4	(ha)	335.2	0	541.1	0	55.8	962.9	175.6
			(%)	3.07	0.00	11.46	0.00	1.47	6.50	6.27
	Restricted	PU - 8	(ha)	267.3	0	113.6	0	117.6	1204	109.1
			(%)	2.45	0.00	2.40	0.00	3.11	8.13	3.89
	Total		(ha)	1767.5	49.5	665.2	0	409	3017.2	456.2
			(%)	16.19	4.18	14.08	0.00	10.80	20.37	16.28
Salanpur C.D. Block	Extensive	PU - 2	(ha)	742.5	70.3	308.5	0	468.8	1393.3	221.1
			(%)	6.80	5.93	6.53	0.00	12.38	9.41	7.89
	Extensive	PU - 6	(ha)	646.3	35.2	257.9	0	107.1	183.4	104.6
			(%)	5.92	2.97	5.46	0.00	2.83	1.24	3.73
	Intensive	PU - 1	(ha)	247.6	32.2	2.5	0	60.3	627.9	32.6
			(%)	2.27	2.72	0.05	0.00	1.59	4.24	1.16
	Restricted	PU - 4	(ha)	68.2	30.7	12.6	0	36.1	394.2	64.1
			(%)	0.62	2.59	0.27	0.00	0.95	2.66	2.29
	Total		(ha)	1704.6	168.4	581.5	0	672.3	2598.8	422.4
			(%)	15.61	14.20	12.31	0.00	17.76	17.55	15.08
Jamuria C.D. Block	Eco-Sensitive	PU - 3	(ha)	39.1	0	16.9	0	63.8	132.6	22.3
			(%)	0.36	0.00	0.36	0.00	1.69	0.90	0.80
	Extensive	PU - 7	(ha)	1361.8	34.7	1173.3	1070	508.4	732.7	372
			(%)	12.47	2.93	24.84	95.17	13.43	4.95	13.28
	Restricted	PU - 9	(ha)	346.4	54.6	247.3	0	212.5	741.3	244.5
			(%)	3.17	4.61	5.24	0.00	5.61	5.01	8.73
	Restricted	PU - 11	(ha)	59.8	0	0	0	3.8	94.3	15.5
			(%)	0.55	0.00	0.00	0.00	0.10	0.64	0.55
	Total		(ha)	1807.1	89.3	1437.5	1070	788.5	1700.8	654.2
			(%)	16.55	7.53	30.43	95.17	20.83	11.48	23.35
Rural			(ha)	6602.4	404.1	2821.2	1075.9	2056.2	8512.1	1757.4
			(%)	60.46	34.08	59.73	95.70	54.31	57.48	62.73
Jamuria Municipality	Restricted	PU - 9	(ha)	861	148.4	819.8	48.4	632.9	729.8	108.6
			(%)	7.88	12.52	17.36	4.30	16.72	4.93	3.88
Raniganj Municipality	Restricted	PU - 10	(ha)	367.6	67.3	69.6	0	106.4	513.4	70.2
			(%)	3.37	5.68	1.47	0.00	2.81	3.47	2.51
Kulti Municipality	Extensive	PU - 2	(ha)	70.9	11.1	19.9	0	6.6	54	18.4
			(%)	0.65	0.94	0.42	0.00	0.17	0.36	0.66
	Intensive	PU - 5	(ha)	545.6	0	207.1	0	166.4	619	193.7
			(%)	5.00	0.00	4.38	0.00	4.39	4.18	6.91
	Restricted	PU - 8	(ha)	318.6	0	19	0	80.7	1261.9	148.5
			(%)	2.92	0.00	0.40	0.00	2.13	8.52	5.30
	Restricted	PU - 4	(ha)	134	12.2	37.2	0	8.5	252.7	66.7
			(%)	1.23	1.03	0.79	0.00	0.22	1.71	2.38
	Total		(ha)	1069.1	23.3	283.2	0	262.2	2187.6	427.3
			(%)	9.79	1.97	6.00	0.00	6.92	14.77	15.25
Asansol Municipal Corporation	Extensive	PU - 6	(ha)	90.3	72	9.1	0	34.2	101.2	13
			(%)	0.83	6.07	0.19	0.00	0.90	0.68	0.46
	Extensive	PU - 13	(ha)	909.9	201.5	179.2	0	511.3	1157.3	250.1
			(%)	8.33	17.00	3.79	0.00	13.50	7.81	8.93
	Intensive	PU - 12	(ha)							
			(%)	805.1	210.6	426.1	0	182.5	355.9	111.4
	Restricted	PU - 8	(ha)	7.37	17.76	9.02	0.00	4.82	2.40	3.98
			(%)	214.9	58.4	115.3	0	0.6	1251.6	63.5
	Total		(ha)	2020.1	542.5	729.8	0	728.6	2866	438
			(%)	18.50	45.76	15.45	0.00	19.24	19.35	15.63
Urban			(ha)	4317.8	781.5	1902.4	48.4	1730.1	6296.8	1044.1
			(%)	39.54	65.92	40.27	4.30	45.69	42.52	37.27
Total Asansol Sub-division			(ha)	10920.2	1185.6	4723.6	1124.3	3786.3	14808.9	2801.5
			(%)	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 5.21: Summary distribution of allocated land in proposed land use zones in Asansol Sub-division

Name ofC.D. Block/ Municipal Area		Land allocated in proposed land use plan							
		Proposed Residential Zone	Gross Residential Area (As per the demand assessment)	Proposed Commercial Zone	Proposed Light Industrial Zone	Proposed Heavy Industrial Zone	Proposed Institutional Zone	Proposed Primary Sector Activities	Proposed land under Transportation
Raniganj	(ha)	1323.2	1240.7	96.9	137	5.9	186.4	1195.3	224.6
	(%)	11.62	14.56	7.08	2.78	0.52	4.80	8.32	8.02
Baraboni	(ha)	1767.5	1043	49.5	665.2	0	409	3017.2	456.2
	(%)	15.52	12.24	3.62	13.52	0.00	10.52	21.00	16.28
Salanpur	(ha)	1704.7	1248.3	168.3	581.4	0	672.3	2613.5	422.3
	(%)	14.97	14.65	12.30	11.81	0.00	17.30	18.19	15.07
Jamuria	(ha)	1807.1	1616.3	89.3	1437.5	1070	788.5	1700.8	654.2
	(%)	15.87	18.97	6.53	29.21	95.17	20.29	11.84	23.35
Rural	(ha)	6602.5	5148.3	404	2821.1	1075.9	2056.2	8526.8	1757.3
	(%)	57.99	60.41	29.53	57.32	95.70	52.90	59.36	62.73
Jamuria (M)	(ha)	861	867	148.4	819.8	48.4	632.9	729.8	108.6
	(%)	7.56	10.17	10.85	16.66	4.30	16.28	5.08	3.88
Raniganj (M)	(ha)	367.6	141.2	67.3	69.6	0	106.4	513.4	70.2
	(%)	3.23	1.66	4.92	1.41	0.00	2.74	3.57	2.51
Kulti (M)	(ha)	1534.6	1333.1	205.9	481.3	0	362.7	1728.9	427.3
	(%)	13.48	15.64	15.05	9.78	0.00	9.33	12.04	15.25
Asansol (MC)	(ha)	2020.1	1032.5	542.5	729.8	0	728.6	2866	438
	(%)	17.74	12.12	39.65	14.83	0.00	18.75	19.95	15.64
Urban	(ha)	4783.3	3373.8	964.1	2100.5	48.4	1830.6	5838.1	1044.1
	(%)	42.01	39.59	70.47	42.68	4.30	47.10	40.64	37.27
Total	(ha)	11385.8	8522.1	1368.1	4921.6	1124.3	3886.8	14364.9	2801.4
	(%)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

A brief look at Table 5.21 provides the total amount of land put under various proposed land use zones distributed across the Asansol Sub-division. First three column entries of this table present the amount of land actually put under proposed residential use zone and the estimated demand for gross residential area for each C.D. Block and municipal area. It is evident that despite the total demand for land being estimated at around 8500 ha for residential use, in the proposed plan 11400 ha of land has been provided - which is approximately 30 percent higher. This has been intentionally done to accommodate the unwillingness to change the land use from existing activity pattern to the proposed one. Several outcomes are possible such as, the owner might decide to keep it vacant or the owner might be permitted to continue the existing use for certain period, or the owner might choose non-residential functions allowed within proposed residential zone or some land might be trapped in legal disputes. In this case, if a margin for tolerance is not kept to absorb the shortage, the supply of the residential land will be less than the demand. This will lead to escalation of land prices and result in higher cost of living - which is completely unintended.

Most of the urban and rural-urban fringe areas in India suffer from shortage of land supply with adequate infrastructure, which has often led to spiralling of prices in land and landed property markets. To avoid this unintended consequences, additional land has been allocated in excess to the design capacity. The quantum of additional land has varied - depending upon the need for the local situation. Asansol Municipal corporation has been supplied almost double the land than design demand. This is due to already high supply-demand deficit existing in the real estate market for residential land.

A tentative estimation of the employment that can be absorbed in the land allocated in proposed commercial, industrial and institutional use zones has been carried out and presented in Table 5.22. It shows that nearly 4.2 lakh workers can be accommodated within the land allocated in these proposed

zones till 2025. It is expected that Asansol Sub-division will add another 10 lakhs of population by 2025 of which 1/3rd will be potential work force i.e. around 3.3 lakhs. The land allocated only for exclusive commercial industrial and institutional zones will be able to accommodate the land requirements to meet the future demand and will also meet the present deficit. This estimation do not claim that such volume of employment will be generated within ADPA, but only stresses that if such employment is generated there will be adequate land to meet their requirements.

Table 5.22: Distribution of tentative workers which can be accommodated in proposed commercial, industrial and institutional zones in Asansol Sub-division

C.D. Block/ Municipal Area	Tentative no. of workers in each sector				
	Proposed Commercial Zone	Proposed Light Industrial Zone	Proposed Heavy Industrial Zone	Proposed Institutional Zone	Total
Raniganj	6395	7234	156	3076	16860
Baraboni	3267	35123	0	6749	45138
Salanpur	11108	30703	0	11093	52904
Jamuria	5894	75900	28248	13010	123052
Rural	26664	148959	28404	33927	237954
Jamuria (M)	9794	43285	1278	10443	64800
Raniganj (M)	4442	3675	0	1756	9872
Kulti (M)	1498	14953	0	4244	20695
Asansol (MC)	35805	38533	0	12022	86360
Urban	51539	100447	1278	28464	181728
Total	78203	249406	29682	62391	419682

[Note: The calculations are based on the following assumptions:

Commercial Zone:

Plot area of 100sqm/worker has been taken for Commercial Zone. As the commercial zone includes large amount of wholesale trading and storage functions such low employment generation rate per unit of land has been taken. Net available area for commercial plots will be around 2/3rd the area of the commercial zone, rest will be used for circulation and utilities.

Light Industrial Zone:

Plot area of 125sqm/worker has been taken for Industrial Zone. Net available area for industrial plots will be around 2/3rd the area of the industrial zone, rest will be used for circulation and utilities.

Heavy Industrial Zone:

Plot area of 250sqm/worker has been taken for Industrial Zone. Net available area for industrial plots will be around 2/3rd the area of the industrial zone, rest will be used for circulation and utilities.

Institutional Zone:

Plot area of 200sqm/worker has been taken for Institutional Zone. As large number of open space based public activities may come up in this zone, net available area for institutional plots will be around 1/3rd the area of the institutional zone, rest will be used for recreational open spaces, circulation and utilities.]

6. Land Use Zoning Regulations

In the previous section, Land Use Zoning Plan for Asansol Sub-division along with its various aspects has been presented. In this section, Zoning Regulations are presented which must be read in tandem with the Land Use Zoning Plan for proper implementation of Land Use and Development Control Plan (LUDCP).

There are six broad categories of land use zones adopted for the Land Use Zoning Plan, as has been introduced in the earlier section. In this section, the list of detailed activities/uses that will be allowed within the proposed zones has been discussed in detail.

The list contains two types of uses/activities that will be allowed to carry out in the proposed zones:

a. **Uses permitted** category, where uses/activities listed for a specific land use zone will be allowed unconditionally under normal circumstances
b. **Permissible Uses** category, where uses/activities listed will be considered on an application to the Development Authority i.e. the competent authority in this case, subject to scrutiny by the Development Authority, and may or may not be permitted, with or without conditions as deemed appropriate.

For each type of proposed land use zones three different sets of uses/activities are specified under following heads:

a. For Extensive 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 prescribed a different list of uses/activities as compared to areas under extensive and intensive development zones within Asansol Sub-division.

[A detailed list of mouzas falling under Extensive, Intensive, Restricted and Eco-sensitive Development Zone for each administrative unit within the Asansol Sub-division is provided in Annexure-II]

Areas falling under restricted development zone has coal seam layer beneath and large parcels of land has been identified as unstable locations due to mining subsidence. There has been a conscious effort not to locate uses/activities which require large scale investment or will necessitate large construction activities within this zone. As a result some uses/activities are not allowed within this zone or permitted with specific conditions (i.e. restrictions on building construction or use within a specified distance from identified unstable locations).

On the other hand, areas under eco-sensitive zone are mostly along the Ajoy river with extensive forest cover and where land is under the threat of soil erosion. As a result uses/activities which attract huge population or large construction activity or extensive change in the nature of existing ecology or environment, are limited or avoided in this zone. Specific conditions/restrictions on development along a specified distance from the river front are also prescribed for eco-sensitive development zone.

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.

For example, retail commercial activities are permitted within residential zone, but the individual shop sizes cannot exceed 100 sqm and total floor area dedicated to commercial activities cannot exceed 500 sqm in one location. Limit on shop size as well as cluster size will ensure that only small retail activities as commensurate to the scale of residential neighbourhood will be allowed.

Along similar lines, limit on institutional activities is placed by providing a limit on floor area and scale of activities. Manufacturing activities are limited both on the type of enterprise (i.e. micro and small type) and their pollution potential (i.e. EXEMPTED and GREEN Category). Recreational activities demanded for residential population at neighbourhood level is only provided. Transport related activities necessary for residential population is also allowed. Some primary sector activities i.e. farming and plantation has also been allowed with an upper limit on plot area.

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 Light Industrial Zone

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

D. Proposed Heavy Industrial Zone

The primary use in this zone is of industrial activity of extensive and polluting type. Otherwise very limited uses/activities have been allowed in this zone.

E. Proposed Institutional 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 farming activities, horticulture, floriculture, pisciculture, aqua-culture, forestry/plantation, agro-forestry, mining and extractive activities.

Along with these, some type of residential, commercial, institutional, recreational and transport related activities are allowed with specific conditions. Detailed list of uses/activities have been listed in a tabular format in the following part of this section.

However, for levy, assessment and recovery of Development charges (as outlined in Chapter IX, Section 102, 102, 104, 105 and 106 of the Act), all activities listed under 'Residential use' in Section 6.1 to 6.6 (entries in the first column of the table) of 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 Section 6.1 to 6.6 (entries in the first column of the table) of 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' in Section 6.1 to 6.6 (entries in the first column of the table) of 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 Section 6.1 to 6.6 (entries in the first column of the table) of the Land Use and Development Control Plan, under taken 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 Section 6.1 to 6.6 (entries in the first column of the table) of the Land Use and Development Control Plan, under taken 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).

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

Step 1: To identify the plot location in Proposed Land Use Zoning Map at mouza level and find out the proposed Land Use Zone specified for it.

