BAREILLY DEVELOPMENT AUTHORITY BDA

Vision, Implementation Strategy and Integrated Infrastructure Plan, Bareilly, 2071

DEMAND ANALYSIS REPORT

D – 3: Final Report

JUNE , 2023

Tender Ref. no.12-802021/BDA

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

1.1 City at a Glance

Bareilly is a city in North India tarai region and is classified as Class I town. It is the center for manufacturing of cane furniture and for trade in cereal, sugar, pulse and newly rice cultivation. The city administration is headquartered to Bareilly district and Bareilly division. Bareilly is the 4th city of Uttar Pradesh which has CNG fuel stations, after Lucknow, Kanpur and Agra.

According to National Capital Region Planning Board (NCRPB) 2041 plan Bareilly has been identified as Counter Magnet Area (CMA) for future development. It is equidistant from New Delhi with 250 kilometers and Lucknow with 252 kilometers. It is located as Eastern Dedicated Freight Corridor Node. It is famously known as the Zari Nagar for Zari Zardozi handicrafts works on dress materials of Uttar Pradesh.

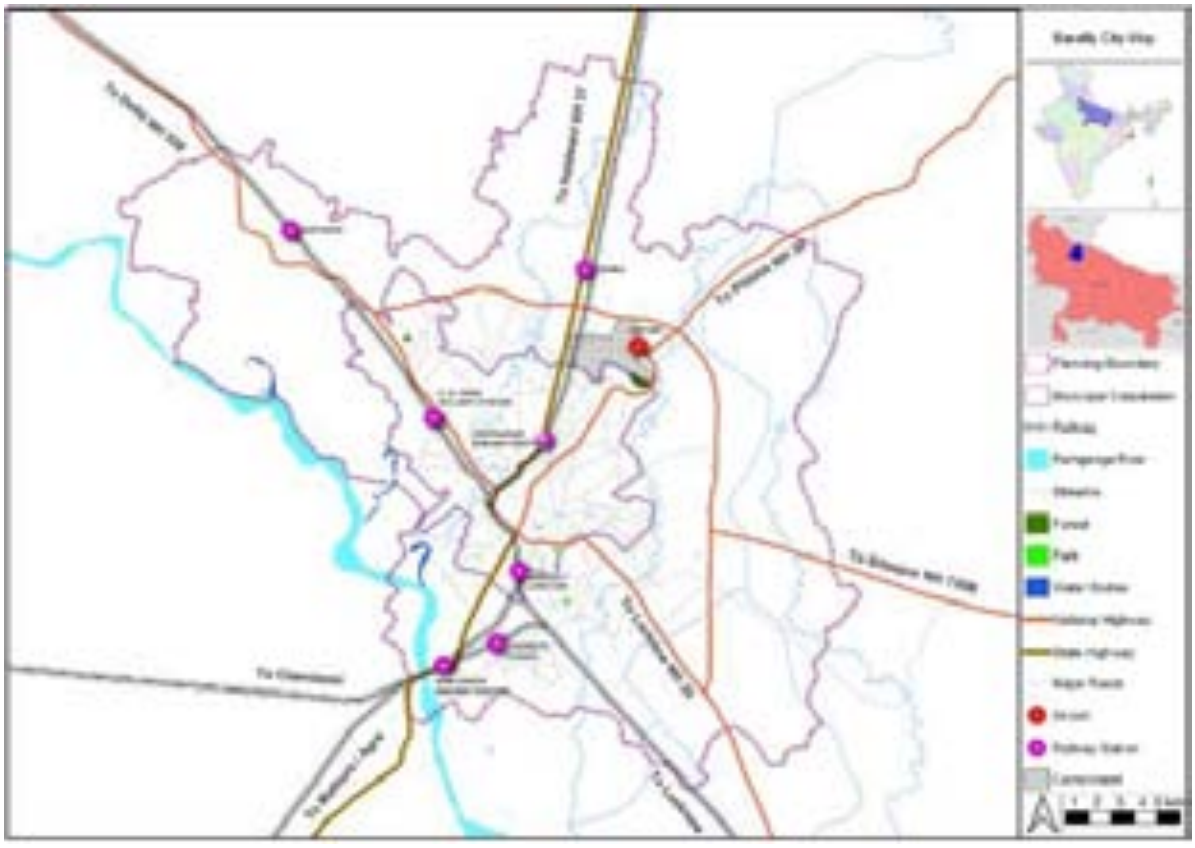


Figure 1 Study Area Map

The district shares its boundary with Badaun to the south, Pilibhit and Shahjahanpur on the east, Udham Singh Nagar (Uttarakhand) to the north and Rampur on the west. City is gateway to Hill areas of Kumaon Himalaya region. The city is level and well-watered, sloping towards the south. Its soil is fertile, with groves of trees. The river Sharda or Goghra passes the eastern boundary and is the primary waterway. The Ramganga receives most of the drainage from the Kumaon Himalayan region. The Gomati (or Gumti) is also nearby Bareilly and lies 252 meters above sea level located off the left bank of Ramganga. The core city of Bareilly lies nearly 10 kilometers to the left of Ramganga river. Since the 19th century, the city has been expanding to the south, with neighborhoods like Civil Lines and Bareilly Cantt established during British rule; however, after the Independence of India, city has been growing

towards north. During British period smaller industrial clusters have been established, like C.B. Ganj and Izzat Nagar. The city has an urban area of 106 square kilometers, while together with its metropolitan area it covers 123 square kilometers. Bareilly is one of the 100 Smart Cities being developed in India. 10 percent ethanol- blending programme on a pilot basis has been initiated under Central scheme in Bareilly. Existing major industries like B. L. Agro Refinery at Parshkhera, IFFCO plant in Aonla. An airport is also developing at Bareilly – Pilibhit road. Bareilly Development Authority is developing Ramganga Nagar Housing scheme at Dohra and Bilaspur Road for around 259 Ha and main feature in this scheme are science and technology park and zonal park of 35000 sq. mt. area.

1.2 Geographical setting

1.2.1 Regional Setting

Bareilly is the fourth largest city located on the Ramganga River. District Udham Singh Nagar of Uttarakhand state lies in the north. It is a level landscape with various streams that flows through it, and it normally slopes to the south. Bareilly District serves as the capital of the Rohilkhand division. For administrative purposed, it is delineated into six tehsils and fifteen development blocks. Bareilly city is the administrative headquarter of the district.

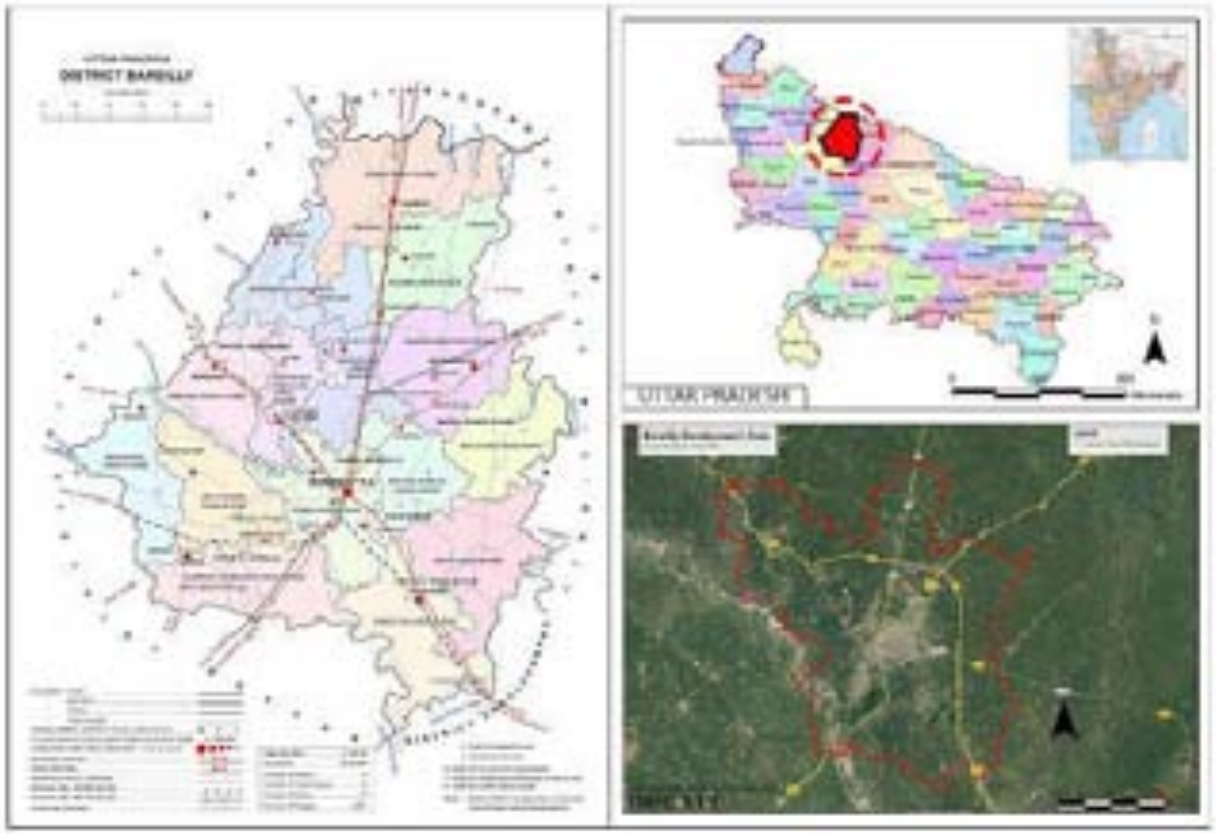


Figure 2: Regional Setting of Bareilly

1.2.2 Regional Ecological Features

The Ramganga is the district's primary river, which enters from the west and runs south-east. The Sidh Dejora, Bahgul, Sankha, Aril, Deoha, Deoanian, and Nakatia rivers, as well as their tributaries, all start in tarai and flow across the district in southern and south-eastern directions before joining it. In terms of geology, the district is alluvial. The district is separated into three sub-micro areas based on geology, soils, terrain, climate, and natural vegetation:

I. Bareilly Tarai

II. Bareilly Plain
III. Ram Ganga

Bareilly Tarai: The region is located in the district's north-western corner, encompassing a small portion of *Baheri* tehsil. It is the Tarai tract, where various streams flow in a north-south direction. The majority of them are from the Nainital tarai belt. Although it is a rice-growing region, productivity is dependent on rains due to a lack of irrigation.

1.3 Report Structure

This report provides a demand assessment of Bareilly with the goal of identifying parameters that influence Bareilly's attractiveness and critical evaluation of the same to determine key drivers / projects for developing Bareilly as a model city.

The report is divided into eight chapters, the first of which provides a brief introduction to the city. The following chapters present demand assessments for individual sectors such as Urban Planning, Economy, Transportation, Heritage, and Urban Design.

i. Urban Planning
ii. Urban Regeneration
iii. Heritage & Tourism
iv. Economy & Industries
v. Transportation
vi. Infrastructure
vii. Renewable Energy

Chapter 2. Urban Planning

2.1 Approach and Methodology

To achieve successful demand assessment for vision planning and development, these components will be studied in detail and form a part of our approach:

- Population Projections until 2071
- Land Requirements for various uses guided by the vision until 2071 in decadal phases
- Landuse implications of Industrial and Economic Base
- Recommendations on Draft Master Plan 2031 and see how it integrates to the 2071 Vision
- Proposed shelf of Projects
- Convergence of proposed Urban Sector projects with existing programs/schemes and strategies:

2.2 Proposed Growth of the City

2.2.1 Determinants of Urban growth

It is also one of the major service providers in the region. With proposals of various scales and sectors, this city is envisioned as the key economic growth center in the area. Major determinants of the growth in Bareilly will be:

1. Bareilly is identified as one of the nine magnets to the National Capital Region.
2. Existing Industrial base potential can be developed as Agro-based industries because of the availability of raw materials. The projected industrial growth hubs are intended to create employment opportunities and attract investment to the city because industries are the engine of economic progress.
3. The inhabitants of the surrounding area will be drawn to proposed residential zones, which are meant to be planned neighborhood zones since they would offer better living conditions and amenities.
4. Connectivity via road and rail to the state capital of Lucknow, the national capital New Delhi, and the popular tourist resort Nainital.

2.2.2 The extent of Spatial growth

Bareilly serves as the area's educational center, numerous prestigious educational institutions, as well as auxiliary buildings like apartments and hostels, can be found throughout the town's outlying areas, which is crucial for the growth of the metropolitan area. Locals from the villages nearby also move and reside in Bareilly to take advantage of the city's improved employment prospects, healthcare services, and educational resources. The geographic scope of a city expands as a result of inward migration, population growth, significant infrastructure development, and significant initiatives that have an impact on economic growth.

The city is anticipated to grow with the existing vision and proposed developments as mentioned in the Table below:

Table 1: Urban Extent 2051 and 2071

Road Name	Urban Extent 2051 (Village Name)	As per Draft Master Plan 2031 Boundary	Urban Extent 2071 (Village Name)	As per Draft Master Plan 2031 Boundary
Nainital Road	Bhojipura	(Inside the Boundary)	Semi Khera	(Outside the Boundary)
Pilibhit Road	Labhera	(Outside the Boundary)	Khai Khera	(Outside the Boundary)
Lucknow Road	Jerh	(Outside the Boundary)	Naugawan	(Outside the Boundary)
Badaun Road	Anguri	(Inside the Boundary)	Sardarnagar	(Outside the Boundary)
Delhi Road	Dhaneta	(Outside the Boundary)	Mirganj	(Outside the Boundary)

These locations of urban growth are based upon the past growth trends, proposed projects, and analysis of existing conditions.

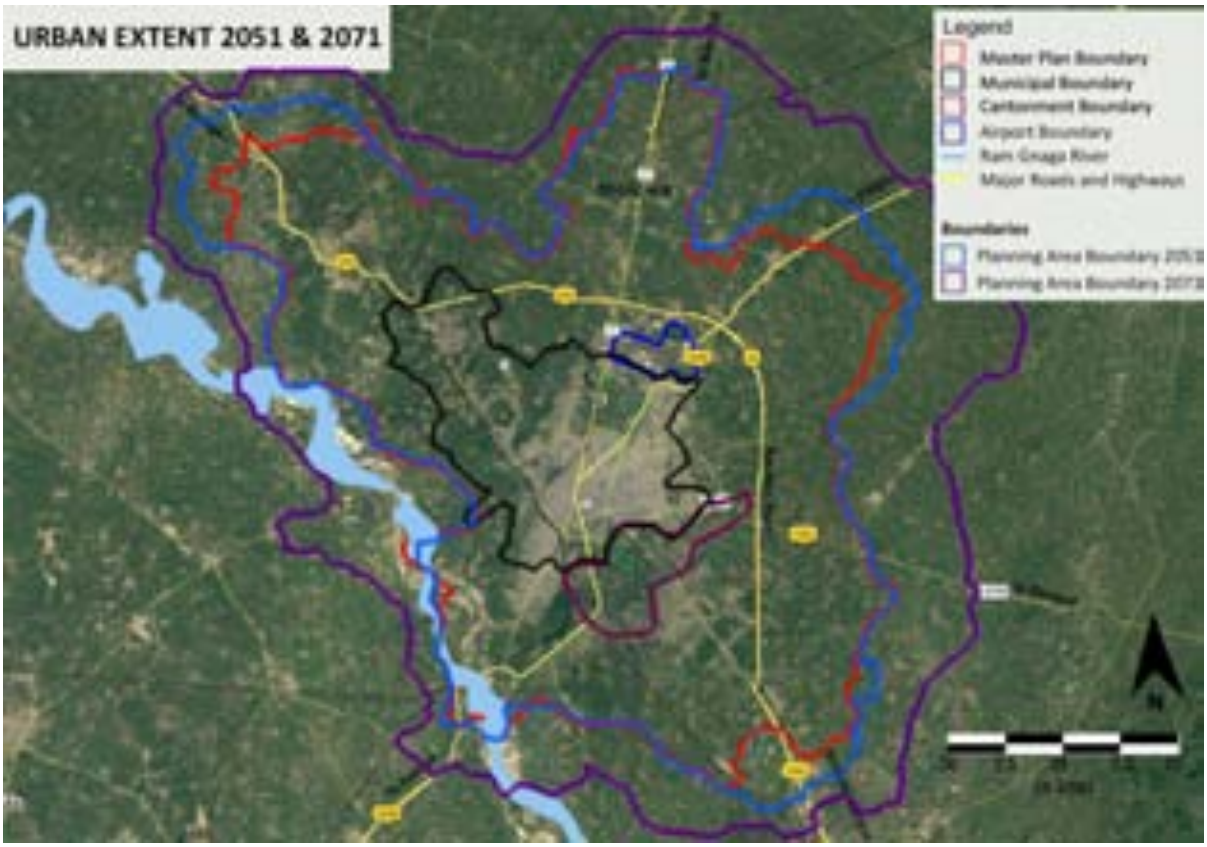


Figure 3: Urban Extent 2051 and 2071

2.3 Demographic Profile

2.3.1 Population Projections

For population projection of the horizon year, five projection methods are taken into account. The Arithmetical projection method shows the lowest population and predicts the population to be 22,50,731 to be in 2051 and 31,25,421 to be in the horizon year 2071. Similarly, the Incremental Increase method projects the population to be 28,49,757 to be in the horizon year. The geometrical increase method estimates the population to be 45,86,064. Apart from these methods such as the

graphical method of population projection is also used to project the population by 4 different methods namely Linear Method, 2nd Order Polynomial Method, 3rd Order Polynomial Method, and Exponential Method. 3rd Order Polynomial Method projects the highest i.e., 47,58,683 population for Bareilly city. Based on the growth trajectory 2nd Order Polynomial Method which estimates the population to be 31,25,421 in 2071 is considered for the Municipal area.

Table 2: Population Projection for Municipal Corporation Area

Sl. No	Population Projection Method					
		2031	2041	2051	2061	2071
1	Arithmetic Progression Method	1439947	1593930	1747913	1901896	2055879
2	Geometrical Progression Method	1658330	2138520	2757754	3556296	4586064
3	Incremental Increase Method	1492872	1752706	2065464	2431148	2849757
4	Growth Method	1668765	2165517	2810141	3646654	4732177
5	Graphical Method					
	a) Linear Method	1238736	1381870	1525004	1668138	1811272
	b) 2nd Order Polynomial Method	1532953	1872228	2250731	2668462	3125421
	c) 3rd Order Polynomial Method	1683919	2224493	2904945	3743575	4758683
	d) Exponential Method	1582382	2041186	2633019	3396451	4381237

Master Plan boundary is a consortium of cantonment board area, villages within planning boundary, census towns within planning area boundary in addition to the municipal area. Bareilly city population including all these for the year is projected to be 19,49,012 as per the consultant analysis against the population of 18,94,211 of Master Plan consultant for 2031. For the year 2051 and for the horizon year 2071 population is projected to be 28,94,499 and 37,02,015 respectively.

Table 3: Summary of Population Projection

	2021	2031	2041	2051	2061	2071
Municipal Area	1140717	1431466	1698116	1991891	2668462	3125421
Cantonment Board	37388	46591	65206	81256	174853	279265
Total Villages within Planning Boundary	279655	348492	487722	607775	106911	170753
Total Census Towns within Planning Boundary	98273	122463	171389	213577	79252	126577
Total Planning Boundary Population	1556033	1949012	2422433	2894499	3029478	3702015
Master Plan 2031 estimation of Total area		1894211				

Year	Population (M.C.)	Working Population	Growth Rate	WPR (Work Participation Rate)	Arithmetic	Growth Rate	Geometric	Growth Rate	Incremental	Growth Rate
1991		165827		27.30%						
2001		206247	19.60%	27.60%						
2011	903668	303392	32.02%	33.60%						
2021	1140717	330474	8.19%	33.60%						
2031	1431466				385356	16.61	416166	25.93	390176	18.07
2041	1698116				440238	14.24	524078	25.93	454698	16.54
2051	1991891				495120	12.47	660081	25.94	469158	3.18
2061	2575326				550002	11.08	831286	25.94	488438	4.11
2071	3338685				604884	9.98	1046897	25.94	512538	4.93

2.3.2 Estimated Household Size

The household size of Bareilly city has dropped in the past 3 decades. It was 6.43 in the year 1991 which in the last census of 2011 declined to 5.42. The decline in household size can be attributed to the nuclear family being more in existence now as compared to the joint family. Household size of 5.0 is proposed for Bareilly city which is also the national average.

2.3.3 Proposed Density

Decongestion of the core area is necessary to provide infrastructural equity and address traffic issues. This is also to admit that low dense low rise infrastructure development demands large investment. So, to reduce costs and provide long-lasting suitable infrastructure, medium-density compact development with a density of 250pph is proposed.

2.4 Workforce Characteristics

2.4.1 Proposed Occupational Structure

Bareilly is a service sector dominant city because it acts as the major educational and healthcare in the region. It also has a strong industrial base producing goods of a varied range. Considering all these into account Bareilly city is expected/proposed to employ 5 percent of its population in the primary sector, 35 percent in the secondary sector, and 60 percent in the tertiary sector.

2.4.2 Estimated Workforce participation rate

Note: Data used for WFPR calculation is of Municipal Area only

Working population for the subsequent years as well as horizon year till 2071 is projected based upon three methods which show variable results. Projections are done based upon the given assumptions that future growth rate will follow a similar trend to previous records and similar situations as existed till now will prevail. For these three projection methods namely: Arithmetic, Exponential, and Incremental method are used. The arithmetic method depicts linear and slow growth. The Geometric Method showed exponential growth. The incremental method demonstrates an increase in the increment utilized for forecasts, as well as a high rate of growth.

Bareilly being identified as one of the counter magnets of the National Capital Region which is a major economy will attract economic development. This will bring various enabling infrastructures for the increasing economy and have a positive impact on WFPR. For Bareilly, the geometric method is

considered which forecasts the no. of workers to be 10,46,897 for the population of 33,38,685 which is found to be 31.35 percent.

Master Plan 2021 projects different sectors of workers for 2011 and 2021. On similar assumptions and patterns based upon the ratio method, projections for the future year till 2071 is been done. For the year 2071, it is projected that primary services will employ 60,552 people and 1,57,522 will work in the manufacturing sector. As per the projection, the retail sector will be the highest engaging sector with around 1,71,420 people working in this. Transport and communication will provide work to 1,02,267 and the remaining working population of 3,18,668 will be employed in other service-providing sectors.

Table 4: Decadal employment in various sector

Economic Activity	2001	2011	2021	2031	2041	2051	2061	2071
	As per Census	Projected with average growth rate and share in the total working population						
	No. of Workers	No. of Workers	No. of Workers	No. of Workers	No. of Workers	No. of Workers	No. of Workers	No. of Workers
Primary Services	16500	21237	25411	30146	37760	46932	51699	60552
Manufacturing	30937	48543	66105	78424	98231	122091	134491	157522
Construction	10312	15170	17138	20332	25467	31653	34868	40839
Retail	41249	60678	71937	85343	106897	132863	146357	171420
Transport and Communication	24750	36407	43072	51099	64004	79551	87630	102637
Others	82498	121357	133729	158652	198719	246991	272076	318668
Total	206246	303392	357392	423997	531078	660081	727121	851636
Population	748353	903668	1311599	1556033	1949012	2422433	2668462	3125421

Note: Data used for calculation is of Municipal Area only.

2.5 Planning Boundary and Area of Future growth

2.5.1 Bareilly Development Authority

Existing landuse of Bareilly city covers only 7421.66 hectares of area in 2021 against 20,563.82 hectares. There is only 36.09 percent of the total allocated area in Master Plan 2021. As per the Draft Master Plan 2031, 2,251.94 hectares of additional area are added to the Master Plan boundary making it a total of 22815.76 hectares. For 2051 and 2071, an additional area of 7,652.65 hectares 2051 and 16,152.82 in 2071 hectares needs to be added to regulate and develop the area in 2071. The total estimated area required will be 30468.41 hectares for the year 2051 and 38968.58 hectares for the year 2051 which will be within the current BDA Boundary of 36,558.70 hectares till 2051 but might be necessary to extend the Pilibhit, Delhi, and Hardoi Road boundaries based on the development that is already apparent and. For the year 2071, the total landuse area required will exceed the boundary on all roads and will require a total of 38968.58 hectares of land.

Table 5: Landuse Requirement till 2071

S	Landuse	Norms %	Percent	Proposed Landuse 2031	Area Required as per URDPFI Standards Landuse 2031	Total Area Required for 2041	Total Area Required for 2051	Total Area Required for 2061	Total Area Required for 2071
1	Residential	30-35	38	8580.37	8669.99	9589.57	11578.00	12117.91	14808.06
2	Commercial	4-6	4	945.65	912.63	1056.88	1218.74	1275.57	1558.743
3	Industrial	8-10	10	2008.76	2281.58	2245.03	3046.84	3188.924	3896.858
4	Public and Semi Public	10-12	10	1406.82	2281.58	1572.29	3046.84	3188.924	3896.858
5	Official		2	360	456.32	402.34	609.37	637.7848	779.3716
6	Parks and Open Spaces	15-20	16	5705.74	3650.52	2274.04	4874.95	5102.279	6234.973
7	Traffic and Transportation	18-20	18	2034.72	4106.84	6376.84	5484.31	5740.064	7014.345
8	Others	Balance	2	1773.66	456.32	1982.27	609.37	637.7848	779.3716
	Total		100	22815.76	22815.76	25499.25	30468.41	31889.24	38968.58

These calculations are as per norms and standards in line with the Draft Master Plan, Industrial landuse requirement as per the city development plan vision is detailed in the section titled ***"Projected Industrial Land Demand."***

2.5.2 Dedicated Freight Corridor

Khurja Node of Eastern Dedicated Freight Corridor which is an 1800 km length corridor lies 200 km from Bareilly City via Badaun. To enable the movement of goods and provide better transport services for industrial goods and market a multimodal logistics hub is proposed at Kurtara near Paraskhera Industrial Area and an Integrated Freight Centre at Faridpur. Both of these Logistics facilities are expected to cover a land parcel of 35 hectares each. It is also proposed to connect these dedicated facilities to the Khurja Node of EDFC.

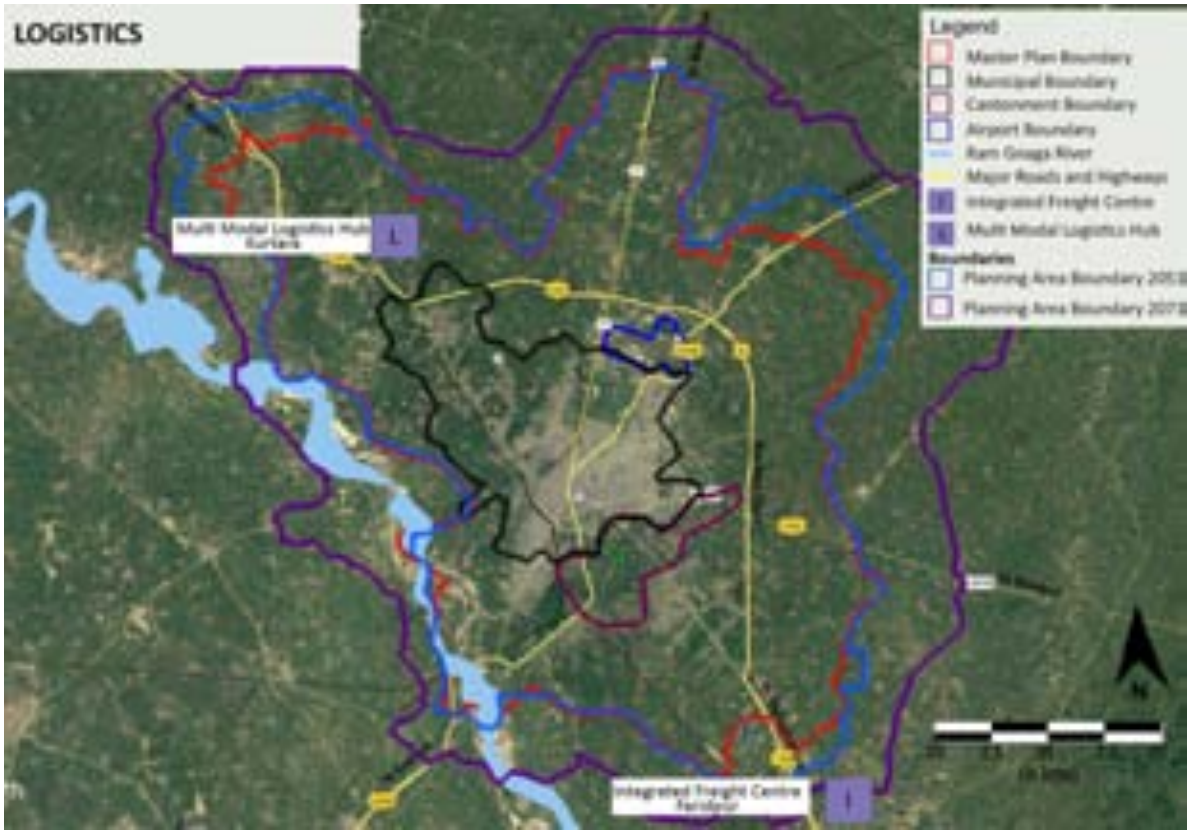


Figure 4: Logistic Hub

2.6 City Level Landuse Demand

2.6.1 Draft Master Plan 2031

Table 6: Draft Master Plan 2031 comparison with URDPFI Guidelines

S	Landuse	MP 2021 Area as per GIS Map	Existing as per GIS 2020 map	Master Plan Percent	As per Master Plan 2031	Norms	Cons. Percent	Area as per URDPFI Guidelines	Deviation
1	Residential	6900.15	3986.51	38	8580.37	30-35	40	8669.99	89.62
2	Commercial	911.20	245.75	4	945.65	4-6	4	912.63	-33.02
3	Industrial	1057.42	541.62	9	2008.76	8-10	10	2281.58	272.82
4	Official	279.39	184.77	2	1406.82	2	2	2281.58	874.76
4	Public and Semi Public	1257.20	531.1	6	360	10-12	10	456.32	96.32
5	Parks and Open Spaces	1782.65	357.92	25	5705.74	15-20	16	3650.52	-2055.22
5	Traffic and Transportation	3675.37	1105.49	9	2034.72	18-20	18	4106.84	2072.12
8	Others		468.5	Balance	1773.66	Balance	2	456.32	-1317.34
	Total	16721.83	7421.66	**100**	22815.76		**100**	22815.76	

Master Plan 2021 allocated a total land parcel of 7,173.39 hectares against which 3379.26 hectare was developed and 3,794.12 hectare of land was available as the vacant area within MP 2021. As per the norms, an additional area of 4634.67 hectares is allocated in Draft Master Plan 2031.

2.6.2 Implications on the Proposed Vision

2.6.2.1 Residential Landuse

Draft Master Plan 2031 allocates a total of 8580.37 hectares of land under residential landuse. Due to external growth drivers, a rising residential tendency in the city improved regional connectivity, and planned developments, the percentage of residential area is projected to be on the higher side i.e., 40 percent. Thus, a total of 14808.06 hectares of the land area needs to be under the umbrella of residential landuse for 2071.

2.6.2.2 Industrial Landuse

Bareilly has a strong industrial base because of varied types of industries ranging from agro-based to chemicals etc. It is also evident in the Draft Master Plan 2031 that the highest land increment is done in industrial landuse only. Industrial production is the major contributor to developing the city as well generates an economy. To enforce the same industrial development as in major industrial cities such as Ludhiana which has industrial landuse up to 18 percent. Industrial landuse in the vision is kept at 12 percent for the year 2041 and 15 percent for the year 2051 and subsequent years. This makes the total industrial land required to be 2561.50 ha and 3,836.53 ha for the year 2051 and 2071 respectively.

2.6.2.3 Proposed Residential Density

Draft Master Plan 2031 proposes the residential density to be 150 which is low density and low-rise development. According to the vision, a 250pph residential density is envisioned for the city's growth. It will make it possible to enjoy the compact development and decongest the central area, minimizing the cost of physical infrastructure.

2.7 Residential Landuse Demand

2.7.1 Master Plan 2031

2.7.1.1 Proposed Residential Zones

The core area is the high-density residential area neighboring cantonment area. As per the Draft Master Plan 2031 major residential area is proposed in the north of the city starting from the Moradabad Road which has a small patch of residential landuse at the Master Plan Boundary. There is ribbon residential landuse along the Bye pass road till Pilibhit road covering Nainital road. Residential landuse is also allocated on Lucknow Road. There is also a major patch of residential landuse adjacent to Aligarh Road.

2.7.1.2 Zoning Regulations

Permissible Categories of Different Activities / Uses: The various activities/uses under the major land use zones proposed in the master plan will have the following permission categories:

Permissible Use: The activities/uses which will be ancillary to the major land-uses concerned and would normally be allowed.

Conditionally Permissible Uses: Those actions/uses which will be permissible based on work fulfillment in the respective major land-uses with mandatory means and restrictions are provided in section 6.4 of the Master Plan Document.

Permissible use with special permission of the Competent Authority: The activities/uses which are reckoned permissible during the approval process from the competent authority, based on the type of construction, infrastructure, and the environmental impact on the surrounding area, shall be permissible with special conditions. These are listed in section 6.3.3 of the Master Plan Document.

Prohibited use: All activities/uses that are not permissible in the master plan's major landuse, those listed as prohibited activities; and all such activities that are not ancillary to the main landuse or in the above three categories, or not included in the category's list of permissible actions, will be prohibited.

Floating Use: The proposal intends to improve the master plan's zoning system's flexibility. Certain activities/uses are proposed in response to a city's changing social, physical, and political context, but are not mentioned in zoning restrictions. For example; Bus/Rail/Air terminal Wholesale market, etc.

Rainwater harvesting: The existing actual use of natural reservoirs, ponds and lakes, etc. of one acre and above area under any land-use zone proposed in the master plans / zonal development plans of metropolitan areas, for the conservation and recharging of groundwater, will stay the same or supplementary thereto. The principal land use of the properties should have been shown differently in the same master plan. After listing all such reservoirs, ponds, lakes, and other bodies of water, it will be necessary to establish appropriate measures for their protection in the master plan / zonal plan layout plan.

Impact Fee: Applications for permission of certain other activities/uses in plans approved by the Competent Authority in planned developed areas where provision has been made for ancillary activities according to the standards will be received, as per the master plan. The regulations of the Zoning Regulations will apply to such applications. If permission for high use is given in the low land use zone, it will result in an impact on the traffic-transportation infrastructure and environment in the area concerned. The impact fee options were outlined in-depth in the master plan.

Exempted Landuse Conversions:

1. For commonly permitted activities/uses in a built-up area.
2. Activities to be allowed temporarily (maximum time limit one week) in various major land use zones for public and semi-public facilities.
3. Activities to be developed by government and semi-government agencies in residential land use zones / for uses.
4. There will be no impact fee charged under various policies declared by the state government, such as tourist policy, information technology policy, film policy, and others, for which activities/uses have been approved in specified land-use zones as per government directives. Hotels with a star rating and information technology units/parks with a capacity of up to 5 KVA.

Procedure for Permission:

1. In any of the major land use zones under the development area, before special permission is given for other activities by the competent authority, a committee will examine each such case and the committee's recommendation will be presented to the authority board.
2. The said committee will have the following members:

a. Chief Town and Country Planner, Uttar Pradesh or his representative.
b. Vice-Chairman of the Development Authority or the officer nominated by him.
c. A non-official member of the Authority Board nominated by the Chairman Development Authority.

3. The applicant shall not be entitled to any action or use under the zoning regulations. permission

Other Requirements:

1. Development/construction on a site proposed for any action or specific use under the master plan's major land use zones will be permitted only if that action or specific use is relevant to the master plan's major land use zones.
2. Existing forest areas or sites associated with public services and utilities, such as parks, playgrounds, and roads, will remain the same, regardless of where in the proposed Master Plan they are located.
3. If the zonal development plan or layout plan of a site/ plot has been approved by the competent authority, then in such a case the permissible land use of the said site/plot would be as specified in the zonal development plan or layout plan.
4. All development/construction works in all land use categories must comply with relevant building bye-laws under the proposed zoning regulations.

2.7.2 Proposed Residential Zones

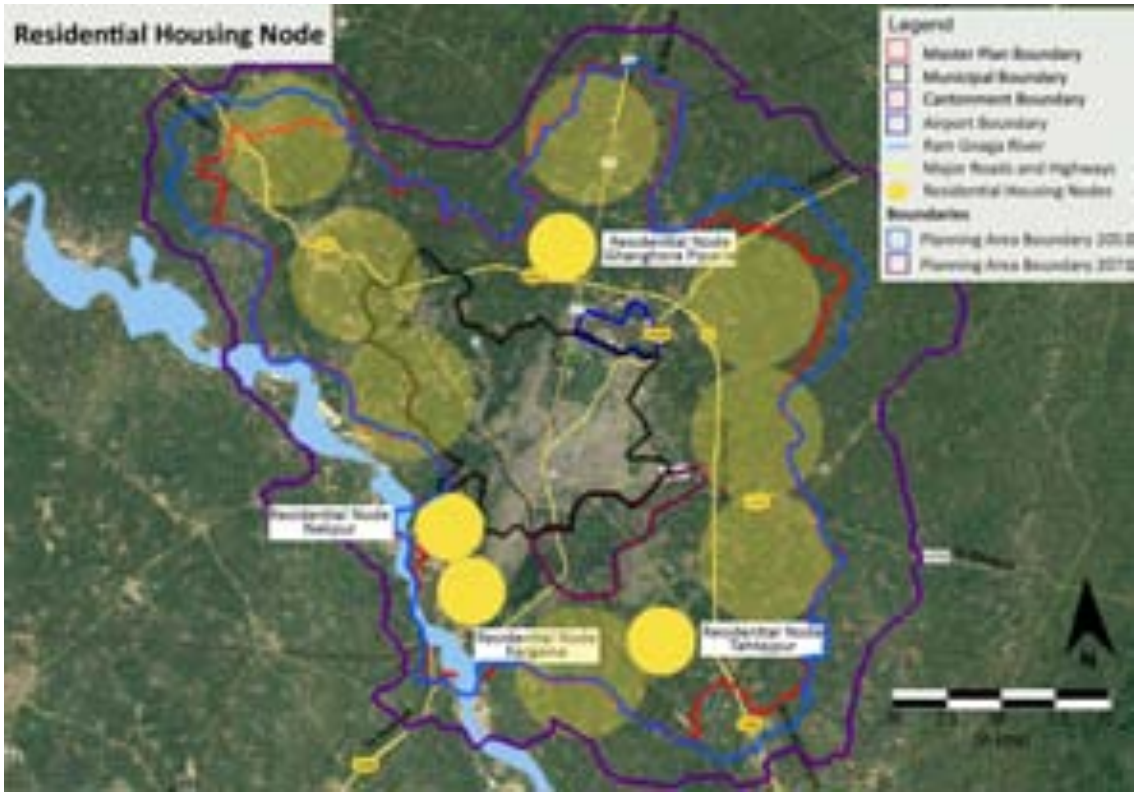


Figure 5: Residential Housing Nodes and Probable Residential Areas of Future

The population is projected to increase more than twofold and reach 28 lakhs within the horizon year. The growing population will need land for a habitat, but if these new regions are not built-in accordance with the laws and standards, it will exacerbate the already chaotic conditions in some sectors. New residential zones are suggested to handle the population growth and improve living conditions. Four residential zones or nodes are proposed to be developed following the study and demand evaluation. Out of these 2 residential zones are proposed on Aligarh Road near village Nekpur and Kargana. Other residential zones are proposed on Lucknow Road near Tehtajpur and near Village Ghaghoria Piparia on Nainital Road. Each residential node is expected to be developed on 100 hectares each.

Additionally, it is anticipated that by 2051, the population will have spread out past the boundary of the Draft Master Plan 2031 and settled in various areas throughout the city.

2.7.3 Projected Housing Demand

Bareilly city is projected to accommodate 5,78,900 households by 2051 and 7,43,403 households by the horizon year 2071. It is as per the national average of 5.0 person per household. EWS Category which is considered to be 15 percent will have 86,835 units and 1,11060 units by 2051 and 2061 respectively. LIG category and MIG category both will constitute 35 percent each of the total share of housing demand with 2,02,615 units in 2051 and 2,59,141 units by 2071. HIG category will constitute 15 percent and will require housing units similar to EWS category but 4 times the size of each unit. Below is a breakdown of demand by category according to the Draft Master Plan 2031:

Table 7: Housing Demand till 2071

Type of residential category as per economic status	Type of residential category as per economic status	No. of houses For 2031	No. of houses For 2041	No. of houses For 2051	No. of houses For 2061	No. of houses For 2071
EWS	15	58470	72673	86835	90884	111060
LIG	35	136431	169570	202615	212063	259141
MIG	35	136431	169570	202615	212063	259141
HIG	15	58470	72673	86835	90884	111060
Total	100	389802	484487	578900	605896	740403

Unit area for various groups is taken into consideration under socioeconomic requirements. Area for EWS category per unit is 50 sq.m., 80 sq.m. for LIG, 120 sq.m. for MIG and 200 sq.m. for HIG class. The total built-up area for 2031, 2041, and 2051 is computed based on these standards, as indicated in the table below:

Table 8: Built Up Area w.r.t. housing need till 2071

Type of residential category as per economic status	Unit Area Considered	Built-up area by 2031 (in sq.m.)	Built-up area by 2041 (in sq.m.)	Built-up area by 2051 (in sq.m.)	Built-up area by 2061 (in sq.m.)	Built-up area by 2071 (in sq.m.)
EWS	50	2923515	3633652.5	4341750	4544217	5553023
LIG	80	10914456	13565636	16209200	16965077	20731285
MIG	120	16371684	20348454	24313800	25447616	31096928
HIG	200	11694060	14534610	17367000	18176869	22212092
Total		41903715	52082352.5	62231750	65133779	79593328

No. of units for EWS and HIG is the same but due to the difference in unit size built-up area in the year, 2071 for EWS is 55,53,023 sq.m. and 2,22,12,092 sq.m. Similarly, HIG and MIG categories have similar no. of units in their share but a total built area of MIG will be 3,10,96,928 sq.m. and 2,07,31,285 sq.m. for LIG. Total built-up area required by 2051 will be 7,95,93,328 sq.m.

