

**MASTER PLAN
OF
KAMLA NEHRU PRANI SANGRAHALAYA, INDORE**



Indore Municipal Corporation, Indore

(2014 to 2034)

PROJECT CONSULTANTS:

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CERTIFICATE

This is certified that the Master Plan of the Kamla Nehru Prani Sangrahalaya, Indore has been prepared by Indore Municipal Corporation, through its consultant M/s Mehta & Associates, Indore.

The Master Plan is prepared as per the guidelines of CZA.



Officer In-Charge,
Indore Zoo



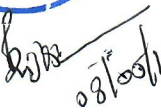
Commissioner
Municipal Corporation, Indore
Municipal Corporation, Indore

Master Plan of the Kamla Nehru Prani Sangrahalaya, Indore, Madhya Pradesh is approved by the Technical Committee of the Central Zoo Authority in its 70th Meeting held on 01.07.2014, subject to condition that:-

- The mobilizing the financial resources for implementation of the Master Plan will be sole responsibility of the Municipal Corporation of Indore / Zoo Operator, and
- The Municipal Corporation of Indore / Zoo Operator should quantify the resources available for the implementation of the Master Plan.



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Dr. Uttam Yadav

Officer In-charge

Kamla Nehru Prani Sangrahalay

Municipal Corporation,

Indore (M.P.)

PREFACE

The Kamla Nehru Prani Sangrahalaya, Indore is one of the oldest zoos in the state of Madhya Pradesh, established in the year 1972. Initially zoo was started on 17 acres of land after that 34 acres of land was acquired, today total area of the zoo is 51 acres. Zoo was established for the purpose of conservation of wild animals and creating awareness among common people about the importance of wild animals. Presently zoo displays 45 species of animals and birds numbering 346 specimens. The zoo is quite popular as is evident from the fact that 10.50 lakh visitors visited this zoo in the year 2012-13.

At present zoo administration is divided in to several sections for the better management of the zoo. But due to lack of skilled staffs and required equipments in sections, sometimes management fails to give its best output. This zoo does not have technical team which can take care of conservation breeding, public awareness campaign. Animal enclosures are small, dingy and do not conform to CZA guidelines

In view of the above, it has been proposed to address all the issues in the master plan. Preparation of master plan involves inputs from zoo professional's, architects, veterinarians and wild lifers. A team of zoo officials, and architect was formed which took the task of preparing this plan. The plan has been prepare for the improvement and development of this zoo over a period of 20 years incorporating the vision, mission, theme of display and objectives.

The salient features of this plan include displaying the animal in near natural environment. All enclosures will be designed to meet biological and behavioural requirement of the species. The zoo will have one way movement, clear segregation of visitors and service path. The theme of display is taxonomical. New enclosures for mammals, bird and reptiles have been proposed while the old and dingy would be dismantled.

The whole zoo has been divided into 8 sections viz animal, veterinary, sanitation & horticulture, security, store section, construction and maintenance, education and awareness. Each section will be headed by well qualified and professional incumbent which is in tune with the recommendation of expert committee on zoos.

It has been proposed to display 529 animal comprising of 48 species as per collection plan. The quality of animal care, exhibits and awareness programme will be of higher level. Efforts have been made to provide adequate facilities like cafeteria, parking, toilets, shelters and drinking water points for the visitors for their smooth and rewarding visit.

The revised layout plan and an animal collection plan has been recommended for approval by the expert group of zoo design of CZA in its 29th meeting held on 11.04.2012.

To avoid natural calamities, all parameter have been analysed and based upon these parameters strategies would be evolved. Indore region comes under low risk seismic and moderate damage risk zone. It is found that there had been no such calamities but for precaution sake, measures to mitigate fire hazards, earth quake and flood have been proposed.

Therefore, a detailed disaster management plan and contingency plan have been incorporated. A plan to upgrade the skill of animal keepers and other staff, a capacity building plan has also been prepared. With the development in IT sector, e-governance has also been planned; this will help to maintain the record and data of animals and related issues for easy interaction with national and international expert and institutes.

The total non-recurring expenditure is expected in the tune of Rs. 5987.96 Lacs which includes cost of construction/modification of enclosures, infrastructure works, health facilities, environmental improvement, equipments and vehicles etc.

FOREWORD

Zoo is the one of the medium for the conservation of wildlife animals for the future generation. The Kamla Nehru Prani Sangrahalaya, Indore is one of the oldest zoo in the state of Madhya Pradesh. It was established in 1972. This zoo aims to conserve and display the local as well as regional animals.

In the master plan of 2014-34, it has been tried to short out the all existing shortcomings to meet the environmental and wildlife sustainability. Zoo also fulfills the requirements of public recreation as well as plays the role of urban green space.

Recent advances in animal husbandry such as behavioural enrichment will allow zoo animals to become more active and visible, displaying a wider range of natural behaviour within habitat settings. New communication & training programs for staff will address the strategy, governance, education, conservation and other essential issues of maintaining this zoo.

Valuable suggestions have been provided by a team comprising Shri S.C. Sharma, Dr. A.K. Malhotra, members of the expert group on zoo designing and the Member Secretary, Central Zoo Authority. Dr. Uttam Yadav, Director, Indore Zoo, Shri Naresh Jaiswal, AE, Municipal Corporation, Indore, Shri S.K. Devara, Sub-Engineer and Dr. Akhilesh Upathaya, Veterinarian have also provided suggestions.

This master plan has outlined the development of Prani Sangharalaya, Indore for the next 20 years i.e. 2014-34. I am happy that plan will take care of animals, visitors and staff.

I congratulate all the experts and team members for this hard work for bringing out this master plan.

Mayor Municipal Corporation, Indore

PART - I**1. CHAPTER – I****INTRODUCTION****1.1 History:-**

The Kamla Nehru Prani Sangrahalaya, Indore popularly known as Indore Zoo, is probably one of the oldest Zoos in Madhya Pradesh, established in 1972 and is being gradually developed by Indore Municipal Corporation by its own resources. The initial survey of the land where the Zoo is located was first done by the in-charge of Lucknow Zoological Garden in 1969. Initially zoo was started on an area of 17 acres of land.

Indore Municipal Corporation, Indore intended to develop master plan on the guidelines of CZA to give this city a show case of wild life. In this regard, the corporation passed a resolution in order to execute the plan. A zoo development committee was formed in 1999 soon after the visit of Dr. Brij Kishor Gupta, the scientist at CZA on 08/12/1999. An additional 34 acres of land was acquired and clubbed with the existing 17 acres, and thus the total area became 51 acres. The preparation of master plan was entrusted to M/s Mehta and Associates, Indore after due approval of Zoo advisory board.

1.2 Vision of the Zoo:-

Inspiring passion for nature and saving wildlife for future generations.

1.3 Mission of the Zoo:-

The mission of the Zoo is to create awareness about conservation of wild life among the community.

1.4 Strategy of the Zoo:-

The Strategy emphasizes that there are three major initiatives:

1. To support conservation of endangered species
2. To create awareness among masses about wild life conservation
3. To make rewarding experience of the zoo visit

1.5 Objectives:-

The aim of the zoos is to complement and strengthen the national efforts in conservation of rich biodiversity of the country, particularly the fauna. However, the zoo will strive to achieve the following objectives:

1. Conservation of wild animals particularly endangered species by providing near natural habitat.
2. To create awareness towards wild animals and nature in the common man.
3. Wildlife education and interpretation for the purpose of communicating conservation values to the visiting public, for understanding the unique faunal wealth of this Zoo and its role in environment of the city.
4. To provide facility of health care and rehabilitation of rescued animals.
5. To provide recreational facility to a large number of people by utilizing out-door setting of nature without detriment to any of the essential objectives of zoo as prescribed by CZA.

1.6 Physical Features:-

The zoo is located in the western region of Madhya Pradesh. Kamla Nehru Prani Sangrahalaya is spread along both sides of River Khan. Soil type in this region is black cotton soil.

1.7 Topography:-

As Khan River flows almost through the center of the zoo campus across the entire length, hence the slope from both North and south side converges into the center of the river. The surrounding area has plain topography. The Khan River which flows in south-west to north in the zoo has a number of scattered islands.

1.8 Geology:-

The soil is composed of black basalt and black cotton soil having a depth of 5 meter.

1.8.1 Rock & Soil:-

The underlying rock of the region is composed of black basalt. The soil is black cotton soil which is the characteristic of Malwa region with organic content making it fertile. This is suggested by the rich vegetation present on the site. The soil is highly adhesive and soft, therefore expands in volume when wet and shrinks heavily when dry.

1.9 Flora & Fauna in Zoo Premises:-

FLORA: The list of plants and trees is given enclosed in **annexure – 1**.

FAUNA: The list of fauna of the zoo is given enclosed in **annexure – 2**.

1.10 Climate:-

Indore has a humid sub-tropical climate. Winter season is from November to February. The night temperature remains around 10 degree C. It can be as low as 2 to 3 degree C. The summer season is from April to June. The days are hot with a temperature of 35 to 40 degree C.

1.10.1 Rainfall:-

Indore gets moderate rainfall of 80 cms during July-September due to South-West Monsoon. The district enjoys the salubrious climate of Malwa region with above 1050 mm rainfall. The typical monsoon season goes from 15 June till mid-September. 95% of rains occur during monsoon season.

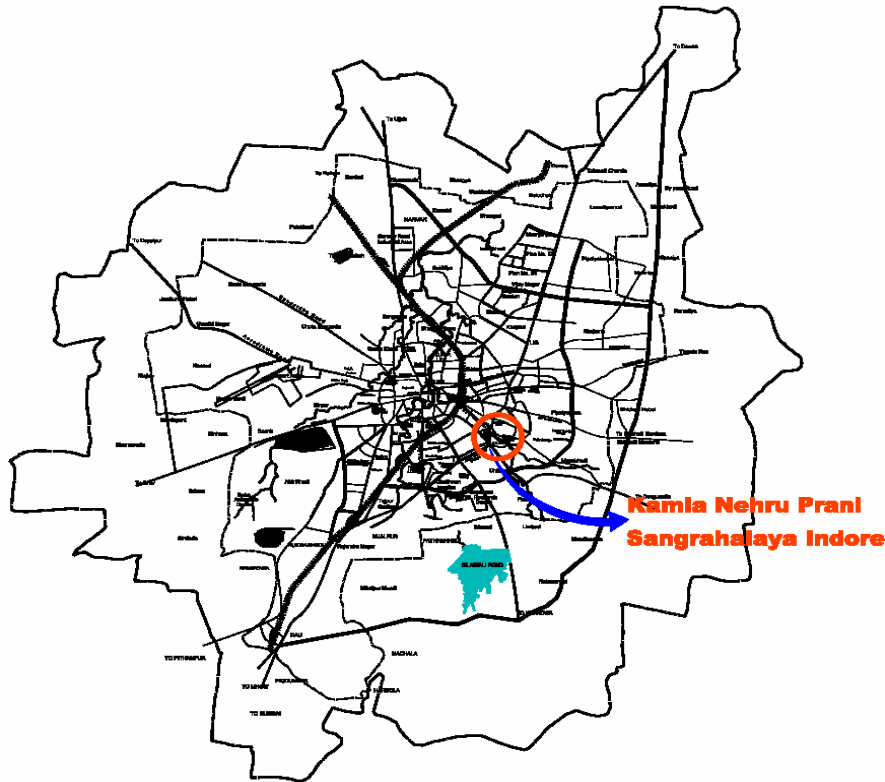
1.10.2 Season: -

Three distinct seasons are observed namely, summer, monsoon and winter. Summer starts in mid-March and can be extremely hot in April and May. The daytime temperature can touch 40°C on more than one occasion. Average summer temperature may go as high as 36–39 °C (100.4 °F) but humidity is very low.

Winters season starts from November to February and the night temperature remains around 10 degree C. It can be as low as 2 to 3 degree C.

1.11 Approach:-

The Zoo is almost centrally located in the eastern part of the city near to the Indira Gandhi circle between Navlakha Square & GPO square on the A.B. Road Pilot Corridor of BRTS, Indore. Zoo is easily accessible by Road which is located at a distance of 2.5 km from Indore railway station as well as Sarvate Bus depot. Zoo is located at a distance of around 10 km from the domestic airport of Indore.



re Master Plan

LOCATION OF KAMLA NEHRU PRANI SANGRAHALAYA, INDORE

1.12 Demography of the Surrounding Area:-

The 51 acres of zoo campus is now surrounded from all side by roads. Major land use around the zoo is residential and along the surrounding road mix land use does exist.

The Landmarks around the Zoo are Digamber Jain School, Central School and Residency Club in northern side, Shyam Shukl Nagar and Doordarshan Center in southern side, Residential Colony and Crematorium in eastern side and A-B Road and Indira complex in western side.

1.13 Legal Status of the Land:-

The entire land belongs to Indore Municipal Corporation. The copy of notification of ownership of land is enclosed as **Annexure - 3**.

1.14 Sources of Pollution:-

Since Indore is one of the fast growing cities in India and zoo is located in the urban centre of the city, surrounded by arterial roads. The heavy traffic on these roads causes noise pollution. No study has been done to know the impact of noise pollution. But the river water which flows through the Zoo itself is polluted and the contaminated water produces bad odor.

Central Zoo Authority has earlier expressed its concern regarding the sewage flow in the River Khan passing through the Zoo. Indore Municipal Corporation has already initiated the process of intercepting the sewage flow in the River/Nallah.

Indore Municipal Corporation has already executed sewage project worth Rs. 400 crores, including the surrounding urban areas near zoo. However a separate STP is also proposed at the entry point of the zoo to treat the filthy water. This will help in the environment up-gradation.

1.15 The Present Ground Situation:-

The aim and objectives set for the development plan for 2002-07 have not been fulfilled to satisfaction. There was pressure to increase animal enclosures but a few were constructed. Some basic infrastructures, public amenities, staff requirements, were provided. In order to complete the remaining developmental works, an elaborated master plan of this zoo has been proposed.

1.16 Description of Different Facilities:-

A brief description of different facilities has been given in the appraisal part.

1.17 Difficulties Faced In the Management in Past:-

The planning was done as per the knowledge available at the time of establishment of the zoo. The animals were displayed in small and dingy enclosures. With the establishment of CZA in 1992, standard were prescribed to display and for health care of wild animal in captivity. Since the original enclosures do not conform to the norms of CZA. Therefore the old and undersized enclosures have been planned to phase out.

The number of visitors also increased due to the awareness of people about wild life. This created pressure to enhance the visitor amenities. With the increase in visitor numbers and construction of few animal enclosures, the pressure to increase the man power was also felt. The corporation has been approached to provide adequate funds to mitigate the above mentioned problems.

1.18 Description of Existing Layout Plan:-

The Kamla Nehru Prani Sangharalay, Indore is located on A.B road. It has an area of 51 acres and displays about 45 species comprising of 436 specimens. About 10.50 lakh visitors visit the zoo annually. The layout plan has been drawn on scale 1:1400 with contour interval of 1 to 5 meter. There is no theme or plan of display and the animals have been exhibited haphazardly. There is single road which serves both for visitor's movement, food distribution and other services. The animals have been displayed on the both the sides of road. The main road traverses through the old area and joins the newly constructed exhibits through a bridge over Khan river. This road is about 1.25 km. in length (one way)

Khan river flows in the middle of the zoo. This river carries city sewage. The road after entering the new exhibit area moves in a circle to show exhibits like tiger, bear, lion and

leopard. The visitors have to follow the same road to the exit gate. Water points, toilets, benches and shelter have also been provided as visitors facilities.

The plan lacks segregation of visitor and service road. The exhibits are small in size and lack basic facilities. Such exhibits have been proposed to be demolished. The existing layout plan of the zoo is placed at **annexure -4**.

1.19 Achievements:-

The zoo has been successful in breeding the animals like tiger, white tiger, hippo, fox, emu, golden pheasant, lady Amherst pheasant etc. An additional area of 34 hectare was acquired and added in the existing area of 17 hectare. The zoo displays endangered species like tiger, white tiger, and sloth bear in spacious, open and near natural environment. A few lawns were created and improved for the visitors to sit and relax.

Two new toilets and two new drinking water points were also added at different locations as visitors' amenities. The zoo regularly holds awareness campaign and competition for the visitors and school children.

2. CHAPTER - II

APPRAISAL OF THE PRESENT ARRANGEMENT & CONSTRAINTS

Indore zoo is spread in 51 acres of land on both sides of the river Khan. There are a total of 45 species of animals comprising of 346 specimen displayed in 28 enclosures

APPRAISAL OF DIFFERENT SECTION: -

2.1 Animal Section: -

This section is responsible for looking after animals and their houses. It ensures cleanliness and maintenance of enclosures and surroundings. The staff of the section strives hard to maintain hygienic conditions of enclosures and food.

2.1.1 Duties and Responsibilities:-

1. To clean the animal enclosures, night houses and surroundings daily and inside once in week.
2. To provide feed and water to animals & birds to submit regular ration requisition according to need.
3. To report the condition of the animals on health, feeding, mating, breeding etc.
4. To ensure safe capturing and transportation of animals when requires.
5. To keep close eye on behavior of animal.
6. To keep liaison with veterinary section for health problems and treatment.
7. To keep liaison with maintenance section for repair and continuation of civic services.
8. To maintain the records of all live stock and inventories of the section.

2.1.2 Existing Equipments:-

At present this section is equipped with 2 nets, 6 ropes, 2 trolleys, 2 squeeze case, 2 trap cage, 5 gunny bags, 5 blindfold towel, 6 pipes, 5 long bamboo. 2 search lights. 4 locks **with key**.

2.1.3 Existing Staff:-

Animal Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	Range Officer	-	-	-	9300-34800 Grade pay Rs. 4200
2	Head Animal Keeper	1	1	-	5200-20200 Grade pay Rs. 2400

Animal Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
3	Animal Keeper	2	1	1	5200-20200 Grade pay Rs. 1800
4	Attendant/Labour	-	3 (Muster)	-	4440-7440 Grade pay Rs. 1400

2.1.4 Status of Animals:-

The status of animals as on 31-03-2013 is given in **annexure – 5**.

2.1.5 Single Animals:-

The list of single animal is as under:-

List of Single animals			
S. no.	Name of animal	Male	Female
1	White tiger	0	5
2	Common Langur	2	0

2.1.6 Surplus Animals:-

The list of surplus animals is as under:-

List of Surplus animals			
S. no.	Name of animal	Male	Female
1	White tiger	---	2
2	Black buck	10	10
3	Hyena	1	1
4	Jackal	1	1
5	Indian fox	1	1
6	Hippo	---	1
7	Crocodile	2	3
8	Porcupine	1	2
9	Ring necked parakeet	2	3
10	Alexandrine parakeet	2	3
11	Emu	1	1
12	Jungle cat	1	1
13	Star back turtle	2	2
14	Budgerigar	10	10



2.1.7 Appraisal of existing animal enclosures:-

The description of existing enclosures is given as under:-

S N	Particulars	Details
1	Animal Name	Tiger Normal Colour
2	Existing Enclosure Area (in Sqm)	80 Sqm
3	Night Shelter Area (in Sqm)	3x3 Sqm.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Iron bar
	Night Shelter	-
	Floor	Paver block
	Roof	Asbestos Sheet
	Sewerage	Poor
	Drinking Water	Cemented tub
	Flush water	Slope
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Royal Bengal Tiger-Existing enclosure

S.No.	Particulars	Details
1	Animal Name	Jungle Cat
2	Existing Enclosure Area (in Sqm)	20 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Vertical iron bar
	Night Shelter	No
	Floor	Cemented
	Roof	Asbestos Sheet
	Sewerage	No
	Drinking Water	Cemented tub
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled
		
Jungle Cat - Existing enclosure		

S N	Particulars	Details
1	Animal Name	Spotted deer
2	Existing Enclosure Area (in Sqm)	200 Sqm
3	Night Shelter Area (in Sqm)	Wooden shed
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Chain link
	Night Shelter	Wooden shed
	Floor	Half Soiled/half Bricked
	Roof	Wooden shed
	Sewerage	No
	Drinking Water	Cemented pond
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Spotted deer- Existing enclosure

S N	Particulars	Details
1	Animal Name	Emu
2	Existing Enclosure Area (in Sqm)	200 Sqm
3	Night Shelter Area (in Sqm)	10×5 Sqf.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Chain link
	Night Shelter	No
	Floor	Soiled
	Roof	Cemented/RCC
	Sewerage	No
	Drinking Water	Plastic tub
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Emu - Existing enclosure

S N	Particulars	Details
1	Animal Name	Alexandrine Parakeet
2	Existing Enclosure Area (in Sqm)	8×8 Sqm.
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	Iron bar
	Night Shelter	No
	Floor	Soiled
	Roof	Iron sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Alexandrine Parakeet - Existing enclosure

S N	Particulars	Details
1	Animal Name	Blossom headed Parakeet
2	Existing Enclosure Area (in Sqm)	5×8 Sqf.
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	1 inc. wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Iron Sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Blossom headed Parakeet - Existing enclosure

S N	Particulars	Details
1	Animal Name	Rose ringed Parakeet
2	Existing Enclosure Area (in Sqm)	22 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	1 inc. wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Iron Sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Rose ringed Parakeet - Existing enclosure

S N	Particulars	Details
1	Animal Name	Love Birds
2	Existing Enclosure Area (in Sqm)	2×2 Sqm.
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	1 inc. wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Asbestos cement sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Love Birds - Existing enclosure

S N	Particulars	Details
1	Animal Name	Cockatiel
2	Existing Enclosure Area (in Sqm)	2×2 Sqm.
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	1 inc. wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Asbestos cement sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Cockatiel - Existing enclosure

S N	Particulars	Details
1	Animal Name	Peafowl White
2	Existing Enclosure Area (in Sqm)	20 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	2 inc. wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Half open and half covered plastic sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Peafowl White - Existing enclosure

S N	Particulars	Details
1	Animal Name	Sarus Crane
2	Existing Enclosure Area (in Sqm)	180 Sqm.
3	Night Shelter Area (in Sqm)	Not applicable
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	Not applicable
6	Existing Condition :-	Open enclosure
	Fencing	Iron bar
	Night Shelter	No
	Floor	Soiled
	Roof	Open
	Sewerage	No
	Drinking Water	Cemented water tub
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Sarus Crane - Existing enclosure

S N	Particulars	Details
1	Animal Name	Owl
2	Existing Enclosure Area (in Sqm)	20 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	2 inch wire mesh
	Night Shelter	No
	Floor	Cemented
	Roof	Asbestos Cement Sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Owl - Existing enclosure

S N	Particulars	Details
1	Animal Name	Silver Pheasant
2	Existing Enclosure Area (in Sqm)	25 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	2 inch wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Half open and half covered plastic sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Silver Pheasant - Existing enclosure

S N	Particulars	Details
1	Animal Name	Golden Pheasant
2	Existing Enclosure Area (in Sqm)	25 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	2 inch wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Half open and half covered plastic sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Golden Pheasant - Existing enclosure

S N	Particulars	Details
1	Animal Name	Painted Stork
2	Existing Enclosure Area (in Sqm)	25 Sqm.
3	Night Shelter Area (in Sqm)	Not applicable
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	2 inch wire mesh
	Night Shelter	No
	Floor	Soiled/Natural habitat
	Roof	Half open and half covered plastic sheet
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Painted Stork - Existing enclosure

S N	Particulars	Details
1	Animal Name	Rosy Pelican
2	Existing Enclosure Area (in Sqm)	10×10 Sqm.
3	Night Shelter Area (in Sqm)	Not applicable
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	Not applicable
6	Existing Condition :-	mixed aviary
	Fencing	2 inch wire mesh
	Night Shelter	No
	Floor	Soiled/Natural habited/water body
	Roof	Half open and half covered plastic sheet
	Sewerage	Open
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Rosy Pelican - Existing enclosure

S N	Particulars	Details
1	Animal Name	Indian rock Python
2	Existing Enclosure Area (in Sqm)	25 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	2 inch wire mesh
	Night Shelter	No
	Floor	Soiled
	Roof	Half covered and half open
	Sewerage	No
	Drinking Water	Cemented water pond
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Indian rock python - Existing enclosure

S N	Particulars	Details
1	Animal Name	Star Tortoise
2	Existing Enclosure Area (in Sqm)	40 Sqm
3	Night Shelter Area (in Sqm)	Not applicable
4	Kraal Area (in Sqm)	Not applicable
5	Moat Area W & D	Not applicable
6	Existing Condition :-	
	Fencing	2 inch wire mesh
	Night Shelter	No
	Floor	Sandy
	Roof	Half iron sheet and Half open
	Sewerage	No
	Drinking Water	Earthen pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Star Tortoise - Existing enclosure

