Indore
City Biodiversity Index

Prepared by

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ICLEI
Local Governments
for Sustainability
SOUTH ASIA

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MESSAGE

Indore is the commercial capital of Madhya Pradesh and through its dedicated efforts, the city earned the distinction of being the cleanest city in India. It is growing at a fast pace and manages to combine both traditional and modern lifestyles. At the same time, due to a rapid growth in population, urbanisation and disposable incomes have grave impacts such as significant landscape changes that lead to loss of biodiversity. Thus, there is an urgent call for cities to come together to form partnerships, share experiences and seek solutions for urban biodiversity.

In this regard, CBD launched a concept of City Biodiversity Index for conservation of urban biodiversity and sensitization of urban local bodies. Madhya Pradesh State Biodiversity Board (MPSBB) initiated a project in 2021 to prepare the City Biodiversity Index for Indore in collaboration with Wildlife Institute of India and ICLEI – Local Governments for Sustainability, South Asia.

A lot of effort has been taken to prepare Indore's City Biodiversity Index and I am sure that it will play a key role in helping the city conserve and enhance its greenness sustainable smart city development, and reinforce its vision to become a liveable and sustainable space. We are grateful to Wildlife Institute of India and ICLEI – Local Governments for Sustainability, South Asia for the invaluable support they provided in making this initiative a success. I hope this report motivates other urban centres in Madhya Pradesh to adopt similar measures to conserve their natural ecosystems.

(J. N. Kansotiya)

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MESSAGE

Biological diversity represents the natural wealth of our planet, and provides the basis for life and prosperity of mankind. However, biodiversity is currently vanishing at an alarming rate due to a variety of human activities. We need to respond to these challenges by rethinking our plans and policies, and we can no longer see biodiversity as being restricted to forests and rural areas; cities, too, play a critical role in biodiversity conservation.

In recognition of the fact, Madhya Pradesh Forest Department has taken lot of effort in maintaining the greenness of Indore city. However, the concept of City Biodiversity Index is one of the key initiative of CBD to sensitize the urban local bodies and help to conserve urban biodiversity. Madhya Pradesh State Biodiversity Board (MPSBB) has taken a lead in developing the City Biodiversity Index of Indore with the support from Wildlife Institute of India and ICLEI – Local Governments for Sustainability, South Asia. The Madhya Pradesh Forest Department is committed to conserve biodiversity in Indore city, and the development of the City Biodiversity Index is a key achievement of our efforts in this direction.

I would like to take this opportunity to thank Wildlife Institute of India and ICLEI-Local Governments for Sustainability, South Asia for their assistance and expertise in developing the City Biodiversity Index, which will help Indore to take proactive steps towards biodiversity conservation and contribute to the attainment of the National Biodiversity Targets and the Post 2020 Global Biodiversity Framework, thus supporting the implementation of the Convention on Biological Diversity.

Ramesh

(Ramesh Kumar Gupta)

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Abbreviations

ARPF	Animal Rehabilitation and Protection Front
BMC	Biodiversity Management Committees
CBD	Convention on Biological Diversity
CBI	The City Biodiversity Index
CBSE	Central Board of Secondary Education
CII	Confederation of Indian Industry (CII)
COP	Conference of the Parties
CSRs	Corporate social responsibility
EPCO	Environmental Planning and Coordination Organisation
FICCI	Federation of Indian Chambers of Commerce and industry
GA	Geographical Area
ICLEI	International Council for Local Environmental Initiatives
ICSE	Indian Certificate of Secondary Education
IDA	Indore Development Authority
IET	Institute of Engineering and Technology
IIM	Indian Institute of Management
IIT	Indian Institute of Technology
IMC	Indore Municipal Corporation
ISCDL	Indore Smart City Development limited
IUCN	International union for conservation of nature
LBSAP	Local Biodiversity Strategy Action Plan
LULC	Land Use Land Cover
MPSBB	Madhya Pradesh State Biodiversity Board
MSL	Mean Sea Level
NA	Natural Asset
NBSAP	National Biodiversity Strategy Action Plan
NGOs	Non-Governmental Organization
NIR	Near InfraRed
OECM	Other effective area-based conservation measures
PCCF	Principal Chief Conservator of Forests
SBA	Swachh Bharat Abhiyan
SCBD	Singapore City Biodiversity
SGSITS	Shri Govindram Seksarai Institute of Technology & Science
SI	Singapore Index
TNV	The Nature Volunteer
ULBs	Urban Local Bodies
USGS	United States Geological Survey
WII	Wildlife Institute of India
WPA	Wildlife Protection Act

Section I: About City Biodiversity Index

The City Biodiversity Index (CBI) was proposed to benchmark the conservation efforts made by cities to preserve biodiversity, by Singapore's former Minister for National Development, Mr. Mah Bow Tan at COP-9 in 2008. Developed and maintained by the Singapore National Parks Department (NParks), with support from ICLEI, the CBD and others, the CBI is the only biodiversity index designed specifically for monitoring and evaluating biodiversity in cities.

Also called the 'Singapore Index (SI)', so named in recognition of Singapore's contribution and leadership, the index is a self-assessment tool meant to assist cities in better understanding how to enhance their biodiversity conservation efforts over time. The CBI is broadly divided into two parts: Part I- the profile of the city; which provides background information on the city; and Part II- the 23 indicators that measure native biodiversity, ecosystem services provided by biodiversity, and governance and management of biodiversity based on guidelines and methodology provided in the User's Manual on the Singapore Index on Cities ' Biodiversity.[1]

With a maximum score of 92, scores for each indicator vary from 0 to 4 points. The year in which a city first embarks on this scoring will be taken as the baseline year, and this will be measured against future applications of the Index to chart its progress in conserving biodiversity .

CBI for Indore has been prepared by the Wildlife Institute of India (WII), Dehradun with support from the Madhya Pradesh State Biodiversity Board (MPSBB), the Indore Municipal Corporation and with the knowledge support from ICLEI South Asia.

Summary of the Scores

The CBI of Indore, 2022 has been prepared based on the SCBD endorsed user's manual for CBI updated in 2014. The 23 indicators that make up the index are grouped into three main components viz. Native Biodiversity, Ecosystem Services provided by biodiversity and Governance and Management of biodiversity.

The city scored a total of 35 out 72 for 18 indicators. Since this was the baseline year the indicators 4-8 were not considered for the analysis.

- The first section on "Native Biodiversity in the City", contributed to a score of 10 out of 20 as only 5 indicators were taken into consideration. The city receives an average score indicating that its wetlands and surrounding forest habitats are important ecosystems for local biodiversity.
- Indicators 11-14 which relate to "Ecosystem Services Provided by Biodiversity in the City" are scored 4 out of 16 points. The city's low score for this section can be improved by focussing on improving the health of its natural ecosystems.
- Indicators 15-23 which correspond to "Governance and Management of Biodiversity in the City" contributed to a score of 21 points out of 36 points. This is a fair score indicating that there are some governance mechanisms already in place that may benefit biodiversity and local ecosystems.

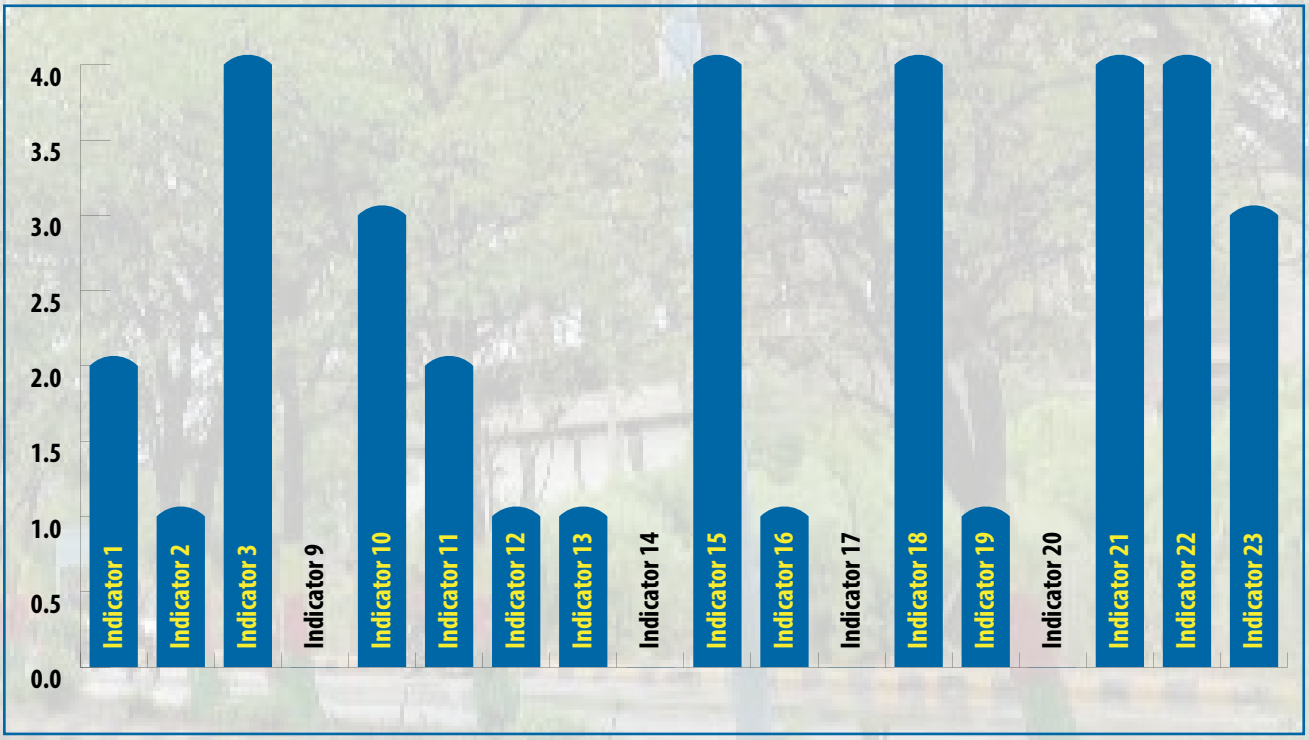

Figure 1: Summary of Scores for Indore

Section II: City Biodiversity Index of Indore

Part A: Indore City Profile

Location

Indore, Madhya Pradesh's largest city and its business capital,[2] is located between 22°20" N latitude and 75°25" E to 75°15" E longitude.[3] It is also the cultural, educational and commercial centre of the state.[4] The city is situated in the heart of Malwa plateau of Central India[5] covering an area of 279.39 sq. km, 550m above sea level.

Geophysical Characteristics

The city is located on the Malwa Plateau in the country's north central region, on the banks of the rivers Kanh and Sarswati,[1, 2] tributaries of the River Shipra.[6] In the north, it is bordered by the Madhya Bharat Plateau and the Bundelkhand area, in the south by the Vindhya Range, and in the west by the Gujarat region.[7] According to the Zonation Map of India, the region lies in the Seismic Zone III.[8]

Demography

According to the census 2011, the population of Indore city and its outgrowth is 1,994,397 which includes 1,035,912 males and 958,485 females.[9]

80.18% of the population follows Hinduism followed by 14.09% who follow Islam. Christianity is followed by 0.65%, Jainism by 3.25%, Sikhism by 1.09%, and Buddhism by 1.09% in Indore city.[8]

Economy

The district is well-developed in terms of industry. Textile production and commerce is its oldest enterprise, playing a significant role in its economy. Kinetic Honda, Bajaj Tempo, Eicher Motors, Hindustan Motors, Kores India, Pratap Steel, Prestige Group, Chirag Ingots, Crompton Greaves, Onida Saka, Bridge Stone, Dhar Textile, Larsen & Turbo, Indo German Tools, and others are among its significant industries. These industries generate a significant amount of income each year. Agriculture is also a source of income for some of the inhabitants. Gram, groundnut, soybean, cotton, jowar, paddy, wheat, are majorly grown in the district.[10]

Indore district's gross domestic product was INR 4,335,623 at current prices in 2016-17, compared to INR 3,464,020 at constant prices in 2011-2012. The district's net domestic product in 2016-17 was INR 3,836,158 at current prices, compared to INR. 3,023,311 at constant prices in 2011-2012. The district's Per Capita Income, at Factor Cost in 2016-17 was INR 107,930 at current prices, compared to INR 85,060 at constant prices in 2011-2012.[9]

In terms of education, Indore is fortunate to have both IIT and IIM, making it the only city in the world with the prestigious institutions.[2] Daly College is one of the oldest co-educational boarding schools of India which was established in 1882.[9] Apart from the deemed University Engineering College, Shri G. S. Institute of Technology & Science (SGSITS) and Institute of Engineering and Technology (IET), the Devi Ahilya University of Indore runs over 40 engineering institutes.[2]

Biodiversity

Indore city has several natural spaces which supports a rich biodiversity. The green spaces of the city are dominated by several parks and avenue plantations. The Ralamandal Wildlife Sanctuary, a biodiversity hotspot, is situated adjoining the municipal boundaries of the city. In terms of the blue spaces, Sirpur Lake, Fatan Khedi Lake, Bilawali Lakes are important sites.

Sirpur Wetland was recently declared a Ramsar Site on the 7th of January 2022. The wetland has a total area of 161 Ha. The area is also known as Pakshi Vihar (bird sanctuary). It is home to over 175 kinds of terrestrial plants, six macrophytes, 30 types of wild and cultivated fish, eight reptile and amphibian species, and more. During winters, 130 different bird species can be seen around the lake.[11] The Lake is also designated as an Important Bird and Biodiversity Area (IBBA).[17]

Data on biodiversity of the city is limited to some scientific research papers and books published on birds and benthic macro invertebrates. To further support the development of the index, several experts were consulted for checklists of plants, butterfly, invasive species.

A study detailing the flowering plants of Indore district in Madhya Pradesh by Rao & Sastry 1964 identified 566 species of flowering plants.[12] The study hasn't been revised and an updated publication on the flora is lacking. A checklist of plants from the Garden Department of Indore Municipal Corporation (IMC) accounts for 478 species of vascular plants (Refer Table 12, Annexure 3).

A study on the benthic macro-invertebrates was done in the Bilawali lake of the city, where 38 species of macro-invertebrates were identified. Among these, 12 species of Annelids, 13 species of Molluscans and 13 species of Arthropods were found.[5]

Studies on birds particularly the spatial variation, IUCN, WPA and residential status, and their nest building behaviour was conducted in various green spaces of Indore city (Pipliyapala Regional Park, Lalbagh, Meghdoot Garden, Nehru Park) and in the Holkar Science College Campus.[13, 14, 15, 16, 17] In the study conducted in the Holkar Science College Campus, 51 species of birds were identified which belong to the 14 Orders and 33 Families. In the study of various birds in different green spaces of the city, 58 bird species belonging to 13 orders and 34 families were identified.[14,15] The nature Volunteer (TNV), an NGO working in Indore, has also conducted some studies in the region. They have published two books, The Birds of Sirpur[18] and Birds of Indore[19] which reports 130 and 266 species of birds respectively. Birds of Indore accounts for the whole district rather than the city. For the city, a consolidated list was developed which was compared with the species recorded by citizen science platform eBird, developed by the Cornell Lab of Ornithology. A total of 238 species of birds are found in the city (Refer Table 11 of Annexure 3). A butterfly list was supplied by Dr Vipul Keerti, Professor, Department of Zoology, Holkar Science College Indore. 82 species of butterflies are found in the region (Table 13, Annexure 3).

Data on the fishes occurring in the ponds of city is collected from the Department of Fisheries. There are 18 species of fishes occurring in the water bodies of the city (Table 15, Annexure 3). Sharma & Sharma 2015 identified 43 species of spiders under 11 families, in their study on Sirpur Lake[20] (Refer Table 14, Annexure 3).

Natural Asset Map: The Natural Asset map of Indore which was prepared by WII and ICLEI- Local Government for Sustainability, South Asia, identifies the blue green spaces of city. 11 land classes were identified along with their area (Table 1) making up 44.28% of the total city area. Agriculture occupies the largest area among the various land uses identified in the map followed by urban green spaces.

Table 1: Indore Municipal Corporation Natural Asset's Area Wise Distribution

S. No.	Class Name	Class Area (sq. km.)	Area percentage to total Area
1	Forest / Natural vegetation	6.30	2.25
2	Sparse vegetation / scrub	6.46	2.31
3	Marshes	0.22	0.08
4	Open Green Spaces	3.01	1.08
5	Lakes and ponds	5.68	2.03
6	River / Drainage	2.16	0.77
7	Riverine Vegetation	0.43	0.15
8	Open ground	1.32	0.47
9	Tree patch and plantation	10.09	3.61
10	Agriculture	87.78	31.42
11	Fallow land	0.3	0.11
	Total	**123.75**	**44.28**

Administration of Biodiversity

In Indore, the following are the agencies responsible for some level of management of biodiversity.

Madhya Pradesh Forest Department (Indore Division)

This department which was established in 1860, is headed by the Principal Chief Conservator of Forests (PCCF). Forest lands and other protected areas are managed efficiently, and forest resources are conserved and promoted through administrative entities established at the regional level. Madhya Pradesh was likely the first state in India to begin the job of developing a working plan in 1894.[21] The Forest Department also maintains the city forests of Indore. For more details please visit: https://mpforest.gov.in/HomeHindi.aspx

Indore Municipal Corporation (IMC)

Indore Municipal Corporation is involved in the day-to-day administration of the 87 wards of the city. The local body provide services such as healthcare, education, green space improvement, housing and transport by collecting property taxes and administering grants from the state government. For more details please visit: Indore municipal corporation (mp.gov.in)

Indore Smart City Development Limited (ISCDL)

Indore Smart City Development limited is a Special Purpose Vehicle constituted under the Smart Cities Mission that works towards improving cities and their liveability through sustainable infrastructure development. ISCDL is headed by the Collector of the Indore district as a chairman, and the Commissioner of IMC is the executive Director. For more details please visit: Smart City Indore | Welcome to Indore Smart City.

Indore Development Authority (IDA)

Indore Development Authority, is the urban planning agency serving Indore Metropolitan Region. The IDA and IMC collaborate to support biodiversity administration. Numerous parks and gardens are included in the IDA schemes and are maintained by the IMC. For more details: IDA: Indore Development Authority (idaindore.org)

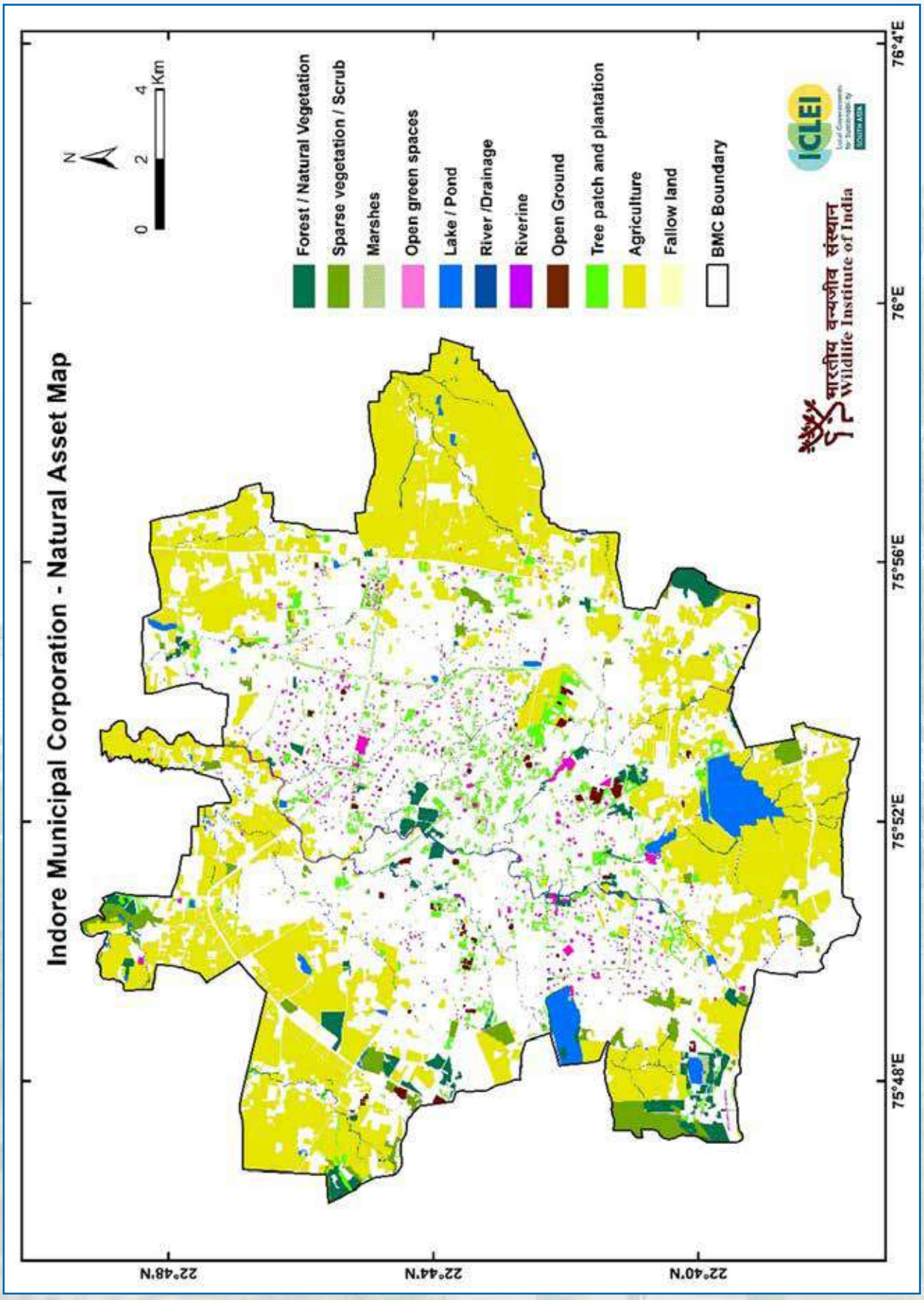

Figure 2: Natural Asset Map of Indore Municipal Boundaries


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Part B: Indicators of the Singapore Index on Cities' Biodiversity

Native Biodiversity

Indicator 1: Proportion of Natural Areas in the City

The definition of the Natural areas is stated in the Singapore Index Manual as "Natural areas comprise predominantly native species and natural ecosystems, which are not, or no longer, or only slightly influenced by human actions, except where such actions are intended to conserve, enhance or restore native biodiversity."

Methodology

As per the CBI user manual

Principle for calculation of the indicator
(Total area of natural, restored and naturalised areas) ÷ (Total area of city) × 100%

Scoring Range: (based on the CBI user manual)
0 point: <1.0%
1 point: 1.0% - 6.9%
2 points: 7.0% - 13.9%
3 points: 14.0% - 20.0%
4 points: > 20.0%

City Data and Calculations
The definition given in the CBI manual was followed as closely as possible given Indian conditions, and the Natural Asset map (Figure 1) was referred while calculating the Proportion of Natural Areas. Table 1 enlists all the land classes and their areas as identified in the Natural Asset Map. Among all the land classes, those that fit within the definition of natural areas include Forest / Natural vegetation, Sparse vegetation/ Scrub, Lakes and pond, Marshes, River/Drainage and Riverine Vegetation and have been considered for the calculation of this indicator.

Table 2: Area of Natural land classes for calculation of Indicator 1

S. No.	Class Name	Class Area (sq. km.)
1	Forest / Natural vegetation	6.30
2	Sparse vegetation / scrub	6.46
3	Marshes	0.22
4	Lakes and ponds	5.68
5	River / Drainage	2.16
6	Riverine vegetation	0.43
	Total	**21.25**

Principal for calculating the indicator: (Total area of natural, restored and naturalized areas) ÷ (Total area of city) × 100%

Total area of natural, restored and naturalized areas: 21.25 sq. km.

Total area of city: 279.39 sq. km.

Indicator 1 = (21.25) ÷ (279.39) × 100%

RESULT: 7.6%

SCORE: 2

Recommendations to Improve Score

Indore can improve its score by focussing on restoration of natural landscapes within the city. To start off with, regions like Malwa mill and Hukumchand mill which are sites with very rich diversity and very low human interference, can be focussed on while simultaneously working towards the completion of the "Ahily van", initiative. Other areas in the city can be selected by developing a Local Biodiversity Strategy and Action Plan (LBSAP) which can help to also identify goals, strategies and actions that will improve the extent and quality of natural ecosystems.

Indicator 2: Connectivity Measures or Ecological Networks to Counter Fragmentation

Methodology

As per the CBI user manual

Principle for calculation of the indicator

$$\frac{1}{A_{total}} * \left(A_1^2 + A_2^2 + A_3^2 + \ldots + A_n^2\right)$$

Where:

- A_{total} is the total area of all natural areas
- A_1 to A_n are areas that are distinct from each other (i.e. more than or equal to 100m apart)
- $_n$ is the total number of connected natural areas

This measures effective mesh size of the natural areas in the city. A_1 to A_n may consist of areas that are the sum of two or more smaller patches which are connected. In general, patches are considered as connected if they are less than 100m apart.