Step 2: To find out the Type of Development Zone specified for that mouza from Annexure-II, which lists all the mouzas according to Administrative Units, Police Station, Type of Development Zone and Planning Unit No.

Step 3: Find out the list of uses/activities permitted or permissible for the proposed Land Use Zone and for the type of Development Zones.

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. In case of proximity to multiple number of proposed land use zones, permission to develop should consider regulations of all the adjoining proposed land use zones (to reduce the nuisance value arising out of proposed change to any of adjoining proposed land use zones), as per the discretion of the Development Authority.

6.1 Zoning Regulations for Proposed Residential Zone

Following zoning regulations are applicable for 'Proposed Residential Zone' as well as areas with existing Residential Land Use (R-1, R-2, R-3, R-4, R-5 and R-6) presented in the LUMR [Refer Table 5.2] for Asansol Sub-division.

In addition to these, it will also be applicable for existing non-residential land uses whose nature and scale are commensurate to an adjoining proposed residential zone i.e. existing commercial (C-1), existing Public and Semi-public (PS-3, PS-4 and PS-6), existing Recreational (S-1, S-2, S-3 and S-4), existing Light industrial activities(M-1) under EXEMPTED and GREEN category, existing Traffic and Transportation activities (T-1, T-2, T-4 and T-5) as presented in LUMR [Refer Table 5.2].

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	***Uses permitted:*** i. Plotted housing (detached, semi-detached), group housing ii. Service apartments, boarding and lodging houses, hotels (up to 3 star category) and guest houses iii. Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups iv. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i - iv] above) should cover less than 5000 sqm of plot area[1]. ***Permissible uses:*** v. Residential use (as listed in [i - iv] above) covering more than 5000 sqm of plot area	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. ***Uses permitted:*** i. Plotted housing (detached, semi-detached) ii. Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups iii. Housing for resettlement and rehabilitation, and for economically weaker section Residential use (as listed in [i - iii] above) should cover less than 500 sqm of plot area. ***Permissible uses:*** iv. Group housing v. Service apartments, boarding and lodging houses, hotels and guest houses vi. Residential use (as listed in [i - v] above) covering more than 500 sqm of plot area	No residential use should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Plotted housing (detached, semi-detached) ii. Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups iii. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i - iii] above) should cover less than 500 sqm of plot area. ***Permissible uses:*** iv. Group housing v. Service apartments, boarding and lodging houses, hotels and guest houses vi. Residential use (as listed in [i - v] above) covering more than 500 sqm of plot area

[1] Plot area refers to the land area to be utilized for development.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Commercial use	***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area[2] of each shop not exceeding 100 sqm) ii. Eateries and restaurants (without bar facilities) iii. Banks, financial institutions and private offices Commercial uses (as listed in [i - iii] above) should cover less than 500 sqm of floor area at one location ***Permissible uses:*** iv. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) v. Restaurants with bar facilities, banquet halls vi. Commercial use (as listed in [i - v] above) covering floor area more than 500 sqm at one location vii. Daily or weekly markets (not more than 300 - 400 units per location and total area not exceeding 0.4 ha)	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:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm) ii. Eateries and restaurants (without bar facilities) iii. Banks, financial institutions and private offices Commercial uses (as listed in [i - iii] above) should cover less than 500 sqm of floor area at one location ***Permissible uses:*** iv. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) v. Restaurants with bar facilities, banquet halls vi. Commercial uses (as listed in [i - v] above) covering floor area more than 500 sqm at one location vii. Daily or weekly markets (not more than 300 - 400 units per location and total area not exceeding 0.4 ha)	No commercial use should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm) ii. Eateries and restaurants (without bar facilities) iii. Banks, financial institutions and private offices Commercial uses (as listed in [i - iii] above) should cover less than 250 sqm of floor area at one location ***Permissible uses:*** iv. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) v. Professional consultant's offices(floor area of each office less than 100 sqm vi. Restaurants with bar facilities vii. Commercial uses (as listed in [i - vi] above) covering more than 250 sqm of floor area at one location viii. Daily or weekly markets (not more than 300 - 400 units per location and total area not exceeding 0.4 ha)
Public and Semi-public use	***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading	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:*** i. Government/semi-government offices and	No institutional use should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. Government/semi-government offices and institutions

[2] Floor area means covered area of a building at any floor level.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	rooms, vocational training institutions iii. Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres Health facilities (as listed in [iii] above) should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases iv. Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly Places of public assembly (as listed in [iv] above) should have design occupancy less than 300 people) v. Places of public worship, religious buildings, welfare institutions, clubs, cultural centres/ institutions Social/cultural facilities (as listed in [v] above) covering floor area less than 500 sqm at one location) vi. 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.) vii. Other public distribution services (e.g. postal services etc.)	institutions ii. Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions iii. Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres Health facilities (as listed in [iii] above) should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases iv. Multi-purpose community halls (with design occupancy less than 300 people) v. Places of public worship, religious buildings, welfare institutions, clubs Social/cultural facilities (as listed in [v] above) covering floor area less than 500 sqm at one location) vi. 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.) vii. Other public distribution services (e.g. postal services etc.) ***Permissible uses:*** viii. Higher secondary schools, residential schools, colleges, technical education institution (upto poly-technique) ix. Nursing homes and health centres (up to 100 beds)	ii. Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms iii. Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres Health facilities (as listed in [iii] above) should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases iv. Multi-purpose community halls, (with design occupancy less than 300 people) v. Places of public worship, religious buildings, welfare institutions, clubs Social/cultural facilities (as listed in [v] above) covering floor area less than 500 sqm at one location) vi. 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.) vii. Other public distribution services (e.g. postal services etc.) ***Permissible uses:*** viii. Higher secondary schools, residential schools, colleges, vocational training institutions ix. Water treatment plants, sewage treatment

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	Permissible uses: viii. Higher secondary schools, residential schools, colleges, technical education institution (upto poly-technique) ix. Nursing homes and health centres (up to 100 beds) x. Health facilities (as listed in [iii & ix] above) covering floor area more than 500 sqm at one location and not exclusively treating contagious diseases xi. Rehabilitation centres xii. Place of public assembly (as listed in [iv] above) with design occupancy more than 300 people xiii. Social/cultural facilities (as listed in [v] above) covering floor area more than 500 sqm at one location, cultural centres/ institutions, exhibition and art galleries xiv. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations, dhobi ghats xv. Fuel refuelling stations, automobile repairing workshops/garages xvi. LPG storage (up to 8000 kg storage capacity)	x. Health facilities (as listed in [iii & ix] above) covering floor area more than 500 sqm at one location and not exclusively treating contagious diseases xi. Multi-purpose community halls (with design occupancy more than 300 people) xii. Auditoriums, assembly halls, cinema halls and any place of public assembly (with design occupancy less than 300 people) xiii. Social/cultural facilities (as listed in [v] above) covering floor area more than 500 sqm at one location, cultural centres/ institutions exhibition and art galleries xiv. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations, dhobi ghats xv. Fuel refuelling stations, automobile repairing workshops/garages xvi. LPG storage (up to 8000 kg storage capacity)	plants, solid waste treatment units, solar power and other alternative energy installations, dhobi ghats x. Fuel refuelling stations, automobile repairing workshops/garages
Recreational use	***Uses permitted:*** i. Tot-lots, parks, playgrounds, gardens, multi-purpose open spaces, gymnasium; (including incidental buildings thereon) ***Permissible uses:*** ii. Swimming pools, golf courses, indoor stadiums, sports complex/training facilities	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. ***Uses permitted:*** i. Tot-lots, parks, playgrounds, gardens, multi-purpose open spaces, gymnasium; (including incidental buildings thereon)	No built up development should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Tot-lots, parks, playgrounds, gardens, multi-purpose open spaces

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		Permissible uses: ii. Swimming pools, golf courses, indoor stadiums, sports complex/training facilities	***Permissible uses:*** ii. Gymnasium, Swimming pools; (including incidental buildings thereon)
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:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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	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. Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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	No industrial use should be permitted within 150 m from the riverfront. Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable	XVIII of 1950), if applicable
Transportation use	***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV up to Type 2 vehicles with maximum permissible gross weight up to 16.2 tonnes)	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:*** i. 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 ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV up to Type 2 vehicles with maximum permissible gross weight up to 16.2 tonnes)	No transport infrastructure development (except roads railway lines and water navigation facilities) should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV up to Type 2 vehicles with maximum permissible gross weight up to 16.2 tonnes)
Primary sector activities	***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha	No built up development should be permitted within 500m of any unstable location, as listed in Present Land Use Map and Register or identified thereafter ***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture,	No built up development should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone & Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce	horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce	Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce

6.2 Zoning Regulations for Proposed Commercial Zone

Following zoning regulations are applicable for 'Proposed Commercial Zone' as well as areas with existing Commercial Land Use (C-2 & C-3) presented in the LUMR [Refer Table 5.2] for Asansol Sub-division.
In addition to these, it will also be applicable to any other existing non-commercial land uses whose nature and scale are commensurate to the adjoining proposed commercial zone, as presented in LUMR.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	***Uses permitted:*** i. Service apartments, boarding and lodging houses, hotels (up to 3 star category) and guest houses ii. Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with trade and commercial activities iii. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i - iii] above) should cover less than 2500 sqm of plot area ***Permissible uses:*** iv. Group housing v. Residential use (as listed in [i - iv] above) covering more than 2500 sqm of plot area	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. ***Uses permitted:*** i. Boarding and lodging houses, and guest houses ii. Hostels, dormitories and any kind of accommodation for under privileged social groups associated with trade and commercial activities iii. Housing for resettlement and rehabilitation, and for economically weaker section Residential use (as listed in [i - iii] above) should cover less than 500 sqm of plot area ***Permissible uses:*** iv. Group housing v. Service apartments, hotels vi. Residential use (as listed in [i - v] above) covering more than 500 sqm of plot area	No residential use should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i] above) should cover less than 500 sqm of plot area ***Permissible uses:*** ii. Boarding and lodging houses, hotels and guest houses iii. Residential use (as listed in [i - ii] above) covering more than 500 sqm of plot area
Commercial use	***Uses permitted:*** i. Retail commercial shops/departmental stores, retail shopping complex/malls ii. Whole sale commercial shops, whole sale commercial/trading complex	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.	No commercial use should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Retail commercial shops/departmental stores,

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	iii. Eateries, restaurants, banquet halls iv. Banks, financial institutions, private/corporate offices v. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials) Commercial use (as listed in [i - v] above) should cover less than 5000 sqm of plot area ***Permissible uses:*** vi. Daily or weekly markets vii. Storage/warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials) viii. Storage, segregation and sale of second hand/ junk goods/recyclables ix. Commercial use (as listed in [i - viii] above) covering more than 5000 sqm of plot area	***Uses permitted:*** i. Retail commercial shops/departmental stores, retail shopping complex/malls, ii. Whole sale commercial shops, whole sale commercial/trading complex iii. Eateries, restaurants, banquet halls iv. Banks, financial institutions, private/corporate offices v. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials) Commercial use (as listed in [i - v] above) should cover less than 2500 sqm of plot area ***Permissible uses:*** vi. Daily or weekly markets vii. Storage/warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials) viii. Storage, segregation and sale of second hand/ junk goods/recyclables ix. Commercial use (as listed in [i - viii] above) covering more than 2500 sqm of plot area	retail shopping complex/malls, ii. Whole sale commercial shops, whole sale commercial/trading complex iii. Eateries, restaurants, banquet halls iv. Banks, financial institutions, private/corporate offices Commercial use (as listed in [i - iv] above) should cover less than 500 sqm of plot area ***Permissible uses:*** v. Daily or weekly markets vi. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials) vii. Commercial use (as listed in [i - vi] above) covering more than 500 sqm of plot area
Public and Semi-public use	***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions iii. Health clinics, dispensaries, nursing homes and health centres (upto 100 beds), diagnostic centres	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:*** i. Government/semi-government offices and institutions ii. Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions	No institutional use should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, tutorial institutions, public libraries and reading rooms, vocational training institutions iii. Health clinics, dispensaries, nursing homes

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	Health facilities (as listed in [iii] above) should not exclusively treat contagious diseases iv. Multi-purpose community halls, auditoriums, assembly halls, cinema halls and any place of public assembly Places of public assembly (as listed in [iv] above) should have design occupancy less than 500 people) v. Welfare institutions, clubs, cultural centres/ institutions vi. 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.) vii. Other public distribution services (e.g. postal services etc.) viii. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** ix. Higher secondary schools, residential schools, colleges, technical education institution (poly-techniques, engineering colleges, management institutes etc. with campus size less than 8.0 ha), R&D institutions, experimental and testing laboratories x. Nursing homes and health centres (up to 300 beds) rehabilitation centres xi. Health facilities (as listed in [iii & x] above)	iii. Health clinics, dispensaries, nursing homes and health centres (upto 100 beds), diagnostic centres Health facilities (as listed in [iii] above) should not exclusively treat contagious diseases iv. Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly Places of public assembly (as listed in [iv] above) should have design occupancy less than 300 people) v. Welfare institutions, clubs, cultural centres/ institutions vi. 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.) vii. Other public distribution services (e.g. postal services etc.) viii. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** ix. Higher secondary schools, residential schools, colleges, technical education institution (poly-techniques, engineering colleges, management institutes etc. with campus size less than 8.0 ha), R&D institutions, experimental and testing laboratories x. Nursing homes and health centres (up to 300 beds), rehabilitation centres	and health centres (upto 100 beds), diagnostic centres Health facilities (as listed in [iii] above) should not exclusively treat contagious diseases iv. Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly Places of public assembly (as listed in [iv] above) should have design occupancy less than 300 people) v. Welfare institutions, clubs, cultural centres/ institutions vi. 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.) vii. Other public distribution services (e.g. postal services etc.) viii. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** ix. Higher secondary schools, residential schools, colleges, technical education institution (up to poly-techniques) x. Rehabilitation centres xi. Health facilities (as listed in [iii & x] above) not exclusively treating contagious diseases xii. Place of public assembly (as listed in [iv]

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	not exclusively treating contagious diseases xii. Place of public assembly (as listed in [iv] above) with design occupancy more than 300 people xiii. Places of public worship, religious buildings, exhibition and art galleries, museums, science centres, convention centres and any other social/cultural premises xiv. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations	xi. Health facilities (as listed in [iii & x] above) not exclusively treating contagious diseases xii. Place of public assembly (as listed in [iv] above) with design occupancy more than 300 people xiii. Places of public worship, religious buildings, exhibition and art galleries, museums, science centres, convention centres and any other social/cultural premises xiv. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations	above) with design occupancy more than 300 people xiii. Places of public worship, religious buildings, science centres xiv. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations
Recreational use	***Uses permitted:*** i. Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon) ***Permissible uses:*** ii. Golf courses, indoor stadiums, sports complex/training facilities, outdoor stadium, organised recreational complexes, eco-park	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:*** i. Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon) ***Permissible uses:*** ii. Golf courses, indoor stadiums, sports complex/training facilities, outdoor stadium, organised recreational complexes, eco-park	No built up development should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools; (including incidental buildings thereon) ***Permissible uses:*** ii. Golf courses, indoor stadiums, sports complex/training facilities, outdoor stadium, organised recreational complexes, eco-park
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:*** i. Industries listed under "EXEMPTED"	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. Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be	No industrial use should be permitted within 150 m from the riverfront. Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	category of WBPCB ***Permissible uses:*** ii. Industries listed under "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	permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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 permitted:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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
Transportation use	***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, check posts and toll plaza	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:*** i. Roads, railway lines and station facilities, water navigation facilities, terminal facilities for para-transit modes (auto rickshaw, rickshaw, taxi,	No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. 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-

