

Introduction to Urban Planning
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Module No # 02
Lecture No # 07
Development Plan – I

Welcome to the Course of Urban Planning. In this session we are going to cover Development Plan within the broader theme of different levels of plans.

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(URDPFI, 2015)

As you can see, we have seen by now Perspective Plan, Regional Plan so today we are going to cover Development Plan. We are going to walk through the URDPFI guidelines and Bhopal Development Plan 2031 Draft Document to understand the purpose and the content of the Development Plan in this session.

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Coverage
① Distinction of the Development Plan
② Major Contents of the Development Plan
③ Guideline for capturing Existing Conditions and Development Issues with the help of Bhopal Development Plan-2031 (Draft)
④ Range of Maps prepared for the Development Plan Document

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Accordingly, the coverage of this session will include distinction of the Development Plan major contents of the Development Plan, guidelines for capturing existing conditions and development issues with the help of Bhopal Development Plan 2031, range of maps which needs to be prepared for Development Plan Document.

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Learning Outcomes
① On completion you should be able to differentiate the Development Plan from other levels of Plans.
② Should be able to tell important contents of the Development Plan.
③ Should be able to discuss the Development plan of Bhopal with respect to its content and context.
④ Should be able to list Range of Maps prepared for the Development Plan Document

The expected learning outcomes would include; on completion of this session you should be able to differentiate the Development Plan from other level of plans, you should be able to tell important contents of the Development Plan, you should be able to discuss the Development Plan of Bhopal with respect to its content and context. We should be able to list range of maps prepared for the Development Plan Document.

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Development Plan

- Development plan is a Statutory Plan.
- Related to or set by laws or statutes.
- Decided or controlled by law.
- Formulated in accordance with statutory provisions of the relevant Act.

Development Plan is a statutory plan which means it is related to or set by laws or statutes. It is decided or controlled by law as you will see, not other plans are a statutory plan but the Development Plan is a statutory plan which is guided by the laws. This means that it is formulated in accordance with the statutory provisions of the relevant act.

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Bhopal Development Plan-2031, (Draft)

Volume –I

(Existing Conditions, Studies & Analysis)

(Published under the provision of Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973)

As we can see here Bhopal Development Plan as it is mentioned in the document published under the provision of Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973. So under this Act this document has been prepared.

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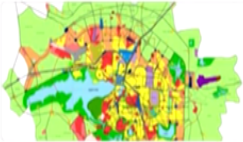
संचालनालय नगर तथा ग्राम निवेश , मध्य प्रदेश शासन

DIRECTORATE OF TOWN AND COUNTRY PLANNING
GOVERNMENT OF MADHYA PRADESH



मुख्य रूप से: स्थापना योजनाएं ई. सेवाएं लोक सेवा योजना का अधिकार विकास/अधिकृत सुसज्जित कार्यक्रम एवं वित्तियिका विकास अधिकार एवं आय

- Development Permission
- Development Plan
- District Offices
- Bhopal
- Indore
- Gwalior
- Jabalpur
- Rewa
- Sagor
- Ujjain
- Guna
- Neemuch
- Shahdol
- Khandwa
- Satna



Layouts of Capital Project Area

Approved layout of the Industrial Sector of the Physical District

नियोजन तैयिकी

Bhopal :

Bhopal Development Plan 2031 (Draft)

Hindi	MP 1	MP 2	MP 3
English	Volume 1	Volume 2	Volume 3

Zone Map

Zone Map with Khajara

Road Network

नवीन सूचनाएं

Read More

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We can see the planning team here which consists of Directorate Town and Country Planning Team as well as consultants and subject experts. So we see that there is a huge team which is involved in preparing the Development Plan. Development Plan is prepared within the structure of the Perspective Plan and aligned with the Regional Plan. A Development Plan is to be prepared for the period of 20 to 30 years.

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Development Plan

Objective

“The **objective** of the **Development plan** is to provide further **necessary details** and **intended actions** in the form of strategies and physical proposals for **various policies** given in the **perspective plan** and **regional plan** depending upon the **economic and social needs and aspiration** of the people, **available resources** and **priorities**.”

The objective of the Development Plan is to provide further necessary details and intended actions in the form of strategies and physical proposals for various policies given in the Perspective Plan and Regional Plan depending upon the economic and social needs and aspiration of the people, available resources and priorities.

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Development Plan

Attributes

- The proposals of the development plan are definite.
- Supported by an implementation strategy and evaluation criteria.
- The intention of the local authority regarding the physical, social, and the economic development, the facilities and the services that are proposed to be provided in the near future.
- The approved, development plan, allows the local authority, to implement development of the land area.

(URDPFI, 2015)

The distinction of the Development Plan compared to perspective and Regional Plan are that the proposals of the Development Plan are definite, supported by an implementation strategy and evaluation criteria. The Development Plan makes known publicly the intention of the local authority regarding the physical, social and economic development, the facilities and the services

that are proposed to be provided in near future. The approved Development Plan allows the local authority to implement development of the land area specified under the plan with the help of Local Area Plans and projects.

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Development Plan

Time Frame

- The time frame of the Development Plans is for a period of 20 years by most of the Urban Development Authorities/ULBs.
- For greenfield cities, a longer planning period may be considered, aligned with the infrastructure life of 30 years.
- These plans should be in phases of 5 years, to make it convenient for periodic reviews and revisions.
- This 5-year cycle may be coincided with the State Five Year plans and State Finance Commissions' recommendations.
- For Greenfield area, phasing could include a 'Zero' period for approvals, institutional set-up, initial land pooling and revisiting any strategy.

The time frame of the Development Plan is for a period of 20 years by most of the Urban Development Authorities or ULB's. For Greenfield cities a longer planning period maybe considered aligned with the infrastructure life of 30 years. These plans should be in phases of 5 years to make it convenient for periodic reviews and revisions. This 5-year cycle maybe coincided with the State level, State 5 years plans and State Finance Commission's recommendations, for Greenfield area phasing could include a 0 period for approvals institutional setup, initial land pooling and revisiting any strategy.

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Development Plan

Terminology

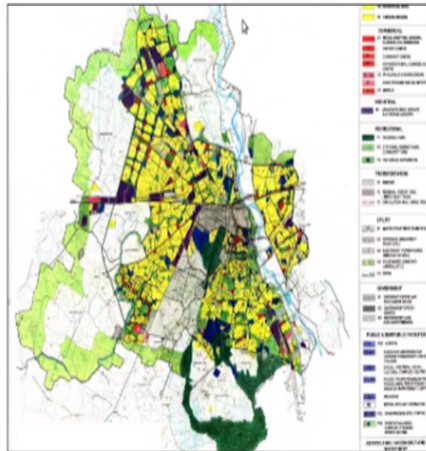
- The term “Development Plan” is used differently in different States.
- Some States use it for an integrated multi-sector plan, such as the District Development Plan.
- In some other States, it is a statutory land use plan, approved and adopted by the local authority and its proposals are precise and definite, notifying the property owners the manner in which their properties will be affected.

The term Development Plan is used differently in different States. Some States use it for an integrated multi-sector plan such as District Development Plan. In some other States it is a statutory land use plan approved and adopted by the local authority and its proposals are precise and definite, notifying the property owners the manner in which their properties will be affected.

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Development Plan

Example: Delhi Master Plan



(DDA, 2021)

We can see here for example, the Bhopal Development Plan where they are calling it as a Development Plan. In the other we can see Delhi Master Plan where we call it a Master Plan. So we see that there is variation. Here both the plans Development Plans and Master Plans have the same functions and impose similar controls with variation in the use of nomenclature by States.

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Development Plan

Schedule 6 of the Constitution

- In areas under the **Schedule 6 of the Constitution**, land is not directly **State subject** such as in the **North-Eastern (NE) States**, where **land title** is based on **community ownership**.
- **The approach to land aspects** of the Development Plan may be **different** in such cases.
- Therefore, in **URDPFI guidelines**, a **Structure Plan** approach to **land management** is suggested as a **possible appropriate tool** in order to allocate land for different land uses in **urban areas**.

We can see, further, that in areas under the Schedule 6 of the Constitution, land is not directly State subject such as in the North Eastern States, where land title is based on community ownership. The approach to land aspect of the Development Plan may be different in such cases.

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Development Plan

Content of Development Plan

- The Development plan is a written document.
- Contains a map showing the spatial plan.
- The document contains range of supporting charts and diagrams

We look at the content of the Development Plan, the Development Plan is a written document and contains map showing the spatial plan and the document contains range of supporting charts and diagrams.

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Bhopal Development Plan

We will simultaneously walk through the URDPFI guidelines and the Bhopal Development Plan 2031 Draft Document to understand the purpose and details of the Development Plan.

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Development Plan

Content of Development Plan

As per the URDPFI guidelines the document / or the report should contain the following major heads:

1. Existing Conditions and Development Issues
2. Assessment of Deficiencies and Projected Requirements
3. Vision and Mission
4. Development Proposals
5. Implementation Plan

As per the guidelines, the documents or the report should contain the following major heads. First we see it should contain existing conditions and development issues which will be our major focus today where we will see how Bhopal Development Plan has really covered existing conditions and development issues. Second, will see assessment of deficiency and projected

requirements how they are done. Vision and mission, it should be covered within the content of Development Plan then what kind of development proposals are prepared should be covered. We further see that the most important part is, that it should have implementation plan. So these are the broader range of contents which a Development Plan has. In this session we will only cover the first part that indicates what constitutes or what should be captured in showing existing conditions and development issues of the planning area.

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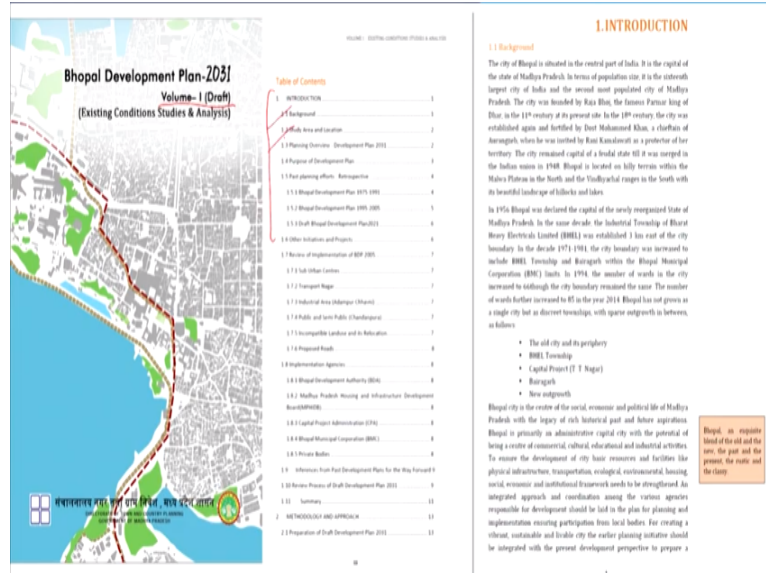
Bhopal Development Plan

Background

- Location, regional setting and connectivity
- Brief history of development
- City influence and its characteristics
- Physical setting – Topography, Climate, Soil (profile and condition),

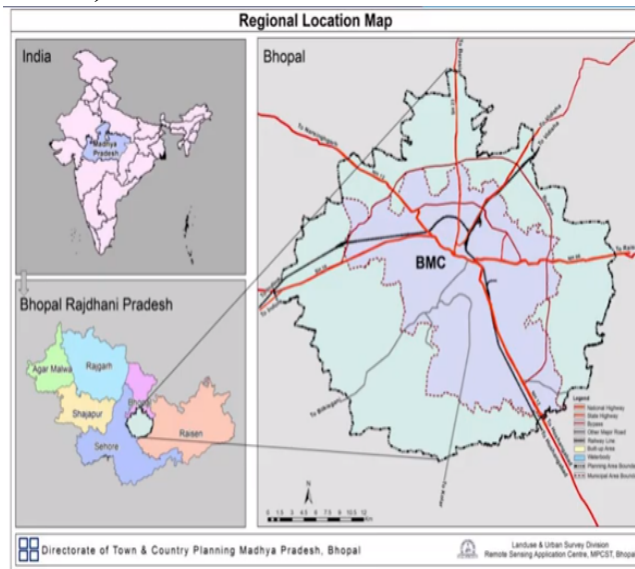
So, while doing this we see first, most of the documents indicate or should indicate as suggested, the back ground where it should indicate the location, regional setting and the connectivity, brief history of the development of the planning area, city influence and its characteristic including settlement pattern, rural urban relationship and fringe area development should be discussed. We, further see that, the physical settings; topography, climate, soil, all these profiles and conditions need to be given when one discusses the background information of the Development Plan.