2.8 Industrial Landuse analysis

2.8.1 Proposed Industrial products as per the vision

Industries in Bareilly produce products of a varied range. While other industries are involved in generating items linked to chemicals, plastic, etc., major industries like Coco-Cola, Vadilal, and BL Agro produce agro-based products. Bareilly is an area that can procure raw material for agro-based industry from the surrounding region. As per the vision, Agro-based products which also include food processing and packaging are focused. In addition to this, Zari Zardozi is selected under the One District One Product Scheme so it is also focused under the vision and is proposed to provide enabling infrastructure for this.

2.8.2 Proposed Industrial Zones

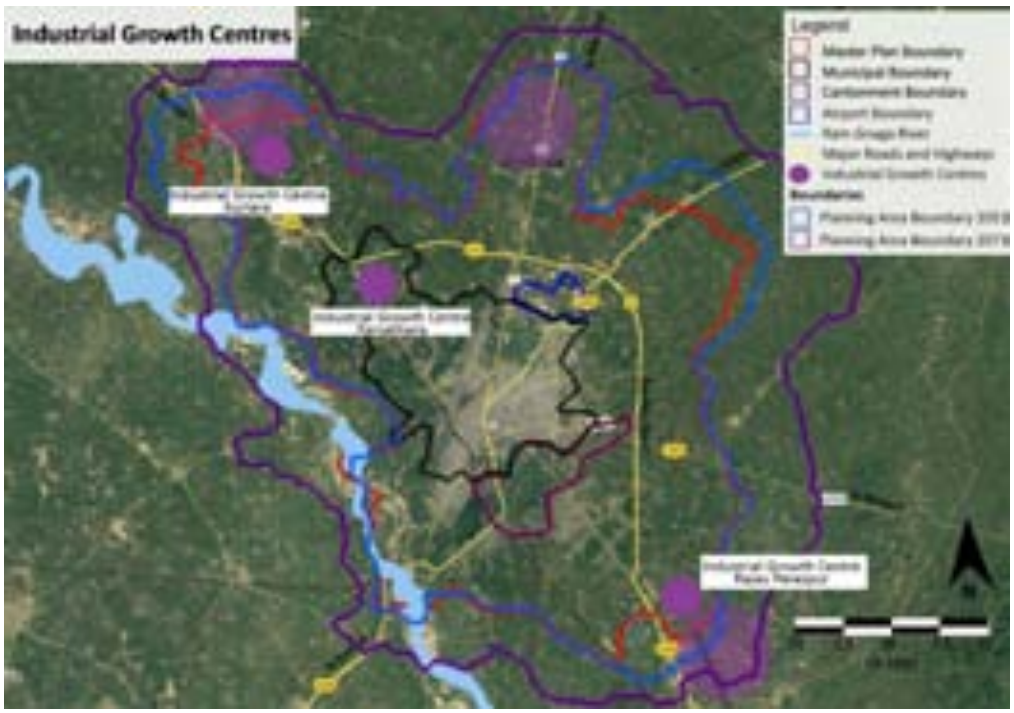


Figure 6: Proposed Industrial Growth Centers and Probable Industrial Areas of Future

Bareilly city has three UPSIDA industrial areas and one private industrial area which is near Invertis University on Lucknow Road. As per the demand assessment, three industrial areas are proposed. The first industrial area is proposed of area 50 hectares as an extension of the already existing Paraskhera Industrial area which is currently the major industrial area of Bareilly city. The second industrial area is also on Rampur/Delhi Road and lies near village Kurtara. It is proposed to cover 100 hectares of area. The third industrial area is proposed as an up-gradation and extension of the already existing private industrial area on Lucknow Road on an area of 100 hectares. Paraskhera industrial growth center is proposed in short term, Rajau Paraspur in the medium-term, and Kurtara in the long-term time frame.

In addition to these industrial zones, potential sites for industrial growth are also analyzed and displayed on the map above. It is anticipated that these areas would expand as an addition to the current or prospective industrial areas.

2.8.3 Proposed Industrial Typology

The city's identity originally rested on its small-scale industries of bamboo craft and zari zardozi, but these are now fast disappearing. Therefore, it is suggested that MSME households be increased. In

Bareilly, small and medium-sized businesses that produce goods based on agriculture, chemicals, plastics, and other materials predominate. The main drivers of the economy in Bareilly are small and medium-sized businesses. Therefore, it is suggested to support small and medium-sized companies, for which space is designated under the Draft Master Plan 2031 and the necessary infrastructure is anticipated to be put in place during the project's medium-term time frame. According to the current situational study and demand assessment, there is no significant demand for large-scale industries.

2.8.4 Master Plan 2031

2.8.4.1 Proposed Industrial Zone

In Draft Master Plan 2031, major industrial land use is proposed on Rampur/Delhi Road along the main highway near or as an extension to Paraskhera Industrial area. Another industrial area is Bhojipura industrial area on Nainital road which is an already existing industrial area, one major industrial land use is on Lucknow Road adjacent to Bye pass road and Lucknow Road junction.

2.8.5 Projected Industrial Land Demand

Table 9: Projected Industrial Landuse Demand

Year	Projected Population	Total Master Plan Area (Ha)	Proposed Percentage (Ha)	Required Commercial Area (Ha)	Additional Area Required additional to Master Plan 2031 (Ha)
2031	1949012	22815.76	8.8 (in Draft Master Plan 2031)	2008.76	0
2041	2422433	25499.25	12	3059.91	1051.15
2051	2894499	30468.41	15	4570.26	2561.50
2061	30,29,478	31889.24	15	4,783.39	2,774.63
2071	37,02,015	38968.58	15	5,845.29	3,836.53

8.8% of the overall Master Plan area, or 2008.76 hectares, has been allotted in the Draft Master Plan 2031. The city will need more land by 2041 for propelling industrial landuse at 12 percent, which will require an additional area of 1051.15 hectares. More industries will be needed to boost the economy and provide more employment opportunities, therefore from the year 2051, a 15% industrial landuse is recommended, requiring 2561.50 hectares of additional land. For the horizon year 2071, an area of 3836.53 hectares will be required in addition to the allocation in the Draft Master Plan for 2031, for a total of 5845.29 hectares.

2.8.6 Enabling Industrial Infrastructure

2.8.6.1 Raw Material Availability

Bareilly's industries produce a wide variety of commodities. For agro-based products, some industries obtain their raw materials from local agricultural products, while other large-scale industries, such as BL Agro, etc., import them from different regions of the nation. Raw materials for the bamboo and cotton industries are sourced locally or imported from other regions of the state or India. Similar to this, different industries in Bareilly obtain raw materials from various sources according to availability and demand. The proposed agro-based food processing and packaging industry is anticipated to obtain the necessary raw materials from the surrounding region and other parts of the nation following to their respective needs.

2.8.6.2 Waste Disposal

Proposed industrial areas will include a standard effluent treatment facility to dispose of the hazardous industrial waste in a suitable way. Currently, there is a problem of untapped drains flowing without bar mesh and discharging waste directly. So, it is also suggested to tap these drains in compliance with the environmental norms to avoid environmental degradation. Some private businesses in Bareilly are also working towards rubbish collection and recycling, and Bareilly Municipal Corporation is in charge of providing waste management services inside the municipal boundaries.

2.8.6.3 Logistics and Transportation

Industries require logistics support to facilitate the transfer of finished goods and raw materials. Currently, Transport Nagar on Lucknow Road is the major facility for logistics support which lies opposite the Paraskhera industrial area. An Integrated Freight Center in Faridpur for the Lucknow Road Industrial area and a Multi-Modal Logistics Hub close to Kurtara are proposed in order to assist the currently existing and newly projected industrial areas on Delhi Road and ensure efficient movement of goods and products. The area of the proposed Multi-Modal Logistics Hub and proposed Integrated Freight Centre will be approximately 35 ha each.

2.8.6.4 Common Facility Centers

A common facility center for Bamboo products and one for readymade garments is been set up in Bareilly recently to provide sill development and required infrastructure. As per the policy, CFC should provide the following facilities:

- Testing Lab
- Design Development and Training Center
- Technology Research and Development Center
- Product Demonstration cum Sale Center
- Raw-Material Banks/Common Resources Center
- Common Production/Processing Center
- Common Logistics Center
- Information collection, analysis, and broadcasting Center
- Packaging, Labelling, and Barcoding Facilities

2.8.6.5 Other Infrastructure

There is a lack of physical and road infrastructure in all the existing industrial areas, especially the privately set-up Lucknow rod industrial area. Providing enabling infrastructure will motivate the investors to set up new industries and will also positively affect the existing industries.

2.9 Commercial Zone analysis

2.9.1 Proposed Main Commercial Areas

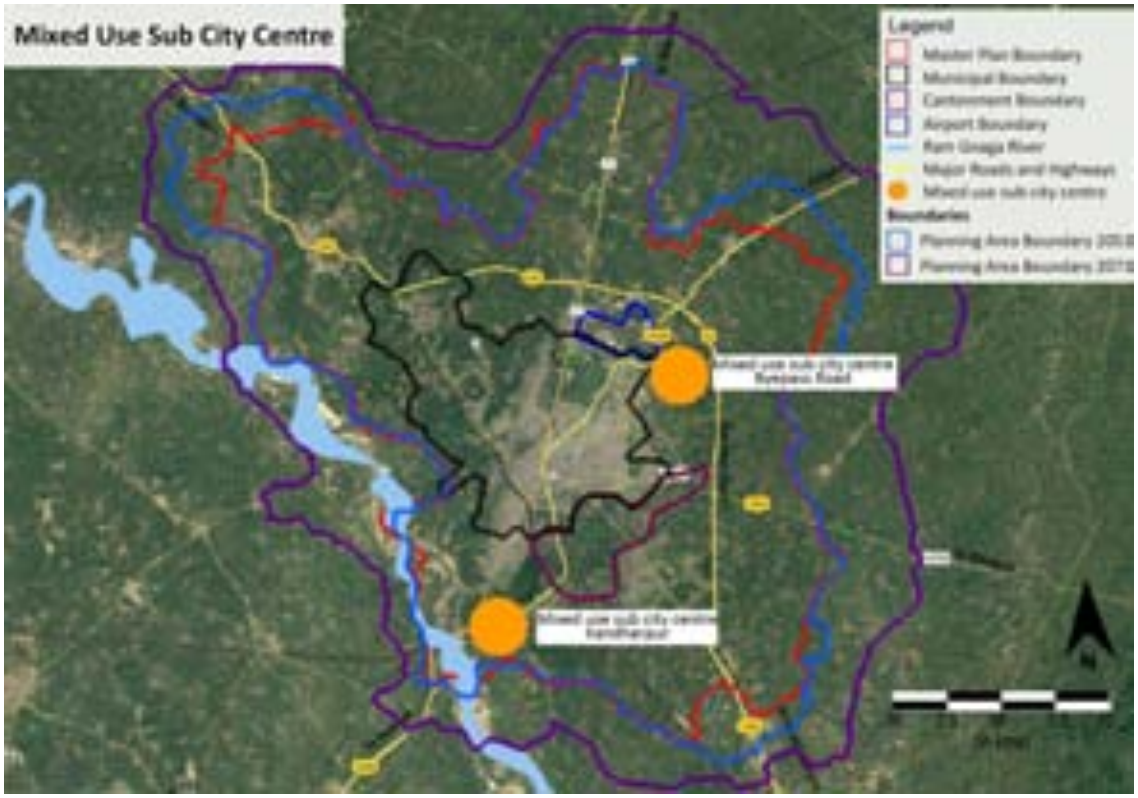


Figure 7: Proposed Mixed Landuse Sub-City

Existing commercial landuse of Bareilly city is 3.3 percent of the existing landuse in the year 2020. The core area which has major traffic and congestion problems and is densely populated currently serves as the major commercial area.

To curb these issues city needs commercial counter magnets to decongest the core area and reduce city's commercial dependency on the area. Bareilly city needs intervention in form of major commercial areas. To cater to this need of Bareilly city two mixed land sub-city one on Bye Pass near Airport and other near Kandharpur on Badaun road are proposed.

Additionally, physical and social infrastructure is the backbone of any residential area along with commercial areas which cater to the daily needs of the residents. Commercial pockets are suggested in the designated residential zones to meet the needs.

Major commercial areas proposed in residential nodes are:

1. Ghanghoria Piparia on Nanital Road
2. Nekpur Commercial area
3. Kargaina Commercial area on Aligarh Road
4. Tehtajpur Commercial area on Lucknow Road

In addition to these commercial areas, it is anticipated that commercial areas will expand near or around potential residential areas to accommodate the anticipated population growth.

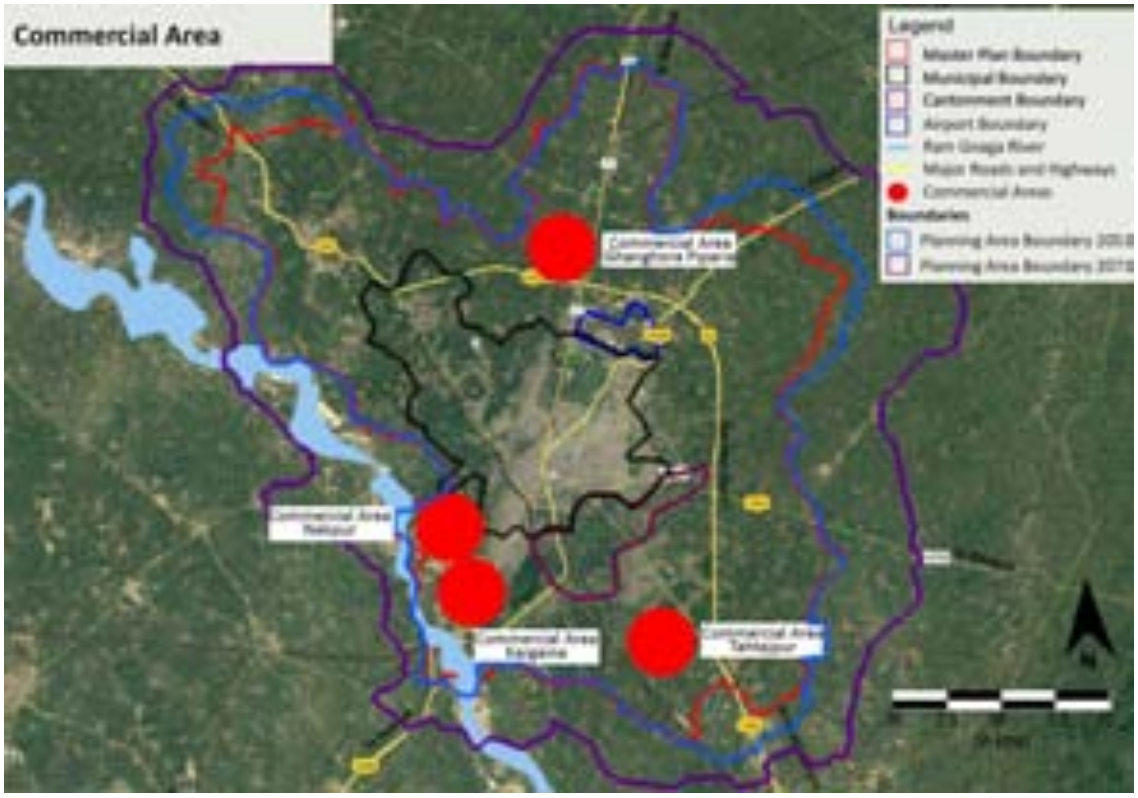


Figure 8: Proposed Commercial Areas within Residential Housing Nodes

2.9.2 Proposed Commercial Zone Typology

Commercial areas in mixed-use sub-city will be developed as retail markets but will a part of these sub-cities will be kept reserved for wholesale markets which will be developed in a phased manner starting from acting as a counter magnet to the wholesale markets in the core area. The proposed commercial spaces in the residential housing nodes/zones will mostly consist of planned commercial pockets which will offer retail spaces including complexes, showrooms, and offices.

2.9.3 Projected Commercial Land Demand

Table 10: Projected Commercial Landuse Demand

Year	Projected Population	Total Master Plan Area (Ha)	Proposed Percentage (Ha)	Commercial Area (Ha)	Additional Area additional to Master Plan 2031 (Ha)
2031	1949012	22815.76	4	912.63	0
2041	2422433	25499.25	4	1019.97	107.33
2051	2894499	30468.41	4	1218.73	306.10
2061	30,29,478	31889.24	4	1275.56	362.93
2071	37,02,015	38968.58	4	1558.74	646.11

In addition to the area currently designated for commercial land use in the Draft Master Plan 2031, the additional land requirement for commercial space is 306.10 ha for the year 2051 and 646.11 collectively for the year 2071. The required land for commercial landuse for 2071 is 1558.74 ha.

2.10 Social Infrastructure

2.10.1 Projected Land Demand for Public and Semi-Public Area

Table 11: Projected Public and Semi-Public Landuse Demand

Year	Projected Population	Total Master Plan Area (Ha)	Proposed Percentage (Ha)	Required Public and Semi-Public Area (Ha)	Additional Area Required apart from Master Plan 2031 (Ha)
2031	1949012	22815.76	10	2281.57	0
2041	2422433	25499.25	10	2549.92	268.34
2051	2894499	30468.41	10	3046.84	765.26
2061	30,29,478	31889.24	10	3188.92	907.34
2071	37,02,015	38968.58	10	3896.85	1615.28

In addition to the area currently designated for public and semi-public landuse in the Draft Master Plan 2031, the projected land demand for public and semi-public landuse is 3046.84 hectares for the year 2051 and 3896.85 hectares for the year horizon year 2071. This will require additional 765.26 hectares of land in 2051 and 1615.28 hectares of land in 2071.

2.10.2 Education sector

2.10.2.1 Demand assessment of education facilities

URDPFI 2014 guideline is used for the demand assessment of the education sector as following.

Table 12: URDPFI 2014 guidelines for educational facilities

S.N.	Category	Population served per unit	Area requirement
1	Pre-Primary, Nursery School	2500	0.08 ha
2	Primary School (class I to V)	5000	0.40 Ha
3	Senior Secondary School (VI to XII)	7500	1.80 Ha
4	Integrated School without hostel facility (Class I- XII)	90,000 – 1 lakh	3.50 Ha
5	Integrated School with hostel facility (Class I-XII)	90,000 – 1 lakh	3.90 Ha
6	School for Physically Challenged	45,000	0.70 Ha
7	School for Mentally Challenged	10 lakhs	0.20 Ha
8	College	1.25 lakh	5.00 Ha
9	University Campus		10-60 Ha
10	Technical Education Centre (A) – To include 1 Industrial Training Institute (ITI) and 1 Polytechnic	10 lakhs	4.00 Ha
11	Technical Education Centre (B) – To include 1 ITI, 1 Technical Centre and 1 Coaching Centre	10 lakhs	4.00 Ha
12	Engineering College	10 lakhs	6.00 Ha
13	Other Professional Colleges	10 Lakh	2.00 Ha
14	Nursing and Paramedical Institute	10 lakhs	2000 sqm

As per URDPFI Guidelines, the present gap and requirement in upcoming years for educational facilities in the Bareilly District is as follows:

Table 13: Demand Assessment of Education Facilities

SN	Education facility Category	Norm	Existing gap			Projected Demand					
		URDPFI	Existing	Demand	Gap	Required in 2031	2031	2041	2051	2061	2071
	Population	-	-	1556033	-	-	1894211	2623989	3451401	4586103	6188168
1	Pre-Primary, Nursing School	2,500	467	622	155	758	291	403	530	704	950
2	Primary School (I to V)	5,000	278	311	33	379	101	140	184	244	329
3	Senior Secondary School (VI to XII)	7,500	72	207	135	253	181	250	329	437	590
4	Integrated School without Hostel	90,000 - 01 lakh	0	17	17	21	21	29	38	51	69
5	Integrated School with Hostel	90,000 - 01 lakh	0	17	17	21	21	29	38	51	69
6	School for Physically Challenged	45,000	0	35	35	42	42	58	77	102	138
7	College	1,25,000	0	12	12	15	15	21	28	37	50
8	Technical Education Centre (A)	10,00,000	1	2	1	2	1	1	2	2	3
9	Technical Education Centre (B)	10,00,000	1	2	1	2	1	1	2	2	3
10	Medical College	10,00,000	3	2	-	2	-1		0	0	0
11	Engineering College	10,00,000	11	2	-	2	-9		0	0	0
12	Other Professional Colleges	10,00,000	21	2	-	2	-19		0	0	0
13	Nursing and Paramedical Institute	10,00,000	1	2	1	2	1	1	2	2	3

Current Demand:

As per URDPFI guideline 2014, the number of pre-primary schools required in the Bareilly District is 362. Similarly, there are requirement of educational facilities like 181 primary school, 121 secondary school, 1 Medical College, 1 Engineering College, 1 other Professional Colleges, I.T.I.s & Polytechnic colleges. There are requirements of more secondary/ senior secondary school as indicated in the table above.

As per master plan 2031, till 2031, there will be a requirement of 77 schools, 107enter colleges. In similar manner, the demand for the subsequent years, i.e. 2041, 2051, 2061 and 2071 is projected and presented in the above table.

2.10.3 Demand assessment of teachers / faculties in educational facilities

Pupil Teacher Ratio

The Pupil Teacher Ratio is the number of teachers relative to the number of pupils in a particular school. In other words, it is the number of students who attend a school or university divided by the number of teachers in the institution.

Norm for Pupil Teacher Ratio

According to the Right to Education Act, the norm for pupil-teacher ratio (PTR) is:

- 30:1 for grade 1 to grade 5 (primary) and
- 35:1 for grade 6 to grade 8 (middle school/upper primary).
- 43:1 for secondary school
- 47:1 for senior secondary schools

As per Unified District Information System for Education (UDISE) the PTR at national level is:

- 24:1 for elementary schools and
- 27:1 for secondary schools

As per AICTE guidelines desirable PTR used for NIRF (institute level) is:

- 1:10 and minimum is 1:15

As per UGC, the faculty student ratio for institutions and university should not be less than

- 1:10

Exiting situation Bareilly:

Table 14: Demand Assessment of teachers/ faculties in education facilities

Pupil Teacher Ratio (2019 – 20)	Norm	Existing	Remarks on demand
At Pre – Primary Level	30	28.43	Coherent to the norm
At Primary Level	35	29.87	Coherent to the norm
At Secondary Level	47	61.2	Ratio of 47 is required at secondary level for projected demands/ population of 2031, 2041, 2051, 2061 & 2071.

Source – District wise Development Indicators 2020 Economics and Statistics Division State Planning Institute Planning Department, Uttar Pradesh,
URL - http://updes.up.nic.in/esd/reports/district%20indicators%202020.pdf

As per Right to Education Act, the PTR required at Primary Level education is 30. However, Bareilly district has good PTR, signifying that there are sufficient faculties at Primary Level Education, upper primary level.
At the secondary education level, the PTR should be 43 but the district has PTR 61.2 which is quite high, and this high ratio signifies that there are a smaller number of teachers at the Secondary Level of Education indicating the requirement of more teachers at this level of education.

2.10.4 Health sector

2.10.4.1 Demand assessment of health facilities

URDPFI guidelines for health facilities

The size of a hospital depends upon the hospital bed requirement, which in turn is a function of the size of the population it serves. As per the Indian Public Health Standards (IPHS), 2012, the calculation of number of beds is based on-

- annual rate of admission as 1 per 50 population
- average length of stay in a hospital as 5 days

Table 15: Classification of health facilities

S.N.	Category	Population served per unit	Area requirement
1	Dispensary	15000	0.12 Ha
2	Nursing home, child welfare and maternity center	45000 to 1 lakh	0.20 to 0.30 Ha
3	Polyclinic	1 lakh	0.20 to 0.30 Ha
4	Intermediate Hospital (Category A)	1 lakh	1.00 Ha
5	Intermediate Hospital (Category B)	1 lakh	3.70 Ha
6	Multi-Specialty Hospital	1 lakh	9.00 Ha
7	Specialty Hospital	1 lakh	3.70 Ha
8	General Hospital	2.5 lakh	6.00 Ha
9	Family Welfare Centre	50,000	500 sqm-800 sqm
10	Diagnostic center	50,000	500 sqm-800 sqm
11	Veterinary Hospital for pets and animals	5 lakhs	2000 sqm
12	Dispensary for pet animals and birds	1 lakh	300 sqm

The Department of Health and Family welfare suggests incorporation of Trauma Centers in the highways cutting across urban local authority jurisdiction. As per URDPFI Guidelines, the number of Health facilities required in the Bareilly District is as follows:

Table 16: Demand Assessment of health facilities

S. No	Health Facilities Category	Norm	Current Demand (2021)			Projected Demand					
		URDPFI	Existing	Demand	Gap	Required 2031	2031	2041	2051	2061	2071
	Population	-	-	1556033	-	-	1894211	2623989	3451401	4586103	5188168
1	Dispensary	15000	44	104	60	126	82	114	150	199	269
2	Nursing Home	45000 to 01 lakh	29	35	6	42	13	18	24	32	43
3	child welfare and maternity center	45000 to 01 lakh	15	35	20	42	27	38	49	66	89
4	Polyclinic	100000	-	16	-	42	42	58	77	102	137
5	Intermediate Hospital (Category A)	100000	14	16	2	19	5	7	9	12	16
6	Multi - Specialty Hospital	100000	9	16	7	19	10	14	18	24	32
7	Specialty Hospital	100000	-			19	19	26	35	46	62
8	General Hospital	250000	7	6	-	8	1	1	1	1	2
9	Family Welfare Centre	50,000	29	31	2	38	9	12	16	22	29
10	Diagnostic Center	50,000	-	31		38	38	53	69	92	124
11	Veterinary Hospital for pets and animals	500000	13	3	-	4	4	6	7	10	13
12	Dispensary for pets and animals	100000	-	16	-	19	19	26	35	46	62

Source –

1) Consultant analysis

2) District wise Development Indicators 2020 Economics and Statistics Division State Planning Institute Planning Department, Uttar Pradesh,
URL - http://updes.up.nic.in/esd/reports/district%20indicators%202020.pdf

At present, Bareilly city has 7 general hospital, 9 multi – specialty hospital, 14 intermediate hospitals and 13 veterinary Hospital for pet and animals whereas as per URDPFI norms up to 2031, there will be requirements of additional 5 multi – specialty hospitals, 14 specialty hospitals. On similar lines, the demand for the subsequent years, i.e., 2041, 2051, 2061 and 2071 is projected and presented in the above table.

Chapter 3. Urban Regeneration

3.1 Vision – Developing Nath Temple Circuit

3.1.1 Project – Development of Spiritual Tourism by Creating Religious Circuit of All Seven Nath Temples

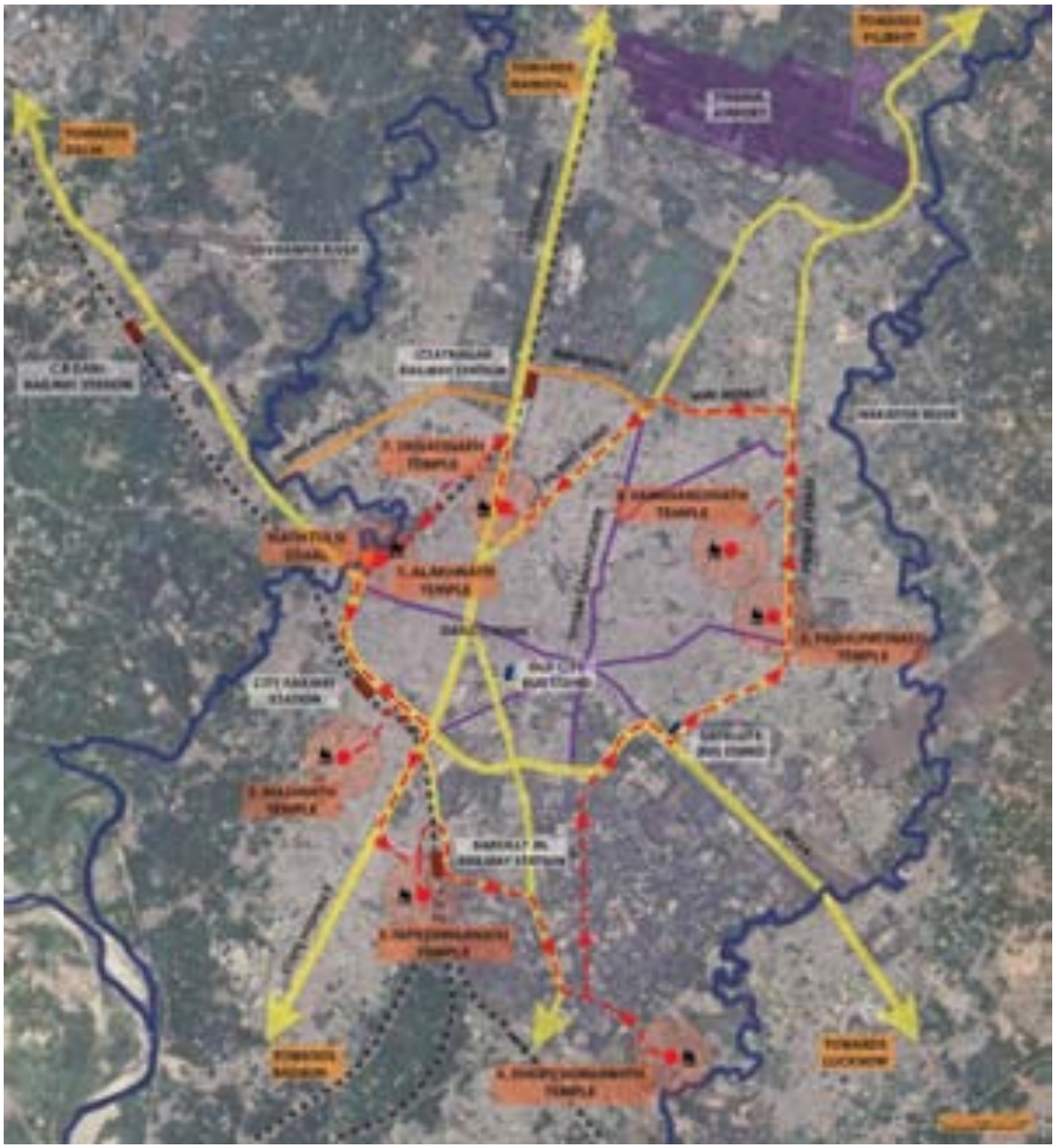


Figure 9: Nath Temple Complex

(Source: Consultant Analysis)

Project Significance:

A dedicated Nath Temple circuit becomes essential due to following factors:

- To restore city's cultural value and enhance the urban character of their precincts.
- To enhance the Tourism Potential of the City.

- To provide public amenities like parking space, washrooms, etc. along the circuit will offer convenience to the visitors.

Area of Intervention:

Identified pilgrimage route as marked in the map showcases formation of a circuit connecting all the Nath temples.

Alakhnath Temple to Madinath Temple - 4.2 Km
Madinath Temple to Tapeshwarnath Temple - 2.8 Km
Tapeshwarnath Temple to Dhopeshwarnath Temple - 5.4 Km
Dhopeshwarnath Temple to Pashupatinath Temple - 6.6 Km
Pashupatinath Temple to Vankhandinath Temple - 2.7 Km
Vankhandinath Temple to Trivatinath Temple - 5.3 Km
Trivatinath Temple to Alakhnath Temple - 3.2 km

Total Length of Nath Nagri Circuit to be developed - 30.2 Km

Project Demand:

In order to revive the city's identity as Nath Nagri, it is essential to define a road network that seamlessly connects the Nath temple circuit by means of public and private transport. The loss of imageability of all Nath temples due to the expansion of city fabric has also led to the demand for restructuring the road network in order to establish better connectivity. Thus, the project aims to create a designated circuit/corridor that will not only offer the visitors ease of access to the temple complexes but will also establish the required urban character and spiritual identity in all the precincts. Another significant spiritual place in the city is the Math Tulsi Sthal near Alakhnath temple which has also lost its presence and identity over a period of time due to inappropriate accessibility and lack of identity markers. In the Stakeholder meeting, the city officials also suggested integrating the Math Tulsi Sthal to the Nath corridor due to its historic and spiritual significance. The development of Nath temple circuit is an essential development which intends to initiate more tourist influx from within the city and the region.

Key Interventions & Design Components:

Title of the Project: Nath Temple Circuit improvement & beautification				
S.No.	**Components**	**Items**	**Description**	**Estimated Quantity***
A	**Pedestrian/ cycle pathway**			
A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc	One-way pedestrian path 1.2m each (150mm high)	Length of Road = 30.2 km Area of footpath: As per the design scheme

A.2	Multi-utility zone	Vegetation strips, parking bays (using pavers/ rubberized paint), curbstone, concrete	MUZ underneath Flyover/ available spaces along the stretch, 150mm high. To be facilitated with parallel parking bays, vegetation strips, signage, canopies, vending zones, IPT and cycle stands.	Length of Road = 30.2 km Area of MUZ: As per the design scheme
B	**Lighting**			
B.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c	As per the design scheme
B.2	Two-way street light	Light posts and two-way lights	To be used along the median @30m c/c	As per the design scheme
B.3	Ornamental lights		Ornamental/ theme-based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
C	**Public Amenities**			
C.1	Bus stops		Existing ones to be renovated/ replaced and new ones to be planted along the MUZ as per the bus transit program	Quantity to be devised as per design
C.2	IPT/ NMV stands		To be paced along the MUZ or plazas & at major intersections	Quantity to be devised as per design
D	**Signage**			
D.1	Signage on road	For vehicular legibility (metal signage) For pedestrian way finding (metal/ stone signage)	Signage to be placed at parking bays, intersections, public nodes, plazas, public toilets, bus stops and other IPT/public transit stops, heritage precincts, critical street geometries, curves etc if any.	Signage to be placed along the 30.2 Km stretch. Quantity to be finalized as per detail design program.

Key Interventions & Design Components:

3.1.2 Project – Urban Renewal of All Nath Temple Precincts by Defining Entrance Gateways, Corridors and Enhancing the Public Infrastructure

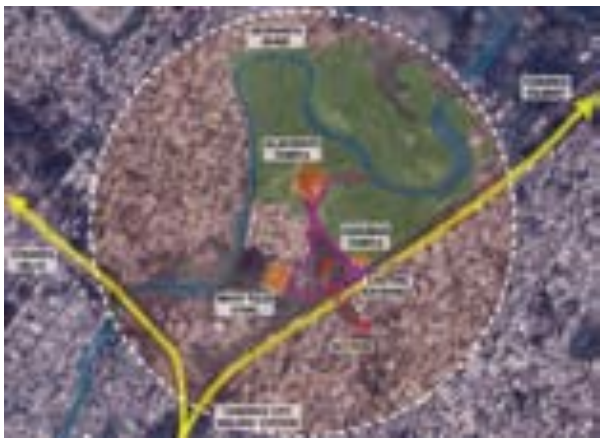


Figure 11: Alakhnath Temple Precinct
(Source: Consultant Analysis)

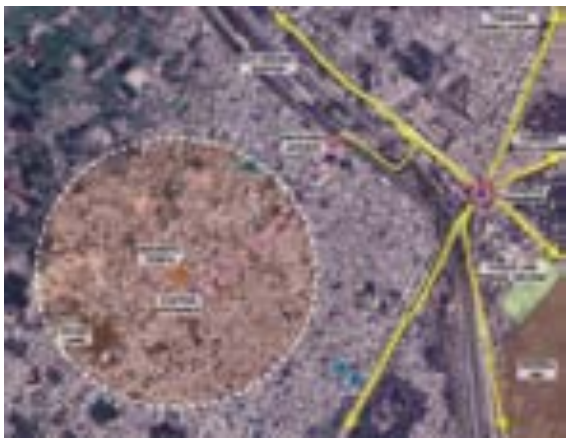


Figure 12: Madinath Temple Precinct
(Source: Consultant Analysis)

Figure 10: Tapeshwar Nath Temple Precinct
(Source: Consultant Analysis)

Figure 13:Dhopeshwar Nath Temple Precinct
(Source: Consultant Analysis)

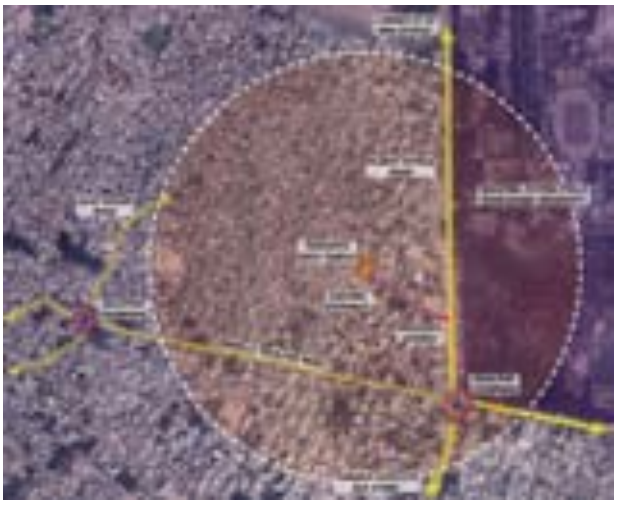


Figure 15: Pashupati Nath Temple Precinct
(Source: Consultant Analysis)

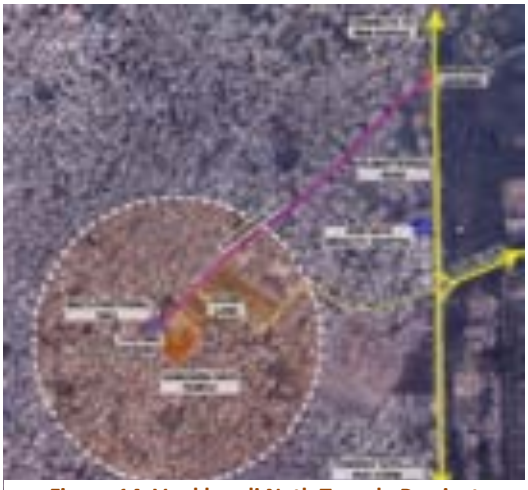


Figure 14: Vankhandi Nath Temple Precinct
(Source: Consultant Analysis)

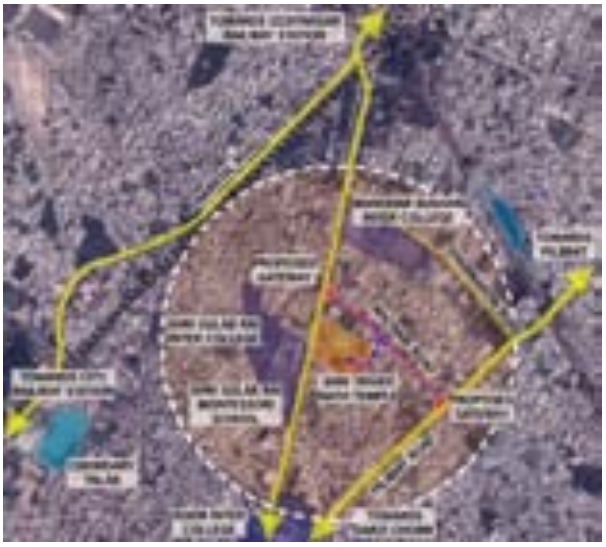


Figure 16: Trivati Nath Temple Precinct
(Source: Consultant Analysis)

Project Significance:

1. The revival of these religious precincts becomes essential to restore city's cultural value.
2. Establishing identity markers/ entrance gateways and development of corridor leading to the religious places will enhance the urban character of their precincts.
3. Provisions of public amenities like parking space, washrooms, etc. will not only offer convenience to the visitors but will also create a better user experience.
4. Development of temple precincts will help in reclaiming the lost identity of all Nath temples and conserving the city's cultural value.
5. The intervention envisions initiating more tourism influx to the city, which will further contribute to the city's economy.

Area of Intervention:

For all Nath Temples, the area of intervention will be the approach road to the temple & the temple precinct itself.

Approach road size for all temples:

Alakhnath Temple - 100m
Madinath Temple - 750m
Tapeshwarnath Temple - 400m
Dhopeshwarnath Temple - 250m
Pashupatinath Temple - 250m
Vankhandinath Temple - 1000m
Trivatinath Temple - 450m

Project Demand:

Considering the historical and spiritual value of the seven Nath temples and their precinct, they hold a great potential for urban regeneration. As per the data collected during stakeholder consultations, it is noted that each temple witnesses the footfall of 2500 to 10,000 people per day during the Sawan month. The highest visitor influx of people that varies from 50,000 to 1,00,000 is observed at each temple on Mondays of Sawan month & on the day of Maha Shivratri as well.

The lack of infrastructure at the temple complexes seeks urban renewal of their precincts in order to cater the high tourist influx. Development of symbolic identity markers is required to define approach and establish their presence in the context. Identifying a corridor that leads to the temple is crucial to revive its connectivity, exhibit urban character and redefine sense of place. The need for public amenities/ convenience along the corridor has also emerged in the precinct to support the high pilgrim footfall, which is found to be missing at most of the sites. The urban renewal of all the Nath temple precincts will be a significant value addition to the city's social infrastructure & will enhance the economic potential of Bareilly.