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	Permissible uses: iii. 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	trekker etc), bus stand/shelter facilities, off-street parking facilities (car/two-wheeler/bicycle), transmission and communication lines ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. 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	street parking facilities (car/two-wheeler/bicycle), transmission and communication lines ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types)
Primary sector activities	***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha` iv. Storage, processing and sale of farm produce	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:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce	No built up development should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce

6.3 Zoning Regulations for Proposed Institutional Zone

Following zoning regulations are applicable for 'Proposed Institutional Zone' as well as areas with existing Public and Semi-public Land Use (PS-1, PS-2, PS-3, PS-4, PS-5, PS-6 & PS-7) presented in the LUMR [Refer Table 5.2] for Asansol Sub-division.
In addition to these, it will also be applicable to any other existing non-Public and Semi-public land uses whose nature and scale are commensurate to the adjoining proposed institutional zone, as presented in LUMR.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	***Uses permitted:*** i. Group housing appurtenant to the institutional activities ii. Service apartments, boarding and lodging houses, hotels (up to 3 star category) and guest houses iii. Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups iv. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i - iv] above) should cover less than 2500 sqm of plot area ***Permissible uses:*** v. Residential use (as listed in [i - iv] above) covering more than 2500 sqm of plot area	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. ***Uses permitted:*** i. Boarding and lodging houses, and guest houses ii. Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups iii. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i - iii] above) should cover less than 500 sqm of plot area ***Permissible uses:*** iv. Group housing appurtenant to the institutional activities v. Service apartments, hotels vi. Residential use (as listed in [i - v] above) covering more than 500 sqm of plot area	No residential use should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i] above) should cover less than 500 sqm of plot area ***Permissible uses:*** ii. Group housing appurtenant to the institutional activities iii. Service apartments, boarding and lodging houses, hotels and guest houses iv. Hostels, dormitories, night shelters, old age homes, orphanages and any kind of accommodation for under privileged social groups v. Residential use (as listed in [i - iv] above) covering more than 500 sqm of plot area
Commercial use	***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100	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.	No commercial use should be permitted within 100 m from the riverfront.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	sqm) ii. Eateries and restaurants (without bar facilities) iii. Banks, financial institutions and private offices Commercial uses (as listed in [i & ii] above) should cover less than 500 sqm of floor area at one location Commercial uses (as listed in [iii] above) should cover less than 5000 sqm of floor area at one location ***Permissible uses:*** iv. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) v. Restaurants with bar facilities, banquet halls vi. Commercial use (as listed in [i - ii, iv - v] above) covering floor area more than 500 sqm at one location vii. Commercial uses (as listed in [iii] above) covering floor area more than 5000 sqm of at one location viii. Retail shopping complex/malls ix. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials)	***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm) ii. Eateries and restaurants (without bar facilities) iii. Banks, financial institutions and private offices Commercial uses (as listed in [i & ii] above) should cover less than 500 sqm of floor area at one location Commercial uses (as listed in [iii] above) should cover less than 2500 sqm of floor area at one location ***Permissible uses:*** iv. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) v. Restaurants with bar facilities, banquet halls vi. Commercial use (as listed in [i - ii, iv - v] above) covering floor area more than 500 sqm at one location vii. Commercial uses (as listed in [iii] above) covering floor area more than 2500 sqm of at one location viii. Retail shopping complex/malls ix. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials)	***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm) ii. Eateries and restaurants (without bar facilities) iii. Banks, financial institutions and private offices Commercial uses (as listed in [i - iii] above) should cover less than 500 sqm of floor area at one location ***Permissible uses:*** iv. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) v. Restaurants with bar facilities vi. Commercial use (as listed in [i - v] above) covering floor area more than 500 sqm at one location
Public and Semi-public use	***Uses permitted:*** i. Government/semi-government offices and institutions ii. Head quarters/reserve lines/training academies for police, para military, defence personnel, detention centres and correction	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:*** i. Government/semi-government offices and	No institutional use should be permitted within 150 m from the riverfront except public utilities ***Uses permitted:*** i. Government/semi-government offices and institutions

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	homes iii. 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 iv. Health clinics, dispensaries, diagnostic centres, nursing homes, health centres, hospitals, rehabilitation centres, sanatoria and other medical and public health institution Health facilities (as listed in [iv] above) should not exclusively treat contagious diseases v. Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly Places of public assembly (as listed in [v] above) should have design occupancy less than 1000 people) vi. 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	institutions ii. Nursery crèches, pre-primary schools, primary schools, secondary schools, higher secondary schools, residential schools, tutorial institutions, colleges, vocational training institutions, public libraries and reading rooms iii. Health clinics, dispensaries, diagnostic centres, nursing homes, health centres Health facilities (as listed in [iii] above) should not exclusively treat contagious diseases iv. Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly Places of public assembly (as listed in [iv] above) should have design occupancy less than 500 people) v. Places of public worship, religious buildings welfare institutions, clubs, cultural centres/institutions vi. 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.) vii. Other public distribution services (e.g. postal services etc.) viii. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** ix. Head quarters/reserve lines/training academies	ii. Nursery crèches, pre-primary schools, primary schools, secondary schools, higher secondary schools, residential schools, tutorial institutions, colleges, vocational training institutions, public libraries and reading rooms iii. Health clinics, dispensaries, diagnostic centres, nursing homes, health centres Health facilities (as listed in [iii] above) should not exclusively treat contagious diseases iv. Multi-purpose community halls, auditoriums, assembly halls, cinema halls, open air theatres and any place of public assembly Places of public assembly (as listed in [iv] above) should have design occupancy less than 500 people) v. Places of public worship, religious buildings welfare institutions, clubs, cultural centres/institutions vi. 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.) vii. Other public distribution services (e.g. postal services etc.) viii. Fuel refuelling stations, automobile repairing workshops/garages

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	vii. 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.) viii. Other public distribution services (e.g. postal services etc.) ix. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** x. Place of public assembly (as listed in [v] above) with design occupancy more than 1000 people) xi. Foreign missions, embassies, consulates xii. Health facilities exclusively treating contagious diseases xiii. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and alternative energy installations xiv. LPG storage (upto 8000 kg storage capacity)	for police, para military, defence personnel, detention centres and correction homes x. Universities, technical education institutions, R&D institutions, experimental and testing laboratories, meteorological observatories xi. Hospitals, rehabilitation centres, sanatoria and other medical and public health institutions xii. Health facilities (as listed in [iii & xi] above) exclusively treating contagious diseases xv. Place of public assembly (as listed in [v] above) with design occupancy more than 500 people xvi. Exhibition and art galleries, museums, science centres, convention centres , archives, commemorative complexes/grounds, public squares/plazas xiii. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and alternative energy installations xiv. LPG storage (upto 8000 kg storage capacity)	***Permissible uses:*** ix. Universities, technical education institutions, R&D institutions, experimental and testing laboratories, meteorological observatories x. Hospitals, rehabilitation centres, sanatoria and other medical and public health institutions xi. Health facilities (as listed in [iii & x] above) exclusively treating contagious diseases xii. Place of public assembly (as listed in [iv] above) with design occupancy more than 500 people xiii. Exhibition and art galleries, museums, science centres, convention centres , archives, commemorative complexes/grounds, public squares/plazas xiv. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and alternative energy installations xv. LPG storage (upto 8000 kg storage capacity)
Recreational use	***Uses permitted:*** i. 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) ***Permissible uses:*** ii. Zoological and botanical gardens, waterfront	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:*** i. Parks, playgrounds, gardens, multi-purpose open spaces, gymnasium, swimming pools, golf course, indoor and outdoor stadium, sports complexes/training facilities, organised	No built up development should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. 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)

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	developments	recreational complexes/amusement parks, eco parks; (including incidental buildings thereon) ***Permissible uses:*** ii. Zoological and botanical gardens, waterfront developments	***Permissible uses:*** ii. Zoological and botanical gardens, waterfront developments
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:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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	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. Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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.	No industrial use should be permitted within 150 m from the riverfront. Only micro enterprises and small enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "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

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		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	Nation Building Code of India and the West Bengal Fire Services Act 1950 (West Bengal Act XVIII of 1950), if applicable
Transportation use	***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV up to Type 2 vehicles with maximum permissible gross weight up to 16.2 tonnes)	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:*** i. 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 ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV up to Type 2 vehicles with maximum permissible gross weight up to 16.2 tonnes)	No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV up to Type 2 vehicles with maximum permissible gross weight up to 16.2 tonnes)

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Primary sector activities	***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce	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:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce	No built up development should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 1.0 ha ii. Agro-forestry, forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 1.0 ha iv. Storage, processing and sale of farm produce

6.4 Zoning Regulations for Proposed Light Industrial Zone

Following zoning regulations are applicable for 'Proposed Light Industrial Zone' as well as areas with existing Manufacturing Land Use (M-1) presented in the LUMR [Refer Table 5.2] for Asansol Sub-division.
In addition to these, it will also be applicable to any other existing non-industrial land uses whose nature and scale are commensurate to the adjoining proposed Light Industrial Zone, as presented in LUMR.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	***Uses permitted:*** i. Group housing appurtenant to the industrial activities ii. Housing for resettlement and rehabilitation and for economically weaker section Residential activities (as listed in [i & ii] above) should not exceed 2500 sqm of plot area ***Permissible uses:*** iii. Service apartments, boarding and lodging houses, hotels and guest houses iv. Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities v. Any residential use (as listed in [i - iv] above) covering more than 2500 sqm of plot area	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. ***Uses permitted:*** i. Housing for resettlement and rehabilitation and for economically weaker section Residential activities (as listed in [i] above) should be less than 500 sqm of plot area ***Permissible uses:*** ii. Group housing appurtenant to the industrial activities iii. Service apartments, boarding and lodging houses, hotels and guest houses iv. Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities v. Any residential use (as listed in [i - iv] above) covering more than 500 sqm of plot area	No residential use should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Housing for resettlement and rehabilitation and for economically weaker section Residential activities (as listed in [i] above) should be less than 500 sqm of plot area ***Permissible uses:*** ii. Boarding and lodging houses, hotels and guest houses iii. Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities iv. Any residential use (as listed in [i - iii] above) covering more than 500 sqm of plot area
Commercial use	***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm)	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.	No commercial use should be permitted within 100 m from the riverfront.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	ii. Eateries and restaurants iii. Banks, financial institutions and private offices Commercial uses (as listed in [i - iii] above) should cover less than 500 sqm of floor area at one location iv. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials) ***Permissible uses:*** v. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) vi. Commercial use (as listed in [i - iii, v] above) covering floor area more than 500 sqm at one location vii. Storage/warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials)	***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm) ii. Eateries and restaurants iii. Banks, financial institutions and private offices Commercial uses (as listed in [i - iii] above) should cover less than 500 sqm of floor area at one location iv. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials) ***Permissible uses:*** v. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) vi. Commercial use (as listed in [i - iii, v] above) covering floor area more than 500 sqm at one location vii. Storage/warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials)	***Uses permitted:*** i. Retail commercial shops/departmental stores (floor area of each shop not exceeding 100 sqm) ii. Eateries and restaurants iii. Banks, financial institutions and private offices Commercial uses (as listed in [i - iii] above) should cover less than 250 sqm of floor area at one location ***Permissible uses:*** iv. Retail commercial shops/departmental stores (floor area of each shop exceeding 100 sqm) v. Commercial use (as listed in [i - iv] above) covering floor area more than 250 sqm at one location vi. Storage/warehousing (not involving perishable, inflammable, explosive or other kinds of hazardous materials)
Public and Semi-public use	***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, vocational training institutions, R&D institutions, experimental and testing laboratories iii. Health clinics, dispensaries Health facilities (as listed in [iii] above) should not exclusively treat contagious diseases iv. Multi-purpose community halls (with design	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:*** i. Government/semi-government offices and institutions ii. Nursery crèches, vocational training institutions, R&D institutions, experimental and testing laboratories iii. Health clinics, dispensaries Health facilities (as listed in [iii] above) should not	No institutional use should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, vocational training institutions, iii. Health clinics, dispensaries Health facilities (as listed in [iii] above) should not exclusively treat contagious diseases

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	occupancy less than 300 people) v. 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.) vi. Other public distribution services (e.g. postal services etc.) vii. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** viii. Water treatment plants, sewage treatment plants, solid waste treatment units including disposal facilities, industrial (non hazardous) waste treatment units including disposal facilities, solar power and other alternative energy installations	exclusively treat contagious diseases iv. Multi-purpose community halls (with design occupancy less than 300 people) v. 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.) vi. Other public distribution services (e.g. postal services etc.) vii. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** viii. Water treatment plants, sewage treatment plants, solid waste treatment units including disposal facilities, industrial (non hazardous) waste treatment units including disposal facilities, solar power and other alternative energy installations	iv. Multi-purpose community halls (with design occupancy less than 300 people) v. 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.) vi. Other public distribution services (e.g. postal services etc.) vii. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** viii. R&D institutions, experimental and testing laboratories ix. Water treatment plants, sewage treatment plants, solid waste treatment units including disposal facilities, industrial (non hazardous) waste treatment units including disposal facilities, solar power and other alternative energy installations
Recreational use	***Uses permitted:*** i. Parks, gardens; (including incidental buildings thereon) ***Permissible uses:*** ii. Multi-purpose open spaces	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:*** i. Parks, gardens; (including incidental buildings thereon) ***Permissible uses:*** ii. Multi-purpose open spaces	No built up development should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Parks, gardens; (including incidental buildings thereon) ***Permissible uses:*** ii. Multi-purpose open spaces

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Industrial use	Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted ***Uses permitted:*** i. Industries listed under "EXEMPTED", "GREEN" and "ORANGE" category of WBPCB ***Permissible uses:*** ii. Industries listed under "ORDINARY RED" category of WBPCB	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. Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED", "GREEN" and "ORANGE" category of WBPCB ***Permissible uses:*** ii. Industries listed under "ORDINARY RED" category of WBPCB	No industrial use should be permitted within 150 m from the riverfront. Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "GREEN" and "ORANGE" category of WBPCB
Transportation use	***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:*** iii. 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	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:*** i. 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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza	No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:***

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
		Permissible uses: iii. 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	iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types)
Primary sector activities	***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 5.0 ha ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 5.0 ha iv. Storage, processing and sale of farm produce	No built up development should be permitted within 500 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:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 5.0 ha ii. Agro-forestry, urban forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 5.0 ha iv. Storage, processing and sale of farm produce	No built up development should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. High density farming/vertical farming/stacked green house farming, pisciculture/aquaculture, horticulture, floriculture, community garden farming Agricultural activities (as listed in [i] above) should be covering plot area less than 5.0 ha ii. Agro-forestry, forestry/plantation, riparian buffers ***Permissible uses:*** iii. Agricultural activities (as listed in [i] above) covering plot area more than 5.0 ha iv. Storage, processing and sale of farm produce

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

6.5 Zoning Regulations for Proposed Heavy Industrial Zone

Following zoning regulations are applicable for 'Proposed Heavy Industrial Zone' as well as areas with existing Manufacturing Land Use (M-2 & M-3) presented in the LUMR [Refer Table 5.2] for Asansol Sub-division.
In addition to these, it will also be applicable to any other existing Public and Semi-public land uses whose nature and scale are commensurate to the adjoining proposed Heavy Industrial zone, as presented in LUMR.