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So, we are looking at the Bhopal Development Plan 2031 we see how the introduction part here takes care of, this is Volume 1 Draft we are looking at, how it takes care of the entire introduction part where it covers the background study area location and it also reviews all the previous Development Plans.

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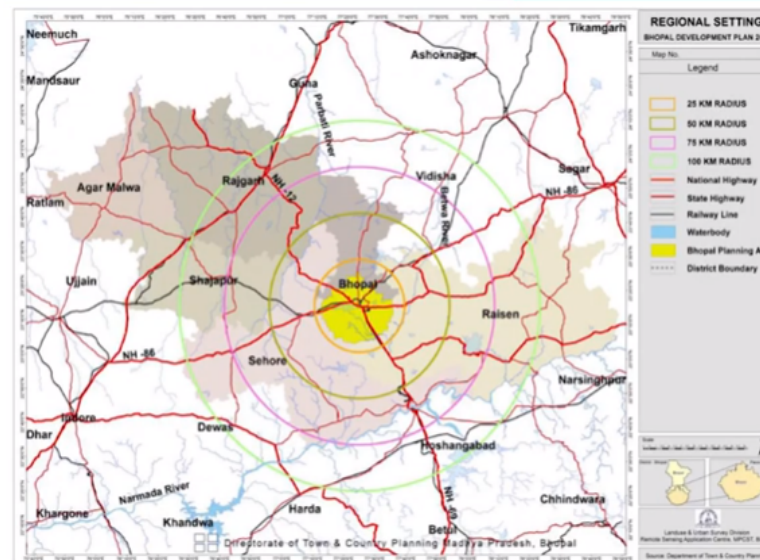


(BDP, 2021)

The Document indicates that Bhopal plays a dominant role in the Bhopal capital region which comprises of the districts of Bhopal: Rajgarh, Sehore, Raisen, Shajapur and Agra Malwa. The city is surrounded by a network of market towns: Berasia, Vidisha, Raisen, Abdulla Ganj and Sehore. These towns are well connected by regional roads with the city of Bhopal, but are poorly connected with each other. Consequently, the city acts as a Nodal Center of trade and commerce of regional importance.

Furthermore, the cities relatively accomplished in various services and facilities and act as a major service center of the region. We further see that in the Document it takes cognizance of the regional setting and neighboring Development Plans. The total area of the region is nearly 30,000 square kilometers.

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The neighboring Development Plans which are considered in the Document are acknowledged in the Document are Sehore, Berasia, Sanchi, Vidisha, Raisen, Rajgarh, Salkanpur, Rehati and Mandideep which are prepared by Town and Country Planning and are adopted by the State. In the Document the geographical setting is reviewed to assess the resources of the planning area. The region has nearly over 25% forest, tiger reserve, Narmada River, Parvati River, Polar and Betwa river pass through the region.

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Bhopal Development Plan

Geographical Settings

The region also has numerous reservoirs including

- | | |
|---------------------------|------------------------------|
| 1. Bhojtal | 7. Shahpura Lake |
| 2. Lower Lake | 8. Laharpura Dam |
| 3. Hatai Kheda Pond | 9. Kolar Reservoir |
| 4. Halali Reservoir | 10. Kerwa Reservoir |
| 5. Ghora Pachad Reservoir | 11. Sarangpaani |
| 6. Kaliyasot | 12. Munshi Hussain Reservoir |

The region also has numerous reservoirs including Bhojtal, Lower lake, Hatai Kheda pond, Halali reservoir, Ghora Pachad reservoir, Kaliyasot and so on.

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Bhopal Development Plan

Industrial Zone



Bhopal Industrial Corridor (GMaps, 2021)



Mandideep Industrial Area (Internet, 2021)

In the Document the industrial corridor is reviewed at the regional level. The region has Mandideep as one of the major industrial center in which 32 major and 252 medium and small units are operated. The industrial center has been also developed in village Pillu ke din, major industrial centers are connected via roads forming a ring in the city. The development of an industrial center is proposed by the Industrial Development Corporation (IDC) in village Bagroda located between Mandideep and Bhopal. Some of the major industrial units have been established in Sehore and Budhni.

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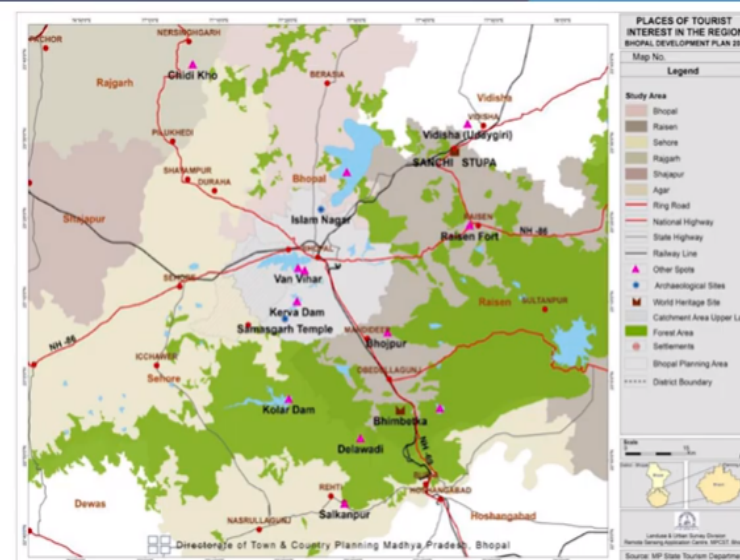
Bhopal Development Plan

Industrial Zone



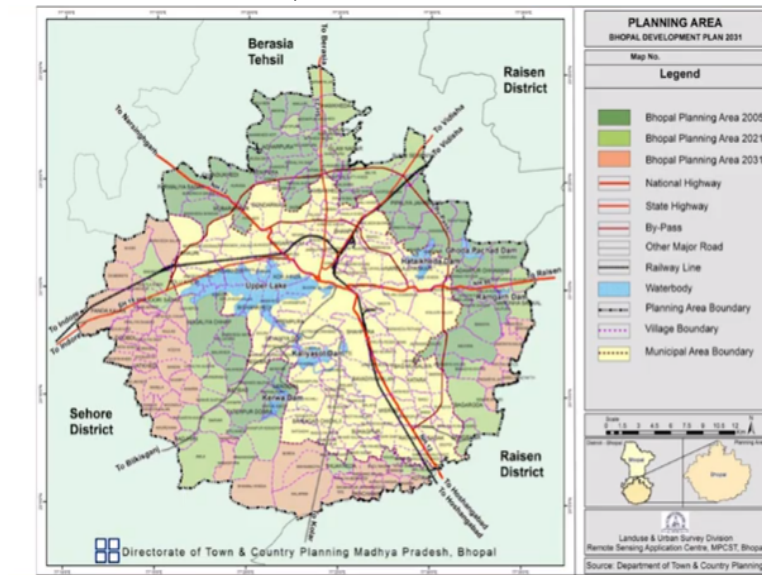
We also see a Plastic Park which was developed on 63 hectare of land in Tamot village. So we see all these details have been provided in the Development Plan. They are reviewed and provided. Further, review is also done of the traffic and transportation at the regional level and regional tourism centers.

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There are important rivers, lake, reservoirs, mountain range, forest, religious places and other natural resources with considerable potential for tourism. There are 2 world heritage sites-Sanchi and Bhimbetka near the city. The region has numerous places such as Islam Nagar, Udaygiri, the Ratapani Sanctuary, Delawadi, Bhojpur and so on. We can see as this map is prepared which it shows the places of tourist interest in the region. So this is the map that has

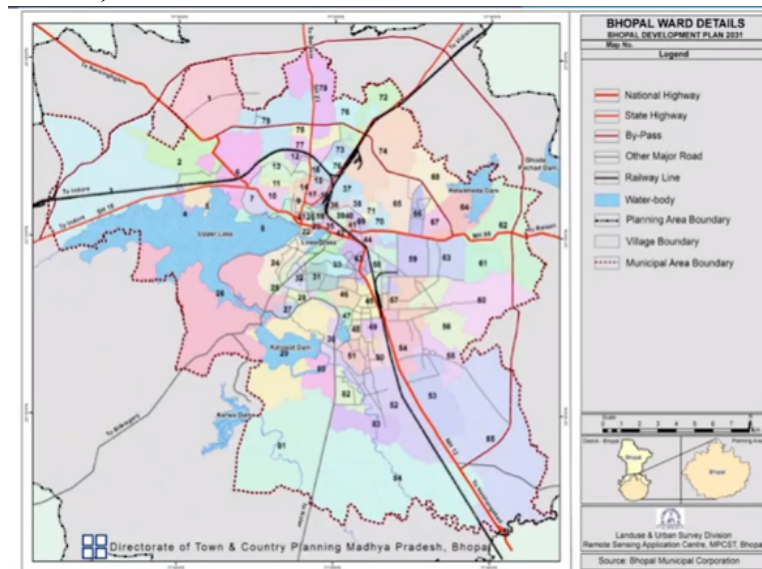
been prepared. In the Development Plan in the Document the economic and income profile are also reviewed. **(Refer Slide Time: 13:26)**



Now we look at the planning area what does the document tell about the planning area. Bhopal planning area, shown in dark green expanded in northern side in 2005, we are looking at how these areas are expanding as per the Development Plans which came up in years.

In 2021, the area is shown in light green, was in all the peripheral areas as you can see. Now we see the new planning area is mostly in the southern-western peripheral area and to certain extent on the eastern peripheral area shown in orange color.

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At present Municipal Corporation has 85 wards and total area is for over 41,000 hectares. The population density of ward number 12 is 974 persons per hectare, which is the most densely populated ward in the city. The ward with the lowest population density is ward number 24 which has a density of 12 persons per hectare. In total there are 12 wards having a density

between 300 to 500 persons per hectare, 9 wards have density ranging from 500 to 974 persons per hectare. As we can see in this map it provides Bhopal ward details and location of the different wards.