Scoring Range: (based on the CBI user manual)

0 point:	< 200 ha
1 point:	201 - 500 ha
2 points:	501 - 1000 ha
3 points:	1001 - 1500 ha
4 points:	> 1500 ha

City Data and Calculations

The patches associated with the land classes used to calculate indicator 1, i.e., Forest / Natural Vegetation, Sparse Vegetation/ Scrub, Lake, Marshes, River/Drainage and Riverine Vegetation have been considered in this calculation. In reality, landscapes represented in Indore Municipal Corporation by the land classes- Agriculture, fallow land, tree patches, open ground, and parks also form a part of the ecological network. However, these have not been considered natural areas following the guidelines of the CBI manual.[22] Figure 2 shows the map prepared for Connectivity patches of Natural Areas of Indore Municipal Boundaries.

162 polygons (patches) were merged with the land class River Saraswati and considered a single unit, as per the 100m proximity rule. The total area of this big patch (A1) was determined as 491.92 ha. 19 patches were merged with Sirpur lake, considered patch A2, with an area of 326.72 ha (refer to Annexure 2,Table 10).

There are 323 polygons (patches) outside the 100m buffer of these two big patches. As per the 100m proximity rule, these patches are inter-merged into 116 patches (A3 – A124). The total number of patches is shown in Table 10.

A_{total} = 2124.83 ha

As per the final calculation

Indicator 2 = 1/2124.83 ha X (470279.62 ha^2) = 221.33 ha

RESULT: 221.33 ha

SCORE: 1

Recommendations to Improve Score

The blue-green connectivity of the city can be improved by the conservation and restoration of the natural areas as recommended in indicator 1. With 31.4% of the land use under Agriculture, biodiversity friendly cultivation methods, technologies like Agroforestry, permaculture can be a focus of the IMC through partnerships with the Agriculture and Forest departments. Stakeholder consultations and partnerships should be an integral part of identifying the right intervention. Further strategies can be identified through the LBSAP.

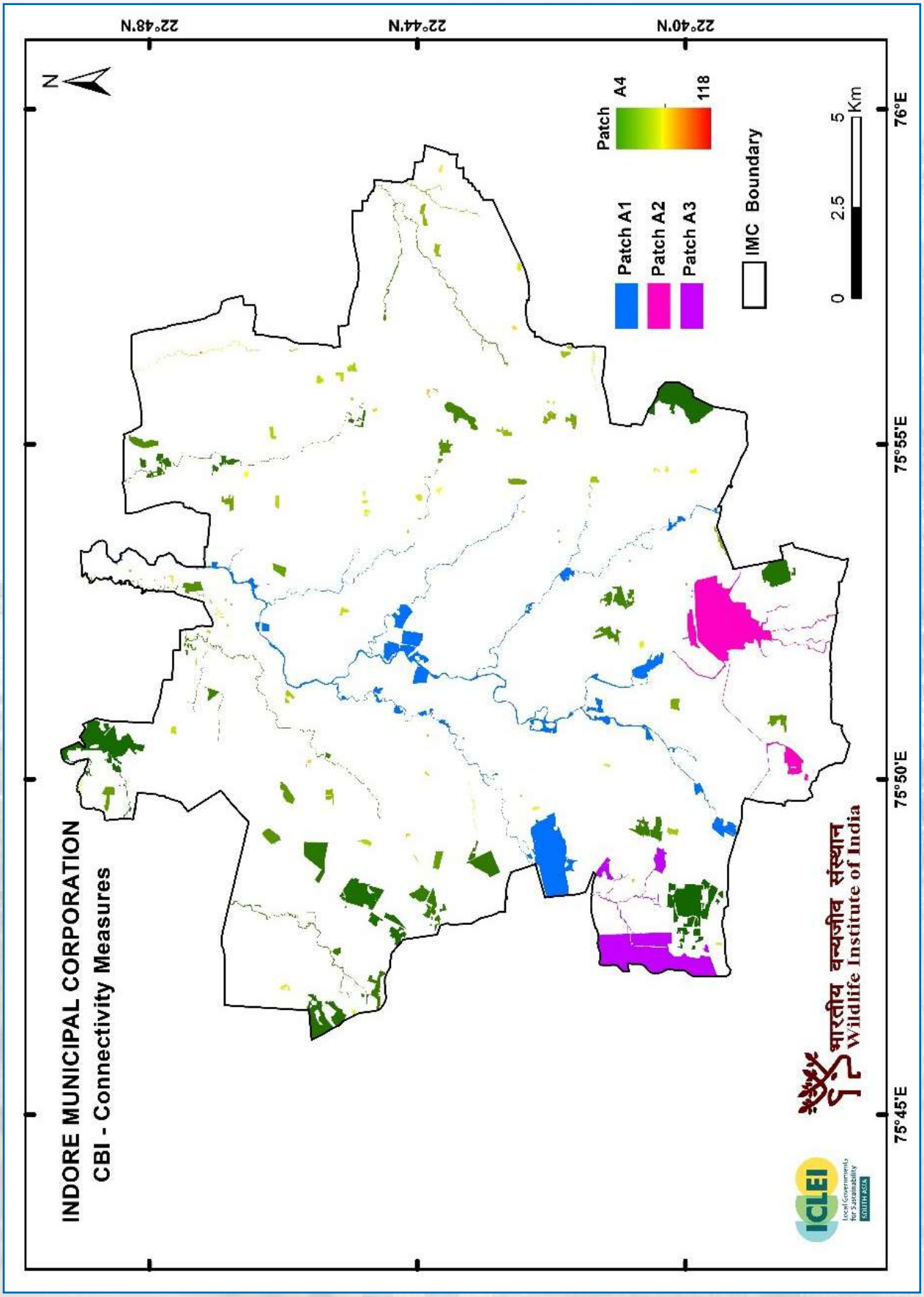


Figure 3: Connectivity patches of Natural Areas of Indore Municipal Boundaries

Indicator 3: Native Biodiversity in Built up Areas (Bird Species)

Methodology

How to calculate indicator

Number of native bird species in built up areas where built up areas include impermeable surfaces like buildings, roads, drainage channels, etc., and anthropogenic green spaces like roof gardens, roadside planting, golf courses, private gardens, cemeteries, lawns, urban parks, etc. Areas that are counted as natural areas in indicator 1 should not be included in this indicator.

Scoring Range: (based on the CBI user manual)

0 point: < 19 bird species
1 point: 19 - 27 bird species
2 points: 28 - 46 bird species
3 points: 47 - 68 bird species
4 points: > 68 bird species

City Data and Calculations

Secondary data on birds was available in the form of research paper, books and reports. Citizen science platforms such as eBird (2021) developed by Cornell Lab of Ornithology was also referred for the generation of the list. The computation of this indicator does not include the natural areas that are taken into account in Indicator 1. The Nature Volunteer Team's experts were consulted to examine the birds that are found in the natural or urban (anthropogenic) areas.

The city is home to 238 different bird species, 87 of which may be found in the city's urban and anthropogenic altered areas. Table 11 of Annexure 3, lists the birds taken into consideration.

RESULT: 87 bird species

SCORE: 4

Recommendations to Maintain Score

The number of urban birds dwelling in the city can be improved by expanding the greenspaces in the urban environment. Birds can be attracted by encouraging the public to plant more native trees in their yards, communal gardens, or parking lots. The planting of native vegetation should be encouraged rather than replacing it with ornamental plants. The general public ought to be aware of the value of urban birds and their contribution to the environment. With the aid of NGOs already dedicated to the same cause, the city can initiate partnerships that encourage residents to engage in activities like bird watching and participating in citizen science initiatives.

Indicators 4 - 8: Change in Number of Native Species

Methodology

How to calculate indicator

The change in number of native species is used for indicators 4 to 8. The three core groups are:

- Indicator 4 : vascular plants
- Indicator 5 : birds
- Indicator 6 : butterflies

These groups have been selected as data are most easily available and to enable some common comparison.

Cities can select any two other taxonomic groups for indicators 7 and 8 (e.g. bryophytes, fungi, amphibians, reptiles, freshwater fish, molluscs, dragonflies, beetles, spiders, hard corals, marine fish, seagrasses, sponges, etc.)

The above data from the first application of the Singapore Index would be recorded in Part I: Profile of the City as the baseline.

Net change in species from the previous survey to the most recent survey is calculated as:

Total increase in number of species (as a result of re-introduction, rediscovery, new species found, etc.) minus number of species that have gone extinct.

Scoring Range: (based on the CBI user manual)

0 point: Maintaining or a decrease in the number of species
1 point: 1 species increase
2 points: 2 species increase
3 points: 3 species increase
4 points: 4 species or more increase

City Data and Calculations

Data is very deficient in case of native biodiversity of city. Relatively few studies are conducted on the flora or fauna present on the region, as also discussed in the part I of the Biodiversity Section. For Indicator 4, the Garden section of IMC provided a list of plants (Table 12, Annexure 3). For the preparation of birds list for indicator 5, a consolidated list was prepared from all the available sources discussed in part I (Table 11, Annexure 3) and a taxa expert from the TNV Team was consulted at the final stage of the list preparation. Dr. Vipul Keerti, Professor in the Department of Zoology at Holkar Science College, provided the list of butterflies for the indicator 6 (Table 13, Annexure 3).

For the additional taxa (Indicator 7 & 8) a list of Spiders and Fishes was compiled respectively. The list of spiders was extracted from the study conducted by Sharma & Sharma 201520 (Table 14, Annexure 3) and the list of fishes is received from the Department of Fisheries, Indore region (Table 15, Annexure 3).

When the city revises the index in five years, these lists will serve as the baseline data for comparison and calculation of indicators.

RESULT: Since this is the baseline year for the species count, the city will not receive any score on the indicators 4-8 and the same will be excluded from the overall calculation.

Indicator 9: Proportion of Protected Natural Areas

Methodology

How to calculate indicator
(Area of protected or secured natural areas) ÷ (Total area of the city) × 100%

Scoring Range: (based on the CBI user manual)
0 point: < 1.4%
1 point: 1.4% - 7.3%
2 points: 7.4% - 11.1%
3 points: 11.2% - 19.4%
4 points: > 19.4%

City Data and Calculations

The definition of a protected area according to the CBI manual is "any legally protected, formally secured areas, and other administratively protected areas, as different cities have different terminologies and means for protecting their natural areas".

The details of the protected areas have been supplied by the Forest Department, Indore Division. In addition to the designated protected zones, the Indore Municipal Corporation is creating the Ahilya Van (City Forest) in 150 selected spots. However, since areas these are still in the process of being developed and declared, they have not been taken into consideration. The Sirpur Wetland which is a Ramsar site is also included in the list. The table below lists all of Indore's protected areas.

Table 3: List of protected areas

S. No.	Name of the PA	Area (sq. km.)	category
1	Rewti	0.17	Protected Forest
2	Airport Bijasen	2.74	Reserve Forest
3	Devguradiya	1.03	Protected Forest
4	City Forest Bicholi Mardana	.10	City Forest
5.	Sirpur Lake	1.61	Ramsar Site
	Total	**5.65**	

(Area of protected or secured natural areas) ÷ (Total area of the city) × 100%

Total Natural Protected Area = 5.65 sq. km.

Total area of City - 279.39 sq. km.

RESULT: 0.020%

SCORE: 0

Recommendations to Improve Score

The city scores poorly in this indicator highlighting a distinct absence of protection of natural spaces. The ongoing Ahilya Van Project will contribute to improving the future score however, the city can identify areas rich in biodiversity such as Hukumchand and Malwa mill regions, and designate them as biodiversity heritage sites under the Biological Diversity Act, 2002. Exploring partnerships with the Forest Department may also yield information about other areas which can be afforded protection through Other effective area-based conservation measures (OECM).

Indicator 10: Proportion of Invasive Alien Species

Methodology

How to calculate indicator
(Number of invasive alien species) ÷ (Number of native species) × 100%

Scoring Range: (based on the CBI user manual)
0 point: > 30.0%
1 point: 20.1% - 30.0%
2 points: 11.1% - 20.0%
3 points: 1.0% - 11.0%
4 points: < 1.0%

City Data and Calculations
The taxonomist Dr. Sudeep Ray, Professor, Department of Botany, PMB Gujarati Science College, was contacted to support in the identification of invasive species from the total plant list of the city because there was no published information on the invasive species of Indore City. Dr. Ray identified 44 invasive species. The species are listed in Table 16.

Indicator 10 = (Number of invasive alien species) ÷ (Number of native species) × 100%

Number of Invasive Alien Species = 44

Number of Native Species = 478

RESULT: 9.2%

SCORE: 3

Recommendations to Improve Score

The score for this indicator has been calculated taking into account limited information on the city's invasive species and therefore can only be considered indicative. Further research should be carried out on the invasive species of the region which may be addressed as an action point in the LBSAP for the city which should be developed to improve the score of several indicators.

Indicator 11: Regulation of Quantity of Water

Methodology

How to calculate indicator
(Total permeable area) ÷ (Total terrestrial area of the city) × 100%

Scoring Range: (based on the CBI user manual)
0 point: < 33.1%
1 point: 33.1% - 39.7%
2 points: 39.8% - 64.2%
3 points: 64.3% - 75.0%
4 points: > 75.0%

City Data and Calculations

A permeability map of IMC was prepared for the purpose of calculating this indicator (Figure 3). For the map preparation Sentinel-2 Level, 2 products with a cloud cover of less than 3% comprising the IMC region (Tile Number - T43QEF) acquired on 01 October 2022 were downloaded from USGS Earth Explorer. Red (R), Green (G), Blue (B), and Near Infrared (NIR) bands with 10m spatial resolution and vegetation red edge bands and Short-wave infrared bands with 20 m spatial resolution were pre-processed for the supervised classification process. The field surveyed and Google satellite layer location data for the Land use classes of Paddy field, Plantation, Waterbody, Scrubland, Dense vegetation, Sparse vegetation, Open ground and Urban built-up were utilized as the training data set for the supervised classification based on the standard methodology in ENVI 5.3 software. After the LULC classification, the respective land classes were merged, and a permeability map was prepared.

Table 4: Area of permeable spaces of Indore

Item/ Land Type	Area in ha	Area Percentage
Permeable land area	11308.67	40.48
Waterbody	694.75	2.49
Impermeable	15936.08	57.04

Total permeable area = Permeable land area + Water body = 12003.42 ha

Total Terrestrial area = 27232.78 ha

RESULT: 44.08%

SCORE: 2

Recommendations to Improve Score

The Rainwater Harvesting Project and the rejuvenation of traditional waterbodies project started by the IMC and ISCDL will play a significant role in the improvement of this indicator. Improving the city's green and blue network by identifying strategies through the LBSAP will also improve the score for this indicator.

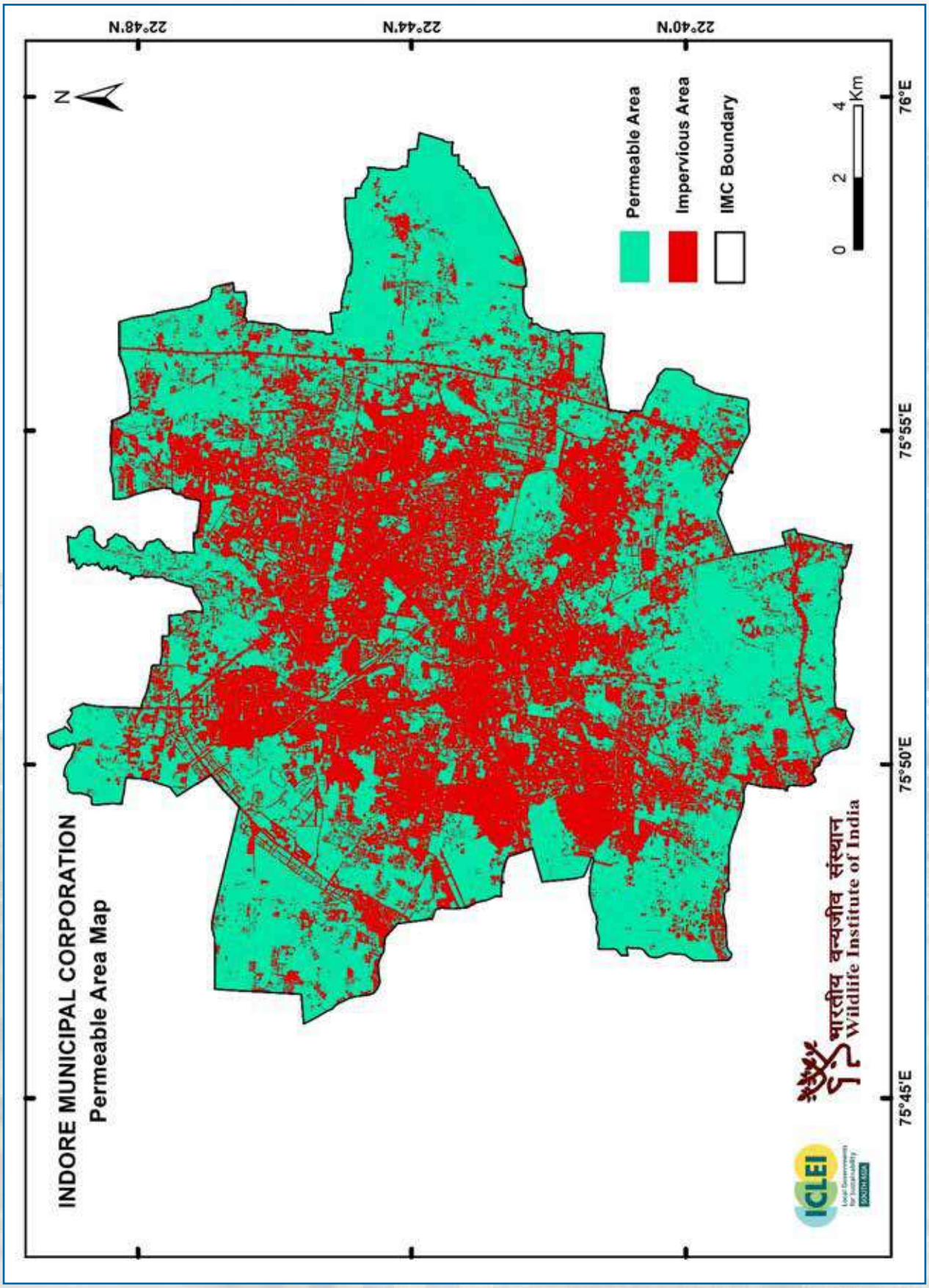


Figure 4: Permeable Area map of Indore City

Indicator 12: Climate Regulation: Carbon Storage and Cooling Effect of Vegetation

Methodology

How to calculate indicator
(Tree canopy cover) ÷ (Total terrestrial area of the city) × 100%

Scoring Range: (based on the CBI user manual)
0 point: < 10.5%
1 point: 10.5% - 19.1%
2 points: 19.2% - 29.0%
3 points: 29.1% - 59.7%
4 points: > 59.7%

City Data and Calculations

In order to calculate indicator 12, a tree cover map (Figure 4) was developed using Sentinel satellite imagery. Sentinel-2 Level 2 products with a cloud cover of less than 3% comprising the study region (Tile Number - T43QEF) acquired on 01 October 2022 were downloaded from USGS Earth Explorer. Sentinel bands 2 to 8,8a,11 and 12 were pre-processed and used in the supervised classification process based on the standard methodology. The field surveyed location data for the tree cover area such as Dense vegetation, Forest, Avenue tree patches and plantations were utilised as the training data set for the tree cover classification in ENVI 5.3 software. The tree cover map was prepared by merging the respective land classes.

Table 5: Tree Canopy Cover area for Indore

Item	Area in ha
Tree cover	3039.40
Total terrestrial area	27232.78

Tree cover = (Tree canopy cover) ÷ (Total terrestrial area of the city) × 100%

Tree cover = 3039.40 ha

The total terrestrial area of the city = 27232.78 ha.

RESULT: 11.16 %

SCORE: 1

Recommendations to Improve Score

Indore's land use comprises a high percent of built-up area followed by agricultural areas. As a result, the score for this indicator is low. To boost the score the IMC can identify suitable areas for tree as well as look into developing native tree green belts along roadsides, avenues and parks. Recruiting the public through well thought out awareness programmes and sapling distribution will only serve to accelerate plantation on private and public land. Future applications of the indicator may see an increase in the score if the Ahilya Van project is successful.

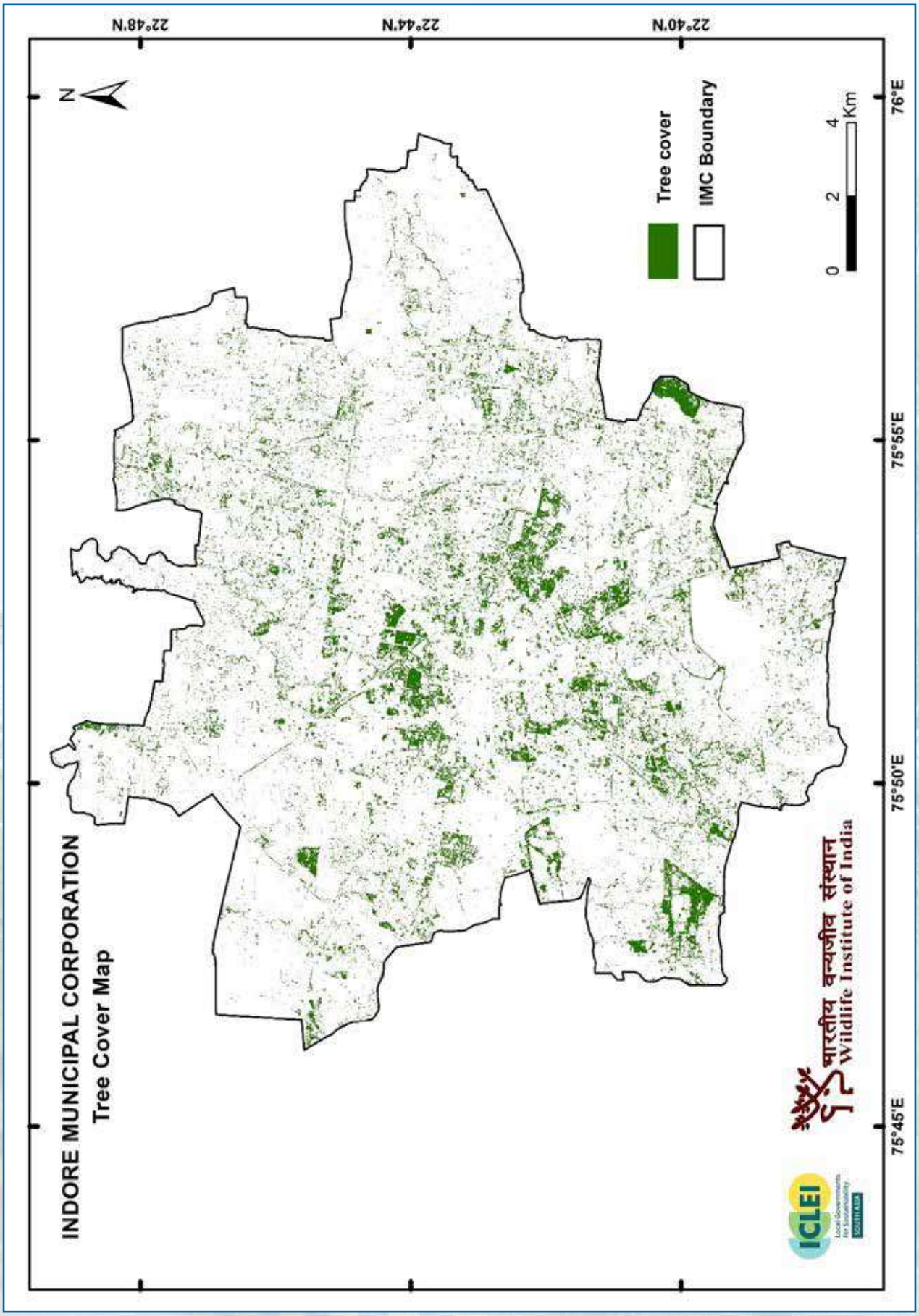


Figure 5: Tree Canopy Cover of Indore

Indicator 13: Recreational Services

Methodology

How to calculate indicator
(Area of parks with natural areas and protected or secured natural areas)/1000 persons

Scoring Range: (based on the CBI user manual)
0 point: < 0.1 ha/1000 persons
1 point: 0.1 - 0.3 ha/1000 persons
2 points: 0.4 - 0.6 ha/1000 persons
3 points: 0.7 - 0.9 ha/1000 persons
4 points: > 0.9 ha/1000 persons

City Data and Calculations
The IMC is responsible for developing and maintaining 1,381 parks throughout the city which are accessible to all its citizens (List of parks is provided in the Annexure 4). The Indore Zoo, also known as Kamla Nehru Prani Sanghralay, is an area of recreation for city inhabitants, hence its area is taken into account while calculating the indicator.

Area of all the parks = 86.8 ha

Area of Indore Zoo = 51.75 Ha

Total area for recreational services = 138.55 Ha

RESULT: 0.13 ha

SCORE: 1

Recommendations to Improve Score

Indore has less than the minimum standard of 570 ha of recreational green space, as provided in the Urban and Regional Development Plans Formulation and Implementation (URDPFI, Vol. I) Guidelines, 2015.[23] The city must, on priority, establish more organised native green spaces. Partnerships with agricultural land owners resulting in them setting aside a small proportion of land which can be developed into recreational green spaces through an appropriate financial model, will not only result in protection of the city's agricultural lands from being converted, but also provide recreational spaces for locals.