S N	Particulars	Details
1	Animal Name	Wolf
2	Existing Enclosure Area (in Sqm)	500 Sqm
3	Night Shelter Area (in Sqm)	2×2 Sqm
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Iron bar
	Night Shelter	2×2 Sqm
	Floor	Cemented
	Roof	Iron sheet
	Sewerage	Open
	Drinking Water	Cemented tub
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Wolf - Existing enclosure

S N	Particulars	Details
1	Animal Name	Common langoor
2	Existing Enclosure Area (in Sqm)	40 Sqm
3	Night Shelter Area (in Sqm)	2x2 Sqm
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Iron bar
	Night Shelter	2x2 Sqm
	Floor	
	Roof	Iron Sheet leakage
	Sewerage	Open
	Drinking Water	Cemented tub
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Common langoor - Existing enclosure

S N	Particulars	Details
1	Animal Name	Rhesus Macaque
2	Existing Enclosure Area (in Sqm)	42 Sqm
3	Night Shelter Area (in Sqm)	No
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	iron bar
	Night Shelter	No
	Floor	Cemented
	Roof	Iron Sheet
	Sewerage	Open
	Drinking Water	Cemented tub
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Rhesus Macaque - Existing enclosure

S N	Particulars	Details
1	Animal Name	Bonnet Macaque
2	Existing Enclosure Area (in Sqm)	40 Sqm
3	Night Shelter Area (in Sqm)	3×3 Sqm.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Iron bar
	Night Shelter	3×3 Sqm.
	Floor	Cemented
	Roof	Asbestos Sheet with small leakages
	Sewerage	Open
	Drinking Water	Cemented tub
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Bonnet Macaque - Existing enclosure



S N	Particulars	Details
1	Animal Name	Black buck
2	Existing Enclosure Area (in Sqm)	150 Sqm
3	Night Shelter Area (in Sqm)	Tin shed 4×8 Sqm.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Chain link
	Night Shelter	Tin shed 4×8 Sqm.
	Floor	Soiled
	Roof	Open
	Sewerage	Open
	Drinking Water	Cemented water body
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled

Black buck - Existing enclosure

S N	Particulars	Details
1	Animal Name	Nilgai
2	Existing Enclosure Area (in Sqm)	170 Sqm
3	Night Shelter Area (in Sqm)	4×10 Sqm.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Surrounded by cemented wall
	Night Shelter	4×10 Sqm.
	Floor	Soiled
	Roof	Iron Sheet with small leakages
	Sewerage	Open
	Drinking Water	Cemented water body
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Nilgai - Existing enclosure

S N	Particulars	Details
1	Animal Name	Hippopotamus
2	Existing Enclosure Area (in Sqm)	170 Sqm
3	Night Shelter Area (in Sqm)	4×4 Sqm.
4	Kraal Area (in Sqm)	6×10 Sqm.
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Surrounded by cemented wall
	Night Shelter	4×4 Sqm.
	Floor	Cemented
	Roof	Cemented
	Sewerage	Open
	Drinking Water	Cemented water pond
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled
		
Hippopotamus - Existing enclosure		

S N	Particulars	Details
1	Animal Name	Sambar
2	Existing Enclosure Area (in Sqm)	1650 Sqm
3	Night Shelter Area (in Sqm)	5×12 Sqm.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	Chain link
	Night Shelter	5×12 Sqm.
	Floor	Soiled
	Roof	Iron sheet covered by dry grass
	Sewerage	Open
	Drinking Water	Cemented Pond
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled
		
Sambhar - Existing enclosure		

S N	Particulars	Details
1	Animal Name	Porcupine
2	Existing Enclosure Area (in Sqm)	4×4 Sqm.
3	Night Shelter Area (in Sqm)	1×2 Sqm.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	2 inc. wire mesh
	Night Shelter	1×2 Sqm.
	Floor	Soiled/tunneled
	Roof	Covered
	Sewerage	No
	Drinking Water	Cemented Pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Porcupine - Existing enclosure

S N	Particulars	Details
1	Animal Name	Fox
2	Existing Enclosure Area (in Sqm)	5×5 Sqm.
3	Night Shelter Area (in Sqm)	1×1 Sqm.
4	Kraal Area (in Sqm)	No
5	Moat Area W & D	No
6	Existing Condition :-	
	Fencing	1 inc. wire mesh
	Night Shelter	1×1 Sqm.
	Floor	Cemented
	Roof	Asbestos Sheet
	Sewerage	Open
	Drinking Water	Cemented pot
	Flush water	No
7	Future aspect	Not as per the guidelines of CZA. To be dismantled



Fox - Existing enclosure

2.1.8 Constraints:-

1. No post of curator (Animal) or RO.
2. Inadequate staff
3. Infrastructure of old enclosure in poor state.
4. Sewage and drainage system are defunct in old enclosure.
5. Chain link fence of animal houses is not uniform.
6. Steel material rusted and eroded.
7. Enclosures do not conform to CZA guide lines.
8. Inadequate availability of equipments

2.2 Veterinary section: -

The veterinary section looks after the health care of animal. A full time veterinary doctor and a compounder are posted here. The section has well equipped veterinary hospital having Operation Theater with basis facilities, in-patient wards, tranquilization equipments, laboratory and post mortem room.

2.2.1 Duties and responsibilities:-

1. Inspection of the Zoo animals, identification of sick animals and treating them.
2. Formulation of diet and quality control of feed issued to Zoo animals.
3. To follow prophylactic protocols, periodical examination of fecal matter, blood, de-worming, vaccination and disinfection.
4. Planning breeding strategy of endangered species and their husbandry.
5. To take measures for preventive disease control in Zoos.
6. Physical and chemical capture of Zoo and strayed animals.

2.2.2 Existing equipments:-

This section has 2 tranquilizing guns, 1 microscope, 1 shadow less lamp, 1 operation table, 1 auto clave and all surgical instruments and required medicines

2.2.3 Existing staff:-

Veterinary Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	Veterinary Officer	1	1	-	26860-6600-24091
2	Compounder	1	-	1	5200-20200 Grade pay Rs. 2400
3	Lab Technician	-	-	1	5200-20200 Grade pay Rs. 2400

Veterinary Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
4	Animal Keeper	1	1	-	4440-7440 Grade pay Rs. 1800
5	Attendant	-	1 (Muster)	--	4440-7440 Grade pay Rs. 1400

2.2.4 Constraints:-

1. In adequate technical staff and animal keepers
2. Lack of equipments like sonography, x-ray machine, and hydraulic OT table electronic
3. Microscope, bone cutting machine and sterilization room.
4. Lack of post operative room.
5. No zoo hospital library
6. There is need to computerize all records

2.3 Store and feed supply section:

There is a store which stores grains, animal feed, milk, bread, egg, fruit and vegetable and grasses. This section receives feed supply daily and keeps in the containers. The food is supplied as per requirement of animals. This section also procures maintenance material for the animal houses, enclosures and building. The zoo itself grows fodder and grains.

2.3.1 Duties and responsibilities:-

1. To procure, store and supply the feed items as per requirement.
2. To get the quantity of food checked by the Veterinarian.
3. To keep the store neat and clean.
4. To prepare the food as per schedule.
5. To procure special diet items for lactating and sick animals as per veterinarian advise.
6. To procure items as required by maintenance or other sections.
7. To keep record of the purchase and disposal of all the items.

2.3.2 Existing equipments:-

It has an electronic weighing machine, containers, begs, cartons, trolley and kitchen wares.

2.3.3 Existing staff:-

Store and Feed Supply Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	Store Keeper	-	1 (Muster)	-	4440-7440 Grade pay Rs. 1800
2	L.D.C.	-	-	1	5200-20200 Grade pay Rs. 2400
3	Driver	1	1	-	5200-20200 Grade pay Rs. 2400
4	Labour	-	5 (Muster)	-	4440-7440 Grade pay Rs. 1400

2.3.4 Daily feed requirement: -

The food is received on the basis of average daily requirement. Quality is checked by veterinary staff on regular basis. The average daily consumption of food is given as under: -

Daily Feed Requirements		
S.No.	Particulars of Food	Quantity
1	Fruits and Vegetable	300 kg.
2	Beef/chicken/Mutton/pork	125 kg.
3	Grass	1000 kg.
4	Fish	7.5 kg.
5	Grains etc.	120 kg.
6	Milk	10 Ltr.

2.3.5 Constraints:-

1. In adequate space to store items.
2. In adequate staff.
3. There is no platform to load and unload material.
4. There is no kutti machine.
5. Meat house requires modernization and air-conditioning.
6. Meat house require deep freezer.
7. Storage area should have more height and adequate ventilation.

2.4 Horticulture and sanitation section:-

This section is responsible to provide naturalness in the zoo by maintaining natural flora. It is responsible all works related to plantation and maintenance of trees, gardens and lawns. A plant nursery and fodder farm is also being maintained by this section.

This section is also responsible to keep the whole campus clean and pollution free environment. It removed leftover food, dung, cut grasses fallen leaves, weeds and other items. All roads, foot-paths, toilets, drinking water points and rain shelters are also cleaned and maintained.

2.4.1 Duty and responsibilities:-

1. To maintain lawns. Trees, hedges and plants.
2. To remove weed form lawns and hedges etc.
3. To provide water to lawns, and trees.
4. To remove and collect all dry leaves from lawns.
5. To remove uprooted / dead trees when ever occasion arises.
6. To prepare seedlings of plants as per season.
7. To maintain flowering and small plant earthen pots.
8. To maintain fodder farm and plant nursery.
9. To maintain the record of manpower supplied, work under taken, and implements used by outsourcing agency
10. Cleaning of roads, paths, toilets and urinals.
11. To remove and disposal of garbage, leftover food, animals waste, bones, fallen leaves, cut grasses, weeds, tobacco pouches and plastic items.
12. Regular cleaning of drinking water coolers and tanks.
13. To spray malaria oil to check mosquito breeding.
14. To clean and dusting of all sections offices.
15. To control rodents by using traps particularly in aviaries and night houses.
16. To follow the disinfection schedule for animal enclosures.
17. To maintain all records of the section.

2.4.2 Existing equipments:-

This section has 2 lawn movers, 2 grass cutter machines. 10 pipes, 2 water pumps, 5 trolleys and brooms etc.

2.4.3 Existing staff:-

Horticulture and Sanitation Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	Range Officer	-	-	-	9300-34800 Grade

Horticulture and Sanitation Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
					pay Rs. 4200
2	Head Mali	-	-	-	5200-20200 + Grade pay Rs.2400
3	Mali	11	11	-	4440-7440 Grade pay Rs. 1400
4	Sanitary Inspector	1	1	-	5200-20200 Grade pay Rs. 2400
5	Sweeper	-	5 (Muster)	-	4440-7440 Grade pay Rs. 1400

2.4.4 Constraints:-

1. In adequate staff for horticulture and sanitation works.
2. In adequate store facilities.
3. In adequate number of dustbins.
4. In adequate implements / garden tools.
5. There is no separate office for supervisor / staff.

2.5 Maintenance section:-

This section is responsible for the maintenance of animals enclosures, road and pathways, construction work, plumbing, electrical, carpentry and masonry works etc.

2.5.1 Duty and responsibilities:-

1. Construction of buildings, animal's enclosures, roads, path, and service lines.
2. Maintenance of all buildings, animal enclosures, service lines etc.
3. Repair and strengthening of steel sections, doors, partitions, up slides etc. by welding.
4. Lubrication of sliding / partition/ gates/ doors/ pulleys/ pressure pumps etc. to ensure their proper functioning
5. Dewatering of moats / ponds/ wallow pools/ water bodies, as and when required.
6. Repair pressure pumps / heaters/ coolers and other miscellaneous equipments and to maintain them functional.
7. Replacement of damaged steel wire ropes of up-slide partitions / gates of animal enclosures.

2.5.2 Existing equipments:-

This section is equipped with 1 welding machine, 1 iron cutter, 1 grinder, 1 hole-machine, 1 set of mason equipments, 1 set of electric equipments, and 1 set of plumbing equipments.

2.5.3 Existing staff:-

Maintenance Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	J.E./R.O	-	-	-	9300-34800 Grade pay Rs. 4200
2	Plumber	-	-	-	4440-7440
3	Welder	2	1	1	4440-7440 Grade pay Rs. 1800
4	Carpenter	-	-	-	4440-7440 Grade pay Rs. 1800
5	Mason	1	1	-	4440-7440 Grade pay Rs.1800
6	Electrician	-	1 (Muster)	1	4440-7440 Grade pay Rs. 1800
7	Pump Operator	-	-	-	4440-7440 Grade pay Rs. 1800

2.5.4 Constraints:-

1. Lack of well equipped workshop and store facilities.
2. In adequate technical staff and skilled labour.
3. In adequate labour.

2.6 Security section:-

There is no security section as such. Only night guards are deputed for patrolling and to check theft of government property.

2.6.1 Duty and responsibilities:-

1. To patrol the zoo area and to protect government property.
2. To maintain law and order and the entrance inside the zoo.
3. To assist public in lost and found.
4. To control vandalism, pick pocketing and teasing of animals.

Note:- As stated above that there is no security section, so the above mentioned duties are performed by contract labour/ guards.

2.6.2 Existing equipments:-

As security is outsourced, so equipments are provided by the outsourced agency.

2.6.3 Existing staff:-

Security Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	Range Officer	-	-	-	3900-34800 Grade

Security Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
					pay Rs. 4200
2	Security Guard	2	24 (out sourced)	-	4440-7440 Grade pay Rs. 1800

2.6.4 Constraints:-

1. No separate section
2. No supervisor
3. Untrained staff
4. Lack of communication network
5. No frisking equipment
6. No public address system

Note: - The work of security section has been outsourced.

2.7 Water supply system: -

The water is supplied to the zoo area through four bore wells located at white tiger, farm area, and Veterinary hospital at open area. Indore Municipal Corporation also supplies water to the zoo.

2.8 Solid and liquid waste management:-

The solid waste includes animal excreta, leftover food, dry and fallen leaves, cut grasses and public waste. The quantum of waste is around 600 kg per day.

Solid waste is collected by the zoo employees and kept at a fixed point from where the waste is collected by Municipal Corporation personal and dumped at the dumping area.

There are 6 vermi compost units where biodegradable waste is used to make fertilizers

The liquid waste includes washing water from enclosures, animal urine, toilets and drinking water points. No quantity of liquid waste has been assessed at this moment. The liquid waste is disposed off by internal sewage lines into Khan River.

2.9 Drainage system:-

There is proper drainage system in the zoo. The water accumulated during monsoon is drained out through natural slopes in the Khan River.

2.10 Visitor amenities:-

Indore zoo is visited by 10.50 lakhs of visitors annually. The number of visitors remains high on Sunday and holidays. The visitor include adult, old, women, children and students. Following amenities have been provided to the visitors:-

1. Drinking water points - There are three drinking water points spread in the whole zoo
2. Toilets – There are three toilets, one for ladies near elephant enclosure, one general toilet near monkey lane and one toilet in front of lion house.
3. Dustbins – 50 dustbins have been kept at different locations.
4. Shelter and benches 10– 15 have been placed at different locations.
5. Zoo timings – 9 :00 am to 5:00 pm
6. Entry fees –

1. Adult	–	Rs. 10/-
2. Child	-	Rs.10/-
3. Staff with school children	-	Free
7. Photography –

1. Still camera	—	Rs.30/-
2 .Video camera	—	Rs.50/-
3. Film Shooting	-	Rs.150/-

The zoo remains closed on every Monday

2.11 Animal collection plan (existing):-

The present animal collection has been given in the **annexure -5**.

2.12 General zoo administration section:-

This section looks after the requirement of staff, and undertakes correspondence with state ministries, corporation, CZA, zoos and other departments. It also prepares plan and non plan budget and maintains cash book, contingency and challan register etc.

This section is divided into two sub sections:-

1. Establishment

2. Account section

The officer incharge acts as Director and is responsible for the operation and maintenance of the zoo. He is assisted by veterinarian and support staff. The officer incharge reports to Commissioner Municipal Corporation and management committee.

2.12.1 Duty and responsibilities:-

1. To maintain diary and dispatch of letters.

2. To invite tender for supply of diet and maintenance articles.
3. To process for out sourcing the various works and to engage man power on contract.
4. To coordinate various meetings.
5. To undertake correspondence with state ministries. CZA, corporation, zoo and other departments
6. To procure furniture, stationary liveries for employees etc.
7. To prepare plan and non plan budget and revise estimates.
8. To process cases of GPF withdrawal and retirement benefits.
9. To prepare regular pay, Arrear, DA and Bonus, LTC, TA, Medical, gratuity, leave encashment bills.
10. To issue salary slip, GPF statement and form 16 of Income Tax.
11. To process cases of loans for Scooter, Cycle and House building.
12. To maintain record of visitor data and revenue collected.
13. To submit monthly statement of expenditure to department.
14. To process telephone, water and electricity bills.
15. To prepare duty roaster for booking counters.
16. To maintain cash book, contingency register, cheque and challan register.
17. To deposit cash collected from gate.
18. To keep record of entry tickets.
19. To pass the bills of outsourced agencies.

2.12.2 Existing equipments:-

The officer in-charge has an official vehicle, computer facilities and furniture and almiraha for secretarial staff.

2.12.3 Existing staff:-

1. Establishment

Establishment Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	Office Superintendent	1	1	-	9300-34800 Grade pay Rs. 3200
2	Senior Clerk	1	1	-	5200-20200 Grade

Establishment Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
					pay Rs. 2400
3	L.D.C.	-	-	-	5200-20200 Grade pay Rs. 2400
4	Peon	-	2 (Muster)	-	4440-7440 Grade pay Rs. 1400

2. Account section

Account Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	*Junior Accountant	-	1 (Muster)	-	5200-20200 Grade pay Rs. 2400
2	Booking Clerk	2	2	-	5200-20200 Grade pay Rs. 2400
3	Cashier	-	1	-	5200-20200 Grade pay Rs. 2400
4	Clerk	3	3	-	5200-20200 Grade pay Rs. 1800
5	Peon	1	1	-	4440-7440 Grade pay Rs. 1400

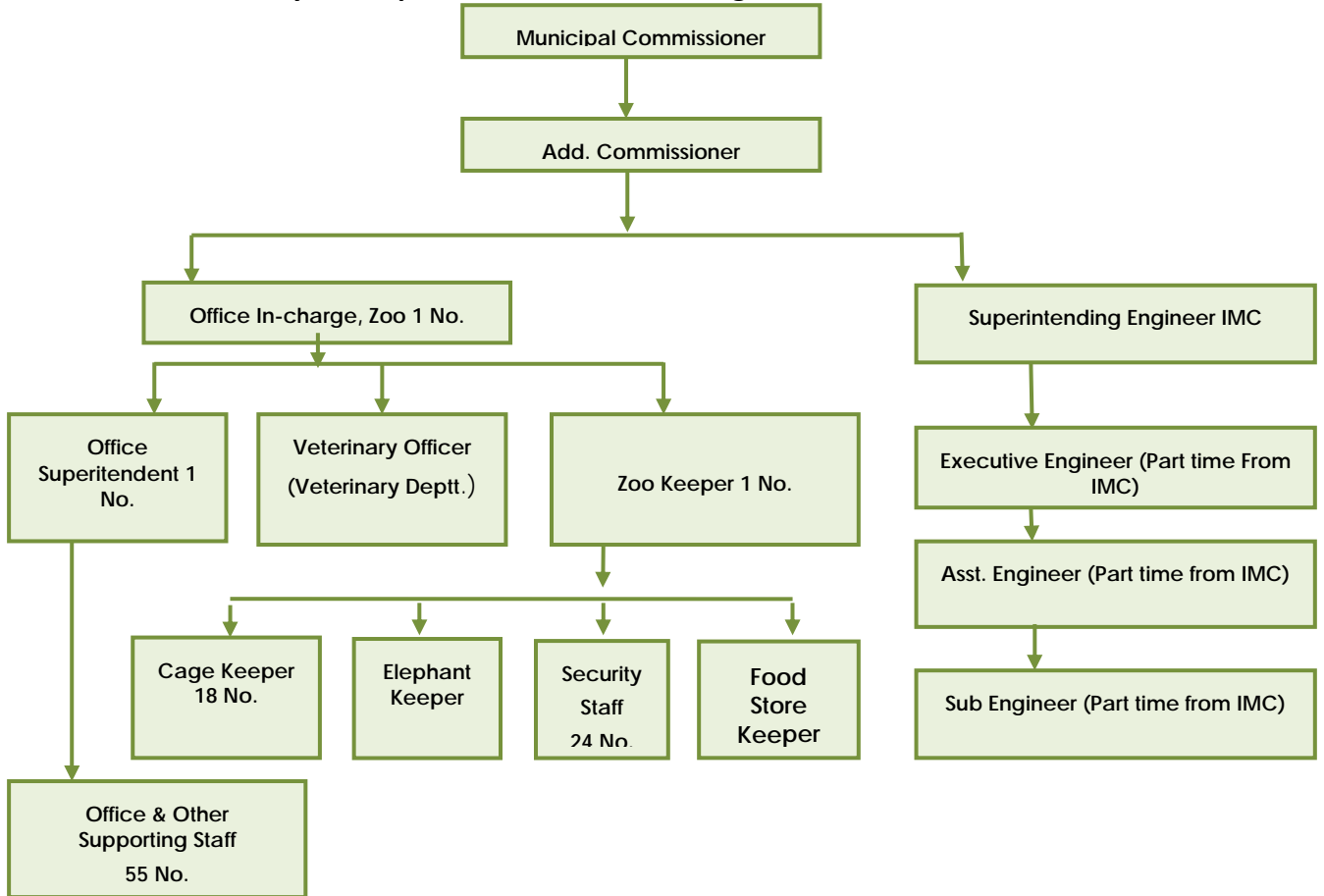
3. Zoo in-charge office:

Zoo in-charge office					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	In-charge zoo	1	1	---	70000
2	Driver	1	1	---	5200-20200 Grade pay Rs. 1800

2.12.4 Constraints:-

1. No separate administrative office.
2. Inadequate office equipments.
3. Inadequate staff.

2.12.5 The hierarchy of the present administration is given as under:-



2.13 Research section:-

The zoo does not have any research section.

2.14 Conservation breeding:-

The Indore zoo is neither coordinating nor participating institute in conservation breeding programme.

2.15 Education and awareness section:-

There is no education section as such in the zoo, however awareness programmes like screening of films, Wild life week Earth day, World environment day, Drawing painting competition, distribution of pamphlets, wild animal save campaign are conducted by muster role staff. The animal information signages have been fixed at each enclosure. There is audio visual hall in the campus where films on wildlife are shown.

2.15.1 Existing Staff: -

Education and Awareness Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
1	Education Asst.	-	-	1	9300-34800 Grade pay Rs. 2400

Education and Awareness Section					
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale
2	Audio Visual Operator	-	1 (Muster)	-	4440-7440 Grade pay Rs. 1800
3	Attendant	-	2 (Muster)	-	4440-7440 Grade pay Rs. 1400

2.16 Any other unique activity:-

2.16.1 Adoption scheme:-

This scheme has been started in the name of “Vanya Prani Punyodaya yojana” in the zoo. Average expenditure for feeding of an animal is calculated. Scheme is being brought to the notice of public by advertisements. People are motivated to adopt the animal for particular period. The name of animal adopter is published in the news paper. The scheme is appreciated by media and people. The people are voluntarily participating in the scheme. This scheme has received spontaneous response in the form of enormous love and affection with zoo animal from the people of Indore and surrounding areas. 26 animals have been adopted by the enthusiastic people.

2.16.2 Prohibition on use of polythene bags and plastic bottles:-

Carrying of polythene bags and plastic bottles are prohibited inside the zoo as these are hazardous when consumed by the animals. Every visitor is checked at entry point for polythene bags and plastic bottle. If it is found same is kept at office and cloth bag given to visitor for carrying his material at the time of exit this cloth bag is returned to the office.

PART II

3. CHAPTER - III

3.1 Future objectives:-

There is no change in future objectives, vision, mission and theme as given in part-I Chapter-1, however the same is reproduced as under:-

3.2 Objectives:-

The aim of the zoos is to complement and strengthen the national efforts in conservation of rich biodiversity of the country, particularly the fauna. However the zoo will strive to achieve the following objectives:

1. Conservation of wild animals particularly endangered species by providing near natural habitat.
2. To create awareness towards wild animals and nature in the common man.
3. Wildlife education and interpretation for the purpose of communicating conservation values to the visiting public, for understanding the unique faunal wealth of this Zoo and its role in environment of the city.
4. To provide facility of health care and rehabilitation of rescued animals.
5. To provide recreational facility to a large number of people by utilizing out-door setting of nature without detriment to any of the essential objectives of zoo as prescribed by CZA.