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Bhopal Development Plan

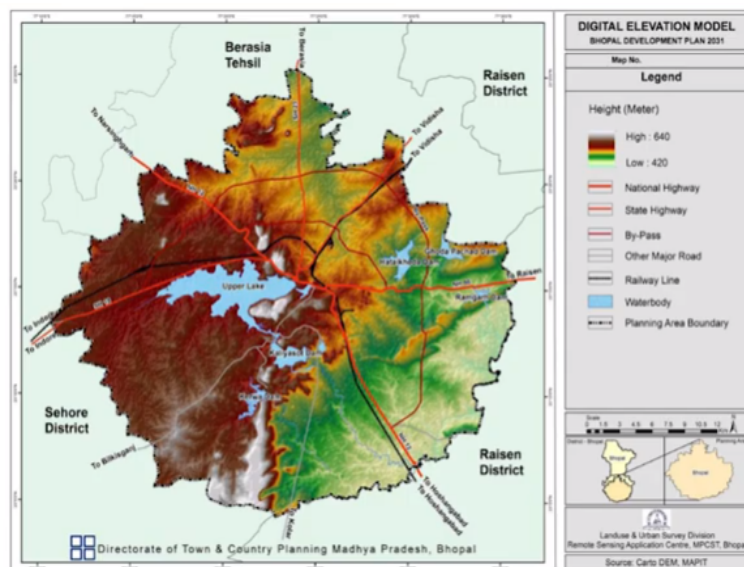
Major Functional Centers



(Internet, 2021)

Bhopal, being the state capital of Madhya Pradesh, is a fast growing as a Multi-Functional Capital city. Rapid changes taking place in the urban economy due to globalization and liberalization of economic policy started in the early nineteen that has placed a new demand on Bhopal which is emerging as a National City. Based on these perspectives, it is envisaged that Bhopal is likely to perpetuate the major functional characters as administrative center, commercial cum industrial center, education cum research center, transport and communication center.

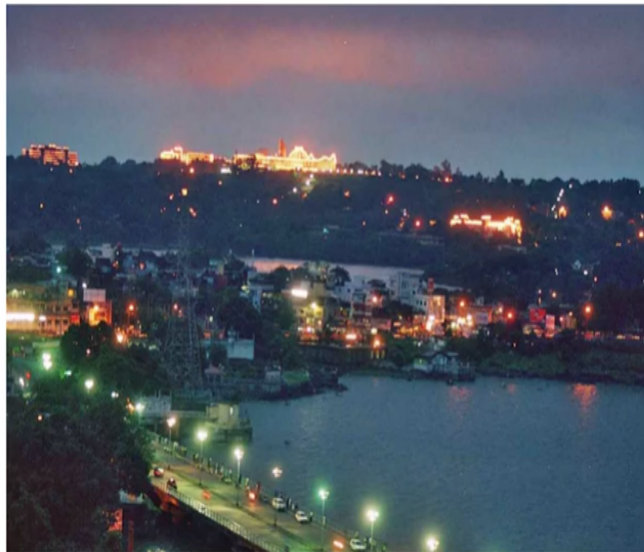
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The Document review provides physiography, physical features of the city. Bhopal city is built on a hilly area we can see in this map. This map is again provided in the Development Plan. You

can see the digital elevation model which shows the range variation in elevation across the city planning area.

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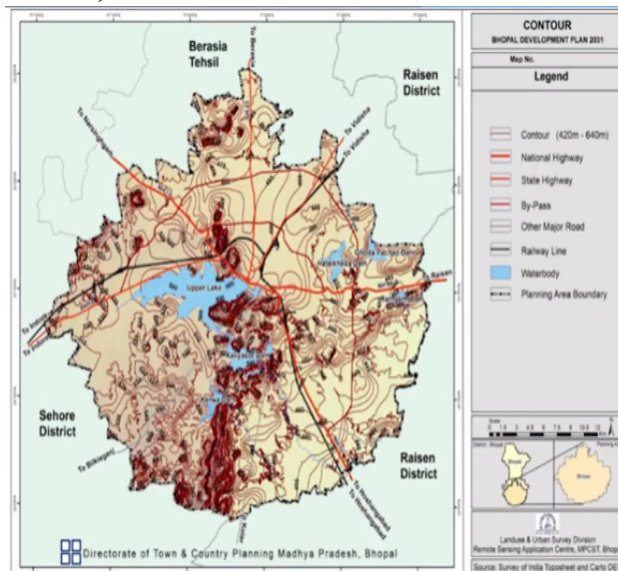


Bhopal Hilly Area

(Bhopal City Portal, 2021)

You can see have a view of the city how the land terrain is undulated.

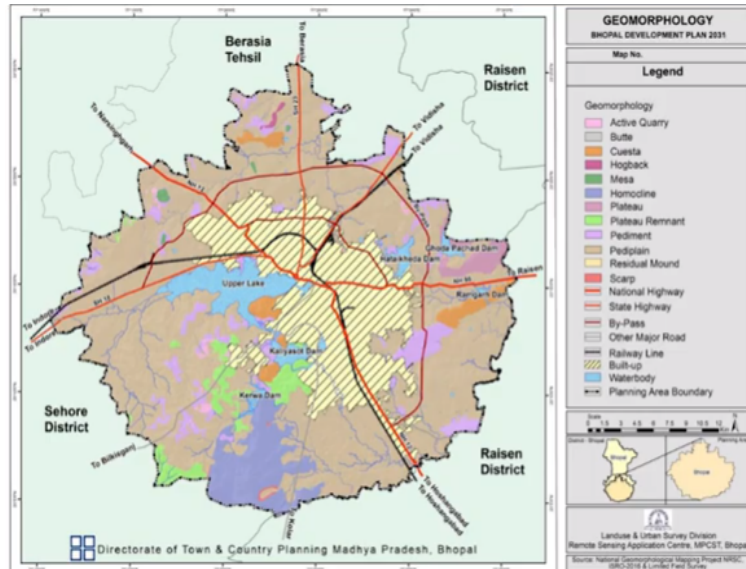
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(BDP, 2021)

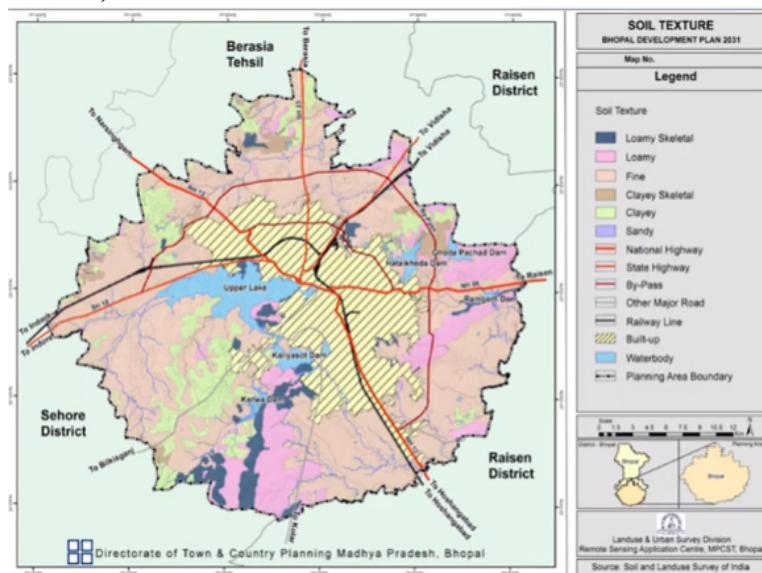
We can further see this map is prepared in the Document which shows the contour and you can see how the contour varies from 420 to 640 meters and then the other infrastructure which are around it. In the process , as given in Document, the geomorphology, soil textures, slope and ground water prospects of the planning area of 2031 are reviewed. So, we further see that these physiographical features are being reviewed.

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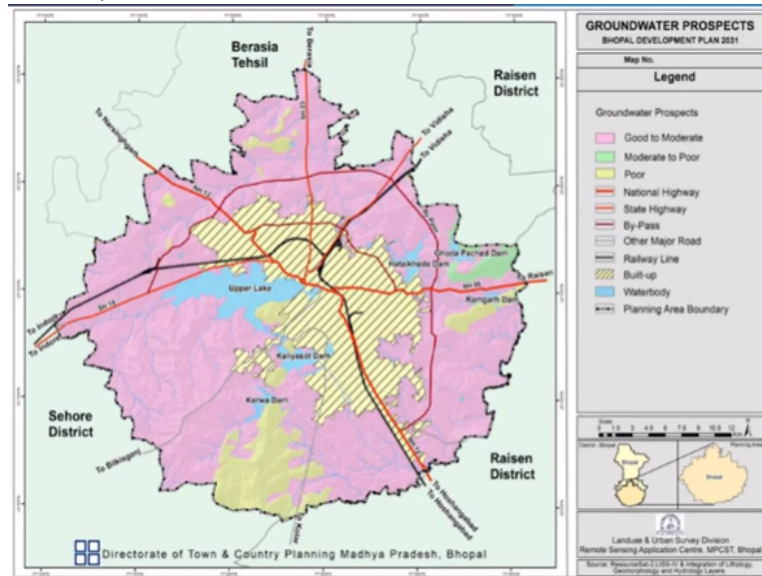
We see here, they have prepared the map of geomorphology of the city where they show different range of geomorphology which is present in the city.

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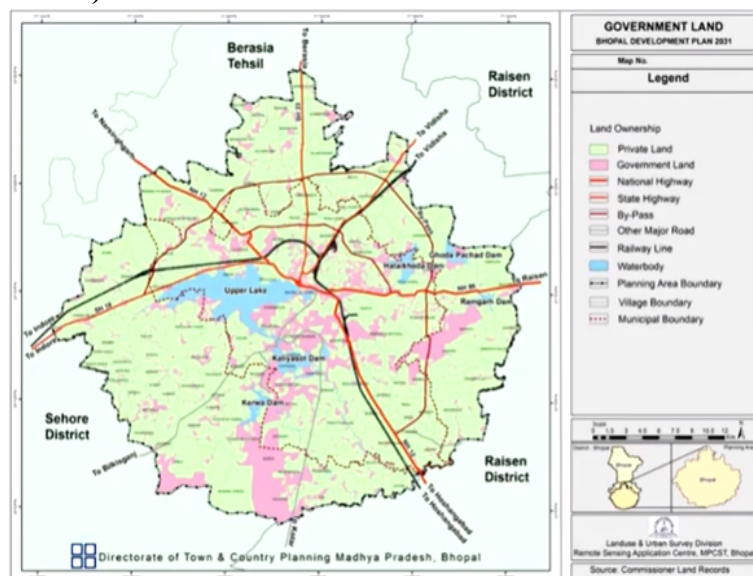
We can also see that in this map the soil texture which has been studied for the planning purpose here.

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We can also see the slope variation in the city and then the groundwater prospects.