Indicator 14: Educational Services

Methodology

How to calculate indicator
Average number of formal educational visits per child below 16 years to parks with natural areas or protected or secured natural areas per year

Scoring Range: (based on the CBI user manual)
0 point: 0 formal educational visit/year
1 point: 1 formal educational visit/year
2 points: 2 formal educational visits/year
3 points: 3 formal educational visits/year
4 points: > 3 formal educational visits/year

City Data and Calculations
The Kamla Nehru Prani Sanghralay (Indore Zoo), in collaboration with an NGO, The Animal Rehabilitation and Protection Front (ARPF), offers several informative educational guided tours for students from various schools. Additionally, ARPF organises several excursions to Ralamandal Wildlife Sanctuary. Anubhooti camp, a nature camp organised by the Madhya Pradesh Forest Department for Indore's public schools, takes students to a neighbouring national park or wildlife sanctuary. However, as these activities are not mandatory in the school curriculum, they cannot account for the indicator calculation.

RESULT: No formal educational visit/year

SCORE: 0

Recommendations to Improve Score

Despite the fact that several environmental educational programmes take place, these are not linked with the curriculum and hence the indicator's score is zero. The city can recommend to the state education boards that a mandatory educational tour to natural areas be added to the curriculum to boost this score.

Indicator 15: Budget Allocated to Biodiversity

Methodology

How to calculate indicator

(Amount spent on biodiversity related administration) ÷ (Total budget of city) × 100

Scoring Range: (based on the CBI user manual)

0 point: < 0.4%
1 point: 0.4% - 2.2%
2 points: 2.3% - 2.7%
3 points: 2.8% - 3.7%
4 points: > 3.7%

City Data and Calculations

The budget related to biodiversity was scrutinized from the IMC budget document under the function group of Urban Forestry. Other than that, the budget of Indore Zoo is also included as IMC is the operator of zoo. The following are the various budget allocations (in INR) for biodiversity related activities, made by the IMC for the financial year 2021-2022.

1. Budget Allocated to biodiversity related administration (under the function Parks and Gardens, functional group Urban Forestry of Indore Nagar Palika Nigam)- 16,07.36 million INR. The breakdown of the amount is given below:

- Expenditure on development of parks and gardens = 316.001 million INR
- Expenditure on maintenance of Sirpur Pond buffer zone = 415.162 million INR
- Expenditure on plantation on pitra parvat = 1.0 million INR
- Operations and maintenance of lakes, ponds and other waterbodies = 271.00 million INR
- Others = 606.284 million INR

2. Budget Allocated for Indore Zoo- 2,97.5 million INR

Total budget allocated for biodiversity = Budget allocated to biodiversity related administration + Budget allocated for Indore Zoo = (16,09.447 + 2,97.5) million INR = 1906.947 million INR

Total budget of IMC = 47639.641 million INR

(Amount spent on biodiversity related administration) ÷ (Total budget of city) × 100

Calculations: (1906.947) ÷ 47639.641 × 100 = 4

RESULT: 4

SCORE: 4

Recommendations to Maintain Score

Indore has scored the highest points in the indicator as the budget allocated to the biodiversity activities are quite effective. To maintain the score, the city governance should develop more projects which can enhance the scores of other indicators. The scores of other indicators can also be raised by allocating a small amount to creating a BMC and LBSAP.

Indicator 16: Number of Biodiversity Projects Implemented by the City Annually

Methodology

How to calculate indicator

Number of programmes and projects that are being implemented by the city authorities, possibly in partnership with private sector, NGOs, etc. per year.

In addition to submitting the total number of projects and programmes carried out, cities are encouraged to provide a listing of the projects and to categorise the list into projects that are:
1. Biodiversity related
2. Ecosystems services related

Scoring Range: (based on the CBI user manual)

0 point: < 12 programmes/projects
1 point: 12 - 21 programmes/projects
2 points: 22 - 39 programmes/projects
3 points: 40 - 71 programmes/projects
4 points: > 71 programmes/projects

City Data and Calculations

There are various agencies which work together with the ULB to implement several projects throughout the year. Some of these are statal agencies while others are NGOs. On the basis of data collected from the IMC, ISCDL, the list of projects is given below.

Table 6: List of Biodiversity and Ecosystem services related projects being carried out in the city

Sl. No.	Name of the Activity	Implementing Agency
1	Bhu Jal Sanrakshan Abhiyan (Rain water harvesting)	IMC and ISCDL
2	Ahilya van Project	IMC and ISCDL
3	Ecofriendly Mati Ganesh Campaign	IMC
4	Har Din ek Ped Campaign from 8 August to 15 August 2022.	IMC
5	Plantation drives by Forest Department	Forest Department
6	Blue Master Plan	ISCDL and IMC
7	Riverfront Project: Plantation across the river banks of Sarswati and Kahn river.	ISCDL
8	Native trees Plantation at different sites	Scientech Eco Foundation
9	Rejuvenation of traditional water bodies of the city	IMC and ISCDL
10	Treatment of Catchment areas of river Saraswati and Kanh rivers	IMC and ISCDL
11	Lake Restoration and Rejuvenation Project at Kanadia	IMC and ISCDL
12	Pitra Parvat Green Area Development	IMC and ISCDL
13	Rejuvenation of Kanh and Sarswati River areas	IMC and ISCDL
14	Drum plantation on roadside	IMC and ISCDL
15	Green Belt Area and Garden Development	IMC and ISCDL
16	Study on Biodiversity of Sirpur Wetland, Indore	EPCO & IMC

Sl. No.	Name of the Activity	Implementing Agency
17	Conservation of Important Lakes & Reservoirs	EPCO & IMC
18	Sirpur Lake Five Year Plan	EPCO & IMC
19	Cleaner Air Better Life	Confederation of Indian Industry (CII)
20	Gober-Dhan Plant (Bio-CNG Plant)	IMC
21	Development of the CBI	IMC, WII, ICLEI South Asia, MPSBB

RESULT: 21

SCORE: 1

Recommendations to Improve Score

The city of Indore, through its LBSAP and can take up meaningful activities identified therein, to enhance its biodiversity, through partnerships with statal and parastatal agencies, local NGOs, academic institutions and the private sector.

Indicator 17: Policies, Rules and Regulations – Existence of Local Biodiversity Strategy and Action Plan

Methodology

How to calculate indicator
Status of LBSAP (or any equivalent plan); number of associated CBD initiatives.

Scoring Range: (based on the CBI user manual)

0 point:	No LBSAP*
1 point:	LBSAP not aligned with NBSAP
2 points:	LBSAP incorporates elements of NBSAP, but does not include any CBD initiatives**
3 points:	LBSAP incorporates elements of NBSAP, and includes one to three CBD initiatives
4 points:	LBSAP incorporates elements of NBSAP, and includes four or more CBD initiatives

* LBSAP or equivalent.
** The thematic programmes of work and cross-cutting issues of the CBD are listed in http://www.cbd.int/programmes/. The Strategic Plan for Biodiversity (2011-2020), including the Aichi Biodiversity Targets can also be used as a reference framework (http://www.cbd.int/sp/default.shtml).

City Data and Calculations
No LBSAP is prepared for Indore City.

RESULT: No LBSAP

SCORE: 0

Recommendations to Improve Score

Developing an LBSAP for Indore can improve several indicators' score which will help the city better plan and administer to its local biodiversity. The initiative in this regard should be taken up on priority basis by the Municipal Corporation.

Indicator 18 : Institutional Capacity - Essential Biodiversity Related Functions

Methodology

How to calculate indicator

Number of essential biodiversity related functions* that the city uses.

* The functions could include the following: biodiversity centre, botanical garden, herbarium, zoological garden or museum, insectarium, etc.

Scoring Range: (based on the CBI user manual)

0 point: No functions
1 point: 1 function
2 points: 2 functions
3 points: 3 functions
4 points: > 3 functions

City Data and Calculations

The city has a number of biodiversity functions housed in academic institutes, museums and include the following (Table 7).

Table 7: List of Biodiversity Function

Sl. No.	Name of the Biodiversity Function
1	Butterfly Park at Indore Zoo
2	Kamla Nehru Prani Sanghralay (Indore Zoo)
3	Butterfly Park at Sirpur Lake
4	Botanical garden at Regional Park
5	Herbal Garden at Ward No 4
6	Botanical Garden at Holkar Science College Indore
7	Botanical garden at DAVV
8	Rajwada Museum
9	Central Museum
10	Medicinal garden at Forest Department Campus

RESULT: 10

SCORE: 4

Recommendations to Maintain Score

Several biodiversity functions are already present in Indore city however, most are maintained autonomously, without any participation of the ULB. The IMC can contribute to the maintenance of these institutions, exploring partnerships and ways to attract more visitors. Drawing a connect with the educational aspects, the Corporation can also facilitate connections with education boards.

Indicator 19 : Institutional Capacity - Inter-Agency Co-Operation

Methodology

How to calculate indicator
Number of city or local government agencies involved in inter-agency co-operation pertaining to biodiversity matters.

Scoring Range: (based on the CBI user manual)
0 point: 1 or 2 agencies* cooperate on biodiversity matters
1 point: 3 agencies cooperate on biodiversity matters
2 points: 4 agencies cooperate on biodiversity matters
3 points: 5 agencies cooperate on biodiversity matters
4 points: > 5 agencies cooperate on biodiversity matters

* Agencies could include departments or authorities responsible for biodiversity, planning, water, transport, development, finance, infrastructure, etc.

City Data and Calculations
The main local government agencies that are working on biodiversity matters.

- Indore Municipal Corporation (IMC)
- Indore Smart City Development Limited (ISCDL)
- Indore Development Authority (IDA)

RESULT: 3

SCORE: 1

Recommendations to Improve Score

To improve this score the city administration can look at establishing an outreach organisation of the Corporation, which will be registered separately and will function independently. This organisation will assist the city corporation in undertaking and monitoring projects and programmes related to biodiversity conservation. Additionally, the corporation should also set up their biodiversity management committee (BMC) as per the provisions of the Biological Diversity Act of 2002. This committee will be responsible for documenting local biodiversity, its sustainable use and dealing with Access and Benefit Sharing (ABS) issues.

Indicator 20 : Participation and Partnership - Formal or Informal Public Consultation

Methodology

How to calculate indicator
Existence and state of formal or informal public consultation process pertaining to biodiversity related matters.

Scoring Range: (based on the CBI user manual)

0 point:	No routine formal or informal process
1 point:	Formal or informal process being considered as part of the routine process
2 points:	Formal or informal process being planned as part of the routine process
3 points:	Formal or informal process in the process of being implemented as part of the routine process
4 points:	Formal or informal process exists as part of the routine process

City Data and Calculations
No Formal or informal public consultation process pertaining to biodiversity exists in the city.

RESULT: No formal or informal process exists

SCORE: 0

Recommendations to Improve Score

The city needs to incorporate a formal public consultation process to improve inclusive decision making, public participation, public ownership and transparency. The BMC, once formed can spearhead this process of public consultation.

Indicator 21 : Participation and Partnership - Institutional Partnership

Methodology

How to calculate indicator

Number of agencies/private companies/NGOs/academic institutions/international organisations with which the city is partnering in biodiversity activities, projects and programmes.

Instances of inter-agency co-operation listed in Indicator 19 should not be listed here again.

Scoring Range: (based on the CBI user manual)

0 point: No formal or informal partnerships
1 point: City in partnership with 1-6 other national or subnational agencies/private companies/ NGOs/academic institutions/international organisations
2 points: City in partnership with 7-12 other national or subnational agencies/private companies/ NGOs/academic institutions/international organisations
3 points: City in partnership with 13-19 other national or subnational agencies/private companies/ NGOs/academic institutions/international organisations
4 points: City in partnership with 20 or more other national or subnational agencies/private companies/NGOs/academic institutions/international organisations

City Data and Calculations

There are several agencies, private companies, NGOs, with which the city is partnering in biodiversity activities, projects and programmes. The information is acquired from consultations held with ULB officials directly, with the relevant stakeholders, and via social media platforms.

Table 8: List of agencies and their activity

Sl. No.	Name of the Agency	Activities Done by the agencies
1	Scientech Eco Foundation	Drum plantation along the roadside.
2	Empower Solutions	
3	Infor Beans	
4	Federation of Indian Chambers of Commerce and industry (FICCI) FLO	
5	Nagrath Charitable Trust	Creating public awareness for installing Rain water harvesting.
6	Environment Foundation of India	Lake restoration, rejuvenation of Sarswati and Kanh River.
7	MPD Industries Pvt. Ltd.	Green Belt Area and Garden Development.
8	Rotary Club	
9	Parijat Foundation	
10	Jal evam Talab Sanrakshan Samiti Indore	
11	Wild Warriors	
12	International Waste Management	
13	Kalyan Group	

Sl. No.	Name of the Agency	Activities Done by the agencies
14	Loins Group	Development of 25 Ahilya Van Project.
15	Umang Engineering Pvt Ltd	
16	Decathlon	Cycle for Change Campaign.
17	Confederation of Indian Industry	Cleaner Air Better Life.
18	Indore School of Social Work	Cleaner Air Better Life.
19	Ipca Laboratories Limited	Drip irrigation & water Sprinkling Facilities provided to the riverside plantation.
20	WII	City Biodiversity Index of Indore
21	MPSBB	
22	ICLEI South Asia	

RESULT: 22

SCORE: 4

Recommendations to Maintain Score

Indore has several partnerships which focus on various aspects of biodiversity both directly and indirectly. Strengthening the number and nature of these partnerships and collaborations can lead to higher scores in other indicators such as Indicator 16, Indicator 21.

Indicator 22 : Education and Awareness: Is Biodiversity or Nature Awareness included in the School Curriculum

Methodology

How to calculate indicator
Is biodiversity or nature awareness included in the school curriculum (e.g. biology, geography, etc.)?

Scoring Range: (based on the CBI user manual)

0 point:	Biodiversity or elements of it are not covered in the school curriculum
1 point:	Biodiversity or elements of it are being considered for inclusion in the school curriculum
2 points:	Biodiversity or elements of it are being planned for inclusion in the school curriculum
3 points:	Biodiversity or elements of it are in the process of being implemented in the school curriculum
4 points:	Biodiversity or elements of it are included in the school curriculum

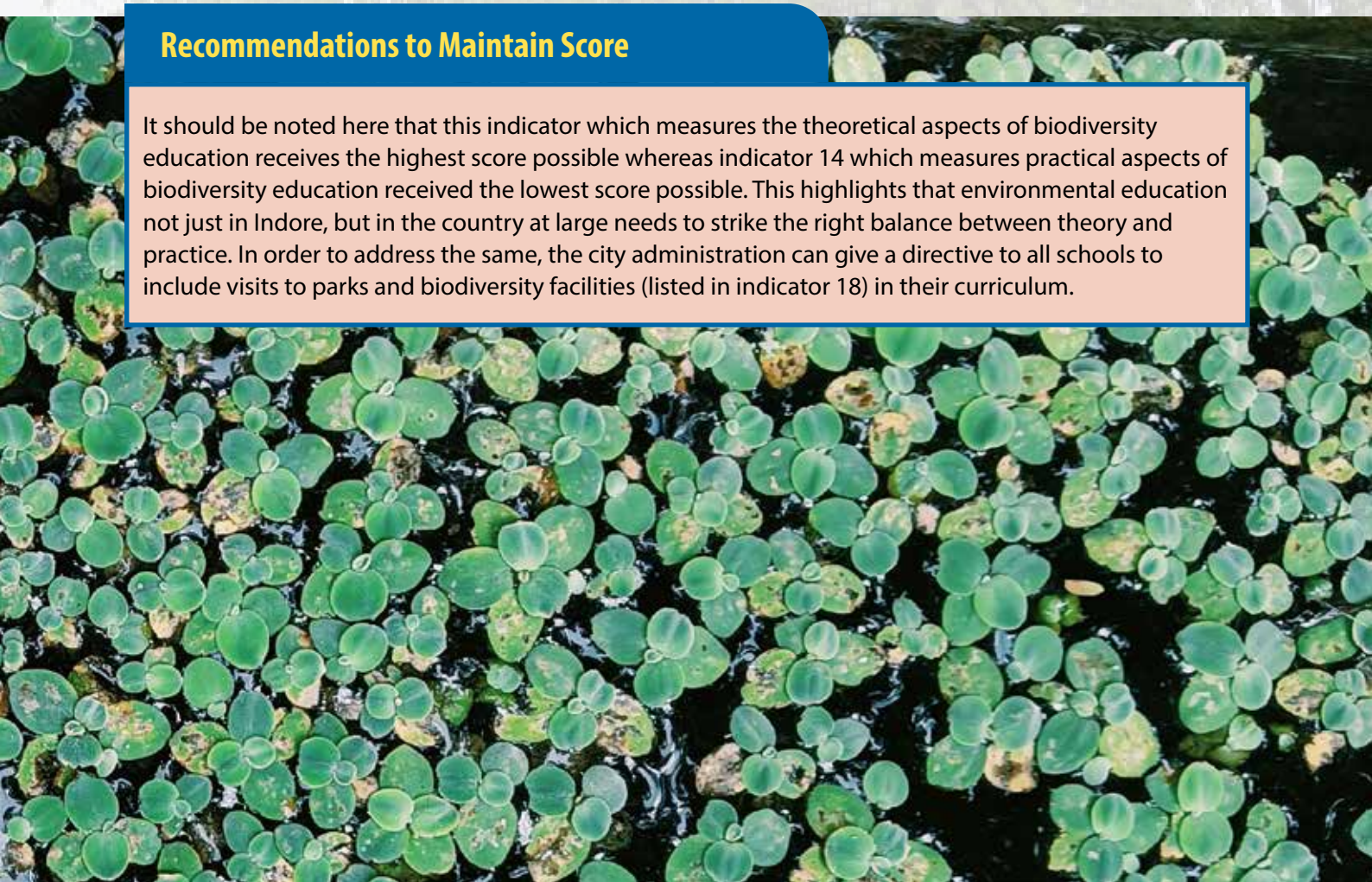
City Data and Calculations
The school of the city follows the curriculum of Madhya Pradesh State Board, Central Board of Secondary Education (CBSE), and Indian Certificate of Secondary Education (ICSE). All of the examination boards include subjects like, biology, geography, science, and environmental science. Thus, the components of biodiversity are taught in schools.

RESULT: Yes

SCORE: 4

Recommendations to Maintain Score

It should be noted here that this indicator which measures the theoretical aspects of biodiversity education receives the highest score possible whereas indicator 14 which measures practical aspects of biodiversity education received the lowest score possible. This highlights that environmental education not just in Indore, but in the country at large needs to strike the right balance between theory and practice. In order to address the same, the city administration can give a directive to all schools to include visits to parks and biodiversity facilities (listed in indicator 18) in their curriculum.



Indicator 23: Education and Awareness - Number of Outreach or Public Awareness Events

Methodology

How to calculate indicator
Number of outreach or public awareness events held in the city per year.

Scoring Range: (based on the CBI user manual)
0 point: 0 outreach events/year
1 point: 1 - 59 outreach events/year
2 points: 60 -149 outreach events/year
3 points: 150-300 outreach events/year
4 points: > 300 outreach events/year

City Data and Calculations
Being the Cleanest City of India, IMC itself conducts a lot of outreach awareness activities under the aegis of Swachh Bharat Abhiyan (SBA) which directly or indirectly encompass biodiversity issues. Numerous initiatives including plantations, cyclathons, marathons, and competitions are employed to generate awareness. The outreach programs are also conducted via social media accounts, FM radio, hoardings, and door-to-door outreach. According to conversations with city administrators, there are over 150 outreach activities carried out every year.

RESULT: 150-300

SCORE: 3

Recommendations to Improve Score

The Municipal Corporation takes its status as the Cleanest City of India seriously which it has won as a result of well planned and executed awareness activities. Moving beyond the SBA associated awareness programmes, into biodiversity related issues would benefit the score for this indicator. Partnerships and collaborations will further bolster the score.

Table 9: Indore's score indicator-wise for the CBI

	Maximum Score	Indore City's score
Component – Native Biodiversity		
Indicators		
1. Proportion of Natural Areas in the City	4 points	2 points
2. Connectivity Measures	4 points	1 point
3. Native Biodiversity in Built Up Areas (Bird Species)	4 points	4 points
4. Change in Number of Vascular Plant Species	4 points	NA
5. Change in Number of Bird Species	4 points	NA
6. Change in Number of Freshwater fish Species	4 points	NA
7. Change in Number of Species (Odonates)	4 points	NA
8. Change in Number of Species (Amphibians)	4 points	NA
9. Proportion of Protected Natural Areas	4 points	0 points
10. Proportion of Invasive Alien Species	4 points	3 points
Component – Ecosystem Services Provided by Biodiversity		
Indicators		
11. Regulation of Quantity of Water	4 points	2 points
12. Climate Regulation: Carbon Storage and Cooling Effect of Vegetation	4 points	1 point
13. Recreation and Education: Area of Parks with Natural Areas	4 points	1 point
14. Recreation and Education:Number of Formal Education Visits per Child Below 16 Years to Parks with Natural Areas per Year	4 points	0 points
Component – Governance and Management of Biodiversity		
Indicators		
15. Budget Allocated to Biodiversity	4 points	4 points
16. Number of Biodiversity Projects Implemented by the City Annually	4 points	1 point
17. Existence of Local Biodiversity Strategy and Action Plan	4 points	0 points
18. Institutional Capacity: Number of Biodiversity Related Function	4 points	4 points
19. Institutional Capacity: Number of City or Local Government Agencies Involved in Inter-agency Cooperation Pertaining to Biodiversity Matters	4 points	1 point
20. Participation and Partnership: Existence of Formal or Informal Public Consultation Process	4 points	0 points
21. Participation and Partnership: Number of Agencies/Private Companies/NGOs/ Academic Institutions/International Organisations with which the City is Partnering in Biodiversity Activities, Projects and Programmes	4 points	4 points
22. Education and Awareness: Is Biodiversity or Nature Awareness Included in the School Curriculum	4 points	4 points
23. Education and Awareness: Number of Outreach or Public Awareness Events Held in the City per Year	4 points	3 points
Component – Native Biodiversity in the City (Sub-total for indicators 1-10)*		**10 / 20 points***
Component – Ecosystem Services provided by Biodiversity (Sub-total for indicators 11-14)		**4 / 16 points**
Component – Governance and Management of Biodiversity (Sub-total for indicators 15-23)		**21 / 36 points**
Total		**35 / 72 points**

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Annexure 1 – Methodology of Natural Asset Map

1. The shapefiles of the IMC boundaries were collected from the ISCDL.

2. A satellite imagery base map was imported in ArcGIS (April 2022) and mapping scale was set to 1:2500, 1cm on map= 100m on ground.

3. All the NA classes were digitised over the base map.

4. The final classes are: (Forest / Natural vegetation, Sparse vegetation/ scrub, Marshes, Open Green Spaces, Lakes and Ponds, River/drainage, Riverine, Open Ground, Tree patch and plantation, Agriculture and Fallow land.

Visual Interpretation Key

Several visual interpretation elements like - shape, size, colour, texture, pattern etc., were used for identification and digitisation of the Natural asset classes. Table 10 shows list of classes and corresponding interpretation keys used for classification-

Table 10: Shows list of classes and corresponding interpretation keys

Sl. No.	Class Name	Size	Shape	Colour	Pattern
1	Forest / Natural vegetation	Yes	Yes	Yes	Yes
2	Sparse vegetation / scrub			Yes	Yes
3	Marshes			Yes	
4	Open Green Spaces	Yes	Yes	Yes	
5	Lakes and ponds		Yes	Yes	
6	River / Drainage	Yes	Yes	Yes	Yes
7	Riverine		Yes		Yes
8	Open ground	Yes	Yes	Yes	
9	Tree patch and plantation			Yes	Yes
10	Agriculture	Yes	Yes	Yes	Yes
11	Fallow land		Yes	Yes	

Classification Scheme

1. **Forest / Natural vegetation:** A Forest is a large area dominated by trees and have legal status and administrative boundary. This area appears to be dark green and dense on the imagery. Devguradiya City Forest has been identified in this category.

Natural vegetation: In Indore, in the middle of urban areas there are few patches which appears to be highly dense and vegetated. These areas are classified as Natural vegetation.

2. **Tree patch and plantation:** The patches of trees occur in amid of the urban area. These areas appear to be green in colour in the imagery and looks vegetated. the Tree patch does not follow a regular pattern but present in scattered form.

Plantation: The land use plantation has been identified along with roads, canals in a linear pattern. The roadside plantation always follows a regular (linear) pattern and appears to be green in colour.

3. **Agriculture:** : It is land area which is being used for crop production. The land use class is characterised by regular checkerboard shaped areas with defined boundaries. They appear to be in different shades of green- yellow colour.

4. **Fallow land:** These areas are cultivable lands which has no growing crops, they appear to be brown or yellow in colour and area adjacent to agricultural fields.

5. **Open Green Spaces:** These are areas with trees and plantation meant for recreational purposes. They have a defined boundary and are accessible to public, therefore parks are present around built-up areas. All the parks have been digitised and classified under this class.

6. **Lakes and ponds:** These areas are lentic ecosystems, water bodies which appears to be dark blue and sometime greenish in colour. The city is characterised by presence by 2 important lakes, upper lake and lower lake and several small ponds.