Key Interventions & Design Components:

Title of the Project: Nath Temple Facility improvement & beautification				
S.No.	**Components**	**Items**	**Description**	**Estimated Quantity***
A	**Pedestrian/ cycle pathway**			
A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc	Two-way pedestrian path of width 2m on both sides (150mm high)	Total Length of approach roads to temple precincts 3200 m x 2 = 6400m Area of footpath: 6400m x 2m= 12800 sq.m
B	**Lighting**			
B.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c	710 Street lights
B.2	Ornamental lights		Ornamental/ theme-based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
C	**Street Furniture**			
C.1	Seating	Stone/ concrete seating	600x1800mm stone/ concrete seating to be placed along the road at defined places	Quantity to be calculated as per the design.

C.2	Dustbins		Dry and wet waste segregation bins to be used on both sides of the street every 200m along the street.	Along the street - 3200m Dustbins required 3200/200= 16
D	**Public Amenities**			
D.1	Drinking water	Water ATMs/ fountains	One water ATM at every 500 m (preferably under the flyover) with barrier free connectivity across the street.	9 Drinking water facilities (Min. 1 at every temple precinct)
D.2	Public conveniences (Toilets)		One toilet block (comprising of male, female and physically challenged toilet) at every 500m of the streets (preferably along the nodes and plazas) with barrier free connectivity across the street.	7 toilet blocks (1 at every temple precinct)
D.3	IPT/ NMV stands		To be paced at the gateways	At 8 proposed Gateways
E	**Signage**			
E.1	Signage on road	For vehicular legibility (metal signage) For pedestrian way finding (metal/ stone signage)	Signage to be placed at parking bays, intersections, public nodes, plazas, public toilets, bus stops and other IPT/public transit stops, heritage precincts, critical street geometries, curves etc if any.	Quantity to be finalized as per detail design program.
E.2	Entrance Gateway		Entrance Gateway to be placed at the starting of every temple stretch as a market	8 proposed Gateways

3.2 Vision – Streetscape of City Core and Development of Dargah Precinct

3.2.1 Project – Streetscape of Market Street from Qila to Shyam Ganj Along with Urban Renewal of Dargah Precinct by Defining Entrance Gateways, Corridors and Enhancing the Public Infrastructure

Figure 17: Qila to Shyam ganj Road, Dargah e Aalahazrat and Khanqah e Niazia Precinct

(Source: Consultant Analysis)

Project Significance:

1. The project aims to define the character of the city market streets.
2. The core city roads shall be defined as internal streets that will be prioritized on cycle and pedestrian infrastructure.
3. The peripheral city streets will be developed as the outer loop where provisions for cycling, IPT, parking near intersections, cycle stands at regular intervals shall be given.
4. The revival of Dargah and Khanqah precincts becomes essential to restore city's cultural value.
5. Designating corridor leading to these religious places and defining its street character will elevate the essence of the precinct.
6. Establishing identity markers/ entrance gateways and development of public amenities like parking space, washrooms, etc. will offer convenience to visitors in terms of approach and user experience.

Area of Intervention:

Qila to Shyam Ganj Market Road:

Total Road Stretch of the Market – 3 Km

Width of road – Varies from 5 - 7 meters (ROW based on existing situation)

Biharipur Dhal Road to Dargah & Khanqah:

Total Road Stretch for redevelopment – 700 meters

Width of road – 3 meters (ROW based on existing situation)

Project Demand:

Situated in the dense city core, the Bada bazaar and Shyam Ganj market are the two major wholesale and retail hubs of the city which not only cater to the residents of Bareilly but also to the buyers/retailers/wholesalers from other cities as well. These streets act as an extended place for celebrating religious activities, fairs and Urs. Streets and shops are decorated, religious processions are carried and the markets become a hub of activity, celebration and festivity. Due to lack of organization in the street, segregated infrastructure for pedestrians/ Para transit and defined informal vending zones, this major commercial hub has lost its urban character. The street offers very less space for the pedestrians who are seen struggling with the IPT and market activities. Unorganized two and three-wheeler parking and loading unloading in the market street also hampers the pedestrian movement therein. The current scenario showcases a very mismanaged and disruptive image of the market street that is in a dire need of urban renewal.

Considering a spiritual value of such prestige, the Dargah-e-Ala-Hazrat and Khanqah e Niazia are two major public nodes in the dense fabric of the city. As per the data collected during stakeholder consultations, it is noted that Dargah witnesses the footfall of lakhs of people in the week of Urs, in which pilgrims from all over the country visit Bareilly. The highest visitor influx of around 5 lakh people is observed on the day of Urs.

The lack of infrastructure in the two spiritual places seeks urban renewal of their precincts in order to cater the high influx. Development of symbolic identity markers is required to define approach and establish their presence in the context. Identifying a corridor that leads to the Dargah/ Khanqah is crucial to exhibit its urban character and redefine the sense of place. The need for public amenities/ convenience along the corridor has also emerged in the precinct to support the high pilgrim influx. The urban renewal of the Dargah precinct will not only offer convenience to the high influx of pilgrims but will also ease out the movement through a systematic and organized approach.

Key Interventions & Design Components:

Title of the Project: Streetscape development of Qila to Shyam ganj along with Facility improvement & beautification of Dargah - e - Aala Hazrat				
S.No.	**Components**	**Items**	**Description**	**Estimated Quantity***
Stretch 1 - Qila to Shyam Ganj				
A	**Pedestrian/ cycle pathway**			

A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc	One-way pedestrian path 1.2m each (150mm high)	Length of footpath 3 x 2= 6km Area of footpath: 6000m x 1.2m= 7200 sq.m
B	**Lighting**			
B.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c	660 Street lights
B.2	Ornamental lights		Ornamental/ theme-based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
C	**Street Furniture**			
C.1	Seating	Stone/ concrete seating	600x1800mm stone/ concrete seating to be placed along the MUZ proposed under the flyover	Quantity to be calculated as per the MUZ and plaza design.
C.2	Dustbins		Dry and wet waste segregation bins to be used on both sides of the street every 200m along the street.	Along the street- 3000m x 2= 6000m Dustbins required 6000/200= 30
D	**Public Amenities**			
D.1	Drinking water	Water ATMs/ fountains	One water ATM at every 500 m (preferably under the flyover) with barrier free connectivity across the street.	12 Drinking water facilities
D.3	IPT/ NMV stands		To be paced at major intersections	Quantity to be devised as per design
E	**Signage**			

E.1	Signage on road	For vehicular legibility (metal signage) For pedestrian way finding (metal/ stone signage)	Signage to be placed at parking bays, intersections, public nodes, plazas, public toilets, bus stops and other IPT/public transit stops, heritage precincts, critical street geometries, curves etc if any.	Quantity to be finalized as per detail design program.
Stretch 2 - Biharipur Dhal Road to Dargah & Khanqah				
A	**Pedestrian/ cycle pathway**			
A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc	Developing the route as a Pedestrian pathway	Length of footpath 700 m Area of footpath: 700m x 3m= 2100 sq.m
B	**Lighting**			
B.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c	75 Street lights
B.2	Ornamental lights		Ornamental/ theme based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
C	**Street Furniture**			
C.1	Seating	Stone/ concrete seating	600x1800mm stone/ concrete seating to be placed along the road at defined places	Quantity to be calculated as per the design.
C.2	Dustbins		Dry and wet waste segregation bins to be used on both sides of the street every 200m along the street.	Along the street - 700m Dustbins required 700/200= 4
D	**Public Amenities**			

D.1	Drinking water	Water ATMs/ fountains	One water ATM at every 500 m (preferably under the flyover) with barrier free connectivity across the street.	2 Drinking water facilities
D.3	IPT/ NMV stands		To be paced at the gateways	At 2 proposed Gateways
E	**Signage**			

3.3 Vision – Promotion & Innovation of Craft Products – Kala Sanskriti

3.3.1 Project – Rejuvenation of Zari – Zardozi (Shyam Ganj Market) – One District One Product

Figure 18: Sailani Market Road

(Source: Consultant Analysis)

Project Significance:

1. The urban renewal of the road underneath the flyover will not only enhance the approach to the Sailani market street but will also address a prominent access point for the visitors/tourists.
2. The intervention will redefine the urban character of the whole market street and will also emphasize on the underlying market of Zari - Zardozi.
3. The project will initiate more influx to the market street and help in restoring the city's native craft.

Area of Intervention:
Shyam Ganj Flyover:
Total Road Stretch underneath Flyover for redevelopment – 100 meters
Width of road – 9 meters (ROW based on existing situation)

Sailani Road:
Total Road Stretch for redevelopment – 600 meters
Width of road – 7 meters (ROW based on existing situation)

Project Demand:
Being one of the oldest marketplaces for retail and wholesale of Zari – Zardozi, the Sailani market road inherits a very rich historic and craft value that marks its significance in the city. The dedicated market place of the city's native craft holds a great potential to cater the tourist/ visitor influx, thus raising the demand for its revival. The construction of Shyam ganj flyover has led to creation of dead spaces underneath the flyover, which portrays a dire need of streetscape intervention along with organized mobility infrastructure. This mobility infrastructure shall be further integrated with the city level Para-transit network, which will make the approach to the market convenient for the visitors and initiate more influx to the Sailani road. Considering the rich craft value of the street, Façade development guidelines are also required in order to establish its identity in the city.

Key Interventions & Design Components:

Title of the Project: Zari Zardozi Shyam Ganj and Sailani market façade development and streetscape				
S.No.	**Components**	**Items**	**Description**	**Estimated Quantity***
Stretch 1 - Road underneath Shyam Ganj Flyover				
A	**Pedestrian/ cycle pathway**			
A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc.	Two-way pedestrian path 1.2m each (150mm high)	Length of footpath 1 x 2= 2km Area of footpath: 2000m x 1.2m= 2400 sq.m
A.2	Cycle Track	Rubberized track, concrete, curbstone	One-way cycle track 1.5 m wide each, (100mm high)	Length of track 1 x 2= 2km Area of track: 2000m x 1.5m= 3000sq.m
A.3	Multi-utility zone	Vegetation strips, parking bays (using pavers/ rubberized paint), curbstone, concrete	MUZ underneath Flyover, 150mm high. To be facilitated with parallel parking bays, vegetation strips, signage, canopies, vending zones, IPT and cycle stands.	Length of flyover 1km Area under flyover: 1000m x 7m= 7000sq.m
B	**Lighting**			
B.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c	220 Street lights

B.2	Ornamental lights		Ornamental/ theme-based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
C	**Street Furniture**			
C.1	Seating	Stone/ concrete seating	600x1800mm stone/ concrete seating to be placed along the MUZ proposed under the flyover	Quantity to be calculated as per the MUZ and plaza design.
C.2	Dustbins		Dry and wet waste segregation bins to be used on both sides of the street every 200m along the street.	Along the street- 1000m x 2= 2000m Dustbins required 2000/200= 10
D	**Public Amenities**			
D.1	Drinking water	Water ATMs/ fountains	One water ATM at every 500 m (preferably under the flyover) with barrier free connectivity across the street.	2 Drinking water facilities
D.2	Bus stops		Existing ones to be renovated/ replaced and new ones to be planted along the MUZ as per the bus transit program	Quantity to be devised as per design
D.3	IPT/ NMV stands		To be paced along the MUZ or plazas & at major intersections	Quantity to be devised as per design
E	**Signage**			
E.1	Signage on road	For vehicular legibility (metal signage) For pedestrian way finding (metal/ stone signage)	Signage to be placed at parking bays, intersections, public nodes, plazas, public toilets, bus stops and other IPT/public transit stops, heritage precincts, critical	Quantity to be finalized as per detail design program.

			street geometries, curves etc. if any.	
Stretch 2 - Sailani Road				
A	**Pedestrian pathway**			
A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc.	Two-way pedestrian path 1.2m each (150mm high)	Length of footpath .6 x 2 = 1.2 km Area of footpath: 1200m x 1.2m= 1440 sq.m
B	**Lighting**			
B.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c	130 Street lights
B.2	Ornamental lights		Ornamental/ theme-based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
C	**Street Furniture**			
C.1	Seating	Stone/ concrete seating	600x1800mm stone/ concrete seating to be placed along the MUZ proposed under the flyover	Quantity to be devised as per design
C.2	Dustbins		Dry and wet waste segregation bins to be used on both sides of the street every 200m along the street.	Along the street- 600m x 2= 1200m Dustbins required 1200/200= 6
E	**Facade Development**			
E.1	Façade Development with defined signage (unified color and size of lettering)		Facade development of all the shops of Sailani market stretch along with defined signage on the shop fronts	Along the complete street length - 600m x 2= 1200m
F	**Signage**			

F.1	Signage on road	For vehicular legibility (metal signage) For pedestrian way finding (metal/ stone signage)	Signage to be placed at parking bays, intersections, public nodes, plazas, public toilets, bus stops and other IPT/public transit stops, heritage precincts, critical street geometries, curves etc. if any.	Quantity to be finalized as per detail design program.

3.4 Vision – A Place for Spiritual Tourism and Nature Retreat

3.4.1 Project – Ramganga Riverfront Development

Figure 19: Ramganga Ghat and Fair Ground

(Source: Consultant Analysis)

Project Significance:

1. Development of the riverfront will help in revival of the overall river edge and restoring its ecology as well.
2. Integration of the riverfront along with the fairground will result in rejuvenation of the overall precinct benefiting the pilgrims and city residents.
3. The provision of public amenities will add to the overall development and public convenience resulting in more pilgrim footfall.
4. The urban renewal of the existing ghat will eventually result in upliftment of the city social infrastructure.
5. Development of the Naturopathy Center will not only provide medical facilities to the city residents but will also escalate the level of medical infrastructure in the city.

6. The project is being proposed with an objective of providing people with therapeutic treatments, Ayurveda training, various medical programs, recreational activities with the Indian tradition of hospitality.

Project Demand:

Since the Ramganga River crosses in close proximity to Chaubari village, a major fair is organized annually at the banks of the river known as Chaubari fair. The fair takes place on the occasion of Kartik Purnima. As per the data collected during stakeholder consultations, this is one of the most significant fairs of the city that witnesses a visitor influx of more than 1,00,000 people. One of the biggest attractions of this fair is the horse market, where people from far off areas visit the city to buy or sell horses.

A fair after every 14 days is also organized on the river banks attracting tourists and pilgrims from all over the city. The river banks are flooded with people taking baths, performing religious activities and celebrating the festival.

The regular usage of ghat area by the pilgrims has resulted in its degradation over a period of time due to lack of public infrastructure and supporting facilities. Considering the present condition of the city's natural assets, the site seeks development of the riverfront along with provision of necessary public amenities to accommodate the visitor influx. Development of symbolic identity markers is required to define the approach and establish the presence of such an important natural asset in the city. Identification of a corridor that leads to the fairground is crucial to exhibit its urban character and redefine sense of place. The development of public amenities/ convenience along the ghat area is deemed essential to support the high pilgrim influx and use of all areas in a controlled manner.

Key Interventions & Design Components:

Title of the Project: Ramganga river front development at Chaubari fairground				
S.No.	**Components**	**Items**	**Description**	**Estimated Quantity***
A	**Pedestrian/ cycle pathway**			
A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc	Two-way pedestrian path of width 3m on the external periphery (150mm high)	Total Length of chaubari fairground periphery = 1200m Area of footpath: 1200m x 3m= 3600 sq.m
B	**Ghat Development**			

	Ghat Development at 450 m stretch of fairground	Dholpur stone flooring 5m x 5m Viewing decks placed at different levels and distributed over the entire ghat length RCC river embankment Lifeguard and first aid	The ghat will be designed in small unit prototype that can be replicated over the whole stretch Each unit size: 25m (L) x 12m (W)	Length of Ghat = 450m Area of Ghat = 450 x 12 = 5400 sq.m Total numbers of unite replicated = 450/25 i.e., 18
C	**Boating Deck**			
	Boating Deck on river edge	Boats and jetties Ticket counter Lifeguard and first aid		As per the design scheme
D	**Shading Canopies**			
	Shading Canopies			As per the design scheme
E	**Horse Stable**			
E.1	Permanent Horse Stable structure	A semi - open permanent metal frame horse stable structure		As per the design scheme
E.1	Space for additional Horse Stable	Demarking space/ field for setting up temporary horse stables during the Chaubari fair.		As per the design scheme
F	**Lighting**			
F.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c along periphery	130 Street lights
F.2	Ornamental lights		Ornamental/ theme-based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
G	**Street Furniture**			
G.1	Seating	Stone/ concrete seating	600x1800mm stone/ concrete seating to be placed along the road at defined places	Quantity to be calculated as per the design.
G.2	Dustbins		Dry and wet waste segregation bins to be used on both sides of the street every 200m along the street.	Quantity to be calculated as per the design.
H	**Public Amenities**			

H.1	Drinking water	Water ATMs/ fountains	One water ATM at every 500 m (preferably under the flyover) with barrier free connectivity across the street.	5 Drinking water facilities
H.2	Public conveniences (Toilets)		One toilet block (comprising of male, female, physically challenged toilet and changing rooms) at every 500m of the streets (preferably along the nodes and plazas) with barrier free connectivity across the street.	5 toilet blocks
H.3	IPT/ NMV stands		To be paced at the entrance gateways	At proposed Gateway
I	**Signage**			
I.1	Signage on road	For vehicular legibility (metal signage) For pedestrian way finding (metal/ stone signage)	Signage to be placed at parking bays, intersections, public nodes, plazas, public toilets, bus stops and other IPT/public transit stops, heritage precincts, critical street geometries, curves etc if any.	Quantity to be finalized as per detail design program.
I.2	Entrance Gateway		Entrance Gateway to be placed at the starting of every temple stretch as a market	1 proposed Gateway
J	**Naturopathy Centre**			
	Naturopathy Centre	Integrating Naturopathy Centre with City's Natural asset		As per the design scheme

3.4.2 Project – Nakatiya river front development into city level greens

Figure 20: Nakatiya River, Cantonment Area

(Source: Consultant Analysis)

Project Significance:

1. Development of the riverfront will help in revival of the overall river edge and restoring its ecology as well.
2. Integration of the river edge along with the available land parcel will result in rejuvenation of the overall precinct, creating an active green asset for the city residents.
3. The provision of public amenities will add to the overall development and public convenience.

Project Demand:

The leisure space infrastructure in Bareilly is a mix of heritage & modern buildings (malls, funcity) which tend to provide recreational activities to the city residents. The city lacks smaller scale open public spaces in the residential precinct that are accessible to people on a daily basis.

One of the two main rivers passing across the city, the edge condition of Nakatiya River remains redundant over the years. With no defined river edge, wetlands or ghats, the condition of riverine ecology has consequently depleted over the period of time, becoming a place for cattle herding.

In order to revive the whole riverine edge, a riverfront rejuvenation project will be needed that will include reclaiming the existing open green spaces along the river edge & developing them as active public greens thus establishing environmental resilience and improving the social infrastructure of the city.

Key Interventions & Design Components:

Title of the Project: Nakatiya river front development				
S.No.	**Components**	**Items**	**Description**	**Estimated Quantity***
A	**Pedestrian/ cycle pathway**			
A.1	Pedestrian path	Red and beige sandstone, concrete, tactile pavers, curbstone, bollards, etc	Two-way pedestrian path of width 2m on the external periphery (150mm high)	Total periphery of both land parcels = 900m Area of footpath: 900m x 2m = 1800 sq.m
D	**Shading Canopies**			
	Shading Canopies			As per the design scheme
F	**Lighting**			
F.1	Single arm Pedestrian Street lights	Light Post, Light	One light post @9m c/c along periphery	100 Street lights
F.2	Ornamental lights		Ornamental/ theme-based lights of varying heights and designs and to be used in the plazas, intersections and public nodes	As per the design scheme
G	**Street Furniture**			
G.1	Seating	Stone/ concrete seating	600x1800mm stone/ concrete seating to be placed along the road at defined places	Quantity to be calculated as per the design.
G.2	Dustbins		Dry and wet waste segregation bins to be used on both sides of the street every 200m along the street.	Quantity to be calculated as per the design.
H	**Public Amenities**			
H.1	Drinking water	Water ATMs/ fountains	One water ATM at every 500 m (preferably under the flyover) with barrier free connectivity across the street.	2 Drinking water facilities (1 at each ground)
H.2	Public conveniences (Toilets)		One toilet block (comprising of male, female and physically	2 toilet blocks (1 at each ground)

			challenged toilet) at every 500m of the streets (preferably along the nodes and plazas) with barrier free connectivity across the street.	
H.3	IPT/ NMV stands		To be paced at the entrance gateways	At proposed Gateway
I	**Signage**			
I.1	Signage on road	For vehicular legibility (metal signage) For pedestrian way finding (metal/ stone signage)	Signage to be placed at parking bays, intersections, public nodes, plazas, public toilets, bus stops and other IPT/public transit stops, heritage precincts, critical street geometries, curves etc. if any.	Quantity to be finalized as per detail design program.
I.2	Entrance Gateway		Entrance Gateway to be placed at the starting of every temple stretch as a market	2 proposed Gateway (1 at each ground)

3.5 Vision – City level infrastructure Development

3.5.1 Project – Aero-city integrated office complex near Airport development

Figure 21: Ramganga Ghat and Fair Ground

(Source: Consultant Analysis)

Project Significance:

1. Development of Aero-city by allocating a land parcel near the city airport for mixed use development to foster new growth opportunities for Bareilly.
2. Development of the allocated land parcel featuring state-of-the-art Retail centers, offices, hotels and convention centers will result in city's economic growth and generate new employment for the city residents.
3. The proposal will also act as a gateway to the city.

Project Demand

Bareilly is listed as one of the nine counter magnets of the National Capital Region which can be developed as the economic growth centre. Trade and commerce are one of the important sectors which can amplify the economy of the city. As per draft master plan 2031, the existing landuse of the commercial area is found to be 3.31 percent against the URDPFI guidelines of 4-6 percent. Lack of commercial space is also outlined by stakeholders such as Bareilly Vyapar Mandal, etc. Bareilly city needs commercial area as given below:

Year	Projected Population	Total Master Plan Area (Ha)	Proposed Percentage (Ha)	Commercial Area (Ha)	Additional Area additional to Master Plan 2031 (Ha)
2031	1949012	22815.76	4	912.63	0
2041	2422433	25499.25	4	1019.97	107.33
2051	2894499	30468.41	4	1218.73	306.10
2061	30,29,478	31889.24	4	1275.56	362.93
2071	37,02,015	38968.58	4	1558.74	646.11

Chapter 4.Heritage and Tourism

4.1 Vision – Developing Nath Temple Circuit

4.1.1 Vision Planning

At present the city of Bareilly is recognized as gateway to Kumaon Hills, but unfortunately has not been part of any tourist circuits of State. The Vision is to develop Bareilly as tourism destination by identification of the cultural and natural heritage, conservation and heritage sensitive development of the diverse Cultural Heritage Resource of the city and its nearby areas, developing infrastructure facilities for the tourists and local community aligning with the vision of Sustainable Development Goals 2030 adapted by the state of Uttar Pradesh.

Bouquet of Projects

4.2 Project 1: Ahichchhatra – Tourism Infrastructure Upgradation of ASI Site in consultation with ASI and UP Tourism Regional Managers

Background:

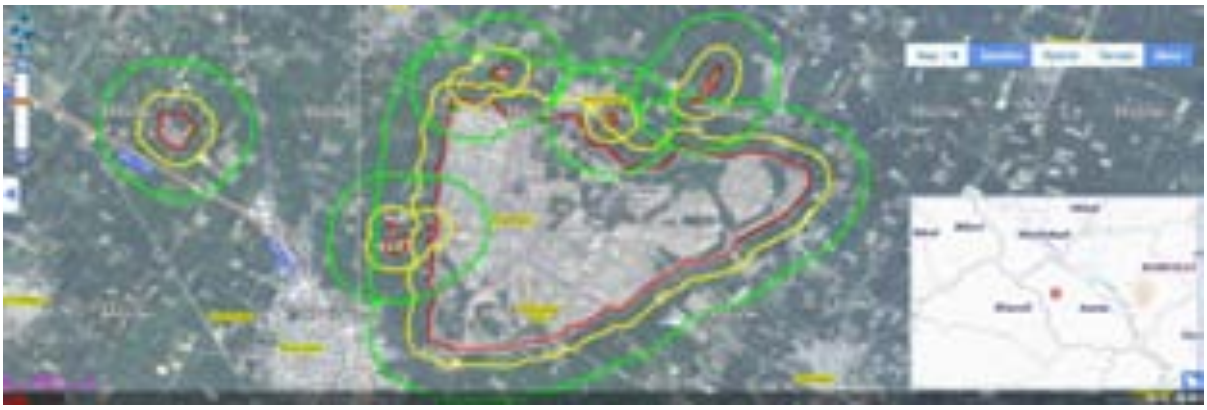
From archaeological point of view the district of Bareilly is very rich. The extensive remains of Ahichchhatra, the Capital town of Northern Panchala have been discovered near Ramnagar village of Aonla Tehsil in the district. The site of Ahichchatragarh was briefly explored by Sir Alexander Cunningham in 1871, and then excavated by the ASI from 1940 for "about five years". The excavations found brick fortifications and continuity of occupation from a period before 600 BCE to 1100 CE. It was during the first excavations at Ahichchhatra (1940–44) that the painted grey ware, associated with the advent of the Aryans in the Ganges–Yamuna Valley, was recognised for the first time in the earliest levels of the site. Nearly five thousand coins belonging to periods earlier than that of Guptas have been yielded from Ahichchhatra. It has also been one of the richest sites in India from the point of view of the total yield of terracotta. On the basis of the existing material, the archaeology of the region helps us to get an idea of the cultural sequence from the beginning of the 2nd millennium BC up to the 11th century AD.

Near Ahichchhatra, 2 km to its west there is a big pond which is said to trace its ancestry to the time of Mahabharata. The pond, located in the village of Jagannathpur is said to have been made by the pandavas at the time of their forest dwelling.

Table 17 List of ASI Sites in Bareilly District (3 sites in Bareilly, 7 sites in Ramnagar, 2 in Aonla and 1 site in Pachomi)

S.NO.	NAME	LOCATION	DISTRICT
1.	**Tomb of Hafiz-ul-Mulk Rahmet Khan, the Rohila Chief**	**Bareilly, Bakar Ganj**	**Bareilly**
2.	**Tomb of Hermit Shah Dana**	**Bareilly, BakarGanj**	**Bareilly**
3.	Large obelisk of red sandstone	Fateh Ganj	Bareilly
4.	Several ancients ruined mounds in which Indo-Scythian coins are found.	Pachomi or Wahidpur Pachaumi	Bareilly
5.	Ancient Site	Ramnagar, Alampur Kot	Bareilly
6.	Fort	Ramnagar	Bareilly

7.	Mound called Chikatia Khera	Ramnagar	Bareilly
8.	Mound to the south of the tans known as of the Gandhan Sagar and Adisagar	Ramnagar	Bareilly
9.	Small hillock called Katari Khera or Kottari Khera	Ramnagar	Bareilly
10.	Stupa mound	Ramnagar	Bareilly
11.	Two Buddhist mounds close to the Konwaru Tal	Ramnagar	Bareilly
12.	Begum's Masjid with three lofty domes	Aonla	Bareilly
13.	Site near Aonla railway station	Rehtoia	Bareilly



Map 1: ASI sites with buffer demarcation Source: Bhuvan Portal

Map 2: Location of ASI Protected Structures in District of Bareilly
Source: Project Team

Figure 22 Archival image of the site excavation activities (1940 – 1945) Alexander Cunningham

Figure 23 Archival image of Excavated Site (1940 – 1945) Alexander Cunningham

Figure 24 Archival image of Excavated Site (1940 – 1945) Alexander Cunningham

Figure 25 Archival image of Excavated Site (1940 – 1945) Alexander Cunningham

Figure 26 Archival image of Excavated Site (1940 – 1945) Alexander Cunningham

Problem statement:

The site is located at a distance of 55.4 kms from Bareilly with poor tourism infrastructure and site interpretation facilities. It is also located in close proximity of a Jain Teetha which is highly visited by the pilgrims as well as the visitors. There are 7 ASI protected sites in Ramnagar and other unprotected sites including Jain Temples Shri Ahichchhatra Parshvanath Atishaya Teerth Kshetra Digambar Jain Mandir, Ramnagar, Lakes and temples in Aonla etc. which are not explored to its full potential dues to

lack of awareness, poor infrastructure facilities, lack of connectivity and improper visitor infrastructure facilities.

Value addition of this project to the tentative vision:
The provision of proper visitor amenities, support infrastructure facilities and improved last mile connectivity will enhance the tourist footfall to these sites. The site interpretation would help to generate interest of different categories of tourists.

Key activities, tasks, interventions involved:

1. Identification of area for development of Museum.
2. Connectivity enhancement to the identified sites located in close proximity.
3. Site Development & Landscape Improvement.
4. Providing wayfinding and interpretative signages in and around the sites.

Site Delineation: The buffer area of the Ahchichatra Fort identified in consultation with ASI.

Strategies for Precinct Level Development:

1. To improve last mile connectivity from towns / cities such as Bareilly, Badaun and other nearby towns.
2. Development of Site Interpretative Museum for creating awareness about site, and to develop outreach programmes.
3. Site development and landscape improvement to provide visitor amenities such as food and beverage, toilet facilities, tourist information centre.

Project Impact & Benefit:

- World Heritage Site Nomination
- Increase in tourist footfall both domestic and foreigner resulting in creation of more jobs and economic benefit of the district.

SWOT Analysis
Strength:

1. Close proximity with Bareilly makes it an apt site to be developed as a destination for one/ two-day excursion.
2. Eight ASI protected sites are located in close proximity along with the Jain Temples which can be explored and be used for creating tourist interest.
3. Regional connectivity with Badaun.
4. The fort has potential to be designated as World Heritage Site, therefor site development with proper infrastructure facilities, site Museum with Interpretation centre, last mile connectivity would enhance the future tourism prospects of the district.

Weakness:

1. Last mile connectivity.
2. Lack of awareness of other tourism attractions both built and natural heritage.
3. Lack of Infrastructure Facilities.

Opportunity:

1. Ahichchatra/ Ramnagar Fort is the most visited site in Bareilly.
2. Improved infrastructure facilities will help to increase the footfall.
3. Regional connectivity of Bareilly –Ramnagar and Badaun can be explored to develop a tourist circuit.
4. Site sensitive interventions would help to enhance the importance of the site.

Threat:

1. Any insensitive interventions in and around the site would be detrimental to the significance of the site.

2. Any development around the archaeological areas is to be protected and conserved.

Stakeholders:

1. Department of Tourism, Government of Uttar Pradesh.
2. Archaeological Survey of India.
3. Bareilly District Administration.
4. Gram Panchayat / Tehsil.

Nodal Agency:

1. Archaeological Survey of India	For site development
2. Department of Tourism	For developing Tourism Infrastructure facilities

Data needs for the projects/ Obtained Data:

S.No.	Data	Status
1.	Visitors' footfall in Ahichachhatra , Aonla, Bareilly	**500 – 700 Daily (Average)**
2.	Tourist Profile	**No Records**
3.	Average stay of Tourist	**No Records**

4.3 Project 2: Developing a Theme based Museum on First War of Independence 1857

Project Background:

During 1857, Bareilly became a major center of revolt under the leadership of Khan Bahadur Khan while maintaining the communal harmony despite the efforts by Company officers to create trouble by inciting Rajput's against Khan Bahadur Khan. Bareilly was the last to fall (May 1858). British order was restored on 13 May 1858 by an expeditionary force lent by Commander Colin Campbell of 9th Regiment of Foot with the help of Captain William George Drummond Stewart of 93rd Regiment of Foot, after winning the Bareilly battle. Some of the mutineers were captured and sentenced to death. When the Indian Rebellion of 1857 failed Bareilly, too, was subjugated. Khan Bahadur Khan was sentenced to death and hanged in the Kotwali on 24 February 1860.

Figure 27 The Indian Mutiny: 6th Dragoon Guards (Carabiniers) at Bareilly, May 1858 by Orlando Norie. Source: Royal Collection Trust

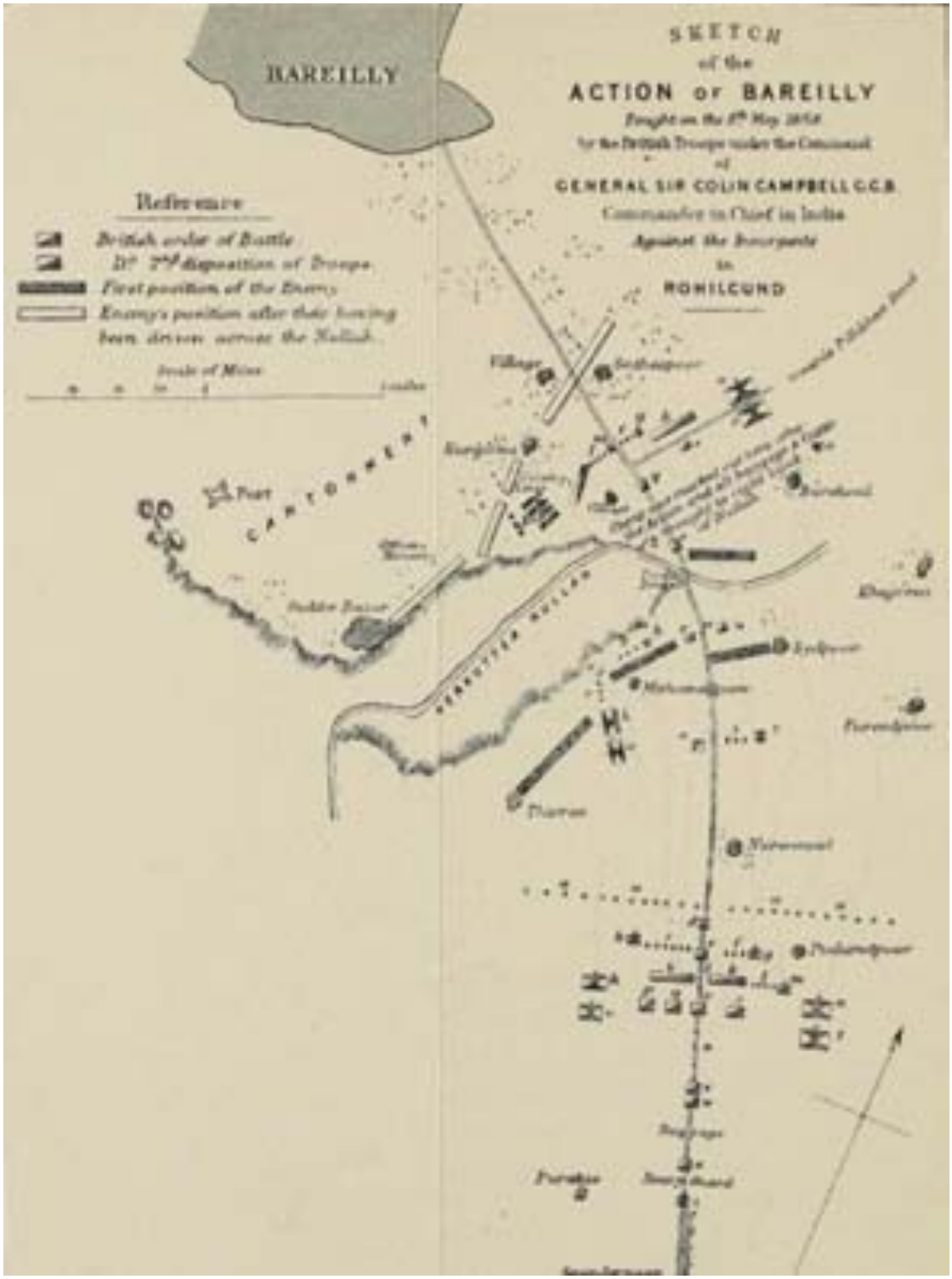


Figure 28 Sketch of Battle of Bareilly, 1858. (Source: A history of the Indian mutiny by G.W Forrest)

Case studies:

1. Town Hall of Amritsar which is developed and Adaptive Reuse as Partition Museum.

2. Dara Shikoh Library in Delhi which is converted under Adaptive Reuse mission as Partition Museum.

Figure 29 Town Hall, Partition Museum of Amritsar – Punjab

Figure 30 Town Hall, Partition Museum of Amritsar, Galleries – Punjab

Figure 31 Dara Shikoh Library and 1947 Partition Museum – Mori Gate, Delhi

Problem statement:

There is lack of awareness about the city as a major centre of the first war of independence. A theme based interpretative Museum development would address this and also enhance the future tourism prospects. Bareilly has potential to develop a museum based on the theme of First War of Independence by Adaptive Reuse of a historic building.

Value addition of this project to the tentative vision:

Potential for Tourism Development, Creating awareness and recreational facility at city level.

Objectives:

1. Develop Bareilly as Tourist destination and Enhance the Tourism potential of the city.
2. Reviving the memory of the First War of Independence.

Key activities, tasks, interventions involved:

1. Development of Theme based Museum.
2. Interpretative displays of the history of the region and associated personalities, role of Bareilly.
3. Visitor Management Plan.
4. Development of visitor amenities.
5. Site improvement.
6. Building Conservation for Adaptive Reuse.
7. Signages and way finding.

Site Delineation:

Based on stakeholder consultation, the possibility of developing the theme-based museum in some parts of the Bareilly College is being explored. The college is a historic building which is in use currently.

Figure 32 Bareilly College – Gangapur, Bareilly Source: Project Team

Figure 33 Bareilly College – Gangapur, Bareilly Source: Project Team

Strategies for Precinct Level Development:

1. NOC and approval from the college for the Adaptive Reuse and Development of Museum
2. Museum Design and Planning
3. Visitor Information
4. Visitor Amenities

Project Impact & Benefit:

The Project would help to create a tourist site by development of the Museum. It would also help to create awareness about the rich cultural past of the city at the local as well as at the State level. It will also be one of the contributing factors in celebrating "Azadi ka Amrit Mahotsav" celebrating 75 years of India's Independence. It will also help to increase tourist footfall in the city by making it as a one/ two day stay destination to visit the local sites of freedom movement as well as the regional sites.

SWOT Analysis

Strength:

1. Representative of an important period in the growth and evolution of Bareilly City.
2. One of the oldest heritage site and 1st colonial schools in India.

Weakness:

1. The connectivity of site is ideal but lack in proper tourism infrastructure and issues of heavy traffic on vehicular road.

2. Planning museum in institution building sometimes fails to magnetize larger crowd as compared to sites dedicated to only museum and gallery planning.

Opportunity:

1. Development of first theme-based Museum on First War of Independence.
2. Site sensitive interventions would help to enhance the significance of the site.

Threat: The structural study must be done before Adaptive Reuse of structure.

Nodal Agency:

Bareilly Municipal Corporation	Site Development
UP Tourism	Funding and Tourism Infrastructure
Education	Institutional Services and Guidelines for Visitor Management

Stakeholders: Bareilly Municipal Corporation, UP Tourism, Education Department

4.4 Project 3: Colonial Heritage Trail in Bareilly

Background:

Since the city was a cantonment under British rule, there are a range of colonial heritage in the city located largely in the civil lines area. The cantonment area of the city displays some historically and architecturally significant buildings which are unprotected. These structures are a reminder of the colonial past in the state of Uttar Pradesh. There are many states such as Maharashtra, Punjab etc. where these building are revered as architectural marvels and are being reused as a museum based on themes.

The city approximately has 26 Churches which are both architecturally and historically significant such as St. Stephan Church, Free Will Baptist Church, Christ Methodist Church etc.

St. Stephan's Church: It was built in Victorian architectural era in 1861, it is the most magnificent Church among the 26 churches in Bareilly. A red brick church with exquisite interiors ornamented with ebony wood panels and marble pulpit. It also houses 20-foot-high pipe organ imported from England.