3.3 Vision of the zoo:-

Inspiring passion for nature and saving wildlife for future generations.

3.4 Mission of the zoo:-

The mission of the Zoo is to create awareness about conservation of wild life among the community.

3.5 Theme:-

The display of animal has been done on taxonomical system. The visitors will see the animals of a particular group in one location for better understanding of their behavior and differences. The visitors will have exciting experience of different taxonomical group as under:-

1. Reptiles
2. Primates

3. Small cats
4. Large cats
5. Herbivore
6. Bird aviary
7. Birds of wetland
8. Flight less bird

3.6 Strategy to achieve objectives:-

1. **Ex-situ conservation:-** The zoo displays endemic species like tiger, lion, panther, bear, hyenas, wolf, fox, crocodile, ghariyal, parakeets and peafowl. Efforts will be made to provide them adequate space for movement, health care and balance diet for their breeding and longevity. The animal section will be strengthened by the recruiting technical staff and upgrading their skill by training.
2. **Education and awareness:-** In order to achieve the objective, an education cum research section will be created in the zoo with adequate man power and infrastructure like interpretation center, published material and audio visual.

This section will develop and education and awareness programme as under:-

1. To develop interactive signages.
2. To prepare animals signages – giving basic information's and their characteristics
3. Providing of general information signages at prominent places.
4. To conduct guided tour, organize lectures, talks an competitions.
5. To publish guide book, brochures, guide map and leaflets about the zoo and its inmates.
6. To organize orientation programmes for the selected group.
7. To conduct various competitions on the eve of wildlife week and other specific days.
8. To involve volunteers, public, NGO'S to take up awareness activities.

This section will also collect data on general health, behavior, breeding biology, nutrition and growth of different species. It will also maintain the animal history card and stud book of endangered species.

4. CHAPTER – IV

FUTURE ACTION PLAN

4.1 Future planning:-

The future planning is aimed of providing directions for development of this zoo in the coming 20 years i.e. 2014-34 and will be reviewed after 10 years. The proposal of development is based on the availability of facilities, resources and climatic conditions. The guidelines of CZA and advice from zoo experts and wild lifers have been taken into consideration in the formulation of action plan. The development has been planned keeping in view the strategy to achieve the prescribed objectives.

4.2 Animal collection plan:-

The zoo aims to display animals keeping in view the local habitat, climatic conditions and the resources available. This zoo is medium zoo. The CZA has formulated guidelines for animal collection for small zoo as under.

1. Species of local area / ecosystem 60% of the total sp. Displayed
2. Species of region 20% of the total sp. Displayed
3. Species of nation 10% of the total sp. Displayed
4. Exotic species 10% of the total sp. Displayed

Table 1: Animal collection plan for Types of Animals

Animal collection plan of Mammals for Kamla Nehru Prani Sangrahalaya, Indore is as under:-

A. Mammals												
S N	Animals Name	Taxonomic name	Existing				Proposed/Requ ired			Existing Facility	Existing Area in Sq.m.	Proposed Area in Sqm.
			Male	Female	Unsex	Total	Male	Female	Total			
1	White Tiger	Panthera tigris	0	0	0	0	2	0	2	yes	441 6	4416
2	Tiger Normal Color	Panthera tigris	3	1	0	4	1	1	2	yes	485 8	4858
3	Leopard	Panthera pardus	3	1	0	4	0	2	2	yes	116 1	1161

A. Mammals												
S N	Animals Name	Taxonomic name	Existing				Proposed/Required			Existing Facility	Existing Area in Sqm.	Proposed Area in Sqm.
			Male	Female	Unsex	Total	Male	Female	Total			
4	Jungle cat	Felis chaus	2	0	0	2	0	3	3	No	40	200-300
5	Civet cat	Paradoxurus hermaphroditus	0	0	0	0	1	3	4	No	–	200-300
6	Lion	Panther leo	0	0	0	0	2	4	6	NO	–	5350
7	Sloth bear	Melursus Ursinus	1	1	0	2	1	1	2	yes	2763	2763
8	Hyaena	Hyaena hyaena	3	2	0	5	0	0	0	yes	2423	2425
9	Wolf	Canis indica	0	3	0	3	2	0	2	No	–	1750
10	Jackal	Canis aureus	0	3	0	3	3	0	3	yes	1350	1300
11	Fox	Vulpes bengalensis	1	1	4	6	-	-	-	yes	100	400
12	Common langoor	Semnopithecus entellus	2	0	0	2	2	4	6	No	40	1020
13	Rhesus Macaque	Macaca mulatta	2	6	0	8	0	0	0	No	42	2065
14	Bonnet Macaque	Macaca Rediata	1	4	0	5	2	3	5	No	40	1025
15	Spotted deer	Axis axis	5	12	1	18	2	8	10	No	200	3950
16	Black buck*	Antilope cervicapra	19	28	2	49	0	0	0	No	150	2980
17	Nilgai	Boselaphus tragocamelus	5	5	0	10	0	0	0	No	170	1520
18	Hippopotamus	Hippopotamus amphibius	3	1	0	4	0	0	0	No	170	4850
19	Sambar	Cervus unicolor	0	0	0	0	5	5	10	No	–	1940
20	Porcupine	Hystrix	3	5	3	11	0	0	0	No (ol	–	110

A. Mammals												
S N	Animals Name	Taxonomic name	Existing				Proposed/Required			Existing Facility	Existing Area in Sqm.	Proposed Area in Sqm.
			Male	Female	Unsex	Total	Male	Female	Total			
0		indica								d)		
	A	Total	53	73	10	136	23	34	57	-	-	44483

Animal collection plan of Reptiles for Kamla Nehru Prani Sangrahalaya, Indore is as under:-

B. Reptiles												
S N	Animals Name	Taxonomic name	Existing				Proposed/Required			Existing Facility	Existing Area in Sqm.	Proposed Area in Sqm.
			Male	Female	Unsex	Total	Male	Female	Total			
1	Crocodile	Crocodylus palustris	2	2	6	10	0	0	0	yes	650	650
2	Ghariyal	Givialis gangeticus	1	4	0	5	0	0	0	yes	500	500
3	Indian rock Python	Python molurus	1	0	1	2	0	0	0	No	25	150
4	Tortoise Star back	Geochelon sps.	0	0	19	19	0	0	0	No	40	100
5	Cobara	Naja naja.	0	0	0	0	2	4	6	No	-	150
6	Rat Snake	Ptyas mucosus	0	0	0	0	2	4	6	No	-	80
7	Viper	Vipera russelli	0	0	0	0	2	4	6	No	-	100
8	Common Sand Boa	Eryx johnii	0	0	0	0	2	4	6	No	-	80
9	Red Sand Boa	Eryx sp.	0	0	0	0	2	4	6	No	-	80
10	Banded Krait	Bungarus fasciatus	0	0	0	0	2	4	6	No	-	80
	B	Total	4	6	26	36	12	24	36			1970

Animal collection plan of Birds for Kamla Nehru Prani Sangrahalaya, Indore is as under:-

C. Birds												
S N	Animals Name	Taxonomic name	Existing				Proposed/Required			Existing Facility	Ex. Area in Sqm.	Proposed Area in Sqm.
			Male	Female	Unsex	Total	Male	Female	Total			
1	Peafowl white	Pavo cristatus	4	4	0	8	0	0	0	No (old)	20	300
2	Alexandrine parakeet	Psittacula eupatria	10	5	0	15	0	0	0	No (old)		100
3	Blossom headed parakeet	Psittacula cyanocephala	1	0	0	1	5	5	10	No (old)		80
4	Roseringed parakeet	Psittacula krameri	8	5	0	13	0	0	0	No (old)	22	80
5	Cockateil	Nymphicus hollandicus	2	2	0	4	4	4	8	No (old)	15	80
6	Owl	Urenus Eagle. Bubo bubo	0	0	1	1	1	1	2	No	20	80
7	Sarus Crane	Grus antigone	1	0	1	2	1	1	2	No (old)	-	Adjusted with samber
8	Emu	Dromains novaehollandiae	1	1	0	2	1	1	2	No (old)	200	1350
9	Silver Pheasant	Lophura nycthemera	0	1	0	1	2	4	6	No (old)	25	80
10	Macaw (blue & yellow)	Ara ararauna	0	0	0	0	3	3	6	No	-	80
11	Lory	Trichoglossus haematodus	0	0	0	0	2	4	6	No	-	80

C. Birds												
S N	Animals Name	Taxonomic name	Existing				Proposed/Required			Existing Facility	Ex. Area in Sqm.	Proposed Area in Sqm.
			Male	Female	Unsex	Total	Male	Female	Total			
12	Golden Pheasant	Chysolophus pictus	0	0	0	0	2	4	6	No	-	80
13	Adjutant Stork	Leptoptilos dubius	0	0	0	0	5	5	10	No	-	Wetland are an open enclosure area = 2070 sq. m.
14	Painted Stork	Mycteria leucocephala	0	0	0	0	2	4	6	No	-	
15	White ibis	Threskiornis aethiopica	0	0	0	0	2	4	6	No	-	
16	Spoon bill	Platalea leucorodia	0	0	0	0	2	4	6	No	-	
17	Horn bill	Tockus birostris	0	0	0	0	2	4	6	No	-	
18	Pelican Rosy/white	Pelicanus onocrotalus	1	0	0	1	1	1	2	No (old)	-	
	C	Total	24	14	2	39	35	49	84		-	4460

4.3 Description of revised layout plan:-

Layout map has been drawn on the scale of 1:1400 and as per the topography of the site, contour line, have been taken at an interval of 1 to 5 meter. Existing features like Khan River water bodies, parks and gardens, drinking water points, kiosk etc. have been shown. Proposed features like visitor's circulation plan, proposed roads, site for the disposal of carcasses, and other surroundings activities have also been shown. The color code which has been used in the map is black for the existing animal enclosures, green for the enclosure which is to be modified, red colour for the reconstruction of existing enclosure after the demolition and blue color is for the construction of new enclosures.

The animals have been displayed in taxonomical form as under:-

1. Reptiles
2. Primates

3. Small cats
4. Large cats
5. Herbivore
6. Bird aviary
7. Birds of wetland
8. Flight less bird

All the new enclosures will have enough space for movement, hide and brisk walking. These will conform to CZA guide lines. A visitor road starting from entrance will go up to crocodile exhibit, where it will be bifurcated. This road will have a divider in the form of hedge to segregate the in going and out coming visitors. The bifurcated road will traverse in a loop to show primates, small cats, large cats and herbivores and joins the main visitor road near the crocodile. A new bridge over Khan River will be constructed for the loop road for return journey. The visitors will be able to see aviary birds, bird of wetland and flightless birds on their left while coming out. The one round of the zoo on this road will be of about 2.50 km. It will take about two hours to see the zoo on foot. All the service lines have been marked in the layout plan which is placed at **annexure 12**.

The revised layout plan has been recommended for approval by the CZA's expert group in its 29th meeting held on 11.04.2012.

The copy of revised layout plan is placed at **annexure - 6**.

4.4 Visitor circulation:-

The visitor circulation is well defined and is from left to right. The visitors enter from the A.B road side. The entry leads to interpretation center for orientation. After visiting center the visitor go to the first exhibit of reptile's house, followed by other reptiles like gharial and crocodile. There after the visitor will move in a loop to see different kinds of primates located on sub loops / secondary paths, small and large cats, herbivores and finally birds on their way to exit. Directional signages will be put a different crossings to guide the visitors for a proper exhibit. This will reduce the walking time.

4.5 Services:-

The zoo proposes to provide services for its operation and maintenance in the following ways:-

1. Supply of feed and essential items:- For this a service gate has been proposed near the Children science park. The majority of the services will be under taken through this gate. A service road behind the night houses has been created for unobstructed

movement of service vehicle for supply of feed items to animals. The service gate and the network of service road can be seen in the layout plan.

2. Internal services like solid waste disposal, water management system, liquid waste disposal (sewage), drainage system and electricity supply systems are described below:-

4.5.1 Water management system:-

The water is obtained from the following sources.

1. Bore wells.
2. Municipal Corporation.
3. STP.

There are four bore wells, located near white tiger, farm area, and veterinary hospital and near bridge. One more bore well is proposed to be built near bear enclosure. The water from the bore well will be collected in one reservoir of capacity of 50,000 ltr. The report of water sample tested by public health department is placed at **annexure – 7**. A water treatment plant will be installed near reservoir for its treatment before release through over head tank of 30,000 ltr capacity. The drawing of potable water (drinking) distribution system is placed at **annexure – 8**.

The water from Municipal Corporation will also be utilized through a network of supply lines for drinking of visitors, animals and office.

The water from STP will be used for horticulture, fodder farm and nursery.

The projected requirement of water is given as under.

Table 2: Water Requirements

Drinking water requirement

Sr. No.	Items	Drinking water requirement in ltr.	Basis of Calculation for Potable water	Non potable water requirement in ltr.	Basis of Calculation for Non-Potable water
1	Animal enclosures (No 66)	1000 lit.	5 ltr of water has been considered for each mammal. Rest 15 ltr water has been considered for 39 Birds and 36 Reptiles with wastage during water supply	50,000 lit.	250 ltr for each proposed mammals has been considered

Sr. No.	Items	Drinking water requirement in ltr.	Basis of Calculation for Potable water	Non potable water requirement in ltr.	Basis of Calculation for Non-Potable water
2	Toilets, water points	1000 lit.	60 ltr of drinking has been considered for each proposed 8 resting kiosk & for 7 drinking facilities at different location	1000 lit.	for cleaning purpose- 500 ltr for a toilet
3	Canteen/kiosk	1000 lit.	Has been considered as per the daily consumption of canteen	1500 lit.	for cleaning purpose- 500 ltr for a Canteen/kiosk
4	Office/ field office	100 lit.	as per the daily consumption	500 lit.	for cleaning purpose- 500 ltr
5	Veterinary hospital (rescue centre, quarantine and post mortem room)	50 lit.	as per the daily consumption	200 lit.	for cleaning purpose- 200 ltr
6	Store	20 lit.	as per the daily consumption	30 lit.	for cleaning purpose- 30 ltr
7	Interpretation centre	50 lit.	as per the daily consumption	100 lit.	for cleaning purpose- 100 ltr
8	Work shop	20 lit.	as per the daily consumption	50 lit.	for cleaning purpose- 50 ltr
9	Miscellaneous	3000 lit.	as per the daily consumption	50,000 lit.	for cleaning of Cars/Tractors/Two wheelers/Meat Trolley/Small Trucks etc
	Total	6240 lit.		103380 lit.	

Non potable water requirement

Sr.No.	Items	Non potable water requirement in ltr.	Basis of Calculation for Non-Potable water
1	Lawns	50,000	5000 ltr per Ha has been considered for the maintenance of Lawns and green spaces around the enclosures
2	Nursery	15,000	5000 ltr per Ha has been considered for the maintenance of Nursery
3	Hedges	15,000	100 ltr per rms per day for the maintenance of Hedges along the Pathways and enclosures
4	Moats	-	
5	Fodder farm	1,00,000	200 ltr per sqm per day for the maintenance of fodder farm
6	Fountain	10,000	1000 ltr per fountain is required
7	Water bodies	15,000	
8	Miscellaneous	25,000	
	Total	2,30,000	

Total: - Potable water requirement 3340 ltr per day

Non potable water requirement 333380 ltr per day

4.5.2 Solid waste disposal:-

The solid waste of the park will consist of following materials.

1. Leftover food.
2. Fecal matter.
3. Fallen leaves.
4. Grasses.
5. Visitors left over.
6. Office waste.

It has been proposed to segregate the non bio-degradable waste. This waste will be disposed off by the authorized outsourced agency or municipal corporation personnel. The bio-degradable waste will be used in vermi compost. This vermi compost will be used for horticulture purpose.

4.5.3 Liquid waste disposal (sewage):-

The liquid waste includes water from enclosures washing, animal urine and excreta, toilets and drinking water points. Total daily use of water in zoo is 50,000.00 ltr. Total liquid waste generated daily is 80% of the used water i.e. 40,000.00 ltr per day. After treatment, treated water will be 90% of the waste water i.e. 36,000 ltr. Treated water will be used for irrigation, horticulture and flushing. Details have been given in the following table.

Sr.No.	Animal Name	Water used in ltr.	Frequency of water replacement
1	Hippopotamus	60000	Weekly
2	Ghariyal	50000	Weekly
3	Magar	50000	Weekly
4	Tiger	20000	Weekly
5	Lion	10000	Weekly
6	Hyena	10000	Weekly
7	Leopard	10000	Weekly
8	Jackal	10000	Weekly
9	Wolf	10000	Weekly
10	Cats (Civet, Jungle, Fox)	2000	Weekly
11	Blue Bull	10000	Weekly
12	Spotted Dear	10000	Weekly
13	Black buck	10000	Weekly
14	Sambhar	10000	Weekly
15	EMU	2000	Weekly
16	Langoor	2000	Weekly
17	Bonnet macaque	2000	Weekly
18	Macaque	2000	Weekly
	Total of Weekly consumption in ltr.	280000	Weekly
19	Elephant	5000	Daily
20	Beer	5000	Daily
	Total of Daily consumption in ltr.	10000	
	Over all Daily consumption in ltr.	50000.00	

New sewer line network is proposed which will cater the sewage discharge of the whole area to the STP where this will be treated and re-circulated for horticulture, washing, cleaning purpose. The STP is designed considering demands for next 10 years. The drawing of internal sewage disposal system is placed at **annexure – 9**.

4.5.4 Drainage system:-

During monsoon the whole zoo may be in undated. The excess water will be disposed off by a network of pipe lines and open drains as shown in the map placed at **annexure – 10**.

4.5.5 Electricity supply system:-

MP state electricity board supplies electricity directly to the zoo. The detail of the electricity required is given as under. Drawing of electricity distribution system is placed at

annexure – 11. Two number of diesel generators each with capacity of 62.5 each will be installed in the maintenance section. This DG sets will start and switch off automatically.

Table 3: Power requirement:-

Sr.No.	Items	Power requirement (in KV)
1	Gate	0.5 kv
2	Parking	1.0 kv
3	Interpretation centre	3 kv
4	Store	0.2 kv
5	Animal houses	5 kv
6	Office / field office	1.0 kv
7	All road sides	8.0 kv
8	Pump house	12.0 kv
9	Veterinary hospital	4.0 kv
10	Work shop	4.0 kv
11	Miscellaneous	3.0 kv
12	Total	41.7 kv

4.6 Animal section:-

As stated in the appraisal, this section is responsible for the up keep of animals and their houses so that they get a hygienic and naturalistic environment. Adequate measures will be taken to ensure the safety of animals, caretakers and visitors while designing the exhibit. Each exhibit will have proper drainage of excess water and arrangements for removal of excreta and residual waste.

4.6.1 Additional staff requirement:-

Animal Section: Staff Details			
Sr. no.	Post	Number	Scale
1	Range Officer	1	9300-34800 + Grade pay Rs. 4200
2	Head Animal Keeper	--	5200-20200 + Grade pay Rs. 2400
3	Animal Keeper	19	4440-7440 + Grade pay Rs. 1800
4	Attendant/Labour	2	4440-7440 + Grade pay Rs. 1400

4.6.2 Equipment and vehicle requirement:-

Animal Section: Equipment and Vehicles Details		
Sr. No.	Items	Number
1	Net	2
2	Rope	6
3	Bamboo	-
4	Trolley	2

Animal Section: Equipment and Vehicles Details		
Sr. No.	Items	Number
5	Squeeze Cage	2
6	Trap Cage	2
7	Gunny bag	1
8	Blindfold towel	5
9	Pipe	6
10	Search light	5
11	Tranquillizing gun	1
12	Blow pipe	1

4.6.3 List of animal enclosures to be demolished and new to be constructed:-

1. Royal Bengal Tiger
2. Jungle cat
3. Spotted deer
4. Emu
5. Alexandrine parakeet
6. Blossom headed parakeet
7. Rose ringed parakeet
8. Love birds
9. Cockatiel
10. Peafowl white
11. Sarus crane
12. Owl
13. Silver pheasant
14. Golden pheasant
15. Painted stork
16. Rosy pelican
17. Indian rock python
18. Star tortoise
19. Wolf
20. Common langoor
21. Rhesus macaque
22. Bonnet macaque
23. Black buck
24. Nilgai
25. Hippopotamus
26. Sambar
27. Porcupine
28. Fox

The exhibits of above mentioned species are smaller in size, dingy and do not conform to CZA norms for animal exhibits as stated in the appraisal report. These will be replaced by the new enclosures after getting their designs approved from the CZA.

Besides the above following of new enclosures will also be constructed after getting the design approved from CZA.

1. Lion
2. Jungle cat
3. Civet cat
4. Birds of wetland
5. Fox

4.6.4 Brief of animal enclosures to be constructed:-

(1) Lion

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)	Remarks
L	B	H		
2.75	1.80	3	Lion -5350	<p>The exhibits will be covered on three sides with 5cm x 5 cm x 8g chain link fence, with height of 5 mtr. And 1.5 mtr inverted at the top at 60 degree angle.</p> <p>V-shapes dry moat with depth of 5 mtr and horizontal width at the top 8 mtr.</p> <p>To rule out any chance of its escape by developing speed and crossing the moat in a long leap, the ground slope will be kept downward.</p> <p>The fenced sides will have over grown shrubs to conceal the metallic parts.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Shady trees of moderate height will be provided. 2. Groove of bushes will be provided. 3. Shelters/ den will be made. 4. Scratching logs will be provided. 5. Pools / streams will be made.

(2) Civet cat and jungle cat

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)	Remarks
L	B	H		
1.80	1.50	2	200-300 for each species	<p>The enclosures will be covered on all sides with 1.5 x 1.5 chain link fence</p> <p>The viewing will be through toughened glass fixed at one place or through fence. The fenced sides will have over grown shrubs to conceal the metallic parts.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Small bushes will be proved. 2. Burrows/ dens will be made. 3. Small logs will be fixed. 4. Wooden ladder will be provided. 5. Cubicles will have darkness.

(3) Fox and wolf:

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)	Remarks
L	B	H		
2	1.50	2.5	<p>Fox: 400</p> <p>Wolf: 1750</p>	<p>The enclosures will be covered on three sides with 5cm x 5cm x 10g chain link fence of 2.5 mtr high.</p> <p>The front of viewing side will have V-shaped dry moat (flat bottomed) with depth of 2.6 mtr and width of 5 mtr.</p> <p>The fenced sides will have over grown shrubs to conceal the metallic parts.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Burrows / dens will be made. 2. Small old logs will be fixed for playing. 3. Carcass feeding will be done. 4. Groove of bushes will be provided.

(4) Primates- Grey Langoor, Bonnet, Rhesus macaque.

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)	Remarks
L	B	H		
2	1.5	2.5	<p>Langoor – 1020</p> <p>Bonnet – 1025</p> <p>Rhesus – 2065</p>	<p>The enclosures will be island type having a U Or V-shaped dry or wet moat around with a depth of 5 mtr and width of 7 mtr for langoor and depth of 4 mtr and width of 6 mtr for monkeys. Or the enclosures will be covered by chain link fence of 5 mtr in height with inclined inward steel plate of one</p>

Cell size (in mtr)			Area proposed for enclosure (sqm mtr)	Remarks
L	B	H		
				<p>meter width on the top. The steel plate should be placed at the angle of 60°</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Trees and logs shall be provided. 2. Small logs will be fixed in cubicles. 3. Adequate shelter will be provided. 4. Rope for swinging will be fixed. 5. Food will be provided 3- times a day.

(5) Sambar, chital, black buck and Neelgai

Cell size (in mtr)			Area proposed for enclosure (sqm mtr)	Remarks
L	B	H		
3	2	2.5	<p>Sambar – 1940</p> <p>Spotted deer (Chital) – 3950</p> <p>Black buck – 2980</p> <p>Neelgai – 1520</p>	<p>The enclosures will be covered on three sides with 7.5 cm x 7.5 cm x 10g chain link fence of 2.5 mtr high. The front or viewing side will have V-shaped dry moat with a depth of 2.5 mtr and width of 6 mtr.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Grove of bushes will be provided 2. Adequate poles / logs to rub horns / antlers will be fixed. 3. Salt lick blocks will also be kept. 4. Food will be provided at 2-3 places.