7. **Sparse Vegetation:** The land use in this land class has green area which have very little or no vegetation. The land is mostly permeable and appears to be in green colour giving grass like appearance.

8. **Marshes:** These are wetland ecosystems dominated by herbaceous plants, such as grasses, reeds, and sedges. Marshes are mostly located near lakes and larger water bodies. They appear to be bright green in satellite imagery.

9. **Riverine Vegetation:** The vegetation present around the rivers or drainage are classified under this category. This vegetation is irregular in shape and appears to be green in colour.

10. **River/ Drainage:** The city has two rivers prominently, i.e., Saraswati River and Kahn river that flows across the city. These two main streams are classified under this land class.

Drainage: Streams or drainage which connects with the river or lakes. They do not follow a regular pattern and appears to be blue, sometimes whitish blue or dark blue in colour.

11. Lakes and ponds: These areas are lentic ecosystems, water bodies which appears to be dark blue and sometime greenish in colour.

Annexure 2 – Calculation of Connectivity Areas

Table 11: Number and Area of patches used in the calculation of Indicator 2

Patch_no	Area_A	Area_A	Area*Area
A1	491.93	491.93	241990.67
A2	326.74	326.74	106762.23
A3	260.40	260.40	67807.18
A4	110.18	110.18	12138.88
A5	109.14	109.14	11912.47
A6	88.11	88.11	7763.67
A7	80.19	80.19	6429.84
A8	52.88	52.88	2796.11
A9	42.16	42.16	1777.48
A10	37.86	37.86	1433.10
A11	37.74	37.74	1423.97
A12	34.52	34.52	1191.51
A13	32.16	32.16	1034.24
A14	31.16	31.16	971.22
A15	26.06	26.06	679.05
A16	26.01	26.01	676.75
A17	24.85	24.85	617.39
A18	23.75	23.75	564.05
A19	20.46	20.46	418.77
A20	14.32	14.32	205.20
A21	13.83	13.83	191.17
A22	12.21	12.21	149.01
A23	12.18	12.18	148.40
A24	11.38	11.38	129.49
A25	11.18	11.18	125.09
A26	10.79	10.79	116.40
A27	10.18	10.18	103.64
A28	8.36	8.36	69.83
A29	7.28	7.28	53.01
A30	7.11	7.11	50.53
A31	6.67	6.67	44.51
A32	6.39	6.39	40.83
A33	6.20	6.20	38.43
A34	6.04	6.04	36.54
A35	5.78	5.78	33.38
A36	5.73	5.73	32.86
A37	5.40	5.40	29.14

Patch_no	Area_A	Area_A	Area*Area
A38	5.15	5.15	26.52
A39	4.77	4.77	22.71
A40	4.59	4.59	21.10
A41	4.30	4.30	18.47
A42	4.22	4.22	17.84
A43	4.13	4.13	17.02
A44	4.07	4.07	16.59
A45	3.97	3.97	15.74
A46	3.76	3.76	14.11
A47	3.50	3.50	12.23
A48	3.36	3.36	11.29
A49	3.05	3.05	9.30
A50	2.81	2.81	7.90
A51	2.80	2.80	7.82
A52	2.70	2.70	7.27
A53	2.53	2.53	6.39
A54	2.28	2.28	5.18
A55	2.20	2.20	4.86
A56	1.99	1.99	3.96
A57	1.92	1.92	3.69
A58	1.86	1.86	3.47
A59	1.84	1.84	3.40
A60	1.84	1.84	3.38
A61	1.80	1.80	3.25
A62	1.74	1.74	3.03
A63	1.70	1.70	2.89
A64	1.44	1.44	2.08
A65	1.40	1.40	1.96
A66	1.29	1.29	1.66
A67	1.25	1.25	1.57
A68	1.20	1.20	1.43
A69	1.14	1.14	1.29
A70	1.12	1.12	1.26
A71	1.08	1.08	1.16
A72	1.07	1.07	1.15
A73	1.04	1.04	1.09
A74	0.95	0.95	0.90

Patch_no	Area_A	Area_A	Area*Area
A75	0.88	0.88	0.77
A76	0.84	0.84	0.71
A77	0.84	0.84	0.70
A78	0.80	0.80	0.64
A79	0.75	0.75	0.56
A80	0.75	0.75	0.56
A81	0.74	0.74	0.55
A82	0.74	0.74	0.55
A83	0.74	0.74	0.55
A84	0.66	0.66	0.43
A85	0.63	0.63	0.39
A86	0.54	0.54	0.29
A87	0.52	0.52	0.27
A88	0.48	0.48	0.23
A89	0.43	0.43	0.18
A90	0.35	0.35	0.12
A91	0.33	0.33	0.11
A92	0.33	0.33	0.11
A93	0.29	0.29	0.09
A94	0.26	0.26	0.07
A95	0.26	0.26	0.07
A96	0.26	0.26	0.07

Patch_no	Area_A	Area_A	Area*Area
A97	0.25	0.25	0.06
A98	0.25	0.25	0.06
A99	0.24	0.24	0.06
A100	0.22	0.22	0.05
A101	0.22	0.22	0.05
A102	0.21	0.21	0.05
A103	0.20	0.20	0.04
A104	0.20	0.20	0.04
A105	0.19	0.19	0.04
A106	0.19	0.19	0.04
A107	0.16	0.16	0.03
A108	0.16	0.16	0.03
A109	0.16	0.16	0.03
A110	0.13	0.13	0.02
A111	0.13	0.13	0.02
A112	0.08	0.08	0.01
A113	0.08	0.08	0.01
A114	0.08	0.08	0.01
A115	0.04	0.04	0.00
A116	0.03	0.03	0.00
A117	0.02	0.02	0.00
A118	0.00	0.00	0.00

Annexure 3 – List of Species

Table 12: List of Birds Used to calculate Indicator 3

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
FAMILY: PODICIPEDIDAE : Grebes			
Little Grebe	*Tachybaptus ruficollis* (Pallas)	R	NO
FAMILY: PHALACROCORACIDAE : Cormorants			
Little Cormorant	*Phalacrocorax niger* (Vieillot)	RM	YES
Indian Cormorant	*Phalacrocorax fuscicollis Stephens*	RM	NO
Great Cormorant	*Phalacrocorax carbo* (Linnaeus)	RM	NO
Oriental Darter	*Anhinga melanogaster Pennant*	RM	NO
FAMILY: ARDEIDAE : Herons, Egrets, Bitterns			
Grey Heron	*Ardea cinerea Linneaus*	RM	NO
Striated heron	*Butorides striatus* (Linn.)	RM	NO
Indian Pond Heron	*Ardeola grayii* (Sykes)	R	YES
Cattle Egret	*Bubulcus ibis* (Linnaeus)	R	YES
Intermediate/Medium Egret	*Mesophoyx intermedia* (Wagler)	RM	NO
Little Egret	*Egretta garzetta (Linnaeus)*	R	YES
Night Heron	*Nyticorax nycticorax Linneaus*	R	NO
Purple Heron	*Ardea purpurea Linneaus*	RM	NO
The Great Egret	*Ardea alba*	RM	YES
FAMILY: CICONIIDAE : Storks			
Painted Stork	*Mycteria leucocephala* (Pennant)	RM	NO
Open-billed stork	*Anastomus oscitans* (Boddaert)	M	YES
Woolly-necked stork	*Ciconia episcopus* (Boddaert)	R	NO
Black Stork	*Ciconia nigra*	RM	NO
FAMILY: THRESKIORNITHIDAE : Ibises, Spoonbill			
Glossy Ibis	*Plegadis falcinellus* (Linnaeus)	RM	YES
Red-naped Ibis/ Indian black Ibis	*Pseudibis papillosa* (Temminck)	RM	YES
Black-necked ibis/Oriental white ibis	*Threskiornis melanocephalus* (Latham)	R	YES
Eurasian Spoonbill	*Platalea leucorodia Linnaeus*	RM	NO
FAMILY: PHOENICOPTERIDAE : Flamingos			
Lesser Flamingo	*Phoenicopterus minor* (Geoffroy)	RM	NO
FAMILY: ANATIDAE : Ducks, Geese			
Lesser Whistling-teal/Indian whistling duck	*Dendrocygna javanica* (Horsfield)	R	NO
Northern Pintail	*Anas acuta Linnaeus*	M	NO
Eurasian Teal	*Anas crecca Linnaeus*	R	NO
Indian Spot-billed Duck	*Anas poecilorhyncha J. R. Forster*	R	NO

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
Gadwall	*Anas strepera Linnaeus*	M	NO
Garganey	*Anas querquedula Linnaeus*	M	NO
Northern Shoveler	*Anas clypeata Linnaeus*	M	NO
Ruddy Shelduck	*Tadorna ferruginea* (Pallas)	M	NO
Comb Duck	*Sarkidiornis melanotes* (Pennant)	R	NO
Cotton Pygmy-Goose	*Nettapus coromandelianus* (Gmelin)	RM	NO
Common Pochard	*Aythya ferina* (Linnaeus)	M	NO
Red Crested Pochard	*Rhodonessa rufina* (Pallas)	M	NO
Eurasian Wigeon	*Anas penelope Linnaeus*	M	NO
Greylag Goose	*Anser anser* (Linnaeus)	M	NO
Bar-headed Goose	*Anser indicus*	M	NO
Mallard	*Anas platyrhynchos*	M	NO
The Northern Shoveler	*Spatula clypeata*	M	NO
Ferruginous Duck	*Aythya nyroca*	M	NO
Tufted Duck	*Aythya fuligula*	M	NO
FAMILY: GRUIDAE : Cranes			
Sarus Crane	*Grus antigone* (Linnaeus)	R	YES
FAMILY: RALLIDAE : Coots			
Eurasian Coot	*Fulica atra Linnaeus*	RM	NO
Grey-headed Swamphen	*Porphyrio poliocephalus*	RM	NO
FAMILY: ACCIPITRIDAE : Hawks, Vultures, Eagles			
Black-winged Kite	*Elanus caeruleus Desfontaines*	R	YES
Crested Honey Buzzard	*Pernis ptilorhynchus* (Temminck)	R	YES
Black Kite	*Milvus migrans Boddaert*	R	YES
Shikra	*Accipiter badius* (Gmelin)	R	YES
White-Eyed Buzzard	*Butastur teesa Franklin*	R	NO
Egyptian Vulture	*Neophron percnopterus* (Linnaeus)	R	YES
Pallid Harrier	*Circus macrourus* (S.G. Gmelin)	M	NO
Short-Toed Eagle	*Circaetus gallicus* (Gmelin)	R	NO
Crested Serpent Eagle	*Spilornis cheela* (Latham)	R	NO
Western Marsh Harrier	*Circus aeruginosus* (Linnaeus)	M	NO
Montagu's Harrier	*Circus pygargus*	R	NO
The Greater Spotted Eagle	*Clanga clanga*	R	NO
The Bonelli's Eagle	*Aquila fasciata*	RM	NO
The Booted Eagle	*Hieraaetus pennatus*	R	NO
Crested Hawk Eagle	*Nisaetus cirrhatus*	R	NO
FAMILY: FALCONIDAE : Falcons			
Common Kestrel	*Falco tinnunculus Linnaeus*	M	NO
Red-necked Falcon	*Falco chicquera*	M	NO
Eurasian Hobby	*Falco subbuteo*	M	NO
Peregrine Falcon	*Falco peregrinus*	M	YES
FAMILY: PHASIANIDAE : Pheasants, Patridges, Quails			
Painted partridge	*Francolinus pictus*	R	NO
Grey Francolin/Teetar	*Francolinus pondicerianus* (Gmelin)	R	NO

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
Common Quail	*Coturnix coturnix* (Linnaeus)	R	NO
Jungle Bush Quail	*Perdicula asiatica* (Latham)	R	NO
Grey Junglefowl	*Gallus sonneratii* (Temminck)	R	NO
Indian Peafowl	*Pavo cristatus Linnaeus*	R	YES
White Breasted Waterhen	*Amaurornis phoenicurus* (Pennant)	R	YES
Rain Quail	*Coturnix coromandelica*	R	NO
Rock Bush Quail	*Perdicula argoondah*	R	NO
FAMILY: CHARADRIIDAE : Plovers, Lapwing			
Red-Wattled Lapwing	*Vanellus indicus* (Boddaert)	R	YES
Yellow-Wattled Lapwing	*Vanellus malabaricus* (Boddaert)	R	NO
Little Ringed Plover	*Charadrius dubius Scopoli*	RM	NO
Kentish Plover	*Charadrius alexandrinus*	M	NO
FAMILY: JACANIDE : Jacanas			
Bronze Winged Jacana	*Metopidius indicus* (Latham)	R	NO
Pheasant Tailed Jacana	*Hydrophasianus chirurgus* (Scopoli)	R	NO
Common Moorhen	*Gallinago chloropus* (Linnaeus)	R	NO
Purple Swamphen	*Porphyrio porphyrio* (Linnaeus)	R	NO
FAMILY: ROSTRATULIDAE : Snipes			
Common Snipe	*Gallinago gallinago* (Linnaeus)	RM	NO
Greater Painted Snipe	*Rostratula benghalensis* (Linnaeus)	R	NO
Temminck Stint	*Calidris temminckii* (Leisler)	M	NO
FAMILY: RECURVIROSTRIDAE : Stilts, Avocet			
Black Winged Stilt	*Himantopus himantopus* (Linnaeus)	R	YES
FAMILY: GLAREOLIDAE : Coursers, Pratincoles			
Small Pratincole	*Glareola lactea Temminck*	M	NO
Indian Courser	*Cursorius coromandelicus* (Gmelin)	R	NO
FAMILY: LARIDAE : Terns			
River Tern	*Sterna aurantia J.E.Gray*	R	NO
Brown-headed Gull	*Chroicocephalus brunnicephalus*	R	NO
Black-headed Gull	*Chroicocephalus ridibundus*	R	NO
Little Tern	*Sternula albifrons*	R	NO
FAMILY: PTEROCLIDIDAE : Sandgrouse			
Chestnut Bellied Sandgrouse	*Plerocles exustus Temminckii*	R	NO
FAMILY: COLUMBIDEA : Pigeons, Doves			
Yellow Footed Green Pigeon	*Treron phoenicoptera* (Latham)	R	YES
Rock dove/ pigeon biset	*Columba livia Gmelin*	R	YES
Eurasian Collared-Dove	*Streptopelia decaocto* (Frivaldszky)	R	YES
Red Collared-Dove	*Streptopelia tranquebarica* (Hermann)	R	NO
Spotted Dove	*Streptopelia chinensis* (Scopoli)	R	YES
Laughing Dove	*Streptopelia senegalensis* (Linnaeus)	R	YES
FAMILY: PSITTACIDAE : Parakeets			
Alexandrine Parakeet	*Psittacula eupatria* (Linnaeus)	R	YES
Rose-Ringed Parakeet	*Psittacula krameri* (Scopoli)	R	YES
Plum Headed Parakeet	*Psittacula roseate*	R	YES

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
FAMILY: CUCULIDAE : Cuckoos			
Jacobin Cuckoo	*Clamator jacobinus* (Boddaert)	M	NO
Common Hawk Cuckoo	*Hierococcyx varius Vahl*	RM	YES
Indian Cuckoo	*Cuculus micropterus Gould*	M	NO
Asian Koel	*Eudynamys scolopacea* (Linnaeus)	R	YES
Sirkeer Malkoha	*Phaenicophaeus leschenaultii* (Lesson)	R	NO
Greater Coucal	*Centropus sinensis* (Stephens)	R	YES
FAMILY: STRIGIDAE : Owls			
Common Barn Owl	*Tyto alba* (Scopoli)	R	YES
Indian Scops Owl	*Otus bakkamoena Pennant*	R	NO
Eurasian Eagle-Owl	*Bubo bubo* (Linnaeus)	R	NO
Jungle Owlet	*Glaucidium radiatum* (Tickell)	R	NO
Spotted Owlet	*Athene brama* (Temminck)	R	YES
Mottled Wood Owl	*Strix ocellata* (Lesson)	R	NO
Short eared Owl	*Asio flammeus* (Pontoppidan)	M	NO
Indian Eagle Owl	*Bubo bengalensis*	R	NO
Brown Fish Owl	*Ketupa zeylonensis*	R	NO
FAMILY: CAPRIMULGIDAE : Nightjars			
Indian Jungle Nightjar	*Caprimulgus indicus Latham*	R	NO
Common Indian Nightjar	*Caprimulgus asiaticus Latham*	R	NO
Savanna Nightjar	*Caprimulgus affinis*	RM	NO
FAMILY: APODIDAE : Swifts			
Alpine Swift	*Tachymarptis melba* (Linnaeus)	R	NO
Little Swift	*Apus affinis*	R	YES
Crested Tree Swift	*Hemiprocne coronata* (Tickell)	R	NO
Asian Palm Swift	*Cypsiurus balasiensis*	R	YES
FAMILY: ALCEDINIDAE : Kingfishers			
Pied Kingfisher	*Ceryle rudis* (Linnaeus)	R	NO
Common Kingfisher	*Alcedo atthis* (Linnaeus)	R	NO
White Breasted Kingfisher	*Smryensis halcyon*	R	YES
FAMILY: MEROPIDAE : Bee-eaters			
Blue-Tailed Bee-Eater	*Merops philippinus Linnaeus*	RM	NO
Green Bee-Eater	*Merops orientalis Latham*	R	YES
FAMILY: CORACIIDAE : Rollers			
Indian Roller	*Coracias benghalensis* (Linnaeus)	R	YES
European Roller	*Coracias garrulus Linnaeus*	RM	NO
FAMILY: UPUPIDAE : Hoopoe			
Eurasian Hoopoe	*Upupa epops Linnaeus*	R	YES
FAMILY: BUCEROTIDAE : Hornbills			
Indian Grey Hornbill	*Ocyceros birostris* (Scopoli)	R	YES
FAMILY: CAPITONIDAE : Barbets			
Brown-Headed Barbet	*Megalaima zeylanica* (Gmelin)	R	YES
Coppersmith Barbet	*Megalaima haemacephala* (Muller)	R	YES
Eurasian Wryneck	*Jynx torquilla Linnaeus*	M	NO

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
FAMILY: PICIDAE : Woodpeckers			
Black-rumped flameback	*Dinopium benghalense* (Linnaeus)	R	YES
Brown Capped Pigmy Woodpecker	*Dendrocopos nanus* (Vigors)	R	NO
White-bellied Woodpecker	*Dryocopus javensis* (Horsefield)	R	NO
FAMILY: PITTIDAE : Pittas			
Indian Pitta	*Pitta brachyura* (Linnaeus)	RM	NO
FAMILY: ALAUDIDAE : Larks			
Singing Bush Lark	*Mirafra cantillans Blyth*	R	NO
Ashy Crowned Sparrow-Lark	*Eremopterix grisea* (Scopoli)	R	YES
Rufous Tailed Lark	*Ammomanes phoenicurus Franklin*	R	YES
Syke's Crested Lark	*Galerida deva* (Sykes)	RM	NO
Common Crested Lark	*Galerida cristata* (Linnaeus)	R	NO
FAMILY: HIRUNDINIDAE : Swallows			
Dusky Crag-Martin	*Hirundo concolor Sykes*	R	YES
Barn Swallow	*Hirundo rustica Linnaeus*	R	YES
Wire-Tailed Swallow	*Hirundo smithii Leach*	R	NO
Red-rumped Swallow	*Hirundo daurica Linnaeus*	R	NO
FAMILY: DANIIDAE : Shrikes			
Great Grey Shrike	*Lanius excubitor Linnaeus*	M	NO
Bay-Backed Shrike	*Lanius vittatus Valenciennes*	R	YES
Long Tailed Shrike	*Lanius schach Linnaeus*	RM	YES
Brown Shrike	*Lanius cristatus Linnaeus*	M	NO
FAMILY: ORIOLIDAE : Orioles			
Eurasian Golden Oriole	*Oriolus oriolus* (Linnaeus)	RM	YES
Black-Headed Oriole	*Oriolus xanthornus* (Linnaeus)	RM	NO
FAMILY: DICRURIDAE : Drongos			
Black Drongo	*Dicurus macrocercus Vieillot*	R	YES
White-Belled Drongo	*Dicrurus caerulescens* (Linnaeus)	R	YES
FAMILY: ARTAMIDAE : Swallow-Shrikes			
Ashy Woodswallow	*Artamus fuscus Vieillot*	R	NO
FAMILY: STURNIDAE : Mynas			
Brahminy Starling	*Sturnus pagodarum* (Gmelin)	R	YES
Rose-coloured Starling	*Sturnus roseus* (Linnaeus)	M	YES
Pied Myna	*Sturnus contra Linnaeus*	R	YES
Common Myna	*Acridotheres tristis* (Linnaeus)	R	YES
FAMILY: CORVIDAE : Crows, Treepies			
Rufous Treepie	*Dendrocitta vagabunda* (Latham)	R	YES
House Crow	*Corvus splendens Vieillot*	R	YES
Jungle Crow	*Corvus macrorhynchos Wagler*	R	YES
FAMILY: CAMPEPHAGIDAE : Minivets, Cuckoo-Shrikes			
Common Woodshrike	*Tephrodornis pondicerianus* (Gmelin)	R	NO
Large Cuckoo-Shrike	*Coracina macei* (Lesson)	M	NO
Black Headed Cuckoo Shrike	*Coracina melanopter* (Rupell)	R	NO

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
Small Minivet	*Pericrocotus cinnamomeus* (Linnaeus)	R	YES
White Bellied Minivet	*Pericrocotus erythropygius* (Jerdon)	R	NO
FAMILY: IRENIDAE : Ioras			
Common Iora	*Aegithina tiphia* (Linnaeus)	R	YES
FAMILY: PYCNONOTIDAE : Bulbuls			
Red-Vented Bulbul	*Pycnonotus cafer* (Linnaeus)	R	YES
FAMILY: MUSCICAPIDAE : TIMALINAE : Babblers			
Yellow- Eyed Babbler	*Chrysomma sinense* (Gmelin)	RM	NO
Common Babbler	*Turdoides caudatus* (Dumont)	R	YES
Large Grey Babbler	*Turdoides malcolmi* (Sykes)	R	NO
Jungle Babbler	*Turdoides striatus* (Dumont)	R	YES
Siberian Stonechat	*Saxicola maurus*		YES
FAMILY: MUSCICAPINAE : Flycatchers			
Red-Throated Flycatcher	*Ficedula parva* (Bechstein)	RM	NO
Ultramarine Flycatcher	*Ficedula superciliaris* (Jerdon)	RM	NO
Tickell's Blue Flycatcher	*Cyornis tickelliae Blyth*	RM	NO
Verditer Flycatcher	*Eumyias thalassina* (Swainson)	M	NO
Grey Headed Canary Flycatcher	*Culicicappa ceyloensis* (Swainson)	M	YES
White Browed Fantail Flycatcher	*Rhipidura aureola* (Lesson)	M	YES
White-Throated Fantail Flycatcher	*Rhipidura albicollis* (Vieillot)	R	NO
Indian Paradise Flycatcher	*Terpsiphone paradisi* (Linnaeus)	R	YES
Black-Naped Monarch Flycatcher	*Hypothymis azurea* (Boddaert)	R	NO
FAMILY: SYLVIINAE : Warblers			
Plain Prinia/plain wren warbler	*Prinia inornata* (Gmelin)	R	NO
Ashy Prinia/ Ashy wren-warbler	*Prinia socialis Sykes*	R	YES
Grey Breasted Prinia	*Prinia hodgsonii*	R	NO
Common Tailor Bird	*Orthotomus sutorius* (Pennant)	R	YES
Orphean Warbler	*Sylvia hortenis* (Gmelin)	M	NO
Western Ophean Warbler	*Phylloscpus trochiloides* (Sundevall)	M	YES
Booted Warbler	*Hippolais caligata* (Lichtenstein)	RM	NO
Streaked Fantail Warbler	*Cisticola juncidis* (Rafinesque)	RM	NO
FAMILY: TURDINAE : Thrushes, Chats			
Blue Throat	*Luscinia svecica* (Linnaeus)	M	NO
Oriental Magpie Robin	*Copsychus saularis* (Linnaeus)	R	YES
Black Redstart	*Phoenicurus ochruros* (S.G. Gmelin)	M	NO
Common Stone Chat	*Saxicola torquata* (Linnaeus)	M	NO
Pied Bush Chat	*Saxicola caprata* (Linnaeus)	R	YES
Indian Robin	*Saxicoloides fulicata* (Linnaeus)	R	YES
Blue Rock Thrush	*Monticola solitarius* (Linnaeus)	M	NO
Common Blackbird	*Turdus merula Linnaeus*	RM	NO
Brown rock Chat	*Cercomela fusca* (Blyth)	R	YES
Isabelline Wheatear	*Oenanthe isabellina* (Temminck)	RM	NO