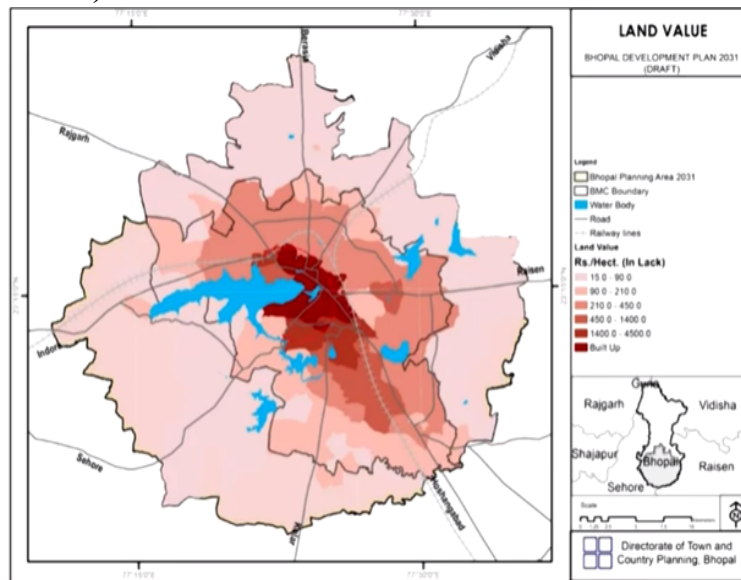
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We, further see, that in the Document the land owned by the Government and the Private Owners have been indicated and also the land values and the pattern is reviewed.

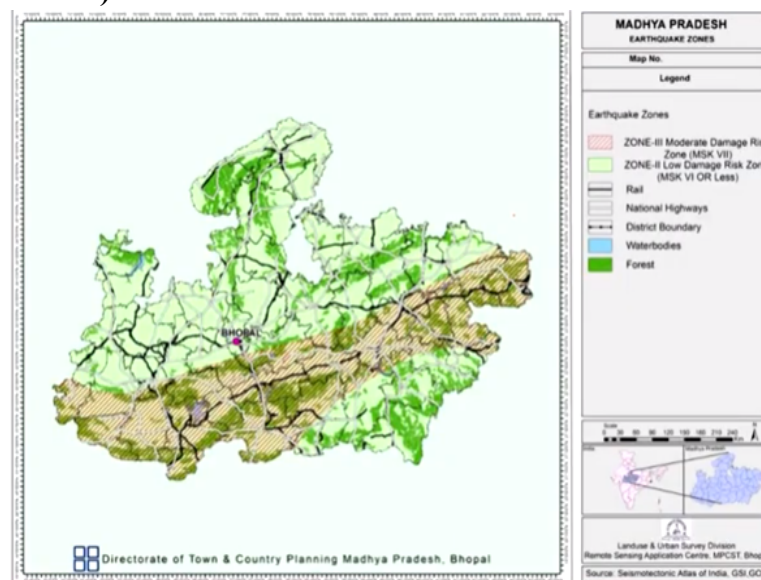
We can see in this map here how the Government Land has been identified, it shows the land ownership- Private Land, Government Land along with the other key elements in the map.

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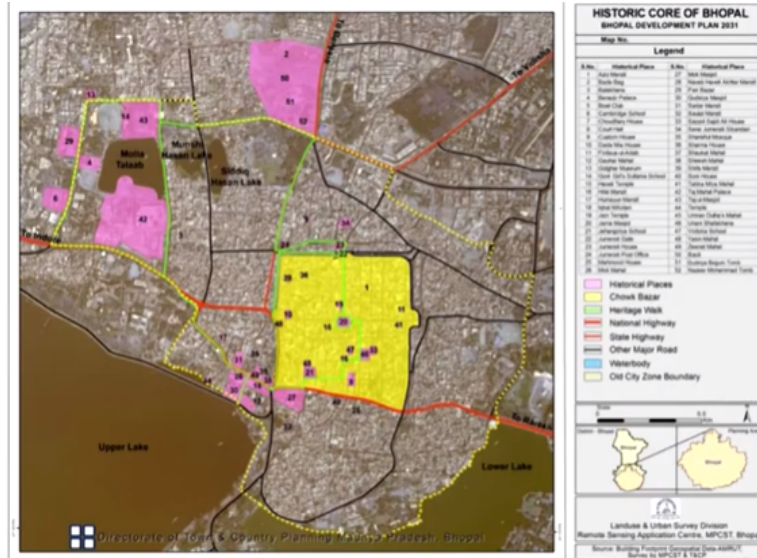
We can also see the land value in this where how the land values vary with the highest price at the center of the city to variation at the peripheral areas.

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We see that in the document, it further reviews the disaster risk component in the planning area. We see the earth quake zone 2 and 3 in the map and all the area which comes within that.

Further, the climatic conditions are reviewed including temperature, humidity, wind direction rainfall and air quality. (Refer Slide Time: 18:13)



In the Development Plan Document, the heritage and culture of the planning area has been reviewed in totality. The process of listing heritage and grading the same is a mandatory exercise in the Bhopal planning area within the time frame specified by the State Government and shall become an integral part of the Development Plan. So you can see here in this that it is done intensively and integrated with the planning process.

In this map you can see historic core of Bhopal has been identified on all historic places and then the Chowk Bazaar Heritage Walk along with the major infrastructures have been indicated in the document.

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The urban image of the city is a collective visual appearance contributed by natural and manmade elements. Bhopal is gifted with the rare monuments and splendid areas of vernacular architecture. The built heritage comprising areas such as Jumerati Gate, Kamala park, Raj Bhawan, Minto Hall, Chowk area, Jama Masjid, Moti Masjid and Gauhar Mahal so on, they all

need to be dealt with utmost care and pride for the city. So that all as been acknowledged in the Planned Document.

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An inventory of the heritage building of cultural, historical, socio-economical and architectural values was also prepared by INTACH, which is Indian National Trust for Art and Cultural Heritage in 1984. Resulting in a document of more than 281 buildings divided into 4 grades based on the respective values of each building.

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In the map the gates of heritage importance have been marked given in the document. For example, you can see the gates Bhabhesh, Sikandari, Shaukat, Mahal Gate, Sardar Darwaza, Kala Darwaza and so on. Further suggested components in the section of analysis of existing scenario in development issue in the Development Plan content as per the guidelines include the

demographic profile. So we have seen so far the background components now we are going to look at what demographic profile, what all should be given in the Development Plan.

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Bhopal Development Plan

Demographic Profile

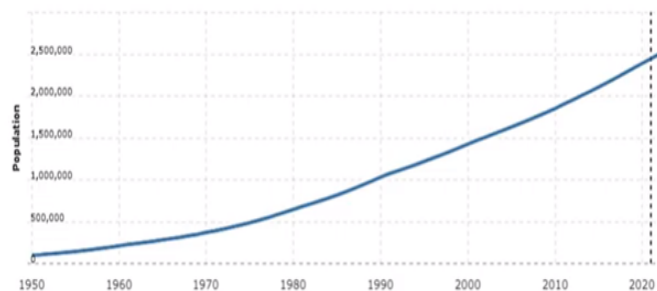
- Existing population and distribution
- Population growth and its composition
 - Natural growth
 - Migration pattern/
 - Jurisdictional changes
 - Floating population
 - Age-sex composition and literacy rate
 - Workforce participation
 - Population density (net and gross)
 - Household characteristics - Household sizes

Here, we see, as suggested in the guidelines that the demographic profile should cover the existing population and distribution, population growth and its composition including what is the natural growth, what is the migration pattern, jurisdictional changes, floating population, age, sex composition and literacy rate, workforce participation, population density, net and gross household characteristics, household sizes. So these are suggested and let us see how what kind of information has been given in the Bhopal Development Plan.

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Bhopal Development Plan

Population



Bhopal Population Trend According to United Nations - World Population Prospects

In Bhopal Development Plan Document, the urbanization and growth trends are reviewed. The demographic profile indicate that Bhopal is the second largest city of Madhya Pradesh with population of more than 18 lakhs as per Census of 2011. The city has experienced natural growth

and expansion of its limits due to which the municipal limits was expanded. In 1950 the population of Bhopal was just about 1 lakh. Population of Bhopal for the current year is estimated at about 23 lakhs. Bhopal has grown by more than 2 lakhs since 2015 which represents a 2.56% annual change these estimates represent the urban agglomeration of Bhopal which typically includes Bhopal's population in addition to the adjacent suburban areas.

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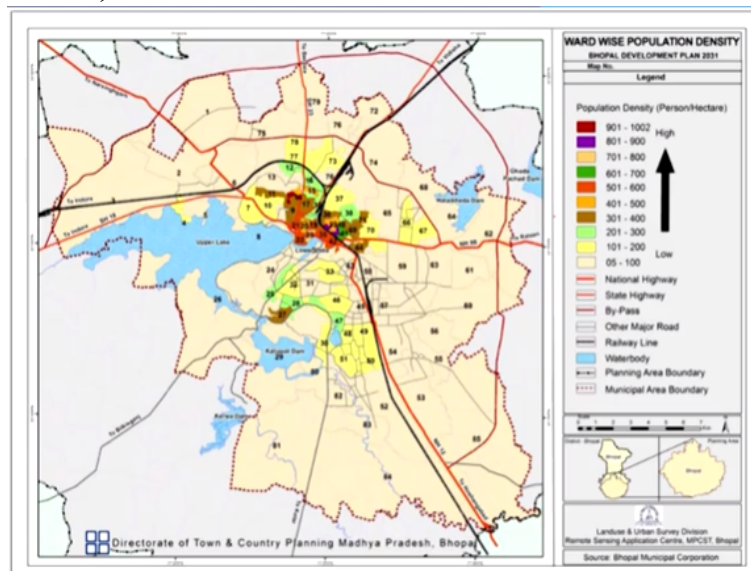
Bhopal Development Plan

Population Growth Rate

Year	Population in Lakhs	Decadal Growth Rate
1951	1.02	-
1961	2.23	117.87
1971	3.85	72.62
1981	6.71	74.35
1991	10.62	58.04
2001	14.54	36.99
2011	18.86	29.72

In the table from the document we can see the decadal population growth.

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Looking at the population density, the net population density of the Bhopal Municipal Corporation area is 62% per hectare as per the existing situation analysis on the GIS platform. This low gross population density is mainly because of the natural constraint such as undulated terrain with hills, forest areas and water bodies occupying a large area of land. Thus, reducing the

effective land area available for habitation. Considering the developed area of the city the population density is 104 persons per hectare.

The population of Bhopal as per Census 2011 is 19 lakhs against the projective 25 lakhs estimated in the year 2005. The estimated population is not achieved even in the year 2019. In Development Plan the population density is prescribed at the city level the population density will depend upon the development of land and actual population inhabited at the end of the plan period, that is 2031 and it would be practical to calculate the population density at the end of the duration of the plan period as per the Development Plan Document. Here we can see how the document provides the world wise population density map and all the description of the population, how it has grown and and what is the trend.