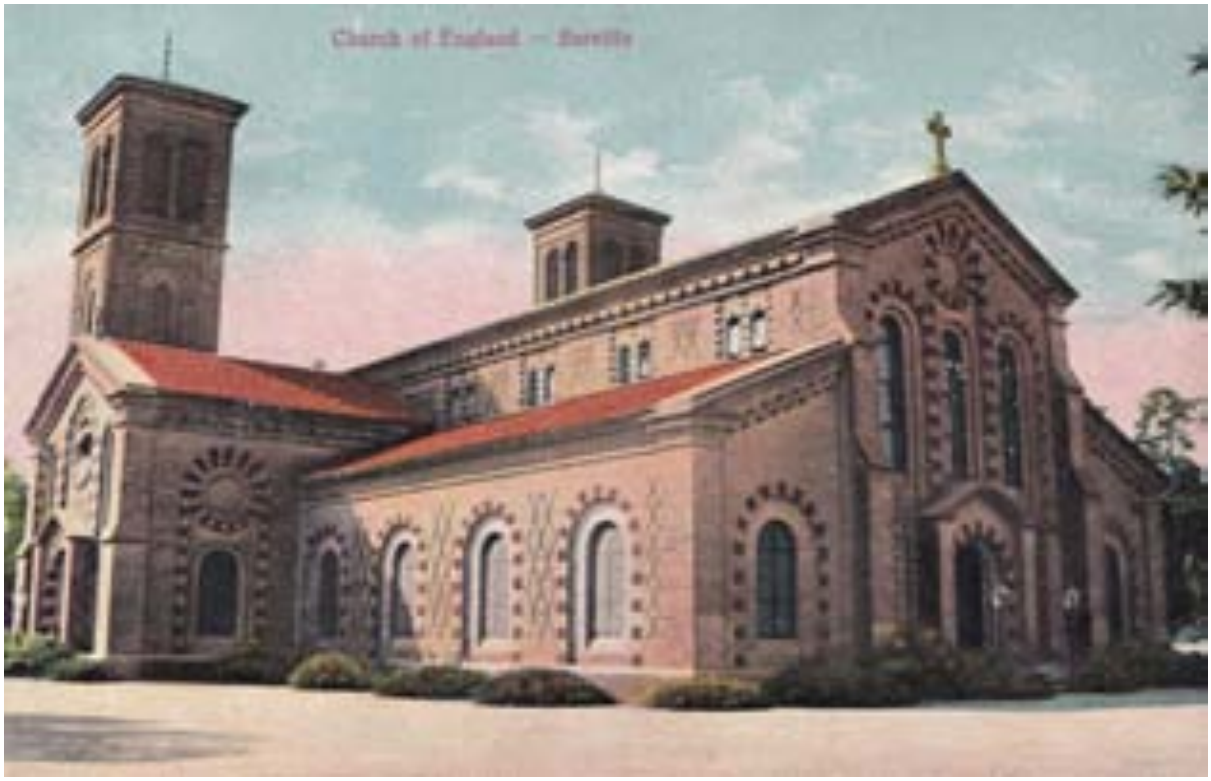


Figure 34 St. Stephan's Church – Civil Lines, Bareilly

Free Will Baptist Church: One of the oldest churches of Bareilly on Helen Road. It was constructed by East India Company in 1838 under the supervision of British Bishop Daniel Wilson. During the first war of Independence, the church was set on fire as the armed soldiers hid inside claiming lives of 40 British subjects, majority of soldiers. The church was repaired in 1858. The graves of the pastor, his wife and minor son who lost their lives in this incident are in the backyard.

Figure 35 The Freewill Baptist Church – Civil Lines, Bareilly

Figure 36 Bishop Cantonment Church - Bareilly

Figure 37 Christ Methodist Church – Civil Lines, Bareilly

Bareilly College: It was constructed on the land donated by the Nawab of Rampur, Hamid Ali Khan and inaugurated by Sir James La Tpuche in 1906, the then governor of North Western Provinces. It was started as a school in 1837 and attained the status of college in 1850. It was later affiliated to Calcutta University in 1862 and to Allahabad University in 1888. At present, it is part of Rohailkhand University.

Figure 38 Bareilly College – Gangapur, Bareilly

Figure 39 Dharamshala – Bareilly

Figure 40 North Indian Theological Seminary - Bareilly

The city also has Dharmshalas which were constructed in the city during colonial period using elements of colonial architecture. The Indian Theological Seminary was one of the important sites associated with the First war of Independence in the city.

Cemetery: It is burial place where Britishers were buried during 1857 who were killed in the war of Independence. The burial place of Christians or cemetery can be developed for tourism.

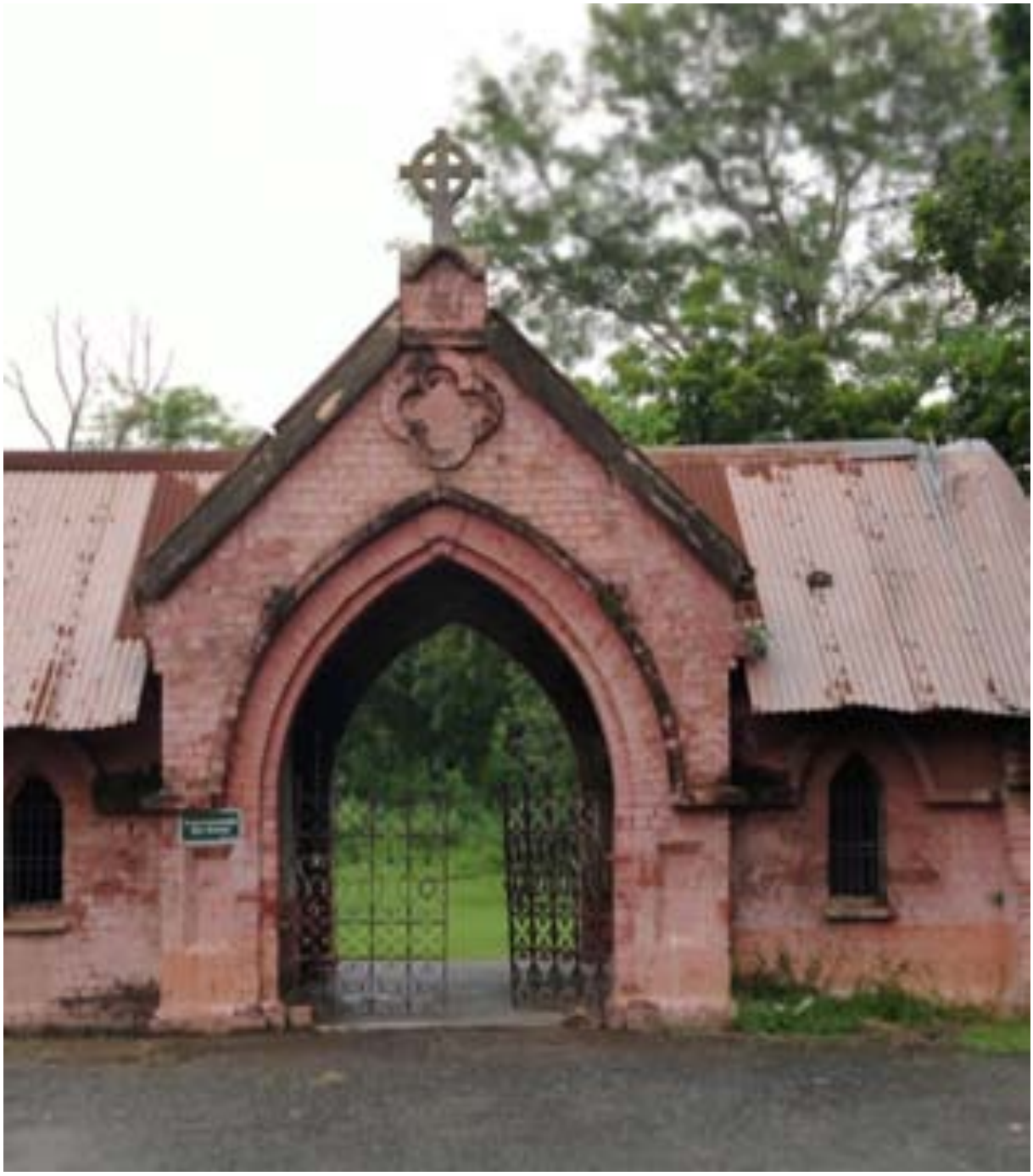


Figure 41 *British Cemetery - Bareilly*

Figure 42: *British Cemetery - Bareilly*

Problem statement:

Colonial heritage is one of the typologies of Heritage of the city which is unprotected as well as unrecognized. These sites are associated with the first war of independence in the city in one way or another. Very few people are aware that Bareilly was the last town which fell after a year of struggle under the leadership of an 82-year-old man Khan Bahadur Khan. It is required to revere these sites as part of the heritage of Bareilly by creating awareness through outreach activities, by improving interpretative signages and other infrastructural amenities.

Value addition of this project to the tentative vision:

Creating awareness about the Cultural Heritage of the City as well as the district and increasing the Tourism Potential.

Objectives:

1. Create awareness for the Regional Colonial Heritage of the city.
2. Conservation, Protection, Maintenance and Management of the Cultural Heritage of the city.
3. Develop Bareilly as Tourist destination and Enhance the Tourism potential of the city.

Key activities, tasks, interventions involved:

1. Developing the Colonial Trail by identification and mapping of Colonial Heritage of Bareilly.
2. Streetscape Development in identified stretches.
3. Connectivity enhancement to the identified sites located in close proximity.
4. Provision of Visitor Amenities.
5. Providing wayfinding and interpretative signages in and around the sites.
6. Application based audio tours.

Site Delineation:

Identification & Mapping of the historically & architecturally significant Colonial Sites - St. Stephan Church, Free Will Baptist Church, Bishop Cantonment Church, Christ Methodist Church, Bareilly College, Dharmshalas, Northern Indian Theological Seminary, Cemetery etc. for creation of Trail. The buildings added can be expanded/ added in a phased manner based on the archival research.

Strategies for Precinct Level Development

- Mapping of Colonial Sites
- Conservation & Protection of these heritage sites by the State / Municipal Corporation.
- Heritage Conservation & Development guidelines for the identified sites
- Creation of Visitor amenities & Interpretatory signages

Project Impact & Benefits

The project aims to create awareness about the colonial sites in the area and ensuring harmonious development around these sites. It also aims to attract more visitors and tourists at these sites through placemaking activities and sensitive design & planning.

SWOT Analysis

Strength:

1. Representative of an important period in the growth and evolution of Bareilly City.
2. These buildings have historic, architectural, artistic, social and educational values.
3. An important repository of regional colonial heritage of the city.

Weakness:

1. Lack of awareness of Colonial Heritage of the city as tourist attractions.
2. Lack of guidelines for the conservation, protection and maintenance of these sites including guidelines for addition and alteration.
3. Lack of Signages both descriptive and informative.

Opportunity:

1. Conservation of the Buildings in poor condition.
2. Site development and landscape improvement.
3. Adaptive Reuse of abandoned colonial buildings for creating Interpretative Museum on the theme of First War of Independence.
4. Site sensitive interventions would help to enhance the significance of the site.

Threat:

1. Unrecognized as heritage by the City Administration as well as the Masterplan.

2. Disappearance of important sites dues to Urban Development activities for example road widening activities lead to demolition of Heritage.
3. Any insensitive interventions in and around the site would be detrimental to the significance of the site.

Nodal Agency:

Bareilly Municipal Corporation	Site Development
UP Tourism	Signages and Visitor Amenities
Bareilly Development Authority	Integration & Mapping of Cultural Heritage of Bareilly in the masterplan with demarcation of the buffer of 100 and 200m of the ASI protected sites

Stakeholders listing:

1. Department of Tourism, Government of Uttar Pradesh.
2. Archaeological Survey of India.
3. Bareilly District Administration.
4. Bareilly Development Authority.
5. State Department of Archaeology.

Bouquet of Projects - Previously Shared

4.5 Project 4: Upgradation of Temple Precinct of Nath

Nodal Agency:

Bareilly Municipal Corporation	Site Development
UP Tourism	Signages and Visitor Amenities
Bareilly Development Authority	Integration & Mapping of Cultural Heritage of Bareilly in the masterplan with demarcation of the buffer of 100 and 200m of the ASI protected sites
Temple Trusts	Need for the coordination of visitors plan and management

Background:

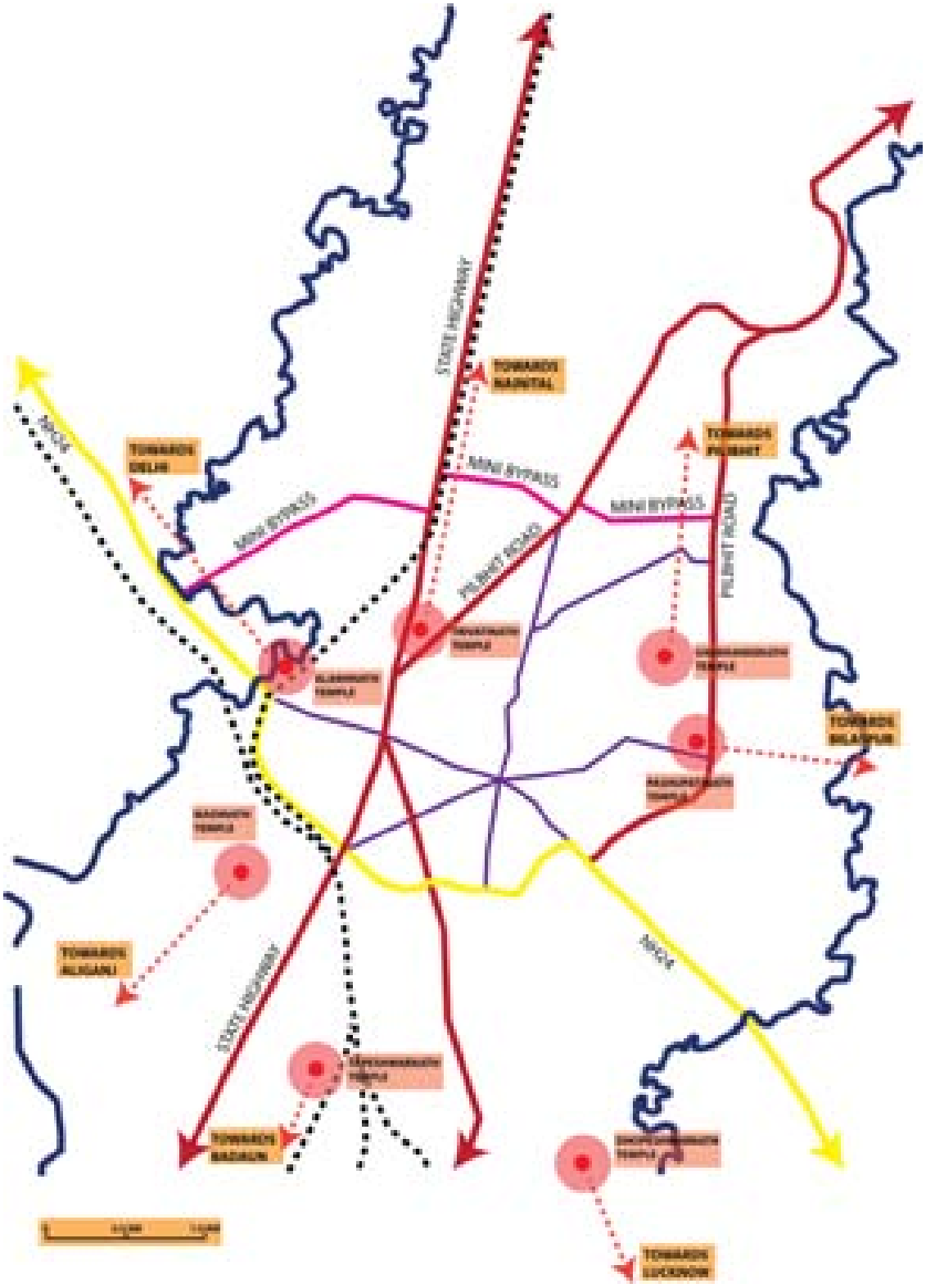
There are four Nath temples in Bareilly which has historical and associational significance. Some of them also have connect with nature and therefore had landscape value. They are **Alakh Nath Temple, Bankhandi Nath**, Dhopeshwar Nath, Madhi Nath and Pashupati Nath.

S.No.	Name [1]	Location	Description
1.	**Alakh Nath**	Nainital Road near Qila Bareilly.	The temple has a history of over 930 years. According to a local legend, the Qila region was home to dense forests in ancient times. Saint Alakhiya used to penance below **a Banyan Tree**. It was after him that the temple was named Alakhnath Temple. During late 17th century under Mughal rule, several temples were demolished in the region, and many saints took refuge in the temple complex. It is believed that the Mughals could not enter the complex.
2.	**Bankhandi Nath**	Jogi Navada	The Bankhandinath Temple, dedicated to Lord Shivanand is administered by the members of Dashnam Juna Akhada. This temple is said to have been built in the *Dvapara Yuga* era. It is believed that a large number of sages and saints used to gather in the temple and do rigorous penance. Many of them also took *samadhi* in the temple. The *samadhis* are present in the temple complex even today.
3.	**Dhopeshwar Nath**	Sadar Bazaar Cantonment area	The historical and ancient temple of Dhopeshwar deity. In the month of Sawan and Bhadon a big fair is organized. In the campus of the temple a huge tank is located. The site is the birth site of Draupadi and Dhrishtadyumna in the Mahābhārata era. Both Draupadi and Dhrishtadyumna were considered to be born by the grace of Lord Shiva.
4.	**Madhi Nath**		It is believed that this temple is more than 5000 years old and shivling of this temple was established by pandavas during their exile.

[1] Identified from the secondary sources

5.	**Tapeshwar Nath**	BSA Office Subhash Nagar	This is the oldest temple of the city
6.	**Trivati Nath**	MacNair Road	According to myth Lord Shiva - Trivati Nath foretold his first appearance under the three Banyan trees in dense panchal area in the dream of a shepherd. On awakening shepherd found a beautiful Shiv Lingam near the roots of three Banyan trees.
7.	**Pashupati Nath**	Pilibhit bypass road	The Pashupatinath Temple, also known as the Jagmohaneshwarnath Temple, is the newest amongst the seven Nath Temples.

Map 3: Location of Nath Temples – Bareilly



Map 4: Location of Nath Temples - Bareilly

Figure 43 Alakh Nath Temple – Qila Bareilly

Figure 44: Bankhandi Nath Temple – Jogi Navada

Figure 45 Dhopeshwar Nath Temple – Sadar Bazaar (Bareilly Cantonment)

Figure 46 *Trivati Nath Temple – Macnair Road*

Figure 47 Pashupati Nath Temple – Pilibhit Bypass Road

Problem statement:

All the temples are located at specific corners of the city defining its limit. With urban development this connect is being lost.

Value addition of this project to the tentative vision:

Establishing the significance of Bareilly as Nath Nagri would enhance the tourism potential of the city.

Objectives:

1. Development of Spiritual Tourism by enhancing the tourism infrastructure, public conveniences, and site branding.
2. Creation of religious network between different nodes and their associated fairs and festivals.

Key activities, tasks, interventions involved:

1. Site Development of Temple Precinct.
2. Rejuvenation of the temple pond/ waterbodies.
3. Restoration of the Temple by enhancing material integrity and authenticity.
4. Provision of descriptive and informative signages.
5. Provision for visitor amenities such as toilets, drinking water facilities, resting area, street furniture and lighting.

Stakeholders:

1. Temple Trusts Bareilly.
2. Bareilly Nagar Nigam.
3. PWD.

SWOT Analysis

Strength:

1. Religious significance at city level.

Weakness:

1. Lack of Visitor amenities.
2. Improper road conditions.
3. Lack of interpretative signages.

Opportunity:

1. Urban Regeneration of the area with Site Improvement and Precinct Development for each temple.
2. Development of Nath circuit.
3. Rejuvenation of the Temple Pond.

Threat:

1. Uncontrolled urban development.
2. Lack of development guidelines around these sites.
3. Lack of visitor amenities.

4.6 Project 5: Precinct Development of Tomb of Hafiz- ul-Mulk Rahmet Khan and Tomb of Shah Dana

Background:
The city of Bareilly has numerous spiritual sites that have potential for developing a spiritual circuit in the city. the city is the center of Sufism with the shrine of Ala Hazrat located in the heart of the city. This Dargah was once the main site Site of Urs-e-Razvi, also known as Urs-e-Ala Hazrat which is 3 day long annual event commemorating the death anniversary of Imam Ahmad Raza Khan organized at the Dargah Ala Hazarat. This festival attracted many Sufi followers. Some of the important sites are:

Tomb of Hafiz Rahmat Khan: Hafiz Rahmat Khan was an Afghan Rohilla chief, in Rohilkhand in the late 18th century and is known for his involvement in the Battle of Panipat in 1757 where with the assistance of Nawab Shuja ud-Daula (r.1753-1775) of Awadh, they defeated the Maratha army. Hafiz Rahmat Khan was killed in battle in 1774 at Miranpur Katra, the battle of St. George, fighting against Colonel Champion. Bareilly was one of the main cities in Rohilkhand and the location of several tombs of the Rohilla chiefs.

Tomb of Shah Dana:

Table 18 List of ASI Sites in Bareilly

S.NO.	NAME	LOCATION	DISTRICT
1.	Tomb of Hafiz-ul-Mulk Rahmet Khan, the Rohila Chief	Bareilly, Bakar Ganj	Bareilly
2.	Tomb of Hermit Shah Dana	Bareilly, Bakar Ganj	Bareilly

Figure 48 Mausoleum of Hafiz Rahmat Khan

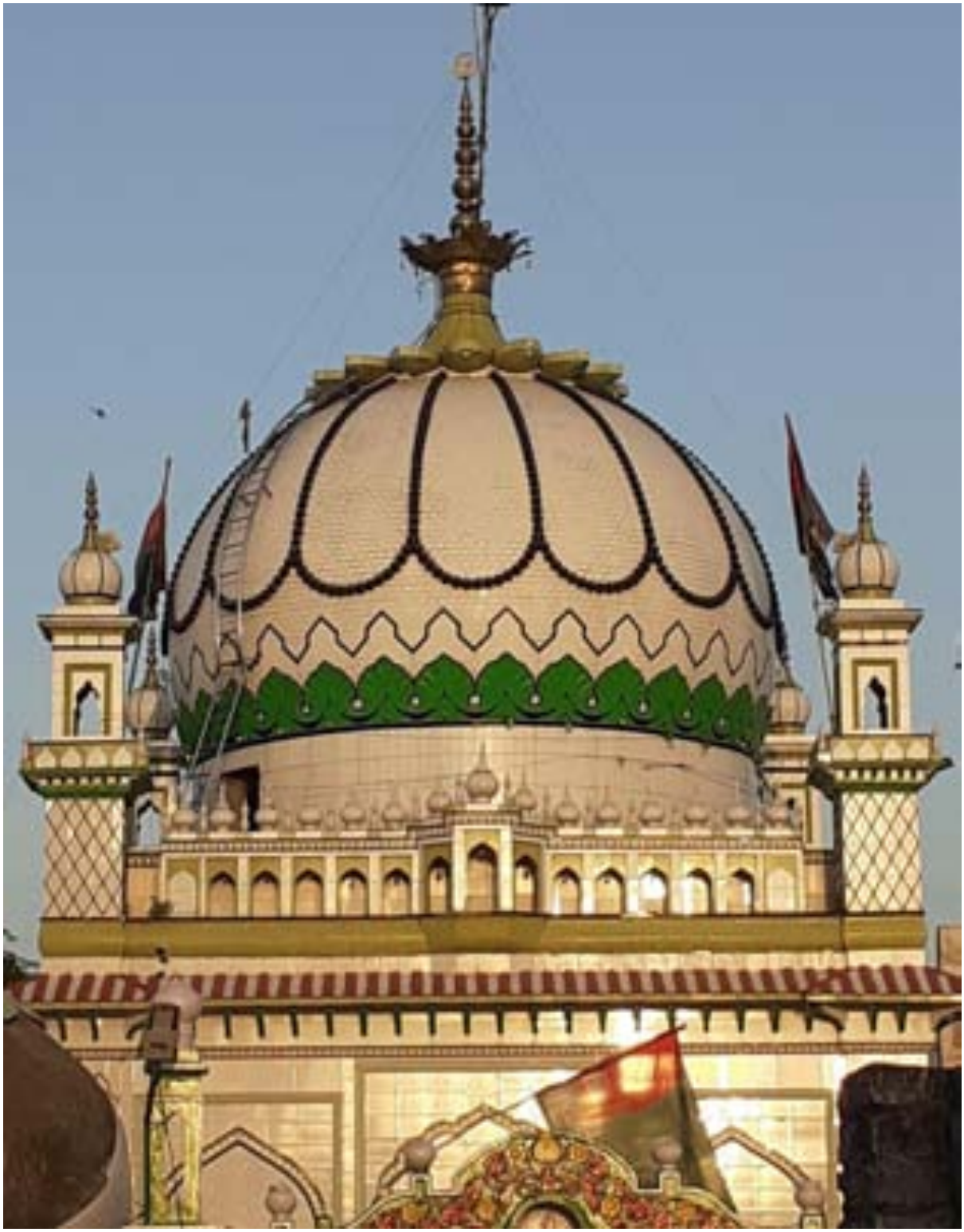


Figure 49 *Dargah-e-ShahDana Wali*

Other Important Sites are:

Khanqah e Aliya Niyazia: Located at Kwaja Qutub, this shrine is a spiritual centre affiliated to both the Chisti and Qadri orders of Sufism and visited by people of diverse faiths. It was founded by Shah Niyaz, who was born in 1742 at Sirhind into a Sayyad family from Bukhara in Central Asia. The center has also influenced Hindustani Classical music and notable singers Shambhu Maharaj and Birju Maharaj were affiliated to Niyazia Khanqah. The present structure was built by Nawab Rampur in early 20th century.

Other singers such as Begum Akhtar, Hariharan, Shubha Mudgal. Ustad Rashid Khan are also associated with the khaqah.

Figure 50 *Khanqah-e-Aliya Niyazia*

Qila Jama Masjid: This is a remnant of the days of Raja Makrand Rai, the governor during Aurangzeb's Reign. It is located in the center of a densely populated locality.

Figure 51 *Jama Masjid – Qila Mohallah*

Bibi ji ki Masjid: It is located in Beharipur and is the only surviving monument from the Rohilla era. It was built in the mid-18th Century by Hafiz Rahmat Khan's sister, which was popular among locals as BibBi ji. It has a compact ablution pool, tall minarates, and three bulbous domes.

Figure 52 *Bibi Ji ki Masjid – Beharipur*

Asifi Masjid: It is located at 300metres distance from Qila Masjid and is a late 18th century Mosque in the Zakhira locality. It was constructed by Mirza hasan Raza Khan, an official of Asaf-ud-Daula and later renovated by the Nawab of Rampur. The mosque has three domes flanked by two lofty minarets.

Figure 53 Asifi Masjid - Zakhira

Problem statement:

Both the sites are located in a congested area. Being ASI protected sites, both the sites have designated protected buffer of 100m and 200 m. However, the buffer demarcation does not exist. There is lack of awareness for the spiritual sites of the city which are famous locally and also have association with notable personalities.

Value addition of this project to the tentative vision:

Comprehensive development of the city along with the Conservation and Protection of the Cultural Resources.

Objectives:

1. Enhance the tourist engagement at city level.
2. Improved amenities and infrastructure condition providing better environment.

Key activities, tasks, interventions involved:

1. Site Development.
2. Provision of informational and interpretative signages.
3. Provision of visitor amenities.
4. Integration and development of other Spiritual sites of the city.
5. Improvement of the peripheral landscape of the shrine.
6. Visitor Management Plan for the shrine.

Nodal Agency:

Bareilly Municipal Corporation	Site Development and Infrastructure upgradation
UP Tourism	Signages and Visitor Amenities

Bareilly Development Authority	Integration & Mapping of Cultural Heritage of Bareilly in the masterplan with demarcation of the buffer of 100 and 200m of the ASI protected sites
Waqf Board	Approval for development of visitor amenities

Stakeholders listing:

1. Committee Members of Shah Dana Dargah.
2. Waqf Board.
3. ASI.
4. UP Tourism.
5. Bareilly Nagar Nigam.
6. PWD.

SWOT Analysis

Strength:

1. ASI Protected Spiritual Site.
2. Celebration of Urs at Shahdana Dargah.

Weakness:

1. Located in a congested area.
2. Lack of Visitor amenities.
3. Improper road conditions.
4. Lack of interpretative signages.

Opportunity:

1. Urban Regeneration of the area with Site Improvement and Precinct Development.
2. Develop it as a spiritual circuit by connecting with other lesser-known sites of the city such as Bibi ki Masjid, Khanqah-e- Aliya Niyazia, Asifi Masjid, Jama Masjid etc.

Threat:

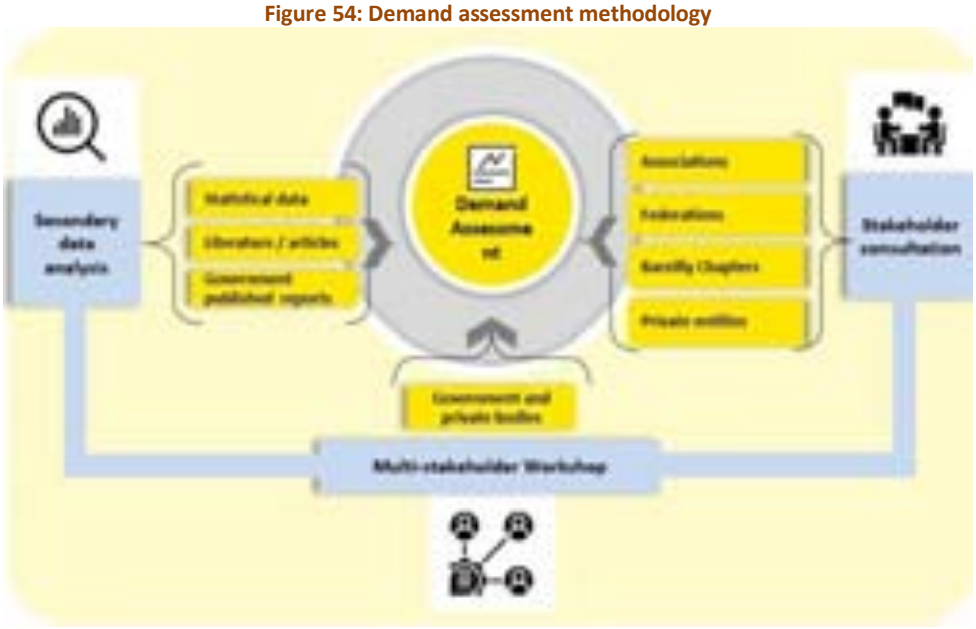
1. Uncontrolled urban development.
2. Lack of development guidelines in the designated buffer of 100m and 200m as per AMASAR Act.
3. Lack of awareness about these sites.

Chapter 5. Economy

5.1 Demand assessment methodology

To assess the demand, the team has formulated a methodology which consists of three major components namely – (i) Secondary data analysis, (ii) Stakeholder consultations with various associations, federations, private entities, and representatives from various bodies, (iii) multi-stakeholder workshop held in BDA in the presence of various government and private bodies.

Figure 54: Demand assessment methodology



Multiple discussions with stakeholders e.g., representatives of various bodies like Central U.P. Chamber of Commerce, Office of Development Commissioner (Handicrafts), Dastkaar Bunkar Welfare Association, Office of medical officer and CREDAI Chapter of Bareilly; has been conducted at in order to analyze the qualitative and quantitative demand. The Multi – stakeholder workshop conducted had the representatives from Chamber of Commerce, Indian Industry Associations (IIA), Laghu Udyog Bharti, UP Nursing Home Council and Udhyog Mandal, etc.

For quantitative assessment, the team has utilized secondary data available in public domain including statistical data from district development indicators 2020, district industrial profile 2020, etc.

Based on the above defined framework, next sections describe the demand assessment of various sectors.

5.2 Economic sectors

Based on the CAGR from 2011-12 to 2019-20, the projections have been done for the sectoral contribution of the primary secondary and tertiary sector to GDDP and per capita income in Bareilly District as following:

Table 19: Sectoral Contribution to GDDP in Bareilly District

Sectors of Economic Activity	Existing GDDP Contribution		CAGR	Projected GDDP contribution					
	2011 - 12	2019 - 20		2021	2031	2041	2051	2061	2071
Total Primary Sector	**7046.11**	**8171.52**	1.66 %	8,307	9,794	11,547	13,613	16,050	18,922

Total Secondary Sector	**4765.79**	**11458.2**	10.24%	12,631	33,478	88,731	2,35,172	6,23,302	16,52,006
Total Tertiary Sector	**8059.76**	**21112.44**	11.29%	23,497	68,500	1,99,699	5,82,186	16,97,252	49,48,017

Per capita income

District Name	2011 - 12	2019 -20	CAGR	2021	2031	2041	2051	2061	2071
Bareilly	41,964	76,848	6.95%	82,191.64	1,60,982.41	3,15,303.78	6,17,561.12	12,09,569.19	23,69,089.59

5.3 Industrial sector

As per norms of the URDPFI, the Industrial area required in the large cities is 7 – 8%. The industrial area of the Bareilly city as per Master plan 2021 is 5.69% which is very less as per URDPFI norms. Although it has been increased to 8.80% as per Master plan 2031 but still more industrial areas in the city may be required for future.

Table 20: URDPFI Norms for Industrial Parks

Land use Category	Guideline percentage of developed area			
	Small	Medium	Large Cities	Metropolitan Cities & Megapolis
Industrial	8 – 10	7 – 9	7 – 8	7 – 8

Source: URDPFI guidelines

Table 21: Details of existing industrial area in Bareilly city

Landuse	Proposed area 2021	Proposed area 2021 (%)	Proposed area 2031	Total area	%
Industrial	1170.86	5.69%	837.9	2008.76	8.80%

Source - Bareilly Draft Master Plan 2031

Over the years, the number of Industrial areas in the district has become almost doubled & the number of small-scale industries has also increased along with the increment in the number of employees in the registered working factories which signifies that there is a requirement of new industrial areas. The demand of a new industrial areas can also be felt through the increment in the number of registered working factories per lakh population.

Requirements for any proposed industrial areas:

An industrial area should consist of:

- Roads capable to accommodate the foreseeable development of traffic as well as bicycle and pedestrian infrastructure.
- Access points & parking areas to manage the stationary traffic.
- The entire logistics of the goods entering or leaving the area including management of entry points like harbors, train terminals, warehouses or other types of logistics hub.
- Transport facilities like pipelines for gases & liquids, conveyor belts for bulk material & respective storage, loading & pumping facilities.
- Telephone & internet connections.
- Green spaces provision for recreational areas for employees.

- A common sewerage system & effluent treatment plants as well as systems.

Infrastructure requirement norms for industrial areas:

1) Land Use:

Table 22: Distance of different areas from Industrial site

Areas	Distance
Ecologically &/or otherwise sensitive areas	At least 25 km or more, if required
Coastal areas	At least ½ km from high tide line
Flood plain of the Riverine systems	At least ½ km from flood plain
Transport/ communication	At least ½ km away from highway & railway
Major settlements (3,00,000 population)	At the time of siting of the industry, if any settlement's notified lie within 50 km, the spatial direction of growth of the settlement for at least a decade must be assessed & the industry shall be side at least 25 km from the projected growth boundary of the settlement.

Source: Report on Guidelines for Physical Infrastructure in Industrial area planning, url: https://www.researchgate.net/publication/322083115_Guidelines_for_Physical_Infrastructure_in_Industrial_Area_Planning_A_Review_of_the_Indian_Context

2) Solid Waste Management (SWM) norms

Table 23: Solid Waste Management Norms

S.N.	Guidelines
1	The developers of Special Economic Zone, Industrial Estate. Industrial Park to earmark at least 5% of the total area of the plot or minimum 5 plots/ sheds for recovery & recycling facility
2	High calorific wastes shall be used for co-processing in cement or thermal power plants
3	All industrial units using fuel & located within 100 km from a solid waste-based Refuse-derived fuel (RDF) plant shall make arrangements within 06 months from the date of notification of these rules to replace at least 5% of their fuel requirement by RDF so produced.
4	Non-recycle waste having calorific value of 1500 K/cal/kg or more shall not be disposed of on landfills & shall only be utilized for generating energy either or through refuse derived fuel or by giving away as feed stock for preparing refuse derived fuel.

Source: Report on Guidelines for Physical Infrastructure in Industrial area planning, url: https://www.researchgate.net/publication/322083115_Guidelines_for_Physical_Infrastructure_in_Industrial_Area_Planning_A_Review_of_the_Indian_Context

3) Water supply

Table 24: CPCB standards for water supply

Industry	KL/unit production
Low water intensive	0 – 100
Medium water intensive	100 – 250
High water intensive	250 & above

Source: Report on Guidelines for Physical Infrastructure in Industrial area planning, url: https://www.researchgate.net/publication/322083115_Guidelines_for_Physical_Infrastructure_in_Industrial_Area_Planning_A_Review_of_the_Indian_Context

4) Wastewater Management

Table 25: General standards for wastewater generation

Industry		Quantum
Integrated iron & steel		16 m3/ tone of finished goods
Sugar		0.4m3/tone of cane crushed
Pulp & Paper	Pulp & Paper	175m3/tone of paper produced
	Rayon grade pulp	150m3/ tone of paper produced
	Agro – residue based	150m3/ tone of paper produced
	Waste paper based	50m3/ tone of paper produced
Fermentation industries	Maltry	3.5m3/ tone of grain produced
	Brewer	0.25m3/ KL of beer produced
	Distillery	12 m3/ KL of alcohol produced
Caustic soda	Membrane cell process	1 m3/ tone of CS produces excluding cooling tower blown down
	Mercury cell process	4 m3/ tone of CS produced. 10% below down permitted for cooling tower.
Textile industries	Nylon & Polyesters	120 m3/ tone of fibre produced
	Viscose staple fibre	150 m3/ tone of product
	Viscose filament yarn	500 m3/ tone of product
Tanneries	-	28m3/tone of raw hide
Starch Glucose and related products	-	8 m3/ tone of maize crushed
Dairy	-	3 m3/ Kl of milk
Natural rubber processing industry fertilizer	-	4 m3/ tonne of rubber

Source: Report on Guidelines for Physical Infrastructure in Industrial area planning, url: https://www.researchgate.net/publication/322083115_Guidelines_for_Physical_Infrastructure_in_Industrial_Area_Planning_A_Review_of_the_Indian_Context

Table 26: NMWC standards for wastewater

Industry	Total wastewater flow (m3/day)
Textile	6,450
Distillery	1,725
Food processing	1,460
Chemical	4,500

Source: Report on Guidelines for Physical Infrastructure in Industrial area planning, url: https://www.researchgate.net/publication/322083115_Guidelines_for_Physical_Infrastructure_in_Industrial_Area_Planning_A_Review_of_the_Indian_Context

5) Power supply

URDPFI guidelines & National Electricity Policy for Industrial parks

- The recommended consumption is 2.74 kWh per capita per day demand.

Planning strategies for industrial areas

Site location of the industrial city is the prime aspect of its planning. The siting criteria shall satisfy the environmental requirements mentioned by Ministry of Environment and Forest, which is with sufficient buffers, distance from a large size town and agricultural land (refer Chapter 6 for specifics). Land suitability analysis to be done for identifying zones for placing hazardous industrial (uses including air polluting units and wind directions), other manufacturing industrial, compatible uses along surface water bodies, hamlets and settlements and placing of non - processing areas.
For locating industrial zone, preference to areas with easy connectivity, provision for logistics and areas with existing industries to be given, also wind directions to be considered.

Zoning for processing and nonprecessing areas is recommended in the ratio of 40:60 (especially in SEZ). The land use regulations have to keep in view the requirements of both these areas according to the activities envisaged. Due to the health concerns and safeguards, provision of green buffers of minimum of 500 meters between compatible and non-compatible shall be well defined while zoning.

Processing area: may be comprise of the following activities:

- Industries / manufacturing.
- Ancillary & MSMEs.
- Retail Trade and commerce.
- Go-downs and warehousing.
- Utility corridor.
- Port and port related activities.
- Airport and related uses, rail, road and inland waterway and spaces for parking etc.
- Public utilities and any other essential services.
- Incidental and other activities for safety and security; and essential residential for the same.
- Governmental use / activities to manage the proper functioning of such processing areas.
- Information Technology and Enabled Services.

Within the processing areas, space for informal commercial, service industries and parking as per industrial requirement to be paid attention. For development of various types of parks – like IT parks, Plastic parks, Biotechnology parks, Food parks, Agro park, etc. the policy and norms issued by respective departments and guidelines available to be considered for planning. In absence of such handholding provisions, case studies of the specific industrial sector to be referred.

Cluster development: A cluster approach may be taken to optimize use or resources and minimize cost of production. For example, all work related to computers, IT, Communication can be housed in a cluster at the outskirts of processing area to minimize heavy transportation within the city. Small clusters related to IT and communication can also be accommodated within the non-processing area at uniform distance for easy reach of availability of all services in time.

Non - processing areas: Areas other than processing area are to be planned for various uses and activities, mainly as an industrial township including residential, commercial, recreational and activities related to social infrastructure like education, health care, and socio-cultural facilities.

Social infrastructure: The overall quantum of social infrastructure to be provided in the industrial township may be divided into two levels of facilities, including - Industrial city level Facilities and Local Level Facilities.

Table 27: Norms for parking facilities

Industry	
Industrial Plot up to 50 sqm area	2 ECS/ 100 sqm of floor area
Industrial Plot 51 sqm – 400 sqm area	2 ECS/ 100 sqm of floor area
Industrial Plot 401 sqm and above	2 ECS/ 100 sqm of floor area
Flatted group Industry (Min Plot size 400 sqm)	2 ECS/ 100 sqm of floor area

Source – URDPFI Guidelines 2014

URL - https://mohua.gov.in/upload/uploadfiles/files/URDPFI%20Guidelines%20Vol%20I.pdf

Table 28: Norms for water requirements for industrial areas

Industry	Unit of Production	Water requirements in Kilolitres per unit
Automobile	Vehicle	40
Distillery	Kilolitre (proof alcohol)	122 -170
Fertilisers	Tonne	80 – 200
Leather	100 kg (tanned)	4
Paper	Tonne	200 – 400
Special Quality paper	Tonne	400 – 1000
Straw board	Tonne	75 – 100
Petroleum refinery	Tonne (crude)	1 – 2
Steel	Tonne	200 – 250
Sugar	Tonne	1 -2
Textile	100 kg (goods)	8 – 14

Source – URDPFI Guidelines 2014

URL - https://mohua.gov.in/upload/uploadfiles/files/URDPFI%20Guidelines%20Vol%20I.pdf

The Industrial Use Zone may be subdivided into

1. Service and Light Industry
2. Extensive and Heavy Industry
3. Special Industrial Zone – Hazardous, Noxious and Chemical

The activities Permitted, Restricted and Prohibited in Industrial land use zone shall be as given below:
Permitted Use/Activity - Residential building for essential staff and for watch and ward personnel, all kind of industries, public utilities, parking, loading, unloading spaces, warehousing, storage and depot of non-perishable and non-inflammable commodities and incidental use, cold storage and ice factory, gas godowns, cinema, bus terminal, bus depot and workshop, wholesale business establishments, petrol filling stations with garage and service stations, parks and playgrounds, medical centers, restaurants.