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
FAMILY: PARIDAE : Tits			
Great Tit	*Parus major Linnaeus*	R	YES
Black-Lored Tit	*Parus xanthogenys Vigors*	R	NO
FAMILY: SITTIDAE : Nuthatches, Creepers			
Indian Chestnut Bellied Nuthatch	*Sitta castanea Lesson*	R	NO
FAMILY: MOTACILLIDAE : Pipits, Wagtails			
Paddyfield Pipit/ Oriental Pipit	*Anthus rufulus Vieillot*	R	YES
Citrine Wagtail	*Motacilla citreola Pallas*	M	NO
Grey Wagtail	*Motacilla cinerea Tunstall*	M	YES
White Wagtail	*Motacilla alba Linnaeus*	M	NO
White-browed Wagtail	*Motacilla maderaspatensis Gmelin*	R	YES
Yellow Wagtail	*Motacilla flava Linnaeus*	RM	NO
FAMILY: DICAEIDAE : Flowerpeckers			
Thick Billed Flowerpecker	*Dicaeum agile* (Tickell)	R	YES
Pale-billed Flowerpecker	*Dicaeum erythrorhynchos*	R	YES
FAMILY: NECTARINIDAE : Sunbirds, Spiderhunters			
Purple Rumped Sunbird	*Nectarinia zeylonica* (Linnaeus)	R	YES
Purple Sunbird	*Nectarinia asiatica* (Latham)	R	YES
FAMILY: ZOSTEROPIDAE : White-Eye			
Indian White-eye	*Zosterops palpebrosus* (Temminck)	R	YES
FAMILY: PLOCEIDAE : Sparrows, Munias, weaver Birds			
House Sparrow	*Passer domesticus* (Linnaeus)	R	YES
Yellow Throated Sparrow	*Petronia xanthocollis* (Burton)	R	NO
Baya Weaver	*Ploceus phillippinus* (Linnaeus)	R	YES
Streaked Weaver Bird	*Ploceus manyar* (Horsfield)	R	NO
Red Avadavat	*Amandava amandava* (Linnaeus)	R	NO
Scaly Breasted Munia	*Lonchura punctulata (Linnaeus)*	R	YES
FAMILY: EMBERIZIDAE : Buntings			
Black-headed Bunting	*Emberiza melanocephala Scopoli*	M	NO
Red-headed Bunting	*Emberiza bruniceps Brandt*	M	NO
Crested Bunting	*Melophus lathami* (Gray)	RM	NO
FAMILY: Scolopacidae : Sandpipers			
Eurasian Curlew	*Numenius arquata*	M	NO
Common Greenshank	*Tringa nebularia* (Gunner)	M	NO
Common Redshank	*Tringa totanus* (Linnaeus)	M	NO
Wood Sandpiper	*Tringa glareola Linnaeus*	M	NO
Green Sandpiper	*Tringa Ochropus*	M	NO
Common Sandpiper	*Actitis hypoleucos Linnaeus*	M	NO
Marsh Sandpiper	*Tringa stagnalis* (Bechstein)	M	NO
Black Tail Godwit	*Limosa limosa* (Linnaeus)	M	NO
Ruff	*Philomahus pugnax* (Linnaeus)	M	NO
Spotted Redshank	*Tringa erythropus*	M	NO

Common Names	Scientific Names	Resident (R) Migrant (M) R/RM/M	Urban Birds Yes/NO
FAMILY: Pandionidae			
Osprey	*Pandion haliaetus*	M	NO

Table 13: List of Plants identified for Indicator 4

Sl. No.	Family	Botanical Name	Category
1	Annonaceae	*Annona squamosa L.*	Tree
2		*Miliusa tomentosa (Roxb.) Sinclair*	Tree
3	Bixaceae	*Cochlospermum religiosum (L.) Alston*	Tree
4	Malvaceae	*Bombax ceiba L.*	Tree
5		*Firmiana colorata (Roxb.) R.Br.*	Tree
6		*Grewia tiliifolia Vahl*	Tree
7		*Kydia calycina Roxb.*	Tree
8		*Sterculia urens Roxb.*	Tree
9	Rutaceae	*Aegle marmelos (L.) Corr.*	Tree
10		*Limonia acidissima Groff*	Tree
11	Simaroubaceae	*Ailanthus excelsa Roxb.*	Tree
12	Burseraceae	*Boswellia serrata Roxb. ex Colebr.*	Tree
13		*Garuga pinnata Roxb.*	Tree
14	Meliaceae	*Azadirachta indica A. Juss.*	Tree
15	Celastraceae	*Cassine glauca (Rottb.) Kuntze*	Tree
16	Rhamnaceae	*Ziziphus jujuba Mill.*	Tree
17		*Ziziphus xylopyrus (Retz.) Willd.*	Tree
18	Sapindaceae	*Sapindus emarginatus Vahl*	Tree
19		*Schleichera oleosa (Lour.) Merr.*	Tree
20	Anacardiaceae	*Buchanania cochinchinensis (Lour.) M.R. Almeida*	Tree
21		*Lannea coromandelica (Houtt.) Merr.*	Tree
22		*Mangifera indica L.*	Tree
23	Moringaceae	*Moringa concanensis Nimmo ex Dalz.*	Tree
24	Leguminosae	*Acacia catechu Willd.*	Tree
25		*Acacia leucophloea (Roxb.) Willd.*	Tree
26		*Acacia nilotica (L.) Delile ssp. indica (Benth.) Brenan*	Tree
27		*Acacia suma Buch.- Ham. ex Voigt*	Tree
28		*Albizia amara Boivin*	Tree
29		*Albizia lebbeck (L.) Willd.*	Tree
30		*Albizia odoratissima (L.f.) Benth.*	Tree
31		*Albizia procera (Roxb.) Benth.*	Tree
32		*Bauhinia purpurea L.*	Tree
33		*Bauhinia racemosa Lam.*	Tree
34		*Butea monosperma (Lam.) Taub.*	Tree
35		*Cassia fistula L.*	Tree
36		*Dalbergia lanceolaria L.f. ssp. lanceolaria*	Tree
37		*Dalbergia latifolia Roxb.*	Tree
38		*Dalbergia lanceolaria L.f. ssp. paniculata (Roxb.) Thoth.*	Tree
39		*Dalbergia sissoo DC.*	Tree

Sl. No.	Family	Botanical Name	Category
40		*Desmodium oojeinense (Roxb.) Hara*	Tree
41		*Erythrina suberosa Roxb.*	Tree
42		*Hardwickia binata Roxb.*	Tree
43		*Pithecellobium dulce (Roxb.) Benth.*	Tree
44		*Pongamia pinnata (L.) Pierre*	Tree
45		*Pterocarpus marsupium Roxb.*	Tree
46		*Prosopis juliflora (Sw.) DC.*	Tree
47		*Tamarindus indica L.*	Tree
48	Combretaceae	*Anogeissus latifolia (Roxb.ex DC.) Wall.*	Tree
49		*Anogeissus pendula Edgew.*	Tree
50		*Terminalia arjuna (Roxb.ex DC.)Wight & Arn.*	Tree
51		*Terminalia bellirica (Gaertn.) Roxb.*	Tree
52		*Terminalia crenulata Roth*	Tree
53		*Terminalia tomentosa Wight & Arn.*	Tree
54	Myrtaceae	*Syzygium cumini (L.) Skeels*	Tree
55		*Syzygium salicifolium (Wight) J. Graham*	Tree
56	Lythraceae	*Lagerstroemia parviflora Roxb.*	Tree
57	Cornaceae	*Alangium salvifolium (L.f.) Wang.*	Tree
58	Rubiaceae	*Gardenia latifolia Aiton*	Tree
59		*Haldina cordifolia (Roxb.) Ridsdale*	Tree
60		*Hymenodictyon excelsum (Roxb.) Wall.*	Tree
61		*Mitragyna parvifolia (Roxb.) Korth.*	Tree
62		*Morinda coreia Buch.-Ham.*	Tree
63	Sapotaceae	*Madhuca longifolia (Koenig) Mac Bride var. latifolia (Roxb.)*	Tree
64	Ebenaceae	*Diospyros melanoxylon (L.) Roxb.*	Tree
65		*Diospyros montana Roxb.*	Tree
66	Oleaceae	*Nyctanthes arbor-tristis L.*	Tree
67	Salvadoraceae	*Salvadora persica L.*	Tree
68	Apocynaceae	*Holarrhena pubescens Wall. ex D. Don*	Tree
69	Boraginaceae	*Cordia dichotoma G. Forst.*	Tree
70		*Cordia macleodii Hook.f. & Thoms.*	Tree
71		*Ehretia laevis Roxb.*	Tree
72	Bignoniaceae	*Dolichandrone falcata Seem.*	Tree
73	Lamiaceae	*Clerodendrum phlomidis L.f.*	Tree
74		*Gmelina arborea Roxb.*	Tree
75		*Tectona grandis L.f.*	Tree
76	Santalaceae	*Santalum album L.*	Tree
77	Euphorbiaceae	*Mallotus philippensis (Lam.) Muell. Arg.*	Tree
78	Phyllanthaceae	*Bridelia retusa (L.) A. Juss.*	Tree
79		*Phyllanthus emblica L.*	Tree
80	Moraceae	*Ficus amplissima Sm.*	Tree
81		*Ficus arnottiana (Miq.) Miq.*	Tree
82		*Ficus benghalensis L.*	Tree
83		*Ficus hispida L.f.*	Tree
84		*Ficus microcarpa L.f.*	Tree

Sl. No.	Family	Botanical Name	Category
85		*Ficus racemosa L.*	Tree
86		*Ficus religiosa L.*	Tree
87		*Ficus virens Aiton*	Tree
88	Ulmaceae	*Holoptelea orientalis (L.) Blume*	Tree
89	Cannabaceae	*Trema graveolens Dalz.*	Tree
90		*Casearia tomentosa Roxb.*	Tree
91	Salicaceae	*Casearia indica (Burm. f.) Merr.*	Tree
92		*Flacourtia sylvestris (L.) Roxb.*	Tree
93	Arecaceae	*Phoenix. strictus Nees*	Tree
94	Poaceae	*Dendrocalamus strictus*	Tree
95	Capparaceae	*Capparis decidua (Forssk.) Edgew.*	Shrubs
96		*Capparis sepiaria L.*	Shrubs
97	Tamaricaceae	*Tamarix ericoides Rottl.*	Shrubs
98		*Abutilon indicum (L.) Sweet ssp. indicum*	Shrubs
99		*Abutilon indicum (L.) Sweet ssp. guineense (Schum.) Borssum*	Shrubs
100		*Azanza lampas (Cav.) Alef.*	Shrubs
101		*Eriolaena hookeriana Wight & Arn.*	Shrubs
102	Malvaceae	*Grewia damine Gaertn.*	Shrubs
103		*Grewia hirsuta Vahl*	Shrubs
104		*Helicteres isora L.*	Shrubs
105		*Hibiscus micranthus L.f.*	Shrubs
106		*Urena lobata L.*	Shrubs
107		*Urena sinuata L.*	Shrubs
108	Zygophyllaceae	*Balanites aegyptiaca (L.) Delile*	Shrubs
109	Celastraceae	*Gymnosporia montana (Roth) Benth.*	Shrubs
110	Rhamnaceae	*Ziziphus nummularia (Burm.f.) Wight & Arn.*	Shrubs
111		*Ziziphus oenopolia (L.) Mill.*	Shrubs
112	Vitaceae	*Leea asiatica (L.) Ridsdale*	Shrubs
113		*Acacia jacquemontii Benth.*	Shrubs
114		*Caesalpinia bonduc (L.) Roxb.*	Shrubs
115		*Caesalpinia decapetala (Roth) Alston*	Shrubs
116		*Desmodium velutinum (Willd.) DC.*	Shrubs
117	Leguminosae	*Dichrostachys cinerea (L.) Wight & Arn.*	Shrubs
118		*Indigofera tinctoria L.*	Shrubs
119		*Senna auriculata (L.) Roxb.*	Shrubs
120		*Tephrosia purpurea (L.) Pers.*	Shrubs
121		*Tephrosia villosa (L.) Pers.*	Shrubs
122	Lythraceae	*Woodfordia fruticosa (L.) Kurz*	Shrubs
123	Rubiaceae	*Catunaregum spinosa (Thunb.) Tirveng.*	Shrubs
124		*Spermadictyon suaveolens Roxb.*	Shrubs
125	Plumbaginaceae	*Plumbago zeylanica L.*	Shrubs
126		*Calotropis gigantea (L.) Dryand.*	Shrubs
127	Apocynaceae	*Calotropis procera (Aiton) Dryand.*	Shrubs
128		*Carissa carandas L.*	Shrubs
129		*Wrightia tinctoria R. Br.*	Shrubs

Sl. No.	Family	Botanical Name	Category
130		*Sarcostemma acidum (Roxb.) Voigt*	Shrubs
131	Convolvulaceae	*Ipomoea carnea Jacq.*	Shrubs
132	Solanaceae	*Datura metal L.*	Shrubs
133		*Solanum anguivi Lam.*	Shrubs
134		*Solanum incanum L.*	Shrubs
135		*Withania somnifera (L.) Dunal*	Shrubs
136	Acanthaceae	*Barleria prionitis L.*	Shrubs
137		*Strobilanthes callosus Nees*	Shrubs
138		*Rotheca serrata (L.) Steane & Mabb.*	Shrubs
139		*Vitex negundo L.*	Shrubs
140		*Vitex trifolia L.*	Shrubs
141		*Volkameria inermis L.*	Shrubs
142	Polygonaceae	*Persicaria barbata (L.) H.Hara*	Shrubs
143		*Persicaria glabra (Willd.) M. Gomez*	Shrubs
144		*Persicaria stagnina (Buch.-Ham.ex Meissn.)*	Shrubs
145	Euphorbiaceae	*Baliospermum solanifolium (Burm.) Suresh*	Shrubs
146		*Croton bonplandianus Baill.*	Shrubs
147		*Euphorbia antiquorum L.*	Shrubs
148		*Euphorbia caducifolia Haines*	Shrubs
149		*Euphorbia tirucalli L.*	Shrubs
150		*Jatropha curcas L.*	Shrubs
151		*Jatropha gossypifolia L. var. elegans Muell.-Arg.*	Shrubs
152	Phyllanthaceae	*Phyllanthus reticulatus Poir.*	Shrubs
153		*Fleuggia virosa (Roxb. ex Willd.) Royle*	Shrubs
154	Costaceae	*Cheilocostus speciosus (J. Koenig) C.D. Specht*	Shrubs
155	Xanthorrhoeaceae	*Aloe vera (L.) Burm. f.*	Shrubs
156	Menispermaceae	*Cissampelos pariera L. var. hirsuta (Buch.-Ham.ex DC.) Forman*	Climbers
157		*Cocculus hirsutus (L.) Diels*	Climbers
158		*Tinospora sinensis (Lour.) Merr.*	Climbers
159	Capparaceae	*Capparis zeylanica L.*	Climbers
160		*Maerua oblongifolia (Forssk.) A.Rich.*	Climbers
161	Celastraceae	*Celastrus paniculatus Willd.*	Climbers
162	Rhamnaceae	*Ventilago denticulata Willd.*	Climbers
163	Vitaceae	*Ampelocissus latifolia (Roxb.) Planch.*	Climbers
164		*Ampelocissus tomentosa (Heyne ex Roth) Planch.*	Climbers
165		*Cayratia trifolia (L.) Domin*	Climbers
166		*Cissus repanda (Wight & Arn.) Vahl*	Climbers
167		*Cyphostemma auriculatum (Roxb.) P. Singh & B. V.*	Climbers
168	Sapindaceae	*Cardiospermum halicacabum L.*	Climbers
169	Leguminosae	*Abrus precatorius L.*	Climbers
170		*Acacia pennata (L.) Willd.*	Climbers
171		*Cajanus scarabaeoides (L.) Thouars.*	Climbers
172		*Canavalia gladiata (Jacq.) DC.*	Climbers
173		*Milletia extensa (Benth.) Baker*	Climbers
174		*Mucuna pruriens (L.) DC.*	Climbers

Sl. No.	Family	Botanical Name	Category
175		*Paracalyx scariosa (Roxb.) Ali*	Climbers
176		*Pueraria tuberosa (Willd.) DC.*	Climbers
177		*Rhynchosia minima (L.) DC. var. minima*	Climbers
178		*Teramnus labialis (L.f.) Spreng.*	Climbers
179	Combretacae	*Combretum ovalifolium Roxb.*	Climbers
180	Passifloraceae	*Passiflora foetida L.*	Climbers
181	Cucurbitaceae	*Coccinia grandis (L.) Voigt*	Climbers
182		*Diplocyclos palmatus (L.) Jeffrey*	Climbers
183		*Luffa acutangula (L.) Roxb.*	Climbers
184		*Momordica dioica Roxb. ex Willd.*	Climbers
185		*Mukia maderaspatana (L.) Roem.*	Climbers
186		*Trichosanthes bracteata (Lam.) Voigt*	Climbers
187	Apocynaceae	*Cryptolepis dubia (Burm.f.) M.R. Almeida*	Climbers
188		*Cryptostegia grandiflora (Roxb.) R.Br. ex Lind.*	Climbers
189		*Dregia volubilis (L.f.) Benth. ex Hook. f.*	Climbers
190		*Hemidesmus indicus (L.) R.Br. ex Schult.*	Climbers
191		*Ichnocarpus frutescens (L.) W.T. Aiton*	Climbers
192		*Leptadenia reticulata (Retz.) Wight & Arn.*	Climbers
193		*Marsdenia tenacissima (Roxb.) Moon*	Climbers
194		*Pergularia daemia (Forssk.) Chiov.*	Climbers
195	Convolvulaceae	*Argyreia sericea Dalz.*	Climbers
196		*Ipomoea eriocarpa R.Br.*	Climbers
197		*Ipomoea hederifolia L.*	Climbers
198		*Ipomoea nil (L.) Roth*	Climbers
199		*Ipomoea obsucra (L.) Ker-Gawl.*	Climbers
200		*Ipomoea pes-tigridis L.*	Climbers
201		*Lettsomia setosa Roxb.*	Climbers
202		*Merremia aegyptia (L.) Urban*	Climbers
203		*Rivea hypocrateriformis Choisy*	Climbers
204	Dioscoreaceae	*Dioscorea bulbifera L.*	Climbers
205		*Dioscorea pentaphylla L.*	Climbers
206	Asparagaceae	*Asparagus racemosus Willd. var. javanicus Baker*	Climbers
207	Nelumbonaceae	*Nelumbo nucifera Gaertn.*	Herbs
208	Nymphaeaceae	*Nymphaea pubescens Willd.*	Herbs
209	Papaveraceae	*Argemone mexicana L.*	Herbs
210	Brassicaceae	*Rorippa indica (L.) Hiern.*	Herbs
211	Cleomaceae	*Cleome gynandra L.*	Herbs
212		*Cleome viscosa L.*	Herbs
213	Violaceae	*Hybanthus enneaspermus*	Herbs
214		*F. v. Muell.*	Herbs
215	Polygalaceae	*Polygala arvensis Willd.*	Herbs
216	Portulacaceae	*Portulaca oleracea L.*	Herbs
217	Elatinaceae	*Bergia ammannioides Roxb.ex.Roth*	Herbs
218	Malvaceae	*Abelmoschus ficulneus (L.) Wight & Arn.*	Herbs
219		*Abelmoschus manihot (L.) Medik. ssp. tetraphyllus (Roxb. ex*	Herbs

Sl. No.	Family	Botanical Name	Category
220		*Corchorus olitorius L.*	Herbs
221		*Corchorus trilocularis L.*	Herbs
222		*Hibiscus lobatus (Murray) Kuntze*	Herbs
223		*Hibiscus panduriformis Burm.f.*	Herbs
224		*Melochia corchorifolia L.*	Herbs
225		*Sida cordata (Burm.f.) Borssum*	Herbs
226		*Sida cordifolia L.*	Herbs
227		*Sida ovata Forssk.*	Herbs
228		*Sida spinosa L.*	Herbs
229		*Triumfetta rhomboidea Jacq.*	Herbs
230		*Waltheria indica L.*	Herbs
231	Linaceae	*Linum mysorense Heyne ex Benth.*	Herbs
232	Zygophyllaceae	*Tribulus terrestris L.*	Herbs
233	Oxalidaceae	*Biophytum sensitivum (L.) DC.*	Herbs
234	Balsaminaceae	*Impatiens balsamina L.*	Herbs
235		*Aeschynomene indica L.*	Herbs
236		*Alhagi camelorum Fisch.*	Herbs
237		*Alysicarpus bupleurifolius (L.) DC.*	Herbs
238		*Alysicarpus hamosus Edgew.*	Herbs
239		*Alysicarpus longifolius (Spreng.) Wight & Arn.*	Herbs
240		*Alysicarpus monilifer (L) DC.*	Herbs
241		*Alysicarpus pubescens Law*	Herbs
242		*Alysicarpus tetragonolobus Edgew.*	Herbs
243		*Chamaecrista absus (L.) H.S.Irwin & Barneby*	Herbs
244		*Chamaecrista mimosoides (L.) Greene*	Herbs
245		*Chamaecrista pumila (Lam.) K. Larsen*	Herbs
246		*Clitoria annua J. Graham*	Herbs
247		*Crotalaria calycina Schrank*	Herbs
248		*Crotalaria hebecarpa (DC.) Rudd*	Herbs
249		*Crotalaria hirsuta Willd.*	Herbs
250	Leguminosae	*Crotalaria linifolia L.f.*	Herbs
251		*Crotalaria medicaginea Lam.*	Herbs
252		*Crotalaria orixensis Willd.*	Herbs
253		*Crotalaria prostrata Willd.*	Herbs
254		*Crotalaria vestita Baker*	Herbs
255		*Cullen corylifolium (L.) Medik.*	Herbs
256		*Desmodium gangeticum (L.) DC.*	Herbs
257		*Desmodium triflorum (L.) DC.*	Herbs
258		*Indigofera cordifolia Roth*	Herbs
259		*Indigofera glandulosa Wendl.*	Herbs
260		*Indigofera linifolia (L.f.) Retz.*	Herbs
261		*Indigofera linnaei Ali*	Herbs
262		*Indigofera trifoliata L. var. trifoliata*	Herbs
263		*Indigofera trita L.f.*	Herbs
264		*Medicago polymorpha L.*	Herbs
265		*Melilotus indica All.*	Herbs

Sl. No.	Family	Botanical Name	Category
266		*Rhynchosia minima (L.) DC.*	Herbs
267		*Senna obtusifolia (L.) H.S.Irwin & Barneby*	Herbs
268		*Senna occidentalis (L.) Link*	Herbs
269		*Senna sophera (L.) Roxb.*	Herbs
270		*Senna tora (L.) Roxb.*	Herbs
271		*Sesbania bispinosa (Jacq.) W. Wight*	Herbs
272		*Smithia conferta Sm.*	Herbs
273		*Tephrosia strigosa (Dalz.) Santapau & Mahesh.*	Herbs
274		*Trigonella occulta Ser.*	Herbs
275		*Uraria picta (Jacq.) DC.*	Herbs
276		*Vigna trilobata (L.) Verdc.*	Herbs
277		*Zornia gibbosa Span.*	Herbs
278	Lythraceae	*Ammannia baccifera L.*	Herbs
279	Onagraceae	*Ludwigia hyssopifolia (G.Don) Excell*	Herbs
280		*Ludwigia perennis L.*	Herbs
281	Molluginaceae	*Glinus lotoides L.*	Herbs
282		*Mollugo pentaphylla L.*	Herbs
283	Aizoaceae	*Trianthema portulacastrum L.*	Herbs
284	Apiaceae	*Centella asiatica (L.) Urban*	Herbs
285		*Pimpinella heyneana (DC.) Kurz*	Herbs
286		*Trachyspermum stictocarpum (Clarke) Wolff*	Herbs
287	Rubiaceae	*Oldenlandia affinis (Roem. & Schult.) DC.*	Herbs
288		*Spermacoce hispida L.*	Herbs
289	Compositae	*Acanthospermum hispidum DC.*	Herbs
290		*Ageratum conyzoides L.*	Herbs
291		*Bidens biternata (Lour.) Merr. & Sherff.*	Herbs
292		*Blainvillea acmella (L.) Philipson*	Herbs
293		*Blumea eriantha DC.*	Herbs
294		*Blumea membranacea DC.*	Herbs
295		*Caesulia axillaris Roxb.*	Herbs
296		*Cyanthillium cinereum (L.) H. Rob.*	Herbs
297		*Cyathocline purpurea (D.Don) Kuntze*	Herbs
298		*Echinops echinatus Roxb.*	Herbs
299		*Eclipta prostrata (L.) L.*	Herbs
300		*Glossocardia bosvallea (L.f.) DC.*	Herbs
301		*Gnaphalium luteo-album L.*	Herbs
302		*Gnaphalium polycaulon Pers.*	Herbs
303		*Lagascea mollis Cav.*	Herbs
304		*Launaea procumbens (Roxb.) Ramayya & Rajgopal*	Herbs
305		*Oligochaeta ramosa (Roxb.) Wagenitz*	Herbs
306		*Parthenium hysterophorus L.*	Herbs
307		*Pulicaria wightiana (DC.) C.B. Clarke*	Herbs
308		*Sclerocarpus africanus Jacq.*	Herbs
309		*Sphaeranthus indicus L.*	Herbs
310		*Tridax procumbens L.*	Herbs
311		*Xanthium strumarium L.*	Herbs