(6) Hippopotamus:

Cell size (in mtr)			Area proposed for enclosure (sqm mtr)	Remarks
L	B	H		
5	3	0.5	Hippo - 4850	<p>The exhibit will be covered by stone wall of the height of 1 mtr to 1.5 mtr. There will be two water bodies of 200 sqm mtr and 400 sqm. The depth of water bodies will be 1.50 mtr in the center.</p> <p>There will be an inlet and outlet for the water.</p> <p>The area around water bodies will be kuccha with mud.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Enough trees covered will be provided on the sides. 2. Mud will be provided for mud bath.

(7) Porcupine:

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)	Remarks
L	B	H		
2	1.5	1.5	Porcupine - 110	<p>The exhibits will be covered by 5 cm x 5 cm x 12g chain link fence of 2.5 mtr high on all sides with top open.</p> <p>The foundation will be of concrete masonry 1 mtr deep to check the digging of tunnels for escape.</p> <p>60 percent of the arena will be kept kuccha</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Sandy soil will be provided for making burrows. 2. Adequate shady trees will be planted.

(8) Bird aviary:

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)			Remarks
L	B	H		Area	Height	
Parakeet.						<p>The minimum prescribed size by CZA for the outdoor enclosures will be followed as indicated in the table.</p> <p>Each aviary will be a covered with wire mesh of size of 1" x 1" except for love birds and cockatiel where this size of wire mesh will be 1 cm x 1 cm.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Perches of bamboo of varying diameter (2-3) will be provided 2. Small size tree / bushes will be planted. 3. Earthen pots or nest boxes will be kept. 4. Nesting material will be provided.
1	1	1.30	Alexandrine parakeet	100	6	
Pheasants.			Blossom headed parakeet	80	6	
1.10	1.10	1.30	Rose ringed parakeet	80	6	
Love birds			Love birds	80	6	
Love bird & cockatiel			Cockatiel	80	6	
0.80	0.80	1.30	Owl	80	6	
Macaw			Silver pheasant	80	3	
2	1.5	2.5	Golden pheasant	80	3	
Macaw			Macaw	80	6	
Lory			Lory	80	6	
Grey Horn bill			Grey Horn bill	80	6	
1	1	1.30	White peafowl	300	3	
White peafowl						
2	1.5	2.5				

(9) Wetland birds:- Painted stork, Pelican, White ibis, Spoon bill and Adjutant stork

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)	Remarks
L	B	H		
There will be no cell			2070	<p>About 60 percent of the area will be in the form of water body.</p> <p>Small islands of different sizes (25 sqm to 75 sqm) with adequate trees and bushes will be created.</p> <p>The periphery of the water body will have thick row of typha plants.</p> <p>The depth of water body will be from 1 ft to 5 ft. There will be a system of releasing the water and its exit.</p> <p>The whole area will be covered with chain link fence. The height of chain link fence will be 8 mtr.</p> <p>Adequate food will be provided. Fish fry will be released to grow fish in the water body.</p>

(10) Emu:

Cell size (in mtr)			Area proposed for enclosure (sqr mtr)	Remarks
L	B	H		
3	2	2.5	Emu -1350	<p>The enclosures will be covered on three sides with 2" x 2" chain link fence of 2.5 mtr high. The front or viewing side will have V-shaped dry moat with a depth of 1.5 mtr and width of 3 mtr.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Australian plants / groove of bushes will be planted. 2. Grass land will be created. 3. Shallow water pool with fountain will be created 4. Marble chips will be provided at 2-3 locations. 5. Soft soil / nesting material (dry hay) will also be provided.

(11) Star tortoise:

Cell size (in mtr) L B H	Area proposed for enclosure (sqm mtr)	Remarks
There will be no cell 3	Star tortoise – 100	<p>The enclosures will be covered by 2" x 2" chain link fence of all around. The height of the chain link fence will be 2.50 mtr. Or A stone wall of height of 1 mtr to 1.25 mtr will be constructed with a service gate.</p> <p>A water body of about 25 sqm the depth of 1 mtr will be developed. There will be provision for the inlet and exit of water</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Sand beds will be provided 2. Flow of water will be maintained to check over heating in summer.

(12) Reptiles house: Indian rock python, Cobra, Rat snake, Viper, Sand boa, Red sand boa and banded krait

Cell size (in mtr) L B H	Area proposed for enclosure (sqm mtr)	Remarks
There will be no cell	Indian rock python -150 Cobra – 150 Rat snake – 80 Viper – 100 Sand boa – 80 Red sand boa – 80 Banded krait - 80	<p>An area of 910 has been kept for the development of reptile's house.</p> <p>10-15 enclosure with display area as per CZA norm will be made.</p> <p>The design of the display will be such that half of the portion will have access to sun.</p> <p>Viewing will be through glass.</p> <p>A visit to zoo having reputed reptile house will be made and advice of experts will also be sought.</p> <p>Enrichment:</p> <ol style="list-style-type: none"> 1. Sand beds will be provided 2. Flow of water will be maintained to check over heating in summer.

4.6.5 Proposed improvement / modification in the animal section:-

Table 4: Existing enclosures requiring improvement		
S.No.	Enclosure name	Improvement
1	White Tiger	<p>Enrichment: - 1. Wooden logs required for scratching. 2. Construction of cave. 3. Construction of water fall. 4. Construction of big water body.</p> <p>Night shelter: - 1. Damaged tiles to be replaced. 2. Rusted iron bars and chain link to be changed.</p>
2	Sloth bear	<p>Enrichment: - 1. Construction of cave. 2. Construction of water fall. 3. Construction of hut. 4. Wooden logs to be provided.</p> <p>Night shelter: - 1. Damaged tiles to be replaced. 2. Rusted iron bars and chain link to be changed.</p>
3	Normal colour tiger	<p>Enrichment: - 1. Wooden logs required for scratching. 2. Construction of cave. 3. Construction of water fall.</p> <p>Night shelter: - 1. Damaged tiles to be replaced. 2. Rusted iron bars and chain link to be changed. 3. Repairing of treatment cage. 4. Electric wires to be replaced. 5. Fan to be removed.</p>
4	Leopard	<p>Enrichment: - 1. Wooden log to be fixed. 2. Construction of cave. 3. Construction of machan.</p> <p>Night shelter: - 1. Damaged tiles to be replaced. 2. Rusted iron bars and chain link to be changed. 3. White washing of whole enclosures. 4. Electric wires to be replaced.</p>
5	Hyena	<p>Enrichment: - 1. Wooden log to be fixed. 2. Construction of cave.</p> <p>Night shelter: - 1. Damaged tiles to be replaced. 2. Rusted iron bars and chain link to be changed. 3. White washing of whole enclosures. 4. Electric wires to be replaced.</p>

Table 4: Existing enclosures requiring improvement		
S.No.	Enclosure name	Improvement
6	Jackal	<p>Enrichment: - 1. Wooden log to be fixed. 2. Construction of cave</p> <p>Night shelter: - 1. Damaged tiles to be replaced. 2. Rusted iron bars and chain link to be changed. 3. White washing of whole enclosures. 4. Non functional electric fan to be replaced. 5. Wall of the night shelter to be plastered</p>

General works for improvements: -

1. To recruit technical and adequate staff.
2. Repair and replacement of all steel section will be under taken.
3. The masonry and carpentry will also be under taken.
4. White wash and painting of steel section will be undertaken.
5. Blocked sewage and water supply lines will be made functional.
6. Improvement in habitat and enrichment will be made.
7. Damaged partition doors will be replaced.
8. To provide a separate office for the animal section.

4.7 Veterinary section:-

The Kamla Nehru Prani Sangharalaya, Indore has a well equipped hospital. A full time veterinarian along with some support staff is present. The hospital has a clinic with basic facilities for treatment as described in the appraisal

4.7.1 Addition staff requirement:-

Veterinary Section			
Sr. no	Post	No.	Scale
1	Veterinary Officer	-	9300 - 34800 + Grade pay Rs.4600
2	Compounder	1	5200-20200 + Grade pay Rs. 2400
3	Lab Technician	1	5200-20200 + Grade pay Rs. 2400
4	Animal Keeper	1	4440-7440 + Grade pay Rs. 1800
5	Attendant	1	4440-7440 + Grade pay Rs. 1400

4.7.2 Equipment and vehicle requirement:-

Requirement Equipment and vehicle- Veterinary Section		
Sr. no.	Equipments/ Vehicle	Number
1.	Veterinary Ambulance	1
2.	Shadow less lump	1
3.	General surgical equipments	1 set

Requirement Equipment and vehicle- Veterinary Section		
Sr. no.	Equipments/ Vehicle	Number
4.	Tranquilizing gun	2
5.	Hydraulic Operation table	2
6.	Microscope	1
7.	Autoclave	1
8.	Stretcher	1
9.	Hatcher	1
10.	X-ray Machine	1
11.	Computer	1

4.7.3 Proposed improvement / modification in the veterinary section:-

1. To recruit technical and support staff.
2. To create a zoo hospital library.

4.7.4 Rescue center:-

An area of 2282 sqm has been kept for rescue center and quarantine ward. The rescue center will have following facilities.

Facilities for the Different types of Animals			
Sr. No.	Type	Area for facilities (including night house. Shelter and kraal)	No. of facilities
1	Carnivore	200 sqm	2
2	Herbivore	200 sqm	2
3	Small mammal	50 sqm	2
4	Birds	5 sqm	10
5	Reptiles	5 sqm	2

4.7.5 Quarantine Wards:-

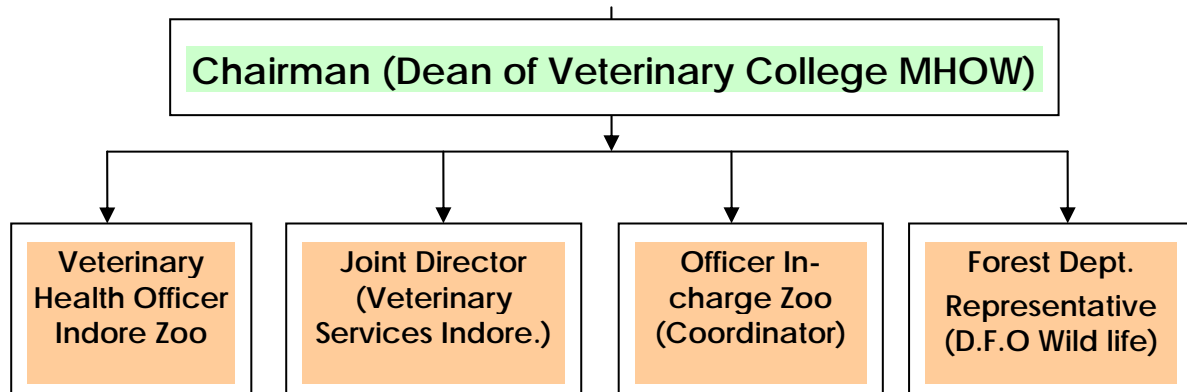
1. An area of 350 sqm will be kept for quarantine wards.
2. Each cell will have light and air exposure.
3. Each cell will have provision for medication and temperature monitoring facilities.
4. The breakup of the area for different wards is given as under.

Area distribution		
Sr. no.	Ward	Area (sq.m)
1	Ward- 1	100
2	Ward- 2	80
3	Ward- 3	60
4	Ward- 4	40

4.7.6 Health Advisory Committee: -

A Health Advisory Committee will be constituted comprising of Dean of Veterinary College MHOW as Chairman and Officer Incharge of the zoo as coordinator. Other members being veterinary health officer of zoo, Joint director of veterinary services Indore and representative of the forest department of the rank of DFO (wildlife). This committee will hold meetings, monthly and as & when required. It will advise the zoo on all matters related with sanitation, hygiene, prophylactics, nutrition and management of sick animals.

The setup of the Health Advisory Committee will be as follow: -



4.8 Store and Feed supply section: -

A well developed store is proposed to be constructed which will have ample space to store the food as well as maintenance material. It will have a storage room feeding troughs, storage containers, kitchen, refrigeration room or cold storage for the storage of items like meat, milk, fish and fruit. It will have a weighing machine and a platform for loading and unloading store items.

4.8.1 Additional staff requirement: -

Store and Feed Supply Section			
Sr. no	Post	No.	Scale
1	Store Keeper	1	5200-20200 + Grade pay Rs. 2800
2	L.D.C.	1	5200-20200 + Grade pay Rs. 2400
3	Driver	1	5200-20200 + Grade pay Rs. 1900
4	Labour	-	4440-7440 + Grade pay Rs. 1400

4.8.2 Equipments and vehicle requirement: -

Requirement Equipment and vehicle- Store and Feed Section		
Sr.No.	Particulars	Quantity
1.	Computer	1
2.	Weighing machine	1
3.	Trolley	1
4.	Food containers of different capacities to be procured	As per need
5.	Feeding tough	As per need
6.	Keema machine	1
7.	Fodder cutting machine	1
8.	Utensils for kitchen	As per need
9.	Electronic weighing machine	1
10.	A small truck	1
11.	Cooking gas	1
12.	Office furniture	As per need
13.	Telephone facility	As per need

4.8.3 Proposed improvement / modification: -

1. New store to be made to store all store items.

4.9 Horticulture and Sanitation section: -

This section will provide naturalness in the park by maintaining natural flora. It will be responsible for all works related to plantation and maintenance of trees, gardens and lawns etc. A fodder farm will also be developed and maintained. This section will also look after the cleanliness and hygienic condition of the park. It will be responsible to remove leftover food, dung, cut grasses, fallen leaves, weeds and other items. All roads, foot-paths, toilets, drinking water points and rain shelters will be cleaned and maintained.

4.9.1 Additional staff requirement: -

Horticulture and Sanitation Section			
Sr. no	Post	No.	Scale
1	Range Officer	1	9300-34800 + Grade pay Rs. 4200
2	Head Mali	1	5200-20200 + Grade pay Rs.2400
3	Mali	9	4440-7440 + Grade pay Rs. 1400
4	Sanitary Inspector	-	5200-20200 + Grade pay Rs. 2400
5	Sweeper	5	4440-7440 + Grade pay Rs. 1400

4.9.2 Equipments and vehicle requirement: -

Requirements of Equipments and Vehicles- Horticulture and Sanitation section		
Sr No.	Equipments	Numbers
1.	Lawn mover	2
2.	Grass cutter machine	2
3.	Pipe	10

Requirements of Equipments and Vehicles- Horticulture and Sanitation section		
Sr No.	Equipments	Numbers
4.	Trolley	5
5.	Water pump	2
6.	Tractor and Trolley	1

4.9.3 Proposed improvement / modification: -

1. A separate office will be provided for horticulture and sanitation section.

4.10 Maintenance Section: -

This section will undertake construction of animal houses, field offices, road, path, bridge, bore wells and laying of service lines and maintenance thereof.

4.10.1 Additional staff requirement: -

Staff Requirements - Maintenance Section			
Sr. no	Post	No.	Scale
1	J.E./R.O	1	9300-34800 + Grade pay Rs. 4200
2	Plumber	1	4440-7440 + Grade pay Rs. 1800
3	Welder	1	4440-7440 + Grade pay Rs. 1800
4	Carpenter	1	4440-7440 + Grade pay Rs. 1800
5	Mason	2	4440-7440 + Grade pay Rs. 1800
6	Electrician	2	4440-7440 + Grade pay Rs. 1800
7	Pump Operator	2	4440-7440 + Grade pay Rs. 1800
8	Labour	5	4440-7440 + Grade pay Rs. 1400

4.10.2 Equipments and vehicle requirement: -

Requirement details for the Equipments and Vehicles - Maintenance Section		
Sr.No.	Particulars	Quantity
1.	Welding machine	1
2.	Iron cutter	1
3.	Grinder	1
4.	Hole machine	1
5.	Mason equipment	1
6.	Electric equipment	1
7.	Plumbing equipment	1
8.	All sanitary equipment	1 each

4.10.3 Proposed improvement / modification: -

1. An office-cum-work shop with ample space for storing facility will be provided.

4.11 Security section: -

A new security section will be created whose office will be at the entrance. This section will be responsible to check the theft of government property, day & night patrolling, maintaining law & order, frisking of visitors and checking of tickets etc.

4.11.1 Additional staff requirement: -

Staff Requirements - Security Section			
Sr. no	Post	No.	Scale
1	Range Officer	1	9300-34800 + Grade pay Rs. 4200
2	Security Guard	24	4440-7440 + Grade pay Rs.1800

4.11.2 Equipments and vehicle requirement: -

The work of security will be out sourced so there is no need have equipment and vehicles.

4.11.3 Proposed improvement / modification: -

1. A security office will be created at the entrance gate.
2. A network of CC TV with terminal at entrance gate, director office, large carnivores' area etc.
3. PA system will also be installed covering whole zoo. Its announcement system will be with the security office.

4.12 Education and Awareness: -

Zoo is a living educational institute. It imparts firsthand knowledge and experience of nature to visitors. As per CZA's norms on zoo education, zoo should inspire empathy for wild life, understanding and awareness about need of conservation of natural re-sources besides maintaining ecological balance. This section will develop educational-cum-awareness program for the visitors and scheduled groups.

A separate education office within interpretation centre will be created near entrance. The interpretation centre will have an exhibit area, small auditorium with projector room, a class and open theatre. The office will have an office for educator and staff, store, library, toilets and drinking water facilities.

4.12.1 Additional staff requirement: -

Staff Requirements - Education and Awareness Section			
Sr. no	Post	No.	Scale
1	Education Asst.	1	9300-34800 + Grade pay Rs. 4200
2	Audio Visual Operator	-	5200-20200 + Grade pay Rs. 1800
3	Attendant	1	4440-7440 + Grade pay Rs. 1400

4.12.2 Equipments and vehicle requirement: -

Requirement of Equipments and Vehicles- Education and Awareness Section		
Sr.No.	Particulars	Quantity
1.	Projector	1
2.	DVD player	1
3.	Visitors chair	1
4.	Power point projector with computer	1
5.	A photo copier	1
6.	PA system	1
7.	Computer with internet and printer	1
8.	Panel with stands	1
9.	Books / news paper/ periodicals	As per requirement
10.	Office furniture	As per requirement
11.	Telephone	As per requirement

4.12.3 Proposed improvement / modification: -

1. A new interpretation centre with all modern facilities for screening films, conducting workshops and exhibition will be constructed.
2. An open air theatre (amphitheatre) will also be constructed.

4.13 General administration: -

A new administrative section with separate office will be created where staff of establishment and accounts will work. This section will be responsible for overall administration and operation of the zoo.

4.13.1 Additional staff requirement: -**i. Establishment Section: -**

Staff Requirements - Establishment Section			
Sr. no	Post	No.	Scale
1	Office Superintendent	-	9300-34800 + Grade pay Rs. 3200
2	Senior Clerk	-	5200-20200 + Grade pay Rs. 2800
3	L.D.C.	2	5200-20200 + Grade pay Rs. 2400
4	Peon	-	4440-7440 + Grade pay Rs. 1400

ii. Account Section: -

Staff Requirements - Account Section			
Sr. no	Post	No.	Scale
1	Junior Accountant	-	5200-20200 + Grade pay Rs. 2800
2	Booking Clerk	-	5200-20200 + Grade pay Rs. 2400
3	Cashier	-	5200-20200 + Grade pay Rs. 2400
4	Clerk	-	5200-20200 + Grade pay Rs. 2400
5	Peon	-	4440-7440 + Grade pay Rs. 1400

iii. Curator office: -

Staff Requirements - Curator Office			
Sr. no	Post	No.	Scale
1	Curator	-	15600 – 39100 + Grade pay Rs.5400
2	PA to Curator	1	5200-20200 + Grade pay Rs. 2400
3	Driver	-	5200-20200 + Grade pay Rs. 1900
4	Peon	1	4440-7440 + Grade pay Rs. 1400

iv. Assistant Curator office: -

Staff Requirements - Assistant Curator Office			
Sr. no	Post	No.	Scale
1	Assistant Curator	1	9300 – 34800 + Grade pay Rs.4800
2	PA to Assistant Curator	1	5200-20200 + Grade pay Rs. 2400
3	Driver	1	5200-20200 + Grade pay Rs. 1900
4	Peon	1	4440-7440 + Grade pay Rs. 1400

4.13.2 Equipments and vehicle requirement: -**i. Establishment Section: -**

Equipments Requirements - Establishment Section		
Sr.No.	Particulars	Quantity
1.	Computer	1
2.	Computer Table	1
3.	Pen holder	1
4.	Almirah	1

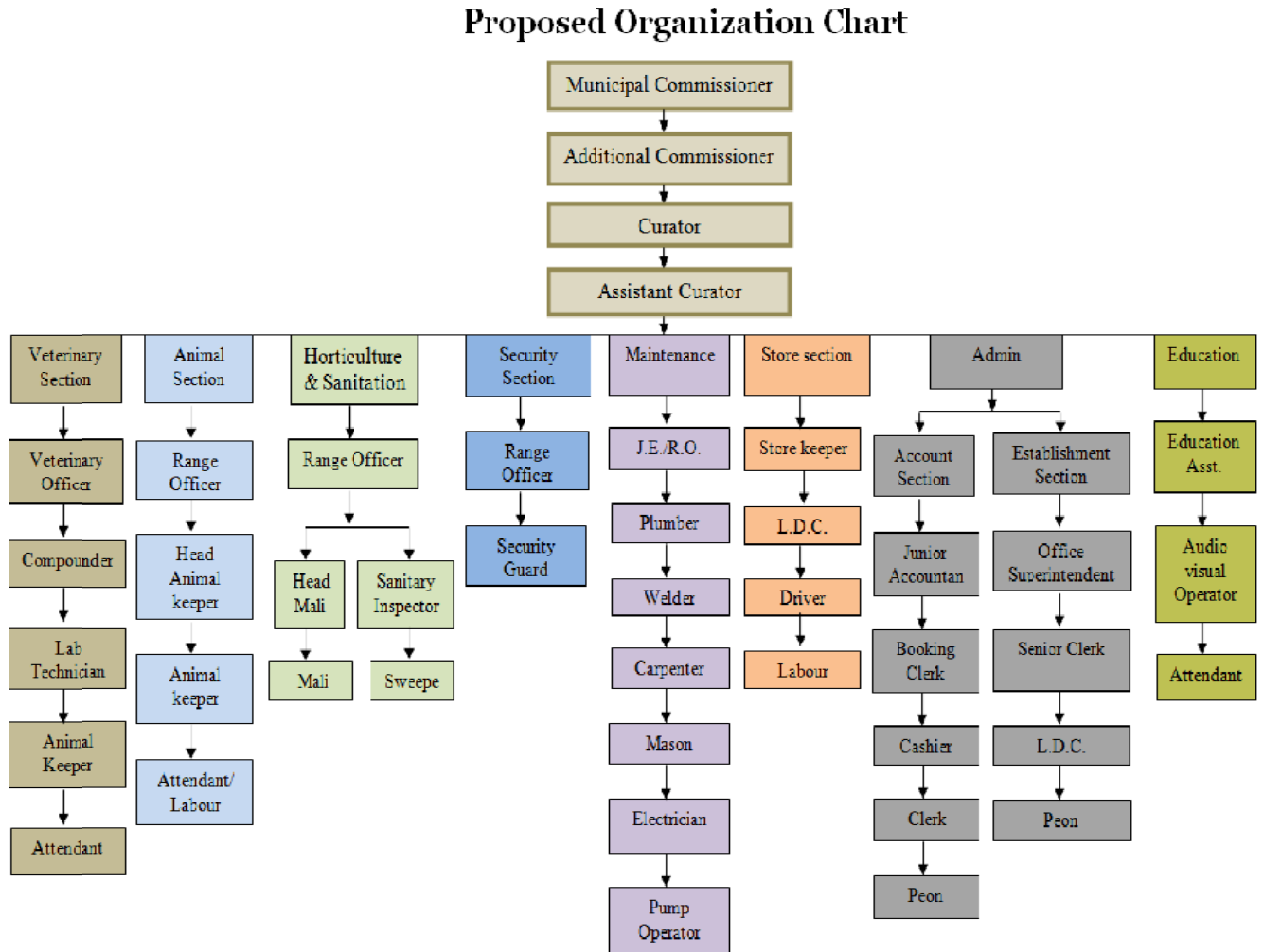
ii. Account Section: -

Equipments Requirements – Account Section		
Sr.No.	Particulars	Quantity
1.	Computer	1
2.	Computer Table	1
3.	Pen holder	1
4.	Almirah	1

4.13.3 Proposed improvement / modification: -

1. A separate office will be created with all office facilities.

4.13.4 The proposed organization chart is given as under: -



4.14 Visitors' amenities: -

Indore zoo caters about 10.50 lacs visitors annually. This includes adult, children, students, wild lifers, old, disabled and foreigners. It opens all day except Monday. The following amenities will be enhanced: -

Parking: - An area about 500 sq mtr will be developed near the entrance gate for the parking of vehicles of the visitors.