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Bhopal Development Plan

Demographic Profile

Factors	Data (2011)
Geographical Area (Sq. Km.)	2,772
Total Population	23,68,145
Urban Population	19,17,051
Rural Population	45,4,010
Sex Ratio (1000)	918
Literacy	83.47 %

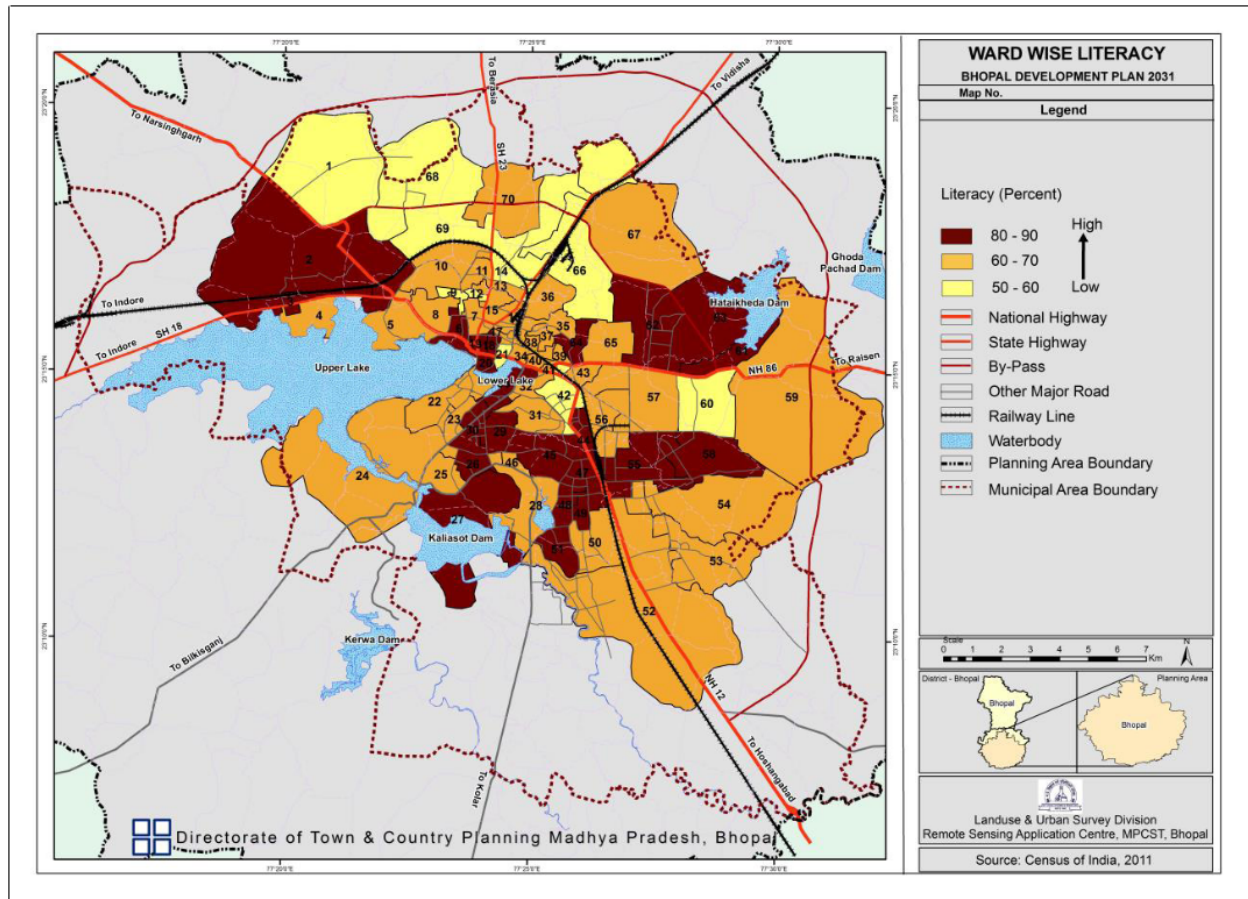
Further, we see that the sex ratio of Bhopal as indicated in the document is 918 females per 1000 males as per Census 2011. This ratio is equal to the sex ratio of the State of Madhya Pradesh, however it is less when compared to the other cities of the same category. Balance sex ratio represent the stable social structure. A low proportion of females indicate a lack of housing facility in the State. Migrant workers have a tendency to live alone in cities, as employees leaving their families in their native place due to high rent of non-availability of houses. The social and cultural life city can be improved by fulfilling the housing demand. So we can see how it effects the housing availability and how the community behaves.

Looking at the literacy rate it is seen that Bhopal has as per census 2011 is 83.47%, which is less which is less than Indore despite of many institutions in the city you may find a lot of institutions REC, MANIT Bhopal and all these institutions are located and despite that we have very low literacy rate.

We notice lower literacy rate in the old Bhopal area as per the map. In the Document review of social profile of the city is provided. It indicates that the percentage of SC, ST population in different wards varies from ward to ward. The highest percentage is 48.30% of ST, SC

population that is found in ward number 63 and the lowest percentage is 1.3% which is found in ward number 41. The map prepared in the Document indicates the distribution of ST, SC population in the different wards.

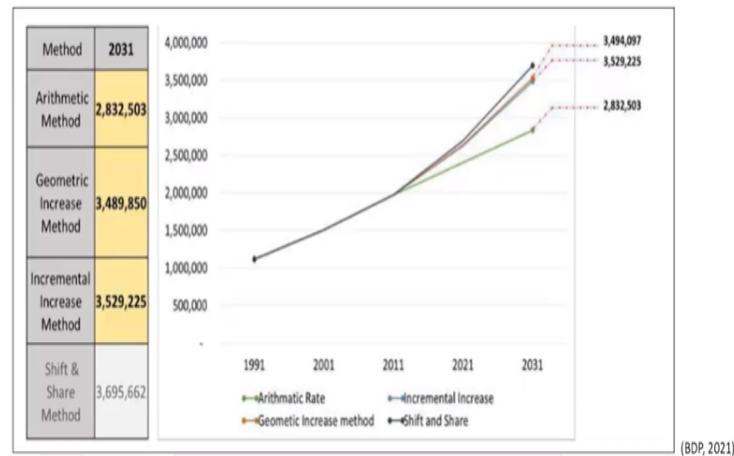
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Bhopal Development Plan

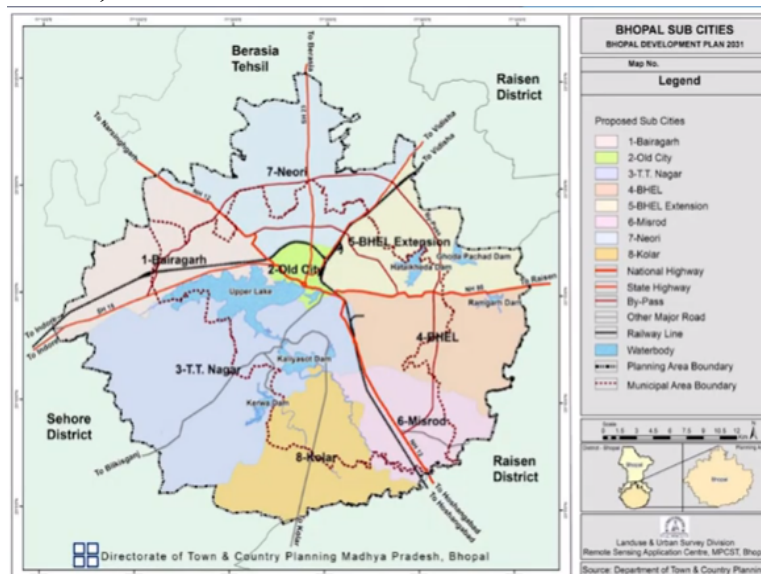
Population Projection



In the Document population projection is undertaken. The population is estimated using incremental increase method which indicates 35.39 which is can be approximately 36 lakhs has been considered as the basis for planning in the city in 2031. As per the Document, if the current growth trend continues, the total population in the planning area is expected to go up to 26 lakhs by 2021 and 35.39 lakhs by the year 2031.

This growth will require additional infrastructure service and facilities to cater to the needs of the future population and to facilitate high quality of life within the city and that will be the target of the Development Plan and this we can see the population projection done.

(Refer Slide Time: 26:33)



In the Document further study using remote sensing data has been taken to understand the urban sprawl. Urban sprawl of this city was guided by industries and transportation network. Bhopal also has the concept of sub-city. In Development Plan 2005 proposals were given for sub-cities

such as Bairagarh, Old Bhopal, T.T.Nagar, BHEL, BHEL Extension, Misrod, Neori, Kolar Municipality and for each sub-city, population is monitored and projected for development purpose.

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Bhopal Development Plan

Land Use Profile

- Jurisdiction changes and efforts of planned development.
- Existing landuse map with revenue level details .
- Developable and non-developable area.
- Existing zoning and development within zoned area.
- Built floor space, floor space permitted.
- Particulars including - Vending zones, Heritage.

Further, suggested component and the important component in the section of analysis of existing scenario and development issue in the Development Plan content as per the guidelines include the land profile. As suggested while doing the review of land profile, following aspects should be covered: One needs to look at the jurisdiction changes and the efforts of planned development, existing plan use map with revenue level details, developable and non-developable areas, existing zones and development with zoned areas, built floor space, floor space permitted particularly including vending zones, heritage zones and so on.

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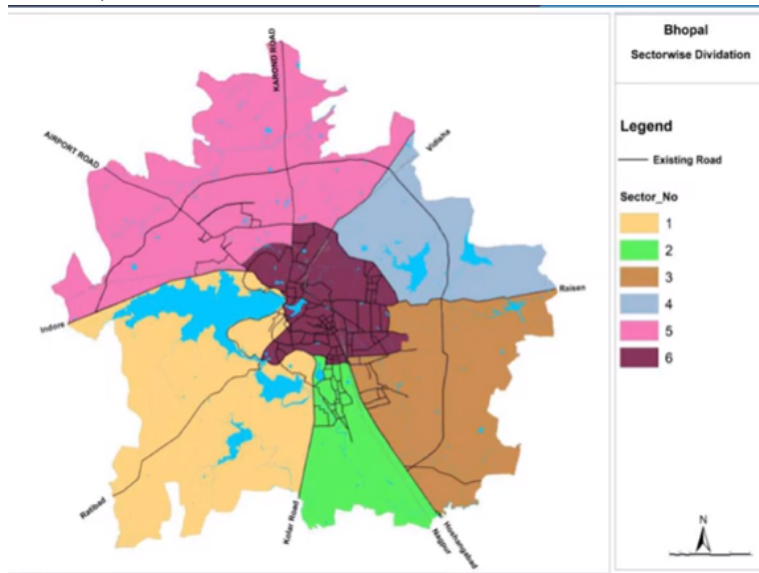
Bhopal Development Plan

Land Use Profile

	Land Use	Landuse Classification (in % age)	As per URDPFI Guideline	Area Available for Development
1	2	7	8	9
1	Residential	25.0 %	36-39 %	+4629.85
2	Commercial	02.0 %	5-6 %	+526.44
3	Industrial	02.0 %	7-8 %	+74.32
4	Public Semi Public	06.0 %	10-12 %	+296.96
5	Public Utilities	01.0 %		-78.13
6	Recreational	08.0 %	12-14 %	+1001.95
7	Transportation	10.0 %	14-16 %	+2981.59
8	Agriculture/Water bodies/Forest /Special Area	46 %	Balance	
	Total	100 %		8762.85

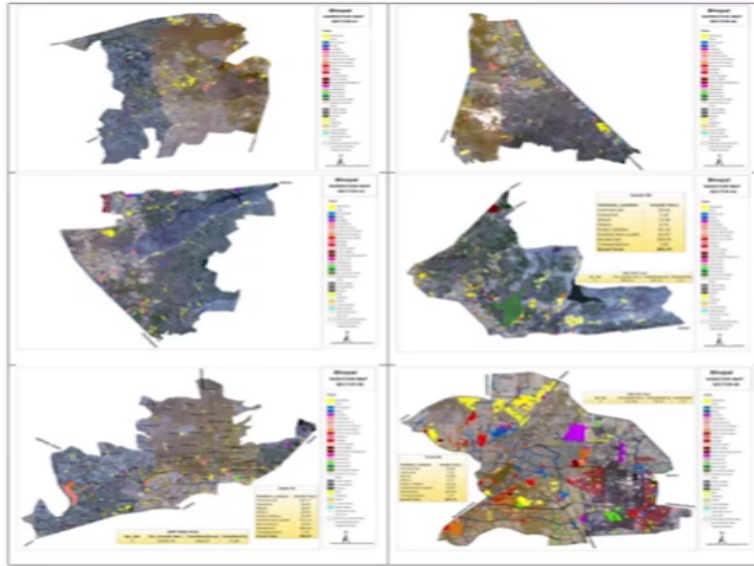
In the document the historical perspective is taken of the key land use covering from residential, commercial, industrial, public, semi-public, transportation, recreational, agriculture, water and forest area. As we can see in the table the planning team further in the Document compares the current land use with the URDPFI guidelines and also reviews the area available for development.