Restricted Uses/Activities - Noxious, obnoxious and hazardous industries except storage of perishable and inflammable goods, junkyards, sports/stadium/playgrounds, sewage disposal works, electric power plants, service stations, cemeteries, government/semi-government / private business offices, bank and financial institutions, helipads, hospitals/medical centers, religious buildings, taxi stands, gas

installations and gas works, animal racing or riding stables, workshops/garages, dairy and farming, quarrying of gravel, sand, clay or stone.

Prohibited Uses/Activities - Residential dwellings other than those essential operational, service and watch and ward staff, schools and colleges, hotels, motels and caravan parks, recreational sports or centers, other non-industrial related activities, religious buildings, irrigated and sewage farms, major oil depot and LPG refilling plants, commercial office, educational institutions, social buildings.

5.3.1 Demand of probable industries for crop produced in Bareilly

Based on the assessment of the existing agriculture production in Bareilly, probable industries categories have been identified as follow:

Table 29: Probable industries for crop wise products & by-products

S.N.	Top five agriculture produce	Direct products	By-products
1	Sugarcane	Food: sucrose, jaggery & syrups Fibre: Cellulose Fodder: green leaves, top portions Fuel: residue/ waste materials Chemicals: alcohol, bagasse & molasses	Bagasse, molasses
2	Wheat	Food: Flour, Bakery products, Maida, Biscuits, meat analogs. Fibre – Paper, cardboard Fodder: wheat gluten Chemical – Alcohol	Distilled dried grains with soluble & wheat
3	Rice	Food: Rice, poha, Fibre – Paper, cardboard, cellulose Fodder: Waste material Chemical: ethylene, 2G – Ethanol, rice beer	Broken Rice, Broken Mace Bran, rice polish, straw.
4	Potato	Food: pancakes, dumplings, soup, chips and sliced or shredded potatoes Fodder: fresh potatoes Chemical: Glue and ethanol	Peels, pulp & rejects
5	Banana	Food: fruit, Fibre: Commercial pectin, Cellulose, Clothing Fodder: Banana peels Chemicals: ethanol	Leaves for packaging, cooking & food serving; pseudo stems, stalk & inflorescence

Source – Consultant's analysis

Table 30: Probable industries (as per NIC code classification) as per availability of crops

Crop	NIC code	Industry classification
Sugarcane	10721	Manufacture or refining of sugar(sucrose) from sugarcane
	10722	Manufacture of 'gur' from sugarcane
	10723	Manufacture of 'gur' from other than sugarcane
	10724	Manufacture of 'Khandsari' from sugarcane
	10725	Manufacture of 'Khandasari' other than from sugarcane
	10726	Manufacture of 'boora' & candy from sugarcane

	10727	Manufacture of 'boora' & candy othaer than from sugarcane
	10728	Manufacture of molasses
	10729	Manufacture of sugar from other sources (juices of palm, sugar beet, etc)
Wheat	10611	Flour milling
	10711	Manufacture of bread
	10712	Manufacture of biscuits, cakes, pastries, rusks, etc
	10617	Manufacture of flour mixes and prepared blended flour and dough for bread, cakes, biscuits.
Rice	10612	Rice milling
	10621	Manufacture of starches from rice, potatoes, maize, etc
	10624	Manufacture of Gluten
Potatoes	10308	Manufacture of potato flour & meals and prepared meals of vegetables
	10621	Manufacture of starches from rice, potatoes, maize etc
Banana	None	None

Source – National Industrial Classification 2008' url - NIC_Sector.p
https://www.ncs.gov.in/Documents/NIC_Sector.pdf df (ncs.gov.in)

5.4 Assessment of existing Handicraft policies in the state

5.4.1 National Handicrafts Development Programme

The schemes implemented by Office of the Development Commissioner (Handicrafts) are composite in nature and not specific to area, caste, or gender. The artisans belonging to all communities including women artisans draw benefits from the schemes. Office of Development Commissioner (Handicrafts) is implementing following generic schemes.

5.4.1.1 National Handicrafts Development Programme (NHDP)

The Government of India implements various schemes for upliftment and development of handicrafts artisans through National Handicraft Development Programme (NHDP).

Objective:

The objective of the programme is to increase the knowledge of the entire handicrafts sector about the new design trends & color forecasts so as to increase the exports from the country by increasing the new design led product.

Implementation:

At present, the office of Development Commissioner (Handicraft) is implementing these seven schemes for promotion and development of handicraft sector.

A. National Handicrafts Development Programme incorporates:

i. Marketing Support & Services
ii. Skill Development in Handicraft Sector
iii. Ambedkar Hastshilp Vikas Yojana [AHVY]
iv. Direct Benefit to Artisans (Welfare)
v. Infrastructure and Technology Support
vi. Research & Development

5.4.1.2 Skill development in handicraft sector

Handicrafts are known for their aesthetics, associated traditional values, uniqueness, quality and craftsmanship. The traditional knowledge and craft practices are commonly passed down from one generation to another through natural learning. However, with the advent of new tools & technology, the process of craft learning has changed dramatically. Standardized production processes, skilled manpower, design database for handicraft products, quick & efficient prototyping, communication skills and other soft skills have become indispensable requirements for the ever-changing handicraft sector.

The sub-scheme "Skill Development in Handicraft Sector" has been conceptualized to fulfil these requirements and has the following four components:

(1) Design and Technology Development Workshop
(2) Guru Shishya Hastshilp Prashikshan Program
(3) Comprehensive Skill Upgradation Program
(4) Improved Toolkit Distribution Program

5.4.1.3 Ambedkar Hastshilp Vikas Yojana (AHVY)

Ambedkar Hastshilp Vikas Yojana (AHVY) is a cluster specific scheme. The scheme envisages need based cluster specific approach for sustainable development of the artisans in the defined clusters. The geographical identity of handicrafts clusters contains few villages or municipal areas within a span or diameter of three kilometers.

Artisans in the crafts clusters may be manufacturing products of single crafts or of multiple craft. The identified cluster will be extended support in terms of financial, technological, and social interventions for a period of five years. Presently, handicrafts sector is contributing substantially towards employment generation and export, but this sector has suffered due to its unorganized nature along with additional constraints like lack of education, capital, and poor exposure to new technologies absence of market intelligence and poor institutional framework.

In order to overcome these constrains, Ambedkar Hastashilp Vikas Yojana (AHVY) as a Centre Plan Scheme was launched in 2001-02 wherein the main thrust was on the adapting project wise, need based approach for integrated development of potential handicrafts clusters with participation of the craft persons at all stages of implementation of the scheme.

The scheme envisages a package of support to the cluster of handicrafts artisans, which inter-alia includes basic inputs and infrastructure support in addition to capacity enhancement to cater to target markets.

5.4.1.4 Comprehensive Handicrafts Cluster Development Scheme (CHCDS)

The objective is to develop these clusters with world-class infrastructure. The guiding principle behind the design of clusters would be to create world-class infrastructure that caters to the business needs of the local artisans & SMEs to boost production and export. In brief, the main objective of setting up these clusters is to assist the artisans & entrepreneurs to set up world-class units with modern infrastructure, latest technology, and adequate training and human resource development inputs, coupled with market linkages and production diversification. SPV is designed in such a way, which will have Standard Models of units of SSI and SME with infrastructure that is customized to give a competitive edge and these centers have greater potential to become globally competitive.

The broad objectives of the proposed program are as follows:

i. To enhance the competitiveness of selected clusters in terms of increased market share and ensuring increased productivity by higher unit value realization of the products.
ii. To ensure effective integration of scattered artisans, building their grass roots enterprises and linking them to SMEs in the sector to build critical mass for customized interventions and ensure economies of scale in operations. This will build a supply system that is geared to responding to large-scale orders, adhering to quality and product standardization, which are pre-requisites of global markets.
iii. To generate additional livelihood opportunities to the people through specific intervention in segmental sub sector industry and increase the incomes to the artisans/craftsmen already engaged in this sector.
iv. To provide requisite support/ linkages in terms of adequate infrastructure, technology, product diversification, design development, raw material banks, marketing & promotion, social security, and other components that are vital for sustainability of artisans/craftsmen engaged in the Handicrafts sector.
v. The core elements of the strategy for the proposed program are given below:
vi. Proactive and strong technical and program management assistance for capacity building, designing of the interventions and their implementation, through a competent professional agency.

Funding pattern

Funds to the tune of 2% (max.) of project cost up to a maximum of Rs. 5.00 Lakhs (whichever is less) per project shall be earmarked for establishing baseline data / DPR against which performance can be compared at the end of the project. The total fund requirement will be as per the Detailed project Report (DPR). 3% of Total project cost shall be provided for setting up of Project Monitoring Unit (PMU).

- 50% of the approved project cost will be released as advance/1 instalment.
- 2 instalment @ 40% of cost the approved project cost will be released on utilization of 70% of 1 instalment.
- The last 10% amount will be released as reimbursement on completion of project and submission of utilization report etc.

Deliverables/Advantages of the proposed Clusters

Social:

i. Employment Generation.
ii. Better living standards for the existing artisans.

Economic:

i. Foreign Exchange earnings by export
ii. Substantial Increase in quality and value-added Production
iii. Increase in the business of small entrepreneurs
iv. Savings in cost by manufacturers in the cluster due to better infrastructure and Government induced benefits
v. Revenue generation to local bodies and State & Central Governments
vi. Growth of industry in an organized form

Source - http://www.handicrafts.nic.in/pdf/Scheme.pdf#page=91

5.4.2 Uttar Pradesh ODOP Scheme 2018

The export of handicrafts from Uttar Pradesh contributes 44% to total exports of handicrafts from the country. Similarly, this contribution stands at a significant 39% in carpets and 26% in leather and leather products. The share of Uttar Pradesh in total exports from the country is 4.73%. Almost each district in the state has one or more unique products- be it in the handicrafts, handlooms or agriculture/horticulture produce or small enterprises, with distinct identity at national and international levels. For example, the silk sarees of Varanasi, the handicraft items of brass from Moradabad, the flute of Pilibhit, the artifacts of Shajar stone from Banda and Kala Namak rice from Siddhartha Nagar need no introduction. There is immense possibility to promote the marketing efforts to create more opportunity of employment and to add to the existing income levels of artisans/workers engaged in these sectors.

Keeping above in view, it has been decided to launch the scheme in the name of **'One District — One Product'** in the State. Regarding execution of the scheme, following actions are to be taken for products from each district:

- To prepare database regarding circulation, stakeholders, total production, export, availability of raw material and to arrange training.
- Research of possibilities regarding production, development, marketing of the product.
- To prepare a micro plan for product development, marketing promotion and to provide additional opportunities of employment and wage increment of the concerned artisans and workers.
- To provide advertising, publicity, and marketing promotion at district, state national and international level.
- Necessary coordination with MUDRA, PMEGP, Stand UP Schemes of GOI as well as Mukhy Mantri Yuva Swarojgar Yojna and Vishwakarma Shram Samman Yojna of GoUP for providing required finance to new and existing units. To start new schemes for the purpose as needed.
- To setup Co-operatives and Self-Help Groups.
- General and technical training of the craft and technology development.

Key Policy Objectives

- Preservation and development of local crafts / skills and promotion of the art.
- Increase in the incomes & local employment
- Promote product quality and skill development

Key Policy Highlights

Table 31: Uttar Pradesh ODOP policy highlights

Support	• Prepare database regarding circulation, stakeholders, total production, export, availability of raw material and to arrange training. • Research of possibilities regarding production, development, marketing of the product. • Prepare a micro plan for product development, marketing promotion and to provide additional opportunities of employment and wage increment of the concerned artisans and workers. • Provide advertising, publicity and marketing opportunities at district, state, national and international level. • Necessary coordination with MUDRA, PMEGP, Stand Up Schemes of Government of India as well as Mukhya Mantri Yuva Swarojgar Yojna and Vishwakarma Shram Samman Yojna of Government of UP for providing

	required finance to new and existing units. To start new schemes for the purpose as needed. • Setup Co-operatives and Self-Help Groups. Hosts general and technical training of the craft and technology development.

5.5 Assessment of existing industrial policies in the state

The team has studied and analyzed the existing industrial policies to understand the Key objectives, policy initiatives, incentives for the upliftment of the MSME sector in Bareilly:

1. Uttar Pradesh Industrial Investments Employment Promotion Policy 2017
2. Uttar Pradesh Private Industrial Park Scheme 2017
3. Uttar Pradesh Food Processing Industry Policy 2017
4. Uttar Pradesh Handloom Power-looms Silk Textile and Garmenting Policy 2017
5. Uttar Pradesh MSME Policy 2017
6. Uttar Pradesh Civil Aviation Promotion Policy 2017
7. Uttar Pradesh Information Technology Policy 2017
8. Uttar Pradesh Electronics Manufacturing Policy 2017
9. Uttar Pradesh Solar Power Policy 2017
10. Uttar Pradesh Biofuel Policy 2018
11. Uttar Pradesh Tourism Policy 2018
12. Uttar Pradesh Pharma Industry Policy 2018
13. Uttar Pradesh Warehousing Logistics Policy 2018
14. Uttar Pradesh Film Policy 2018
15. Uttar Pradesh Defense Aerospace Units Employment Promotion Policy 2018
16. Uttar Pradesh Milk Policy 2018
17. Uttar Pradesh Electric Vehicle Mftg Mobility Policy 2019
18. Uttar Pradesh Electronics Manufacturing Policy 2020
19. Uttar Pradesh Startup Policy 2020
20. Post Covid19 Accelerated Investment Promotion Policy 2020
21. Uttar Pradesh Data Centre Policy 2021

5.5.1 Uttar Pradesh Industrial Investments Employment Promotion Policy 2017

The Industrial Investment & Employment Promotion Policy of Uttar Pradesh 2017 will strive to leverage the inherent strengths of the state while developing new ones and tackling its underlying weaknesses considering the economic dynamics at play at the Indian, Asian and the Global level. The policy will aim to create a framework to stabilize and make existing industries more competitive as well as attract and realize new international and national investments in the industrial sector.

Key Policy Objectives

- Attract investment in UP for job creation
- Mobilize the key strengths of the State for maximizing manufacturing output
- Promote innovations, entrepreneurship, and Make in India
- Ensure balanced regional and sustainable development through rapid industrialization

Vision of the policy and implementation

The vision of the Industrial Investment & Employment Promotion Policy of Uttar Pradesh 2017 is to establish Uttar Pradesh as a nationally and internationally competitive investment destination thereby generating employment and igniting sustainable, inclusive, and balanced economic growth of the state.

Mission

- Increase capital investments in the state
- Provide quality infrastructure for industries to flourish
- Promote ease of doing business to create business friendly environment
- Generate maximum direct and indirect employment and self-employment opportunities for both skilled and unskilled workforce
- Skill the workforce of the state to ensure employability and empowerment
- Provide pro-active support to micro, small and medium enterprises
- Promote the spirit of innovation and incentivize entrepreneurship among youth
- Ensure balanced, sustainable, and inclusive economic development
- Ensure effective implementation of the policy

Strategies to achieve the vision

The GoUP will strive to achieve the vision through the following strategies

- Enabling infrastructure – Developing new infrastructure and upgrading existing ones
- Employment generation – Creating opportunities
- Fiscal incentives – Attracting investments
- Ease of doing business - Creating a conducive industrial environment
- Make in UP – Leveraging the success of Make in India
- Skilled Manpower – Reaping the benefits of demographic dividend
- Innovation – Promoting Start-Ups
- Micro, Small & Medium Enterprises – Ensuring all round industrial growth
- Sectoral approach – Benefitting from sectors of strength
- Sustainable & Inclusive growth – Ensuring clean & balanced distribution of economic growth
- Investment Promotion and marketing 'Brand Uttar Pradesh'.
- Domestic & Global Environment – Gaining from external factors and being responsive to them

Table 32: Uttar Pradesh Industrial Investments Employment Promotion Policy 2017 highlights

Exemption	• **Stamp Duty :**100% in **Bundelkhand & Poorvanchal**, 75% in Madhyanchal & Paschimanchal (except GBNagar & Ghaziabad districts) and 50% in GBNagar & Ghaziabad districts. • **Electricity Duty:** 100% exemption to all new industrial units set up in the state for 10 years. Also, 100% exemption to all new industrial units producing electricity from captive power plants for self-use for 10 years • **Mandi Fee:** 100% exemption to all new food processing units on purchase of raw material for 5 years.
Reimbursement	• **EPF Reimbursement:** Facility to the extent of 50% of employer's contribution to the units providing direct employment to 100 or more unskilled workers • **SGST Reimbursement:** Net SGST reimbursement @90% for Small Industries for 5 years, @60% for Medium Industries for 5 years, @60% for Large Industries other than Mega Industries for 5 years, and @70% for Mega category Industries for 10 years.
Subsidy	• **Capital Interest Subsidy:** 5% per annum for 5 years

	• Infrastructure Interest Subsidy: 5% per annum for 5 years • Industrial Quality Development: 5% per annum for 5 years
Incentivising employment generation	• **Units generating minimum employment of 200 direct workers** including skilled and unskilled will be provided 10% additional EPF reimbursement facility on employer's contribution.

5.5.2 Uttar Pradesh Private Industrial Park Scheme 2017

Private Industrial Park means an industrial estate/ park of more than 20 acres in Bundelkhand & Poorvanchal; 30 acres in Madhyanchal and Pashchimanchal; and more than 50 acres in case of Agro Parks in Bundelkhand, Poorvanchal and Madhyanchal which is developed according to the criteria stipulated by U.P. State Industrial Development Authority (UPSIDA).

Key Policy Objectives

- Promote new and upgrading existing Industrial Parks/ Estates
- Promote integrated manufacturing clusters/ zones/ SEZs
- Ensure world class infrastructure for these industrial hotspots

Key Policy Highlights

Table 33: Uttar Pradesh Private Industrial Park Scheme 2017 highlights

Subsidy reimbursement	The State Government will provide following incentives to industrial parks/estates of more than 20 acres in Bundelkhand & Poorvanchal; 30 acres in Madhyanchal & Paschimanchal and more than 50 acres in case of Agro Parks developed by private sector • Interest subsidy reimbursement for industrial parks/estates and Agro Parks developed by private sector o 50% of annual interest on the loan taken to buy land for 7 years o 60% of annual interest on the loan taken for building infrastructure for 7 years o 60% of annual interest on the loan taken for building hostel/dormitory housing for workers for 7 years • 100% exemption/reimbursement to developer and 50% exemption to individual buyers (first) on stamp duty
Incentive specific procedures	• In principle approval/ Letter of Comfort • Interest Subsidy • Stamp duty Exemption/ reimbursement

5.5.3 Uttar Pradesh Food Processing Industry Policy 2017

Vision

To ensure balanced economic development of the state and provide maximum benefit to all stake holders by establishing Uttar Pradesh as a leading state in food processing sector.

Objective

The main objective of the Uttar Pradesh Food Processing Industry Policy 2017 is to ensure fair and remunerative price of the produce to the growers, value addition to the price of raw produce, promote setting up of food processing industries, easy availability of processed food products to consumers at competitive prices, generation of new employment opportunities to build capacities and increase the skill level of the manpower in this sector and also make available additionally required manpower

Key Policy Objectives

- Affirm fair & remunerative price of the produce to the growers
- Ensure Value addition to the price of raw produce
- Promote setting up of food processing industries
- Easy availability of processed food products to consumers at competitive prices
- Generation of new employment opportunities in the sector

Priority Sector

- Development of Infrastructure Facilities
- Identification of Food Processing Zones
- Development of Food Processing Park, Mega Food Park & Cold Chain Facility
- Providing conducive atmosphere for setting-up Food Processing Industry
- Simplification of Procedures

Key Policy Highlights

Table 34:Uttar Pradesh Food Processing Industry Policy 2017 highlights

Subsidy	• Capital Investment Subsidy @25% up to Rs 50 lakhs • **Interest Subsidy**@100% for 5 years to micro and small food processing industries, and @7% for 5 years for establishments other than micro and small food processing industries. • **Interest Subsidy** for purchase of reefer vehicle/ mobile cooling van @7% for 5 years
Additional Grants-in-aid	• Additional Grants-in-aid to Mega Food Parks up to Rs 50 Cr under SAMPADA scheme • Additional Grants-in-aid @10% under SAMPADA scheme for fruits and vegetables processing industries
incentive	• **Export promotion incentive** @50% reimbursement of expenses incurred on exporting processed food samples for test marketing; and reimbursement of 25% of transportation cost up to INR 10 lakhs p.a. for 3 years. Also 20% reimbursement of Free On-Board value up to Rs 20 lakhs per beneficiary p.a. for 3 years.
Reimbursement	• **Patent registration fee** reimbursement @75% and Quality certification fee reimbursement @50% for internationally accepted quality certification

5.5.4 Uttar Pradesh Handloom Power-looms Silk Textile and Garmenting Policy 2017

Vision

To generate maximum employment in the textile sector in Uttar Pradesh by attracting new investment and up-gradation of technology to improve the standard of living of the poor.

Objectives

Following are the objectives of the New Textile and Garmenting Policy:

- To foster investment and generation of employment in the textile industry so that the per capita income of State comes at par with the per capita income of the nation.
- To provide employment to as many people as possible in the textile sector.
- To attract investment in the textile sector.

- To fulfill the demand of the textiles in India and outside, with products of Uttar Pradesh and to minimize the import of textile products and raw material from other States.
- To develop the textile industry in backward areas of the State- Poorvanchal, Bundelkhand and Madhyanchal on priority and offer employment at local level and stop the relocation of talent and caliber.
- To organize training and skill development programmes as per the needs of the textile sector in order to ensure easy availability of skilled labor.
- To avail maximum benefits of schemes run by the Government of India in order to boost the textile sector in the State.

Strategy

The Policy aims to promote all sub-branches of the textile manufacturing value chain viz. sericulture (including chaaki and koya production), reeling, handloom, spinning, weaving, knitting, texturizing, dyeing, processing, garmenting (i.e., garment manufacturing, embroidery, embroidered fabrics, made-ups, home textiles, fashion accessories, leather garments and accessories), and all types of technical textiles and jute products. However, special thrust will be provided to:

a. Garment & made-ups manufacturing as they generate high direct employment and also act as an engine of growth for upstream manufacturing activities; and

b. Segments where the State has an established strength such as embroidered fabrics, ethnic wear, leather garments and leather accessories

Key Policy Objectives

- Attract investment for creating new job opportunities
- Promote Make in India and meet domestic demand for textiles
- Promote development of textile industry in backward areas
- Ensure rapid availability of skilled labor in Textile industry

Key policy highlights

Table 35:Uttar Pradesh Handloom Power-looms Silk Textile and Garmenting Policy 2017 highlights

Subsidy	• **Land Subsidy @50%** of land cost (30% in GB Nagar district) on land purchase from State Agencies • **Interest Subsidy @7%** up to Rs 1.5 cr (up to Rs 75 lacs for GB Nagar) for 7 years for procurement under TUFS • **Infrastructure Interest Subsidy@5%** up to Rs 1 cr for 5 years per unit for developing infrastructural amenities • **Quality Development Subsidy@ 5%** up to Rs 1 cr for 5 years per lab for research and quality improvement • **Interest Subsidy @50%** on purchase of land for 7 years up to Rs 50 Cr; and @60% for 7 years for construction of staff-quarters, hostel/dormitory.
Exemption	• **Stamp Duty exemption @100%** (75% in GB Nagar district) • Electricity Duty exemption @100% to new units for 10 years • **Stamp duty exemption @100%** to developer (except in GB Nagar district), and @50% to first buyer of plot/unit • Capital Investment Subsidy @25% for plant and machinery based on investment
Reimbursement	• **SGST refund for 10years @90%** to MSME units, @80% to Mega units • EPF reimbursement for 5 years to new unit @50% with min 100 workers & @60% with min 200 workers Special Incentives for Textile Parks

5.5.5 Uttar Pradesh MSME Policy 2017

Vision

- To attain 15% annual growth rate by establishing Uttar Pradesh as an attractive investment destination for setting up of large number of new micro, small and medium enterprises.
- To attain 15% annual growth rate in employment by creating maximum employment in new units and expansion and upgradation of existing units.
- Endeavour to reduce the regional inequalities on the parameters of entrepreneurship, employment, and per capita income and to decrease disparities amongst different classes of society.
- Evolving high-end modern technology driven sensitive administrative system for upgrading existing units and resolution of issues of entrepreneurs.

Strategy

To realize the above vision, the state government will formulate an action plan according to the following strategy:

Target

- 15% annual growth rate of MSMEs
- 15% annual growth rate of employment creation in this sector

Following directives have been identified to achieve aforementioned targets:

- To make available resources, strengthening of infrastructure facilities and assistance in marketing of manufactured products for facilitating expansion and technical upgradation of existing enterprises.
- To ensure easy availability of land for new enterprises, to develop new infrastructure facilities and upgradation of existing facilities.
- To create conducive environment for ease of doing business.
- Sustainable and inclusive development with environmental balance.
- Special encouragement to establishment and upgradation of enterprises in Bundelkhand, Poorvanchal and Madhyanchal towards resolution of regional imbalance.
- Keeping in view the imbalance between various sections of the society, special incentives to increase the participation of women, scheduled castes, scheduled tribes and other backward classes.
- Financial incentive for investment attraction.
- Schemes for technical upgradation for the development of quality of products and services of micro and small enterprises.
- Development of One District One Product concept, branding of state specific products at national and international level.
- Preparation of schemes of the State Government in consonance with Mudra, Startup India, Stand Up India, Make in India and other mission mode programs and schemes of the Government of India.

Key Policy Objectives

- Target to achieve an annual growth rate of 15% in development of MSME industries
- Target to generate employment with annual growth rate of 15%
- Expansion and technical upgradation of the existing MSME industries
- Providing support to the new MSME for setting up the industries
- Create a favorable business environment for the MSME

Key policy highlights

Table 36:Uttar Pradesh MSME Policy 2017 highlights

Subsidy	• **Capital Interest Subsidy** @5% per annum for 5 years • Infrastructure Interest Subsidy @5% per annum for 5 years. • Industrial Quality Development subsidy @ 5% per annum for 5 years
Exemption	• **Land Use conversion**@ 100 % exemption for converting agricultural land to Industrial land of agriculture land development authorities • **Stamp Duty:** Exemption in accordance with the CLAUSE 5.1 of UPIIEPP 2017 • **Energy**@100% Electricity duty exemption to new units for 10 years
Reimbursement	• **EPF Reimbursement@**100% reimbursement for 5 years from the date of commencement of the unit for MSMEs. • **Electricity Charges Reimbursement** @one rupee per unit for 5 years from the date of production for MSMEs
Grant	• **SPV Formation:** The Government will provide grant of equal proportion of contribution by the allotees

5.5.6 Uttar Pradesh Civil Aviation Promotion Policy 2017

Key Policy Objectives

- Create a conducive business environment and provide adequate incentives for the development of robust civil aviation infrastructure.
- Improve the air connectivity through development of new routes under RCS by providing incentives and to facilitate inter-connectivity of non-RCS airports of the State.
- Facilitate trade and generate employment opportunities.
- Provide support for development of air cargo hubs and fulfilment centers in the State
- Facilitate the growth of Maintenance, Repair and Overhaul (MRO) facilities in the state.

Key policy highlights

Table 37: Uttar Pradesh Civil Aviation Promotion Policy 2017 highlights

Reimbursement	• **Reimbursement of S-GST on sale of air tickets** @ 100% reimbursement for 3 years for RCS flights o @ 100% reimbursement for 1 year for new flights in connecting non-RCS airports within U.P. o @ 100% reimbursement for 1 year for new flights in connecting non-RCS airports within U.P.
Miscellaneous	• **VAT on ATF** @ Zero for 10 years for RCS airports o @Zero for 01 year for connecting non-RCS airports in UP with non-RCS airports outside U.P. o @Zero for 01 year for connecting non-RCS airports within U.P. • **Viability Gap Funding** (for 50% of total seat) @20% State Share as per RCS • **Electricity** @ Rs. 4/unit upto 30000 units • Airport parking/night halt at RCS airports @ Zero charges (for 3 years) at GoUP Airports • Office space (100 sqm) for airlines at GoUP RCS airports @ Zero Rental (for 3 years) at GoUP Airports • Route Navigation & Facilitation Charges (RNFC) @ 50% of RNFC (upto Rs. 2000) will be reimbursed on RCS airports or flights connecting Divisional HQ (for 3 years

5.5.7 Uttar Pradesh Information Technology Policy 2017

Vision

"To develop IT as a vehicle for holistic socioeconomic development of Uttar Pradesh with a focus on creating employment, promoting entrepreneurship, innovation and enhanced quality of life"

Mission

- To develop Uttar Pradesh as a leading IT/ITeS investment destination
- To create a conducive environment for the growth of investors, entrepreneurs, and start-ups
- To generate employment opportunities and nurture entrepreneurship among the youths in Uttar Pradesh
- To create equitable and balanced growth across the state by enabling effective use of technology

Key Policy Objectives

- Develop and promote attractive business ecosystem in the State
- Promote human development and infrastructure development by means of IT Cities, IT Parks, IT-BPM units
- Instill and nourish entrepreneurship and innovation by providing impetus to Start-ups, Incubators, Centers of Excellence
- Lead digital empowerment through creation of citizen centric services, whereby welfare is generated across all sections of the society

Key policy highlights

Table 38: Uttar Pradesh Information Technology Policy 2017 highlights

Subsidy	• **Interest subsidy** @5% per annum for a period of 7 years • **Patent Filing Subsidy** @up to 100% of actual filing costs on awarded patents
Reimbursement	• **Electricity Duty**@100% reimbursement for new IT/ITeS units for a period of 10 years post commencement of commercial operations • **Grant on EPF**@100% reimbursement of the total EPF amount paid for IT/ITeS Professionals of Uttar Pradesh domicile with employment for continuous 1 year, after start of commercial operation • **Incentive for Certification:** Maximum reimbursement of 3 certifications with total limit of INR 25 lakhs per unit. • **Provision for land:** Reimbursement up to 25% of the cost of purchase of land from State Agencies subjected to certain conditions
Exemption	• **Stamp Duty**@100% exemption on purchase/lease of land/office space/ buildings for IT/ITeS use with condition of commencing operations within 3 years
Others	• **Recruitment Assistance:** INR20,000 per employee located in Tier-II and Tier-III cities subject to continuous employment of minimum 6 months and annual recruitment of at least 50 students in the field of IT-BPM, recruited from UP based colleges.

5.5.8 Uttar Pradesh Electronics Manufacturing Policy 2017

Vision

"To cultivate Electronics Manufacturing Industry as an important growth driver for Uttar Pradesh through effective use of skilled force, adapting innovation and emerging technologies and building

excellent infrastructure leading to all-round sustainable ecosystem thereby contributing towards the overall economy of the state & nation"

Mission

- To promote the growth of Electronics Manufacturing Industry in the state by providing conducive environment and position Uttar Pradesh as the most preferred Investment destination
- To provide Single window assistance for successful establishment of ESDM units in the state of Uttar Pradesh
- To build a world class ecosystem of R&D, Product design, Assembly & Testing, Engineering & Production for electronics in the state
- To promote skill development for the workforce in the electronics sector which can boost employment opportunities within the state

Policy Target

With this Electronics Manufacturing Policy, the state government targets to make Uttar Pradesh an Electronics Manufacturing Hub and targets to establish a conducive ecosystem for Electronics System Design and Manufacturing (ESDM) sector, where Anchor Units and Components Manufacturers shall work together.

The Policy targets the declaration of entire notified area of Noida Industrial Development Authority (NOIDA), Greater Noida Industrial Development Authority (GNIDA) and Yamuna Expressway Industrial Development Authority (YEIDA) as "Electronics Manufacturing Zone" (EMZ), whereby, at most ESDM units shall establish their manufacturing units.

The policy targets to attract investment of INR 20,000 Crores in ESDM sector and generate employment for 3,00,000 manpower by the year 2022.

Key Policy Objectives

- Develop and promote attractive business ecosystem in the State
- Attract investment in Electronics Manufacturing sector in the state
- Promote establishment of ESDM parks for Domestic / Foreign investors in the state
- Promote and develop employment opportunities within the state

Key policy highlights

Table 39: Uttar Pradesh Electronics Manufacturing Policy 2017 highlights

Subsidy	• **Capital subsidy** @15% on fixed capital other than land subject to max. of Rs. 5 Cr • **Interest subsidy** @ 5% per annum for 7 years subject to a max. of Rs. 1 Cr. per annum per unit • **Land Rebate** @ 25% on prevailing sector rates shall be provided either to EMC SPV / ESDM Parks and individual ESDM units establishing inside EMZ on purchase of Land from State Agencies
Reimbursement	• **Incentives for filing patents**@ up to 100% reimbursement of actual filing costs on awarded patents subject to a maximum of Rs. 5,00,000 for domestic and Rs. 10,00,000 for international patents • **State GST Reimbursement** @ 100% reimbursement subject to a maximum of 100% of fixed capital investment other than land for 10 years
Exemption	• **Stamp Duty** @100% exemption of stamp duty on purchase/lease of land

5.5.9 Uttar Pradesh Solar Power Policy 2017

The State Government targets to meet the supply and demand of energy and to provide 24 hours electricity supply to rural and urban households by year 2018-19. A complete transformation of power sector scenario in Uttar Pradesh including tapping huge solar energy potential is required for attaining such an ambitious target. Additionally, solar energy deployment in the state will also attract investments creating many jobs in the state. The solar industry provides both one-time jobs during pre-commissioning/ construction phase and regular operations and maintenance positions over the life of the project. Investments in the solar industry as well as domestic manufacturing of solar panels will help create direct and indirect employment opportunities in both skilled and unskilled sector. Thus, keeping in view vast potential of solar power in the state and to improve the power availability, the Government is keen in establishing solar energy-based power plants in the state.

Policy Targets

The State Government will endeavor to achieve 8% of total electricity consumption from solar energy (as defined in the Tariff Policy). For attaining this, installation of 10700-megawatt capacity of solar power is targeted till 2022 of which 4300megawatt capacity will be achieved through installation of Rooftop Solar Power Plant.

Key Policy Objectives

- Encourage participation of Private Sector and provide investment opportunities to set up solar power projects in the state
- Support in providing environment friendly and affordable Power for All
- Promote Research &Development, innovations, and skill development in the State
- Achieve target of 8% Solar Renewable Purchase Obligation (Solar RPO) by 2022

Key policy highlights

Table 40: Uttar Pradesh Solar Power Policy 2017 highlights

Exemption	• **Electricity Duty**@100% exemption from electricity duty for 10 years • **Stamp Duty**@100% exemption on chargeable stamp duty • Exemptions for Large Scale Stand – alone solar projects: o @ 50% exemption on wheeling charges/transmission charges on intrastate sale of power to third party or in case of captive use o @ 100% exemption from cross subsidy surcharge and wheeling charges /transmission charges on interstate sale of solar power
Subsidy	• **Subsidy for Grid Connected Rooftop Solar PV Plants**@ Rs. 15000/KW to the maximum limit of subsidy or Rs. 30000/KW per consumer on first come first serve basis for the first 100 MW applications submitted online to UPNEDA • **Subsidy for Mini Grid**@ 30% subsidy for the project to be installed in villages/Majras identified by UPNEDA/State Government by the state government
Purchase offer	• **Solar Park:** State offer to purchase 100% power generated from solar park

5.5.10 Uttar Pradesh Biofuel Policy 2018

"Bio-energy Enterprises Incentive Program" is being executed for effective implementation of various projects run by the U.P. State Bio-Energy Development Board from time to time. Facilitating financial incentives to such projects, the detail guidelines are as under: -

Mission:

- Bio-energy based environment-friendly sustainable development.
- Contribution in creating sustainable employment/ self-employment opportunities
- Ensure the effective execution of the Policy
- Establishing 03 Mega units

Strategy:

The strategy for effective implementation of the project will be based on "Entrepreneurship Mode" under "Value-chain-Mechanism". The following steps will be taken in its implementation process:

i. For this purpose, U.P. State Bio-Energy Development Board will invite investment proposals for establishing bio-energy projects (biodiesel, bio ethanol, methanol, biogas/ bio-CNG, producer gas- Pellets and briquettes) through prestigious newspapers and also publish other promotional activities.
ii. Related facilities shall be made available after appraising the proposals on the basis of first come first serve, the technology adopted by the entrepreneur, the continuity of the adopted technology and per unit production cost first technical inputs and the cost of production, cost per unit cost and the financial resources available in the respective financial year the appraisal will be done in accordance with the descriptions given at point no.2.3 (financial incentive). The appraisal of the proposals received will be done by U.P. State Bioenergy

Development Board in accordance with State Bio Energy Policy. If required necessary, Board may ask the investor for producing additional records / information in favour of investment proposal. After the assessment, the Board will submit its recommendation to the Approval Committee / Empowered Committee for the decision asper the total cost of industrial units.

Key Policy Objectives

- Establish eco-friendly economic development based on biofuel in the State.
- Establish three Mega investment unit in the State.
- Attract investment in the sector.
- Creation of new job opportunities in the State.

Key policy highlights

Table 41:Uttar Pradesh Biofuel Policy 2018 highlights

Subsidy	• Capital Subsidy@ 25% for units investing up to INR 10 Cr @20% for units investing more than INR 10 Cr and up to 100 Cr • SGST Subsidy@100% SGST reimbursement for 10 years
Exemption	• Stamp Duty@100% exemption from Stamp Duty
Reimbursement	• Case to Case Incentives @ for units investing more than INR 100 Cr reimbursement of 15% for project cost or INR 150 Cr whichever is lesser

5.5.11 Uttar Pradesh Tourism Policy 2018

Vision

To establish Uttar Pradesh as a preferred tourism destination in India, and achieve country's highest tourist arrival and tourism receipts, driving employment generation and ensuring best visitor experience.

Mission

To drive a sense of inclusive tourism development in the local community of Uttar Pradesh, and make optimum use of the tourism experiences across vibrant cities, attractions, nature, wildlife, adventure, food, handicraft (including the promotion of 'One District One Product Scheme'), heritage, religion and culture of Uttar Pradesh.

Targets

The Department of Tourism, through implementation of this tourism policy, aims to achieve the following targets:

- To become the most preferred tourist destination in the country by 2023.
- To achieve an annual increase of 15% domestic tourist arrival and 10% foreign tourist arrival, consistently over the next five years.
- To attract investments with a target of INR 5,000 Crore per year.
- To provide employment to approximately people per year.
- To impart training to 10,000 tourism service providers, over the next five years.
- To convert 1 0 heritage buildings (Buildings with heritage value) to heritage hotels per year.
- To attract 1 tourist to national parks and wildlife sanctuaries in Uttar Pradesh per year.
- To improve regional connectivity of all religious and cultural attractions within the state, through road, rail and air.
- To promote the state as a leading MICE destination in the country.
- To elevate the standards of public service facilities across the state and provide high quality visitor experience.
- To improve local entrepreneurship avenues, through execution of tourism events and festivals like Deepotsav, International Literature Festival, International Ramayana Conclave, Geeta Mahotsav, Ganga Mahotsav, Gorakhpur Mahotsav, Lucknow Mahotsav, Rangotsav Barsana, Taj Mahotsav, Shipotsav Noida, UP Divas and other city based mahotsavs.
- To promote city-wise events and festivals with a predefined calendar, and promoting the same nationally and internationally

Key Policy Objectives

- Become most preferred tourist destination in India by 2023
- Attract investments with a target of INR 5,000 Crore per year
- Target to provide employment to approximately 5,00,000 people per year
- Target to impart training to 10,000 tourism service providers, over the next five years
- Elevate the standards of public service facilities across the state and provide high quality visitor experience

Key policy highlights

Table 42: Uttar Pradesh Tourism Policy 2018 highlights

Subsidy	• Capital Investment Subsidy o @15% to New Hotels/Resorts upto Rs 10 Cr o @15% to Wellness Centres upto Rs 10 Cr o @10% to New Sports resort upto Rs 1 Cr o @15% to New Budget Hotels upto Rs 1.5 Cr o @20% to New Tented accommodation upto Rs 50 lacs o @25% to new heritage properties upto Rs 1.5 Cr (To know about more categories refer to full policy) • Interest Subsidy @5% for 5 years upto Rs 25 lacs per annum to all new units • Skill Development Subsidy @100% reimbursement of hospitality related course fees for upto Rs 10000 per person and subsidy of INR
Exemption	• Stamp Duty exemption @100% on sale/lease/transfer for the first transaction • Conversion and Development charges waiver @ 100% to all tourism units • Excise License Fee exemption @100% exemption to Heritage hotels set up in rural areas
Others	• 5 lakh individual/group in reviving the indigenous and scarce art, music, folk dance, craft and cuisine

5.5.12 Uttar Pradesh Pharma Industry Policy 2018

The State is emerging as a top industrial destination with investment friendly reformative policy approach. This policy takes ahead the vision and objectives of State's Industrial Investment and Employment Promotion Policy 2017 and provides attractive incentives to develop supporting ecosystem for a competitive Pharma industry in Uttar Pradesh.

The policy aims at building up competencies of research, development, and commercialization in pharmaceutical sector, capable of harnessing the true potential of the sector in a sustainable way by utilizing the knowledge and manpower from premier institutions to provide quality and affordable healthcare services.