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	***Permissible uses:*** i. Boarding and lodging houses, guest houses ii. Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities iii. Housing for resettlement and rehabilitation and for economically weaker section iv. Residential use (as listed in [i - iii] above) covering more than 2500 sqm of plot area	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. ***Permissible uses:*** i. Boarding and lodging houses, guest houses ii. Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities iii. Housing for resettlement and rehabilitation and for economically weaker section iv. Residential use (as listed in [i - iii] above) covering more than 500 sqm of plot area	No residential use should be permitted within 100 m from the riverfront. ***Permissible uses:*** i. Boarding and lodging houses, and guest houses ii. Hostels, dormitories, night shelters and any kind of accommodation for under privileged social groups associated with industrial activities iii. Housing for resettlement and rehabilitation and for economically weaker section Residential use (as listed in [i - iii] above) covering more than 500 sqm of plot area
Commercial use	***Uses permitted:*** i. Storage/warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials) ***Permissible uses:*** ii. Retail commercial shops (floor area of each shop not exceeding 100 sqm) iii. Eateries and restaurants iv. Banks and financial institutions	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:*** i. Storage/warehousing (involving perishable, inflammable, explosive or other kinds of hazardous materials) ***Permissible uses:*** ii. Retail commercial shops (floor area of each shop not	No commercial use should be permitted within 100 m from the riverfront. ***Permissible uses:*** i. Retail commercial shops (floor area of each shop not exceeding 100 sqm) ii. Eateries and restaurants iii. Banks and financial institutions Commercial uses (as listed in [i - iii] above) should cover less than 500 sqm of floor area at

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	Commercial uses (as listed in [ii - iv] above) should cover less than 500 sqm of floor area at one location	exceeding 100 sqm) iii. Eateries and restaurants iv. Banks and financial institutions Commercial uses (as listed in [i - iv] above) should cover less than 500 sqm of floor area at one location	one location
Public and Semi-public use	***Uses permitted:*** i. Government/semi-government offices and institutions ii. R&D institutions, experimental and testing laboratories iii. Health clinics, dispensaries iv. 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.) v. Other public distribution services (e.g. postal services etc.) vi. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** vii. Water treatment plants, sewage treatment plants, solid waste treatment units including disposal facilities, industrial (non hazardous) waste treatment units including disposal facilities, solar power and other alternative energy installations	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:*** i. Government/semi-government offices and institutions ii. R&D institutions, experimental and testing laboratories iii. Health clinics, dispensaries iv. 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.) v. Other public distribution services (e.g. postal services etc.) vi. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** vii. Water treatment plants, sewage treatment plants, solid waste treatment units including disposal facilities, industrial (non hazardous) waste treatment units including disposal facilities, solar power and other alternative energy installations	No institutional use should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. Government/semi-government offices and institutions ii. Health clinics, dispensaries iii. 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.) iv. Other public distribution services (e.g. postal services etc.) v. Fuel refuelling stations, automobile repairing workshops/garages ***Permissible uses:*** vi. R&D institutions, experimental and testing laboratories vii. Water treatment plants, sewage treatment plants, solid waste treatment units including disposal facilities, industrial (non hazardous) waste treatment units including disposal facilities, solar power and other alternative energy installations

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Recreational use	***Uses permitted:*** i. Parks, gardens; (including incidental buildings thereon) ***Permissible uses:*** ii. Multi-purpose open spaces	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:*** i. Parks, gardens; (including incidental buildings thereon) ***Permissible uses:*** ii. Multi-purpose open spaces	No built up development should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Parks, gardens; (including incidental buildings thereon) ***Permissible uses:*** ii. Multi-purpose open spaces
Industrial use	***Uses permitted:*** i. Industries listed under "EXEMPTED", "GREEN", "ORANGE" and "ORDINARY RED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "SPECIAL RED" category of WBPCB	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. ***Uses permitted:*** i. Industries listed under "EXEMPTED", "GREEN", "ORANGE" and "ORDINARY RED" category of WBPCB ***Permissible uses:*** ii. Industries listed under "SPECIAL RED" category of WBPCB	No industrial use should be permitted within 150 m from the riverfront. Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED" and "GREEN" category of WBPCB ***Permissible uses:*** ii. Industries listed under and "ORANGE" and "ORDINARY RED" category of WBPCB
Transportation use	***Uses permitted:*** i. 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	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:*** i. Roads, railway lines and station facilities, water	No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Roads, railway lines and station facilities, water navigation facilities, terminal

Broad nature of use	Type of uses/activities permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:*** iii. 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	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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:*** iii. 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	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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types)
Primary sector activities	***Uses permitted:*** i. Urban forestry/plantation, riparian buffers ***Permissible uses:*** ii. Agro-forestry	***Uses permitted:*** i. Urban forestry/plantation, riparian buffers ***Permissible uses:*** ii. Agro-forestry	***Uses permitted:*** i. Urban forestry/plantation, riparian buffers ***Permissible uses:*** ii. Agro-forestry

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

6.6 Zoning Regulations for Proposed Primary Sector Activity Zone

Following zoning regulations are applicable for 'Proposed Primary Sector Activity Zone' as well as areas with existing Agriculture Land Use (A-1, A-2, A-3A, A-3B, A-3C, A-3D, A-3E, A-3F, A-3G, A-4A, A-4B, A-5A, A-5B, A-6) presented in the LUMR [Refer Table 5.2] for Asansol Sub-division.
In addition to these, it will also be applicable to any other existing land uses whose nature and scale are commensurate to the adjoining proposed primary sector activity zone, as presented in LUMR.

Broad nature of use	Type of uses/activity permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Residential use	***Uses permitted:*** i. Dwellings within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register ii. 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) ***Permissible uses:*** iii. Housing for resettlement and rehabilitation and for economically weaker section iv. Transient visitors camp	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. ***Permissible uses:*** i. Dwellings within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register ii. 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) iii. Housing for resettlement and rehabilitation and for economically weaker section iv. Transient visitors camp	No residential use should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. Dwellings within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map and Register ii. 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) ***Permissible uses:*** iii. Housing for resettlement and rehabilitation and for economically weaker section iv. Transient visitors camp
Commercial use	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 ***Uses permitted:*** i. Daily or weekly markets ii. Storage and sale of farm products iii. Retail commercial shops/eateries (floor area of each shop not exceeding 25 sqm and not	Uses may be permitted/permissible subject to fulfilment of the following two clauses: 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. Commercial activities should be within a radius of 250 m from the existing village settlement as earmarked in the notified Present Land Use Map	Uses may be permitted/permissible subject to fulfilment of the following two clauses: No commercial use should be permitted within 100 m from the riverfront. 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

Broad nature of use	Type of uses/activity permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	more than 10 shops at one location) ***Permissible uses:*** iv. Banks and financial institutions (with floor area not exceeding 250 sqm)	and Register ***Permissible uses:*** i. Daily or weekly markets ii. Storage and sale of farm products iii. Retail commercial shops/eateries (floor area of each shop not exceeding 25 sqm and not more than 10 shops at one location) iv. Banks and financial institutions (with floor area not exceeding 250 sqm)	***Uses permitted:*** i. Daily or weekly markets ii. Storage and sale of farm products iii. Retail commercial shops/eateries (floor area of each shop not exceeding 25 sqm and not more than 10 shops at one location) ***Permissible uses:*** iv. Banks and financial institutions (with floor area not exceeding 250 sqm)
Public and Semi-public use	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) ***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions iii. Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres Health facilities (as listed in [iii] above) should cover floor area less than 500 sqm at one location and should not exclusively treat contagious diseases iv. Multi-purpose community halls, (with design occupancy less than 300 people) v. Places of public worship, religious buildings,	Uses may be permitted/permissible subject to fulfilment of the following two clauses: 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. 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) ***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions iii. Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres Health facilities (as listed in [iii] above) should cover floor area less than 500 sqm at one location and	Uses may be permitted/permissible subject to fulfilment of the following two clauses: No institutional use should be permitted within 150 m from the riverfront. 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) ***Uses permitted:*** i. Government/semi-government offices and institutions ii. Nursery crèches, pre-primary schools, primary school, secondary schools, tutorial institutions, public libraries and reading rooms, vocational training institutions iii. Health clinics, dispensaries, nursing homes and health centres (upto 30 beds), diagnostic centres Health facilities (as listed in [iii] above) should cover floor area less than 500 sqm at one location

Broad nature of use	Type of uses/activity permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	welfare institutions, clubs Social/cultural facilities (as listed in [v] above) covering floor area less than 500 sqm at one location vi. Other public distribution services (e.g. postal services, public toilets, water posts etc.) vii. Fuel refuelling stations, automobile/farm machineries repairing workshops/garages, viii. 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.) ***Permissible uses:*** ix. Head quarters/reserve lines/training academies of police, para military, defence personnel, detention centres and correction homes x. Residential schools, higher secondary schools, colleges xi. Research establishments related to agriculture and food processing xii. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations xiii. Burning and burial grounds, crematoria and cemeteries	should not exclusively treat contagious diseases iv. Multi-purpose community halls, (with design occupancy less than 300 people) v. Places of public worship, religious buildings, welfare institutions, clubs Social/cultural facilities (as listed in [v] above) covering floor area less than 500 sqm at one location vi. Other public distribution services (e.g. postal services, public toilets, water posts etc.) vii. Fuel refuelling stations, automobile/farm machineries repairing workshops/garages, viii. 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.) ***Permissible uses:*** ix. Residential schools, higher secondary schools, colleges x. Research establishments related to agriculture and food processing xi. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations xii. Burning and burial grounds, crematoria and cemeteries	and should not exclusively treat contagious diseases iv. Multi-purpose community halls, (with design occupancy less than 300 people) v. Places of public worship, religious buildings, welfare institutions, clubs Social/cultural facilities (as listed in [v] above) covering floor area less than 500 sqm at one location vi. Other public distribution services (e.g. postal services, public toilets, water posts etc.) vii. Fuel refuelling stations, automobile/farm machineries repairing workshops/garages, viii. 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.) ***Permissible uses:*** ix. Research establishments related to agriculture and food processing x. Water treatment plants, sewage treatment plants, solid waste treatment units, solar power and other alternative energy installations xi. Burning and burial grounds, crematoria and cemeteries
Recreational use	***Uses permitted:*** i. Parks, playgrounds, gardens, multi-purpose	No built up development should be permitted within 300 m of any unstable location, as listed in Present	No built up development should be permitted within 100 m from the riverfront.

Broad nature of use	Type of uses/activity permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	open spaces (within a radius of 500 m from the existing village settlement as earmarked in the Present Land Use Map and Register) ii. 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) ***Permissible uses:*** iii. Swimming pool complexes, indoor stadium, sports complexes and training facilities, race course, race/driving testing tracks; (including incidental buildings thereon)	Land Use Map and Register or identified thereafter. ***Uses permitted:*** i. 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) ii. 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) ***Permissible uses:*** iii. Swimming pool complexes, indoor stadium, sports complexes and training facilities, race course, race/driving testing tracks; (including incidental buildings thereon)	***Uses permitted:*** i. 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) ii. 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) ***Permissible uses:*** iii. Sports complexes and training facilities, race course; (including incidental buildings thereon) tracks
Industrial use	Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED", "GREEN" and "ORANGE" category of WBPCB (all industries should be farm based or related to food processing activities) ***Permissible uses:*** ii. Industries listed under "SPECIAL RED" and	Uses may be permitted/permissible subject to fulfilment of the following two clauses: 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. Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED",	Uses may be permitted/permissible subject to fulfilment of the following two clauses: No industrial use should be permitted within 150 m from the riverfront. Only micro enterprises, small enterprises and medium enterprises as specified in The Micro, Small And Medium Enterprises Development Act, 2006, will be permitted. ***Uses permitted:*** i. Industries listed under "EXEMPTED",

Broad nature of use	Type of uses/activity permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
	"ORDINARY RED" category of WBPCB (all industries should be farm based or related to food processing activities)	"GREEN" and "ORANGE" category of WBPCB (all industries should be farm based or related to food processing activities) ***Permissible uses:*** ii. Industries listed under "SPECIAL RED" and "ORDINARY RED" category of WBPCB (all industries should be farm based or related to food processing activities)	"GREEN" and "ORANGE" category of WBPCB (all industries should be farm based or related to food processing activities) ***Permissible uses:*** ii. Industries listed under "ORDINARY RED" category of WBPCB (all industries should be farm based or related to food processing activities)
Transportation use	***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types)	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:*** i. 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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types)	No transport infrastructure development (except roads, railway lines and water navigation facilities) should be permitted within 100 m from the riverfront. ***Uses permitted:*** i. 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 ii. Highway amenities i.e. weigh bridges, truck lay-bye, check posts and toll plaza ***Permissible uses:*** iii. Terminal facilities for passenger (i.e. bus, mini bus) and goods vehicles (i.e. LCV, MCV, HCV of all types)

Broad nature of use	Type of uses/activity permitted or permissible (subject to permission by ADDA on application)		
	Extensive Development Zone Intensive Development Zone	Restricted Development Zone	Eco-sensitive Development Zone
Primary sector activities	***Uses permitted:*** i. Agriculture, pisciculture/aquaculture, horticulture, floriculture ii. Orchards, nurseries, grazing pastures, wet lands, barren land and water bodies iii. Community forestry, plantation, agro-forestry, riparian buffer iv. Dairy and cattle farms, piggeries and poultry farms and any kind of animal husbandry and livestock rearing ***Permissible uses:*** v. Brick kilns, quarrying and removal of clay, gravel, sand or stone up to 3 m depth	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:*** i. Agriculture, pisciculture/aquaculture, horticulture, floriculture ii. Orchards, nurseries, grazing pastures, wet lands, barren land and water bodies iii. Community forestry, plantation, agro-forestry, riparian buffer iv. Dairy and cattle farms, piggeries and poultry farms and any kind of animal husbandry and livestock rearing ***Permissible uses:*** v. Brick kilns, quarrying and removal of clay, gravel, sand or stone up to 3 m depth vi. Mining activities vii. Land reclamation activities in derelict mining sites and unstable locations	No built up development should be permitted within 150 m from the riverfront. ***Uses permitted:*** i. Agriculture, pisciculture/aquaculture, horticulture, floriculture ii. Orchards, nurseries, grazing pastures, wet lands, barren land and water bodies iii. Community forestry, plantation, agro-forestry, riparian buffer iv. Dairy and cattle farms, piggeries and poultry farms and any kind of animal husbandry and livestock rearing ***Permissible uses:*** v. Brick kilns, quarrying and removal of clay, gravel, sand or stone up to 3 m depth

7. Development Control Regulations

In the previous sections, Land Use Zoning Plan for Asansol 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.

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 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.

Asansol Sub-division has eight administrative units –there is one Municipal Corporation, three Municipalities and four Panchayat Samiti's. 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 Asansol 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 urbanism (i.e. urban way of living) is prominent. Given the legislative mandate of The West Bengal Town and Country (Planning and Development) Act, 1979, development control regulation proposed in Land Use and Development Control Plan (LUDCP) can address this issue to a great extent.

A large part of the Asansol 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, both falling within rural and urban areas. Development control of building construction activity needs to be much more specific in those areas than that prescribed in The West Bengal Town and Country (Planning and Development) Act, 1979 or The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004. The development control guidelines in Land Use and Development Control Plan offers that scope to incorporate these aspects into the regulatory framework within Asansol 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 regulations 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 Asansol Sub-division offers a broad set of rules which tends to regulate the intensity of building activity, and not to encompass all aspects of building construction activity. Rural areas in Asansol 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 Asansol Sub-division needs to be 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 there 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.