Sl. No.	Family	Botanical Name	Category
312		*Zinnia elegans Jacq.*	Herbs
313	Loganiaceae	*Mitreola petiolata (J.F.Gmelin) Torr. & A. Gray*	Herbs
314	Gentianaceae	*Canscora diffusa (Vahl.) R.Br. ex Roem. & Schult.*	Herbs
315		*Enicostema axillare (Poir.ex Lam.) A. Raynal*	Herbs
316		*Exacum pedunculatum L.*	Herbs
317	Boraginaceae	*Coldenia procumbens L.*	Herbs
318		*Heliotropium ovalifolium Forssk.*	Herbs
319		*Heliotropium strigosum Willd.*	Herbs
320		*Heliotropium supinum L.*	Herbs
321		*Trichodesma inaequale Edgew.*	Herbs
322		*Trichodesma indicum (L.) Lehm.*	Herbs
323		*Trichodesma zeylanicum (Burm.f.) R.Br.*	Herbs
324	Convolvulaceae	*Convolvulus prostratus Forssk.*	Herbs
325		*Evolvulus alsinoides (L.) L.*	Herbs
326		*Ipomoea aquatica Forssk.*	Herbs
327	Solanaceae	*Datura innoxia Mill.*	Herbs
328		*Physalis minima L.*	Herbs
329		*Solanum villosum Mill.*	Herbs
330		*Solanum virginianum L.*	Herbs
331	Linderniaceae	*Lindernia ciliata (Colsm.) Pennell*	Herbs
332		*Lindernia crustacea (L.) F. Muell.*	Herbs
333		*Lindernia parviflora (Roxb.) Haines*	Herbs
334	Plantaginaceae	*Bacopa monnierri (L.) Wettst.*	Herbs
335		*Nannorrhinum ramosissimum (Wall.) Betsche*	Herbs
336		*Limnophila indica (L.) Druce*	Herbs
337		*Lindenbergia indica (L.) Vatke*	Herbs
338		*Stemodia viscosa Roxb.*	Herbs
339		*Veronica anagallis-aquatica L.*	Herbs
340	Scrophulariaceae	*Jamesbrittenia dissecta (Delile) Kuntze*	Herbs
341		*Parasopubia delphinifolia (Roxb.) H. - Hofm. & F.B.Fisch.*	Herbs
342		*Sutera dissecta (Delile) Walp.*	Herbs
343		*Verbascum chinense (L.) Santapau*	Herbs
344	Lentibulariaceae	*Utricularia aurea Lour.*	Herbs
345		*Utricularia stellaris L.f.*	Herbs
346	Acanthaceae	*Andrographis echioides (L.) Nees*	Herbs
347		*Barleria gibsonii Dalz.*	Herbs
348		*Blepharis maderaspatensis (L.) Heyne ex Roth*	Herbs
349		*Dicliptera verticillata (Forssk.) C.Chr.*	Herbs
350		*Dyschoriste nagchana (Nees) Bennet*	Herbs
351		*Eranthemum roseum (Vahl.) R.Br.*	Herbs
352		*Haplanthus verticillaris (Roxb.) Nees*	Herbs
353		*Hemiadelphis polysperma (Roxb.) Nees*	Herbs
354		*Hemigraphis latebrosa (Roth) Nees*	Herbs
355		*Hemigraphis urens (Roth) J.R.I.Wood*	Herbs
356		*Hygrophila auriculata (Schum.) Heine*	Herbs
357		*Hygrophila serpyllum T. Anderson*	Herbs

Sl. No.	Family	Botanical Name	Category
358		*Justicea adhatoda L.*	Herbs
359		*Justicea micrantha (Oerst.) V.A.W.Graham*	Herbs
360		*Justicea procumbens L.*	Herbs
361		*Justicea quinqueangularis Koenig ex Roxb.*	Herbs
362		*Justicea simplex D.Don*	Herbs
363		*Lepidagathis cristata Willd.*	Herbs
364		*Lepidagathis trinervis Nees*	Herbs
365		*Peristrophe bicalyculata (Retz.) Nees*	Herbs
366		*Rungia pectinata (L.) Nees*	Herbs
367		*Rungia repens (L.) Nees*	Herbs
368	Lamiaceae	*Anisomeles indica (L.) O.Ktze*	Herbs
369		*Clinopodium capitellatum (Benth.) Kuntze*	Herbs
370		*Hyptis suaveolens (L.) Poit.*	Herbs
371		*Lavandula burmannii Benth.*	Herbs
372		*Leonotis nepetifolia (L.) R.Br.*	Herbs
373		*Leucas aspera (Willd.) Link*	Herbs
374		*Leucas biflora (Vahl.) Sm.*	Herbs
375		*Leucas cephalotus (Roth) Spreng.*	Herbs
376		*Leucas lavandulifolia J.E.Sm.*	Herbs
377		*Leucas longifolia Benth.*	Herbs
378		*Leucas nutans (Roth) Spreng.*	Herbs
379		*Leucas urticifolia (Vahl) Sm.*	Herbs
380		*Ocimum americanum L.*	Herbs
381		*Orthosiphon pallidus Royle*	Herbs
382	Nyctaginaceae	*Boerhavia diffusa L. var. diffusa*	Herbs
383		*Boerhavia diffusa L. var. repens L.*	Herbs
384	Amaranthaceae	*Achyranthes aspera L.*	Herbs
385		*Aerva lanata (L.) Juss.*	Herbs
386		*Alternanthera paronychioides St.Hill.*	Herbs
387		*Alternanthera pungens H. B.K.*	Herbs
388		*Alternanthera bettzickiana (Regel) G. Nicolson*	Herbs
389		*Alternanthera sessilis (L.) R. Br. ex DC.*	Herbs
390		*Amaranthus spinosus L.*	Herbs
391		*Celosia argentea L.*	Herbs
392		*Chenopodium murale L.*	Herbs
393		*Digera muricata (L.) Mart.*	Herbs
394		*Pupalia lappacea (L.) Juss.*	Herbs
395	Polygonaceae	*Polygonum plebeium R. Br.*	Herbs
396		*Rumex dentatus L.*	Herbs
397	Euphorbiaceae	*Acalypha ciliata Forssk.*	Herbs
398		*Acalypha indica L.*	Herbs
399		*Chrozophora plicata (Vahl) A. Juss. ex Spreng.*	Herbs
400		*Chrozophora rottleri (Geiseler) A. Juss. ex. Spreng.*	Herbs
401		*Euphorbia heterophylla L.*	Herbs
402		*Euphorbia heyneana Spreng.*	Herbs

Sl. No.	Family	Botanical Name	Category
403		*Euphorbia hirta L.*	Herbs
404		*Euphorbia hypericifolia L.*	Herbs
405		*Euphorbia prostrata Aiton*	Herbs
406		*Euphorbia thymifolia L.*	Herbs
407	Phyllanthaceae	*Phyllanthus fraternus G.L. Webster*	Herbs
408		*Phyllanthus maderaspatensis L.*	Herbs
409		*Phyllanthus urinaria L.*	Herbs
410		*Phyllanthus virgatus G. Forst.*	Herbs
411	Ceratophyllaceae	*Ceratophyllum demersum L*	Herbs
412	Hydrocharitaceae	*Hydrilla verticillata (L.f.) Royle*	Herbs
413		*Ottelia alismoides (L.) Pers.*	Herbs
414		*Vallisneria spiralis L.*	Herbs
415		*Najas graminea Delile*	Herbs
416	Zingiberaceae	*Curcuma angustifolia Roxb.*	Herbs
417	Hypoxidaceae	*Curculigo orchioides Gaertn.*	Herbs
418	Amaryllidaceae	*Crinum viviparum (Lam.) R. Ansari & V.J.Nair*	Herbs
419	Taccaceae	*Tacca leontopetaloides (L.) O. Ktze.*	Herbs
420	Asparagaceae	*Chlorophytum laxum R. Br.*	Herbs
421		*Chlorophytum tuberosum (Roxb.) Baker*	Herbs
422		*Drimia indica (Roxb.) Jessop*	Herbs
423		*Scilla hyacinthina (Roxb.) Mc Bride*	Herbs
424	Colchicaceae	*Gloriosa superba L.*	Herbs
425	Pontederiaceae	*Eichhornia crassipes (Mart.) Solms.*	Herbs
426	Commelinaceae	*Commelina benghalensis L.*	Herbs
427		*Commelina forsskalii Vahl*	Herbs
428		*Commelina hasskarlii C.B. Clarke*	Herbs
429		*Cyanotis axillaris (L.) D. Don ex Sweet*	Herbs
430		*Cyanotis cristata (L.) D. Don*	Herbs
431		*Murdannia nudiflora (L.) Brenan*	Herbs
432	Typhaceae	*Typha angustifolia L.*	Herbs
433	Araceae	*Amorphophallus commutatus (Schott) Engler*	Herbs
434		*Amorphophallus paeonifolius (Dennst.) Nicolson*	Herbs
435		*Colocasia esculenta (L.) Schott*	Herbs
436		*Sauromatum pedatum (Willd.) Schott*	Herbs
437		*Lemna paucicostata Hegelm.*	Herbs
438		*Spirodela polyrrhiza (L.) Schleid.*	Herbs
439	Alismataceae	*Limnophyton obtusifolium (L.) Miq.*	Herbs
440	Potamogetonaceae	*Potamogeton crispus L.*	Herbs
441		*Potamogeton nodosus Poir.*	Herbs
442		*Potamogeton pectinatus L.*	Herbs
443		*Potamogeton perfoliatus L.*	Herbs
444	Eriocaulaceae	*Eriocaulon cinereum R.Br.*	Herbs
445		*Eriocaulon duthiei Hook. f.*	Herbs
446	Cyperaceae	*Cyperus alopecuroides Rottb.*	Herbs
447		*Cyperus brevifolius (Rottb.) Hassk.*	Herbs
448		*Cyperus compressus L.*	Herbs

Sl. No.	Family	Botanical Name	Category
449		*Cyperus difformis L.*	Herbs
450		*Cyperus exaltatus Retz.*	Herbs
451		*Cyperus iria L.*	Herbs
452		*Cyperus nutans Vahl*	Herbs
453		*Cyperus pangorei Rottb.*	Herbs
454		*Cyperus pymaeus Rottb.*	Herbs
455		*Cyperus rotundus L.*	Herbs
456		*Cyperus squarrosus L.*	Herbs
457		*Eleocharis atropurpurea (Retz.) J. Presl. & C. Presl.*	Herbs
458		*Fimbristylis aestivalis (Retz.) Vahl*	Herbs
459		*Fimbristylis bisumbellata (Forssk.) Bubani*	Herbs
460		*Fimbristylis complanata (Retz.) Link*	Herbs
461		*Fimbristylis dichotoma (L.) Vahl*	Herbs
462		*Fimbristylis ferruginea (L.) Vahl*	Herbs
463		*Fimbristylis miliacea (L.) Vahl*	Herbs
464		*Fuirena ciliaris (L.) Roxb.*	Herbs
465		*Kyllinga bulbosa P. Beauv.*	Herbs
466		*Pycreus pumilus (L.) Nees*	Herbs
467		*Pycreus sanguinolentus (Vahl) Nees*	Herbs
468		*Schoenoplectus corymbosus (Roth ex Roem. & Schult.) J.*	Herbs
469		*Schoenoplectus litoralis (Schrad.) Palla*	Herbs
470		*Scleria tessellata Willd.*	Herbs
471	Loranthaceae	*Dendrophthoe falcata (L.f.)*	Parasite
472		*Dendrophthoe var. coccinea*	Parasite
473		*Dendrophthoe Santapau var. falcata*	Parasite
474	Santalaceae	*Viscum articulatum*	Parasite
475	Convolvulaceae	*Cuscuta hyalina Roth*	Parasite
476		*Cuscuta reflexa Roxb.*	Parasite
477	Orchidaceae	*Acampe praemorsa (Roxb.) Blatt. & Mc Cann*	Epiphyte
478		*Vanda tessellata (Roxb.) Hook. f. ex G. Don*	Epiphyte

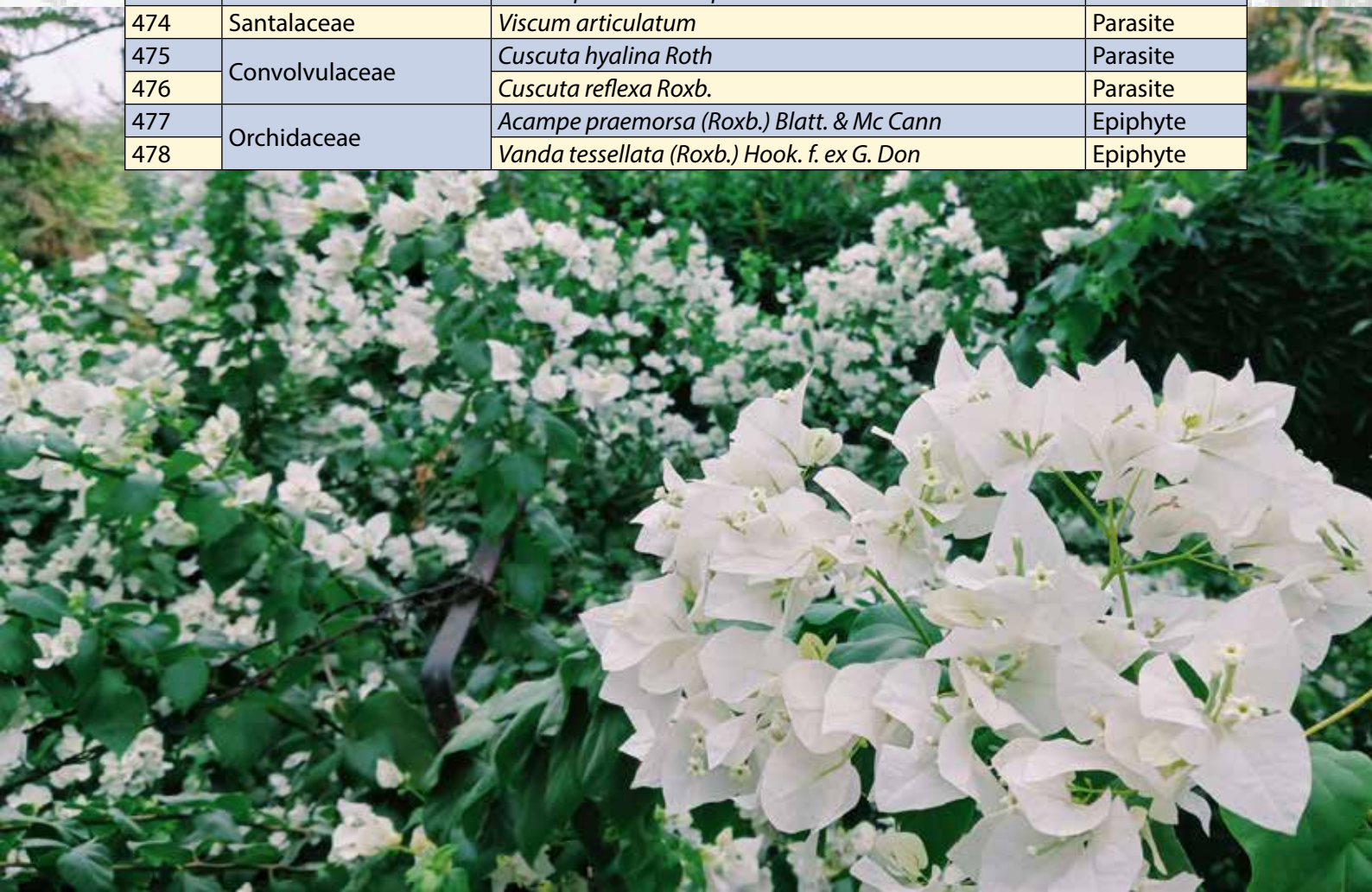

Table 14: Butterfly List identified for the Indicator 6

Sl. No.	Family	Scientific name	Common name
1	Hesperiidae	*Pelopidas mathias*	Small Branded Swift
2		*Borbo cinnara*	Rice Swift
3		*Suastus gremius*	Indian Palm Bob
4		*Spialia galba*	Indian Grizzled Skipper
5		*Hasora chromus*	Common Banded Awl
6		*Badamia exclamationis*	Brown Awl
7	Lycaenidae	*Talicada nyseus*	Red Pierrot
8		*Castalius rosimon*	Common Pierrot
9		*Caleta decidia*	Angled Pierrot
10		*Tarucus extricatus*	Rounded Pierrot
11		*Tarucus plinius*	Zebra Blue
12		*Euchrysops cnejus*	Gram Blue
13		*Pseudozizeeria maha*	Pale Grass Blue
14		*Zizeeria karsandra*	Dark Grass Blue
15		*Zizula hylax*	Tiny Grass Blue
16		*Zizina otis*	Lesser Grass Blue
17		*Luthrodes pandava*	Plains Cupid
18		*Chilades parrhasius*	Small Cupid
19		*Catochrysops strabo*	Forget-Me-Not
20		*Jamides celeno*	Common Cerulean
21		*Lampides boeticus*	Pea Blue
22		*Chilades lajus*	Lime Blue
23		*Arhopala amantes*	Large Oakblue
24		*Prosotas nora*	Common Lineblue
25		*Prosotas dubiosa*	Tailless Lineblue
26		*Rapala iarbus*	Common Red Flash
27		*Tajuria cippus*	Peacock Royal
68		*Chilades trochilus*	Small Grass Jewel
69		*Spindasis vulcanus*	Common silver line
70		*Tarucus balkanicus*	Spotted pierrot
28	Nymphalidae	*Ariadne merione*	Common Castor
29		*Acraea terpsicore*	Tawny Coster
30		*Junonia almana*	Peacock Pansy
31		*Junonia lemonias*	Lemon Pansy
32		*Junonia iphita*	Chocolate Pansy
33		*Junonia atlites*	Grey Pansy
34		*Junonia hierta*	Yellow Pansy
35		*Junonia orithya*	Blue Pansy
36		*Euthalia nais*	Baronet
37		*Hypolimnas bolina*	Great Eggfly
38		*Hypolimnas misippus*	Danaid Eggfly
39		*Neptis hylas*	Common Sailor
40		*Euthalia aconthea*	Common Baron
41		*Tirumala limniace*	Blue Tiger
42		*Danaus chrysippus*	Plain Tiger
43		*Danaus genutia*	Striped Tiger

Sl. No.	Family	Scientific name	Common name
44		*Melanitis leda*	Common Evening Brown
45		*Melanitis phedima*	Dark Evening Brown
46		*Euploea core*	Common Crow
47		*Ypthima inica*	Lesser Three-ring
48		*Ypthima asterope*	Common Three-ring
71		*Phalanta phalantha*	Common Leopard
72		*Moduza procris*	Commander
73		*Mycalesis mineus*	Dark branded bush brown
74		*ariadne ariadne*	Angled caster
75		*Mycalesis Perseus*	Common bush brown
76		*Byblia ilithyia*	Joker
77		*Charaxes solon*	Black Rajah
78		*Charaxes agrarius*	Anomalous Nawab
49	Papilionidae	*Papilio polytes Cr*	Common Mormon
50		*Papilio demoleus L.*	Common Lime Butterfly
51		*Graphium Agamemnon L.*	Tailed Jay
52		*Graphium sarpedon*	Common Jay
79		*Graphium nomius*	Spot Swordtail
80		*Pachliopta aristolochiae*	Common rose
81		*Papilio clytia*	Common mime
82		*Pachliopta hector*	Crimson rose
53	Pieridae	*Eurema hecabe*	Common Grass Yellow
54		*Eurema brigitta*	Small Grass Yellow
55		*Eurema andersonii*	One Spot Grass Yellow
56		*Eurema blanda*	Three Spot Grass Yellow
57		*Eurema laeta*	Spotless Grass Yellow
58		*Catopsilia crocale pomona F.*	Common Emigrant
59		*Catopsilia pyranthe L.*	Mottled Emigrant
60		*Cepora nerissa F.*	Common Gull
61		*Cepora nadina*	Lesser Gull
62		*Delias eucharis*	Common Jezebel
63		*Pareronia valeria*	Common Wanderer
64		*Leptosia nina*	Psyche
65		*Belenois aurota*	Pioneer
66		*Colotis aurora*	Plain Orange Tip
67		*Ixias marianne*	White Orange Tip

Table 15: List of Spiders for Indicator 6

Sl. No.	Scientific name
	1.Family:Araneidae
1	Argiope aemula Walckenaer 1841
2	Argiope anasuja Thorell 1887
3	Araneus mitificus Simon 1886
4	Cyclosa bifida Doleschall 1859
5	Cyclosa confraga Thorell 1892
6	Cyclosa moonduensis Tikader 1963
7	Cyclosa moonduensis
8	Cyclosa spirifera Simon 1889
9	Cyclosa spirifera Simon 1889
10	Cyrtophora cicatrosa Stoliczka 1869
11	Cyrtophora citricola Forskal 1775
12	Cyrtophora citricola Forskal 1775
13	Eriovixia excelsa Simon 1889
14	Eriovixia excels Simon 1889
15	Lipocrea epeiroides
16	Lipocrea epeiroides
17	Neoscona nautica L. Koch 1875
18	Neoscona theisi Walckenaer 1841
19	Neoscona theisi Walckenaer 1841
20	Neoscona vigilans Blackwall 1865
21	Neoscona vigilans Blackwall 1865
22	Thelacantha brevispina Doleschall 1857
23	Thelacantha brevispina Doleschall 1857
	2.Family:Clubionidae
24	Clubiona drassodes OP Cambridge 1847
	3.Family:Eresidae
25	Stegodyphus sarasinorum Karsch 1891

Sl. No.	Scientific name
	4.Family: Gnaphosidae
26	Gnaphosa Sp. Latereille 1804
	5.Family:Hersillidae
27	Hersilia savignyi Lucas 1836
	6.Family:Lycosidae
28	Hippasa agelenoides Simon 1884
29	Paradosa sumatrana Thorell 1890
	7.Family: Miturgidae
30	Chericanthium C.L. Koch 1839
	8.Family:Oxyopidae
31	Oxyopes birmanicus Thorell 1887
32	Peucetica viridence Hentz 1832
	9.Family:Pholcidae
33	Crossopriza lyoni Blackwall 1867
34	Pholcus phalangioides Fuesslin 1775
	10.Family:Philodromidae
35	Philodromus sp. Walckenaer 1826
	11.Family:Salticidae
36	Hasarius adansoni Audouin 1826
37	Hyllus semicupreus Simon 1885
38	Menemerus bivittatus Dufour 1831
39	Myrmarachne plataleoides OP Cambridge 1869
40	Myrmarachne Maratha Tikadar 1973
41	Myrmarachne orientales Tikadar 1973
42	Phintella vittata C.L.Koch 1846
43	Plexippus paykulli Audoin 1826

Table 16: List of fish identified for Indicator 7

Sl. No.	Family	Scientific Name
1	Anguillidae	*Anguilla bengaensi*
2	Bagridae	*Mystus seenghala*
3	Belonidae	*Cancila cancila*
4	Channidae	*Channa striata*
5		*Channa gachua*
6	Cichlidae	*Oreochromis mossambicus*
7	Cyprinidae	*Catla catla*
8		*Labeo rohita*
9		*Cirrhinus mrigala*
10		*Tor-Tor*
11		*Cyprinus carpio*
12		*Hypophthalmichthys molitrix*
13		*Ctenopharyngodon idella*
14		*Labeo bata*
15	Heteropneustidae	*Heteropneustes fossilis*
16	Pangasiidae	*Pangasius pangasius*
17	Siluridae	*Ompak bimaculatus*
18		*Wallago attu*

Table 17: List of invasive species for Indicator 10

Sl. No.	Family	Scientific name	Nativity
1	Amaranthaceae	*Alternanthera paronychioides*	Tropical America
2		*Alternanthera philoxeroides*	Tropical America
3		*Alternanthera pungens*	Tropical America
4		*Alternanthera tenella*	Tropical America
5		*Celosia argentea*	Tropical Africa
6		*Gomphrena serrata*	Tropical America
7	Apocynaceae	*Cryptostegia grandiflora*	Madagascar
8	Araceae	*Pistia stratiotes*	Tropical America
9	Asteraceae	*Acanthospermum hispidum*	Brazil
10		*Ageratum conyzoides*	Tropical America
11		*Bidens biternata*	Northern America, Southern America
12		*Conyza spp.*	Tropical America
13		*Emilia sonchifolia*	Tropical Africa
14		*Parthenium hysterophorus*	Tropical North America (recorded in India in the year 1956)
15		*Sonchus asper*	Mediterranean region
16		*Tridax procumbens*	Tropical Central America
17		*Xanthium strumarium*	Tropical America
18		*Zinnia elegans*	Introduced species from Europe/ America/Mexico/West Indies/Brazil
19		*Echinops echinatus*	Afghanistan
20	Convolvulaceae	*Convolvulus arvensis*	Introduced from Mediterranean Area and Africa
21		*Cuscuta chinensis*	Mediterranean
22	Cyperaceae	*Cyperus difformis*	Tropical America
23		*Cyperus iria*	Tropical America
24	Euphorbiaceae	*Croton bonplandianus*	Southern America