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The Development Plan team reviewed the variation compared to 2005 Development Plan in the land use, based on the actual ground scenario and suggested interventions in the identified sectors. We can see here all the 6 sectors which have been identified and what kind of variations they have observed and according to those variations and the quantum of variations the strategies have been developed.

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The other study which was done to identify these sectorial changes.

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Bhopal Development Plan

Additional Area Required

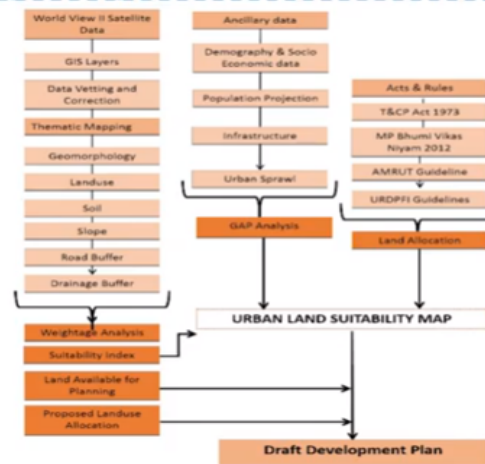
Additional Population TILL 2031	1613900
Additional Area required for Bhopal @100 PPH	16139.00 Ha
Total Planning area BDP 2005	60642.66 ha
Total area proposed in BDP 2005 for development	27103.20 ha
Actual Developed Area in Bhopal against 2005 till 2018 with old planning area	19100.56 ha
Additional undeveloped land available from BDP 2005	7807.08 ha
Additional area required for BDP 2031	8331.92 ha

In the Document area required is calculated based on the projected population for the year 2031 which is 36 lakhs. The increase by 2031 will be around 16 lakhs. The requirement for minimum additional area by 2031 is estimated on the basis of current population density of 100 persons per hectare. So we can see here how much area would be required in this city.

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Bhopal Development Plan

Land Suitability Analysis



Further, in the process the land suitability analysis was undertaken following a very systematic approach. We shall cover the details of various analyses in the later part of the Course.

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Bhopal Development Plan

Infrastructure Profile for Transportation

- Mode of transportation - by road, rail, air, water as the case may be.
- Network of roads, railways, waterways and their interrelationship with major activity nodes
- Transport Corridors & Terminals.
- Trans-intra city transportation facility
- Pedestrian and bicycle, Parking
- Signage and way findings

Moving forward we see that further suggested component and considerably determining component in the section of analysis of existing scenario in development issue and Development Plan content as per the guidelines include review of infrastructure profile and transportation.

So, we see what does the guideline suggest. The guidelines suggest that infrastructure profile for transportation should cover the following aspects: mode of transportation by road, rail, air, water as the case maybe and network of roads, railways, water ways and so on, transportation corridors and terminals, transportation intra-city, transportation facility, pedestrian and bicycle parking, signage and way finding. So, all these should be suggested to be considered under the Development Plan.

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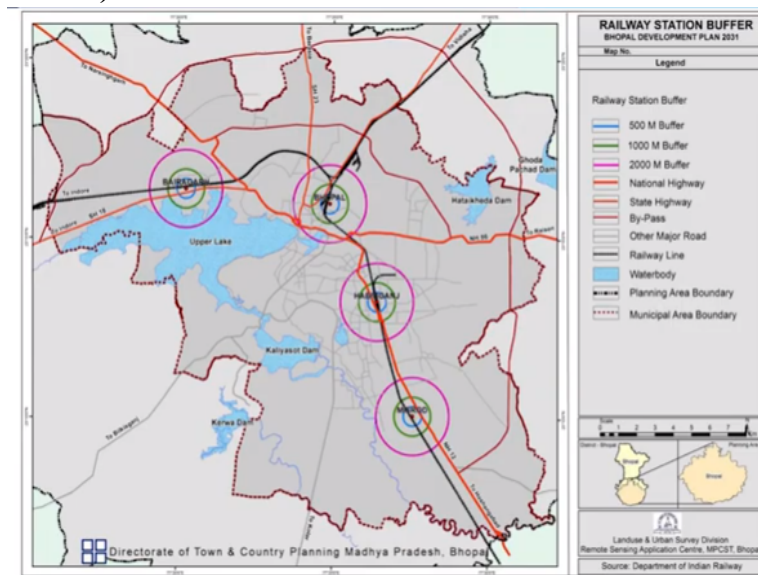
Bhopal Development Plan

Infrastructure Assessment for Transportation

- Traffic, Vehicular Growth, Traffic Volume
- Parking Scenario, Public Parking
- Existing Transportation Scenario
- Existing road situation
- Existing transport / public transport facilities
- Existing pedestrian and bicycle network
- Existing intercity transport
- Airport

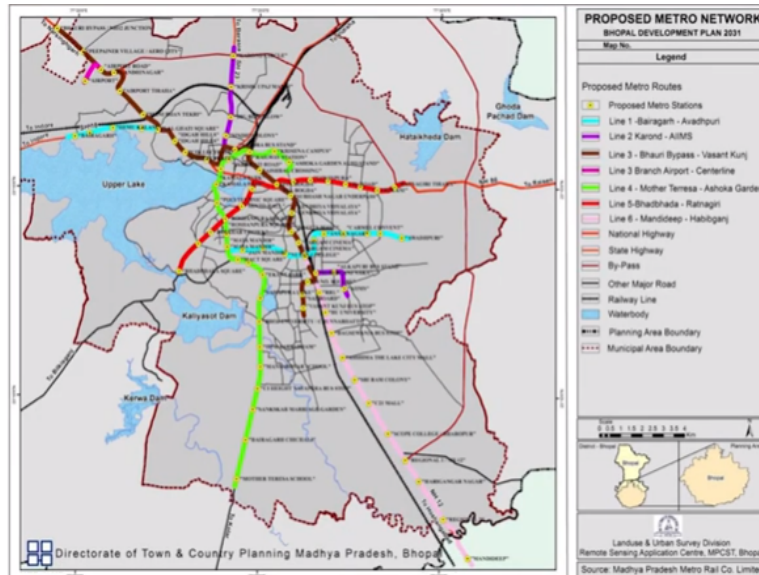
So, we see that in Bhopal Development Plan the assessment is taken of traffic vehicular growth, traffic volume, parking scenario, public parking, existing transportation scenario including regional linkages, intercity road network intra-city road network, existing road situation, existing transport, public transport facilities including; public transport city, bus routes, existing pedestrian and bicycle network, existing intercity transport including; railway, inter-state and inter-city bus terminal, intra-city bus terminal and airport and so on.

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We see the plan which has been developed, you can see the Document has prepared the existing transport network plan here. It also shows the railway station buffer according to all the main stations and how those buffers are.

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It also reviews the proposed Mass Transit System. There is an operational bus rapid system corridor in the city. There is also rapid Mass Transit System, that is metro network, under implementation to cater to ever growing traffic needs of the city. So we can see here how the proposed metro network has been also provided, map has also been provided in the Document.

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Bhopal Development Plan

Housing Scenario

- Housing and shelters
- Housing stock & supply
- Mapping of slums, squatter settlements/JJ clusters.
- Housing supply mechanism
- Housing need assessment
 1. Low cost housing
 2. Affordable Housing
 3. Rental Housing
 4. Night shelters
 5. Slum settlements
 6. Squatter settlement

Moving forward, we see that further suggested component, an important component in the section of analysis of existing scenario and development issue in the Development Plan content as per the guidelines include shelter or the housing which we see. So according to the guidelines what does it need to have, it needs to cover both formal and informal aspect of shelter while considering for the existing scenario as well as for calculating the future requirement.

The planners need to look into the housing scenario, housing stock can supply, mapping of slums, squatter settlement, Jugi Jopadhi cluster, other informal settlements, housing supply mechanism, housing mechanism, housing need assessment including; typologies, low cost housing, affordable housing, rental housing, night shelters, slum shelters, quarter settlement and so on. What we see in the Bhopal Development Document is that the housing scenario is analyzed.

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Bhopal Development Plan

Housing Demand Survey

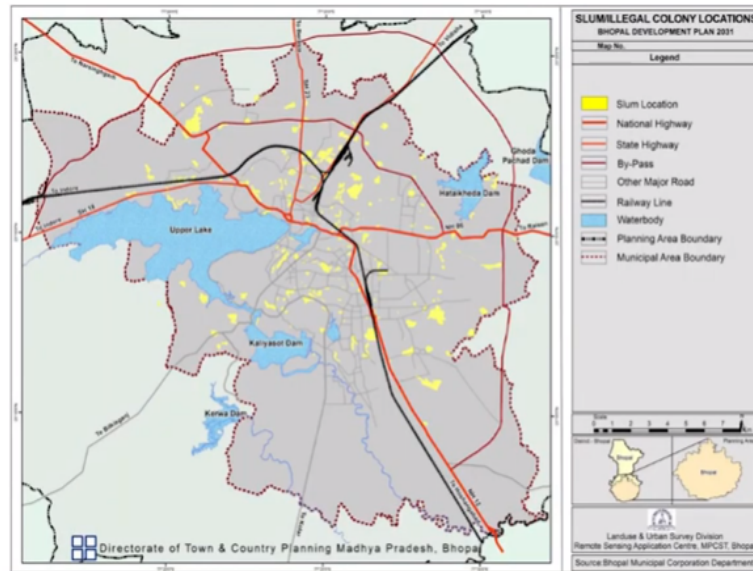
Total Population	Total Households	Total Slum Population	Total Slum HH	%age of Slum Households	Homeless Urban Household as per HFAPoA			
					Slum*	Non-Slum	Total	%age of Homeless Households
1886000	382690	479699	102803	26.86	112692	40103	152795	39.93

(Census, 2011)

Review has been undertaken of total houses, houses on good condition, livable conditions and dilapidated condition as per the Census date of 2011.

Housing stock is also reviewed, existing housing need assessment is made where the housing shortage is estimated.