7.1 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 Asansol Sub-division [Please Refer Section 5 & 6 of the Land Use and Development Control Plan 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 Annexure – II) 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 Asansol 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 are mostly concentrated on areas where coal reserves are found and where extensive mining activity has taken place in past. Area under which coal seam is found is earmarked as Restricted Development Zone and it covers a huge portion of the geographical area in the Asansol Sub-division, both in urban and rural areas. Ideally no development activity should have been allowed, but it might not be practical for such a vast area. Nearly 45 percent of the geographical area in Asansol Sub-division falls under Restricted Development Zone. In this case, minimal development activity is recommended in these zones with certain restriction in building activity. Therefore, precautionary measures before permitting building construction activity has been proposed in Restricted Development Zone - the prime among it to ensure that the soil condition is adequate to support building activity, particularly for construction with building height more than G+1.

As urban areas, which are covered by The West Bengal Municipal (Building) Rules, 2007 has some provisions (as listed below), though not very specific, rural areas does not any regulatory control on building activity provided by The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004,

Chapter IV - Control of building operation, particularly for those areas which are rural and falls under Restricted Development Zone.

The West Bengal Municipal (Building) Rules, 2007 has the following provision in this aspect:

Section 3.(3).(d) says that building permission should be given if the soil of the building site is likely to sustain the construction of a building;

Section 3.(4) says that 'No piece of land in the municipal area, located in a sinking zone ....., as determined by the board of councillors, shall be used as a building site with prior approval of the State Government, provided that for construction .....in municipal areas of the hill areas, prior testing of soil by a Government recognised testing organisation, in respect of land shall be made.'

For these reasons, it has been felt necessary to incorporate this provision before permitting building activity in 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 7.1.

Table 7.1: Distance from 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

[Note: These provisions are already there in The West Bengal Municipal (Building) Rules, 2007. However, no such provisions in The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004. As rural areas in Asansol Sub-division will have substantial development activity in future, such provisions has been extended to the rural areas for general safety of the inhabitants.]

Developments in vicinity of Airport

For any new buildings structures, which rise to 30 m or more in height and are to be located within 20 km of the Aerodrome Reference Point (ARP), shall be constructed only if no objection certificate has been obtained from the Directorate General of Civil Aviation.

No new chimneys or smoke producing factories shall be constructed within a radius of 8 km from the Aerodrome Reference Point (ARP).

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.

[Note: The provisions of The West Bengal Municipal (Building) Rules, 2007 has been extended to the rural areas to regulate the quality of building planning, design and structural stability. In Restricted Development Zone, any building higher than G+1 demands engagement of technical personnel of higher specialization, and such provision has been added.]

Developments adjacent to Major Arterials/National Highway

No new development should be permitted along NH-2 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 NH-2 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 NH-2 or any proposed Major Arterial (with ROW 45 m or higher).

If service road is not provided along NH-2 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, Special Publication 15: Ribbon Development along Highways and its Prevention]

7.2 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.

[Note: For urban areas provisions for minimum width of access road has been kept same as specified in The West Bengal Municipal (Building) Rules, 2007. However, as The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004, Chapter IV - Control of building operation, Section 21 says that every structure or building shall have an approach road or passage from a public road and the minimum width of such passage or road shall be one and eight-tenth metres, the minimum has been retained same i.e. of 1.8 m.]

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.

[Note: Such provisions are already there in urban areas as specified in The West Bengal Municipal (Building) Rules, 2007. It has been extended to the rural areas also in the Asansol Sub-division, as it has been felt that this regulatory provision may reduce traffic management problems often created due to inappropriate location of assembly buildings close to road intersection.]

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 7.2: 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

Table 7.3: 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 to15.0 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		

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 7.3. 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.

[Note: The West Bengal Municipal (Building) Rules, 2007 provisions has been found inadequate and recommendations from National Building Code has been adopted in principle, particularly for development on large plots where there are more than one buildings. This will help to regulate the layout and circulation plan for large development, both residential and non-residential, in an effective way as often these developments deal with range of roads with width of means of access exceeding 10.0 m]

7.3 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 7.4.

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 7.4 by considering the whole plot size(i.e. plot size containing more than one building).

Table 7.4: 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.

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.

[Note: The West Bengal Municipal (Building) Rules, 2007 specifies 65 percent and 50 percent for plot sizes less than 200 sqm and more than 500 sqm respectively, for both educational and residential buildings. On the other hand, The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004, specify 66.67 percent of ground coverage for residential buildings and 60 percent for non-residential buildings, irrespective of plot sizes.

The ground coverage for residential and educational buildings has been reduced in the similar lines of recent amendment in The Kolkata Municipal Corporation Building Rules, 2009. Moreover, educational buildings has been dealt separately and provided lesser ground coverage than residential buildings.]

7.4 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 7.5.

Table 7.5: 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 t o20.0 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)

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. Municipality or 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.

[Note: All the provisions regarding maximum permissible height of a building has been generously adopted from The West Bengal Municipal (Building) Rules, 2007, and has been extended to rural areas as The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004 does not address this issue adequately.]

7.5 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 exhauster and fan
(i) location of smoke exhauster 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

[Note: In principle, the provisions of The West Bengal Municipal (Building) Rules, 2007 has been extended to the rural areas to regulate high rise developments, which are imminent within Asansol Sub-division. The West Bengal Panchayat (Gram Panchayat Administration) Rules, 2004 does not address this issue adequately.]

7.6 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 7.6, 7.7, 7.8 and 7.9.

Table 7.6: 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

Table 7.7: 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			

Table 7.8: 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

Table 7.9: 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			

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 Asansol Sub-division is proposed for extensive development activities, the provision of minimum open spaces adopted in municipal building rules 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.

7.7 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.

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

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 tand 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 7.10.

Table 7.10: 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 to15.0 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]

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.

[The provisions of FAR provided in The West Bengal Municipal (Building) Rules, 2007 has been changed significantly. In these rules FAR has been specified for only for high rise buildings i.e. building higher than 14.5 m or for buildings on plot which have means of access wider than 14.5 m. This means that for buildings which are not high rise or are on plots abutting means of access less than 14.5 m, their development will be solely guided by permissible height, setbacks and ground coverage restrictions. This has resulted in very dense development along narrow street within the urban areas.

Apart from that all non-residential building have been put under same category for prescribing FAR. This has been felt inadequate for Asansol Sub-division where FAR can play an instrumental role in controlling the intensity of development. Maximum permissible FAR has been suggested for plot having varying width of means of access and for all types of building. FAR has been reduced in plots where means of access are relatively less. This is to provide disincentive to dense development activity in areas without inadequate means of access. As large parts of the urban and rural areas within the Asansol Sub-division will accommodate huge development activity, it is least expected that these new areas of development should adopt the same development pattern prevalent in developed urban areas within the Sub-division.]

7.8 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.

[Note: Parking requirements proposed in LUDCP have adopted standards prescribed by The Kolkata Municipal Corporation Building Rules, 2009 as it addresses the issues of multiple tenements of various sizes much more effectively compared to The West Bengal Municipal (Building) Rules, 2007. As new residential developments in Asansol sub-division is likely to have a growing share of multi-tenement units, this proposed regulation is expected to meet the residential parking requirements more appropriately.]

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.

[Note: Parking provisions as prescribed by The West Bengal Municipal (Building) Rules, 2007 has been adopted as found to be appropriate to the needs of Asansol Sub-division]

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.

[Note: Parking provisions as prescribed by The Kolkata Municipal Corporation Building Rules, 2009 has been adopted as found to be appropriate to the needs of Asansol Sub-division]

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;

[Note: Provisions based on seat capacity has been added as recommended by National Building Code]

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.

[Note: Parking provisions are more than specified in The West Bengal Municipal (Building) Rules, 2007, as often these places attract lot of vehicular parking demand.]

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, dinning, 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.

7.9 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

[Note: Only provisions of maximum permissible FAR has been added to the provisions specified by The West Bengal Municipal (Building) Rules, 2007, as suggested in The Kolkata Municipal Corporation Building Rules, 2009]

7.10 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 adopted from The Kolkata Municipal Corporation Building Rules, 2009.

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.

7.11 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 [Refer Annexure -V]. 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 -V 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.

7.12 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 in Annexure -V & VI.

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.

8. Plan Implementation Framework

In the previous sections, land use zoning plan, zoning regulations and development control regulations has been presented as part of the Land Use and Development Control Plan (LUDCP). However, the effectiveness of this plan will be evaluated based not only on the content of the plan but on the efficiency of its implementation. In this section key strategies will be suggested which are expected to improve the implementation mechanism of the Land Use and Development Control Plan.

8.1 Institutional Framework

Asansol Durgapur Development Authority is the nodal authority to implement the Land Use and Development Control Plan. It has primarily three functions to discharge with respect to the plan as listed following.

a) To permit development in accordance with the plan
b) To stop unauthorised development not in conformity with the plan
c) To undertake or support development works as specified by the plan

This often creates huge stress on the existing institutional capacity of the Development Authority and it would be prudent to contemplate an alternative institutional framework for plan implementation.

Section 38 (5) of The West Bengal Town and Country (Planning and Development) Act, 1979 states that 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 situated, to enforce such regulatory measures in supersession of the rules and regulations, if any, applicable to such area or zone.

This clearly implies that the task of enforcement shall be duly shared by the Development Authority with the urban and local bodies within the planning area.

A decentralised form of institutional framework is, therefore, recommended which will have three tiers of management. At the lowest level, it will include Gram Sansad members in rural areas and municipal ward councillors in urban areas. At the mid level it will have urban and rural local bodies i.e. Panchayat Samity, Municipal Corporation and Municipalities, whereas Development Authority will continue at the highest level. A schematic outline of responsibilities is presented below for all the three levels of institutional management framework.

Tier I: The Gram Sansad members in rural areas and ward councillors in urban areas will be responsible for implementation of the LUDCP at the mouza level. Within the geographical area of a mouza, all the elected representatives will be appointed as nodal officers. All mouza level information of the LUDCP i.e. LUMR of the mouza, proposed Land Use Zoning Map for the mouza, relevant zoning regulations and development control guidelines will be provided to these appointed nodal officers. Office of this nodal officers will be responsible for disseminating information regarding LUDCP and providing feedback on any application seeking development permission. In addition to these, they will also be responsible to report unauthorised development, if any within the mouza, to the Tier II level.

Most of permissions for smaller scale development which are in complete conformity or non-conformity with the plan can be directly sanctioned/rejected based on the feedback of the Tier I level. Where conditional approval might be provided or the scale of the development is large or its nature is complicated, such cases should be referred to the higher level along with the feedback/opinion.

Tier II: The urban and rural local bodies will as act as mid level institutions to link the Tier I and Tier III levels. These agencies will have all relevant information about LUDCP including the data at the mouza level provided to Tier I level falling under its jurisdiction. In cases of large scale development or of

conditional approval as forwarded by Tier I level, the feedback of the Tier II level will be forwarded to the Tier I level. Apart from that, any information of unauthorised development, as reported by Tier I level must be dealt at this level, with prior approval from the Development Authority.

Tier III: The Development Authority will have the final authority in approving or disapproving any application for development based on the feedback and opinion of the Tier I and II level. This kind of referral system at three tiers will reduce the load on the Development authority as it has to only handle few cases, which are either large scale or complex in nature.

However, to effectively execute the decentralised and referral system of plan implementation, it is necessary to train and equip the human resources at Tier I and Tier II level. Capacity building at the level of local bodies will empower them so that they can carry on development planning task in future as envisaged in The Constitution (Seventy-Third Amendment) Act, 1992 and The Constitution (Seventy-Fourth Amendment) Act, 1992.

8.2 Plan information system

As pointed out in the opening sections that one of the prime objective of the Land Use and Development Control Plan is to provide reliable and authentic information on proposed utilisation of land for various uses so that it can reduce the information asymmetry in the land market. As land value is completely dependent on the potential use, it will also help to reduce the forces of speculation and cut down opportunism in the land market. Any person buying or selling land or intending to develop on a piece of land or change the nature of existing land use should have the authentic information as prescribed in the Land Use and Development Control Plan.

This will also help reduce significant amount of unauthorised construction or development activity which are not in conformity with the plan. The regulatory environment will also be more efficient as more and more people will be aware of the prescribed land uses not only in their own land but also on adjoining land. As a result people will be more proactive in reporting any development not conformity with the plan – eventually leading to greater public vigilance and better enforcement of the plan.

Dissemination of information on Land Use and Development Control Plan will be crucial for successful implementation of the plan and this information should be available with less cost and pain. Development Authority should take proactive measures to provide information about the Land Use and Development Control Plan at various levels – starting from the mouza level at the Gram Sansad or the Gram Panchayat and Municipal ward councillor level. The urban and rural local bodies i.e. Panchayat Samiti's and Municipality or Municipal Corporation should also become data repository for dissemination of information about Land Use and Development Control Plan. In addition to this, the Development Authority can put the plan in public domain by publishing the mouza level maps and the land register of Land Use and Development Control Plan in its website, which can be freely downloaded at convenience. There should also be provision of purchasing the whole or relevant part of the Land Use and Development Control Plan document upon payment of a nominal sum.

It must be borne in mind that, like any other rules and regulations the success of Land Use and Development Control Plan is directly proportional to the circulation it will have – not only among its regulators but among its users.

8.3 Managing land for public purpose

One of the key objectives of the plan was to provide public goods i.e. roads, public utilities etc. Often these provisions require large tracts of land and it is not possible them to locate entirely on public land. Managing land under private ownership for public purpose is one of the major challenges in recent times which any Development Authority can face. The success of the LUDCP often hinges how private land can be managed for public utilities and services. There are various methods by which such can be done with its own advantages and disadvantages. The process of voluntary land acquisition at prevailing market rate is the most desirable tool to manage private land – however the process can be often lengthy due to negotiations with large number of owners or delayed due to few unwilling owners willing to part off their land. The process of involuntary acquisition is often termed as the last resort due the social and political impendence associated with it. In between voluntary and involuntary acquisition, there are some methods which can be employed in case to case basis as found appropriate.

One of the methods is Town Planning Schemes, where a large part of land is taken from the owners for public projects such as roads. A small part of the land taken is used for the road project and the rest part of the land with increased accessibility is again returned back to the original owners. The owners loose some land but enjoys overall gain as the returned land commands higher market value. This has been one of the most successful models for implementing urban development schemes in Gujarat.

Another method which has often been used for acquiring private land for public purpose is Transfer of Development Rights. In this method, the land is acquired for public purpose but the total floor area that could have been developed is now transferred to another piece of land. Moreover, the development rights are can be bought or sold in similar way as land. The terms and conditions i.e. FAR of the plot, zones where FAR can be transferred and type of use etc can be decided between the Development Authority and the owner of the land.

8.4 Scope of detailed level planning

The proposed Land Use and Development Control Plan has prepared a broad and flexible plan for future utilisation of land. It has contemplated six broad land use zones where a variety of activities can come up. However, it will necessary on part of the Development Authority to prepare detailed level development schemes following the basic guidelines of this plan. Section 57 of The West Bengal Town and Country (Planning and Development) Act, 1979 clearly specifies that for the purpose of implementing the proposals contained in the Land Use and Development Control Plan, Development Authority may prepare one or more development schemes for the area within its jurisdiction. The scope of the development schemes is detailed and has been outlined in the same section of the Act.