Sl. No.	Family	Scientific name	Nativity
25		*Chrozophora rottleri*	Trop Africa
26	Fabaceae	*Parkinsonia*	Introduced from Europe
27		*Pithecellobium dulce*	Introduced species from Europe/ America/Mexico/West Indies/Brazil
28		*Senna occidentalis*	Southern America
29		*Senna uniflora*	Southern America
30	Lamiaceae	*Hyptis suaveolens*	Tropical America
31		*Ocimum americanum*	Tropical America
32	Malvaceae	*Malachra capitata*	Tropical America
33		*Malvastrum coromandelianum*	Tropical America (introduced in India during 19th century)
34		*Melochia corchorifolia*	Tropical America
35		*Waltheria indica*	Tropical America
36	Martyniaceae	*Martynia annua*	Tropical America
37	Oxalidaceae	*Oxalis corniculata*	Europe (introduced in India before 1814)
38	Papaveraceae	*Argemone Mexicana*	Tropical, Central & South America
39	Plantaginaceae	*Scoparia dulcis*	Tropical America
40	Poaceae	*Chloris barbata*	Tropical America
41		*Echinochloa colona*	Trop. South America
42	Portulacaceae	*Portulaca oleracea*	Tropical Central America (introduced to India before 1845)
43	Verbenaceae	*Lantana camara*	Tropical America (introduced in India as ornamental shrub during 1809-1810)
44		*Stachytarpheta jamaicensis*	Tropical America

Annexure 4 – List of Parks

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
1	1	4	Venkatesh Nagar Park Community Hall, Opp. H. No. 200	Undeveloped	3364	22.727755	75.822596	Not present	No water arrangement
2	1	4	Venkatesh Nagar Park H. No. 319 Lambi Patri wala	Undeveloped	1223	22.728523	75.822731	Present	No water arrangement
3	1	4	Patel Nagar Park	Undeveloped	1020	22.724692	75.828314	Present	Narmada Connection available
4	1	4	Aradhana Nagar Shiv Mandir, Opp. H. No. 294 Park	Undeveloped	1884	22.732684	75.825014	Present	Boring available
5	1	4	Radha Krishna Mandir Park	Undeveloped	21000	22.72706	75.817011	Present	No water arrangement
6	1	4	Sukhdev Vihar Opp. Multi Triangle Park	Undeveloped	3000	22.727623	75.830141	Non-gated	No water arrangement
7	1	4	Vacant Land Opp. Chandra Prabhu Mangalik Bhavan	Undeveloped	22000	22.726541	75.825028	Not Present	No water arrangement
8	1	7	Park at Dudhhari Hanuman Mandir, Dhobi Ghat	Undeveloped	4626	22.727374	75.848331	Present	Boring available
9	1	7	Gopeshwar Bal Park Opp. H. No. 45A Radha Nagar Opp. Junarisala	Undeveloped	1864	22.725457	75.846932	Present	Boring available
10	1	7	Park at Ambedkar Nagar	Undeveloped	27300	22.725042	75.844862	Not completed	Boring available
11	1	8	Sitaram Kaushal Park, Junarisala	Undeveloped	3696	22.724394	75.848144	Not completed	No water arrangement
12	1	9	Penjan Colony Park	Undeveloped	1542	22.739901	75.846487	Present	Boring available
13	1	16	Venkatesh Vihar Colony Park, Hanuman Mandir	Undeveloped	5550	22.736152	75.825889	Present	Boring available
14	1	16	Venkatesh Vihar Colony Park near H. No. 372	Undeveloped	4212	22.734849	75.825549	Present	No water arrangement
15	1	16	Chhota Bangdada Park near Dargah	Undeveloped	3200	22.741114	75.827045	Not completed	No water arrangement
16	1	16	Park No. 2 at Smriti Nagar	Undeveloped	9600	22.736151	75.823234	Present	No water arrangement
17	1	16	Scheme No. 155 Park 01	Undeveloped	50000	22.742917	75.836219	Present	No water arrangement
18	1	16	Scheme No. 155 Park 02	Undeveloped	30000	22.743078	75.835204	Present	No water arrangement
19	1	16	Scheme No. 155 Water Tank Park 03	Undeveloped	56000	22.743353	22.836836	Non-gated	No water arrangement
20	1	16	Scheme No. 155 Park 04	Undeveloped	20800	22.74562	75.836777	Present	No water arrangement
21	2	6	Tirupati Nagar Park, Opp. H. No. 23	Undeveloped	7265	22.722448	75.829238	Present	Water tank available
22	2	6	Sai Gangotri H.No. Park 1	Undeveloped	1941	22.718047	75.834047	Work in Progress	Boring available

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
23	2	69	Lodhipura Luvkush Park	Undeveloped	2515	22.714955	75.847259	Present	No water arrangement
24	2	70	Maharishi Valmiki Park	Undeveloped	4894	22.714709	75.838069	Wall is broken	No water arrangement
25	2	70	Harijan Colony Park Opp. Water tank	Undeveloped	9200	22.714683	75.838255	Present	Narmada Connection available
26	3	56	Snehlata Ganj, Behind Veterinary Hospital Park	Undeveloped	1998	22.729369	75.867727	Not present	No water arrangement
27	3	56	Snehlata Ganj Park at Nayapura	Undeveloped	1865	22.727727	75.866649	Present	No water arrangement
28	3	57	Bada Park at Gandhi Hall	Undeveloped	25649	22.719828	75.867365	Not present	Boring available
29	3	57	Chhota Park at Gandhi Hall	Undeveloped	6000	22.720643	75.866549	Not present	Boring available
30	3	57	Polo ground Industrial Area Orchard	Undeveloped	1000	22.736536	75.856856	Wall is broken	No water arrangement
31	3	57	Sabnees Orchard Park	Undeveloped	3011	22.725591	75.859556	Wall is broken	Water arrangement is pending
32	3	57	Park at Samarth Math	Undeveloped	2000	22.730715	75.859029	Present	Boring available
33	3	57	Park at Ahilya Ashram	Undeveloped	1000	22.734452	75.859904	Wired fencing	Water arrangement is pending
34	3	57	Park at Main Road, Office of the Labour Commissioner	Undeveloped	3000	22.719857	75.865597	Present	Narmada Connection available
35	3	57	Park beside Office of the Labour Commissioner	Undeveloped	8000	22.71993	75.865755	Present	Water arrangement is pending
36	3	57	Sai Park	Undeveloped	900	22.72074	75.860412	Present	Water arrangement is pending
37	3	58	Bakshi Bagh Park, Hanuman Mandir	Undeveloped	2000	22.726028	75.853104	Present	Water arrangement through boring can be done
38	3	58	Bakshi Bagh Extension Park	Undeveloped	2309	22.726991	75.853249	Present	Water arrangement can be done through boring
39	3	58	Shiv Mandir Park behind Sadar Bazaar Thana	Undeveloped	3139	22.728142	75.853477	Present	Water arrangement to be done
40	4	12	Yadav Nandnagar Park	Undeveloped	2527	22.744532	75.843953		
41	4	13	Park at Umesh Jain H. No. 48-C, Sangam Nagar	Undeveloped	3500	22.736561	75.839242		
42	4	13	Park at Hammal Colony 1	Undeveloped	2206	22.733364	75.834855		
43	4	13	Park at Yog Mandir	Undeveloped	72000	22.737775	75.83755		
44	4	13	Park at Mahesh Avenue	Undeveloped	6000				
45	4	17	Rishi Nagar Park Opp. H. No. 26	Undeveloped	1140	22.749624	75.839638		
46	5	21	Park 3 at Mangal Nagar, H. No. 18	Undeveloped	1042	2020099	7195752	Present	No water arrangement
47	5	21	Shyam Nagar Ram Vatika Garden 204	Undeveloped	613	22.757252	75.868092	Present	No water arrangement
48	5	22	Opp. Uma Shankar Tarethia Ji	Undeveloped	1617	22.763717	75.869924	Present	Boring available

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
49	5	33	Park at Sanskrit Nagar	Undeveloped	1858	22.7899166	75.875931	Present	Boring available
50	5	33	Park at Sanskrit Nagar Davbhatt Madam Ji	Undeveloped	111	22.76823	75.877298	Present	Boring available
51	6	24	Park at Pardeshipura Thana	Undeveloped	3332	22.737094	75.869553	Present	Boring available
52	6	26	Patnipura Mumtaz Seth Nursing Park	Undeveloped	562	22.737252	75.879525	Not present	No water arrangement
53	6	26	Shyama Prasad Mukherjee Park, Nehru Nagar	Undeveloped	933	22.734127	75.883514	Present	No water arrangement
54	6	26	Nursing ki Chaal behind Thakur's House Park	Undeveloped	562	22.736957	75.87961	Present	No water arrangement
55	6	27	Park Opp. Bajrang H. No. 561 Kurware Ji	Undeveloped	2896	22.748827	75.882421	Present	No water arrangement
56	6	27	Park at Nanda Nagar Road No. 28, Sitlamata Chowk	Undeveloped	8748	22.741116	75.881898	Present	No water arrangement
57	6	27	Anudesh Nagar Park	Undeveloped	1572	22.753583	75.873678	Not present	No water arrangement
58	6	27	Karasdev Nagar Park	Undeveloped	1706	22.750996	75.874273	Present	No water arrangement
59	7	29	34 G/ G Vijay Nagar Park near Mangilal Bhavan	Undeveloped	21312	22.752707	75.891061	Present	STP line present
60	7	31	Babaji Nagar Park Opp. H. No. 30	Undeveloped	2977	22.766162	75.901223	Present	STP line present
61	7	31	Park 02 near Ratanlok Colony Tower	Undeveloped	3000	22.748732	75.898803	Present	STP line present
62	7	31	Park at Ratanlok Colony Power House	Undeveloped	3420	22.749252	75.898877	Present	Boring available
63	7	31	Park at Hotel Contrin Rasoma (Opp. Petrol Pump)	Undeveloped	6000	22.761343	75.897348	Present	Boring available
64	7	32	Park at H. No. Scheme No. 113	Undeveloped	502	22.761775	75.879949	Not present	No water arrangement
65	7	32	Park at Slice No. 5 Scheme No. 78 behind water tank	Undeveloped	1532	22.763647	75.8895742	Present	Boring available
66	7	32	Park at Scheme No. 113 Opp. Plot No. 242	Undeveloped	4022	22.767241	75.879679		
67	7	32	Park at Scheme No. 113 H. No. 227	Undeveloped	1189	22.76407161	75.88106405		
68	7	32	H. No. 281 Opp. Scheme No. 113 Park	Undeveloped	12226	22.765052	75.880408	Work in Progress	STP line present
69	7	32	H. No. 56 Scheme No. 78 Opp. Narmada Colony Park	Undeveloped	21000	22.761176	75.8930595	Present	Boring available
70	7	34	Park Opp. Mashan at Pink City	Undeveloped	6550	22.780246	75.887784	Present	Boring available
71	7	34	Part at Scheme No. 136 Opp. Plot No. 190	Undeveloped	42000	22.77116096	75.88617997	Present	STP line present
72	7	34	Park Opp. No. 3 Water tank	Undeveloped	27600	22.76642656	75.89710763	Present	No water arrangement
73	7	34	Park at H. No. 1164 Sector C Opp. Scheme No. 136	Undeveloped	30000	22.7656788	75.87865241	Present	No water arrangement
74	7	34	H. No. 116 Scheme No. 114 Part 1 Park at Kanchan Vihar Opp. Maa Bhakti Laghuwan	Undeveloped	18500	22.77259043	75.89567447	Not Present	No water arrangement
75	7	34	H. No. 2038 Opp. Scheme No. 114 Part-1 Park	Undeveloped	18900	22.77338846	75.8890493	Not present	No water arrangement
76	7	34	H. No. 1750 Opp. Scheme No. 114 Part-1 Park	Undeveloped	26400	22.77405	75.8892933	Not present	No water arrangement

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
77	7	34	H. No. 1912 Opp. Scheme No. 114 Part-1 Park	Undeveloped	45000	22.77405	75.8892933	Not present	No water arrangement
78	7	34	H. No. 827 Opp. Scheme No. 114 Part-1 Park	Undeveloped	36000	22.7740414	75.8913268	Not present	No water arrangement
79	7	34	H. No. 675 Scheme No. 114 Part-1 Park	Undeveloped	16300	22.769438	75.897698	Not present	No water arrangement
80	7	34	H. No. 74 Opp. New Loha Mandi Park	Undeveloped	22000	22.7753561	75.8978268	Not present	No water arrangement
81	7	34	H. No. 420 Opp. New Loha Mandi Park	Undeveloped	18900	22.77741884	75.89346943		
82	7	34	H. No. 463 Opp. New Loha Mandi Park	Undeveloped	22500	22.77741884	75.89346943		
83	8	30	Park at Anurag Nagar 3	Undeveloped	2553	22.735929	75.897533		
84	8	30	Park at Hanuman mandir	Undeveloped		22.741645	75.897142		
85	8	35	Panchwati Park Mandir Wala	Undeveloped	12093	22.793967	75.904408		
86	8	35	Singapur Main 205 Park	Undeveloped	990	22.804722	75.907287		
87	8	35	Panchwati Colony Park	Undeveloped	5770	22.795127	75.904595		
88	8	35	Panchwati Park Colony Andar Wala	Undeveloped	3712	22.794583	75.903017		
89	8	35	Panchwati Park Lasudia Muktidham Park	Undeveloped	1799	22.786088	75.912449		
90	8	35	Panchwati Park ahead of J.C.B showroom	Undeveloped		22.792874	75.902926		
91	8	35	Singapur Jaali wala Park	Undeveloped		22.802597	75.906205		
92	8	35	Singapur Gali No. 6 Aakhri wala Park	Undeveloped					
93	8	35	Park near Rahul Gandhi Nagar Chauraha	Undeveloped		22.782773	75.898942		
94	8	36	Sukh Sampada Colony wala behind Shiv mandir Park	Undeveloped	5000			Present	No water arrangement
95	8	36	Platinum Paradise Colony H. No. 359 Ficu wala Park	Undeveloped	5461	22.760706	75.942578		
96	8	36	Tirupati Palace near Khandelwal Park	Undeveloped	3596	22.766452	75.927717	Present	Boring available
97	8	36	Pawan Dham Colony near Khandelwal Park	Undeveloped	4062	22.755979	75.925094	Present	No water arrangement
98	8	36	H. No. 268 Summer Park Colony Park	Undeveloped	1735	22,761546	75.925198	Present	No water arrangement
99	8	36	H. No. 369 Opp. Goyal Avenue Chamberwala Park	Undeveloped	2586	22.766335	75.926502		
100	8	36	Platinum Paradise Colony Opp. H. No. 116 Park	Undeveloped	7773	22.756523	75.935981		
101	8	36	Hare Krishna Vihar Opp. H. No. 125 Park	Undeveloped					
102	8	36	Tirupati Palace near Tirumala Park	Undeveloped		22.766962	75.928056		
103	8	36	Amrit Palace H. No. 162 Park	Undeveloped		22.764117	75.926709		
104	8	36	Sukh Sampada Opp.H. No. 138 Park	Undeveloped		22.769886	75.922606		
105	8	36	Ankur Aangan Gate wala Park	Undeveloped		22.764359	75.918506		
106	8	37	M.R. 1 Opp. Sandeep Joshi	Undeveloped		22.755279	75.913464	Present	No water arrangement
107	8	37	Sai Kripa Colony Park Opp. H. No. 730	Undeveloped	3978	22.749897	75.911397		

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
108	8	37	Scheme No. 94 Nipaniya Chauraha wala Park	Undeveloped		22.768049	75.908531		
109	8	37	Chikitsa Nagar Park 3	Undeveloped	1650	22.756294	75.907148		
110	8	37	Veena Nagar Park Opp. Chauhan DSP	Undeveloped	3289	22.758797	75.907311		
111	8	37	387-A Mahalaxmi Nagar Park Opp. Vakil SA	Undeveloped	5291	22.754545	75.910816		
112	8	37	Opp. Khajrana Crematorium Park	Undeveloped	1439	22.72985	75.904046		
113	8	37	289 Tulsi Nagar near Niketan School Park	Undeveloped	4910	22.760131	75.919287		
114	8	37	M.R.I Opp. Tulsi Nagar Park	Undeveloped		22.753506	75.914982		
115	8	37	Gulab Bagh Opp. Petrol Pump Park	Undeveloped		22.768049	75.908531		
116	8	37	Gulab Bagh Colony	Undeveloped	2928	22.769058	75.908897		
117	8	37	M. R.-3 Opp. H. No. 323 Mandirwala Park	Undeveloped	2287	22.758257	75.91596		
118	8	37	169-A Mahalaxmi Nagar Opp. Pushpendra Vaid Patrakar Park	Undeveloped		22.760396	75.907832		
119	8	37	126 Mansarovar Nagar Park	Undeveloped		22.760914	75.907472	Present	Boring available
120	8	37	523- R Mahalaxmi Nagar Opp. Prajapati Ashram Park	Undeveloped		22.75708	75.911158		
121	8	37	776- R Mahalaxmi Nagar near Pioneer College Park	Undeveloped		22.758773	75.913139	Present	No water arrangement
122	8	37	Mansarovar Opp. H. No. 88 Park	Undeveloped		22.760128	75.907496		
123	8	37	M. R. 4 near Santosh Thakur Park	Undeveloped		22.763295	75.914004		
124	8	37	Vrindavan Dham Tanki wala Chhota Park	Undeveloped		22.768368	75.910112		
125	8	37	59 R. behind Mahalaxmi Nagar Basti Park	Undeveloped		22.757365	75.908358		
126	8	37	M. R. 05 Opp. H. No. 548 Chhota Park	Undeveloped		22.759448	75.911423		
127	8	37	M. R. 05 Opp. H. No. 401 Gol Park	Undeveloped		22.760787	75.911482		
128	8	37	Ashray Colony Wala Park	Undeveloped		22.766731	75.914759		
129	8	37	M. R. 04 Opp. H. No. 75 Aamwala Park	Undeveloped		22.759843	75.912837		
130	8	37	Pushp vihar Colony Park	Undeveloped		22.753053	75.913479		
131	8	37	Home Paradise Park	Undeveloped		22.766973	75.914289		
132	9	44	Chandra Nagar Tanki wala Park	Undeveloped	3631	22.741196	75.895117	Present	Boring available
133	9	45	C.H.L near Apollo Hospital Park	Undeveloped	6142	22.732872	75.889479	Present	No water
134	9	47	Lal Bahadur Shastri Park Pancham	Undeveloped	12534	22.730214	75.878812	Wall is incomplete	No water
135	9	47	Part at Race course road near Dr. Savita Inamdar House	Undeveloped	5000	22.728619	75.875604	Present	No water
136	9	47	56 Shop at Harijan Colony Park	Undeveloped	6839	22.726335	75.884946	Wall is broken	Boring available
137	10	39	Park Opp. Parshad Mahodaya House	Undeveloped	604				
138	10	39	Zakaria Colony Park	Undeveloped	1858	22.739246	75.917468		
139	10	39	Ali Colony Park	Undeveloped	4124	22.73288	75.917773		
140	10	39	Dilip Colony Park Khajrana	Undeveloped	2919	22.731018	75.916202		
141	10	39	Habib Colony Park	Undeveloped	557	22.736135	75.916652		
142	10	40	Park at Ganeshpuri , Pipal Chowk	Undeveloped	465				

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
143	10	40	Scheme No. 134 09 Park 7	Undeveloped	1858	22.746866	75.928151		
144	10	40	Scheme No. 134 09 Park 8	Undeveloped	1394	22.748316	75.929153		
145	10	40	Scheme No. 134 09 Park 9	Undeveloped	232	22.74857	75.924111		
146	10	42	Vivekanand Nagar Park A	Undeveloped	1845	22.72173	75.903042		
147	10	42	Pushp Nagar Park	Undeveloped	297				
148	10	42	Paliwal Nagar Park Tankiwala	Undeveloped	3804	22.726997	75.902536		
149	10	42	Swami Vivekanand Nagar Park B	Undeveloped	1115				
150	10	43	Khajrana Road Opp. Suketi Apartment	Undeveloped	151	22.731058	75.89809		
151	10	43	Park near Palasiya Dhobi Ghat	Undeveloped	6839	22.728625	75.885817		
152	11	48	Palasiya Police Line Park	Undeveloped	39100	22.723801	75.888146	Present	No water arrangement
153	11	48	Manorama ganj Park No. 01	Undeveloped	1998	22.715235	75.88613	Present	No water arrangement
154	11	48	Manorama ganj Park No. 02	Undeveloped	25500	22.715275	75.886062	Present	No water arrangement
155	11	48	Shanti Nagar Park near water tank	Undeveloped	1237	22.720694	75.890112	Not present	No water arrangement
156	11	48	Van Mandal Parisar Park	Undeveloped	9750	22.715311	75.889173	Present	No water arrangement
157	11	49	Sainath Colony Park C Opp. H. No. 9	Undeveloped	1883	22.718008	75.901505	Present	No water arrangement
158	11	49	Sainath Colony Chhota Park	Undeveloped	32200	22.716675	75.901148	Present	No water arrangement
159	11	49	Sai Vihar Colony Opp. Sector-C Park 55B	Undeveloped	4800	22.71232	75.901991	Present	No water arrangement
160	11	49	Pushp Vatika Park	Undeveloped	1079	22.713178	75.901371	Present	No water arrangement
161	11	49	Goyal Nagar Park, Shani Mandir	Undeveloped	12250	22.719819	75.904238	Not present	Boring available
162	11	49	Swarna Vatika Park 1	Undeveloped	561	22.712712	75.901018	Wired Fencing	No water arrangement
163	11	49	Sai Vihar Colony Chhota Park 2	Undeveloped	3300	22.712965	75.90213	Present	No water arrangement
164	11	54	Residency Park near Shahdat Khan Statue	Undeveloped	1300	22.706974	75.880582	Wired Fencing	No water arrangement
165	11	54	Radio Colony Park near Rickshaw Stand	Undeveloped	1587	22.704319	75.883495	Present	No water arrangement
166	11	54	Park at Medical Hospital Opp. Mukherjee Statue	Undeveloped	3178	22.706532	75.886184	Present	No water arrangement
167	11	55	Kanchan Bagh Park No. 02	Undeveloped	4617	22.718471	75.881649	Present	No water arrangement
168	12	59	Boliya Chhatri Park	Undeveloped	4394	22.719626	75.859407	Present	Small well
169	12	61	Mahal Kachhari Park Mata Mandir	Undeveloped	2072	22.712076	75.860061	Present	Boring available
170	12	61	Juni Indore Mukti Dham	Undeveloped	3706	22.712704	75.866575	Present	Boring available
171	12	62	Juni Indore Thana Park	Undeveloped	6094	22.705805	75.860903	Present	Boring available
172	12	65	Professor Colony Park 2	Undeveloped	20800	22.700143	75.866194		
173	12	65	Khatiwala Tank Khanuja Park	Undeveloped	14491	22.699294	75.86234	Wall is broken	No water arrangement
174	12	65	Jeevan deep Colony Park	Undeveloped	1344	22.703696	75.862926	Present	Boring available, No connection
175	12	65	Sant Bhagat Kanwar Ram Park, Sindhi Colony	Undeveloped	3404	22.701949	75.863613	Present	No water arrangement

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
176	12	66	Prem Nagar Park Opp. H. No. 18 B	Undeveloped	3509	22.703025	75.853293	Present	Boring available, No connection
177	12	66	Vasudev Nagar Park, Ganesh Dutt Mandir	Undeveloped	4421	22.707064	75.853995	Present	Boring available
178	12	66	Ladkana Park	Undeveloped	1869	22.704437	75.850404	Present	No water arrangement
179	12	66	Roop Ram Nagar Navgraha Mandir	Undeveloped	5435	22.700835	75.851937	Present	No water arrangement
180	13	74	Indrapuri Park H. No. 37	Undeveloped	111	22.689611	75.867559	Present	Boring available
181	13	74	Vishnupuri Extension Park	Undeveloped	7246	22.691042	75.861542	Not present	No water arrangement
182	13	74	Nanak Nagar Park 2	Undeveloped	2142	22.681296	75.866779	Present	Boring available
183	13	74	Vishnupuri Colony Tankiwala	Undeveloped	16760	22.691003	75.863206	Present	Boring available
184	13	74	Nahar Bhandar Vishnupuri Main Road	Undeveloped		22.689692	75.860518		
185	13	77	Brij Nayani park	Undeveloped	2081	22.667942	75.887496	Present	Boring available
186	13	77	Ganga Vihar Colony Park	Undeveloped	2657	22.669379	75.888926	Not present	No water arrangement
187	13	77	Sri Krishna Phase 1 Park	Undeveloped	1421	22.661741	75.890209	Not present	No water arrangement
188	13	77	Sri Krishna Phase 3 Park	Undeveloped	1751	22.662243	75.89299	Present	Boring available
189	13	77	Fish Plant Park	Undeveloped	1338	22.667061	75.893091	Present	No water arrangement
190	13	77	New Rani Bagh Park No. 2	Undeveloped	5523	22.657889	75.888346	Present	Boring available
191	13	77	New Rani Bagh Park No. 3	Undeveloped	1541	22.6595506	75.88929	Present	Boring available
192	13	77	Anuradha Nagar Park 1	Undeveloped	2008	22.636465	75.887595	Not present	No water arrangement
193	13	77	Anuradha Nagar Park 2	Undeveloped	1545	22.636859	75.887381	Not present	No water arrangement
194	13	77	Anuradha Nagar Park 3	Undeveloped	1329	22.637375	75.886242	Present	No water arrangement
195	13	77	Tejaji Nagar Park	Undeveloped	3728	22.640758	75.882283	Present	Boring available
196	13	77	Bilwali Mukti Dham	Undeveloped	6243	22.665739	75.86749	Present	No water arrangement
197	13	78	Amitesh Nagar Park Opp. H. No. 92 Colonel Park	Undeveloped	5384	22.681121	75.847728	Present	Boring available
198	13	78	Amitesh Nagar Park Main Road Water Tank	Undeveloped	14339	22.681158	75.852336	Present	Boring available
199	13	78	Amitesh Nagar Park Sanchi Point	Undeveloped	7946	22.680556	75.851813	Present	No water arrangement
200	13	78	Scheme No. 103 Park IDA 1 Block	Undeveloped	2274	22.676813	75.845084	Present	No water arrangement
201	13	78	Scheme No. 103 Park IDA 2 Block	Undeveloped	3656	22.676924	75.844592	Present	No water arrangement
202	13	78	Scheme No. 103 Park IDA 3 Block	Undeveloped	7361	22.678566	75.843929	Present	No water arrangement
203	13	78	Scheme No. 103 Park IDA 4 Block	Undeveloped	8064	22.67857	75.844189	Present	Boring available
204	13	78	Nalanda Campus Sector-C Park	Undeveloped	4243	22.679134	75.837297	Present	Boring available
205	13	78	Swami Dayanand Nagar Main Road	Undeveloped	966	22.691053	75.852517	Present	Boring available
206	13	80	Dutt Nagar Park Opp. H. No. 126 IDA	Undeveloped	2932	22.664943	75.829128	Present	No water arrangement