Entry gate: - New entry gate will be developed at the entrance which will have the following facilities: -

- | | | | |
|------|-----------------------|---|---|
| i. | Booking windows | – | 2 |
| ii. | Cloak room | – | 1 |
| iii. | Entry and Exit gate | | |
| iv. | Security office | | |
| v. | Public address system | | |
| vi. | A ramp | | |

Battery operated trolley:- Battery operated trolley will be started near the interpretation centre. Its operation and maintenance will be on contract basis. The ride charges per head will be decided by the zoo authorities as per circumstances.

Kiosk:- A kiosk will be established near the white tiger exhibit. This will help to relax and refresh.

Toilets and Water points: - Three more toilets and water points will be established.

Sitting benches and shelters: - **25** more sitting benches and shelters will be provided.

Wheel chairs: - Two wheel chairs will be made available at the entrance free of cost to the disabled visitors.

First-aid kit: - It will be available at the entrance with security office, in the main office and veterinary hospital.

Dustbins: - **50** dustbins will be kept all over the zoo area.

4.15 Measures to check pollution arising due to Khan River (Nalla): -

Following measures will be taken to check pollution arising due to Khan river in the zoo: -

Stone pitching: - Both sides of the river will have stone pitching to check erosion and to prevent outward flow in the zoo area.

Plantation: - Above 20 mtr on each side of the river will have thick plantation. The plantation will include herbs, shrubs and trees. Emphasis will be laid to plant local species with broad leaves.

STP: - It is proposed to install STP of capacity of 1 lakh ltr per day at the entrance of the Khan River. The river receives city sewage daily. The sewage will be treated right at the entrance point so that no sewage material enters the zoo.

Recycled/Treated water will meet daily low quality domestic water requirements like flushing, irrigation/gardening and washing activities. TARU in association with Indore Municipal Corporation (IMC) intends to install a sewage treatment plant (STP) in the city zoo, where numbers of visitors turn out every day. Wastewater flowing in the Khan River will be recycled

though slow sand filters technology. TARU proposes to construct the STP that can treat 50,000 liters of waste water on daily basis.

Salient Features of STP:-

1. The STP will treat 50,000 liters (50KL)of sewage per day and convert it for the re-usage(not suitable for drinking) in the zoo
2. Treated water can be used for the gardening, cage cleaning, toilet flushing and ground water recharging in the zoo
3. Operation & maintenance (O&M) is very easy and can be done by gardener/operator
4. There are no chemicals used in the system
5. No sludge drying beds required in the system
6. Low energy requirements to run the system.
7. Groundwater source can be used in other high quality water requirements in the zoo
8. It will demonstrate the technology to many visitors in the zoo and will promote the decentralize waste water recycling in the city for other colonies.

5. CHAPTER – V

PERSONNEL PLANNING

The Kamla Nehru Prani Sangrahalaya, Indore has an area of 51 acres it will exhibit 48 species comprising of 529 specimens. The zoo receives about 10.50 lacs visitors of different walks of life per year. Development and expansion has been envisaged in the master plan for 20 years i.e. 2014-2034. A hierarchy of category of small zoo has been proposed. This includes animal veterinary, horticulture and sanitary, store, security, maintenance, education and administrative sections. The old and defunct exhibits will be replaced by new exhibits conforming to CZA guidelines. The norms of CZA to include technical staff in the personnel management has also been taken care of.

The proposed staffing pattern for this zoo is given at page no-78.

The existing and additional staff requirement of each section is given as under: -

5.1 Animal section: -

Table 5: Staff Details in All Sections

Staff Details – Animal Section									
Existing Staff						Additional staff requirement			
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	S.No.	Post	No.	Scale
1	Range Officer	-	-	-	9300-34800 Grade pay Rs. 4200	1	Range Officer	1	9300-34800 + Grade pay Rs. 4200
2	Head Animal Keeper	1	1	-	5200-20200 Grade pay Rs. 2400	2	Head Animal Keeper	--	5200-20200 + Grade pay Rs. 2400
3	*Animal Keeper	2	1	1	5200-20200 Grade pay Rs. 1800	3	Animal Keeper	19	4440-7440 + Grade pay Rs. 1800
4	**Attendant/Labour	-	3 (Muster)	-	4440-7440 Grade pay Rs. 1400	4	Attendant/Labour	2	4440-7440 + Grade pay Rs. 1400

* Animal keeper will be on regular basis.

**Attendant/Labour will be on musteroll.

5.2 Veterinary section: -

Staff Details – Veterinary Section									
Existing Staff						Additional staff requirement			
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale
1	Veterinary Officer	1	1	-	26860-6600-24091	1	Veterinary Officer	-	9300 - 34800 + Grade pay Rs.4600
2	Compounder	1	-	1	5200-20200 Grade pay Rs. 2400	2	Compounder	1	5200-20200 + Grade pay Rs. 2400
3	Lab Technician	-	-	1	5200-20200 Grade pay Rs. 2400	3	Lab Technician	1	5200-20200 + Grade pay Rs. 2400
4	Animal Keeper	1	1	-	4440-7440 Grade pay Rs. 1800	4	Animal Keeper	1	4440-7440 + Grade pay Rs. 1800
5	*Attendant	-	1 (Muster)	--	4440-7440 Grade pay Rs. 1400	5	Attendant	1	4440-7440 + Grade pay Rs. 1400

*Attendant will be on must roll.

5.3 Store and feed supply section:-

Staff Details – store and Feed Supply Section									
Existing Staff						Additional staff requirement			
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale
1	*Store Keeper	-	1 (Muster)	-	4440-7440 Grade pay Rs. 1800	1	Store Keeper	1	5200-20200 + Grade pay Rs. 2800

Staff Details – store and Feed Supply Section									
Existing Staff						Additional staff requirement			
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale
2	L.D.C.	-	-	1	5200-20200 Grade pay Rs. 2400	2	L.D.C.	1	5200-20200 + Grade pay Rs. 2400
3	Driver	1	1	-	5200-20200 Grade pay Rs. 2400	3	Driver	1	5200-20200 + Grade pay Rs. 1900
4	**Labour	-	5 (Muster)	-	4440-7440 Grade pay Rs. 1400	4	Labour	-	4440-7440 + Grade pay Rs. 1400

*The store keeper will be on regular basis.

** Labour will be on musteroll.

5.4 Horticulture and Sanitation section: -

Staff Details – Horticulture and Sanitation Section									
Existing Staff						Additional staff requirement			
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale
1	Range Officer	-	-	-	9300-34800 Grade pay Rs. 4200	1	Range Officer	1	9300-34800 + Grade pay Rs. 4200
2	Head Mali	-	-	-	-	2	Head Mali	1	5200-20200 + Grade pay Rs.2400
3	*Mali	11	11	-	4440-7440 Grade pay Rs. 1400	3	Mali	9	4440-7440 + Grade pay Rs. 1400
4	Sanitary Inspector	1	1	-	5200-20200 Grade pay Rs. 2400	4	Sanitary Inspector	-	5200-20200 + Grade pay Rs. 2400
5	**Sweeper	-	5 (Muster)	-	4440-7440 Grade pay Rs. 1400	5	Sweeper	5	4440-7440 + Grade pay Rs. 1400

*Additional Mali (9) will be on musteroll.

**Sweeper will be on musteroll.

5.5 Maintenance section: -

Staff Details – Maintenance Section										
Existing Staff						Additional staff requirement				
S. No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale	
1	J.E./R.O	-	-	-	9300-34800 Grade pay Rs. 4200	1	J.E./R.O	1	9300-34800 + Grade pay Rs. 4200	
2	Plumber	-	-	-	4440-7440	2	Plumber	1	4440-7440 + Grade pay Rs. 1800	
3	Welder	2	1	1	4440-7440 Grade pay Rs. 1800	3	Welder	1	4440-7440 + Grade pay Rs. 1800	
4	Carpenter	-	-	-	4440-7440 Grade pay Rs. 1800	4	Carpenter	1	4440-7440 + Grade pay Rs. 1800	
5	Mason	1	1	-	4440-7440 Grade pay Rs.1800	5	Mason	2	4440-7440 + Grade pay Rs. 1800	
6	*Electrician	-	1 (Muster)	1	4440-7440 Grade pay Rs. 1800	6	Electrician	2	4440-7440 + Grade pay Rs. 1800	
7	Pump Operator	-	-	-	4440-7440 Grade pay Rs. 1800	7	Pump Operator	2	4440-7440 + Grade pay Rs. 1800	
						8	**Labour	5	4440-7440 + Grade pay Rs. 1400	

* Electrician (2), presently one on musteroll and second additional to be on regular basis.

**Labour will be on musteroll.

5.6 Security section: -

Staff Details – Security Section										
Existing Staff						Additional staff requirement				
Sr. No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale	
1	Range Officer	-	-	-	3900-34800 Grade pay Rs. 4200	1	Range Officer	1	9300-34800 + Grade pay Rs. 4200	
2	Security Guard	2	24 (outsourced)	-	4440-7440 Grade pay Rs. 1800	2	Security Guard	24	4440-7440 + Grade pay Rs.1800	

* On outsourced. RO will be on regular basis.

5.7 Education and Awareness: -

Staff Details – Education and Awareness Section										
Existing Staff						Additional staff requirement				
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale	
1	Education Asst.	-	-	1	9300-34800 Grade pay Rs. 2400	1	Education Asst.	1	9300-34800 + Grade pay Rs. 4200	
2	*Audio Visual Operator	-	1 (Muster)	-	4440-7440 Grade pay Rs. 1800	2	Audio Visual Operator	-	5200-20200 + Grade pay Rs. 1800	
3	**Attendant	-	2 (Muster)	-	4440-7440 Grade pay Rs. 1400	3	Attendant	1	4440-7440 + Grade pay Rs. 1400	

*Audio visual operator presently on musteroll, will be on regular basis.

**Attendant will be on musteroll.

5.8 General administration: -

i. Establishment Section: -

Staff Details – Establishment Section										
Existing Staff						Additional staff requirement				
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale	
1	Office Superintendent	1	1	-	9300-34800 Grade pay Rs. 3200	1	Office Superintendent	-	9300-34800 + Grade pay Rs. 3200	
2	Senior Clerk	1	1	-	5200-20200 Grade pay Rs. 2400	2	Senior Clerk	-	5200-20200 + Grade pay Rs. 2800	
3	L.D.C.	-	-	-	5200-20200 Grade pay Rs. 2400	3	L.D.C.	2	5200-20200 + Grade pay Rs. 2400	

Staff Details – Establishment Section										
Existing Staff						Additional staff requirement				
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale	
4	*Peon	-	2 (Muster)	-	4440-7440 Grade pay Rs. 1400	4	Peon	-	4440-7440 + Grade pay Rs. 1400	

*Peon presently two, on musteroll will continue to be on musteroll.

ii. Account Section: -

Staff Details – Account Section										
Existing Staff						Additional staff requirement				
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale	
1	*Junior Accountant	-	1 (Muster)	-	5200-20200 Grade pay Rs. 2400	1	Junior Accountant	-	5200-20200 + Grade pay Rs. 2800	
2	Booking Clerk	2	2	-	5200-20200 Grade pay Rs. 2400	2	Booking Clerk	-	5200-20200 + Grade pay Rs. 2400	
3	Cashier	-	1	-	5200-20200 Grade pay Rs. 2400	3	Cashier	-	5200-20200 + Grade pay Rs. 2400	
4	Clerk	3	3	-	5200-20200 Grade pay Rs. 2400	4	Clerk	-	5200-20200 + Grade pay Rs. 2400	
5	Peon	1	1	-	4440-7440 Grade pay Rs. 1400	5	Peon	-	4440-7440 + Grade pay Rs. 1400	

*Junior Accountant presently on musteroll will be on regular basis.

iii. Curator office: -

Staff Details – Curator Section									
Existing Staff						Additional staff requirement			
S. No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale
1	In-charge zoo	1	1	---	70000	1	*Curator	-	15600 – 39100 + Grade pay Rs.5400
2	Driver	1	1	---	5200-20200 Grade pay Rs. 1800	2	PA to Curator	1	5200-20200 + Grade pay Rs. 2400
						3	Driver	-	5200-20200 + Grade pay Rs. 1900
						4	**Peon	1	4440-7440 + Grade pay Rs. 1400

*Officer incharge of zoo will be re-designated as Curator in the above pay scale.

**Peon will be on musteroll.

iv. Assistant Curator office: -

Staff Details – Assistant Curator Section									
Existing Staff -- Nil						Additional staff requirement			
S.No.	Post	No. of sanctioned post	Filled	Vacant	Pay Scale	Sr. no	Post	No.	Scale
						1	Assistant Curator	1	9300 – 34800 + Grade pay Rs.4800
						2	PA to Assistant Curator	1	5200-20200 + Grade pay Rs. 2400
						3	*Driver	1	5200-20200 + Grade pay Rs. 1900
						4	*Peon	1	4440-7440 + Grade pay Rs. 1400

* Driver and Peon will be on musteroll.

Total additional manpower required = 59. This includes musteroll worker but excludes outsourced security guards.

5.8.1 Brief resume of personnel required for operation of the zoo: -

Table 6: Details of the Personnel Requirement for the Operation of Zoo				
Sr.No	Name of Post	Total Number of posts	Pay Scale	Basic Qualification
1	Curator	1	15600-39100+5400 GP	M.Vsc in Medicine with 3 years working experience in the field or B.Vsc with 5 years working experience in the field.
2	Assistant Curator	1	9300-34800+4800 GP	M.Sc in Zoology OR wildlife, with 2 years working experience in the field or B.Vsc with 3 years working experience in the field.
3	Veterinary Office	1	9300-34800+4600 GP	B.Vsc with working experience of 2 years in the field.
4	Range officer (Animal)	1	9300-34800+4200 GP	M.Sc in Zoology/wildlife OR B.Sc in Biology with 5 years working experience in the field.
5	Range officer (Hort. & Sani.)	1	9300-34800+4200 GP	M.Sc in Botany OR B.Sc in Biology with 5 years working experience in the field.
6	Range officer (Security)	1	9300-34800+4200 GP	Graduate from recognized university OR Ex-service man atleast of the rank of Lt.
7	J.E. / R.O. (Maintenance)	1	9300-34800+4200 GP	Diploma in Civil Engineering with 3 years experience of construction work and knowledge of electrical works.
8	Education Assistant	1	9300-34800+4200 GP	M.Sc in Zoology OR Wildlife, OR B.Sc (Biology) B.Ed.
9	Office Superintendent	1	9300-34800+3200 GP	Graduate from recognized university with 5 years working experience in the cadre & knowledge of computer.
10	Junior Accountant	1	5200-20200+2800 GP	B.Com from recognized university with 3 years experience in the cadre & knowledge of computer.
11	Store Keeper	1	5200-20200+2800 GP	Graduate from recognized university with 3 years experience of procurement of store items and their disposal & knowledge of computer
12	Compounder	1	5200-20200+2400 GP	12th passed with certificate of Veteran Compounder Course OR equivalent.
13	Lab Technician	1	5200-20200+2400 GP	12th passed with diploma in Lab technology.
14	Sanitary Inspector	1	5200-20200+2400 GP	12th passed with diploma in Sanitation OR equivalent
15	Senior Clerk	1	5200-20200+2800 GP	Graduate from recognized university with 5 years working experience of secretarial job OR 12th passed with 8 years experience of secretarial job.
16	Audio-Visual Operator	1	5200-20200+1800 GP	12th passed with diploma in audio-visual operation.

Table 6: Details of the Personnel Requirement for the Operation of Zoo				
Sr.No	Name of Post	Total Number of posts	Pay Scale	Basic Qualification
17	Booking Clerk	2	5200-20200+2400 GP	Graduate OR 12th passed with knowledge of computer operation.
18	Cashier	1	5200-20200+2400 GP	Graduate OR 12th passed with knowledge of computer operation and cash handling.
19	Clerk / LDC	6	5200-20200+1900 GP	Graduate OR 12th passed with knowledge of computer operation.
20	Head Animal Keeper	1	5200-20200+2400 GP	Science Graduate OR 12th passed with experience of 3 years in the field.
21	Head Mali	1	5200-20200+2400 GP	Science Graduate OR 12th passed with experience of 3 years in the field.
22	Plumber	1	4440-7440+1800 GP	12th passed with certificate course in the field from ITI.
23	Welder	2	4440-7440+1800 GP	12th passed with certificate course in the field from ITI.
24	Carpenter	1	4440-7440+1800 GP	12th passed with certificate course in the field from ITI.
25	Mason	1	4440-7440+1800 GP	12th passed with certificate course in the field from ITI.
26	Electrician	2	4440-7440+1800 GP	12th passed with certificate course in the field from ITI.
27	Pump Operator	2	4440-7440+1800 GP	10th passed with knowledge of pump operation
28	*Driver	3	5200-20200+1900 GP	12th passed with license to drive heavy & light vehicle. Should be aware of maintenance & minor repair aspects.
29	Animal Keeper	22	4440-7440+1800 GP	10th passed OR Middle with 3 years working experience in the field.
30	*Mali	20	4440-7440+1400 GP	10th passed OR Middle with knowledge of gardening.
31	*Peon	5	4440-7440+1400 GP	10th passed OR Middle with multi skilled aptitude.
32	*Attendant/Labour	20	4440-7440+1400 GP	10th passed OR Middle with multi skilled aptitude.
33	*Sweeper	10	4440-7440+1400 GP	Middle passes with multi skilled aptitude.

Total: 116

*will be on musteroll.

6. CHAPTER – VI

DISASTER MANAGEMENT

The disaster management act. 2005 defines it as “means a catastrophe, mishap, calamity or grave occurrence affecting any area, arising from natural or man cause, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of property, or damage to, or degradation of environment, and is such a nature or magnitudes to be beyond the coping capacity of the community of the different area.

Disaster management involves continuous planning, coordinating and implementation of measures for:-

1. Preparation to deal with disaster situation.
2. To prevent danger of threat.
3. Capacity building.
4. Immediate response to calamities.
5. Evacuation, rescue, relief and rehabilitation.

The Kamla Nehru Prani Sangrahalaya, Indore has an area of 51 ha with lots of vegetation and river Khan. The undergrowth, dry leaves and twigs may pose problem of fire during summer. This park is likely to display over 529 animals and about 10.5 lakh visitors visit this park annually.

The potential hazards of this zoo are as under:-

1. Fire.
2. Flood.
3. Earth quakes.
4. Thunder storm.
5. Law and order problem.

6.1 Disaster management team:-

This has been formed. This team is aware of the Zoo topography, its inmates, facilities available and the contact person of other departments.

The team members can be:-

1. Curator of Zoo – For making plan and taking decision.

2. Coordinator – Assistant Curator will be the coordinator. He can summons person and resources during emergencies.
3. Unit coordinator – The zoo will be divided into different units or sections. Each section will work under the control and direction of unit coordinator as per plan.
4. Skilled / unskilled personnel – These include, para-vet staff, animal keepers, malis, guards, sweepers, drivers, cutter, plumber, electricians and labour. The number depends upon the magnitude of the problem.

6.2 Fire:-

In zoo fire accidents can have devastating impact on visitors, staff and its inmates. To avoid or minimize adverse impacts on animals and visitors, the zoo has its own fire brigade unit provided by Indore Municipal Corporation. Provisions given in MP Bhumi Vikas Niyam -1984 and National Building Code – 2005 have been considered while the designing the project so that fire hazard can be mitigated.

6.3 Flood:-

As per flood hazard map (IDP 2021), the zoo is not situated in flood hazard risk zone. But the probability of occurrence of urban flooding cannot be ruled out as the zoo is spread along both sides of River Khan. Therefore, to mitigate the flood vulnerability, the minimum standards related to drainage pattern given in M.P.Bhumi Vikas Niyam – 1984 and National Building Code – 2005 have been considered during planning stage.

In the event of flood, following measures would be taken: -

1. The animals would be displayed at higher level.
2. Keep staff, pumps, fuel and lubricants readily available during rainy season.
3. A truck with transport cages would also be kept ready.
4. Veterinary staff with medicine and equipments would be kept ready.
5. Co-operation of other departments would be sought.
6. Keep all drains and sewage lines clean.
7. Following equipments would be kept ready.

Requirements of Equipments for the Disaster Management		
S. No.	Items	No.
1	Flashlight / Torch light & Spare Batteries	8
2	First-aid Kit	4
3	Shovels	12
4	Axe	10

Requirements of Equipments for the Disaster Management		
S. No.	Items	No.
5	Generator (with sufficient fuel)	1
6	Tranquilizing Gun with drugs	2 sets
7	Welding machine (with sufficient welding rods)	1 sets
8	Ropes & Net	As per demand
9	Transport cages (different sizes)	10
10	Electric saw	1
11	Construction & repair material	As per demand
12	Gas cutter	1
13	Earth moving equipments	1
14	Ambulance	1
15	Truck	1
16	Diesel pump-portable (This should be periodically checked)	1
17	Folding ladder	2
18	Adequate stock of consumables	As per demands
19	Fixed & portable water jets	As per demands

The department shall keep the contact no. of the persons dealing / supplying the following items:-

1. Transport company
2. Crane supplier
3. JCB supplier
4. Construction material supplier
5. Electrical item supplier

Telephone numbers of all above would be made handy at more than one location.

6.4 Earth quake:-

The various steps have been taken to mitigate the hazard vulnerability. The zoo is located in seismic zone-II which is classified as the low damage risk zone. This IS code assigns zone factor of 0.10 (maximum horizontal acceleration that can be experienced by a structure in this zone is 10% of gravitation acceleration) for zone-II, which has been considered while planning.

6.5 Thunder storm:-

Indore is situated in moderate damage risk zone – B where $V_b=39\text{m/s}$. Hence, wind storm vulnerability cannot be ignored. April and May be the month of incidence of thunder storm. The thunder storm may be associated with violent squalls, accompanied by heavy rain. This may result in the uprooting of large number of trees which may fall on road and buildings.

Immediate action to remove the fallen / uprooted trees will be undertaken. For this, implements as mentioned above table will be made available.

6.6 Law and order problem:-

If the law and order problem arises within zoo employees, assistance from the police would be sought. The security section would also monitor the situation. The law and order problem will be tackled by taking the following measures:-

1. Adequate storage facilities will be available to store feed items at least for 7 days
2. A deep freezer will be available to store beef for 2-3 days
3. The cleaning of enclosures and distribution of feed items will be got done by contract labour under the guidance of supervisors
4. In case the law and order problem arises in the city, the authorities will be requested to issue special permits for essential zoo staff.

6.7 Precautionary measures:-

6.7.1 Siren (alarm) system:-

An alarm (siren) system will be fixed in the zoo premises with adequate range. It will be under the control of RO (security) and is located in the security office. The siren will be used when unpredicted incident happens in the zoo premises.

6.7.2 Evacuation of the visitors:-

The zoo shall have a detailed written protocol for evacuating visitors in hour of every crisis. There will be provision of emergency exits and a public address system to communicate to the visitors the routes to be followed to get out of the zoo in the event of any disaster / crisis. Directional boards will be fixed at appropriate locations leading to exit point for safely evacuation.

6.7.3 Animal Evacuation:-

During emergency animals will be evacuated in vehicles and foldable cages. The cages of different size will be kept ready for use. Trained personnel with protective equipments will be use at the time of evacuation. To deal with such situation provisions have made for the equipments and other items.

6.7.4 Staff training and mock drill:-

The zoo will arrange staff training of each category to have a clear idea of emergency protocols. Head of each section will be responsible for training of persons of his department. The park will also conduct unscheduled mock drill to assess capability viz-

1. Preparation of various departments.
2. Response time.
3. Coordination.
4. Time taken to resolve the issue.

Curator will closely monitor the response.