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Slums have been identified in the city, we can see here the map has been prepared which indicates the slum or the illegal colony locations. In the city you can see the slum location in yellow color here in the map. **(Refer Slide Time: 33:29)**

Bhopal Development Plan

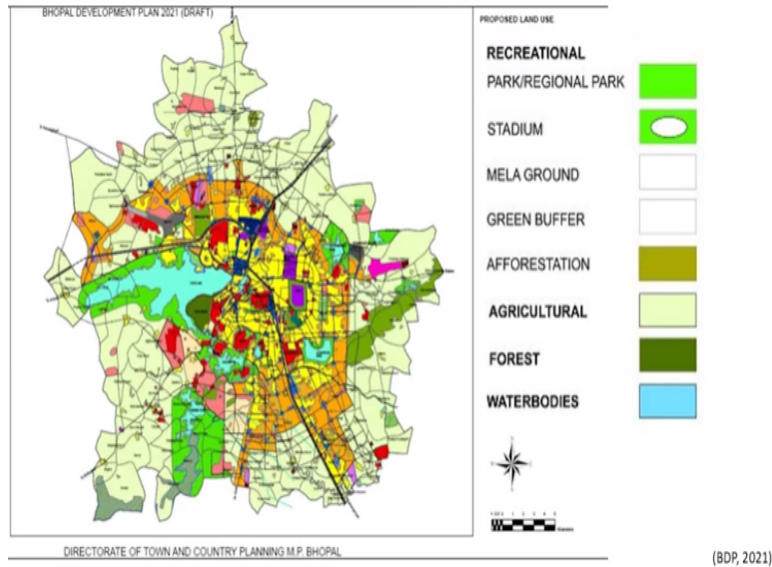
Environmental Profile

- Eco-sensitive zone
- Sanctuaries and eco-sensitive buffers
- River, Water bodies and wetlands
- Coastal/ Hill zone, if any
- Green & Forest cover
- Pollution levels - air, water, noise, soil pollution
- Disaster Management
- Hazard prone zones

Further we see other component which is suggested is the Environment, while reviewing the city profile or creating the city profile.

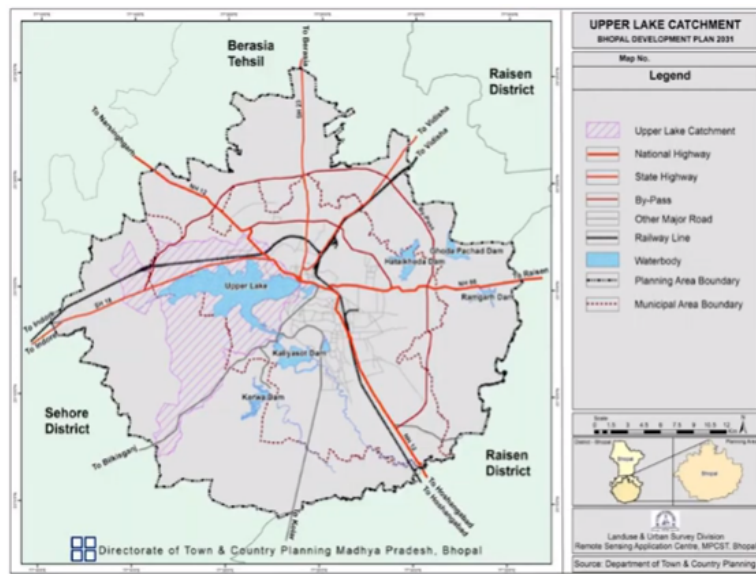
As per the guidelines the Environmental Profile should cover all these areas if they are there, eco-sensitive zones, protected or restricted areas such as National parks and wildlife, sanctuaries and eco-sensitive buffers around it, rivers, water bodies and wet lands, coastal hill zones, if any, green and forest covers, pollution levels, disaster management, hazard prone zones such as earthquake floods or flash flood areas.

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In Bhopal Development Plan 2031 we see green cover area is reviewed. The natural and geographical setting of Bhopal renders a unique environmental characteristic to the city of Bhopal. It is bestowed with hills, lakes and abundant with unique and rare flora and fauna. The city is built on the banks of two lakes, there are in total 18 major water bodies that are important not only from the point of view of water resource but also from the ecology of the whole Bhopal region.

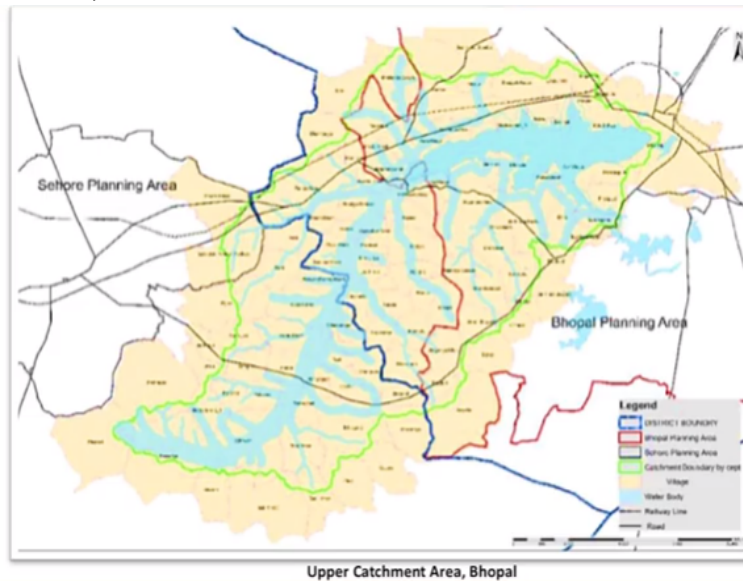
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The total area under green cover includes eco-sensitive area of nearly more than 3 square kilometers, recreational area of more than 4 square kilometers, reserved forest more than 57 square kilometers and revenue forest more than 18 square kilometers.

In the Planned Document we see that they have also reviewed the topography and landform and water bodies. Bhopal is known as the City of Lakes. Bhopal region has in total 18 water reservoirs, the total area of water body is which includes lakes, rivers and streams constitutes more than 54 square kilometers, which is 5% of total planning area.

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In the Document the catchment area of upper lake is mapped and natural drainage characteristic is reviewed.

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Bhopal Development Plan

Public Facilities

- Educational: schools, technical institutes, universities,
- Health care: Dispensary, health centers, hospitals
- Recreational spaces, Parks and Open spaces
- Religious spaces
- Socio-cultural facilities

We further see that the guidelines suggest that all the facilities like education, health care, recreational spaces, religious spaces, socio-cultural facilities should be reviewed.

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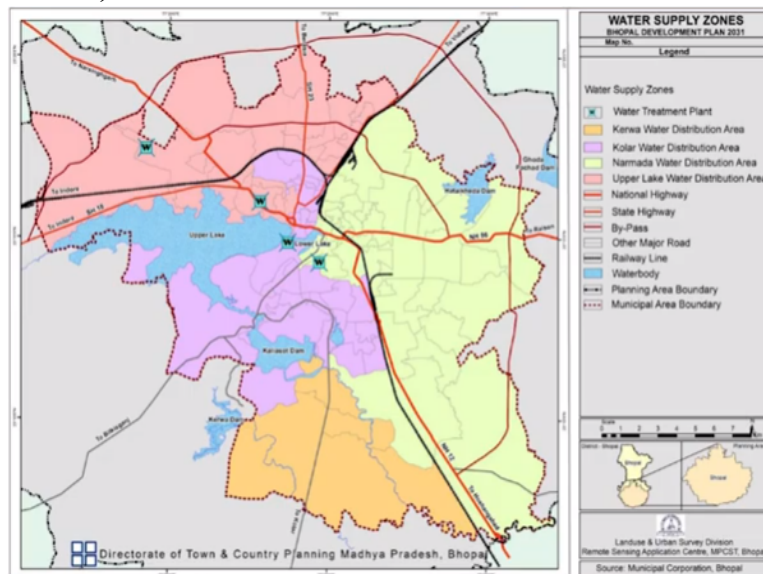
Bhopal Development Plan

Physical Infrastructure

- Water supply
- Energy
- Drainage, Sanitation and Solid waste disposal
- Waste generation and collection system,
- Re-cycling and Re-use of waste
- Police protection
- Fire protection

Within the physical infrastructure we see that water supply, energy, drainage, all the generation and collection system for waste. Also police protection and fire protection all this need to be reviewed. In Bhopal Development Plan of 2031 we see that detailed reviewing of existing urban infrastructure is made.

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It includes water supply details including estimation of demand water supply sources are reviewed, distribution system is reviewed and issues and observations are noted for planning purpose. Here we can see water supply zones have been identified and all the water treatment plants have been located. You can see all the water distribution areas, different distribution areas in this map which is been prepared.

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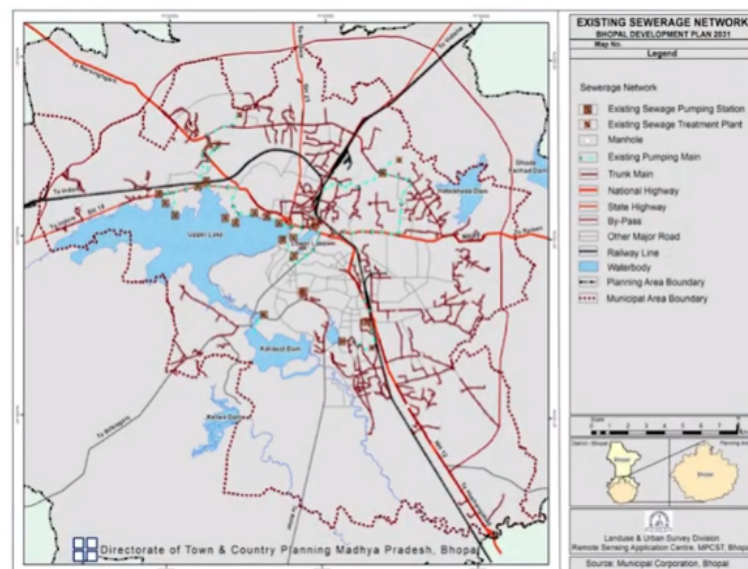
Bhopal Development Plan

Water Supply Zone

S. No.	Source	Million Liters Per Day		
		Present Capacity	Proposed Augmentation	Total Available Water
1	Bhojtal lake	126	-	126
2	Kolar	155	-	155
3	Ground Water Sources	35	-	35
4	Narmada Scheme	185	-	185
5	Kerwa, Hathaikheda, Ghodapachhad	29(existing in kerwa)	92.8	121.8
	Total	495	31	526

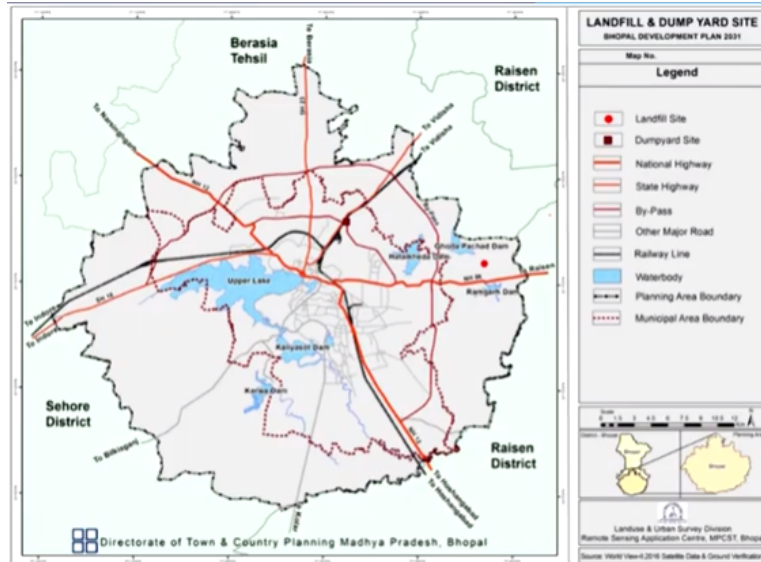
We can see in this table of different water sources for water availability. Further, detail we see that sewerage infrastructure is also reviewed including estimation of waste water flow, existing sewerage system, sewerage network carried out through AMRUT mission in the city, decentralized waste water treatment system and there after observations and issues are noted for planning purpose.