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
207	13	80	Krishna Nagar Rajendra Nagar Chauraha	Undeveloped	650	22.67303	75.824782	Present	No water arrangement
208	13	80	VIP Campus Slice 4 Chhota Park	Undeveloped	1784	22.674838	75.822896	Present	No water arrangement
209	13	80	Parsar Nagar Park (Pragati Nagar)	Undeveloped	5156	22.672814	75.825544	Present	No water arrangement
210	13	80	V.I.P Paraspar Tikona Park	Undeveloped	1394	22.676477	75.825651	Present	No water arrangement
211	13	80	V.I.P Paraspar Slice 04 Park 1	Undeveloped	10000	22.676212	75.822161	Not present	Boring available
212	13	80	V.I.P paraspar Slice 04 Park 2	Undeveloped	5000	22.675508	75.823102	Not present	No water arrangement
213	13	80	V.I.P papraspar Slice 04 Auditorium Park	Undeveloped	2000	22.675489	75.824115	Present	Boring available
214	13	81	Bhawanipur Colony Park Opp. H. No. 124-B	Undeveloped	1275	22.688656	75.831884	Present	Boring available
215	13	81	Greater Vaishali Nagar H. No. 57 Chhota Park	Undeveloped	4753	22.683487	75.836818	Present	No water arrangement
216	13	81	Chanakyapuri Colony Park H. No. 50	Undeveloped	1852	22.682162	75.836818	Present	No water arrangement
217	13	81	Jai Jagat Kanti Kriplani Nagar Park Opp. H. No. 215	Undeveloped	1732			Present	No water arrangement
218	13	81	Saraswati Nagar Park Opp. H. No. 50	Undeveloped	1948	22.689056	75.83546	Present	No water arrangement
219	13	81	Gayatri Nagar Mandir wala Park	Undeveloped	3127	22.684957	75.841454	Present	No water arrangement
220	13	81	Dathichi Statue Rajendra Nagar	Undeveloped	502	22.683802	75.836906	Present	No water arrangement
221	13	81	Saraswati Nagar Park	Undeveloped	1948	22.688893	75.836129	Present	No water arrangement
222	14	79	Guru Kripa Kirana Opp. Silicon City	Undeveloped	5670	22.640618	75.832297		
223	14	79	Dr. Anita Joshi Opp. Garden Green Belt Silicon City	Undeveloped	2750	22.637109	75.832941		
224	14	79	H. No. 343 Sector – A Sai Vilas Apartment	Undeveloped	8091	22.643755	75.829655		
225	14	79	H. No. 181 Opp. Late Shri Ambaram Wala Garden Shraptshrigi Nagar	Undeveloped	6721	22.6422556	75.830083		
226	14	79	Shraptshrigi Mata Mandir wala Garden H. No. 142 Shraptshrigi Nagar	Undeveloped	1788	22.64276	75.831248		
227	14	79	H. No. 331 Shivpali Clinic Opp. Part at Shiv City	Undeveloped	2000	22.641013	75.831652		
228	14	79	Chitaharan Hanuman Mandir Park at Shiv City	Undeveloped	2313	22.650801	75.833572		
229	14	79	H. No. 431-432 Park Opp. Vidur Nagar	Undeveloped	30000	22.680724	75.812915		
230	14	79	H. No. 358 Shivam Apartment Park Opp. Shiv City	Undeveloped	5381	22.6509	75.831024		
231	14	79	Ram Mandir Ahir Khedi	Undeveloped	1072	22.679483	75.81006		
232	14	79	Shri Ram Mandir Park Opp. Shiv City	Undeveloped	14000	22.647366	75.831137		
233	14	79	H. No. 106 Sector – J Park Silicon City	Undeveloped	38400	22.645451	75.827657		

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
234	14	79	Silicon City Main Gate Park	Undeveloped	3806	22.646186	75.828578		
235	14	79	H. No. 353 Shagun Apartment Park Opp. Shiv City	Undeveloped	75000	22.650886	75.83281		
236	14	79	Satellite Park	Undeveloped	28800	22.656251	75.834578		
237	14	79	Sahkar Nagar Park	Undeveloped	16000	22.667889	75.816237		
238	14	79	Silicon City Chauraha wala Park	Undeveloped	12000				
239	14	79	Bal Vihar Park	Undeveloped	4000				
240	14	79	Vidhayak Pratinidhi Park Shiv City	Undeveloped	12500				
241	14	79	Shiv City Water tank wala park	Undeveloped	6000				
242	14	79	Shiv Kutir Park	Undeveloped	6000				
243	14	79	Dr. Anita Joshi Green Belt Wali Patti	Undeveloped	3000				
244	14	79	Sector M. Rajesh Solanki wala Park	Undeveloped					
245	14	79	Prem Sagar Apartment Park	Undeveloped					
246	14	79	Sector A Pant Ji wala park	Undeveloped	20000				
247	14	79	Sector S Vrindavan Park	Undeveloped	70000				
248	14	79	Sector S Holi wala Park	Undeveloped	6000				
249	14	79	Shiv City Solanki Ji Park	Undeveloped					
250	14	79	Shiv Mandir Park	Undeveloped	23000				
251	14	79	Shiv City Garba Park	Undeveloped	4800				
252	14	79	Ambaram Munim Park Satsangi Nagar	Undeveloped	36400				
253	14	79	Maa Pitambara Park	Undeveloped					
254	14	79	Amir Vihar Colony Park No. 01	Undeveloped					
255	14	79	Amir Vihar Colony Park No. 02	Undeveloped					
256	14	79	Amir Vihar Colony Park No. 03	Undeveloped					
257	14	79	Amir Vihar Colony Park No. 04	Undeveloped					
258	14	79	Amir Vihar Colony Park No. 05	Undeveloped					
259	14	79	Amir Vihar Colony Park No. 06	Undeveloped					
260	14	79	Vrindavan Park Sector S	Undeveloped	70000				
261	14	79	Silicon City Diamond Corner	Undeveloped	9000				
262	14	79	Silver Star City Main Gate Park	Undeveloped	15000				
263	14	79	Silver star city H. No. 395 Park	Undeveloped	4800				
264	14	79	Silver star city H. No. 121 Park	Undeveloped	20000				
265	14	79	Silver star city H. No. 56 Chhota park	Undeveloped	12000				
266	14	79	Silver star city H. No. 269 Park	Undeveloped	4200				
267	14	79	Silver star city Power house park	Undeveloped	15000				
268	14	79	Silver star city kuanwala park	Undeveloped	4800				
269	14	79	Silver star city extension water tank park	Undeveloped	5200				
270	14	79	Silver star city extension boundarywala Park 22	Undeveloped	2000	22.642757	75.83602		
271	14	79	Silver star city extension basket ball Park 23	Undeveloped	25000	22.64204	75.83602		
272	14	79	Shiv Kutir Colony Park 01	Undeveloped	6000	22.637788	75.83576		
273	14	79	Shiv Kutir Colony Park 02	Undeveloped	6000	22.63682	75.83574		
274	14	79	Shiv Kutir Colony Park 03	Undeveloped	6000	22.636766	75.836109		
275	14	79	Shiv Kutir Colony Park 05	Undeveloped	5500	22.636606	75.836100		
276	14	79	Shiv Kutir Colony Park 06	Undeveloped	7000	22.96365	75.83711		
277	14	79	Shiv Kutir Colony Greenbelt	Undeveloped	4500	22.636527	75.836836		
278	14	79	Shiv Kutir Colony H. No. 135 Park	Undeveloped	6000	22.636724	75.836392		

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
279	14	79	New Star City Colony H. No. 160 Park Khali Maidan	Undeveloped		22.638422	75.848025		
280	14	79	New star city colony Boundarywall Park Khali Maidan	Undeveloped		22.640538	75.849338		
281	14	79	New star city colony	Undeveloped		22.640846	75.848807		
282	14	79	Newyork city colony Park 06	Undeveloped					
283	14	79	Newyork city Colony Park 07	Undeveloped					
284	14	79	Newyork city colony Park 08	Undeveloped					
285	14	79	Sai Paradise Nihalpur Mandi Park 01	Undeveloped					
286	14	79	Sai Paradise Nihalpur Mandi Park 02	Undeveloped					
287	14	79	Sai paradise Nihalpur Mandi Park 03	Undeveloped					
288	14	79	Sai paradise Nihalpur Mundi Park 04	Undeveloped					
289	14	79	Sai paradise Nihalpur Mundi Park 05	Undeveloped					
290	14	79	Sai Paradise Nihalpur Mundi Park 06	Undeveloped					
291	14	79	Sai Paradise Nihalpur Mundi Park 07	Undeveloped					
292	14	79	Sai paradise Nihalpur Mundi Park 08	Undeveloped					
293	14	79	Sai Paradise Nihalpur Mundi Park 09	Undeveloped					
294	14	79	Sai Paradise Nihalpur Mundi park 10	Undeveloped					
295	14	79	Sai Paradise Nihalpur Mundi Park 11	Undeveloped					
296	14	79	Sai Paradise Nihalpur Mundi Park 12	Undeveloped					
297	14	79	Sai paradise Nihalpur Mundi Park 13	Undeveloped					
298	14	79	Silicon city Diamond Apartment Park	Undeveloped					
299	14	79	Silicon city Diamond Apartment Park	Undeveloped					
300	14	79	Silicon city Avir Vihar Colony H. No. 58 Park	Undeveloped					
301	14	79	Satellite Colony Nihapur Mundi High tension line Park 01	Undeveloped					
302	14	79	Satellite colony Nihapur Mundi High tension Mandir wala Park 02	Undeveloped					
303	14	79	Satellite Colony Nihapur Mundi Opp. High Tension line Park 03	Undeveloped					
304	14	79	Satellite Colony Nihapur Mundi High Tension Line Park 03	Undeveloped					
305	14	79	Satellite Colony Nihapur Mundi High Tension Line Park 01	Undeveloped					
306	14	79	Satellite Colony Nihapur Mundi High Tension Line Park 02	Undeveloped					
307	14	79	Satellite Colony Nihapur Mundi High Tension Line Park 03	Undeveloped					

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
308	14	79	Satellite Colony Nihapur Mundi High Tension Line Park 04	Undeveloped					
309	14	79	Satellite Colony Nihapur Mundi High Tension Line Park 05	Undeveloped					
310	14	79	Shalimar Park	Undeveloped					
311	14	82	Sudama Nagar Ram Mandir H. No. 1805	Undeveloped		22.690467	75.830394		
312	14	85	Sirpur City Forest	Undeveloped	1232	22.696996	75.822691		
313	14	85	Ram mandir Park Prajapat Nagar	Undeveloped	6772	22.6919	75.18157		
314	14	85	Ram mandir Prajapat Nagar Park	Undeveloped					
315	15	71	Usha Nagar Park Opp. H. No. 48	Undeveloped	5316	22.703077	75.841763	Present	Narmada Connection available, water not sufficient
316	15	71	Zone Parisar Dravid Nagar H. No. 175	Undeveloped	9408	22.70234	75.836412	Present	Well present, line to be laid
317	15	71	Dravide Nagar H. No. 51	Undeveloped	9820	22.702744	75.83729	Present	No water arrangement
318	15	71	Swastik Nagar Opp. H. no. 60	Undeveloped	3360	22.704236	75.840351	Not present	Boring available
319	15	71	Bhairu Chowk Park Samajwadi Indira Nagar Opp. H. No. 390-39	Undeveloped	1264	22.706318	75.837226	Gate to be repaired	No water arrangement
320	15	71	Vishwakarma Nagar Park Opp. H. No. 55	Undeveloped	1053	22.705328	75.838171	Boundary wall, Gate, Block repairing to be done	Boring available
321	15	71	Vishwakarma Nagar Park Opp. H. No. 55	Undeveloped	10655	22.693826	75.835315	Boundary wall, Gate, Block repairing	No water arrangement
322	15	71	Sai Mandir Park Bank Colony	Undeveloped	4032	22.694173	75.837359	Present	Line to be laid through well
323	15	71	Malwa Kanya School Campus	Undeveloped	8361	22.704742	75.842477	Present, work in progress	No water arrangement
324	15	72	Dussehra Maidan Park	Undeveloped	8603	22.695317	75.839655	Present, Smart city construction work under progress	
325	15	72	Mahawar Nagar Park H. No. 2495	Undeveloped	3167	22.698468	75.839347	Repairing to be done	Boring available
326	15	72	Rama Mandir Park Mahawar Nagar H. No. 137	Undeveloped	929	22.696836	75.839051	Not present	No water arrangement
327	15	72	Moon Palace Colony Park H. No. 70	Undeveloped	3318	22.695645	75.841089	Present	Water line to laid from adjoining land
328	15	72	Vinay Nagar Park H. No. 201	Undeveloped	4038	22.689522	75.841208	Present	No water arrangement
329	15	72	Revenue Nagar Park H. No. 118	Undeveloped	1998	22.697776	75.84153	Present	Boring available
330	15	72	Revenue Nagar H. No. 45	Undeveloped	502	22.697967	75.841118	Wall to be repaired	Boring available
331	15	72	Kunjvan Colony Park H. No. 35	Undeveloped	2545	22.696438	75.845164	Boundary mesh to be repaired	No water arrangement

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
332	15	72	Silver Palace Park 2 H. No. 10	Undeveloped	1138	22.691948	75.838786	Tank to be repaired	No water arrangement
333	15	72	Silver Palace Park 3 Opp. H. No. 19	Undeveloped	1443	22.692179	75.840114	Boundary wall to be repaired	Narmada Connection available, motor connection to be put
334	15	72	Lokmanya Nagar Park	Undeveloped	1000	22.695882	75.845643	Present	No water arrangement
335	15	72	Lokmanya Nagar Railway Station Park	Undeveloped	24500	22.691259	75.846902	Present	Line put through boring, to be repaired
336	15	73	Book Band Colony Park H. No. 3 Opp. Shiv Mandir	Undeveloped	2911	22.694457	75.85178	Boundary wall and gate repairing to be done	Boring available
337	15	73	Book Band Colony Park H. No. 99	Undeveloped	5444	22.693514	75.85214	Gate repairing to be done	Boring available, water is not sufficient
338	15	73	Ashoka Colony Opp. H. No. 66	Undeveloped	1724	22.692239	75.852067	Present	No water arrangement
339	15	73	Badri Bagh Park	Undeveloped	2341	22.692149	75.849133	Present	No water arrangement
340	15	73	Manik Bagh Mahila Park (Green Belt)	Undeveloped	30800	22.697091	75.855084	Gate to be repaired	Water connection available, motor to be installed in water tank
341	15	83	Manokameshwar Mandir Shitla Bagh Park Scheme No. 71 H. No. 771 B	Undeveloped	2790	22.704354	75.832299	Boundary wall repairing to be done	Boring available
342	15	83	Scheme No. 71 B Sector Hanuman Mandir	Undeveloped	210x110	22.70293	75.83454	Present	Boring available
343	15	83	Scheme No. 71 C Sector H. No. 5 B	Undeveloped	2170	22.6951	75.826672	Present	Boring available
344	15	83	Scheme No. 71 Park H. No. 280 Vaishnav College	Undeveloped	3556	22.700301	75.83199	Present	Boring available
345	15	83	Scheme No. 71 Power House Park	Undeveloped	3047	22.703385	75.828176	Wall is incomplete	Well present
346	15	83	Scheme No. 71 Narmada Tanki wala Park	Undeveloped	1839	22.696812	75.826038	Boundary wall repairing to be done	Boring available, motor to be installed
347	15	83	Scheme No. 71 Zonal Karyalaya Park	Undeveloped	6000	22.701372	75.83571	Present	No water arrangement
348	15	83	Scheme No. 71 Shiv Mandir Park Gumasta Nagar	Undeveloped	4825	22.700064	75.830818	Boundary wall and gate repairing in progress	Boring available, Line to be laid
349	16	1	Vyas Nagar Durga Mandir Park H. No. 70 Park	Undeveloped	654	22.715639	75.816537	Not present	No water arrangement
350	16	1	H. No. 429 Vijay Shri Nagar Park	Undeveloped	1514	22.717306	75.819303	Not present	No water arrangement
351	16	5	H. no. 367 Chandan Nagar Park Hanuman Mandir	Undeveloped	3013	22.713177	75.820524	Present	No water arrangement

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
352	16	14	Palhar Nagar Park 1 H. No. 74 Park	Undeveloped	2118	22.728432	75.835841	Present	No water arrangement
353	16	14	Palhar Nagar Park near H. No. 371 Shiv Mandir	Undeveloped	2930	22.728966	75.831783	Wall is broken	No water arrangement
354	16	14	Sukhdev nagar Park Opp. H. No. 34	Undeveloped	2790	22.730297	75.825622	Present	No water arrangement
355	16	14	Sanwariya Nagar H. No. 3 Park	Undeveloped	4119	22.728966	75.825834	Not present	No water arrangement
356	16	14	Venkatesh Nagar H. no. 3 Park	Undeveloped	2215	22.730586	75.823442	Present	Boring available, Line to be put
357	16	14	Venkatesh Nagar Extension Park H. No. 9A	Undeveloped	2307	22.73056	75.824174	Present	Boring available, Line to be put
358	16	14	Ambika puri H. No. 195 Park	Undeveloped	9660	22.730317	75.818907	Not present	No water arrangement
359	16	14	Somani Nagar H. No. 38 Park	Undeveloped	6630	22.729794	75.822817	Not present	No water arrangement
360	16	14	Ashok Nagar 1 h. No. 660 Park	Undeveloped	18680	22.733679	75.823139	Not present	No water arrangement
361	16	14	Ashok Nagar H. No. B/279 Park 2	Undeveloped	25200	22.734287	75.819924	Not present	No water arrangement
362	16	14	Ashok Nagar Park 3 H. No. b/120	Undeveloped	24325	22.73504	75.820069	Not present	No water arrangement
363	16	14	Om Krishna Kuti H. No. 25 Park	Undeveloped	6750	22.73051	75.83388	Not present	No water arrangement
364	16	15	Padmalaya Colony Park 1 H. No. 135-B	Undeveloped	4347	22.738217	75.819251	Present	No water arrangement
365	16	15	Padmalaya Colony Park 2 H. No. 220-B	Undeveloped	2447	22.738502	75.820545	Present	No water arrangement
366	16	15	Manu shri Colony Tanki 2 Park H. No. 225	Undeveloped	1701	22.733039	75.816739	Not present, wire fencing	No water arrangement
367	16	15	Vidya Palace Colony H. No. 70-C	Undeveloped	4195	22.737375	75.821936	Present	Well present, Line to be put
368	16	15	Park at Gandhi Nagar, Nehru Statue	Undeveloped	9000	22.741173	75.783941	Present	No water arrangement
369	17	19	Kumedi Village Mukti Dham	Undeveloped		22.784613	75.871369		
370	17	20	Khatipura bridge Community Hall Park	Undeveloped		22.759274	75.85931		
371	17	23	Manju Bhandari Hospital Park behind Pardesipura Radha Krishna Mandir	Undeveloped	2610	22.747291	75.871963		
372	17	23	No. 8 School Pardesipura	Undeveloped		22.751758	75.869414		
373	17	23	Pardesipura Gali No. 3 Yadav Smaj wala Park	Undeveloped		22.747189	75.8717747		
374	17	23	Clark Colony Extension Park	Undeveloped		22.753453	75.862631		
375	18	51	Virat nagar Nala Vacant Land	Undeveloped					
376	18	52	Scheme No. 94 Park Vacant Land No. 01	Undeveloped					
377	18	52	Scheme No. 94 Park Vacant Land No. 02	Undeveloped					
378	18	53	Shiv Mandir Park	Undeveloped	2479	22.697136	75.885957		
379	18	63	Greenland School Lohamandi Petrol pump	Undeveloped		22.705118	75.870947		
380	18	63	Ram Mandir Talent School Greenbelt	Undeveloped					

Sl. No.	Zone No.	Ward No.	Name of Park	Developed / Undeveloped	Area in sq. ft.	Latitude	Longitude	Status of Boundary Wall	Water availability
381	18	63	Scheme No. 47 Sapna Sangita Park	Undeveloped					
382	18	64	Kaushalpuri Park Vacant Land	Undeveloped		22.696585	75.881436		
383	18	64	Prakash Nagar Little School Vacant Land	Undeveloped		22.685932	75.874633		
384	18	64	Sanwad Nagar Ex. Parshad	Undeveloped					
385	18	64	Sai Mangal Nagar Vacant Land	Undeveloped					
386	19	41	Sanchar Nagar Mata Mnadir Extension Park H. No. 72	Undeveloped	973	22.726086	75.918961	Work in progress	Boring available
387	19	41	Scheme No. 94 Siddhi Vinayak Hospital	Undeveloped		22.730254	75.904001	Present	No water arrangement
388	19	41	Alok Nagar Mata Mandir Park	Undeveloped	30000	22.727349	75.921019	Present	Boring available
389	19	41	Alok Nagar Tikona Park	Undeveloped	9600	22.727885	75.92128	Present	No water arrangement
390	19	41	Sanchar Nagar Main Park	Undeveloped	15000	22.727462	75.918414	Not present	No water arrangement
391	19	41	Krishna Ji Nagar Mangal Murti Park	Undeveloped		22.723872	75.906561	Present	Boring available
392	19	50	Scheme No. 140 Kirana Dukaan Park 20	Undeveloped	8400	22.710425	75.911255	Present	No water arrangement
393	19	50	Scheme No. 140 Sector A.M H. No. 395 Park 22	Undeveloped	6000	22.710561	75.9009967	Present	Boring available
394	19	50	Scheme No. 140 H. No. 160 C. B Park 09	Undeveloped	6500	22.706463	75.91232	Not present	No water arrangement
395	19	50	Scheme No. 140 IDA Multi Park 21	Undeveloped	22500	22.711427	75.909972	Present	No water arrangement
396	19	50	Scheme No. 140 Sector B. C Behind Max Hospital Park 15	Undeveloped	24700	22.710785	75.91172	Wall is incomplete	No water arrangement
397	19	50	Scheme No. 140 Sector A.OM.N 176 Max Hospital Park 15	Undeveloped	24700	22.708924	75.911913	Wall is incomplete	No water arrangement
398	19	50	Scheme No. 140 DilPasand Multi Park 16	Undeveloped	24700	22.706611	75.911428	Not present	No water arrangement
399	19	50	Scheme No. 140 Zone behind Park 03	Undeveloped	13000	22.705796	75.916287	Not present	Boring available
400	19	50	Scheme No. 140 Anand 02 Park 04	Undeveloped	13000	22.705268	75.91655	Not present	No water arrangement
401	19	50	Scheme No. 140 Toilet wala Park 06	Undeveloped	13000	22.706623	75.913042	Present	Boring available
402	19	50	Scheme No. 140 Punjab National Bank Park 07	Undeveloped	13000	22.708334	75.913342	Wall is incomplete	No water arrangement
403	19	50	Scheme No. 140 H. No. 163 C.M Park 08	Undeveloped	2925	22.709033	75.914077	Wall is incomplete	No water arrangement
404	19	50	Scheme No. 140 Kuan wala Kakad Park 10	Undeveloped	50400	22.707379	75.916887	Present	No water arrangement
405	19	50	Scheme No. 140 H. No. 146 Aanchal Nagar Park 11	Undeveloped	8000	22.70737975	75.916887	Present	No water arrangement
406	19	50	Scheme No. 140 H. No. 280 Sector C. P Park 12	Undeveloped	6300	22.712854	75914899	Wall is incomplete	No water arrangement
441	19	76	Manavta Nagar Park 01	Undeveloped	2663	22.701301	75.92058	Not present	No water arrangement
442	19	76	Manavta Nagar Khel Maidan Park 02	Undeveloped	2252	22.723722	75.928261	Not present	No water arrangement
443	19	76	Kanadiya Mukti Dham Park	Undeveloped	3200	22.744738	75.979524	Present	Boring available
			Total - 1381	Developed	443				

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