7. CHAPTER – VII

CONTINGENCY PLAN

The Kamla Nehru Prani Sangrahalaya, Indore is likely to display over 529 animals in 51 ha and the number of visitors is 10.50 lakh per year. The problems are bound to arise due to one reason or other so it necessary to have a contingency plan to attend such problems. Various problems and their remedial measures are given below:-

7.1 Animal rescued from wild:-

Two cages are reserved for bringing animal rescued from the wild. If animal is sick then treatment will be given to him and after becoming healthy, same will be shifted to local zoo or any other zoo or released into the wild as per direction of authorities and CZA. The rescue centre has been proposed with following aspects: -

1. All rescued, sick or injured wild animals will be rehabilitated back in the wild or in regular lifetime care facilities/zoo/rescue centre within 30 days of treatment/healing depending upon the condition/suitability of the individuals.
2. All seized wild animals are proposed to be rehabilitated back in the wild or in regular lifetime care facilities/zoo/rescue centre depending upon condition & suitability of the individuals within 30 days of the seizure after getting permission of the court dealing with the case.
3. All rescued/abandoned young wild animals will be reared in nurseries attached to the veterinary facilities/hospital.

The veterinary officer will be the in-charge for the rescue squad and its operation. The other team members shall be as under:-

1. Range officer (animal).
2. Security officer.
3. Compounder.
4. Head keeper.
5. Zoo keepers.
6. Attendant.

The vehicle with store section will be used for transportation of manpower, material and rescued animal.

7.2 Escape of animal from enclosures:-

In case of escape of animals from enclosures is noted, the same cages & tranquilizing equipments meant for rescuing animal will be used to capture the animals. This action is to be taken with quickest possible time. The best way to check the escape of animal is to ensure that doors, shutter and locks are closed. The chain link fence is not broken, the trees are regularly pruned. Any weak point or gap identified during the inspection should be repaired and replaced immediately.

The following action will be taken immediately:-

1. Announcement will be made to alert the security, staff and visitors.
2. Public address system and siren will be used.
3. Entry of visitors will be stop when dangerous animal escapes.

Reporting of escape: Any staff seeing an animal outside the enclosure should immediately report to the following officers:-

1. Curator.
2. Assistant Curator.
3. Veterinary officer.
4. Range officer (Animal).
5. Range officer (Security).
6. Range officer (Horticulture & Sanitation)

7.3 Monkey and dog menace:-

To control the monkey and dog menace following arrangement will be made: -

1. Boundary wall will be constructed up to such height so that no stray dogs can enter the zoo.
2. Regular check is being done to see the weak points/breaches/design defects which could be help stray animals to enter the zoo.
3. Along the Nallah new boundary wall of sufficient height is proposed so that no outside animals can enter in the zoo.
4. Two tranquilizer guns are kept ready so that animal can be tranquilized.
5. Two nets are there to catch the stray animals.

6. Strict vigilance shall be kept at all the entry points by security staff to prevent entry of dogs and other stray animals. If any dog is sighted in side zoo premises, it would be captured on priority and handed over to the municipal corporation.

7.4 Arrangement of food in case of strike (non supply by contractor):-

1. Zoo has sufficient storage space to store the food, however to meet out scarcity one new spacious store has been proposed.
2. In case contractor do not supply the food then alternative contractors have been identified, the list with contact number is readily available.
3. Zoo has its own two vehicles which can be utilized for procuring food from any source inside or outside the city.
4. For storing meat, two deep freezers of adequate capacity have been proposed to be procured which can serve as store house to meet immediate requirement.
5. Required help will be taken from Indore district administration, forest department to help in making necessary arrangements.

7.5 Snake bite:-

The Zoo has dense forest and is home for poisonous snakes like Cobra, Viper and Russell. There is a proposal to construct a reptile house which will keep poisonous snakes. There are chances that visitors as well as animal keepers can be bitten by these snakes. In order to meet such incidents, following arrangements are likely to be made:

1. To maintain enough stock of anti snake venom at the zoo hospital.
2. To carry the patient to the hospital without loss of time.
3. To keep first aid kits at important locations of the zoo i.e. security office, main office, veterinary hospital and reptiles house.

7.6 Visitors getting injured / visitors falling inside enclosure:-

New enclosures are being constructed and existing enclosures are being modified in such a manner that visitors may not fall inside the enclosure. Precautionary signages will be placed at prominent locations to avoid such incidences. However, in case any visitor falls inside the enclosure/moat, and gets injured then following measures will be taken:-

1. Ropes and ladders would be available to take him out.
2. Staff will be trained to manage such emergency.
3. Patient will be given for first-aid immediately.

4. Contact numbers of the nearest hospitals will be kept readily available for emergency.

7.7 Fighting among animals:-

As per the revised guidelines of the CZA, enclosures are big and animal are less stressed so that the cases of animal fighting have been reduced. In case of fighting among animals occur, following are the measures to control it: -

1. Spray of water jet on fighting animals. Firefighting network and new water supply scheme is already proposed which will facilitate supply of water at any required location.
2. At present water supply is through bore-well, now one over-headed water tank is proposed so that in case of unavailability of power supply water can be available.
3. Some crackers creating sound of high intensity will be kept in store; same can be used near fighting animal enclosure to make them apart.
4. Two tranquilizer guns are available so that fighting animals can be tranquillized.
5. Two nets are there to catch hold of fighting animals.
6. Ropes are also available to catch the fighting animals.

7.8 Epidemics:-

The zoo follows the vaccination schedule strictly. A well equipped veterinary hospital is already there which has the required vaccines. The vaccines to ungulates and carnivores are given as per the schedule. Besides the above, following measures will be taken:-

1. Extensive disinfection measures like spraying of disinfectants will be undertaken.
2. To remove the infected animal from the group and keep it in isolation ward for treatment.
3. To seek advice and guidance from the experts or veterinary institute.

7.9 Breakdown of power supply etc:-

Two number of diesel generators each with capacity of 62.5 each will be installed in the maintenance section. This DG sets will start and switch off automatically. A system will be made to keep storage of diesel for three days as inventory. Contact numbers of MP State Electricity Board will be kept ready for repairing of the fault etc.

7.10 Free ranging / feral animal menace:-

The park has a number of free ranging animals like rhesus monkeys, mongoose, rats and snakes. They are likely to prey upon the food given to animals or they can even bite. In order to check this menace, following actions will be taken:

- 1.** To make the chain link fence rodent and snakes proof.
- 2.** To feed the animal in the cells and covered kraals.
- 3.** To scare the free ranging animals with bamboo or crackers.

8. CHAPTER – VIII

CAPACITY BUILDING

Skilled and knowledgeable personnel are essential to maintain and up-keep Wild Animal Parks. As time changes the new challenges will emerge and the staff is required to upgrade their skills and potential to handle any eventualities. Capacity building of different category of office staff and frontline personnel is very essential for better care of animals, providing better nature education and smooth function of the Park.

8.1 In-house training:-

The functioning of zoo depends upon the skill and competence of the staff. The skill is required to be transferred to next generation for continuity and smooth running of the park. Therefore, it is proposed to organize training sessions with experienced people for the benefit of youngsters. A group of youngsters would be attached to such senior staff for some time, so that all the fine skills & nuances of animal handling and care could be learnt “on job”.

Interaction with retired staff:- Tapping the experience of skilled and retired personnel is advantageous to maintain the zoo in good conditions. It is desirable to elicit the preferences of each person, and assign jobs to attain specialization in the field. In this background, it is planned to conduct interactive sessions with notable retired staff in animal keeping, horticulture, security, workshop and veterinary care.

Rewards to staff members: - Motivation is important to sustain the interest of staff members. Cash awards may also be given to the animal keepers, gardeners and other staff with appreciation certificate for their exemplary work. Further it is also proposed to institute awards on annual basis to the best outstanding contributor, best animal keeper, best gardener and special award respectively in the following names:-

1. Municipal Corporation Mayor Memorial Award.
2. Municipal Commissioner Memorial Award.
3. Zoo Curator Memorial Award.

8.2 Keepers training programme:-

The Kamla Nehru Prani Sangrahalaya, Indore can organize keepers training programme from time to time to upgrade their knowledge in the scientific management of Park. The

themes of the training may include crisis management and Park emergencies, enrichment, management of birds.

The keepers shall be trained to entrust them with higher responsibility and incentives.

8.3 Administrative training:-

The personnel working in administration section in the Park shall be sent for training to improve their skills. Normally after initial recruitment, they will be working continuously without any opportunity to enhance their skills. Their talents need to be recognized and encouraged for exposure training for the benefit of the Park.

8.4 Middle and top level training on park management:-

The Wildlife Institute of India and the Central Zoo Authority regularly conduct special and focused training and workshops on different aspects of wild life management and policy. Participation of top level management of park is must and essential to upgrade their knowledge and bring changes and adopt newer techniques as enunciated in national park policies and rules. The Zoo shall take the benefit of the training to have trained officers in the management for better results.

8.5 Park vets training:-

The works of the park vets are very important from the point of view of the healthcare management of animals. As the zoo shall house valuable animals and failure to diagnose and able to provide treatment in time may lose the valuable animals. Therefore, the veterinarians can get the benefit from the training conducted by Wildlife Institutes and CZA.

8.6 Zoo educators training:-

As conservation education is one of the fundamental objectives of zoo, the educator shall be trained properly to organize training programme for the students, NGO's.

8.7 Park volunteers training:-

The volunteers should be given orientation training regularly, so that they can assist the park management in due necessities.

8.8 Training abroad:-

CZA also arranges short term training for zoo staff of this country in abroad. Every year one Director/ Curator of the zoo is sent for training at Jersey, UK. This zoo can avail this opportunity as and when occasion arises.

9. CHAPTER - IX

E - GOVERNANCE

The concept of e-governance is now a reality. Present, is the age of information and efficiency of organization depends upon its information system. It not only helps managers at various levels in organization but also helps in dissemination of information to the needful. In this, the core strategy is to move ahead in a systematic manner, and the approach should be to achieve the success step by step ensuring convenience, efficiency, transparency and reliability.

The Kamla Nehru Prani Sangrahalaya, Indore has proposed to develop different software's for quick dissemination of information as under: -

1. Development of relevant software for various services provided by the Indore zoo like e-generation of tickets.
2. Development of Digital guide map of Indore zoo to avoid visitors from getting disoriented and moving haphazardly in all directions.
3. Development of updated specific website for Indore zoo.
4. Publication of Web Brochure for the visitor's information.
5. To develop speedy wireless communication between zoo, Indore Municipal Corporation & Central Zoo Authority.

Uses of E-Governance System: - It will help in the following ways: -

1. To maintain the profile of each employee.
2. To store inventory data of animal and feed schedule.
3. To store details of house facilities.
4. To record birth and deaths with causes.
5. To record behavior and breeding biological aspect.
6. To record the hand rearing technique of babies.
7. To store the visitor data.
8. To record the ongoing research projects.
9. To record the ongoing educational programme.
10. To store stud book information.
11. To store animals history card information.
12. To record treatment of individual.

10. CHAPTER - X

BUDGET ANALYSIS

10.1 Broad Budget Analysis for Implementing the Plan

The Proposed Master Plan 2014-34 would tentatively have a Budget of total **Rs. 5987.96 Lacs.**

As discussed in the preceding chapters at present the zoo is located on 51 acres of land, which includes the additional acquired 34 acre of land in the year 2002.

This expansion and Modification of existing campus will require new development initiatives as well as Addition / alteration in the existing old facilities to suit the guidelines of CZA.

The expenditure can be broadly categorized into two major heads –

1. Non-Recurring Expenditure – This will be permanent expenditure in constructing and developing different facilities
2. Recurring Expenditure –expenditure incurred annually for proper operation and maintenance of Zoo like salaries, feed of animals, Maintenance, upkeep etc.

10.2 Construction and Development

10.2.1 Non Recurring Expenditure

A statement of probable approximate cost of the various items comprising of Non-recurring expenditure is given. This is stage –I estimate is as per the detail plans and designs of the various items which are to be prepared. The final cost can be arrived after the preparation of this detailed estimate etc.

As per the Statement, the Non-Recurring total Stage-I estimate comes to **Rs. 5987.96 Lacs**

Table 7: Estimates For Non Recurring Expenditure					
S N	Work / Item	No./ Area (sq.m)	Approx. rates in Rs.(lacs)	Approx. cost in Rs.(Lacs)	Remarks
I ANIMAL ENCLOSURES					
1	Amphibians House (tortoise)	1/ 100	20.00	20.00	New construction
2	Reptile house for snakes , pythons, Rat snake, Viper, Sand	1/ 910	95.00	95.00	New construction

Table 7: Estimates For Non Recurring Expenditure					
S N	Work / Item	No./ Area (sq.m)	Approx. rates in Rs.(lacs)	Approx. cost in Rs.(Lacs)	Remarks
	Boa, etc				
3	Porcupine	1/ 110	10.00	10.00	New construction
4	Primates Enclosures for Monkey, langoors etc	3/ 4110	320.00	320.00	New construction
5	Hippopotamus	1/ 4850	210.00	210.00	New construction
6	Spotted Deer (Cheetal)	1/ 3950	95.00	95.00	New construction
7	Black Buck	1/ 2980	96.00	96.00	New construction
8	Blue Bull and Neelgai	1/ 1520	50.00	50.00	New construction
9	Sambhar	1/ 1940	56.00	56.00	New construction
10	Civet cat	1/ 900	30.00	30.00	New construction
11	Fox and Wolf	1/ 1750	80.00	80.00	New construction
12	Bird Aviary	3x3/ 740	30.00	30.00	New construction
13	Peacocks	1/ 300	10.00	10.00	New construction
14	Lion	1/ 5350	250.00	250.00	New construction
15	Emu	1/ 1350	90.00	90.00	New construction
16	Jungle Cat	1/ 900	30.00	30.00	New construction
17	Wet land Birds (Water Duck, Painted stork, Pelican, Adj. stork, White ibis etc)		135	135	
Total for Construction of animal Enclosure				1607.00	
Modification /Improvements and demolition of Enclosures (10% of the total construction cost)				160.71	
Total Construction, Modification and Demolition Cost				1767.71	

Table 7: Estimates For Non Recurring Expenditure					
S N	Work / Item	No./ Area (sq.m)	Approx. rates in Rs.(lacs)	Approx. cost in Rs.(Lacs)	Remarks
II INFRASTRUCTURE WORKS					
1	Main entrance Gate comprising of gates, Ticket counter etc	L.S.	60.00	60.00	New construction
2	Up gradation of Adm. Offices / Visitor Information Center	225 sqm	10000.00 per sqm	25.00	New construction
3	Development of Parking lots	1006 sqm	3500 per sqm	35.00	New construction
4	Orientation Center	50 sqm	12000 per sqm	6.00	New construction
5	Food kiosks, rain-shelter and souvenir shops	1961 sqm	4000 per sqm	80.00	New construction
6	Children's Park with interpretative facilities of wildlife conservation	1683 sqm	3000 per sqm	50.50	New construction
7	Shelters and Resting kiosks	8	6.25	50.00	New construction
8	Drinking water Facility at different location	7	9.00	63.00	New construction
9	Toilets	2	11.00	22.00	New construction
10	Meeting Hall , Audio Visual Hall and Office	163 sqm	15000.00	25.50	New construction
11	Open Air Theater/ Nature care center	945 sqm	6000.00	57.00	New construction
12	Amphitheatre	468 sqm	6000.00	28.00	New construction
13	Stores	365.5 sqm	8500	31.00	New construction
External Development (Infrastructure)					

Table 7: Estimates For Non Recurring Expenditure					
S N	Work / Item	No./ Area (sq.m)	Approx. rates in Rs.(lacs)	Approx. cost in Rs.(Lacs)	Remarks
14	Roads/Pathways	19410 sqm	3096 per sqm	601.00	New construction
15	Construction of Reservoir of 0.5 lac ltrs, 1 OHT of 0.3 Lac ltrs, 1 bore well near bear enclosure, Sump 1.50 lac lt, and Up gradation of water supply system (including pipelines, etc.)	1.5 lac. lit.	Reservoir 7 per lit. OHT Rs. 10 per ltr. 1 bore well Rs. 1.5 lacs each	40.00	New construction
16	STP, Up gradation of Sewerage and drainage system	2	60.00	160.00	New construction
17	Up gradation of Solid waste Management system	L.S.	37.50	37.50	New construction
18	Environmental Up gradation of Khan River	L.S.	900.00	900.00	New construction
19	Construction of Boundary wall	L.S.	20000 per RM.	160.00	New construction
20	Drip Irrigation System	L.S.	62.00	62.00	New construction
21	D.G. & Electrical Work	L.S.	112.50	112.50	New construction
22	Bridge Across River	2	100.00	200.00	New construction
23	Rain water Harvesting	L.S.	40.00	40.00	New construction
Total for Infrastructure works				2846.00	
III VETERINARY AND ANCILLARY FACILITIES					
1	Hospital Equipments and Research lab	1No.s-535sqm	12.50	12.50	New construction

Table 7: Estimates For Non Recurring Expenditure					
S N	Work / Item	No./ Area (sq.m)	Approx. rates in Rs.(lacs)	Approx. cost in Rs.(Lacs)	Remarks
2	Crematorium Facility	1No.s-250 sqm	18.75	18.75	New construction
3	Quarantine	1004 sqm	3000 per sqm	30.00	New construction
Total for Veterinary and ancillary facilities				61.25	
IV ENVIRONMENT IMPROVEMENT (inclusive of Landscaping, Gardens etc)					
1.	Landscaping - Horticulture and arboriculture works	L.S.	175.00	175.00	New construction
2.	Development of Nursery, New gardens and pockets along pathways	L.S.	62.50	62.50	New construction
3.	Maintenance and Signage for trees and Plants	L.S.	25.00	25.00	New construction
4.	Development of water bodies, Fountain, water screen etc.	L.S.	50.00	50.00	New construction
Total for Environment Improvement works				312.50	
V	ACQUISITION OF ANIMALS			40.50	
VI	MISCELLANEOUS AND UNFORSEEN EXPENSES			54.00	
VII	EQUIPEMENT, GENERATORS AND VEHICLES FOR THE ZOO I			906	
TOTAL of NON RECURRING EXPENDITURE				Rs. 5987.96 Lakhs	

10.2.2 Recurring Expenditure

Present Staff pattern

At present the staff sanctioned for the Indore Zoo is as per existing organization chart. Actual Budget provision for the financial year 2011-12 on zoo staff related total expenses is 211 lacs.

Additional Staff required

Due to the expansion of zoo and to have proper administration and control, additional staff will be required which is as per Proposed organization chart. Amount of Rs. 216.00 Lacs has been taken as a salary expenses in the budget submitted to IMC for the fiscal year 2012-13.

Table 8: The Details of the Annual Recurring Expenditure Proposed in the Budget Submitted to IMC for the Fiscal Year 2013-14:

S N	WORK / ITEM	Estimated expenses in Rs. Lacs for the period 2013-14
1	ESTABLISHMENT EXPENSES	
	Salaries & allowances for Permanent staff	180.00
	Expenditure on Regular labour	29.97
2	ADMINISTRATIVE EXPENSES	
	Postage /Courier expenses	0.10
	Printing expenses	0.50
	Travelling and conveyance staff	10.00
	Miscellaneous expenses	0.50
3	OPERATIONS & MAINTENANCE	
	Store for Zoo /Sanctuaries	36.73
	Store for Medicine consumption	1.90

	Exp. On food for animal	47.80
	Exp. On Green grass for animals	2.75
	Exp. On Dry grass for animals	12.66
	Zoo (including maintenance of cages)	32.27
	Training & Education of Zoo staff	0.30
	Maintenance of cages for animal Security	8.00
	Moveable cages for animal	0.00
	Exp. On Security Guard, Must roll arrangement ***	20.00
	Maintenance of Fish home	50.00
	Maintenance of cages and other	4.68
	Fruit and vegetable Exp. For animals	20.00
4	PROGRAMME EXPENSES	
	Exp. On Animal week	1.00
	Total	459.16
5	FIXED ASSETS	
	Fixed Assets Total (purchase of new animal/ equipment for veterinary hospital/ office equipment, construction of wall – BRTS/ Entry plaza, development fund, etc.)	546.00
6	CAPITAL WORK IN PROGRESS	
	Development of Zoo (CZA)	100.00
	Total	646.00

S N	WORK / ITEM	Approx. Estimate	ESTIMATED EXPENSES IN RS. LACS FOR THE PERIOD																				
			2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34
	Exp. On Animal week		1.00																				
	Total		459.16																				
5	FIXED ASSETS																						
	Fixed Assets Total		546.00																				
6	CAPITAL WORK IN PROGRESS																						
	Development of Zoo (CZA)		100.00																				
	Total		646.00																				

NOTE: There may be some variations in the above as per the need and availability of required resources and the facilities prioritized by the concerned officials.

*** Regular labour, security guard and must roll will be out sourced by private contractor annually.

Annexure

1. Annexure – 1: List of Flora of Indore Zoo
2. Annexure – 2: List of free living animals of Indore Zoo
3. Annexure – 3: Legal status of zoo land
4. Annexure – 4: Existing survey plan for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
5. Annexure – 5: Status of animals as on 31-03-2013
6. Annexure – 6: Proposed master layout plan for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
7. Annexure – 7: Water sample test report
8. Annexure – 8: Proposed internal Potable water supply system layout plan for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
9. Annexure – 9: Proposed internal sewage disposal system for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
10. Annexure – 10: Proposed internal storm water layout plan for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
11. Annexure – 11: Proposed internal layout plan for street light and electricity distribution system for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
12. Annexure – 12: Proposed internal combined services storm, sewer & water line layout plan for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
13. Annexure – 13: Compliance report of the comments made by expert group on zoo design in its 42nd meeting (Reference no. – 19-73/92-CZA (152) (Volume IV) (M) /3342 Dated 28/08/2013
14. Annexure – 14: Proposed master layout plan with contours for Kamla Nehru Prani Sangrahalaya (Zoo) at Indore
15. Annexure – 15: Compliance report of the comments made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3803 Dated 04/11/2013.
16. Annexure - 16: Compliance report of the comments made by members of expert group vides mail on dated 25/03/2014

17. Annexure – 17: Observation report on the Master plan made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3342 Dated 22/08/2013
18. Annexure – 18: Letter regarding approved Master layout plan approved by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3498 Dated 09/09/2013
19. Annexure – 19: Observation report on the Master plan made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3803 Dated 04/11/2013
20. Annexure – 20: Observation report on the Master plan made by members of expert group vide mail on Dated 25/03/2014
21. Annexure – 21: Observation report on the Master plan made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. III) (M) Dated 27/12/2010

Annexure-1
List of flora of Indore Zoo

S N	List of Trees in Indore Zoo	
Fruit bearing trees		
1	Mahua	Medhuca longifolia
2	Mulberry	Morus alba
3	Indian jujube	Ziziphus mauritiana
4	Guava tree	Psidium guajava
5	Mango trees	Mangifera indica
6	Tamarind	Tamarindus indiaca
7	Jamun	Syzygium cumini
8	Badhal	Artocarpus lakoocha
9	Pomegranate	Punica granatum
10	Ceylon Oak	schleichera oleosa
11	Singree	Pithecolobus dulce
12	Papaya	Carica aurantifolia
13	Lemon	Citrus aurantifolia
14	Amla	Emblica officinalis
Ornamental trees		
1	Cassia siamea	Cassia siamia
2	Jacaranda	Jacaranda mimosaefolia
3	Peltoforum	Peltoforum feruginium
4	Gold Mohar	Delonix regia
5	Amaltas	Cassia fistula

S N	List of Trees in Indore Zoo	
6	Silver Oak	Grevillea robusta
7	Bottle Brush	Callistemon lanceolatus
8	Sita Ashok	Saraca indica
9	Ashok	Polyalthia longifolia
10	Indian Rubber	Ficus elastica
11	Tree of Sorrow	Nyctanthes variegata
Fodder trees		
1	Pakar	Ficus rumphii
2	Banyan	Ficus Benghalensis
3	Gular	Ficus glomerata
4	Pipal	Ficus Religiosa
Other		
1	Semal Tree	Bombax ceiba

Annexure 2

List of free living animals of Indore Zoo

1. Langur (*Presbytis entellus*).
2. Common Rat Snake (*Ptyas mucosus*).
3. Common sand boa (*Eryx johnii*)
4. Monocellate cobra (*Naja naja*)
5. Black Kite (*Milvus migrans*)
6. Crow (*Corvus splendens*)
7. Indian Peacock (*Pavo cristatus*)
8. Red wattled Lapwing (*Vanellus indicus*)
9. Cattle egret (*Bubulcus ibis*)
10. Shikra (*Accipiter badius*)
11. Alexandrine Parakeet (*Psittacula eupatria*)
12. Rose ring Parakeet (*Psittacula krameri*)
13. Koel (*Eudynamys scolopacea*)
14. Pied kingfisher (*Ceryle rudis*)
15. Indian Roller (*Coracias benghalensis*)
16. Grey Hornbill (*Tockus birostris*)
17. Spotted owlet (*Athene brama*)
18. Baya (*Ploceus philippinus*)