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We see that existing sewerage network has been mapped here. In the Development Plan the solid waste management infrastructure is reviewed the cognizance is taken of the existing scenario.

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We see here solid waste management transfer stations have been identified and mapped for the Document. We also see that storm water drainage facilities are reviewed, the existing condition is reviewed in observation and issues are noted.

Here we can see the land fill and dump yard site been indicated in the map.

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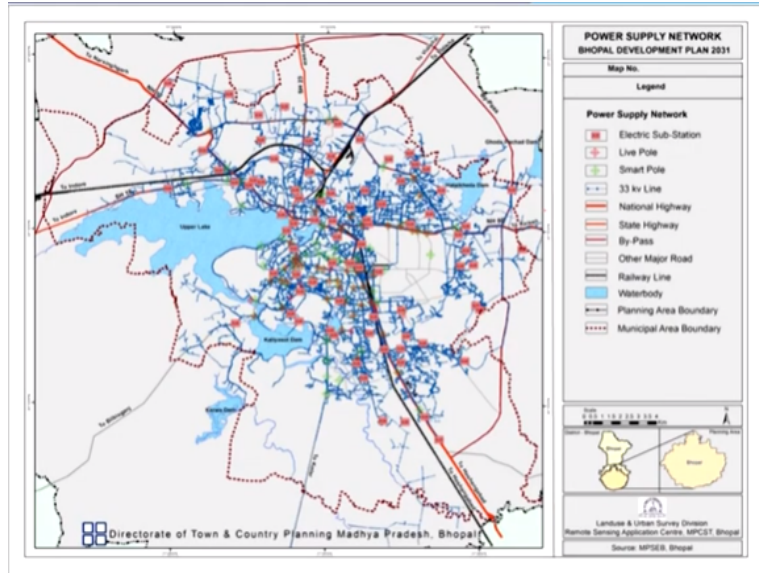
Bhopal Development Plan

Electricity Scenario

1. Industrial- 3.05%
2. Commercial- 5.23%
3. Residential- 67.20%
4. Miscellaneous- 24.52%

Further we see the electricity scenario in the city is reviewed for the purpose of industrial consumption, commercial, residential and miscellaneous and how much is the demand existing consumption has been calculated.

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We see the power supply network of the city here been documented and demand analysis for power is made and observations and issues are noted for planning purpose.
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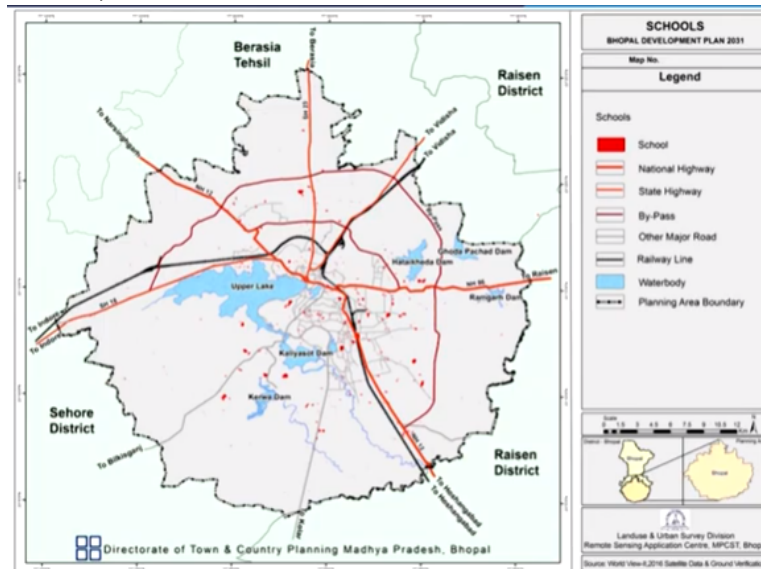
Bhopal Development Plan

Social Infrastructure

S.No.	Infrastructure	Number
1	Aanganbadi	73
2	Banks	81
3	Colleges	177
4	Government Hospitals	53
5	Private hospitals	204
6	Police station	33
7	Post and Telegram office	14
8	School	1509
9	University	14
10	Fire station	11
11	ATM	789
12	Market place (city level)	5
13	Malls	5

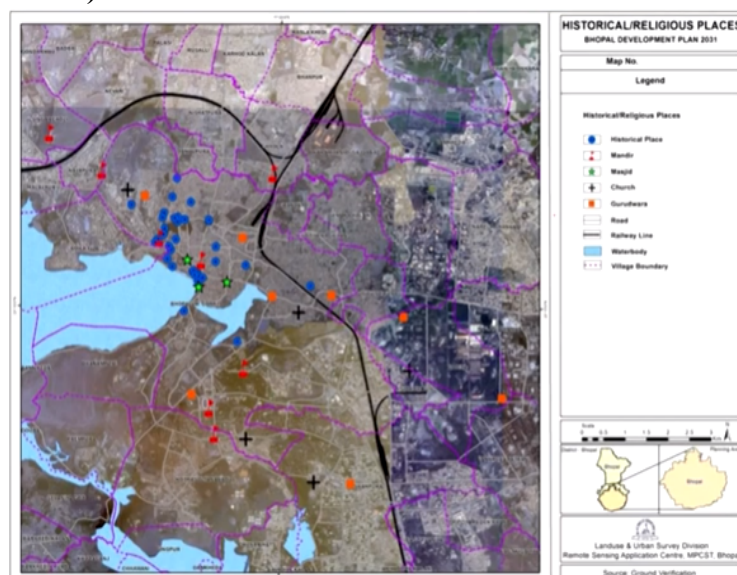
Further, we see the social infrastructure. The quality of life in any urban center depends upon the availability and accessibility to quality social infrastructure. So we can see here in the table number of social infrastructure in the city ranging from Aanganbadi, bank, colleges, government hospitals, private hospitals, police stations, post and telegraph offices, school universities, fire stations, ATMs, market places, malls and so on. We see education facilities in the city are also mapped.

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We can see all the schools here mapped in this, health facilities in the city are also mapped here. You can see the maps prepared for the Development Plan purpose. Socio-cultural facilities such as community toilet, historical and religious places in the city are also mapped and observations are noted. You can see existing community toilet in the map here.

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You can also see the historic and religious places.

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Major Sub Heads of Development Plan

8. Administrative profile:

Legal framework

Institutional framework & manpower

Fiscal: Sources of revenue, streams of expenditure – existing and required

Major policy issues

Key issues in governance

Grievance Redress

City level reforms

So these have been all documented in the Bhopal Master Development Plan. URDPFI guidelines further gives guidelines to the Document, the administrative profile like legal framework, institutional framework, fiscal expenditure, major public issues, key issues in governance, grievances redressals, city level reforms. However, we do not see that in this particular volume of Bhopal Development Plan.

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Major Sub Heads of Development Plan

4. Economic Profile:

- Primary:
 - Agriculture, horticulture & forestry
 - Sericulture and/or Fishing
 - Mining & quarrying
- Secondary:
 - Manufacturing – large, medium and clusters of MSME
 - Household industries
 - Construction

The URPDFI guideline also says to document economic profile, looking at the primary and secondary economic pattern of the city, as well as looking at the primary, secondary and tertiary economic pattern of the city.

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Major Sub Heads of Development Plan

Tertiary:

- Trade (whole sale / retail trade)
- Tourism, Hotels and Restaurants
- Transport, Storage and Communication
- Financial services such as Banking
- Real estate and Business services
- Public Administration
- Others services

So it suggested all of them to be documented in this and it also suggests the range of plans and maps which have to be prepared.

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Major Sub Heads of Development Plan

9. Maps & Plans:

Existing Landuse / Utilization Plan
Historical City Growth Map
Infrastructure Maps
Environmentally Sensitive Zones Map
Disaster Maps



10. Gap analysis:

Based on the existing conditions and the projected requirements of the planning area, a gap analysis is suggested to be done and issues be identified.

So in overall we have seen so many ranges of maps which have been developed for the Plan.

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Summary

- ① Distinction of the Development Plan
- ② Major Contents of the Development Plan
- ③ Guideline for capturing Existing Conditions and Development Issues with the help of Bhopal Development Plan-2031 (Draft)
- ④ Range of Maps prepared for the Development Plan Document

So summarizing in the end we would see that we have seen how Development Plan is distinct. We are going to further look into Development Plan in further sections, but you can have seen how it is different and how intensive and detailed it is. You are also seeing major contents of the Development Plan. So right now we are looking at the first component of the Development Plan where the existing infrastructure existing scenario of the city are reviewed.

Further, we saw how or what kind of information has to be captured to indicate the existing conditions and development issues and we saw it through the case of Bhopal Development Plan. You saw a range of documentations has been done, understanding studies have been done from the population to housing to all the infrastructure. To really capture how the progress is happening and what further direction is taking and while seeing all these things we also saw range of maps which have been prepared in the development document.

(Refer Slide Time: 41:17)

References

- URDPFI Guidelines, Ministry of Housing and Urban Affairs,
<http://mohua.gov.in>
- Census of India, 2011, Office of the Registrar General & Census
Commissioner, India, <https://censusindia.gov.in/>
- Bhopal Development Plan (Draft), 2031, Government of Madhya Pradesh,
http://mptownplan.gov.in/plan_bhopal.html

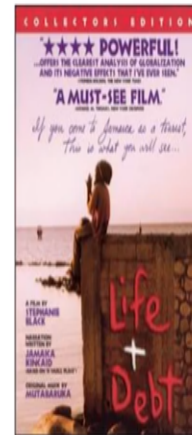
So this was the coverage of today's session. The references which we used were majorly URDPFI guidelines. We also used the Bhopal Development Plan and then we had also had some references from the lectures from SPA, Delhi.

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Suggested Reading and Watch

(to contemplate different layers of Urban and Rural Life)

- <https://www.youtube.com/watch?v=1CarenOqU2Y>
- https://www.youtube.com/watch?v=ZORzsubQA_M
- <https://www.youtube.com/watch?v=AnoxdlQDESI>



Our coverage was limited with the scope to make you aware of the topic. There are enormous readings and movies available to explore. Few are suggested here, this is not an extensive list you may feel free to suggest more from your experience.

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 Please feel free to ask Questions.

Let us know about any Concerns you have 

 Do share your Opinions, Experiences and Suggestions.

Looking forward to Interacting and Co-learning with you while exploring Cities and Urban Planning. 

Please feel free to ask questions, let us know about any concerns you have, do share your opinions, experiences and suggestions. Looking forward to interacting and co-learning with you while exploring cities and Urban Planning, thank you so much.