Key Policy Objectives

- To promote establishment of specialized Pharmaceutical Parks with best-in-class infrastructure and technology.
- To encourage cutting-edge pharmaceutical research, build world-class infrastructure and attract world's best talent to contribute to the State's development.
- To promote creation of Intellectual Property (IP) in the pharmaceutical sector by facilitating R&D institutions and contributing more funds to R&D in the pharmaceutical sector
- To promote AYUSH healthcare through promotion of R&D and manufacturing of AYUSH healthcare products

Key policy highlights

Table 43: Uttar Pradesh Pharma Industry Policy 2018 highlights

Subsidy	• **Patent Filing Subsidy**@ 100% of actual filing costs on domestic patents o @50% of actual filing costs on international patents • **Quality Certification Subsidy** @75% of cost incurred for ISO certification and 50% of cost incurred for BIS certification • SGST Reimbursement, Stamp duty exemption, Capital Interest Subsidy, Infrastructure Interest Subsidy, Industrial Research Subsidy, Electricity Duty & Mandi Fee exemption as per Incentives under UP IIEPP 2017
Support	• Support for setting up **R&D institutes** @60% of annual interest on loan taken reimbursement • Support for **Clinical Trials** @ 75% of total expenditure reimbursement • Support for **Contract / sponsored research** @ 50% subsidy on eligible project cost to institutes situated within UP
Others	• **Pharma Park:** Horizontal Pharma Park developed over min 10acres of land and Vertical Pharma Park developed over min 3 acres of land will be provided same incentives as provided to Private Industrial Parks under IIEPP 2017

5.5.13 Uttar Pradesh Warehousing Logistics Policy 2018

The Govt of Uttar Pradesh realizes that to achieve the vision of sustainable industrialization in the state, the development of warehousing and logistics infrastructure will be a critical factor. A vibrant warehousing and logistics sector would increase the competitiveness of goods produced in the state, both in the domestic as well as export market. The sector has high potential to boost manufacturing and job creation in the state and can therefore be instrumental in improving the State's GDP. With this view, the Govt of UP envisions this "Warehousing and Logistics Policy" to maximize the benefit of the strategic geographical location of the state, and spur far reaching economic benefit.

The rapid industrialization in Uttar Pradesh is also creating higher demand for more sophisticated logistics infrastructure in the State. With GST, India has become a unified market, and UP has immense potential to emerge as a manufacturing and warehousing hub of the nation. The state has huge storage capacity with large number of warehouses under State Warehouse Corporation, cold storages including those under National Horticulture Mission, and Grameen Bhandarans (Rural Godowns) under National Agriculture Bank for Rural Development (NABARD). There are approximately 174 warehouses in UP with 71.84 lakh MT capacity. The current capacity is not enough to suffice the rising storage needs. Therefore, expanding the storage capacity in the state is being emphasized in state.

Through this policy, Govt of Uttar Pradesh envisages to attract investments in the following categories but not limited to -

- Warehousing, Silos, Cold Storages and associated infrastructure
- E-Commerce hubs
- Technological solutions in Real time logistics, supply chain management and process improvement.
- Robotics & Automation technologies in warehousing and logistics sector.
- Skill Development and Training

This policy takes ahead the vision and objectives of State's Industrial Investment and Employment Promotion Policy 2017 (IIEPP 2017) and further provides strategic direction for development of the warehousing and logistics sector in the state over the next 5 years.

Key Policy Objectives

- Promote private investments in setting up logistics facilities in the state with forward and backward linkages.
- Upgrading and improving the existing warehousing and logistics infrastructure to boost economic activities.
- Create more employment opportunities in the sector
- Enhance the warehousing capacity to promote the interests of both primary and secondary sectors
- Promote green and innovative practices to develop a competitive logistics infrastructure in the State.

Key policy highlights

Table 44:Uttar Pradesh Warehousing Logistics Policy 2018 highlights

Subsidy	• **Capital Interest Subsidy**@5% for 5 years upto INR 50 lacs for logistics unit o @5% for 5 years subject to overall ceiling of INR 10Cr for Private logistics Par • **Infrastructure Interest subsidy**@5% for 5 years upto INR 5 Cr for logistics unit o @5% for 5 years upto INR 10 Cr for Private logistics Park
Reimbursement	• **EPF reimbursement facility**@50% reimbursement on providing direct employment to 100 or more employees
Exemption	• Energy@ 100% exemption on electricity duty for 10 years • Development Charges @75% exemption. • **Land-use conversion Charge**@ 50% concession on land use conversion charges
Others	• **Quality certification of Warehouses**@50% of cost of quality certification upto INR 1.5 lacs reimbursement

5.5.14 Uttar Pradesh Film Policy 2018

Objectives

- To develop the state of Uttar Pradesh as an important center for the production of films.
- To provide information about the most amazing, incredible, and delightful places in Uttar Pradesh and the means to attract tourists.
- To promote and publicize the cultural, mythological, and historical heritage and the rich traditions of the state, in the country as well as in other parts of the world.
- To provide opportunities for development of acting and film making talent in the state.
- To provide opportunities for job creation in the state.
- To provide means for attracting additional investment in the state through film industry.
- To provide healthy and relatively economic entertainment to the people of the state as well as the country.

Strategy

The state government is trying to make the best possible efforts to cater to the objectives and for this purpose, it has constituted 'UP Film Bandhu'. Following efforts will be made to create a suitable environment for film production in the state:

- To provide assistance in the development of the best and a very competitive infrastructure at the national level.
- To Renovate the existing infrastructure.
- To provide means for renovation and upgradation.
- To provide required facilities.
- To provide administrative support.
- To attractive packages of financial incentives.
- To provide attractive schemes/ systems of financial support required in the appropriate cases.
- To promote non-government organizations engaged in the publicity of cinema.

Key Policy Objectives

- Establish Uttar Pradesh as the preferred destination for film industry
- Showcase the heritage, culture, and tourist destinations of the State to attract more tourist
- Attract more investment in the state
- Create more employment opportunities in the state

Key policy highlights

Table 45:Uttar Pradesh Film Policy 2018 highlights

Subsidy	• **Subsidy for films** @INR 1 Cr for films which have been shot for at least a half of its total shooting days in Uttar Pradesh @upto INR 2 Cr for the film with two-third of its total shooting days are in Uttar Pradesh • **Additional Subsidy** @ upto INR 25,00,000 will be provided to cast at least 5 artists from UP @ upto INR 50,00,000 will be provided in case all the artists hail from UP • **Processing Subsidy** @ 50% of the processing cost or INR 50, 00, 000, whichever is less is granted if any film producer, shoots and processes the film in the state • **Subsidy for setting up Film institute** @50% of its cost or a maximum of INR 50 lakh, whichever is less, will be provided (excluding Noida/ Greater Noida)
Reimbursement	• SGST reimbursement@100% to multiplex/Cinema Hall owner

5.5.15 Uttar Pradesh Defense Aerospace Units Employment Promotion Policy 2018

Aim

This policy aims to attract private investment in the defense manufacturing sector in the state in the context of the announcement of the establishment of Defense Industrial Corridor in Uttar Pradesh by Hon'ble Prime Minister, Shri Narendra Modi. This policy complements the State's Civil Aviation Policy - 2017 and UP Micro, Small and Medium Enterprises Policy 2017, taking forward the vision and objectives of the State's Industrial Investment and Employment Promotion Policy 2017. Equipped with attractive incentives, this policy provides a strategic direction for the development of defense and aerospace sector in the state in the next 05 years.

Targets

- To attract an investment of Rs. 50,000 Crores in the next 5 years
- Generating 2.5 lakh jobs in the defense and aerospace manufacturing sector

Key Policy Objectives

- Establish the State as D&A manufacturing hub in the country
- Promote establishment of private D&A park in the State
- Provide support to the units which wants to establish themselves in the defense corridor

Key policy highlights

Table 46: Uttar Pradesh Defense Aerospace Units Employment Promotion Policy 2018 highlights

Subsidy	• **Capital Subsidy** @10% of FCI (except land cost) upto Rs. 10 Cr and @15% upto max Rs. 15 Cr in Bundelkhand Region for Mega Anchor & Anchor D&A Unit @5% of FCI (except land cost) upto max Rs. 5 Cr and @7.5% upto max Rs. 7.5 Cr in Bundelkhand Region for MSME & Vendor Unit @10% of FCI up to Rs. 10 Cr and @15% of FCI up to a limit of INR 15 Cr in Bundelkhand region for Private Defence & Aerospace Parks @20% up to Rs. 1 Cr for setting up ETP (Mega Anchor & Anchor units) • **Transport subsidy** (Mega Anchor & Anchor units) @50% subsidy upto consolidated maximum Rs. 2 Cr for transporting imported plant and machinery from logistic park/ transport hub/ port/ harbour to the production unit @30% subsidy up to Rs. 1 Cr (per annum for 5 years) for transporting finished goods to logistic park/ transport hub/ port/ harbour from the production unit
Exemption	• Stamp Duty@100% exemption
Grant	• Grant for setting up of Common Facility Centres @ 25% wherein 75% grant has been provided by GoI
Technology transfer	• Technology transfer (Mega Anchor & Anchor units) @75% for the first 5 units and @50% towards the next 5 units up to Rs. 50 lakhs per unit

5.5.16 Uttar Pradesh Milk Policy 2018

Vision

To establish Uttar Pradesh as the leading milk producing state along with keeping the state as a frontrunner in the field of milk production, to ensure balanced economic development of the state and provide maximum benefit to all the stakeholders.

Targets

- To encourage setting up of milk industry in the state.
- To promote capital investment in the state.
- To ensure that milk producers in rural areas get optimal cost and benefit of their produce.

- To reduce loss of milk of milk producers and to protect their economic interests.
- To increase per capita daily availability of milk in the state from 335 gm to 600 gm.
- To increase milk processing in the state from 12% to 30% through organized sector.
- To increase share of organized sector from current 25% to 60%.
- To enable value-addition of milk and to make available nutritive and high quality hygienic processed milk products to the public.
- To ensure easy availability of processed milk products at affordable rates.
- To encourage export of milk and milk products outside the state and country.

Strategy

- Development of infrastructure facilities
- To provide conducive environment for establishment of milk industry
- Investment promotion
- Technological upgradation promotion
- To provide fiscal incentives and concessions
- Market development and export promotion
- Human resources development
- Other promotional facilitation
- In view of the enormous milk production sector, establishment of 'Project facilitation and monitoring center' (PFMC) at headquarter for providing necessary management and technological efficiency to new entrepreneurs and for facilitating projects and their monitoring.

Key Policy Objectives

- Promote Dairy units and attract investments in UP
- Diversify rural livelihood and ensure fair prices to farmers
- Increase milk production in UP at affordable rates
- Promote innovations, R&D and Tech advancement

Key Policy Highlights

Table 47:Uttar Pradesh Milk Policy 2018 highlights

Subsidy	• Capital Subsidy @ 25% on cost of creating infrastructure/ expansion/ diversification • 100% interest subsidy for 5years to MSME Milk processing units • 7% interest subsidy for 5years to non MSME Milk processing units • 50% subsidy on cost of preparing Detailed Project Report • Promoting Exports o 50% subsidy on cost of sending sample for test abroad o Freight subsidy @25% to transport processed product from plant to airport/port for 3years o 20% subsidy on product Freight on Board cost for 3years
Reimbursement	• 50% reimbursement of quality certification fees and testing charges • 75% reimbursement of patent filing fees (one time)

5.5.17 Uttar Pradesh Electric Vehicle Manufacturing Mobility Policy 2019

Towards this, the Uttar Pradesh Electric Vehicles Manufacturing and Mobility Policy 2018 provides attractive fiscal and non-fiscal to attract investments to promote Electric mobility in the state. The policy also promotes early adoption of EVs in the state as well as create demand in the sector. Therefore, the policy contains 3-components: -

(1) Manufacturing

(2) Charging infrastructure
(3) Demand Creation.

This policy complements the UP Industrial Investment and Employment Promotion Policy (UP IIEP), 2017. Besides the department of infrastructure & industrial development, department of transport, department of power and department of urban development play pivotal role in the implementation of this policy.

Policy Targets

- To attract investments of over INR 40,000 crore in the next 5 years across the electric mobility ecosystem with an employment potential for 50,000 people
- To launch 1000 electric buses (BEVs/FCEVs) and achieve 70% EV public transportation on identified green routes in identified 10 EV cities by 2030.
- To phase out all conventional commercial fleets and logistics vehicles and achieve 50% EV mobility in Goods Transportation in identified 10 EV cities by 2024 and all cities by 2030.
- To roll out nearly 10 lakh EVs, combined across all segment of vehicles, by 2024.
- To bring in manufacturing units of high-density power storage of at least 5GWh capacity in the next 5 years for smooth electric mobility
- To set up nearly 2 lakh slow and fast charging, swapping stations by 2024

Key Policy Objectives

- Promote adoption of in the state EVs in state to create greener environment
- Create employment opportunities both from supply side and demand side of Electric Vehicles
- Create a conducive environment for shift from Internal Combustion (IC) engines to Electric Vehicles (EVs)
- Develop a strong and sustainable ecosystem for battery management, right from production stage to disposal stage
- Develop a strong and sustainable ecosystem for battery management, right from production stage to disposal stage

Key policy highlights

Table 48:Uttar Pradesh Electric Vehicle Mftg Mobility Policy 2019 highlights

Subsidy	• **Land Subsidy**@25% of actual cost or prevalent circle rate of land whichever is less • **Capital Interest Subsidy**@5% p.a. for 5 years upto Rs 50 lakh p.a., to Large, Anchor EVMU/EBUs & MSME • **Infrastructure Interest subsidy**@ 5% p.a. for 5 years upto Rs 1 Cr, to Large, Anchor EVMU/ EBUs & MSME • **Capital Subsidy for Charging Facility**@25% on FCI (excluding land cost) to first 1000 charging stations upto Rs 6 lakh per charging station • **Capital Interest Subsidy for Charging Station**@50% reimbursement on FCI (excluding land cost) for setting up hydrogen generation and fuelling plants to first 10 units, subject to max INR 50 lakh per unit.
Exemption	• **Energy**@100% exemption to Large, Anchor EVMU/EBUs and MSME units for 10 years • **Vehicle Registration Fee**@ 100% exemption from Vehicle registration fees (Only First 1 lakh buyers, and Vehicle manufactures in UP)
Reimbursement	• **Patent and Certification**@75% reimbursement of patent registration cost and 50% reimbursement of quality certification charges for MSME only

5.5.18 Uttar Pradesh Electronics Manufacturing Policy 2020

Vision

To establish Uttar Pradesh as the preferred destination for electronics industry by offering globally competitive infrastructure and favorable policy environment for cultivating Electronics Manufacturing Industry as an important growth driver for Uttar Pradesh through effective use of skilled force, adapting innovation and emerging technologies leading to all-round sustainable ecosystem thereby contributing towards the overall growth of economy of the state & nation.

Mission

- To establish Uttar Pradesh as the preferred destination for electronics industry
- To build a world class ESDM ecosystem in the state
- To nurture MSME enterprises as the growth engine of the economy
- To foster a culture of research, innovation and entrepreneurship
- To create sector-specific high-quality talent pool for the benefit of the industry

Target

- To attract investment worth INR 40,000 Cr
- To establish three (3) Electronics Manufacturing Clusters (EMC) in the state
- To establish three (3) Center of Excellence (CoE) in the state
- To establish ESDM parks for Domestic/Foreign investors in the state
- To attract investment in semiconductor manufacturing through FAB units
- To provide approx. 4 Lakh (0.4 million) employment opportunities within the state

Key Policy Objectives

- Establish Uttar Pradesh as the preferred destination for electronics industry
- Establish three (3) Electronics Manufacturing Clusters (EMC) in the state
- Provide approx. 4 Lakh (0.4 million) employment opportunities within the state
- Foster a culture of research, innovation, and entrepreneurship

Key policy highlights

Table 49:Uttar Pradesh Electronics Manufacturing Policy 2020 highlights

Subsidy	• **Interest Subsidy** @5% per annum on the rate of interest (investment up to INR 200 Cr on the loan) is reimbursed up to maximum of INR 1 Cr per annum per unit for 5 years (Maximum INR 5 Cr per unit) to the ESDM Units @up to 60% of annual interest for 7 years subject to INR 10 Cr per year with an overall ceiling of INR 50 Cr per private ESDM park. • **Land Subsidy** @25% on prevailing sector rates on purchase of land from state agencies in Madhyanchal and Paschimanchal regions. @50% on prevailing sector rates on purchase of land from state Agencies in Bundelkhand and Purvanchal regions
Exemption	• Stamp Duty@100% **exemption of stamp duty** on purchase/lease of land shall be available for the establishment of individual ESDM units @100% exemption of stamp duty on first transaction (Owner to Developer/SPV) and 50% exemption on second transaction (Developer/SPV to ESDM Units) shall be available for purchase/lease of land for EMCs/ESDM parks. • Energy@50% **exemption of Electricity Duty** shall be provided for a maximum period of 10 years to all ESDM units
Reimbursement	• Patent Filing @up to INR 5 Lakhs for domestic and INR 10 Lakhs for international patents, on actual basis reimbursement

5.5.19 Uttar Pradesh Startup Policy 2020

Vision

To establish a world class startup ecosystem in the state by developing a robust infrastructure and providing conducive policy environment.

Mission

Promote the culture of innovation and entrepreneurship at the grassroot level leading to employment generation and introduction of emerging technologies in niche sectors thereby contributing to state economy and empowerment of youth.

Goals

- To be among top 3 states in the "States' Startup Ranking" conducted by, GoI
- Establish/support 100 incubators, minimum one in each district of the State
- Develop minimum one million square feet of incubation/acceleration space for startups
- Create the ecosystem for at least 10,000 startups in the state
- Establish 3 state of the art Center of Excellence (CoEs)
- Establish India's largest incubator in Lucknow

Key Policy Objectives

- Secure a position in top 3 states in the "States' Start-up Ranking" conducted by, GoI
- Establish/support 100 incubators, minimum one in each district of the State
- Develop minimum one million square feet of incubation/acceleration space for start-ups
- Establish 3 state of the art Centre of Excellence (CoEs)

Key policy highlights

Table 50:Uttar Pradesh Startup Policy 2020 highlights

Reimbursement	• Capital grant @upto 50 percent reimbursement of the eligible amount subject to maximum limit of INR One (1) Crore for incubators • Patent Filling reimbursement @INR 2 Lakhs for Indian patents and INR 10 Lakhs for International Patent
Incentives	• Incentives for Start-Ups: o Sustenance allowance @ INR 15,000 per month per start-up for a period of one-year upto 10 start-ups per incubator per year at the idea stage. o Seed capital @ upto INR 5 Lakhs per start-up as marketing assistance upto 10 start-ups per incubator per year to launch the Minimum Viable Product (MVP) in the market
Support	• Financial support to cover operational expenditure @ upto INR 30 Lakhs per year for 5 years or until self-sustainable whichever is earlier for the incubators • State level annual incubator rankings shall be introduced as per the KPI framework approved by the PMIC. Top3 performers in the ranking will be awarded amount of INR 3 Lakhs, 2 Lakhs and 1 Lakh per year to the winner, first runner up and the second runner up respectively • Grant-in-aid (covering capital and operational expenditure) @ upto INR 10 crores to CoE during span of 5 years from the date of establishment.

5.5.20 Post Covid19 Accelerated Investment Promotion Policy 2020

COVID-19 pandemic has caused extensive economic loss at state and national level. Besides loss of revenue, employment resources have been impacted adversely because of decline in industrial output and economic activities. The reverse migration of more than 35 lakh migrant workers from various states has presented the State with challenge as well as opportunity. With an aim to create

employment for such migrant laborers locally and to achieve the objective of building 'Atmanirbhar Bharat' (Self-reliant India), the State Government is looking forward to rigorously promote investments to boost industrial activity in the State.

Therefore, as part of several steps taken to mitigate the demographic risks posed to labour class, the State government has promulgated 'Post-COVID-19 Accelerated Investment Promotion Policy for Economically Backward Regions' to promote fast paced implementation of industrial investments in the economically backward regions of the state to address the COVID-19 distress.

Vision

"To promote fast-paced investments in the economically backward regions of state, thereby creating large scale employment opportunities".

Key Policy Objectives

- Promotes quick investment implementation for job creation
- Provide cushion against Covid 19 distress in the backward regions
- Mitigate the incidence of reverse migration through rapid investments

Key Policy Highlights

Following incentives to mega and mega plus category of industrial undertakings will have to initiate commercial production within 30 months and super mega categories within 42 months from the notification date of this policy: -

Table 51: Post Covid19 Accelerated Investment Promotion Policy 2020 highlights

Subsidy	• Capital interest subsidy @5% pa. for 5years upto Rs 1 Cr
Reimbursement	• 70% reimbursement of net SGST for 12 years in Madhyanchal subject to 200% of eligible capital investment (made during the policy period) and 15 years in Poorvanchal and Bundelkhand subject to 300% of eligible capital investment (made during the policy period).
Exemption	• Electricity duty exemption @50% for 10years. Same subsidy will apply for electricity captive power plant for self-use.

5.5.21 Uttar Pradesh Data Centre Policy 2021

Vision

To establish Uttar Pradesh as the preferred investment destination for Data Center Industry

Mission

To build a world class Data Center ecosystem in the state by attracting investments from global as well as Indian players and nurture MSMEs/ start-ups to support the localization Of the Data Center industry

Target

- To develop 250 MW Data Centre industry in the state
- To attract investment worth INR 20,000 Crores in the state
- Establish at least 3 State of the art Private Data Centre parks

Key Policy Objectives

- Establish UP as preferred investment destination for Data Centre industry
- Develop 250 MW Data Centre Industry in UP
- Attract investments worth Rs 20,000 Crores
- Establishing at least 3 State of art Private Data Centre Parks in UP

Key Policy Highlights

Table 52:Uttar Pradesh Data Centre Policy 2021 highlights

Subsidy	• **Capital Subsidy** to units @7% upto maximum Rs 10 Crores on FCI (exclude land & building) to be paid in 10years • **Interest Subsidy** to parks @60% on annual interest for 7years subject to maximum Rs 50 Crores per park • **Land Subsidy** 25% on prevailing sector rates in Madhyanchal & Paschimanchal; and @50% on prevailing sector rates in Bundelkhand & Poorvanchal upto maximum Rs 75 Crores to parks & units
Exemption	• **Stamp duty exemption** @100% on first transaction and @50% on second transaction to both parks & units • **Electricity duty exemption** @100% for 10years to units • **Transmission & Wheeling charges exemption** for 25years @50% on intrastate sale of power; @100% for intrastate transmission system & for 5years import of energy from outside UP to both parks & units
Others	• **Dual power grid power supply** to first 3 DC parks established in the State. Energy Department to bear the cost of second grid. For units it is available on demand at applicable charges

5.6 Medicity

Medicity is concept which aims to functionally integrate within one campus and one management of the facilities related to medical care, teaching, research, and development. It also offers to explore the possibility of integrating knowledge of traditional and alternative medicine with modern medicine, through means of scientific research.

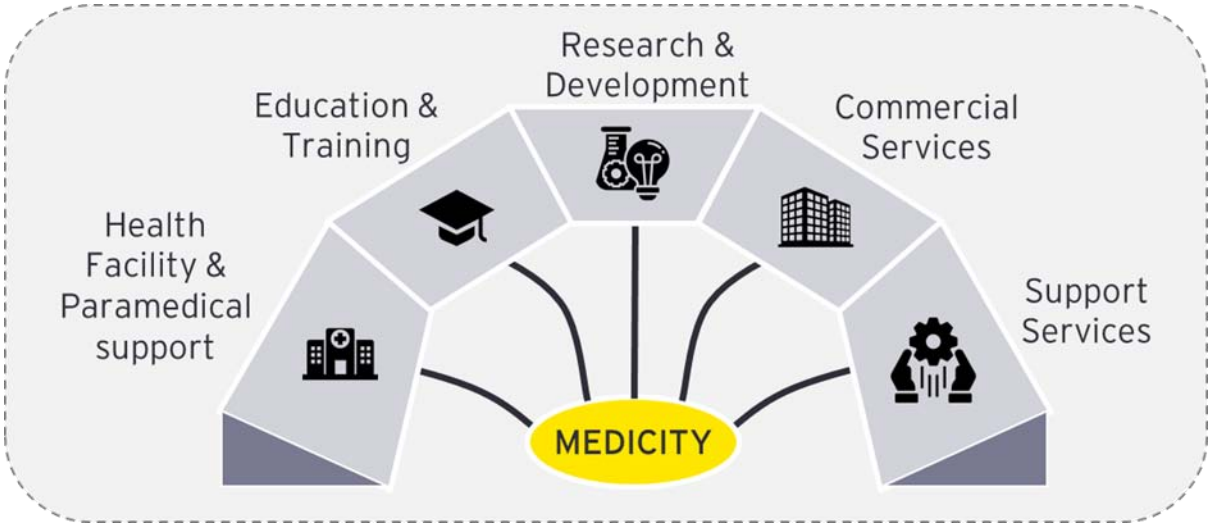
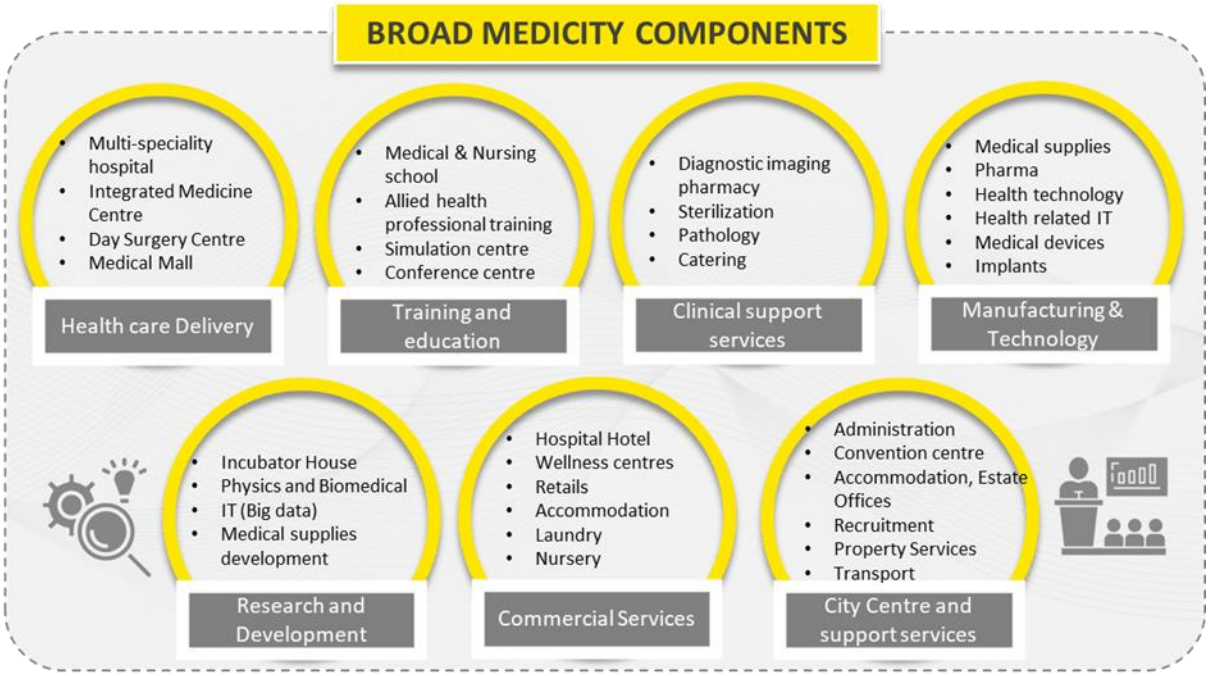


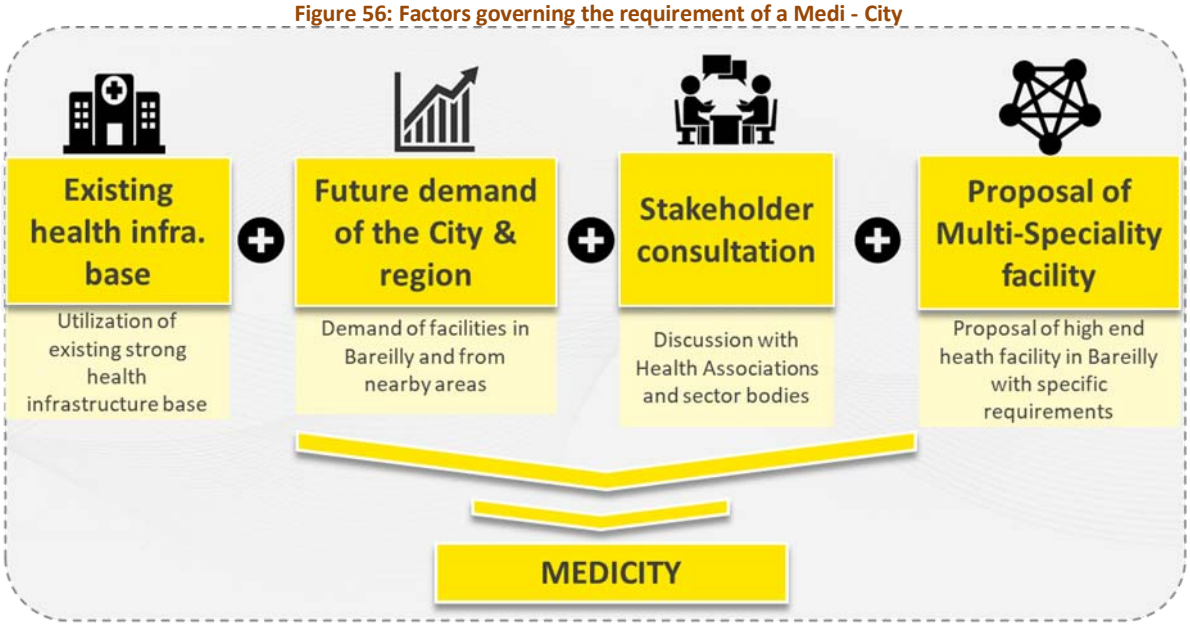
Figure 55: Broad components of Medicity



Bareilly being one of the leading cities of Uttar Pradesh in terms of medical facilities, has a strong health infrastructure base which can be utilized in a better way by providing a much better infrastructure in the form of a Medicity encompassing a Multi – specialty Hospital, academic medical institutions, etc.

Second factor which contributes to the requirement of a Medi – City as per our understanding is that with the increase in population of the Bareilly District, there will be a requirement/ demand of more health facilities in the district in order to cater the population of District along with the population of nearby areas.

Figure 56: Factors governing the requirement of a Medi - City



Discussions with Health Associations and sector bodies, it has come up that there is a need of an organized Healthcare facilities in the district because of the presence of existing healthcare facilities in unorganized/ cluster pattern due to which the local people as well as people from nearby areas face difficulties. Additionally, the existing health facilities needs to be upgraded as these have been deteriorated with time.

Additionally, there is already a proposal being put up by the Government for the high-end health facility in the district with some specifications which may be incorporated with the provision of Medi – City in Bareilly. Following section highlights a few Medicity project in India.

5.6.1 National case study - "Medicity" Concept

5.6.1.1 Health hubs / Medico cities in West Bengal, Andhra Pradesh on PPP mode:

Case study	Bardhaman Health City, Bardhaman, West Bengal	Health hubs in 13 districts of Andhra Pradesh
Components	• 500 bedded hospitals • Centers of excellence (super-specialty treatment) • Pharmacy • Telehealth institute • Rehabilitation center • Medical college, nursing college, advanced dental college • Centre for medical research and development work • Mother & child health center • Hostels for staff & students • Convenience stores, recreational facilities & other civic amenities	• Medical colleges • Nursing colleges • Teaching hospitals • Super-specialty/multi-specialty hospitals [Objective to scale up tertiary healthcare facilities]
Project Cost	INR 1000 Cr (expected)	Min. 100 Cr
Site area	60 acres	30-50 acres (5 acres free of cost)
Type of PPP	DBFOT	Not yet decided
SPV	**Bengal Faith Health Care Pvt Limited (**Bardhaman Development Authority & Bengal CES Infratech Private Ltd in association with FAITH Healthcare Private Ltd	--
Status	**No updates since 2013** (Phase 1 commenced; 100 bedded Bengal Faith Hospital – functional)	Announcement in May 2021

5.6.1.2 Fortis Medicity, Gurgaon and Lucknow

At an investment of over Rs 1,200 crore, the project in Gurgaon will have two campuses. The hospital campus will have a high-end, multi-super-speciality hospital and research center. The college campus will boast of a medical college for undergraduate and postgraduate education, a dental

Figure 57: Fortis Medi-City

college, nursing college and facility for primary and applied research in medicine along with a 600-800-bed hospital.

Spread over 52 acres, the project in Lucknow will see an investment between Rs 500 and Rs 800 crore. It will have an 800-bed hospital, a medical college offering undergraduate, postgraduate and post-doctoral courses, a dental college, nursing college, college of physical medicine and rehabilitation, college of rehabilitative medicine and a college of allied medical science.

5.6.1.3 Apollo Health City, Hyderabad

At an investment of Rs 1,000 crore, this 33-acre project in Hyderabad will not impart undergraduate education. However, it has a postgraduate college for doctors, a nursing school and college, college of physiotherapy, institute of hospital administration, institute of medical informatics, institute for emergency medicine and an institute for paramedics. The hospital has 500 beds and almost 200 more will be added over the next six months.

Figure 58: Apollo Health City, Hyderabad

5.6.1.4 Aster Medcity Kochi

Aster Medcity is a quaternary care healthcare centre in the city of Kochi and one of the largest in South India. It is the flagship hospital of Aster DM Healthcare, a healthcare conglomerate founded by Azad Moopen. This was the third venture of the group in Kerala, after the Malabar Institute of Medical Sciences (MIMS) and DM Wayanad Institute of Medical Sciences (DMWIMS).

Figure 59: Aster Medi-City, Kochi

Aster Medcity is a ₹ 5.5 billion waterfront facility located along Kutti Sahib Road in Cheranallur, a suburb of Kochi and its 40-acre campus is situated on the banks of the backwaters of Kochi. The hospital complex, designed by HKS Architects, has a built-up space measuring a total of 62,710 square meters. The hospital is 7 km from the city center and is accessible through the National Highway 66. Edappally railway station is 7.3 km away and the nearest airport is Kochi International Airport, 24.7 km from the hospital by road. The distance to the National Highway 544 is 7.9 km at Edappally bye-pass junction where Lulu Mall, the largest shopping mall in the country, is located.

The hospital has an in-patient capacity of 670 beds and has 24-hour emergency and accident trauma care facilities. The hospital has been functioning since September 2014 after a soft launch, but the official dedication ceremony was on 6 May 2015, when the institution was inaugurated by the former president of India, A. P. J. Abdul Kalam. The hospital plans to add 500 more beds in its second phase of expansion.

Facilities

The hospital has a general clinical division which includes Internal medicine, General surgery, Clinical imaging, Anesthesia and critical care, Emergency, Pulmonology, otorhinolaryngology, Dermatology, Craniomaxillofacial surgery, Dental sciences, Infectious diseases and infection control, Psychiatry and Nuclear medicine. It also has eight centers of excellence such as Cardiac Sciences, Orthopedics, Neurosciences, Nephrology and Urology, Oncology, Gastroenterology and Hepatology, Women's Health and Child and Adolescent Health, each manned by independent medical teams composed of specialists, nursing and ancillary staff and technicians.

Figure 60: Lay out plan of Aster Medi-City

Aster Medcity has facility for Minimal Access Robotic Surgery (MARS) using da Vinci Surgical System and is reported to be the first hospital in Kerala to provide the service. The system employs tele surgical master-slave robotic system and the surgery is carried out using robotic arms instead of human hands. The Diagnostics division is equipped with 3 Tesla Digital MRI Scanner, 256 slice CT Scanner, Digital Mammography system, The Dexa, Digital X-Ray, Time of Flight PET CT, Cath Lab Allura Clarity system, Flat panel Bi-plane Hybrid Cath Lab, Color Doppler Systems electronic 4D Imaging and Ultrasound Machines with multi modal image fusion. The clinical laboratory which conducts Biochemistry, Hematology, Bacteriology, Mycology, BS Level 3 Tuberculosis, Serology, Immunology, Histopathology, Neuropathology, Renal pathology, Pulmonary pathology, Hematopathology, Bone Pathology and Onco pathology tests, is integrated with the hospital information system. The hospital has an ambulance service, a pharmacy and a rehabilitation center. A blood bank is also operational round the clock in the hospital.

Other services

Aster Medicity is linked to Aster Foundation, an independent charitable non-governmental organization, engaged in providing free medical assistance to financially compromised patients. The hospital serves as a referral healthcare center for patients from the Persian Gulf region. The group has opened help desks in Qatar and Oman for this purpose.

Chapter 6. Transport & Mobility Infrastructure

6.1 Introduction to Bareilly

Bareilly is the fast-growing city and commercial center in the northern part of Uttar Pradesh. It is the present headquarter of Bareilly District and gateway to enter Uttarakhand State. The city is well known as Bans-Bareilly, due to bamboo trade & markets. Bareilly acts as counter-magnet city between New Delhi and Lucknow.

Bareilly is surrounded by districts sharing boarder are Pilibhit, Shahjahanpur and Rampur on the western side, Udham Singh Nagar District (Uttarakhand state) in North and Badaun district in South. The Bareilly city is about 252 km distance from Lucknow, 250 km from New Delhi with total population of 898,167 in 2011.

The Bareilly city plays an important role in contribution towards overall economic development of the northern region of UP. There are several industries located in Bareilly, which includes National Brewery Company, Ice Factory, Flour mill, Wood products, Turpentine & Rosin, Sugar Factory and educational Institutions. Bareilly city is well connected by road/rail/air to major cities like New Delhi, Lucknow, Agra and other cities.

Figure 61- Location & Connectivity map of Bareilly

6.2 Proposed Developments around Bareilly city

6.2.1 Ganga Expressway

The proposed Ganga Expressway is a greenfield project with 6 lane connecting western part of the UP with eastern part with total length of 594 km. The expressway will cover Meerut, Bulandshahr, Hapur, Amroha, Sambhal, Badaun, Shahjahanpur, Hardoi, Unnao, Rae Bareli, Pratapgarh and Prayagraj. The Ganga Expressway will link-up with other expressways in the state like Lucknow-Agar Expressway, Purvanchal Expressway, Ballia Link Expressway.

6.2.2 Rail Land Development Authority (RLDA)

The Indian railways has a proposal for residential development of 62780 sqm of land at Chaupla Railway colony, Izzat Nagar. The land area is divided into two parts, 1966 sqm to be redevelopment of

railway assets and 62780 sqm is to be developed for residential area. The land parcel is a residential cum commercial neighborhood located beside the police line and Ayub khan market.

6.2.3 Ramganga Housing Scheme

Bareilly Development Authority has proposed expansion of Ramganga Nagar Housing scheme on 745 hectares of land. BDA has acquired the land of 12 villages in 2004. BDA has given two options to the farmers, first according to the guidelines of the government, they can take four time the circle rate of the land. Secondly, und the land pooling scheme, he can partner with the BDA of his own free will. BDA will develop their land and will give about 25 percent of the land to the farmers.

6.2.4 Parsakhera Industrial Area

UPSIDC has developed Parsakhera industrial estate near Bareilly. UPSIDC has 367 acres of acquired land out of which 273 acres area allotted plots. The parsakhera industrial estate is 98% allocated to the industries of various small and medium scale.

6.3 Vehicle Growth in Bareilly

In Bareilly, the registered vehicles have been increased moderately over the past decade. It is significant to note that about 14 to 19% of the vehicle's growth in the past decade. The increase of two-wheelers could be attributed to the comparatively better economic status of people and lack of city-wide good PT system. The increase of private modes demands more road space and has resulted in dense concentration of traffic on roads with limited right of ways.

Table 53 Vehicle registration data for Bareilly

Vehicle Registration Data for Bareilly							
Year	**Two-Wheeler**	**Car**	**Bus**	**Truck**	**Others**	**Total**	Growth
2014-2015	47932	5329	72	981	1203	**55,517**	
2015-2016	47440	6155	79	998	1135	**55,807**	1%
2016-2017	54016	7146	144	1235	1210	**63,751**	14%
2017-2018	62757	8592	323	1773	2727	**76,172**	19%

Source: Bareilly RTO

6.4 Transport system & connectivity

The existing transport system of Bareilly city, comprises of road, rail and air transport services. For the purposes of existing situation analysis of the prevailing transport infrastructure, the transport infrastructure can be broadly subdivided into the following components.

6.4.1 Air Connectivity

At present, the Bareilly airport is a civil terminal located in Izzat Nager, which is located 6 km from north of Bareilly city. The terminal building is 2500 sqm, and can handle 150 passengers during the peak hours. In future, a new apron 9500 m provides parking space and 150 cars parking is expanded. A new terminal building was inaugurated in 2021 as a part of airport expansion. The building is spread over 3020 sqm and has a capacity to accommodate over 300 passengers. At present, Bareilly is connected with Delhi, Bangalore, Mumbai.

6.4.2 Rail Connectivity

Bareilly Junction railway station is the major railway station serving city. Bareilly railway station connects the Lucknow-Moradabad line and Lucknow-Sitapur-Lakhimpur-Pilibhit-Bareilly-Kasganj Line. The Bareilly Railway station is well connected to Lucknow, New Delhi, Amritsar, Ambala, Jalandhar, Pathankot, Gorakhpur, Howrah and other major destinations. Other railways station like Bareilly

Cantt, Bareilly City, Bhojipura Junction, CB Ganj, Bohna, Izzatnagar, Parsakhara, Ramganga Bridge secondary railways stations in Bareilly area.