Annexure - 3 Legal status of zoo land

प.के. सिंह,
आयुक्त,
इन्दौर क्षेत्र

अ.आ. पत्र क्र.संके 356
दिनांक 31/8/04

विषय :- इन्दौर शहर के नवमला क्षेत्र स्थित केडी बाग की भूमि प्राणी संग्रहालय में हस्तगतित होने पर।

सन्दर्भ :- श्री ए.के. अंतर्वेद, उप सचिव, म.उ. आरक्षण, जल विभाग का पत्र क्र. संके 2 वी/245/93/3/ जिस दिनांक 24 दिसम्बर 1993 ।

संबन्धित अधिनियम संख्या 27 अक्टूबर 1972 के अन्तर्गत जल विभाग, इन्दौर की ओर से है कि "जल की सुरक्षा एवं आकाशवाणी की दृष्टि से केडी क्षेत्र को सुरक्षा कक्षा में आने के लिये जल विभाग की हस्तगतित करने के लिये जल विभाग तैयार करती है और भी यदि स्थानीय आकाशवाणी के कर्तव्य से जल सुरक्षा आकाशवाणी प्रस्ताव को तो मंजूर की पूरी स्थिति में जल विभाग को अग्रता प्रदान की जायेगी और जल विभाग का कर्तव्य यही होगा, इस संबंध में कोई अग्रताही प्रस्ताव नहीं करेगा।"

इस संबंध में अनुसंधानकर्ता की विस्तृत जांच की गई है। यह संबंध में अंतर्वेद इन्दौर का पत्र संख्या 115 [केडीबाग] का संख्या 63-68 संख्या है जो शासकीय भूमि है। इस भूमि का पूरा अतिरिक्त के अंतर्वेद विवरण निम्नलिखित है :-

1. इस भूमि पर टी.पी.केन्डू, पुलाव, सिंधुवा घाट, आरक्षण [अतिरिक्त क्षेत्र] संयोजन भूखण्ड नगर तथा जल विभाग के कच्चे का केडी बाग स्थित है। इनके संबंध में विवरण रक्का संख्या निम्नलिखित है :-

सर्वे संख्या	संख्या	टी.पी.केन्डू	संख्या
115	63-68 संख्या		6.50 एकड़
		पुलाव	7.00 एकड़
		सिंधुवाघाट	6.50 एकड़
		आरक्षण	0.50 एकड़
		संयोजन भूखण्ड नगर	6.50 एकड़
		[अतिरिक्त क्षेत्र] कच्चा	
		केडी बाग	4.04 एकड़
		जल विभाग के कच्चे का	
		कुल रक्का	31.04 एकड़

उक्त खतरा नंबर 114 की 63.68 एकड़ भूमि में से 63.68-31.04 अर्थात् 32.64 एकड़ शासकीय भूमि रिक्त बूली एवं अतुरक्षित पड़ी हुई है तथा इस पर गाबर घात, लेन्टाना झाड़ियाँ आदि बहुत बड़ी मात्रा में उगी हुई हैं तथा इस भूमि के दक्षिण-पश्चिम में प्रायः सुदृष्ट अतिक्रमण के प्रयास हो रहे हैं।

[2] उपरोक्त विवरण से स्पष्ट है कि रेतीडेंती नवलखा क्षेत्र स्थित खतरा नं. 114 भूमि में से केवल 4.04 एकड़ भूमि जेल विभाग के कब्जे में है। यह भूमि भी इन्दौर नगर पालिक निगम के पत्र क्र. 2[वी] 1248/री.आय. दि. 15-9-66 के अनुसार मध्यभारत गवट में प्रकृषित अधिसूचना क्र. 7104 दि. 26-8-55 अनुसार रेतीडेंती रेरिया के हाथी बाग, नया पुलबाग, एवं कैदी बाग की जमीन है, नगर निगम के अधिकार में आई थी।

नगर निगम आयुक्त ने बैठक दि. 15-5-94 में स्पष्ट रूप से अवगत कराया कि उक्त कैदी बाग की 63.68 एकड़ भूमि में से 4.04 एकड़ भूमि जेल विभाग के आदेशन पर उक्त शासनादेशों के तारताम्य में जेल कैदियों के बसा कराने हेतु जेल विभाग को दी गई थी तथा शेष भूमि पर जेल विभाग का न तो कब्जा है और न ही उसकी कोई मानिक्यता है। तद्वय अधीक्षक जिला जेल ने भी उनके कार्यविधीन पत्र क्र. 2048 इन्दौर, दि. 10-11-93 में भी उपरोक्त विधि शासनादेशों का हवाला देते हुए एवं उसके संबंध में नगर निगम इन्दौर के पत्र की प्रतिलिपि संलग्न करते हुए 63.68 एकड़ भूमि में से केवल 4.04 एकड़ भूमि ही जेल विभाग के कब्जे होने का लेख किया गया।

[3] कैदीबाग की उक्त 4.04 एकड़ भूमि के संबंध में उक्त पत्र के सिवाय शेष भूमि के कब्जे एवं उसकी मानिक्यता के संबंध में अन्य कोई तथ्यात्मक जानकारी यदि हो तो उसे देने हेतु जिला जेल अधीक्षक को अनुविभागीय अधिकारी इन्दौर के पत्र क्र. 2147/री.ई/93 दि. 16-11-93 एवं पत्र क्र. 354/री.ई./94 दि. 13-6-94 द्वारा सूचित किया गया लेकिन इसके बावजूद भी वे न तो कोई तथ्यात्मक जानकारी दे सके और न ही कोई अन्य संगत दस्तावेज पेश कर सके।

इन प्रकार से स्पष्ट है कि रेतीडेंती नवलखा क्षेत्र कैदीबाग खतरा नं. 114 रकबा 63.68 एकड़ में से केवल 4.04 एकड़ भूमि ही जेल विभाग के अधिकार में दी गई है। शेष भूमि शासकीय भूमि है एवं उसमें से पूर्व में सुदाश्रम, टी.व्ही. केंद्र, विद्ययाघर आदि हेतु भूमि दी गई है। शेष 32.64 एकड़ शासकीय भूमि जोके पर बूली अतुरक्षित एवं रिक्त पड़ी है। जेल विभाग की सम्पूर्ण भूमि से अधिक भूमि पर अतिक्रमण होकर व्यापारिक गृह नगर बना हुआ है। भूमि की पर्याप्त सुरक्षा न होने के कारण तद्वय अतिक्रमण की संभावना रहती है। अतएव जोके पर पड़ी सम्पूर्ण भूमि प्राणों संग्रहालय हेतु इन्दौर नगर पालिक निगम को दिया जाने का निर्णय लिया गया है ताकि भूमि पर अतिक्रमण न हो सके। इसके साथ ही

राष्ट्र के प्रतिष्ठा की दृष्टि से भी यह भूमि प्राणी संग्रहालय को दिया जाना आवश्यक है। भूमि प्राणी संग्रहालय को दिए जाने के संकेत में एक महत्वपूर्ण तथ्य यह भी है कि राष्ट्रीय मापदंड के अनुसार इनदोर के प्राणी संग्रहालय के पास पर्याप्त भूमि है एवं प्रजापति केदी बाग की भूमि प्राणी संग्रहालय को दे देने से यह समस्या भी हल हो जाती है एवं प्राणी संग्रहालय इनदोर राष्ट्रीय नहर पर इतने आ जायेगा जिससे इसके विकास में सुविधा होगी।

संलग्न :- उपरोक्तानुसार।

मन्दीर,
१०
[र.के. सिंह]

श्री संजय राम,
प्रमुख अधिकारी,
पशु प्रजनन शाखा,
केंद्र विभाग,
भोपाल

Annexure-5
Status of animals as on 31-03-2013

LIST OF INVENTORY OF TOTAL ANIMALS AVAILABLE FROM 1/04/2012 TO 31/03/13																						
Kamla Nehru Prani Sangrahalaya Indore (M.P)			Yearly Inventory Report												From 01.04.2012 - 31.03.2013							
S N	Animal	Taxonomic name	OPENING STOCK			BIRTH			ACQUISITION			DISPOSALS			DEATH			CLOSING				
			M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T	
1	Budgerigar	Melopsittacus undulatus	18	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	20	0	38
2	Alexandrine parakeet	Psittacula eupatria	1	2	5	0	0	0	4	3	0	0	0	0	0	0	0	0	5	5	5	15
3	Cockatiel	Nymphicus hollandicus	2	2	0	0	0	4	4	4	0	0	0	0	0	0	0	0	6	6	4	16
4	Plum headed parakeet	Psittacula cyanocephala	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	4	5
5	Rose ringed parakeet	Psittacula krameri	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	7
6	Greyheaded lovebirds	Agapornis	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	6
7	Emu	Dromains novaehollandiae	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
8	Sarus Crane	Grus antigone	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
9	Panted Stork	Mycteria leucocephala	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	4	4	0	8
10	Pelican Rosy/white	Pelicanus onocrotalus	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	2	2	0	4

LIST OF INVENTORY OF TOTAL ANIMALS AVAILABLE FROM 1/04/2012 TO 31/03/13																					
Kamla Nehru Prani Sangrahalaya Indore (M.P)			Yearly Inventory Report												From 01.04.2012 - 31.03.2013						
S N	Animal	Taxonomic name	OPENING STOCK			BIRTH			ACQUISITION			DISPOSALS			DEATH			CLOSING			
111	Dove (Columbidae)	Gelopelia	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
112	Silver Pheasant	Lophura nictamera	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	2
113	Golden Pheasant	Chrysolophus pictus	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2
114	Lady Amherst	Chrysolophus amherstiae	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2
115	Jacobin pigeon	Columba livia	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
116	Silky hen	Gallus gallus domesticus	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	9
117	Peafowl white	Pavo cristatus	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5
118	Peafowl	Pavo cristatus	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
119	Eagle	Aquila hastata	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
20	vulture	Gyps fulvus	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	2
21	Owl	Bubo bubo	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	2
22	Grey langoor	Semnopithecus entellus	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
23	Macaque rhesus	Macaca mulatta	5	8	0	0	0	0	0	0	0	0	0	0	0	0	0	5	8	0	13

LIST OF INVENTORY OF TOTAL ANIMALS AVAILABLE FROM 1/04/2012 TO 31/03/13

Kamla Nehru Prani Sangrahalaya Indore (M.P)		Yearly Inventory Report												From 01.04.2012 - 31.03.2013							
S N	Animal	Taxonomic name	OPENING STOCK			BIRTH			ACQUISITION			DISPOSALS			DEATH			CLOSING			
24	White Tiger	Panthera tigris	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
25	Bengal Tiger	Panthera tigris	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4
26	Leopard	Panthera pardus	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	3
27	Jungle cat	Felis chau	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
28	Black bear	Ursus thibetanus	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
29	Sloth bear	Melursus Ursinus	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
30	Hippopotamus	Hippopotamus amphibius	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	4
31	Hyena	Hyaena hyaena	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	5
32	Wolf	Canis indica	1	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	3
33	Jackal	Canis aureus	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
34	Fox	Vulpes bengalensis	1	1	0	1	1	0	1	1	0	1	1	0	0	0	0	2	2	0	4
35	Sambar	Cervus unicolor	2	5	0	0	0	2	0	0	0	0	0	0	0	0	0	2	5	2	9
36	Spotted deer	Axis axis	6	12	0	0	0	1	0	0	0	0	0	0	0	0	0	6	12	1	19
3	Black buck	Antilope	1	3	0	0	0	3	0	0	0	0	0	0	1	0	1	18	32	2	5

LIST OF INVENTORY OF TOTAL ANIMALS AVAILABLE FROM 1/04/2012 TO 31/03/13																						
Kamla Nehru Prani Sangrahalaya Indore (M.P)			Yearly Inventory Report											From 01.04.2012 - 31.03.2013								
S N	Animal	Taxonomic name	OPENING STOCK			BIRTH			ACQUISITION			DISPOSALS			DEATH			CLOSING				
7		cervicapra	9	2															2			
38	Nilgai	Boselaphus tragocamelus	5	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	4	2	1
39	Elephant	Elephas maximus	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
40	Crocodile	Crocodylus palustris	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	2
41	Ghariyal	Givialis gangeticus	1	4	0	0	0	6	0	0	0	0	0	0	0	0	0	4	1	4	2	7
42	Asian rock python	Python molurus	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	9	1	1	1	3
43	Tortoise	Geochelon sps.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
44	Indian Monitor Lizard	Varanus indicus	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
45	porcupine	Hystrix indica	3	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	3	5	4	1
		Total	104	137	50	1	1	32	17	16	7	1	1	0	2	1	14	119	152	75	346	

Annexure-7
Water sample test report

The Municipal Corporation Indore									
LABORATORY (WATER TESTING)									
Report of Bacteriological Examination of Water									
Sample of Water received on..... 3.8.13 At 11.10 a. m. / p. m.									
Place of Collection 2	Division No. 3	Source 4	Free Chlorine P. P. M. 5	Probable No. of B Coll in 100 C. C. of Water 6	Previous Examination if any 7	Turbidity odour 8	Opinion 9	Remarks 10	
पुभारी अधिकारी डा. श्री. अशोक/लक्ष्मी न. ०. नि. इन्दौर	-	ठारपेल	नहीं	नहीं	-	-	अंतोष्य	(a) Highly / Dangerously contaminated. (b) Unfit for human consumption. Sl. : Why chlorination is not properly done ? (i) Repeat the sample twice after proper chlorination & report. (ii) Prosecute, issue notice SE- (i) Please ensure proper chlorination at the source (ii) Please arrange to hang board accordingly. (iii) Please arrange to get the leakage checked immediately.	
Municipal Engineer I/c water works Mpl. Corporation Indore. Sanitary Inspector D. No..... Swimming pool.									
							Public Analyst Municipal Corporation Indore. 58/13		

Annexure 13

Compliance report of the comments made by expert group on zoo design in its 42nd meeting
(Reference no. – 19-73/92-CZA (152) (Volume IV) (M) /3342 Dated 28/08/2013

SI No.	Observations	Compliance Details
1	The area marked for the jungle cat and civet cat of 900 sqm. for each species is on higher side, it should be reduced to 200- 300 sqm for each species.	The area for Civet Cat and Jungle cat has been marked as 200-300 sqm for each species.
2	The location of Fox enclosure should be marked on the layout plan. The area for this species may be kept about 400 sqm.	Site for Fox has been marked (area prescribed 400 sqm)
3	The location of service gate should be clearly marked and labeled.	Complied
4	The location of existing and future bore wells should also be marked.	Complied
5	Site for additional water points and toilets should also be marked.	Complied

Annexure 15

Compliance report of the comments made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3803 Dated 04/11/2013

SI No.	Comments made by Expert and Compliances Details	Compliance Report
1	The layout plan of the proposed services viz. storm water drainage, sewer and water lines is not prepared as per sound engineering practices. Some of the deficiencies are as follows:	
(a)	The Contours may also be indicated on the Master Plan as per CZA Guidelines.	This has been complied. Please see at annexure 14.
(b)	The sewer lines are designed for flow under gravity but the junction (HW-99.00) of manholes near bridge is opposite to the direction of flow of main line.	Design has been aligned as per the flow. Please see at annexure 9.
(c)	STP has been proposed at the upstream and of the nallah at an invert level of 89.40 near wolf enclosure, where the actual ground level is 100.45	STP has been proposed at the suitable location for the treatment of waste as well as discharge of treated waste. This has been marked in annexure 9.
(d)	Sewer line is proposed to cross the water channel at two places which should be avoided for accidental contamination of water channel and also through leakages.	This has been done. Please may be seen in annexure 9
(e)	Sewer line network for area between Hyena enclosure and main gate has not been linked to the proposed STP.	Sewer line network for area between Hyena enclosure and main gate has been linked to the proposed STP. Please see in annexure 9.
(f)	The sewer lines are planned and designed for the probable quantum of sewerage generated Para 2.8 at page no 43 states no quantity of liquid waste has been assessed. The liquid waste generated should be assessed and treated before discharging in Khan River. The sewer lines may be designed considering the quantum of discharge assessed.	The liquid waste has been assessed and sewer line has been designed based on the quantity of waste generated. The quantum of liquid waste has been assessed as 40,000 ltr per day. And sewer line has been designed based on the quantity of the waste generated.
(g)	Para 2.8 at page no 43 is contradictory to para 4.5.3 at page 57 which provides for STP.	Para 2.8 at page 43 indicates the existing system of disposal of solid & liquid waste whereas para 4.5.3 at page 60 indicates that liquid waste will be treated in STP and released for the use of the irrigation, horticulture and flushing. In other word para 2.8 indicates the appraisal whereas para 4.5.3 indicates

SI No.	Comments made by Expert and Compliances Details	Compliance Report
		the future action plan.
(h)	<p>Para 2.7 on water supply system at page 43 should be linked to para 4.5.1 at page 56. A total demand of 6240 litres of potable water and 333380 litres (103380+230000) of non-potable water has been assessed. The total quantity of water available from different sources should be indicated and capacity of reservoir to be calculated. Their locations may be indicated in the Master Plan as well as marked on Layout plan.</p>	<p>Para 2.7 indicates the existing water supply whereas Para 4.5.1 indicates the future action plan for water supply system. Sources & Capacity of reservoir has been mentioned in head 4.5.1 at page no 57. Location of bore well has been mentioned in the Master plan at page 57 and marked in layout plan.</p>
(i)	<p>Water supply lines, feeding the reservoir are not marked on the plan. The quality of water available in the water channel may also be got used and feasibility of its utilization in the campus may be evaluated.</p>	<p>Water supply line feeding the reservoir has been marked in the Plan. This may be seen in the annexure 8. The quality of water has been tested which suits for consumption. This will be utilized for different purpose. Water testing report has been annexed in the Annexure 7.</p>
(j)	<p>Possibility of treatment of solid waste for production of biogas and manure may be explored and incorporated in the Master Plan.</p>	<p>The area has been marked for the preparation of manure by using the solid waste. Please see in annexure 6. Area has been marked in the plan for SWM/dumping site as site for preparation of manure by using solid waste.</p>
7	<p>Estimate of Potable water (3340 liter per day) and non-potable (333380 liter per day) have been given with breakup of requirement (pg- 56 - 57). However the basis of calculations needs to be spelt out.</p>	<p>Basis of Calculation for the requirement of potable and non-potable water has been complied. This has been given on page no 57 to 59.</p>


Annexure 16

Compliance report of the comments made by members of expert group vide mail on dated 25/03/2014:

Sl No.	Observation	Compliances
1	On the cover page the period of master plan is mentioned is of 2008 to 2029, however it is being submitted in 2014 it should start the year accordingly and end date should be of 10 years only. Thus it should state 2014-2024. Keeping in view of this, the information provided at page No. 110-117 should also be amended and filled up accordingly.	Master plan has been prepared for 20 years as per the observation received from CZA members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. III) (M) Dated 27/12/2010. Please see annexure – 21.
2	List of contents should be placed before acknowledgement, foreword and preface, since the present content list includes all.	List of contents has been updated.
3	The approved and signed copy of master (layout) plan as of by CZA should be included within the spiral bind. It is seen at present the same is being stapled separately. Further, it should be annexed in actual size as of approved, so as when the same needs to be referred, the same could be done so.	Approved and signed copy of master layout plan has been annexed in actual size.
4	The layout plan submitted with respect to the water, sewer electric line and others does not include signatures/seal of the zoo director, neither its operator nor all other concerned.	Signed copy of layout plan w.r.t. the water, sewer electric line and others are annexed.
5	The certificate in the beginning of the master plan should include signatures of the Zoo Operator i.e. Commissioner, Municipal Corporation, Indore.	Certificate include signature of Zoo operator.
6	The annexure included at S. No. 3 with respect to the legal status of land is not legible.	Annexure no. 3 made legible.
7	The master plan document should include major correspondence and approvals with respect to master (layout) plan and master plan as of with Central Zoo Authority as annexure.	Master plan document include major correspondence and approvals in annexure.

Annexure – 17

Observation report on the Master plan made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3342 Dated 22/08/2013


GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
Central Zoo Authority

THROUGH REGISTERED POST

F. No. 19-73/92-CZA(152)(Vol. IV)(M) | 3342 DATE: 22.08.2013

To P.O. (ZOO)
नियमानुसार ही कार्यवाही करावे।
आयुक्त
नगर पालिक निगम, इन्दौर

The Officer-in-charge
Kamla Nehru Prani Sangrahalaya,
Indore – 452 001 (Madhya Pradesh).

Sub:- Revised Master (layout) Plan of the Kamla Nehru Prani Sangrahalaya, Indore.

Ref:- Your office letter No. 231/Indore Zoo/2013 dated 13.06.2013.

Sir,

Reference is invited to the above cited correspondence.

The Master (layout) Plan of the Kamla Nehru Prani Sangrahalaya, Indore was placed before the Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 7th August, 2013. You are requested to carry out the following amendments:-

M.P.
CZA
10/09/13

- The area marked for Jungle cat and Civet cat of 900 sq. m. for each species is on higher side, it should be reduced to 200-300 sq. m. for each species.
- The location of Fox enclosure should be marked on the layout plan. The area for this species may be kept about 400 sq. m.
- The location of the service gate should be clearly marked and labeled.
- Location of existing and future bore wells should also be marked.
- Site for additional water points and toilets should also be marked.

Amended copies of the Master (layout) Plan should be submitted to Central Zoo Authority for its approval.

Yours faithfully,
sd/-
(B. S. Bonal)
Member Secretary

Copy to the Commissioner, Municipal Corporation, Indore, Madhya Pradesh for favour of information and necessary action.


(Dr. Brij Kishor Gupta)
Evaluation and Monitoring Officer


Bikaner House, Annexe VI, Shahjahan Road, New Delhi-110011
Phone : 011-23381585, 23073072, 23070375 (EPABX), Fax : +91-11-23386012
E-mail : cza@nic.in Website : http://www.cza.nic.in


Observations made in this letter have been complied and can be seen in the Revised Layout plan (Annexure 6)

Annexure – 18

Letter regarding approved Master layout plan approved by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3498 Dated 09/09/2013


जहाँ है हरियाली।
वहाँ है खुशहाली।।


GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
Central Zoo Authority



THROUGH REGISTERED POST

F. No. 19-73/92-CZA(152)(Vol. IV)(M) / 3498
DATE: 09.09.2013

To
The Officer-in-charge
Kamla Nehru Prani Sangrahalaya,
Indore – 452 001 (Madhya Pradesh).

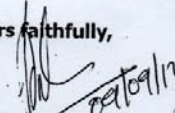
Sub:- Master (layout) Plan of the Kamla Nehru Prani Sangrahalaya, Indore.

Sir,

A copy of the approved Master (layout) Plan of the Kamla Nehru Prani Sangrahalaya, Indore duly authenticated by the Member Secretary on behalf of the Central Zoo Authority is enclosed herewith for your records.

You are hereby requested to ensure that all the developmental activities in the Kamla Nehru Prani Sangrahalaya, Indore must be in conformity with the Master (layout) Plan.

You are also asked to submit the detail Master Plan in consonance with approved Master (layout) Plan at the earliest for approval for this end.

Yours faithfully,

(B. S. Bonal)
Member Secretary

Encl: Signed Master (layout) Plan

Copy for favor of information to (with enclosure):-

1. The Commissioner, Indore Municipal Corporation, Indore, Madhya Pradesh.
2. The Chief Wildlife Warden, Government of Madhya Pradesh, Bhopal.


(B. S. Bonal)
Member Secretary


*वॉयस
CZA
File*


Bikaner House, Annexe VI, Shahjahan Road, New Delhi-110011
Phone : 011-23381585, 23073072, 23070375 (EPABX), Fax : +91-11-23386012
E-mail : cza@nic.in Website : http://www.cza.nic.in

Annexure – 19

Observation report on the Master plan made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. IV) (M) /3803 Dated 04/11/2013


जहाँ है हरियाली।
वहाँ है खुशहाली।


GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
Central Zoo Authority



F. No. 19-73/92-CZA(152)(Vol. IV)(M) / 3803 **DATE: 04.11.2013**

To

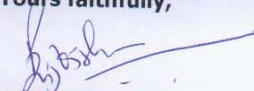
The In-charge
Kamla Nehru Prani Sangrahalaya,
Indore (Madhya Pradesh).