Annexure - I

Registered No. WB/SC-247 No. WB(Part-I)/2014/SAR-701

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

ASANSOL-DURGAPUR DEVELOPMENT AUTHORITY

(A Statutory Body of the Government of West Bengal)

NOTIFICATION

No. *ADDA/ASL/241/XII/19-A – 24th May, 2012* 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 369 mouzas under Asansol Sub-Division in dailies like The Ananda Bazar Patrika, The Telegraph, The Dainik Lipi & The Dainik Jagaran vide memo no. of Public Notice being *ADDA/ASL/842/XVII/19-A* dated *08.02.2012*.

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/ASL/236/XVII/19-A* dated *24.05.2012* of Asansol-Durgapur Development Authority, Asansol.

Therefore, as per provisions of sub-section (6) of section 29 this notice is being published in the Official Gazette for such adoption along with the copy of the Public Notice is appended below :

ASANSOL-DURGAPUR DEVELOPMENT AUTHORITY

(A Statutory Body of the Government of West Bengal)

"SAHARA APARTMENT", KUMARPUR, G.T. ROAD, ASANSOL-713304.

Memo No. : ADDA/ASL/236/XII/19A Date : 24.05.2012.

PUBLIC NOTICE

Whereas Asansol Durgapur Development Authority (hereinafter called ADDA), in pursuance of the provisions of section 28 of the West Bengal Town and Country (Planning & Development) Act, 1979 (hereinafter called T & CP Act),

has prepared the Present Land Use Map and Land Register for the following areas within Asansol sub-division :

Name of the P.S.	No. of Mouzas
Kulti	60
Salanpur	77
Barabani	52
Hirapur	27
Asansol	40
Jamuria	74
Raniganj	31
Chittaranjan	08
Total no. of Mouzas in Asansol sub-division	369

And now, ADDA hereby publishes the draft copy of the Present Land-use Map and Register as adopted after notification for inspection by any person as per provision of section 29 of the W.B. Town & Country (Planning & Development) Act.. 1979. The copy of the Land-use Map and Register may be inspected at all the concerned Municipalities & Municipal Corporations; Panchayat Samities; Office of the A.D.M. , S.D.M. & S.D.L.R.O. and at the office of the Asansol-Durgapur Development Authority, Asansol.

Chief Executive Officer,
Asansol-Durgapur Development Authority.

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Annexure - II

This section provides the detailed delineation of Administrative Units in Asansol Sub-division according to Type of Development Zones, Planning Units, Police Station and Mouza (Name & J.L. No.) for Land Use and Development Control Plan.

Barabani C.D. Block

A. Eco-sensitive zone (PU-3)

Barabani P.S.

Parulbaria (JL No. 1), Roshna (JL No. 2), Daskiari (JL No. 3), Kanskuli (JL No. 4), Aliganja (JL No. 11), Hosenpur (JL No. 12), Putulia (JL No. 13), Gour Bazar (JL No. 14), Amulia (JL No. 15) & Rashunpur (JL No. 16)

B. Restricted Zone (PU-4)

Barabani P.S.

Chhotkara (JL No. 5), Khaerbed (JL No. 6), Baradang (JL No. 7), Alipur (JL No. 8), Kantapahari (JL No. 9), Panuria (JL No. 10), Madanpur (JL No. 17), Sarshatali (JL No. 18), Kapishtha (JL No. 19), Jamgram (JL No. 20), Itapora (JL No. 22), Bila (JL No. 23), Amdiha (JL No. 24) & Khoshnagar (JL No. 47)

C. Restricted Zone (PU-8)

Barabani P.S.

Kanyapur (JL No. 32), Nuni (JL No. 33), Panchgechhia (JL No. 34), Manoharbahal (JL No. 35), Chinchuria (JL No. 36), Napara (JL No. 40), Jayramdanga (JL No. 41), Bhaskajuri (JL No. 42), Majiyara (JL No. 43), Bhanoara (JL No. 44), Barabani (JL No. 45), Shyamsundarpur (JL No. 51) & Charanpur (JL No. 52)

D. Extensive Zone (PU-6)

Barabani P.S.

Puchra (JL No. 21), Baliapur (JL No. 25), Amlala (JL No. 26), Raniganja (JL No. 27), Raghunath Chak (JL No. 28), Taldanga (JL No. 29), Lalganja (JL No. 30), Janarddan Sayer (JL No. 31), Bijari (JL No. 37), Paniphala (JL No. 38), Karrabaid (JL No. 39), Kelejora (JL No. 46), Khamra (JL No. 48), Gopalbaid (JL No. 48) & Domahani (JL No. 50)

Jamuria C.D. Block

A. Eco-sensitive zone (PU-3)

Jamuria P.S.

Andhaira (JL No. 1), Baguli (JL No. 2), Madhabpur (JL No. 3)& Rakhakura (JL No. 4)

B. Restricted Zone (PU-9)

Jamuria P.S.

Bijaynagar (JL No. 49), Dhasna (JL No. 50), Tapasi (JL No. 53), Kunustoria (JL No. 54), Jot Janaki (JL No. 55), Dhasala (JL No. 56), Bahadurpur (JL No. 57), Chakdala (JL No. 58), Sarakdihi (JL No. 59), Bamanband (JL No. 71), Dobrana (JL No. 72), Kenda (JL No. 73) & Parashia (JL No. 74)

C. Restricted Zone (PU-11)

Jamuria P.S.

Semalya (JL No. 66) & Chhatrishganda (JL No. 67)

D. Extensive Zone (PU-7)

Jamuria P.S.

Chichurbil (JL No. 5), Churulia (JL No. 6), Madhudanga (JL No. 7), Madantor (JL No. 8), Naykapur (JL No. 9), Sattar (JL No. 10), Jayantipur (JL No. 11), Manpur (JL No. 12),

Jaynagar (JL No. 13), Desher Mohan (JL No. 14), Birkulti (JL No. 15), Taltor (JL No. 16), Hijalgara (JL No. 40), Kumardiha (JL No. 41), Shankheri (JL No. 42), Barul (JL No. 43), Darbardanga (JL No. 44), Patharchur (JL No. 45), Lalbazar (JL No. 46), Sidhpur (JL No. 47), Jamshol (JL No. 48), Bhaterdaha (JL No. 60), Bataspur (JL No. 61), Khamarshol (JL No. 62), Benashol (JL No. 63), Bagdiha (JL No. 64), Bhuri (JL No. 65), Nimsa (JL No. 68), Chichuria (JL No. 69) & Dahuka (JL No. 70)

Raniganj C.D. Block

A. Restricted Zone (PU-10)

Raniganj P.S.

Saora (JL No. 1), Ratibati (JL No. 2), Chapui (JL No. 3), Kumardiha (JL No. 4), Chelad (JL No. 5), Tirat (JL No. 6), Chalbalpur (JL No. 7), Jemeri (JL No. 8), Belebathan (JL No. 9), Harabhanga (JL No. 10), Damalia (JL No. 11), Narankuri (JL No. 12), Egara (JL No. 13), Amkula (JL No. 14), Murgathaul (JL No. 15), Nimcha (JL No. 16), Chak Janadhara (JL No. 19), Banshra (JL No. 20), Sonachora (JL No. 21), Sahebganj (JL No. 25), Raghunathchak (JL No. 26), Ballavpur (JL No. 27), Chak Brindabanpur (JL No. 29), Baktarnagar (JL No. 30) & Napur (JL No. 31)

Salanpur C.D. Block

A. Restricted Zone (PU-4)

Salanpur P.S.

Salanpur (JL No. 27), Khudka (JL No. 28), Dhundabad (JL No. 29), Banbirdi (JL No. 30), Basudebpur (JL No. 31), Jemari (JL No. 32), Alkusha (JL No. 58), Lahat (JL No. 61), Radhaballabhpur (JL No. 62), Shyamdi (JL No. 63), Pahargara (JL No. 64) & Mohanpur (JL No. 65)

B. Extensive Zone (PU-2)

Salanpur P.S.

Ghatkul (JL No. 1), Gamarkuri (JL No. 2), Sarkuri (JL No. 3), Bathanbari (JL No. 4), Sidhabari (JL No. 5), Banshkatia (JL No. 6), Ramchandrapur (JL No. 7), Kalipathar (JL No. 8), Brindabani (JL No. 9), Damdaha (JL No. 10), Dhanguri (JL No. 11), Pithakiari (JL No. 12), Majhladi (JL No. 13), Muchidi (JL No. 14), Pratappur (JL No. 15), Alladi (JL No. 16), Kaladabar (JL No. 17), Shrishberya (JL No. 18), Ramdi (JL No. 19), Dendua (JL No. 20), Barabai (JL No. 21), Dhanudi (JL No. 22), Hadla (JL No. 23), Maheshpu (JL No. 24), Shrirampur (JL No. 25), Nekrajuria (JL No. 26), Dhaminberia (JL No. 33), Amjharia (JL No. 34), Harishadi (JL No. 35), Rupnarayanpur (JL No. 36), Benagarya (JL No. 37), Kusumkanali (JL No. 40), Ghiadoba (JL No. 42), Uttar Rampur (JL No. 43), Jitpur (JL No. 44), Kalya (JL No. 45), Seakulberia (JL No. 46), Kirtanshala (JL No. 47), Kalisanko (JL No. 48), Chayenpur (JL No. 49), Dharaspur (JL No. 50), Keshardi (JL No. 51), Paharpur (JL No. 52), Manahara (JL No. 53), Malladih (JL No. 54), Kankur Kunda (JL No. 55), Achhra (JL No. 56) & Dabar (JL No. 57)

Chittaranjan P.S.

Namakeshia (JL No. 8)

C. Extensive Zone (PU-6)

Salanpur P.S.

Phulberya (JL No. 59), Sadhna (JL No. 60), Parbatput (JL No. 66), Bolkunda (JL No. 67), Barbakpur (JL No. 68), Madhaichak (JL No. 69), Patal (JL No. 70), Mahishmura (JL No. 71), Bara Pattabara (JL No. 72), Miliakola (JL No. 73), Dharmma (JL No. 74), Talberia (JL No. 75), Ethora (JL No. 76) & Angaria (JL No. 77)

D. Intensive Zone (PU-1)

Salanpur P.S.

Rangameta (JL No. 38), Malbahal (JL No. 39) & Jorbari (JL No. 41)

Chittaranjan P.S.

Amladahi (JL No. 5), Barmuri (JL No. 6), Durgadi (JL No. 4), Fatepur (JL No. 3), Simjuri (JL No. 2), Sundarpahari (JL No. 1) & Uparkeshia (JL No. 7)

Kulti Municipality

A. Restricted Zone (PU-4)

Kulti P.S.

Damagaria (JL No. 4), Jamaldi (JL No. 5), Chanptaria (JL No. 5), Digari (JL No. 5), Sabanpur (JL No. 5), Barira (JL No. 5), Lalbazar (JL No. 10), Ramnagar (JL No. 11), Manberia (JL No. 12), Balitara (JL No. 13), Kendua (JL No. 14), Petana (JL No. 15), Barakar (JL No. 30) & Chungari (JL No. 31)

B. Restricted Zone (PU-8)

Hirapur P.S.

Jamdiha (JL No. 1), Junut (JL No. 2), Bhaladi (JL No. 3), Namabara (JL No. 4), Chapardi (JL No. 5), Aluthiya (JL No. 6), Bharat Chak (JL No. 7), Patmohana (JL No. 8) & Bidyanandapur (JL No. 9)

Kulti P.S.

Mahutdi (JL No. 24), Sanktorya (JL No. 38), Dishergarh (JL No. 39), Shitalpur (JL No. 40), Manoharchak (JL No. 41), Chhota Dhemua (JL No. 42), Sodepur (JL No. 43), Radhanagar (JL No. 44), Asanbani (JL No. 45), Belrui (JL No. 49), Lachhipur (JL No. 50), Bamandiha (JL No. 53), Aldihi (JL No. 54), Methani (JL No. 55), Kamalpur (JL No. 56), Henrelgaria (JL No. 57), Bejdihi (JL No. 58), Paidi (JL No. 59) & Chinakunri (JL No. 60)

C. Extensive Zone (PU-2)

Kulti P.S.

Debipur (JL No. 1), Duburdi (JL No. 2) & Indkata (JL No. 3)

D. Intensive Zone (PU-5)

Kulti P.S.

Kulti (JL No. 16), Lachhmanpur (JL No. 17), Rampur (JL No. 18), Chalbalpur (JL No. 19), Dedi (JL No. 20), Kultara (JL No. 21), Punuri (JL No. 22), Badirchak (JL No. 23), Shipur (JL No. 25), Kuldi (JL No. 26), Namagarara (JL No. 27), Gangutia (JL No. 28), Raydi (JL No. 29), Mahatadi (JL No. 32), Boldi (JL No. 33), Narayanchak (JL No. 34), Hatinal (JL No. 35), Parra (JL No. 36), Jashaidi (JL No. 37), Bhanrra (JL No. 46), Kalikapur (JL No. 47), Sitarampur (JL No. 48), Kumardiha (JL No. 51) & Niamatpur (JL No. 52)

Raniganj Municipality

A. Restricted Zone (PU-10)

Raniganj P.S.

Siarshol (JL No. 17), Amrasota (JL No. 17), Mangalpur (JL No. 22), Ronai (JL No. 23), Raniganj (JL No. 24) & Kumarbazar (JL No. 28)

Jamuria Municipality

A. Restricted Zone (PU-9)

Jamuria P.S.

Jhila (JL No. 17), Shibpur (JL No. 18), Nandi (JL No. 19), Damodarpur (JL No. 20), Jamuria (JL No. 21), Kaithi (JL No. 22), Pariharpur (JL No. 23), Shripur (JL No. 24), Kundalia (JL No. 25), Joba (JL No. 26), Khoshkhula (JL No. 27), Ninga (JL No. 28), Chanda (JL No. 29), Bagra (JL No. 30), Banali (JL No. 31), Mithapur (JL No. 32), Satgram (JL No. 33), Katagarya (JL No. 34), Bijpur (JL No. 35), Balanpur (JL No. 36), Mandalpur (JL No. 37), Ikra (JL No. 238), Sekpur (JL No. 39), Mamudpur (JL No. 51) & Sarthakpur (JL No. 52)

Asansol Municipal Corporation

A. Restricted Zone (PU-8)

Asansol P.S.

Raghunathbati (JL No. 3), Ramjibanpur (JL No. 4), Baradhemo (JL No. 5), Jagatdi (JL No. 6), Phatepur (JL No. 7), Barachak (JL No. 11), Hatgarui (JL No. 13), Gopalpur (JL No. 14), Sarakdi (JL No. 15), Nadiha (JL No. 16), Palashdiha (JL No. 17), Bansarakdi (JL No. 22), Mahujuri (JL No. 23), Barapukhuriya (JL No. 24), Garparira (JL No. 25), Uttar dhadka (JL No. 26), Kalla (JL No. 28), Satpukhuria (JL No. 29), Kankhaya (JL No. 30), Banbishnupur (JL No. 31), Nishchinta (JL No. 32), Keshabganja (JL No. 33), Chak Keshabganja (JL No. 34), Kalipahari (JL No. 36) & Ghoshik (JL No. 39)

B. Extensive Zone (PU-6)

Asansol P.S.

Sudi (JL No. 1) & Maricjkata (JL No. 1)

C. Extensive Zone (PU-13)

Asansol P.S.

Mohishila (JL No. 37), Kotaldihi (JL No. 38) & Damra (JL No. 40)

Hirapur P.S.