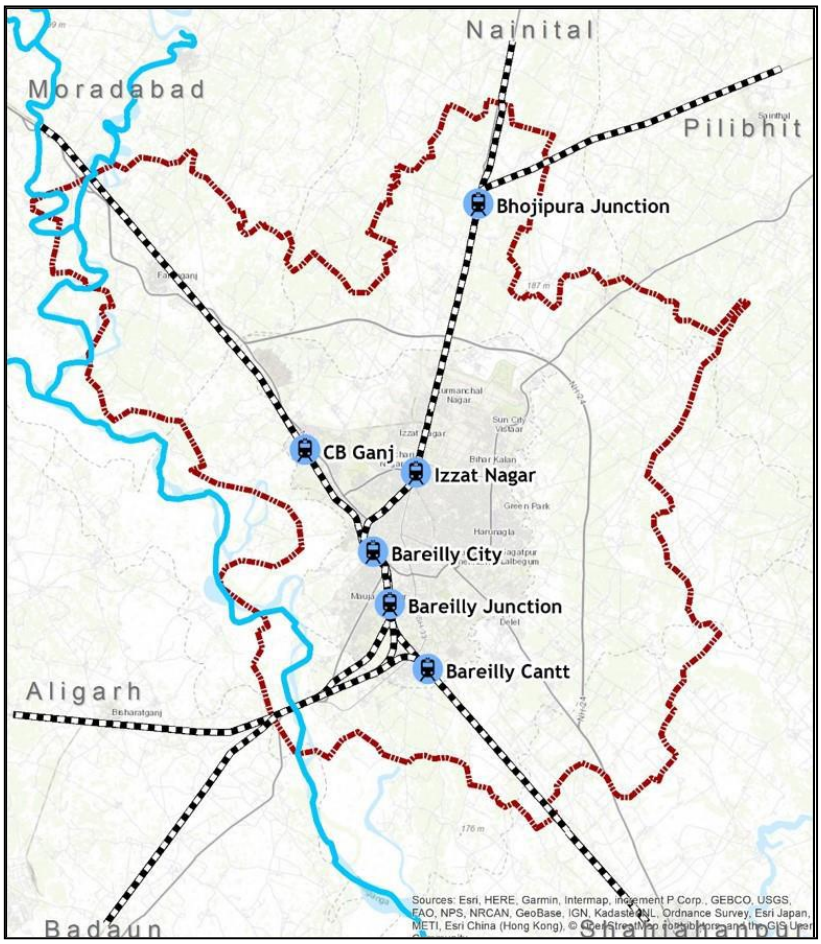


Figure 62: Railway line connecting with Bareilly

6.4.3 Road Connectivity

Bareilly has a radial pattern of road network. National Highways in Bareilly is well connected with its surrounding urban agglomeration, 4 major NH sections pass through Bareilly city are NH-30, NH 530, NH 530-B, NH 730-B and SH 37. The NH 30 is part of Bareilly Bypass section connects Sitarganj on the north and Lucknow, Allahabad on the south. NH 530 connect Bareilly to Rampur Road, NH 530-B connecting Bareilly to Mathura highway, NH 730-B connects (Bareilly to Bisalpur highway. UP state highway no 37 starts from Bareilly to Nainital Road. Bareilly Bypass section starts at Dhantiya village to Rajau Paraspur with total length of 30.1 km.

Figure 63: Major Road Network in Bareilly City

6.4.4 Major road corridor within Bareilly City

Some of the major roads within the Bareilly city is bearing the impact of traffic are

a. Stadium Road: Connecting Pilibhit Road to Shyam Ganj
b. Macnair Road connecting Naintal Road to Stadium Road
c. Pilibhit Bypass Road connecting Pilibhit road to Lucknow Road
d. SH-33 connecting Bareilly to Mathura
e. Mini-bypass connecting Delhi Road to Nainital Road
f. Shyam ganj to Patel Chowk to CB Ganj
g. Shyam Ganj to Chaupla Road
h. Civil Lines Road

6.4.5 Parking System in Bareilly

At present situation in Bareilly city, on-street parking has been observed along the major connecting roads/market areas. which reduces the efficiency of road carriageway and leading to the road congestion. In the site reconnaissance survey, major locations like Kutub Khana Road, Choupla Road, Bareilly Railway Station Road, Mini-bypass Road, Satellite Bus Stand area, Ghanta Ghar, Gandhi Udhyan and other areas.

Table 54: On-street parking in Bareilly

	
Figure 1: On-street parking at Mandi Area	Figure 2: On-Street parking near Choupla Chauraha

6.4.6 Major Junctions within Bareilly City

Some of the Junctions within the Bareilly

 Junction at 100 Futa tiraha (delapeer)	• **Name of the Junction:** 100 Futa Tiraha (Delapeer) • **Type of Junction:** 3 arm • **Directions of the road** - **Eastern side:** Towards Pilibhit Bypass - **Northern side:** Towards Airport - **Southern side:** Towards Delapeer • **Traffic Signal:** Yes; recently installed • **Condition of the road:** Fair (Construction Work for road widening) • **Lane Marking:** No; Marking is faded. • **Availability of Footpath:** No; • **Street Lighting:** Yes; • **On-street Parking:** No; No spaces provided for parking • **Encroachment:** Yes; Temporary Fruits sellers' encroachment
 Junction at Bisalpur Chouraha	• **Name of the Junction:** Bisalpur Chouraha • **Type of Junction:** 4 arm • **Directions of the road** - **Eastern side:** Towards Bisalpur - **Western side:** Towards Jagatpur - **Northern side:** Towards Pilibhit - **Southern side:** Towards Satellite • **Traffic Signal:** Yes; recently installed • **Condition of the road:** Fair • **Lane Marking:** No; Marking is faded. • **Availability of Footpath:** No • **Street Lighting:** Yes; • **On-street Parking:** Informal Parking in the side of the road • **Encroachment:** No.

 Junction at Patel Chowk	• **Name of the Junction:** Patel Chowk • **Type of Junction:** 5 arm • **Directions of the road** - **Eastern side:** Towards Nagar Nigam - **Western side:** Towards Choupla Chowk - **Northern side:** Towards Civil Lines Market - **Southern side 1:** Towards Chowki Chouraha - **Southern side 2:** Towards Car Bazar • **Traffic Signal:** Yes; But Not working. • **Condition of the road:** Bad (Under Construction) • **Lane Marking:** No; Marking is faded. • **Availability of Footpath:** only on one road • **Street Lighting:** Yes • **On-street Parking:** Informal Parking in the side of the roads • **Encroachment:** No.
 **Chowki Chowraha**	• **Name of the Junction:** Chowki Chowraha • **Type of Junction:** 5 arm • **Directions of the road** - **Eastern side:** Towards Gandhi Udhyan Chowk - **Western side:** Towards Railway Junction - **Northern side 1:** Towards Patel Chowk - **Northern side 2:** Towards Bareilly College - **Southern side:** Towards Cantt • **Traffic Signal:** Yes; • **Condition of the road:** Fair • **Lane Marking:** No; Marking is faded. • **Availability of Footpath:** Available but do not have proper movement. • **Street Lighting:** Yes • **On-street Parking:** Informal Parking in the side of the roads • **Encroachment:** No.
 **Delapeer Tiraha**	• **Name of the Junction:** Delapeer Tiraha • **Type of Junction:** 3 arm • **Directions of the road** - **Eastern side:** Towards Airport - **Western side:** Towards IVRI Road - **Southern side:** Towards Stadium Road • **Traffic Signal:** Yes; Recently Installed • **Condition of the road:** Fair • **Lane Marking:** No; Marking is faded. • **Availability of Footpath:** Available but only on one side • **Street Lighting:** Yes • **On-street Parking:** Informal Parking in the side of the roads • **Encroachment:** Yes; Temporary Fruits sellers' encroachment • **Issue:** Traffic Junction

 **Selection Point Chowk**	• **Name of the Junction:** Selection Point Chowk • **Type of Junction:** 4 arm • **Directions of the road** - **Eastern side:** Towards Stadium Road - **Western side:** Towards Sheel Chowraha - **Northern side:** Towards Delapeer - **Southern side:** Towards Koharapeer • **Traffic Signal:** Yes; Recently Installed • **Condition of the road:** Fair • **Lane Marking:** Yes; • **Availability of Footpath:** Not Available; • **Street Lighting:** Yes; • **On-street Parking:** Informal Parking in the side of the roads. • **Encroachment:** No. • **Issue:** Improper Circulation of Traffic.
 **Sheel Chouraha**	• **Name of the Junction:** Sheel Chouraha • **Type of Junction:** 4 arm • **Directions of the road** - **Eastern side:** Towards Selection Point Chowk - **Western side:** Towards Janakpuri - **Northern side:** Towards Rajendra Nagar - **Southern side:** Towards Ram Janki Mandir • **Traffic Signal:** Yes; Recently Installed • **Condition of the road:** Fair • **Lane Marking:** Yes; Marking is faded. • **Availability of Footpath:** Available on one road. • **Street Lighting:** Yes; • **On-street Parking:** Informal Parking in the side of the roads. • **Encroachment:** No. • **Issue:** Improper movement for pedestrians
 **Circuit House Chouraha**	• **Name of the Junction:** Circuit House Chouraha • **Type of Junction:** 4 arm • **Directions of the road** - **Eastern side:** Towards Circuit House - **Western side:** Towards SSP office - **Northern side:** Towards Chowki Chouraha - **Southern side:** Towards Post office • **Traffic Signal:** Yes; Recently Installed • **Condition of the road:** Fair • **Lane Marking:** Yes; • **Availability of Footpath:** Available on 2 roads. • **Street Lighting:** Yes; • **On-street Parking:** Informal Parking in the side of the roads. • **Encroachment:** No. • **Issue:** Improper vehicular movement

 **Gandhi Udyan Chouraha**	• **Name of the Junction:** Gandhi Udyan Chouraha • **Type of Junction:** 4 arm • **Directions of the road** - **Eastern side:** Towards Satellite - **Western side:** Towards Chowki Chouraha - **Northern side:** Towards Shyamganj - **Southern side:** Towards Cantt • **Traffic Signal:** Yes; Recently Installed • **Condition of the road:** Fair • **Lane Marking:** Yes; Marking is faded. • **Availability of Footpath:** Available on 1 road. • **Street Lighting:** Yes; • **On-street Parking:** Informal Parking in the side of the roads. • **Encroachment:** No. • **Issue:** Improper vehicular movement
 **Choupla Chouraha**	• **Name of the Junction:** Choupla Chouraha • **Type of Junction:** 5 arm • **Directions of the road** - **Eastern side:** Towards Chowki Chouraha - **Western side:** Towards Qila - **Northern side 1:** Towards Ghantaghar - **Northern side 2:** Towards Patel Chowk - **Southern side:** Towards Railway Station • **Traffic Signal:** No • **Condition of the road:** Bad; Under Construction • **Lane Marking:** Not Available • **Availability of Footpath:** Not Available • **Street Lighting:** Yes; • **On-street Parking:** Informal Parking in the side of the roads. • **Encroachment:** No. • **Issue:** Improper vehicular movement
 **Satellite Chowraha**	• **Name of the Junction:** Satellite Chouraha • **Type of Junction:** 3 arm • **Directions of the road** - **Eastern side:** Towards Shyamganj - **Northern side:** Towards Pilibhit Bypass - **Southern side:** Towards Lucknow Road • **Traffic Signal:** Yes; Recently Installed • **Condition of the road: Poor** • **Lane Marking:** Yes; Marking is faded. • **Availability of Footpath:** Available on 1 road. • **Street Lighting:** Yes; • **On-street Parking:** Informal Parking in the side of the roads. • **Issue:** Improper vehicular movement Congestion

Jhumka Chowk

- **Name of the Junction:** Jhumka Chowk
- **Type of Junction:** 3 arm
- **Directions of the road**
  - **Eastern side:** Towards Lucknow
  - **Western side:** Towards Delhi
  - **Southern side:** Towards Bareilly
- **Traffic Signal:** No
- **Condition of the road:** Bad; Under Construction
- **Lane Marking:** Not Available
- **Availability of Footpath:** Not Available
- **Street Lighting:** Yes;
- **On-street Parking:** Informal Parking in the side of the roads.
- **Encroachment:** No.
- **Issue:** Entry Point of Bareilly

6.5 Public Transport System in Bareilly

At present in Bareilly city, 2 no of bus stands (Old bus stand and Satellite Bus Stand). Both the Bus Stand are in functional, as most of the Bus frequency is from Satellite Bus Stand. The old Bus stand is located in civil lines cater bus plying on routes towards Moradabad, Haldwani, Delhi, Nainital, Dehradun, Agra, Jaipur areas. Satellite bus station caters the bus services towards long distance to Kanpur, Lucknow, Prayagraj, and others.

Table 55: Satellite Bus Stand in Bareilly

Figure 64: Existing condition of Satellite Bus Stand

UP State Transport Department has commissioned project for provisioning of electric buses in Bareilly city under FAME 2 Scheme, which will be taken up in two phases where phase 1 will house 23 locations for bus shelters and phase 2 will house 30 locations for bus Shelters. The Intra city bus route has been identified and passes throughout the Bareilly area.

Table 56: Proposed City Bus routes in Bareilly

City Transports Services Ltd						
Route Name	**Route Descriptions**	**Distance (KM)**	**Running Time (Min)**	**Layoff Time**	**Frequency Headway (Min)**	**Number of Buses required**
Bareilly Junction to Phoenix Mall	Bareilly Junction to Air Force Station via Chowki Chauraha, Gandhi Udhyan, Satellite Bus Stand, Bisalpur Chauraha, Ruhelkhand University, Phoenix Mall	11.9	60	320	20	5

Bareilly Junction to Central Jail Colony via Swale Nagar	Bareilly Junction to Nagarya Prikshit via Chopla Chauraha, Dulha Miyan Mazar, Qila Pul, Swale Nagar Mini Bypass, Izzat Nagar Railway Station, Central Jail Colony	12.5	65	320	20	4
Bareilly Junction to Persakhada via Qila Pul	Bareilly Junction to Parsakhada via Chopla Chauraha, Dulha Miyan Mazar, Qila Pul, Satya Prakesh Park, CB Gunj Police Station	13.6	70	280	20	5
Bareilly Junction to Fruit Mandi via Delapir Chauraha	Bareilly Junction to peerbhora Air Force Station via Chowki Chauraha, Gandhi Udhyan, Vikas Bhavan, Shyam Ganj Flyover Bridge, Eit Pajaya Chauraha, Bareilly Stadiam, Delapir Chauraha, Fruit Mundi	10.8	55	280	20	6
Bareilly Junction to Badaun Road Patel Vihar	Bareilly Junction to Badaun road Hindustan Petrol Pump via City Mall Godown, Chopla Chauraha, Chaurasi Ganta Mandir	5.1	25	320	20	5

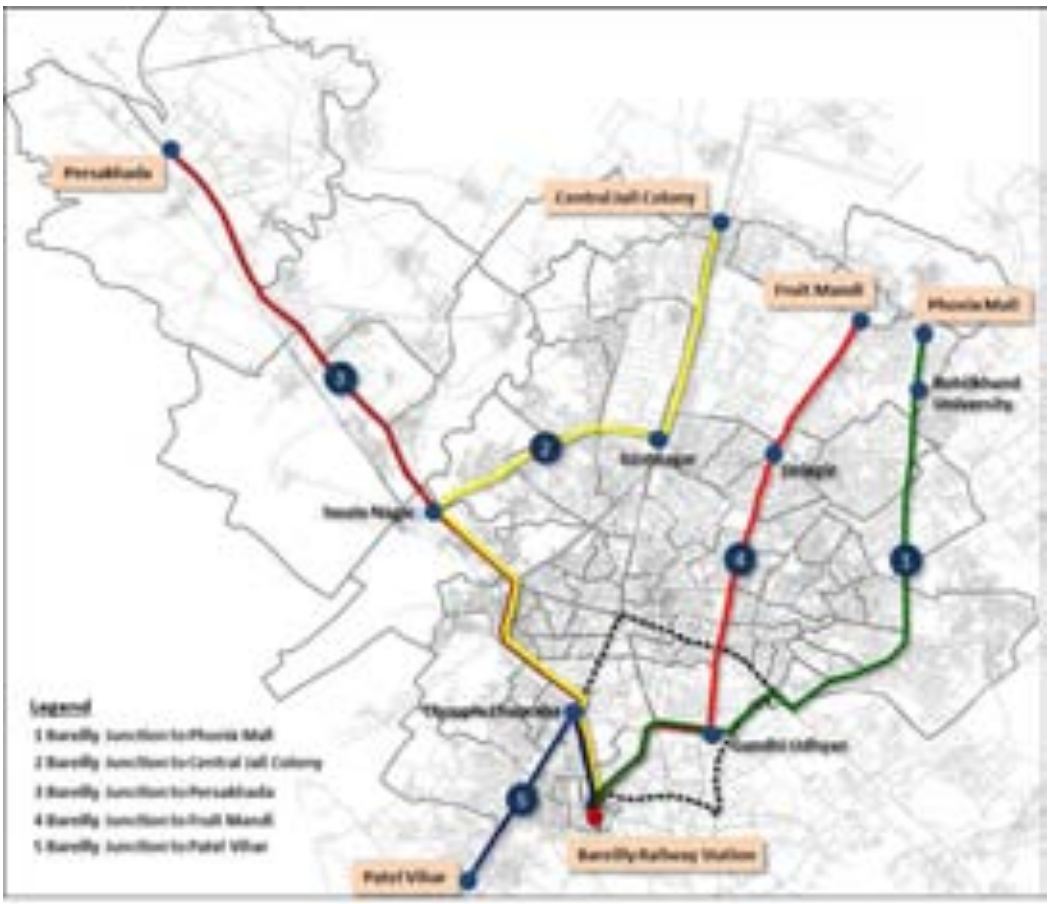


Figure 65: Location map of Proposed Bus route in Bareilly

6.6 Demand & Analysis

6.6.1 Parking Policy and Construction of Off-street parking lots in major market and commercial areas to accommodate the parking demand.

Background: The main objective of the Parking policy to provide relief of congestion, to reduce parking demand through increased parking cost, to promote public transport for

comprehensive mobility. The vision of this project focuses on setting up an off-street parking infrastructure in high traffic congestion zones for the citizens of Bareilly city. The intention is to create modern, space and cost-efficient multi-level parking structures which will ease the load on the roads. They shall have the following features:

- Automated operation
- Puzzle-type electro mechanical parking
- Space efficient design
- Reasonable pricing

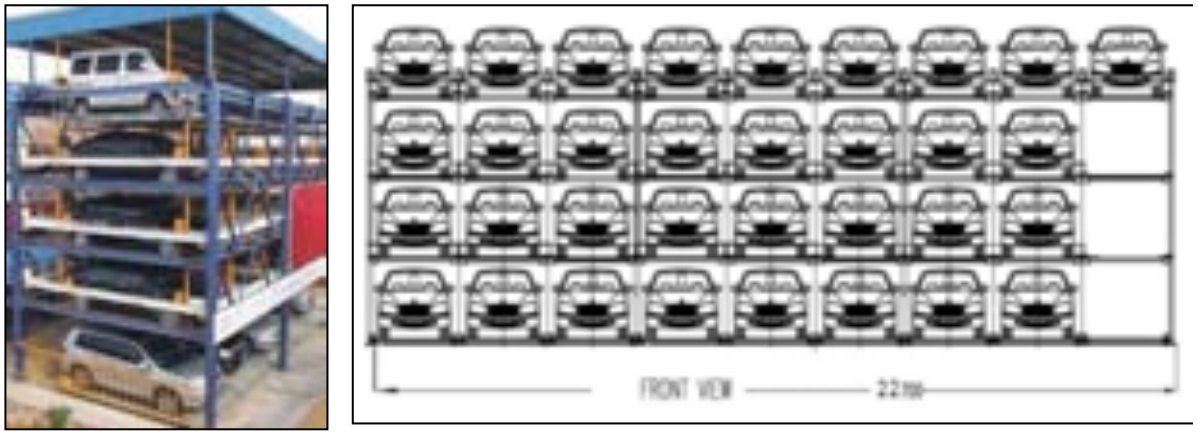
Multi-level Puzzle type parking system can be said to be a combination of pallet and stack systems with minimum space utilization adjacent to the road.

- Revolutionary Parking System with maximum floor space utilization
- Vertical allocation of the parking rooms
- System virtually eliminates Driveways, Ramps, Passenger Lifts etc.
- Three side open cantilever lift for direct drive in and drive out operations
- Possible to integrate various safety and security features
- Can be installed in independent steel tower as well as built in type in RCC structures
- Model Type: 9 Bay x 4 levels
- Area of unit: 2.5 x 5.6 m
- Height: 1.6 m
- Load Bearing: 1600 kg

Proposed Locations:

- Bareilly Railway Station
- Court Compound
- Ayub Khan Chauraha
- Satellite Bus Stand
- Sabji Mandi

Construction Cost: Rs 4.0 lakhs/unit
Installation Time: 6 Months
Mode of Selection: PPP Mode
Concerned Department: BDA/Smart City/BMC



Typical Layout of Multi-level Puzzle Car parking

6.7 Strengthening of Radial Road connecting to Ganga Expressway

The proposed Ganga Expressway is a greenfield project with 6 lane connecting western part of the UP with eastern part with total length of 594 km. The expressway will cover Meerut, Bulandshahr, Hapur, Amroha, Sambhal, Badaun, Shahjahanpur, Hardoi, Unnao, Rae Bareli, Pratapgarh and Prayagraj. The Ganga Expressway will link-up with other expressways in the state like Lucknow-Agar Expressway, Purvanchal Expressway, Ballia Link Expressway.

NH 530B is a secondary route, connects Bareilly-Budaun-Kasganj-Hathras and Mathura in the state of UP with total length of 265 km. The distance between Bareilly to Badaun is only 50.0 km and as per news article the connectivity to Bareilly city is 36 km (Approx.) from proposed ganga expressway.

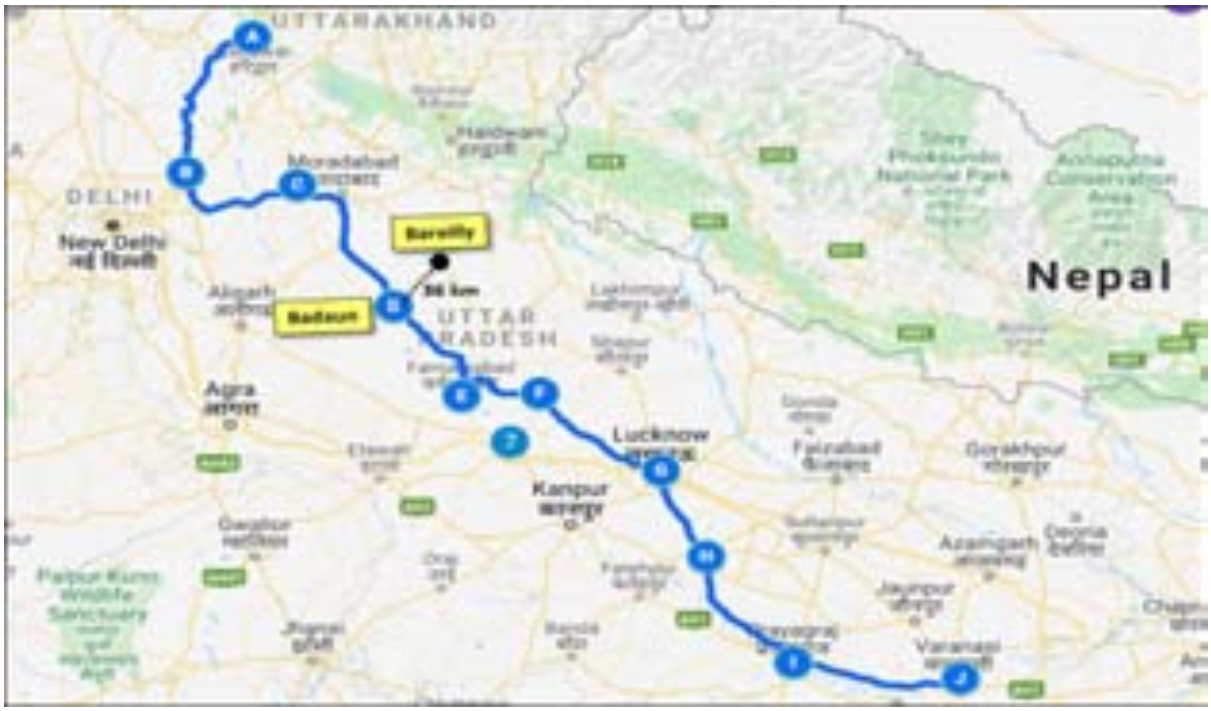


Figure 66: Ganga Expressway alignment

Upgradation of Road: Lalfatak Road to Proposed Expressway near Badaun
Total Length: 36 km
Upgradation: 4/6 lane road

Construction Cost: Rs 8 to 12 Cr/km
Construction time: 3 to 5 years
Concerned Department: BDA/Smart City/BMC

The vision of this project is to connect the Bareilly city with proposed Ganga Expressway with seamless and uninterrupted traffic movement by strengthening the NH 350B. At present, this section is 4 lane divided carriageway and at some locations construction of flyover is taking place. An alternative connection from Parsakhera Industrial area of Bareilly can be linked to the NH 350B.

6.8 Interactive Bus Stop at various locations

To bridge the gap and provide a society in line with the vision of inclusive growth, the purpose of the project is to drive economic growth and improve the quality of life of people by enabling local area development. The objective is to promote cities to provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment. Redevelopment of Integrated bus

stops/shed with the facility of charging point, CC Camera, Location Map, Lighting, seating facilities and Information display Boards.

The system must meet the essential criteria such as Availability, Accessibility, Assessment and Acceptance. Amongst the citizens, special provisions must be made for the physically challenged, senior persons, women and children who may have difficulties in accessing the services of mini bus easily. The range of interventions to meet the stakeholders' expectations could cover:

- Redesigning bus stops on-line display of bus arrivals
- Creation of suitable infrastructure at bus stops and bus stations for on-line real-time
- passenger information system.
- Special seat allocation for old-aged, physically challenged, women and children
- Prioritizing their entry into and exit from the buses before others.
- Status of the bus schedules.
- Electronic ticket sale machine and fare collection system.
- Real time communication with the drivers for incident / emergency management.
- Schedule and bus stop announcements through visual displays and voice based.
- Dust-bins, bollards and other facilities

Proposed Locations: Proposed 30 no of location in Bareilly city
Area Required: 60 sq m/location

Construction Cost: Rs 15 to 20 lakhs/location
Construction time: 3 to 5 years
Concerned Department: BDA/Smart City/BMC

Figure 67: Concept design of the mini bus stand

6.9 Development of Cycle Track Corridor

Objective of this project is to provide safe and congestion free movement of vehicles and provide preference to NMT vehicle for future sustainability. Non-motorized mode is sustainable, environment friendly mode of transport and docking stations are proposed at close proximity to bus stand/railway station/major junction.

In 2015, a cycle track from satellite flyover was constructed with length of 850 m with 2.75 m wide from Satellite junction to isanyion-ki-puliya. Features of Non-motorized transport system is

- To provide convenience to the passengers by way of last mile connection with availability of eco-friendly transportation services at convenient locations in the city.
- To ensure affordable, flexible, safe & secure and comfortable mobility services for short trips as may be utilized by the citizens and general public.
- To provide an active transport choice that offers physical health benefits to the residents of Bareilly.
- Thermoplastic paint with reflective glass beds with 2.5 mm thickness, 150 mm white solid lane marking and cycle symbol with different color on the path.
- Lane width: 1.5 to 2.5 m
- Signages of cycle tracks along the route.

Proposed Locations:

a. Satellite Bus Stand to Fun City mall, Length: 7.5 km
b. Mini Bypass (Rampur Road to Izzat Nagar Railway Station), Length: 3.5 km
c. 100 futa road (IVRI Building to Delaphir junction), Length: 1.7 km

Area Required: 1.5 to 2.5 m on both side of the road
Facilities: Signages, Street Infrastructure and post-top lights
Marking: Retro-reflective Thermoplastic Glass Beads
Docking Areas: Cycle Parking stands

Construction Cost: Rs 1.5 to 2.5 Cr/km
Construction time: 3 to 5 years
Concerned Department: BDA/Smart City/BMC

Figure 68: Cycle track in Lucknow

6.10 Establishment of Freight Logistic Hub for efficient distribution of inter & intra urban freight movement in Bareilly

Freight Logistic hub plays a vital role in promoting storage and distribution of Agricultural and industrial produce. In case of Agricultural produce, it enables the markets to ease the pressure of safe storage during harvest season and thus maintain uninterrupted supply of agricultural commodities during off season.

City logistics is the process for totally optimizing the logistics and transport activities by private companies in urban areas while considering the traffic environment, the traffic congestion and energy consumption within the framework of a market economy.

Bareilly is very well connected with Delhi & Lucknow with road and railway line and is an important hub for all the trains passing through this city.

Proposed Location: Near Parsakhera Industrial Area
Advantage: Connectivity with Railway line and NH 30
Area required: 30 to 40 acres
Mode of Selection/setup: PPP basis
Estimated Cost: 250 to 300 Cr (Approx.)
Construction Time: 3 to 5 years
Concerned Authority: UP Warehouse Corporation, BDA

Provision of Parking space: 500 to 1000 Trucks parking space
(Additional 50 – Car & 100 two-wheeler parking)
Warehouse & Cold Storage: 5000 MT
Other Infrastructure: Warehouse for Storing goods, Loading and unloading, weighbridges (50 T & 100 T Capacity), rest rooms and Petrol Pumps.

Figure 69: Typical Logistic hub

6.11 Electric Vehicle Charging Station along the National Highway for Cars

Installing EV charging stations along the NH will immensely help electric vehicles for long distance travels. Currently there are only limited EV charging stations along the highways to cater to the needs for EV owners.

Setting up EV charging station along NH is also help boosting EV sector around the country. The government's focus on providing world class infrastructure and related services for the highway network is expected to get good returns. Besides EV charging station can also plan restaurants, food courts along the national highways to boost infrastructure.

Proposed Location: Along NH 30
Area Required: 13.5 m x 5.5 m (as per MoP guidelines)
Additional Facilities: Restaurants, Petrol Pump, Amenities, ATM and Refreshment

Estimated Cost: 40 lakhs/unit
Installation time: 6 to 8 months
Concerned Authority: NHAI, BDA, BMC

Figure 70: Typical charging type

6.12 Lite Metro facility for Bareilly city

A medium capacity system or also known as light rapid transit or light metro, is a rail transport system. Ridership determines the scale of a rapid transit system; size of the rail system needs for the proposed location. Most light rail system are fully grade separated and the distance between the stations is not much longer and constant speed of the rail.

The main reason to build the light metro instead of regular metro is to reduce costs, and shorter stations. Light metro may operations faster than heavy rail transit system. In metro light system, ticket counters, platform are on the same floor. Approximately, 300 to 400 passengers/trip can travel in the metro light.

Route Length: 117 km
Estimated Cost: 140 to 160 Cr/km
Construction Time: 5 to 8 years
Concerned Dept: SPV, BDA, BMC

Figure 71: Metro light system

6.13 SWOT Analysis of Bareilly Transport situation

Table 57 SWOT analysis of the Bareilly Transport situation

Strengths	a. Most of the road stretches in the Bareilly city are between 12 to 24 m RoW and thus there is a lot of scope of Development. b. It has been observed that several streets are vibrant in terms of informal sectors and there is a scope to facilitate such activities in efficiently planned manner without disturbing their order. c. Carriageway is in good condition at most of the road stretches and thus do not require intervention until it is necessary. d. A Holistic development of the roads along with the junction development project which will create a consolidated and uniform urban infrastructure system.
Weakness	a. Encroachment of footpath area in present state by vendors and shop owners may put the proposal at risk if enforcement is not done properly b. **Irregular Parking Patterns**: Common pattern noticed in Bareilly is, the citizens prefer on-street parking over off-street parking primarily because the former is cheaper than the latter. This leads to irregular parking all over the road width especially during the peak hours. In addition to this there is lack of parking bays due to which the commuter parks the car on road. c. **Lack of Segregation of Traffic Modes**: It has been observed in the Bareilly city that a large no. of citizens commute via two-wheelers and auto rickshaws though detailed survey of all the roads have not been done. These rickshaws tend to create a havoc on the road sides and regulate the fares according to their conveniences. Also, the citizens commuting by cars are not able to move freely due to hindrance caused by the e-rickshaws. d. **Congestion during Peak Hours**: The citizens generally park their vehicles on the roadsides. So, during peak hours, i.e., the morning and evening there is congestion on the roads creating unmanaged situation if not under policing. e. **Lack of Pedestrian Clarity due to hawking areas**: Footpaths do not exist, as they are either too narrow for people to walk on, or have been encroached by hawkers, forcing pedestrians onto the roads. f. Parking availability and the parking needs have huge gap and thus most of the roads are occupied by vehicles blocking the carriageway
Opportunities	a. Spaces along the Road carriageway could be made into public realm which will not force the pedestrian to use the roads and hence provide safety.

	b. There is a chance for provision for several activity zones respecting the local nature of the city and providing to all irrespective of class. c. There is an opportunity to provide designated spaces for public amenities like toilets, benches, water ATMs etc. d. With this proposals road can be envisioned more than just infrastructure for movement and can become one of the public spaces for the people of Bareilly e. Intelligent traffic management, clear crossings, foot over bridges, signage displays at every interval, street furniture such as dustbins bollards.
Threats	a. As it is clear the sewer trunk line shall be made before the roads proposals and the carriage way shall be disturbed. b. Encroachment on the roads needs to be controlled through effective policing. Unavailability of which may lead to design failure c. Illegal parking may continue, if parking spaces provided are not enough to cater to the demand

Chapter 7. PHYSICAL INFRASTRUCTURE

7.1 Vision Plan

This consultancy project is supported by the Government of Uttar Pradesh which envisions for betterment of the city of Bareilly by enhancing its comprehensive development of physical, institutional, social and economic infrastructure in accordance with modern and innovative urban planning principles.

The project envisages to prepare the Vision, Implementation Strategy and integrated infrastructure plan to support objectives of holistic, sustainable and planned development of Bareilly city. It requires to take a much broader view of planning to allow for more integrated land use and infrastructure development schemes. The project is expected to drive economic growth, improve the quality of life of people by strengthening city's inherent potentials and augmenting its existing infrastructure. It should also contribute to enhancing the resilience of the city by incorporating policies to enable the city in coping with urban risks and climate change mitigation and adaptation. The Vision, Implementation Strategy and integrated infrastructure plan for Bareilly in Uttar Pradesh will further pave the way for project development, management and project implementation support.

Vision Plan- **"Clean Green City"**

7.2 Vision Plan for Water Supply:

Bareilly city is provided with water supply from ground water sources such as bore wells fitted with hand pumps or power pumps. Existing installed capacity of water supply to the city is about 143 MLD, where the volume capacity is 138 MLD and overall demand for city is 154 MLD in year 2021. There is no Water Treatment Plant. Water is only supplied with just 51 percentage coverage in the entire planning area. Total billable volume of water supply connection is 109 MLD.

DESIGN PERIOD:

This vision Plan has been prepared for a design period of 30 years with the initial stage taken as the year 2021, mid stage as the year 2036 and ultimate stage as the year 2051. Intermittent five years duration projection have been also assessed as under. Further 2071 Demand will be freezed for visionary outline development planning purpose.

POPULATION FORECAST FOR SPATIAL EXPANSION:

There are totally 19 census towns except M.C and Cantonment board in Project area i.e. Planning Boundary as per Enclosed list in Master Plan 2031. There are 149 villages within the Project area among which 54 villages are already engulfed with the 2031 Master plan boundary. To account the population growth as per master plan, the general growth method has been adopted and the population estimation for Project area is as under:

Table 1.21: Population Forecast for spatial extent and entire project area

Year	Municipal Area Population (Nos.)	Cantonment Board	Total Villages within Planning Boundary	Total Census Towns within Planning Boundary	Total Planning Boundary Population	Master Plan 2031 estimation of Total area
2021	11,40,717	37,388	279,655	98,273	1556033	
2026	12,46,391	41,990	314,074	110,368	1712822	
2031	14,31,466	46,591	348,492	122,463	1949012	1894211

Year	Municipal Area Population (Nos.)	Canton ment Board	Total Villages within Planning Boundary	Total Census Towns within Planning Boundary	Total Planning Boundary Population	Master Plan 2031 estimation of Total area
2036	15,61,400	52,326	391,383	137,535	2142644	
2041	16,98,116	65,206	487,722	171,389	2422433	
2046	18,41,613	73,231	547,749	192,483	2655075	
2051	19,91,891	81,256	607,775	213,577	2894499	
2071	3125421	279265	20,59,691	723,792	61,88,168	

Source: Analysis

Based on the development plan proposals and by taking into consideration the present trends and absorption capacity, the pattern of population distribution over space has been identified. There is no major change in the total requirement of area and hence in this aspect, the master plan boundary will be useful for spatial extent for 2031 Infrastructure Plan and for the remaining years. Visionary estimation for requirement of physical Infrastructure will be attempted.

The physical extent of the city is also expected to also be incorporated as master plan suggested with the availability of physical infrastructure. As per URDFI Guidelines Medium town density: 100-115 pph. As per trend developed area density assumed 125-135 pph (following other town with same class of population & growth pattern) New area density assumed for planning is 75-100 pph for 2036 & 2051 respectively.

Local Ground Water Sources:

Borewells. In addition to the three-surface water i.e. Ramganga, two water channels within the City and more than 150 bore wells supply water to small-localized pockets. Service reservoirs in different colonies receive water from the bore wells and distribute this water through their distribution network. While many bore wells are fitted with submersible pumps, remaining bore wells are fitted with hand pumps. Ground water is available at a depth of 10.98 m in post monsoon to 9.80 m in pre monsoon in year 2021 (Source: https://jjmup.org/wq/gwd.php)

Total supply from the bore wells is estimated to be about 143 MLD as per Nagar Nigam provided data. Due to scanty rainfall in last few years and excessive drawl to arise the water shortage, the ground water table is lowering rapidly, resulting in the failure of many bore wells with hand pumps. The ground water is also reported to contain slightly high fluoride contents. The transmission mains are pre-stressed concrete pipelines. There are four zones in water supply as under:

Water Availability in Project Area in year 2021

Water Supply: -

Coverage = 51%

Domestic Connection (Unmetered) = 95370 numbers

Installed Capacity for Ground Water Supply = 143 MLD

Volume of water produced through Ground Water (Power Pump) = 138 MLD

Volume of water billed from Domestic Connection = 109 MLD

Volume of water billed from Non-Domestic Connection = 1 MLD

Total Volume of water unbilled (free supplies to Public Taps) = 0.8 MLD

Water Supply frequency = 30 days (8 hours per day)

*(Source SLB 2019-20)

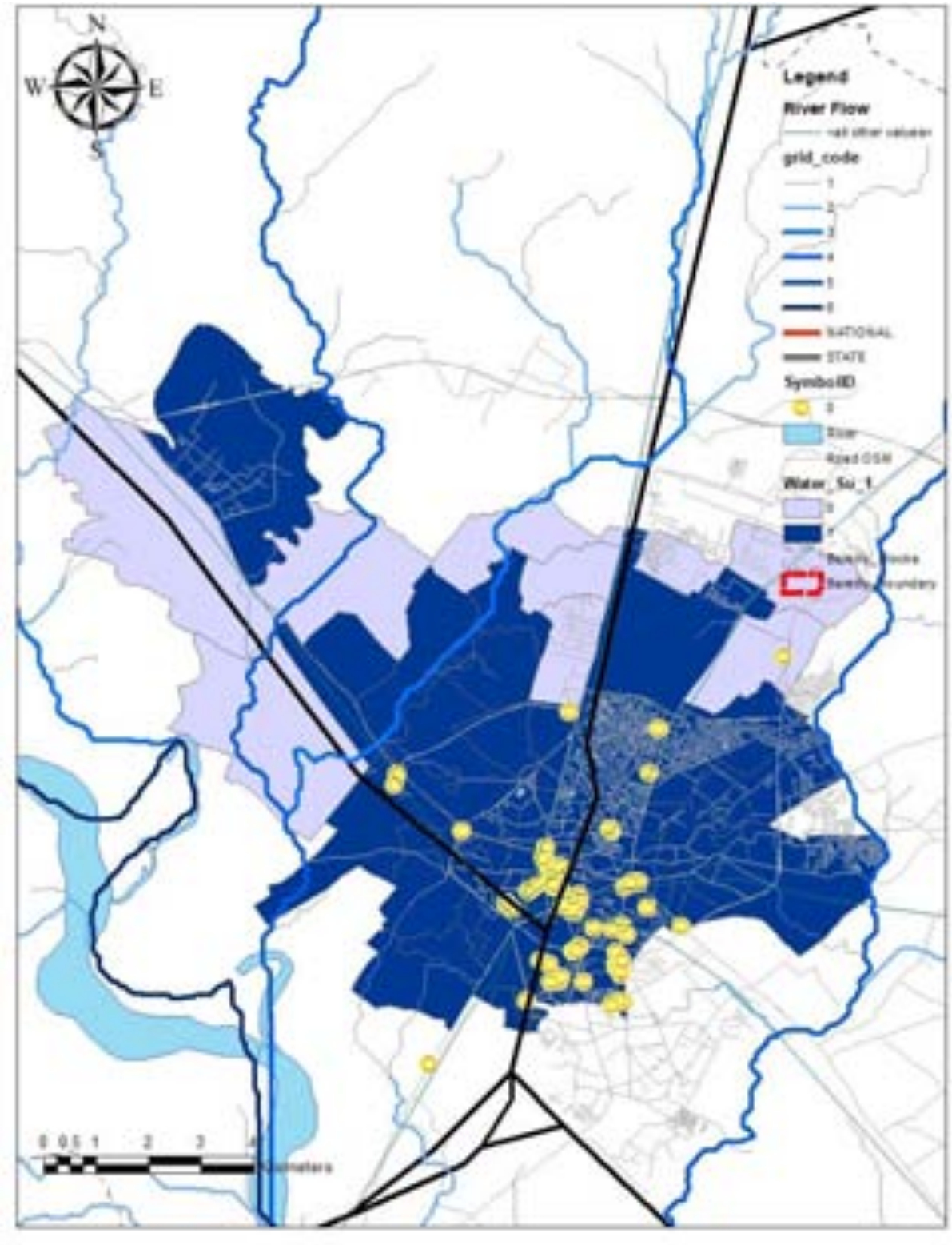


Figure 72: Water supply coverage in Nagar Nigam area within Planning Boundary

HHs Water Demand: -

Year 2021 by considering @150LPCD= 165 MLD
Year 2051 = 301 MLD

Industrial Use:

Not available
Estimated: 30 MLD by PCB

Need Augmentation and DPR Preparation

Connection
Length of distribution network = 578.20 km

Basis of above analysis the availability of water supply is only 51%, and even per capita water availability is only 121 LPCD. Gap in water supply collection charges as per SLIP report 55%. Gap in NRW is almost 20% which includes leakage, free water supply to society on festivals, supply through stand post.

Water availability within municipal area is also different. On account there are more than 200 water bore wells serves city through network system. But total 25 elevated storage serve city as under.

The Green area is having full supply. Yellow area is under smart city area having full supply, blue and red area is having partial supply need augmentation of work. The details of water supply hand pumps are as shown in Fig 72.
Total Water reservoir is 42
Total Hand Punp- 84
Total Water pump is 68
Total supply water bore wells are 17
Total mini bore wells are 8

7.2.1 AREA WISE WATER AVAILABILITY ANALYSIS

Bareilly city has 80 wards. Out of total wards 38 wards are having full connection through water supply network. Addition to that in Smart city area ABD area few wards area having all 100% water supply connection. But total 7 Wards are connected partial areas and two areas still do not have any connection under Amrut 1.0. As per Nagar Nigam Water Balance report total water supply is on today is 76.29 MLD. After total Water source enhancement from 60 to 84 tubewells now per capita availability has increased.
Hydrogeological characteristics of the area shows as under:

Rainfall- The summer monsoon is the major source of rainfall, which generally lasts from mid-October. July and August months are the wettest months.

(b) Temperature: The maximum mean monthly atmospheric temperature has been recorded during the month of May and minimum

(c) Humidity: During the peak monsoon period (i.e. August and September) and in mid (during December) the relative humidity is at highest level ranging between 79% and 84%. While it is lowest around 38% during peak summer month April and May.

(d)Geomorphology (a) In general, the area shows the following distinctive geomorphic units: 1. Lower piedmont plain of Tarai 2. Older alluvial plain or upland 3. Younger alluvial plain or low land 4. Meander flood plain (b) Soils: The soil of the district, can be classified into three major groups, based on its texture and characteristics. Bareilly Type Type-2 (Khadar or low (Upland or Bangar soils) The maximum mean monthly atmospheric temperature has been recorded during the month of May and minimum during January. During the peak monsoon period (i.e. August and September) and in mid winter season (during December) the relative humidity is at highest level ranging between 79% and 84%. While it is lowest around 38% during peak summer months. In general, the area shows the following distinctive

1. Lower piedmont plain of Tarai 2. Older alluvial plain or upland 3. Younger alluvial plain of the district, can be classified into three major groups, based on its texture and composition characteristics. Bareilly Type-1 (Tarai soils) Bareilly -land soils) Bareilly Type-3

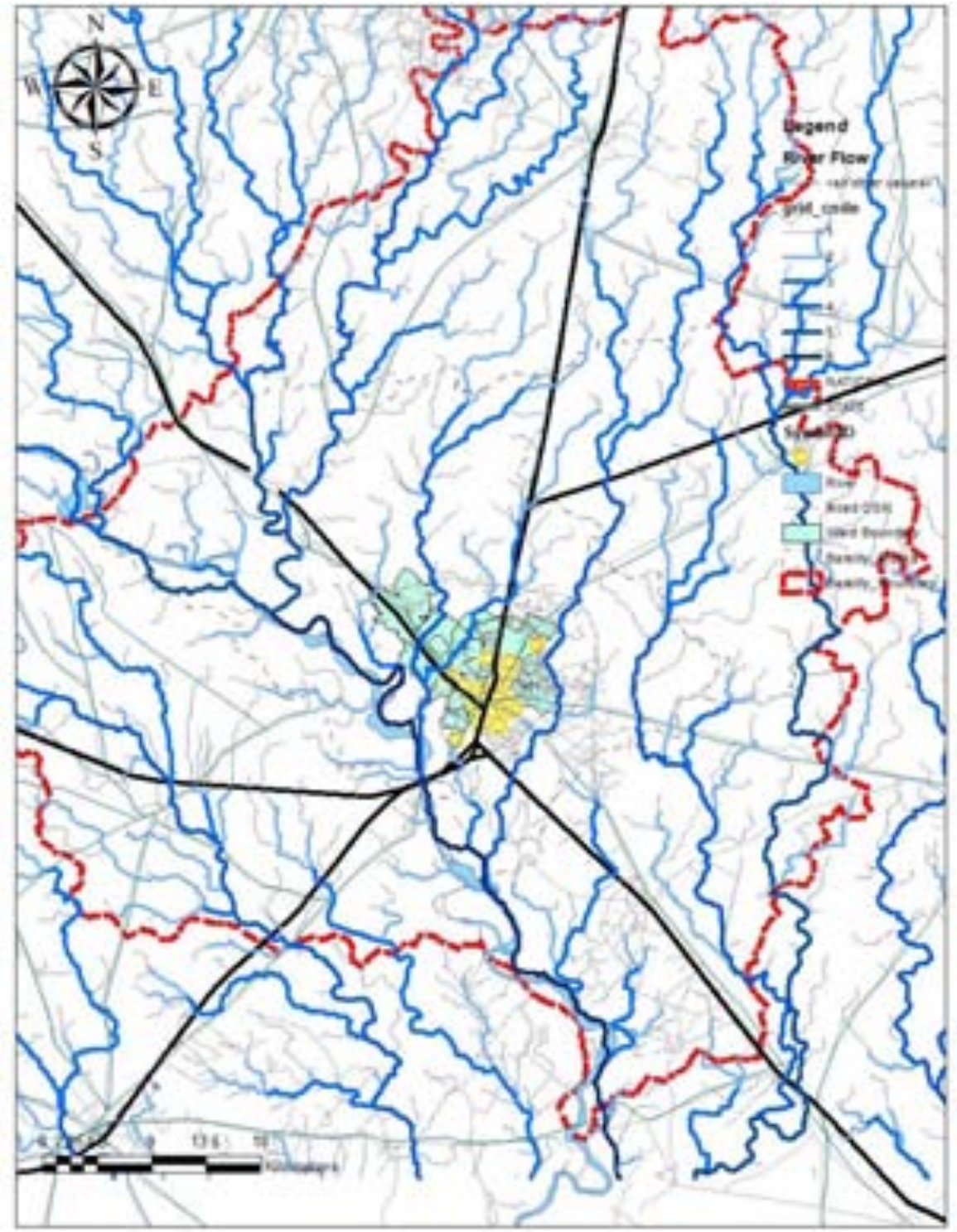


Figure 73: Drainage Pattern of Bareilly City

The major three water body's water quality in city is not good. There are several drains intercepts river. These drains are major causes carrying sewerage and Industrial load to water body.

Details of Water Bodies

Sl. No.	Data Point	Value
1	Total No of water bodies	3
2	No of water bodies with open dumpsites near them	3
3	Number of water bodies with anti-littering messages displayed	3
4	Number of water bodies with sweeping & cleanliness arrangements in place	3
5	Number of Water bodies with twin-litterbins placed in every 50 m of water bodies	3
6	Number of Water bodies with Trash Cleaners are available to trap the solid waste floating on the water bodies	3

Source: Reccy Survey

List of Water Bodies

S.No.	Ward Number	Name of Water Body	Address	Type of Water Bodies	Landmark
1	10	Delapeer Pond	Delapeer Chauraha	Pond	Delapeer Chauraha
2	32	Akshar Vihar	Akshar Vihar Park	Pond	Akshar Vihar Park
3	35	Sanjay Community Hall Pond	Near Elan Club	Pond	Jain Mandir

Source: Nagar Nigam, Bareilly

Demand Assessment:

To assess the future demand for all parts of Bareilly within Municipal area Water demand has been assessed by taking 150 LPCD i.e.. 135 LPCD with 15% unaccounted water demand of the area.

Water requirement		2021	2026	2031	2036	2041	2046	2051	2071
A	**Municipal Area**	154	168	193	211	229	249	269	422
B	**Cantonment Board**	5	6	6	7	9	10	11	38
C	**Total Villages within Planning Boundary**	38	42	47	53	66	74	82	23
D	**Total Census Towns within Planning Boundary**	13	15	17	19	23	26	29	17
E	**Total Planning Boundary Population**	210	231	263	289	327	358	391	500

Source: Analysis

Under Amrut 2.0 all are to be covered within municipal area to address 155 LPCD which is far higher side than the requirement of MoUD i.e. 135 LPCD. So, there is not to presume additional water augmentation to feed futuristic demand for ultimate project population for 2051. But there are 11 Urban agglomeration, and all villages are within planning Boundary which over the year will be amalgamated as a part of city. To estimate the population enhancement by accounting Rural to urban transformation and Urban agglomerated towns in city limit referring Master Plan 2031 document total water demand is estimated as under:

7.2.2 WASTAGE AND DISTRIBUTION LOSSES:

It has been observed that wastage of water at consumer's end in the City is substantial. Almost 30-40% of water supplied is lost in transmission and distribution.

7.2.3 SERVICE CONNECTIONS:

All property connections are unmetered. In addition, there are reported to be about 20, 540public stand posts, supplying water to economically backward households and slum areas.

7.2.4 ISSUES:

- **Scarcity in Source:** Presently only 75% of the population is covered by municipal water supply. Raw water scarcity is experienced in summer, due to lack of flow of present source, Agra Canal water supply network needs to be implemented. Though, under Amrut 2.0 requirement are fulfilling total municipal area.
- **Exploitation of Ground Water Source**: In the absence of a perennial water source, dependence on ground water continues to be high in the periphery. Apart from the municipal bores, a large number of private bores have been installed in various parts of the city. This has seriously affected the ground water level, which is depleting at the rate of 2 to 3m annually. Thus, the reliability and sustainability of the ground water source is questionable.
- **Operation of Water Treatment Plants:** The present operation, including chemical dosing and back washing of filters, Chlorine dosing is arbitrary. All the equipment meant for these functions needs to be repaired, if required and a formal system of testing the raw water turbidity, administering the doses based on jar test and back washing of filters, when it is due, needs to be introduced. Additional gas cylinders have to be procured.
- **System Losses:** Around 30%-40% of the water supplied gets lost during transmission and distribution. Scada system is only commissioning in Smart City ABD area.
- **Limited Duration of Supply:** At present, the water is supplied only for one hour on fifth day. It is proposed to supply water for 24 hours and hence necessary modification including construction of ESR at each distribution station will be carried out.
- **Contamination of water due to old service connections:** The consumer connections are of Galvanised iron, which has a life of 7-8 years. These connections are often not replaced on time and leads to the problems of leakage, low pressure and contamination**.**

Vision Plan

So basis of above requisite the water supply vision for 24X7 potable water supply to all area could cover by de centralize use of water and recycle of water as under:

Year	2026	2036	2051	2071
Action Plan	Short Term	Mid Term	Long Term	Outline Plan
Connection				
Water Augmentation from Canal				
enhancement of WTP &Reuse of Water				

7.3 SEWERAGE & SANITATION SYSTEM:

7.3.1 OVERVIEW OF EXISTING SEWERAGE & SANITATION SYSTEM:

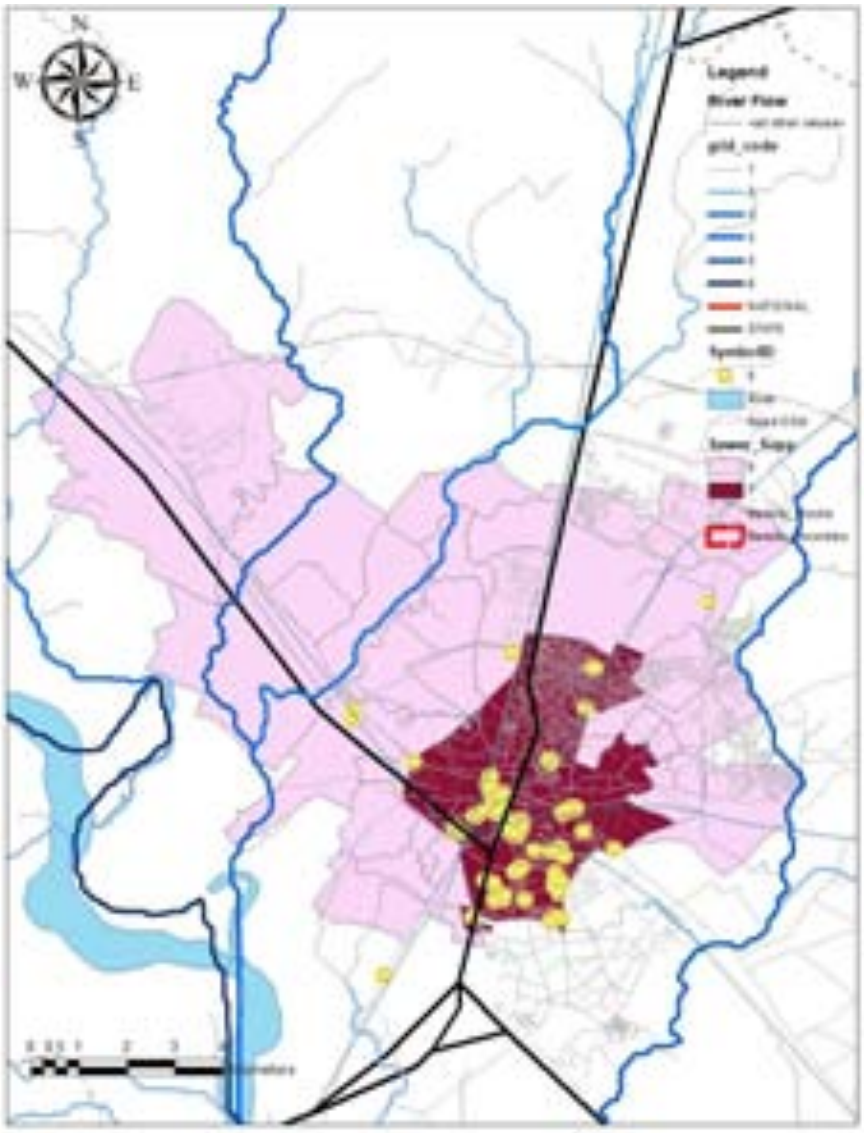
Uttar Pradesh Jal Nigam has designed and constructed sewerage scheme under Amrut 1.0 and it is plemented by Nagar Nigam. The proposals under this Detailed Project Report have been framed on

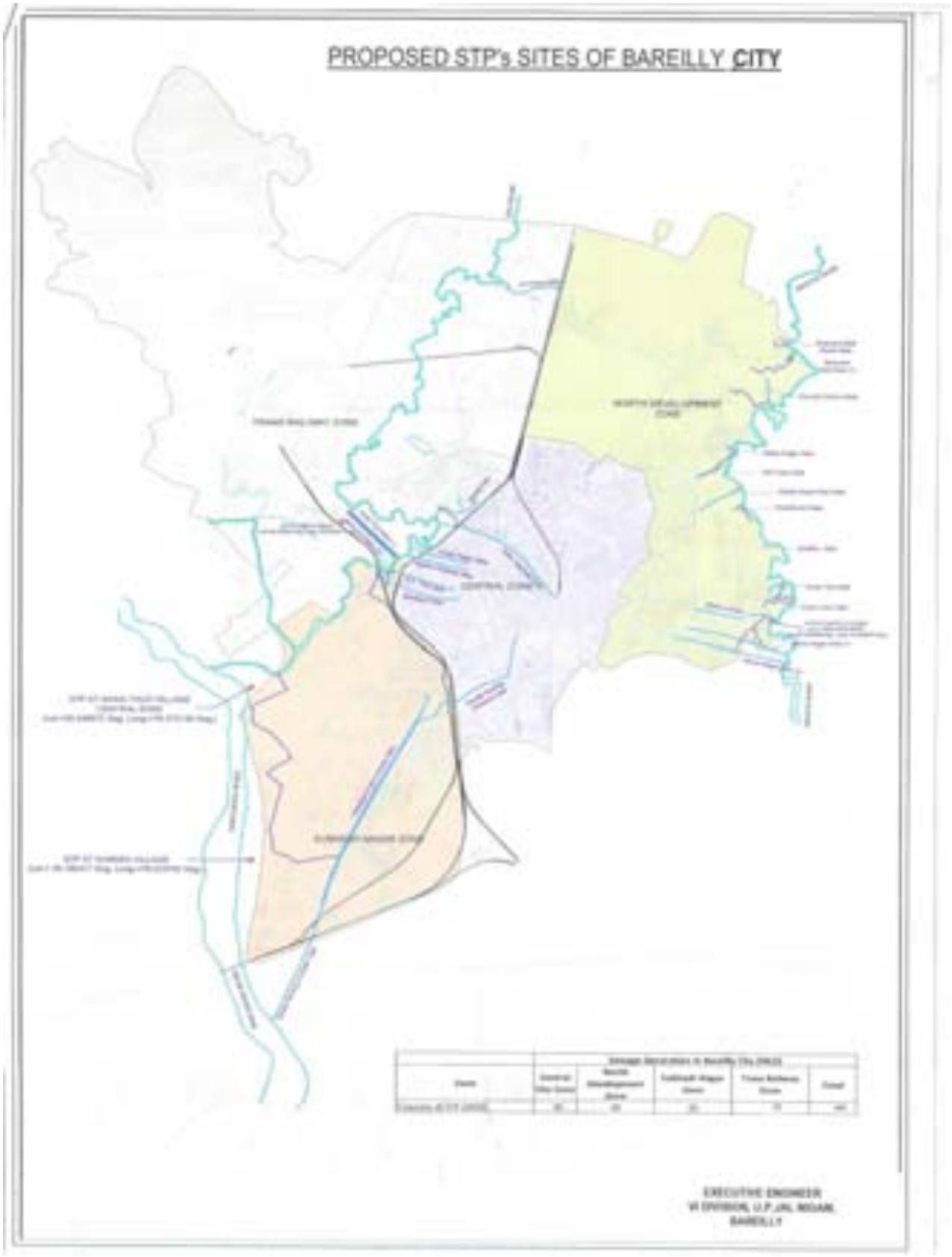
the basis of Latest Norms / Standards / Design Criteria contained in the U.P. Jal Nigam No. under the guidelines under Atal Mission for Rejuvenation and Urban Transformation as well as contained in the Manual of Sewerage and Sewage. Treatment, 4th Edition-2012, CPHEEO, Ministry of Urban Development, Government of India, New Delhi, Main and Prominent norms are summarized below.

The estimation have been worked out adopting the base year 2021, Middle Stage Year 2036 and Ultimate Stage Year 2051.

There are properties with Sewer Connection 65201 and Properties with onsite sanitary disposal are 136275. Total water consumption (billed and unbilled) from ULB and Non ULB sources are accounted 110.8 MLD and volume of waste water generated from Domestic water consumption is around 88.64 MLD (Source SLB 2019-20)

There are no sewer treatment plant. Although STP will be set up soon in two sites as shown in following figure.





Total Length of sewerage network = 206.2 km
Total Waste water produced = 99.2 MLD

Zone	Sever Lines	
	Length (km)	Area covered (sq. km)
Zone- 1	43	9
Zone -2	71	8.46
Zone -3	59	3.97
Zone -4	33	4.33
Total	**206**	**25.76**

*Source: SLB 2012, NNB

INTERMEDIATE PUMPING STATION AND STP

ZONE-2 : In zone-2 is l 71 Km sewer length with MLD stp based on mid year 2033 . there is MPS provided in the stp campus.

Zone 3: IPS-2 of I & D work. in zone-3 is proposed under I & D work of Bareilly city of 59 Km length.

ZONE-4 : IPS-2 of I & D work. in zone-4 is proposed under I & D work of Bareilly city of 33 km length. Works incorporated under this Detailed Project Report have been proposed for year of 2033.

Bareilly Smart City ''ABD'' Area is proposed to be covered with sewer system under Smart City Programme. Sewage Treatment Plants will also be provide for Treatment of sewage and discharge of effluent to the effluent management works for irrigation of cultivable land effluent will however by conveyed to the Natural Drainage when not required for Irrigation purposes.

Taking into consideration Topography/Gradient/Slope of Ground/Location of Railway Tracks i.e. from major drains under the Nagar Nigam area Total Smart City ABD area is proposed to be divided into 4 Zones, Zone-1 includes wards/area .

In the proposed sewer system AC Pressure Pipes Manufactured by MAZZA Processing sizes 150/200mm and in higher sizes RCC Non-Pressure Pipes Class NP3 and NP4 have been proposed in accordance with provisions under the Guidelines issued under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Programme “Manual of Sewerage and Sewage Treatment CPHEEO” Ministry of Urban Development Government of India New Delhi and Relevant code of Bureau of Indian Standards New Delhi.

From the Sewage Treatment Plant effluent will be conveyed to effluent management works i.e. applied for Irrigation iWan agriculture fields during the period effluent is not required for irrigation purposes, it will be discharged into river.

Land requirement for Sewage Treatment Plant: Total Land Requirement for 7 MLD plant on SBR based technology is = 7 x 0.08 hect = 0.56 hectare land is required
Further, drains will be tapped under Namami Gange program

7.3.2 ISSUES :

Over the year Sewerage Generation will be

Sewerage Generation		2021	2026	2031	2036	2041	2046	2051	2071
A	**Municipal Area**	123	135	155	169	183	199	215	338
B	**Cantonment Board**	4	5	5	6	7	8	9	30

Sewerage Generation		2021	2026	2031	2036	2041	2046	2051	2071
C	**Total Villages within Planning Boundary**	30	34	38	42	53	59	66	18
D	**Total Census Towns within Planning Boundary**	11	12	13	15	19	21	23	14
E	**Total Planning Boundary Population**	168	185	210	231	262	287	313	400

Source: Analysis

i) **Coverage:**

The present population of Bareilly is approximately 1554063, as against the combined design population of 1140717 for stage I and stage II sewerage schemes. Thus even after the Stage II scheme, designed to cover 165 MLD for 2033 where as by 2036 the discharge within Municipal area will be 169 MLD, the entire present population of the city will not be covered.

ii) Sewer Connections:

Out of total households, only 50 properties have been connected to the sewers. Even allowing for some unauthorized connections, the utilization of the sewer network appears to be extremely poor. The number of properties connected to the sewer network is abysmally small. An urgent and concerted drive to increase the number of sewer connections is called for.

(iii) Need of Updated Map of Sewer Network:

Unless an updated map showing all the sewers laid so far is prepared, an action plan to improve the coverage and utilization of the sewerage system will not be accurate or fruitful.

(iv) Unauthorized Lifting of Sewage:

Very little quantity of sewage appears to be reaching the treatment plant. Farmers lift the raw sewage from the manholes of out fall sewers and use it for agricultural purpose.

v) Performance of Sewage Treatment Plant

Measurement of sewage flow entering the sewage treatment plant and the characteristics of the influent and effluent needs to be done on a regular basis to know the effectiveness and efficiency of the sewer network and STP.

Vision for Sewerage Plan

Sewerage Vision Plan is to connect each household with sewer line for clean green city plan. Core area is very congested where existing STP could serve city but remaining all part of city should have sewer line. STP should be upgraded. As per requirement of improvement of STP MPS, IPS should be constructed and trunk line should be enhanced.

Overall city's vision plan for STP area as under:

Year	2026	2036	2051	2071
Action Plan	Short Term	Mid Term	Long Term	
Connection				
STP & ETP				
Reuse				
Decentralized System				

7.4 Vision Plan for Stormwater Drain

7.4.1 Vision Plan for stormwater drain

The total length of roads in the City of Bareilly is 832 km out of which only 105 km stretch has closed stormwater drains translating to 12.62%. There are three natural drains in the city namely the Deveraniya drain, Chaubari drain and Nakatiya river/drain. Table 1-1 depicts the characteristic features of the Deveraniya drain while Table 1-2 and Table 1-3 depict the characteristic features of the Chaubari drain & Nakatiya drain respectively

7.4.2 Deveraniya drain

Table 1-1 Deveraniya drain – characteristic features

Sr. No	Description	Remarks
1	Point of origin	Sarai Talfi
2	Point of discharge	River Ramganga
3	Distance of discharge point from city limits	24 km
4	Quantity of sewage let into this drain	102.80 MLD
5	Water quality in drain (pH)	7.20
6	BOD value	39.8
7	COD value	80
8	TSS value	89

(Source: CSP Bareilly)

7.4.3 Chaubari drain

Table 1-2 Chaubari drain – characteristic features

Sr. No	Description	Remarks
1	Point of origin	Subash Nagar
2	Point of discharge	River Ramganga
3	Distance of discharge point from city limits	11 km
4	Quantity of sewage let into this drain	51 MLD
5	Water quality in drain (pH)	7.1
6	BOD value (mg/L)	33.2
7	COD value (mg/L)	200
8	TSS value (mg/L)	70

(Source: CSP Bareilly)

7.4.4 Nakatiya drain

Table 1-3 Nakatiya drain – characteristic features

Sr. No	Description	Remarks
1	Point of origin	Deen Nagar
2	Point of discharge	River Ramganga
3	Distance of discharge point from city limits	100 km
4	Quantity of sewage let into this drain	24 MLD
5	Water quality in drain (pH)	7.30
6	BOD value	44.8
7	COD value	120
8	TSS value	114

Source: CSP Bareilly)

7.4.5 Stormwater drain - constraints

- Silting of the drain
- Unlined drains
- Dumping of debris and garbage into the open drains & nallah
- The roads being below the drains top level which cause the overflow from drains to fill the roads and the low-lying areas
- The increased impervious areas also add to the worsening of the situation

7.4.6 Stormwater drain – Interventions required

- Govt should impose fine to those industries discharging wastewater into the storm water drain.
- All the house service connections shall be properly connected through sewer network and shall be treated in the STPs to maintain storm water drain as a dedicated facility.
- All the untapped drains should be tapped and diverted to STP.
- Ensure sufficient right of way provision for constructing drains in the future proposals.
- Cost and O&M framework.

7.4.7 Stormwater drain – Suggestions for DPR

- Assessment of existing storm water drain condition ward wise.
- Based on the assessment, provide recommendations for reconstruction of the structure wherever possible.
- Analyze the surface runoff and increase the width of the drain wherever required.
- Based on the assessment, identify the financial stability of the developer and workout the phase wise implementation strategy.
- Achieve 100% coverage through effective planning.

Note: *Development of SWD shall be taken care in the city development plan. Hence it is not considered as a separate project in the vision plan proposed list of projects. However, the following suggestions may be considered by the city development authority during the preparation of DPR*

In addition, there is no dedicated provision for storm water drain in many locations and hence, both sewage and storm water drain are mixed together in the nallas. In future, all the house service connections shall be properly connected through sewer network and shall be treated in the STPs to maintain storm water drain as a dedicated facility.

7.5 Vision Plan for Solid Waste Management

7.5.1 Existing situation

The total solid waste generated in Bareilly Is 447.18 Tonnes Per Day (TPD). However, at present, the amount of solid waste collected is only 430 TPD . Of the collected solid waste (Nearly) 140 TPD is processed while the remaining 290 TPD is disposed off in the dump yard. At present, there is no household source segregation. Two solid waste management plants exist (I) At Rajau Paraspur and (ii) At Bakarganj, out of which the SWM plant in Rajau Paraspur is non-operational. Table 1-4 represents the background & status of the Rajau Paraspur SWM plant:

Table 1-4 SWM Plant in Rajau Paraspur

Sr. No	Description	Remarks
1	Land Extent	21.20 Acres
2	Status	Commissioned in 2013 and is abandoned for the past five years
3	Reason For Non-Existence In Operation	Owing to local agitation from citizens as it is located near forest land. Subsequently the National Green Tribunal (NGT), on the grounds of unsafe waste disposal practices, has suspended the functioning of the treatment plant.
4	Facilities Covered	Organic Waste Conversion (OWC) and sanitary landfill
5	Recommendation	Suitably can be relocated to another location which is free from any ecologically-sensitive hindrances. The plant thus relocated will be able to reduce the treatment burden of the existing plant at Bakarganj

Figure 74: Rajau Paraspur SWM Plant

Figure 75: Abandoned approach in Rajau Paraspur SWM Plant

Table 58: Represents the background & status of the Bakarganj SWM Plant:

Sr. No	Description	Remarks
1	Land Extent	17 Acres
2	Status	In operation since December 2021
3	Facilities Covered	Bioremediation I.E., conversion of waste to Refuse Derived Fuel (RDF)
4	Salient Features	• Dumping area: 6 acres • Operational hours: 20 • Operating capacity: 600 TPD • Incoming waste at present: 350 TPD
5	Operating Mode	Public-Private Partnership (PPP) under the "Construct Operate and Maintain" model through 10 years of concession

7.5.2 Projected solid waste generation

The solid waste generation, though measured at the city level, should also be measured and calculated for the entire planning area considered in the ambit of the Vision Plan for Bareilly City. Hence, it is imperative to include those additional areas such as the Cantonment Board Area, Town Villages within the planning boundary and census towns in the planning boundary in addition to the existing Municipal Corporation Area. As a result, the total population for the Year 2021 (Base Year), the year 2036 (Intermediate Year) and the year 2041 (Ultimate Year) are considered for the projection of the solid waste generation as well. The ensuing sections discuss the solid waste generation projection for different scenarios. Table 59 represents the solid waste generation projection for the Municipal Corporation area of Bareilly

Table 59: Solid waste generation projection – Municipal Area

S. No	Population projected year	Population	Solid waste generation (TPD)	Organic waste (TPD)	Existing SWM plant capacity (TPD)	Proposed plant in Sathrapur & Rajau Paraspur (TPD)	Total plant capacity (TPD)	Sufficiency	Gap (TPD)	Inorganic waste (TPD)
1	2021	1,311,599	564	338	600	0	600	No gap	0	226
2	2026	1,556,033	669	401	600	0	600	No gap	0	268
3	2031	1,712,822	737	442	600	0	600	No gap	0	295
4	2036	1,949,012	838	503	600	0	600	No gap	0	335
5	2041	2,142,644	921	553	600	0	600	No gap	0	369
6	2046	2,422,433	1042	625	600	850	1450	No gap	0	417
7	2051	2,655,075	1142	685	600	850	1450	No gap	0	457
8	2056	2,894,499	1245	747	600	850	1450	No gap	0	498
9	2061	3,972,077	1708	1025	600	850	1450	No gap	0	683
10	2066	4,586,104	1972	1183	600	850	1450	No gap	0	789
11	2071	5,315,516	2286	1371	600	850	1450	No gap	0	914

Source: Bareilly Nagar Nigam & Consultant's analysis

Note: If the projected organic waste is found to be higher than the existing SWM plant capacity, then a gap is observed. Inorganic waste is not considered to be treated and handled within the premises of the SWM plant at present.

Inference:

- The proposed plant in Sathrapur is planned over 10 acres of land with 500 TPD capacity.
- The proposed plant in Rajau Paraspur (disputed land) is planned with a treatment capacity of 500 TPD.
- The proposed plant in Rajau Paraspur (disputed land) will require an area of 20 acres for the proposed installed capacity of 350 TPD in an alternate land parcel since the existing plant is non-operational due to NGT litigations.
- For the purpose of solid waste projection over the planning horizon (2071), it is assumed that the above-mentioned two proposed SWM plants with a combined capacity of 850 TPD shall be developed before the year 2046.
- After the year 2046, the total treatment capacity of all the plants shall be 1450 TPD whereas the required excess capacity of treatment capacity due to popoulation growth for 50-year period (i.e., 2071) is just 850 TPD.
- Hence, the proposed treatment plants namely the alternate plant in Rajau Paraspur and proposed Sathrapur plant will be sufficient enough to handle the increase in solid waste generation for the entire planning horizon of the Vision Plan thereby eliminating the need for any new solid waste management plant in addition
- Thus, a need for the development of a new facility doesn't arise if only the municipal area solid waste generation is projected over the project horizon

Figure 76: Dumping yard in Bakarganj SWM plant

Figure 77: Treatment facility in Bakarganj SWM plant

Leveraging success stories of other Cities

The best practices leading to successful management of collection, handling, conveyance and treatment of solid waste in various Indian cities are analysed and a few inferences are attempted in this section.

Table 60: Case study of successful SWM practice – Alappuzha

Case Study Location	Alappuzha
State	Kerala
Major Success Factors	Source-level segregation and decentralised solid waste management
	Marginalised community involvement in rag picking

The economic impact on corporation	• Employment opportunities for more than 90 Self-Help Group (SHG) members • Average daily earnings of Rs. 400 per member of SHG through this initiative • Waste dumped into water bodies is minimised thereby improving the ecological health of the City
Relevance to Bareilly Municipal Corporation (BMC)	Engaging source-level segregation through the marginalised community will be a Win-Win situation wherein the BMC shall minimise the amount of waste being processed and also it shall employ marginalised communities thereby improving their livelihoods

Source: Atin Biswas, Subhasish Parida et al. 2021, Waste-Wise Cities: Best practices in municipal solid waste management, Centre for Science and Environment and NITI Aayog, New Delhi.

Table 1-8 represents the outcome of the case study of successful SWM practice in Bhopal in Madhya Pradesh

Table 61: Case study of successful SWM practice – Bhopal

Case study location	Bhopal
State	Madhya Pradesh
Major success factors	• Source-level segregation • Decentralised solid waste management • Formalising awareness campaigns for citizen participation • Leveraging the informal sector into the channel of formal solid waste management • Marginalised community involvement in rag picking
The Economic Impact On Corporation	• Reduced capital cost for SWM • Decrease in operational expenses by maximising the efficiency • Achieving 100 % source segregation has led to an increase in the efficiency of SWM • Reduced infrastructure costs and augmented the operational revenue by achieving a high rate of material processing
Relevance To BMC	• Engaging citizen awareness programme such as “Carry Your Own Bag” and “Community Composting” are some of the initiatives which can be replicated to attain sustainable sanitation in BMC • Over the long run, the operational efficiency of waste handling can be increased thereby resulting in decreased operational expenditure for BMC

Source:

Atin Biswas, Subhasish Parida et al. 2021, Waste-Wise Cities: Best practices in municipal solid waste management, Centre for Science and Environment and NITI Aayog, New Delhi.

7.5.3 Conclusion

To minimize the environmental impact from waste management and to establish the sustainable sound material-cycle society, reduction of waste that goes into the final disposal by controlling the generation of waste and promotion of recycling are the most important issues. This leads to reduction of the cost required for development and maintenance of facility of waste management as well as to the prolonged life of the final landfill site. Therefore, the priority should be given for

- Reduction of waste at the source of generation; and
- Reduction of waste through reuse and recycling of the waste generated.

Chapter 8. SOLAR SURVEY ANALYSIS

It should be mentioned that we are proposing today's solar projects that will cover vision for year 2030 & 2050. (*As solar plants has life of 25 years*)

8.1 SURVEY ANALYSIS

The total power (Electrical) consumed by city of Bareilly is about 15.8 Megawatt per day.

Solar power plant at Bareilly.				
Sr.No	**Capacity in Mw**	**Commissioned By**	**Vision 2030**	**Vision 2051 & 2071**
1	Nil	Under VGF Scheme	25	35
2.	Nil	UPNEDA Owned plants	5	10
3	2	Under JNSM	5	10

Solar installed is very less as compared to demand, this might be due to harsh regulation & policies laid down by UPNEDA & UPPCL.

8.1.1 Sector wise analysis & Demand for 2030 & 2050.

The facts & figure are on the basis of growth of population, increase in infrastructure, city index limits, thereby increase in demand of power.

8.1.2 Benchmarking & Cost Analysis

Knowing to the regulations & policies of UPNEDA & UPPCL, one should install in own solar plant for self-consumptions & utilization. As no NET metering is allowed beyond 10 KW, we suggest to install solar plant with **Zero Export device** (XPD) this will not allow to export generated solar power to grid, hence 100% generated power can be use for self-utilization.

This will cut 100 % electricity bills, saves money & self-asset for 25 years.

It will also minimize pollution level of city & zero carbon emission. This will lead our vision of ***Clean & Green Environment***.

8.1.3 Cost Analysis

Solar Plant Rates 2022 (Rs / KW)	2031	2051
60,000	73,000	91,000

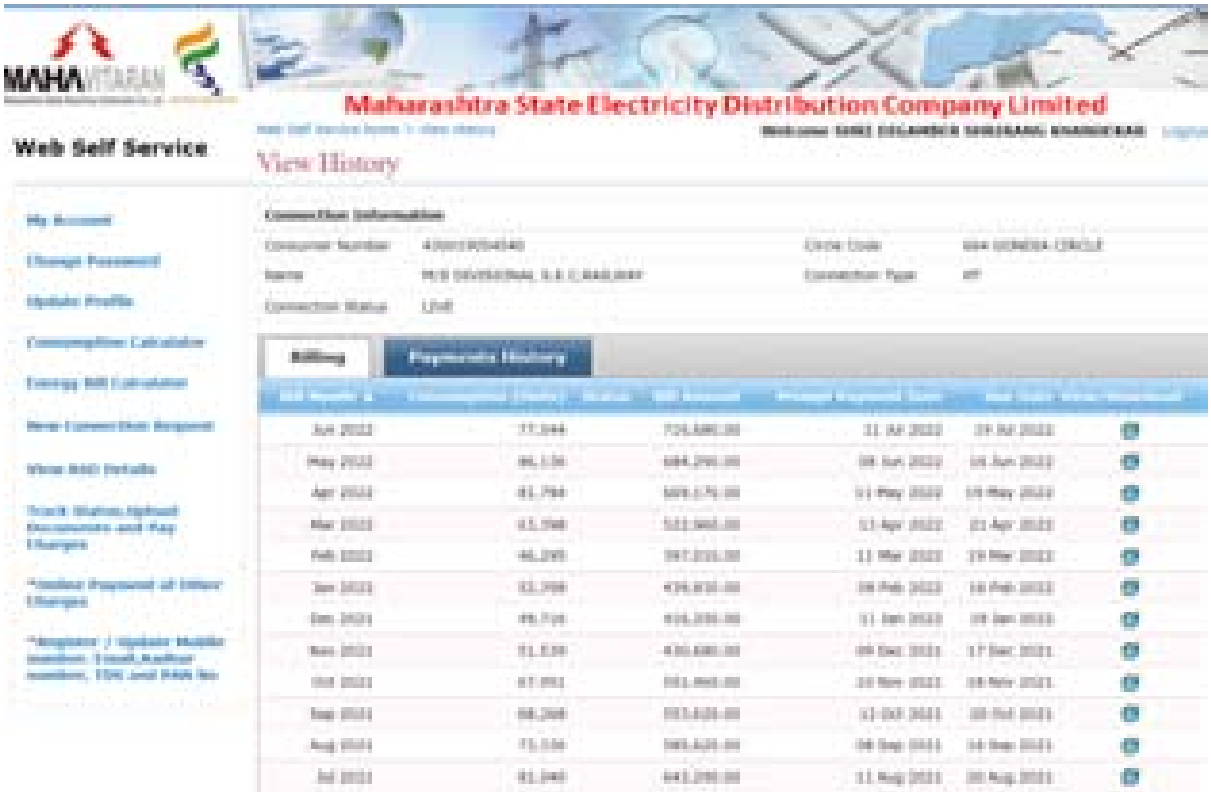
8.1.4 Case Study

Client Name : Sahayog Hospital, Gondia (Maharashtra)

Solar Plant Size : 100 KW On Grid.

Actual Consumption : 320 KW

Date of Plant Installed : Feb 2022




Maharashtra State Electricity Distribution Company Limited
Web Self Service
View History
Billing
Payments History


Maharashtra State Electricity Distribution Company Limited
Web Self Service
View History
Billing
Payments History

8.2 Electrical Consumption: Government Load

Division	Power Consumption in KW (2022)	Demand (Vision) in 2031	Demand (Vision) in 2051
Urban Vidhyut Nagari Vitran Khand Pratham.	**765**	**1050**	**1540**
Khand No.2	**1389**	**1845**	**2175**
Khand No. 3	**1344**	**1815**	**2025**
Khand No. 4	**1336**	**1800**	**2010**

8.3 PROJECTIONS

Division	Solar 2022	Projected 2031	Proposed 2051
Jalkal	12068	15650	18545
Police Stations & Colonies	14091	14450	15550
Swastha Vibhag (Public Health & Hospitals)	916	1220	1545
Zilla Prashashan	400	480	695
PWD	134	160	285
Irrigation	100	125	175
Schools & Collages	845	1050	1560
Sales Tax Office	460	510	550
Nagar Nigam			
Division 1	900	1120	1580
Division 2	296	365	980
Division 3	308	512	1050
Division 4	360	545	895
Gramin	33	54	89