Kuilapur (JL No. 14), Dihika (JL No. 15), Shyamdihi (JL No. 15), Bangram (JL No. 17), Hirapur (JL No. 18), Talkunri (JL No. 23), Barathol (JL No. 24), Kalajhariya (JL No. 26) & Dhenua (JL No. 27)

D. Intensive Zone (PU-12)

Asansol P.S.

Bartaria (JL No. 8), Narasamuda (JL No. 9), Gopalpur (JL No. 10), Ganrui (JL No. 12), Gobindapur (JL No. 18), Kumarpur (JL No. 19), Asansol Municipality (JL No. 20), Shitala (JL No. 21), Dakshin Dhadka (JL No. 27) & Asansol(JL No. 35)

Hirapur P.S.

Bardigari (JL No. 10), Chhotadigari (JL No. 11), Shanrmara (JL No. 12), Purushottampur (JL No. 13), Lakrasata (JL No. 19), Santa (JL No. 20), Narasinghaband (JL No. 21), Ismail (JL No. 22) & Nabaghanadi (JL No. 25)

Annexure - III

This section provides the list of mouza's within Restricted Development Zone as delineated in the Land Use and Development Control Plan for Asansol Sub-division.

Barabani C.D. Block

A. Restricted Zone (PU-4)

Barabani P.S.

Chhotkara (JL No. 5), Khaerbed (JL No. 6), Baradang (JL No. 7), Alipur (JL No. 8), Kantapahari (JL No. 9), Panuria (JL No. 10), Madanpur (JL No. 17), Sarshatali (JL No. 18), Kapishtha (JL No. 19), Jamgram (JL No. 20), Itapora (JL No. 22), Bila (JL No. 23), Amdiha (JL No. 24) & Khoshnagar (JL No. 47)

B. Restricted Zone (PU-8)

Barabani P.S.

Kanyapur (JL No. 32), Nuni (JL No. 33), Panchgechhia (JL No. 34), Manoharbahal (JL No. 35), Chinchuria (JL No. 36), Napara (JL No. 40), Jayramdanga (JL No. 41), Bhaskajuri (JL No. 42), Majiyara (JL No. 43), Bhanoara (JL No. 44), Barabani (JL No. 45), Shyamsundarpur (JL No. 51) & Charanpur (JL No. 52)

Jamuria C.D. Block

A. Restricted Zone (PU-9)

Jamuria P.S.

Bijaynagar (JL No. 49), Dhasna (JL No. 50), Tapasi (JL No. 53), Kunustoria (JL No. 54), Jot Janaki (JL No. 55), Dhasala (JL No. 56), Bahadurpur (JL No. 57), Chakdala (JL No. 58), Sarakdihi (JL No. 59), Bamanband (JL No. 71), Dobrana (JL No. 72), Kenda (JL No. 73) & Parashia (JL No. 74)

B. Restricted Zone (PU-11)

Jamuria P.S.

Semalya (JL No. 66) & Chhatrishganda (JL No. 67)

Raniganj C.D. Block

A. Restricted Zone (PU-10)

Raniganj P.S.

Saora (JL No. 1), Ratibati (JL No. 2), Chapui (JL No. 3), Kumardiha (JL No. 4), Chelad (JL No. 5), Tirat (JL No. 6), Chalbalpur (JL No. 7), Jemeri (JL No. 8), Belebathan (JL No. 9), Harabhanga (JL No. 10), Damalia (JL No. 11), Narankuri (JL No. 12), Egara (JL No. 13), Amkula (JL No. 14), Murgathaul (JL No. 15), Nimcha (JL No. 16), Chak Janadhara (JL No. 19), Banshra (JL No. 20), Sonachora (JL No. 21), Sahebganj (JL No. 25), Raghunathchak (JL No. 26), Ballavpur (JL No. 27), Chak Brindabanpur (JL No. 29), Baktarnagar (JL No. 30) & Napur (JL No. 31)

Salanpur C.D. Block

A. Restricted Zone (PU-4)

Salanpur P.S.

Salanpur (JL No. 27), Khudka (JL No. 28), Dhundabad (JL No. 29), Banbirdi (JL No. 30), Basudebpur (JL No. 31), Jemari (JL No. 32), Alkusha (JL No. 58), Lahat (JL No. 61), Radhaballabhpur (JL No. 62), Shyamdi (JL No. 63), Pahargara (JL No. 64) & Mohanpur (JL No. 65)

Kulti Municipality

A. Restricted Zone (PU-4)

Kulti P.S.

Damagaria (JL No. 4), Jamaldi (JL No. 5), Chanptaria (JL No. 5), Digari (JL No. 5), Sabanpur (JL No. 5), Barira (JL No. 5), Lalbazar (JL No. 10), Ramnagar (JL No. 11), Manberia (JL No. 12), Balitara (JL No. 13), Kendua (JL No. 14), Petana (JL No. 15), Barakar (JL No. 30) & Chungari (JL No. 31)

B. Restricted Zone (PU-8)

Hirapur P.S.

Jamdiha (JL No. 1), Junut (JL No. 2), Bhaladi (JL No. 3), Namabara (JL No. 4), Chapardi (JL No. 5), Aluthiya (JL No. 6), Bharat Chak (JL No. 7), Patmohana (JL No. 8) & Bidyanandapur (JL No. 9)

Kulti P.S.

Mahutdi (JL No. 24), Sanktorya (JL No. 38), Dishergarh (JL No. 39), Shitalpur (JL No. 40), Manoharchak (JL No. 41), Chhota Dhemua (JL No. 42), Sodepur (JL No. 43), Radhanagar (JL No. 44), Asanbani (JL No. 45), Belrui (JL No. 49), Lachhipur (JL No. 50), Bamandiha (JL No. 53), Aldihi (JL No. 54), Methani (JL No. 55), Kamalpur (JL No. 56), Henrelgaria (JL No. 57), Bejdihi (JL No. 58), Paidi (JL No. 59) & Chinakunri (JL No. 60)

Raniganj Municipality

A. Restricted Zone (PU-10)

Raniganj P.S.

Siarshol (JL No. 17), Amrasota (JL No. 17), Mangalpur (JL No. 22), Ronai (JL No. 23), Raniganj (JL No. 24) & Kumarbazar (JL No. 28)

Jamuria Municipality

A. Restricted Zone (PU-9)

Jamuria P.S.

Jhila (JL No. 17), Shibpur (JL No. 18), Nandi (JL No. 19), Damodarpur (JL No. 20), Jamuria (JL No. 21), Kaithi (JL No. 22), Pariharpur (JL No. 23), Shripur (JL No. 24), Kundalia (JL No. 25), Joba (JL No. 26), Khoshkhula (JL No. 27), Ninga (JL No. 28), Chanda (JL No. 29), Bagra (JL No. 30), Banali (JL No. 31), Mithapur (JL No. 32), Satgram (JL No. 33), Katagarya (JL No. 34), Bijpur (JL No. 35), Balanpur (JL No. 36), Mandalpur (JL No. 37), Ikra (JL No. 238), Sekpur (JL No. 39), Mamudpur (JL No. 51) & Sarthakpur (JL No. 52)

Asansol Municipal Corporation

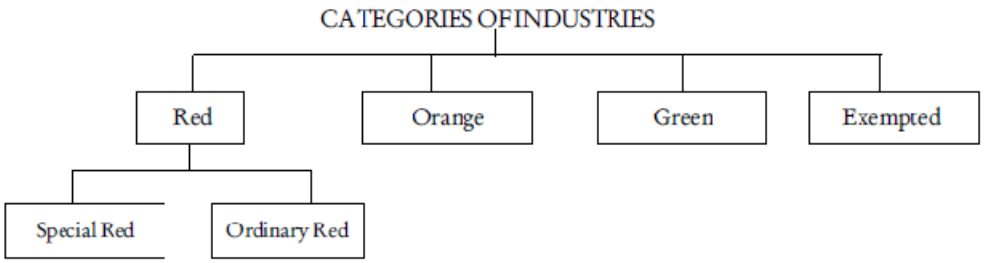
A. Restricted Zone (PU-8)

Asansol P.S.

Raghunathbati (JL No. 3), Ramjibanpur (JL No. 4), Baradhemo (JL No. 5), Jagatdi (JL No. 6), Phatepur (JL No. 7), Barachak (JL No. 11), Hatgarui (JL No. 13), Gopalpur (JL No. 14), Sarakdi (JL No. 15), Nadiha (JL No. 16), Palashdiha (JL No. 17), Bansarakdi (JL No. 22), Mahujuri (JL No. 23), Barapukhuriya (JL No. 24), Garparira (JL No. 25), Uttar dhadka (JL No. 26), Kalla (JL No. 28), Satpukhuria (JL No. 29), Kankhaya (JL No. 30), Banbishnupur (JL No. 31), Nishchinta (JL No. 32), Keshabganja (JL No. 33), Chak Keshabganja (JL No. 34), Kalipahari (JL No. 36) & Ghoshik (JL No. 39)

Annexure - IV

This section provides the categorisation of Industries as adopted in the Land Use and Development Control Plan for Asansol Sub-division. Categorisation of Industries is based on Annexure-I of the Annual Report, West Bengal Pollution Control Board (WBPCB), Page 133-141. Selected portion of the source document (i.e. Annexure-I of the Annual Report, WBPCB) has been represented here for easy and quick reference.



The classification of Special Red and Ordinary Red categories have been made only for administrative convenience and power of processing of 'Consent for Establishment' and 'Consent for Operation' are given to different authorities.

The lists of Special Red, Ordinary Red, Orange, Green and Exempted categories of industries are not exhaustive and these are subject to modifications under environmental consideration.

The industry which do not fall under any of the above classes, decision with regard to their classification will be taken by a Committee at Head Office level comprising of Chief Scientist and Senior Environmental Engineers of the Board.

The validity of 'Consent for Operation' of different groups of industries will be as follows:

Green - maximum 5 years
Orange - maximum 3 years
Special & Ordinary Red (except grossly polluting industries) - maximum 2 years
Grossly polluting industries - maximum 1 year

List of Industries under SPECIAL RED Category

1. Acid lead batteries including lead plate casting (more than ten batteries per day)
2. All mining activities including queries
3. Aluminium smelter
4. Asbestos and asbestos-based industries
5. Basic drug & pharmaceutical (excluding formulation)
6. Calcium carbide manufacturing
7. Cast iron foundry
8. Cement (excluding simple grinding)
9. Chemical, petrochemical and electrochemical, manufacture (including distillation) of mineral acids such as Sulphuric acid, Nitric acid, Hydrochloric acid, Phosphoric acid etc. and their salts, manufacture of alum
10. Chlorates, perchlorates and peroxides
11. Chlorine, fluorine, bromine, iodine and their compounds

12. Chloro alkali
13. Coke making, coal liquefaction, coal tar distillation, processing of coal tar distillate or fuel gas making, coke briquetting (excluding sundrying)
14. Copper smelter
15. Dichromate and chromates & basic chrome sulphate
16. Distillery including fermentation industry (including manufacture of yeast & beer)
17. Dyes and dye-intermediates
18. Electroplating operations
19. Explosives including detonators, fuses etc. & their storage
20. Ferrous & non-ferrous metal extraction (different furnaces & smelting), refining, casting, forging (with coal fired boilers), alloy making etc.
21. Fertiliser (basic) (excluding granulation & formulation only)
22. Glass and ceramics (excluding tile manufacturing)
23. Hazardous waste/bio-medical waste disposal facilities
24. Hydrocyanic acid and its derivatives
25. Incineration plants
26. Industry or process involving metal treatment or process such as pickling, surface coating (excluding spray, manual brush, paint baking, paint stripping), heat treatment (only cyniding), phosphating, galvanising, anodising etc.
27. Integrated textile mills (processing involving scouring, bleaching, dyeing, printing or any effluent/emission generating process) and dyeing of other fabrics
28. Iron and steel (involving processing from ore / scrap / integrated steel plants) including coke plants and steel products involving use of any of the equipment such as blast furnaces, open hearth furnace, induction furnace or arc furnace etc.
29. Isolated storage of hazardous chemicals (as per schedule of the Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989), etc.
30. Lead smelting, refining and manufacture of its oxides
31. Non-alcoholic beverages (soft drinks) and only bottling of alcoholic products (capital investment on plant & machinery > 1 crore)
32. Oil refinery (Mineral oil or petro-refineries)
33. Paints and varnishes (excluding units with only blending & mixing)
34. Pesticides (including formulation)
35. Petrochemicals (manufacture of and not merely use of as raw material)
36. Phenolic products
37. Phosphorous and its compounds
38. Pigments and intermediates
39. Power plants (including hydel power, thermal power, nuclear power etc.) (excluding diesel generator sets and captive power plant)
40. Power plant (captive)
41. Processes involving chlorinated hydrocarbons
42. Printing or etching of glass sheet using hydrofluoric acid (large scale)
43. Pulp & paper (excluding paper manufacturing by hydropulping and excluding manufacture of straw board, gray board & duplex board)
44. PVC granules from PVC waste
45. Radioactive elements
46. Rolling mill (hot) (coal-fired)
47. Rubber chemicals
48. Ship breaking activity
49. Slaughter houses and meat processing units
50. Sugar
51. Synthetic & natural fibre including rayon, tyre cord, polyester filament yarn & raw woollen, raw silk, cellophane paper, cellulose nitrate
52. Synthetic resins
53. Synthetic rubber
54. Tanneries
55. Vegetable oils & edible oils including solvent extracted oils, hydrogenated oils

56. Waste Oil Processing (any method)
57. Zinc smelter

List of Industries under ORDINARY RED Category

1. Acid slurry (sulphonation)
2. Bitumen processing and products
3. Bone mill
4. Composite woollen mill including dewaxing of raw wool and raw silk
5. Ceramic colour manufacturing (Using boiler)
6. Dairy and dairy products (integrated project, capital investment on plant & machinery > Rs. 1 crore)
7. Dry coal processing/mineral processing industries like ore sintering, pelletization, grinding and pulverisation etc.
8. Earthen potteries & tile manufacturing (involving kiln)
9. Electric lamp (bulb) manufacturing (large scale)
10. Fibre glass and glass wool production
11. Food & food processing including fruits & vegetable processing (with capital investment on plant & machinery > Rs. 1 crore)
12. Glue (excluding glue from starch), gelatine and synthetic adhesives
13. Gold and silver smithy (purification with acid, smelting operation and sulfuric acid polishing operation) (using more than 1 litre of sulphuric acid / nitric acid per month)
14. Health care establishment
15. Handicrafts works like terracota work
16. Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black etc.
17. Industrial or inorganic gases (excluding medical oxygen)
18. Jute processing with dyeing
19. Lime manufacturing
20. Lubricating oils, greases or petroleum based products (excluding blending at normal temperature)
21. Magnesium sulphate
22. Manufacturing & reprocessing of PVC granules and manufacturing of reprocessed PVC products
23. Manufacturing of cilica gel with furnace
24. Manufacturing of toothpowder, toothpaste, talcum powder and other cosmetic items (large & medium scale)
25. Manufacturing of pasted veneers using boiler and thermic fluid heater
26. Manufacturing of umbrella (including manufacturing of metallic handle and sticks)
27. Manufacturing of optical lenses (using furnace other than electric furnace)
28. Photographic films and chemicals
29. Plyboard manufacturing (including vineer & laminate) with coal or waste wood fired boiler / thermic fluid heater (with captive resin manufacturing plant)
30. Processing of animal hoofs, horns and other body parts
31. Reclamation of rubber, manufacture of rubber solution containing mineral naptha & rubber wastes, rubber based adhesives
32. Refractories
33. Rubber goods industry (with boiler)
34. Shellac processing
35. Spice grinding (> 20 HP motor)
36. Stone crushing
37. Straw board, gray board, duplex board and paper manufacturing by hydropulping
38. Surgical and medical products involving prophylactics and latex
39. Synthetic detergent (excluding formulation) and soap (with steam boiling)
40. Tyres and tubes vulcanization/hot retreading (using coal fired boiler)/moulding
41. Wood charcoal manufacturing and processing

List of Industries under ORANGE Category

1. Almirah manufacturing (not permitted in municipal areas of West Bengal)
2. Aluminium and copper extraction from scrap using oil-fired furnace
3. Automobile servicing, repairing and painting (excluding only fuel dispensing)
4. Ayurvedic and homeopathic medicine (with boiler)
5. Bakery & confectionery [(a) with production capacity < 10 tpd with coal & wood fired oven and (b) all units with production capacity 10 tpd]
6. Bleaching of fabrics, yarn
7. Brickfields (excluding fly ash brick manufacturing using lime process)
8. Cashewnut processing
9. Cement grinding (excluding coal fired drier)
10. Chilling plant, cold storage and ice making
11. Chira mill
12. Coffee seed processing
13. Coke briquetting (sun drying)
14. Cotton spinning and weaving (medium and large scale)
15. Dry cell battery (excluding manufacturing of electrodes)
16. Engineering and fabrication units
17. Fire works manufacturing and storage
18. Fish feed and poultry feed
19. Fish processing and packaging (excluding chilling of fish)
20. Foam manufacturing
21. Food & food processing including fruits & vegetable processing (capital investment on plant & machinery > Rs.10 lakhs but < Rs. 1 crore)
22. Forging of ferrous & non-ferrous metal (using oil or gas fired boilers)
23. Gravure printing
24. Grill manufacturing (not permitted in municipal areas of West Bengal)
25. Glass, ceramic, earthen potteries and tile manufacturing using oil or gas fired kiln
26. Hardware manufacturing for computer and other information technology instruments
27. Heat treatment using oil fired furnace (excluding cyniding)
28. Hotels & restaurants (capital investment on land, building, plant & machinery > 30 lakhs)
29. Housing complexes with more than 100 flats or more than 60000 sq. ft. super built up area
30. Husking mill
31. Ice cream
32. Infrastructure development project with capital investment more than Rs. 5 crores
33. Jute processing without dyeing
34. Manufacture of mirror from sheet glass
35. Organic nutrients (excluding simple mixing)
36. Paint blending & mixing (ball mill)
37. Pharmaceutical formulation (capital investment plant & machinery . Rs. 10 lacs)
38. Plyboard manufacturing (including vineer & laminate) with oil fired boiler/ thermic fluid heater (without resin plant)
39. Poultry, hatchery, piggery (capital investment on land, building, plant & machinery Rs. 10 lacs)
40. Power press
41. Pulverisation of bamboo and scrap wood
42. Printing ink manufacturing
43. Printing or etching of glass sheet using hydrofluoric acid (small scale)
44. Puffed rice (muri) (using husk or coal fired chullah or vatti)
45. Reprocessing of waste plastic (excluding PVC)
46. Rice mill & rice hullers
47. Rolling mill (oil or gas fired) and cold rolling mill
48. Saw mill
49. Silk screen printing

50. Spray painting, paint baking, paint stripping
51. Storage of hides and processing of tallow
52. Synthetic detergents formulation (capital investment on plant & machinery . Rs. 5 lacs)
53. Tea processing
54. Tobacco products including cigarettes and tobacco processing
55. Tyres and tubes vulcanization/hot retreading (using oil or gas fired boiler)
56. Wire drawing (cold process) and bailing straps
57. Wire netting

List of industries under GREEN category

1. Acid lead battery (up to ten batteries per day excluding lead plate casting)
2. Aluminium utensils from aluminium circles
3. Assembly of air coolers/conditioners, repairing and servicing
4. Assembly of bicycles, baby carriage and other small non-motorised vehicles
5. Automobile fuel outlet (only dispensing)
6. Ayurvedic and homeopathic medicine (without boiler)
7. Bakery & Confectionery (with production capacity < 10tpd with oil, gas or electrical oven)
8. Block making for printing without foundry (excluding wooden block making)
9. Brass & bell metal utensils manufacturing from circle(without re-rolling facility)
10. Candy
11. Cardboard or corrugated box and paper products (excluding paper or pulp manufacturing and without using boiler)
12. Carpet weaving
13. Cement products like pipe, pillar, jafri, well ring etc. (should be done under closed covered shed to control cement dust spreading)
14. Ceramic colour manufacturing (not using boiler and waste water recycling process)
15. Chilling plant and ice making without use of ammonia
16. Coated electrode manufacturing
17. Colour/black & white studio
18. Compact disc, computer floppy & cassette manufacturing
19. Cotton and woolen hosiery making
20. Cotton spinning & weaving (small-scale)
21. Cutting, sizing and polishing of marble stones
22. Decoration of ceramic cups & plates by electric furnace
23. Dairy and dairy products (small scale) (capital investment on plant & machinery < Rs. 1 crore)
24. Dal mills
25. Diesel generator sets (15 KVA and above) for residential buildings, commercial buildings and healthcare organisation
26. Diesel pump repairing and servicing
27. Distilled water
28. Electric lamp (bulb) manufacturing (small-scale)
29. Electrical & electronic goods manufacturing
30. Electronic equipment assembling
31. Fertiliser (granulation and formulation only)
32. Flour mills (dry process)
33. Fly ash bricks manufacturing (lime process)
34. Food & food processing including fruits & vegetable processing (capital investment on plant & machinery < Rs.10 lakhs)
35. Fountain pen manufacturing
36. Glue from starch
37. Glass, ceramic, earthen potteries and tile manufacturing using electrical kiln or not involving kiln
38. Glass putty and sealant
39. Groundnut decorticating (dry)

40. Gold and silver smithy (purification with acid, smelting operation and sulfuric acid polishing operation) (using less than or equal to 1 litre of sulphuric acid / nitric acid per month)
41. Handloom weaving (without dyeing and bleaching operation)
42. Hotel & restaurants (capital investment land, building, plant & machinery < Rs.30 lakhs) and boarding & lodging house
43. Insulation and other coated papers (excluding paper or pulp manufacturing) manufacturing
44. Jobbing and machining
45. Laboratory-wares
46. Leather cutting and stitching (more than ten machines and using motor)
47. Leather footwear and leather products (excluding tanning and hide processing) (except cottage scale)
48. Lubricating oils, greases or petroleum based products (only blending at normal temperature)
49. Manufacturing of ferrous and non-ferrous metal product without using heat treatment (not generating any effluent or emission)
50. Manufacturing of pasted veneers without using boiler or thermic fluid heater or by sundrying
51. Manufacturing of metal caps and containers
52. Manufacturing of shoe brush and wire brush
53. Manufacturing of toothpowder, toothpaste, talcum powder and other cosmetic items (small scale)
54. Manufacturing of optical lenses (using electrical furnace)
55. Medical oxygen
56. Manufacturing of silica gel (without furnace)
57. Mineralised water
58. Manufacturing of coir items from coconut husk
59. Non-alcoholic beverages (soft drinks) and only bottling of alcoholic products (capital investment on plant & machinery < Rs. 1 crore)
60. Oil mill ghani & extraction (no hydrogenation/refining)
61. Organic and inorganic nutrients (by simple mixing)
62. Paints and varnishes (mixing and blending) (without ball mill)
63. Paper pins and U-clips
64. Pharmaceutical formulation (capital investment on plant & machinery < Rs.10 lakhs)
65. Phenyl manufacturing
66. Polythene & plastic processed products manufacturing (excluding manufacturing & reprocessing of PVC granules and manufacturing of reprocessed PVC products and reprocessing of waste plastic)
67. Poultry, hatchery, piggery (capital investment on land, building, plant & machinery < Rs. 10 lacs)
68. Power looms (without dyeing and bleaching)
69. Printing press
70. Puffed rice (muri) (not using boiler)
71. Rope (cotton & plastic)
72. Rubber goods industry (without boiler)
73. Scientific and mathematical instruments manufacturing
74. Soap manufacturing (without steam boiling)
75. Spice grinding (< 20 HP motor)
76. Steel furniture without spray painting
77. Steeping and processing of grains
78. Supari (Betelnut) grinding
79. Surgical and medical products not involving effluent/emission generating processes
80. Sweet shop
81. Synthetic detergent formulation (capital investment on plant & machinery < Rs. 5 lakhs)
82. Tea garden only
83. Teflon based products
84. Thermocol manufacturing
85. Thermometer making
86. Toys (only electronic & mechanical) manufacturing
87. Transformer repairing/manufacturing (should not be allowed in congested areas)
88. Tyres and tubes retreading (without boiler)
89. Veneer, laminate (without boiler and thermic fluid heater)
90. Washing of used sand by hydraulic discharge

91. Washing, chilling of fish and packaging only
92. Water softening and demineralised plants

List of industries under EXEMPTED category

1. Agarbati
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. Book binding
10. Cable TV network
11. Candles manufacturing
12. Carpentry and wooden furniture making (excluding saw mill)
13. Coir manufacturing
14. Cyber café
15. Diesel generator sets (< 15 KVA) sets for residential buildings, commercial buildings and health care organisation
16. Gold and silver smithy (excluding purification/ polishing with any acid and smelting operation)
17. Handicraft products like terracotta, conchshell, coconutshell, dokra, cane and bamboo products, baluchari saree, stone carving, wood carving, batik, sola work etc.
18. Handloom weaving (without dyeing & bleaching)
19. Handmade paper
20. Hardware assembling for IT industries
21. Housing complex with 100 flats or less and 60000 sq. ft. super built up area or less
22. Infrastructure development project with capital investment Rs. 5 crores or less
23. Leather cutting and stitching (not more than or equal to ten machines and without using motor)
24. Leather footwear & leather products (excluding tanning & hide processing) (cottage scale only)
25. Manual brass painting
26. Manufacture of steel trunks & suitcases
27. Mushroom plantation and spawn
28. Manufacturing of umbrella (only assembling)
29. Musical instrument manufacturing
30. Optical frames
31. Optical lens manufacturing (without furnace)
32. Photo framing
33. Radio assembling servicing & repairing work
34. Repairing & servicing of bicycles, baby carriage and other non-motorised vehicles
35. Repairing & servicing of electronic equipment
36. Shoelace manufacturing
37. Soap (handmade)
38. Soft toys, wooden toys manufacturing
39. Software development for information & technology industry
40. Sports goods manufacturing
41. Tank calibration centre
42. Tailoring & garment stitching/garment & apparel manufacturing
43. Tea packaging
44.Weigh bridge (not manufacturing)
45. Wooden block making for printing
46. Xerox & photocopying
47. Zari embroidery work

Annexure - V

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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-I, Bidhannagar, Kolkata - 700 064.

NOTIFICATION

No. 2255-T&CP/C-2/1C-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 specialised 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, recognised 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) Drawings 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 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 are elevation on a scale not smaller than 1:100;

x) Environmental 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 of 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.

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Application Form

(See Rule 7)

[Application for permission for carrying out any "Township Project" under section 46 of the West Bengal Town and Country (Planning and Development) Act, 1979]

From :

Name : .....

Address .....

.....

To

The .....Planning Authority/Development Authority.

Sir,

I intend to develop a ..... "Township" project covering ..... hectare of land under the jurisdiction of ..... Municipal Corporation/ Municipality/ Gram Panchayat covering Mouza or Mouzas with JL No.(s) ..... accessible from or abutting the existing road named ..... under ..... Police Station, in accordance with the provisions of section 46 of the West Bengal Town and Country (Planning and Development) Act, 1979 and rule 7 of the West Bengal Town & Country Planning (Development of Township) Rules, 2008.

Following Documents and Drawings in quadruplicate are submitted herewith for consideration of the proposal:

i)

ii)

iii)

iv)

I request that the proposed development may be approved and that permission may be accorded to carry out the Township Project.

Signature of the Town Planner

Signature of the Applicant.

Annexure - VI

Application NO. : C/ [ ] Date of Submission :

SCHEDULE APPLICATION FORM FOR CONVERSION NOC

(Small Residential Plots)

[Under Section 46 of the West Bengal Town and Country (Planning & Development) Act, 1979]

To

The chief Executive Officer,

Asansol Durgapur Development Authority

City Center, Durgapur-16

Sir,

I intend to develop……/ change the use of land / buildings as per details furnished in the statement bellow for which permission is required under this Act. I hereby request that you will be pleased to declare the liability of land and / or building for the levy of development charge and to determine the development charges payable and communicate the same to me.

Yours faithfully

Applicant Name: First Name: Last Name:

Address……
……
……
Mobile No……

Name of Owner of the Land: ……

……
……

LAND DETAILS FOR WHICH CHANGES SOUGHT FOR

Total Area of Land: ……..[in decimal] ……[in sq. meter]

Block / Municipality:……

Mouza : ……..

JL No : ……

PS : ……

R.S. Plot No : ……... Present Class of Land as per R.O.R. : ……

L.R Plot No : ……..Present Class of Land as per R.O.R. :……

Khatian No : ……

Proposed Land Use : ……

Whether existence of any Building in the Land : O Yes O No

CHECK LIST OF DOCUMENTS SUBMITTED :

1.	Copy of deed Purchased :	O Yes	O No
2.	Mutation Certificate :	O Yes	O No
3.	ROR(Porcha)	O Yes	O No
4.	Current rent receipt (Khajna Roshid)	O Yes	O No
5.	Mouza Map with the plot location	O Yes	O No
6.	Affidavit	O Yes	O No

The information furnished above are the true and best of my knowledge and belief.

Signature :

Date :

Application NO. : P/ Date of Submission :

SCHEDULE APPLICATION FORM FOR CONVERSION NOC

(PROJECT)

[Under Section 46 of the West Bengal Town and Country (Planning & Development) Act, 1979]

To

The chief Executive Officer,

Asansol Durgapur Development Authority

City Center, Durgapur-16

Sir,

I intend to develop……/ change the use of land / buildings as per details furnished in the statement bellow for which permission is required under this Act. I hereby request that you will be pleased to declare the liability of land and / or building for the levy of development charge and to determine the development charges payable and communicate the same to me.

Yours faithfully

Applicant Name: First Name: Last Name:

Address……
……
……

Mobile No……

Name of Owner of the Land:
……
……
……
……
……

LAND DETAILS FOR WHICH CHANGES SOUGHT FOR

Total Area of Land: ……..[in decimal] ……[in sq. meter]

Block/Municipality:……

Mouza : ……..

JL No : ……

PS : ……

R.S. Plot No : ……..Present Class of Land as per R.O.R. : ……

L.R Plot No : ……..Present Class of Land as per R.O.R. : ……

Khatian No : ……

Proposed Land Use : ……

Whether existence of any Building in the Land : O Yes O No

CHECK LIST OF DOCUMENTS SUBMITTED :

1.	Copy of deed Purchased :	O Yes	O No
2.	Mutation Certificate :	O Yes	O No
3.	ROR(Porcha)	O Yes	O No
4.	Current rent receipt (Khajna Roshid)	O Yes	O No
5.	Mouza Map with the plot location	O Yes	O No
6.	Affidavit	O Yes	O No
7.	Architectural Drawing with Suitable scale	O Yes	O No

The information furnished above are the true and best of my knowledge and belief.

Signature :

Date :