Sub:- Master plan for the long-term development of Kamla Nehru Prani Sangrahalaya, Indore - Regarding.

Sir,

The Master Plan submitted for the long-term development of the Kamla Nehru Prani Sangrahalaya, Indore was scrutinized by the members of the Expert Group on Zoo Designing of the Central Zoo Authority.

The members have submitted their comments on the Master Plan of the Kamla Nehru Prani Sangrahalaya, Indore. A copy of the comments is enclosed herewith for your perusal. I am directed to request you to amend the Master Plan accordingly and submit four copies to this office for further necessary action at our end.

Yours faithfully,

(Dr. Brij Kishor Gupta)
Evaluation and Monitoring Officer

Encl: as above

E:\madhu_fm\adhu\master plan\comments of subgroup D to the zoeo.doc

Bikaner House, Annexe VI, Shahjahan Road, New Delhi-110011
Phone : 011-23381585, 23073072, 23070375 (EPABX), Fax : +91-11-23386012
E-mail : cza@nic.in Website : http://www.cza.nic.in

The comments on the Master Plan of Kamla Nehru Prani Sangrahalaya, Indore

1. Kamla Nehru Prani Sangrahalaya, Indore has an area of 51 acres. The zoo proposes to display 48 species comprising of 529 specimens as per collection plan. The Master plan has been prepared for 20 years (20008-09 to 2028-29). Currently, the number of visitors is about 10.50 lacs per year.
2. The master plan has been prepared as per guidelines of CZA and submitted as per the check list for submission of master plan.
3. The plan has clearly stated its vision, mission and objectives (pg-1-2) which are in tune with the CZA guidelines.
4. The zoo operator has complied with all the observations made earlier by members of expert group.
5. The theme of display of animal is taxonomical. New enclosures of mammals, birds and reptiles have been proposed while the old and defunct ones would be dismantled.
6. Description of the proposed layout plan and visitor circulation has ably been described. (Pg-54-55)
7. Estimate of potable water (3340 liter per day) and non potable (333380 liter per day) have been given with breakup of requirement (pg-56-57). However, the basis of calculations needs to be spelt out.
8. Power requirement of 41.7 KV has been estimated which seem to be adequate. (Pg-58)
9. A Plan to dispose of solid and liquid waste has been described. An STP will be installed at the entrance of river Khan into the zoo where the sewage waste will be treated and re-circulated for horticulture purpose.
10. For management purpose, the whole of zoo has been divided into 8 sections namely animal section, veterinary, security, sanitation and horticulture, store, maintenance, education and awareness and administration.
11. Adequate visitors' facilities like parking, toilets, drinking water points and sitting benches have been proposed.
12. A brief of animal enclosures to be constructed has been described. It includes the size of display area, cubicles and enrichment aspects. These parameters are as per CZA guidelines.
13. Khan river is the main source of pollution for the zoo. The master plan has proposed measures like stone pitching, plantation and installation of STP to check pollution (pg-75)

14. Education and awareness program has been well planned .An interpretation center has been proposed having facilities like exhibit gallery, auditorium, a classroom, office, store and W/C (Pg-71).

15. The maintenance section has also been proposed with adequate infrastructure and support staff.

16. The store and feed supply section has been provided adequate space with required equipments, vehicle and support staff.

17. The operator has proposed plans for disaster management with required equipments, vehicle, and siren system and support staff. Contingency plan, capacity building and e-governance have also been proposed .Adequate ways and means have been described to meet contingency and capacity building works.

18. The budget provision has been made to cover all the required construction and development, equipments, vehicles and staffs

19.As regard note on layout plan by Member Secretary CZA, it is informed that the layout plan was first scrutinized by expert group in its 29th meeting held on 11/4/2012.The expert group recommended its approval with certain modification. The zoo operator again submitted the modified layout plan and was again scrutinized in its 42th meeting of expert group. The comments made in that meeting were communicated to zoo operator vide CZA letter no-19-73/92 CZA (152)(Vol-IV) (M)/3342 dated 28/08/2013.(Ann-13)The zoo authorities have again revised the layout plan in the light of aforesaid letter and enclosed it with master plan. The comments have been complied .Therefore the revised layout plan is in order.

20. In view of above the master plan along with layout plan is recommended for approval subject to observations above and those of CE (CCU) sent separately.

(Dr A K Malhotra)

(A.S. Dogra)

Subject: Revised master plan of the Kamla Nehru Prani Sangrahalaya,
Indore, Madhya Pradesh

To: Central Zoo Authority <cza@nic.in>

Cc: malhotra malhotra011@gmail.com, "asdogra"@gmail.com <>

Date: 23/10/13 04:13 PM

From: Kumar <eep2ccu-mef@nic.in>

Lr_MS_CZA_23.10.13_page1.jpg (264kB)

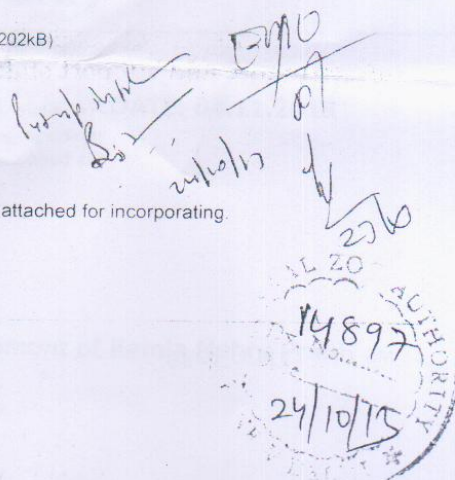
Lr_MS_CZA_23.10.13_p2.jpg (202kB)

To,
The Member Secretary, CZA

Sir,
Comments on Kamla Nehru Prani Sangrahalaya, Indore, Madhya Pradesh is attached for incorporating.

Executive Engineer P-II
Civil Construction Unit

Lr_MS_CZA_23.10.13_page1.jpg



भारत सरकार
मुख्य अभियन्ता (सिविल निर्माण एकक) का कार्यालय
पर्यावरण एवं वन मंत्रालय
पर्यावरण भवन, सी जी ओ कॉम्प्लेक्स
लोदी रोड, नई दिल्ली - 110 003
फोन (011)-24360643, फैक्स (011)-24303422

Government of India
Office of Chief Engineer (CCU)
Ministry of Environment & Forests
Paryavaran Bhawan, CGO Complex
Lodhi Road, New Delhi - 110 003
Ph (011)-24360643 Fax (011)-24363422

उक्त संख्या : 13/07/सि नि ए/1356

नई दिल्ली दिनांक 23/10/13

The Member Secretary,
Central Zoo Authority, MoEF,
Bikaner House, Annexe VI,
Shahjahan Road,
New Delhi-110 011.

Sub: Revised Master plan of the Kamla Nehru Prani Sangrahalaya, Indore, Madhya Pradesh.

Ref: Letter no. 20-3 / 2013 -CZA (M) / 3607 dated 23.09 2013

1. Please refer your office letter mentioned above wherein the revised Master layout plan for the long-term development of the Kamla Nehru Prani Sangrahalaya, Indore was sent for comments of this office. The revised master plan has been examined and following has been observed:
 - i. The layout plan of the proposed services viz. storm water drainage sewer and water lines is not prepared as per sound engineering practice. Some of the deficiencies are as follow:
 - a) The contours may also be indicated on the master plan as per CZA guidelines
 - b) The sewer lines are designed for flow under gravity, but the junction (HW-99 00) of manholes near bridge is opposite to the direction of flow of main line
 - c) STP has been proposed at the upstream end of the nullah at an inverted level of

10/23/2013 4:35 PM

- c) The sewer proposed on the west bank side of the river at an elevation level of 89.40 near Wolf enclosure where the natural ground level is 100.45. STP should be placed at the lowest elevation so as to have adequate slope of pipe lines without excessive excavation.
- d) Sewer line is proposed to cross the water channel at two places which should be avoided for accidental contamination of water channel and also through leakages.
- e) Sewer line network for area between Hyena enclosure and main gate has not been linked to the proposed STP.
- f) The sewer lines are planned and designed for the probable quantum of sewerage generated. Para 2.8 at page no. 43 states no quantity of liquid waste has been assessed. The liquid waste generated should be assessed and treated

Page 1 of 2

Lr_MS_CZA_23.10.13_p2.jpg

before discharging in Khan River. The sewer lines may be designed considering the quantum of discharge assessed.

- g) Para 2.8 at page 53 is contradictory to para 4.5.3 at page 57 which provides for STP.
 - h) Para 2.7 on water supply system at page 43 should be linked to para 4.5.1 at page 56. A total demand of 6240 liters of portable water and 333380 liters (103380 + 230000) of non-portable water has been assessed. The total quantity of water available from different sources should be indicated and capacity of reservoir to be calculated. Their locations, may be indicated in the master plan as well as marked on layout plan.
 - i) Water supply lines, feeding the reservoir are not marked on the plan. The quality of water available in water channel may also be got used and feasibility of its utilization in the campus may be evaluated.
 - j) Possibility of treatment of solid waste for production of biogas and manure may be explored and incorporated in the master plan.
- 2 It is requested that the comments may please be incorporated

With regards,

23/10/13
Executive Engineer (P)-II

Copy to

1. Shri A S Dogra, Coordinator Sub Group - D, Expert Group on Zoo Design, H. No. 256, Sector - 37 - A, Chandigarh (e-mail: asdogra@gmail.com)
2. Shri Dr. A K Malhotra, F-501, Neel Padam-I, Vaishali, Sector-V, Ghaziabad-201 010 (e-mail: malhotra.malhotra011@gmail.com)

10/23/2013 4:35 PM

Observations made in this letter have been complied and can be seen in the Annexure 15

Annexure – 20

Observation report on the Master plan made by members of expert group vide mail on dated 25/03/2014

3/28/2014

Gmail - Recived Mail Dr. Brij Kishor Gupta (Regarding Master Plan.)



Hitendra Mehta <hitendramehta.architect@gmail.com>

Recived Mail Dr. Brij Kishor Gupta (Regarding Master Plan.)

1 message

Kamlanehrupranisangrahalayaindore Madhyapradesh <indorezoo@gmail.com> Tue, Mar 25, 2014 at 4:27 PM
To: Nitish Kumar <niti4ever@gmail.com>, nareshjaiswal78@yahoo.in, Hitendra Mehta <hitendramehta.architect@gmail.com>, malhotra.malhotra011@gmail.com

Central Zoo Authority via nic.in 24 Mar (1 day ago)

to B.S., me

Sir,

The master plan of the Kamla Nehru Prani Sangrahalaya, Indore has been scrutinized and following observations are made:

1. On the cover page the period of master plan is mentioned is of 2008 to 2029, however it is being submitted in 2014 It should start the year accordingly and end date should be of 10 years only. Thus the it should state 2014-2024. Keeping in view of this, the information provided at page No. 110-117 should also be amended and filled up accordingly.
2. List of contents should be placed before acknowledgement, foreword and preface, since the present content list includes all.
3. The approved and signed copy of master (layout) plan as of by CZA should be included within the spiral bind. It is seen at present the same is being stapled separately. Further, it should be annexed in actual size as of approved, so as when the same needs to be referred, the same could be done so.
4. The layout plan submitted with respect to the water, sewer electric line and others does not include signatures/seal of the zoo director, neither its operator and all other concerned.
5. The certificate in the beginning of the master plan should include signatures of the Zoo Operator i.e. Commissioner, Municipal Corporation, Indore.
6. The annexure included at S. No. 3 with respect to the legal status of land is not legible.
7. The master plan document should include major correspondence and approvals with respect to master (layout) plan and master plan as of with Central Zoo Authority as annexure.

Keeping in view of the above, may please submit the revised copy of the master plan for its approval.

Dr. Brij Kishor Gupta
Evaluation & Monitoring Officer
Central Zoo Authority
Annexe VI, Bikaner House
Shahjahan Road
New Delhi 110 011

On 13/03/14 08:37 PM, **Kamlanehrupranisangrahalayaindore Madhyapradesh** wrote:


<https://mail.google.com/mail/u/0/?ui=2&ik=2b4bd0f668&view=pt&search=inbox&th=144f8e3619deb5d4&siml=144f8e3619deb5d4>

1/1

Observations made in this letter have been complied and can be seen in the text and drawings.

Annexure – 21

Observation report on the Master plan made by members of expert group vide CZA letter no. - 19-73/92-CZA (152) (Vol. III) (M) Dated 27/12/2010


GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
Central Zoo Authority

जहाँ है हरियाली।
वहाँ है खुशहाली।

(DATE: 27.12.2010)
T.L. पुजारी, प्राणी संग्रहालय
भुवनेश्वर/भुवनेश्वर

To
The Commissioner
Indore Municipal Corporation,
Indore (Madhya Pradesh).

Sub:- Preparation of Master Plan of Kamla Nehru Prani Sangrahalaya,
Indore - Regarding.

Sir,

Please refer to your letter dated 19/CE/Zoo dated 01/07/2010.

The Master Plan submitted for the long-term development of the Kamla Nehru Prani Sangrahalaya, Indore was scrutinized by the members of the Expert Group on Zoo Designing of the Central Zoo Authority and following observations were made for rectification at your end:-

- (i) The present master plan is mixture of master plan and management plan. The zoo authorities should first get master plan approved by CZA than prepare the management plan as per the approved master plan.
- (ii) Master plan should be for 20 years, whereas the present master plan for Indore zoo is for 10 years (2008 to 2018). This is contrary to CZA's norms.
- (iii) Objectives of plan (page 36-38) – CZA's guidelines have been reproduced but no specific mission, vision, theme & objectives have been identified for this zoo.
- (iv) There are a number of spelling mistakes in animal names (page 40-41 table).
- (v) In table – III (page – 42) under inventory of invertebrates, list of reptiles have been given. The reptiles are vertebrates.
- (vi) No colour coding has been given in the proposed layout plan (Map – III). The areas of proposed & existing enclosures have the same colour code, so it is difficult to differentiate. A new enclosure with proposed area have been identified and views on these are as under:-
- (vii) Observations on area proposed for animals:-

.....2/-

Bikaner House, Annexe VI, Shahjahan Road, New Delhi-110011
Phone : 011-23381585, 23073072, 23070375 (EPABX), Fax : +91-11-23386012
E-mail : cza@nic.in Website : http://www.cza.nic.in

Expenditure B.R.
properly B.R.
plan

19-73/92-CZA (152)

S. No.	Animal	Area propose (In m ²)	Remarks
1	Aviary mixed species	990.85	Name of species should be mentioned
2.	For exotic species for future expansion	5377	Name of species should be mentioned
3.	Indian gaur	3708	OK
4.	Jungle cat	2885	Very big area should be restricted to 200 sq. mtr.
5.	Future expansion open area	4500	Future purpose should be mentioned
6.	Hippo	3704	OK
7.	Off display area	1850	Name of species should be mentioned.

(viii) Rabbits are domestic animals, need not be displayed in a zoo.

(ix) No area has been mentioned for the following:-

- a. Tortoise - Page 45
- b. Nocturnal animal house - Page 45
- c. Elephant enclosure - Page 45
- d. Fish aquarium - Page 46
- e. Hospital equipment & research lab - Page 47
- f. Cremation facilities - Page 47

(x) At page 48, zoo has 20 acres, whereas in the initial pages it has been shown as 10 acres. This may be clarified.

(xi) In the propose staff:-

- a. the office in-charge may be Deputy Conservator (Wildlife)
- b. One post of zoo ranger should be included to Assist Curator.
- c. Two Field Assistants should be proposed to assist the education officer & biologist in field activities.

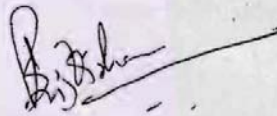
(xii) The enclosure designs for various animals have shown night houses inside the display area. They should be located outside the display area.

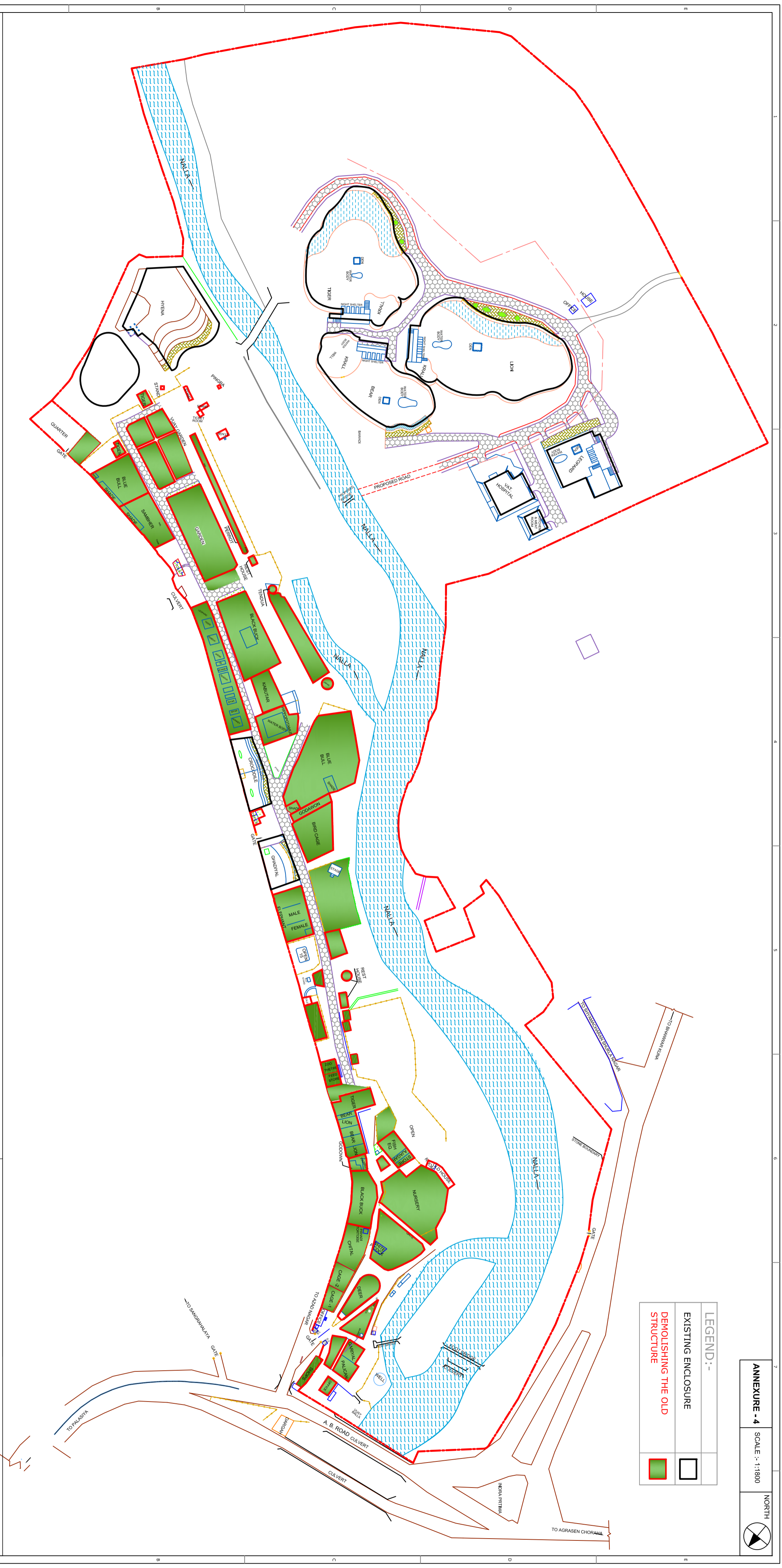
- (xiii) The number of cells in monkey enclosure should be restricted to 4 no., in Jungle cat to 2 no. and in Hippo to 3 no. No floor plan has been provided for Spotted deer and Ampala deer. We have not heard of Ampala deer. The zoo authority should clarify this: do they mean impala? Moreover, deer/ antelope species may be combined in a jungle area as per their natural habitat/ association. For example, Sambar and Blue bull are not natural associates.
- (xiv) A list of visitors amenities should be given along with their location on the proposed layout plan.
- (xv) On p. 17 it is stated that river Khan is like an urban nallah. A plan to clean the nallah may therefore be provided in sufficient detail as part of the master plan. A point of particular interest is whether the proposal would address all likely sources of pollution.
- (xvi) The master talks about water harvesting and ground water recharge through percolation wells: 4/ha. However, layout plan of storm water drainage shows the runoff being discharged in Khan River. Surface runoff calculations along with capacity of the percolation wells proposed may be submitted for clarify on the issue. Moreover, only spot levels have been provided and contours have not been drawn. This may be done now.
- (xvii) Details regarding use of sewage water treated through STP for horticulture and landscaping works have not been provided. This may be done now.
- (xviii) The plan is silent on carcass/ garbage disposal as well as the installation of an incinerator. This may be clarified.

Keeping in view of the above, you are requested to revise the Master Plan and submit five amended copies to this Authority for further scrutiny/ approval at our end.

Yours faithfully,
sd/-
(B. S. Bonal)
Member Secretary

Copy to the Chief Wildlife Warden, Government of Madhya Pradesh, Bhopal for favour of information.


(Dr. Brij Kishor Gupta)
Evaluation & Monitoring Officer



ANNEXURE - 4 SCALE :- 1:1800 NORTH

LEGEND:-

	EXISTING ENCLOSURE
	DEMOLISHING THE OLD STRUCTURE

EXISTING SURVEY PLAN FOR KAMLA NEHRU PRANI SANGRAHALAYA (ZOO) AT INDORE

CLIENT	INDORE MUNICIPAL CORPORATION		
DRAWING	EXISTING SURVEY PLAN OF ZOO AT A.B. ROAD INDORE		
DEALT	H. MEHTA	SCALE	1:1800
DESIGNED	J. MEHTA	DATE	NORTH
DRG. NO.	1		
CHECKED			

MEHTA & ASSOCIATES
 ARCHITECTS, PLANNERS, LANDSCAPE DESIGNERS
 103-102, 1st Floor, Nandan Plaza, 53, Old Bazaar, Indore-462001
 P: 0731-2440394, F: 0731-2440394
 Email: nitendra@mehtaarchitects@gmail.com, mobile: 98260-61124



TOTAL AREA OF THE LAND
= 210333.700 SQM
= 51.975 ACRE

TITLE :- LEGEND FOR WATER SUPPLY.

S.NO	Particular	Symbol
1.	Water Supply Pipe	—
	A. 100 mm Ø GI Pipe	—
	B. 80 mm Ø GI Pipe	—
	C. 25 & 40 mm Ø GI Pipe	—
2.	Sluice Valve	⊕
3.	Air Release Valve	⊕

LEGEND:-

EXISTING ENCLOSURE	□
PROPOSED NEW ENCLOSURE	□
ENCLOSURE REDONE AFTER DEMOLISHING THE OLD STRUCTURE	□
MODIFIED ENCLOSURE	□
BOUNDARY LINE	—

PROPOSED INTERNAL POTABLE WATER SUPPLY SYSTEM LAYOUT PLAN FOR KAMLA NEHRU PRANI SANGRAHALAYA (ZOO) AT INDORE

FOR THE YEAR 2014-2034

SIGN. OF ZOO INDORE AUTHORITY

CLIENT		INDORE MUNICIPAL CORPORATION	
DRAWING		PROPOSED INTERNAL POTABLE WATER SUPPLY LAYOUT PLAN	
DEALT	H. MEHTA	SCALE	NORTH
DESIGNED	J. MEHTA	DATE	
DRG. NO.	6	CHECKED	
ARCHITECTS PLANNERS LANDSCAPE DESIGNERS		MEHTA & ASSOCIATES	
101-102, 1st floor, Navnari Plaza, 5/2, Old Palasia, Indore-452001		Phone : +91-731-2561124, 4065064 Fax - 91-731 - 4065064	
Email : mehtamehta.architect@gmail.com		mobile 98250-61124	



TOTAL AREA OF THE LAND
 = 210333.700 SQM
 = 51.975 ACRE

LEGEND:-

EXISTING ENCLOSURE	
PROPOSED NEW ENCLOSURE	
ENCLOSURE REDONE AFTER DEMOLISHING THE OLD STRUCTURE	
MODIFIED ENCLOSURE	
BOUNDARY LINE	

TITLE :- LEGEND FOR SEWER LINE .

S.NO.	Particular	Symbol
1.	Sewer Main Holes	
2.	Sewer Line	
3.	Sewer Invert lvl	
4.	STP	

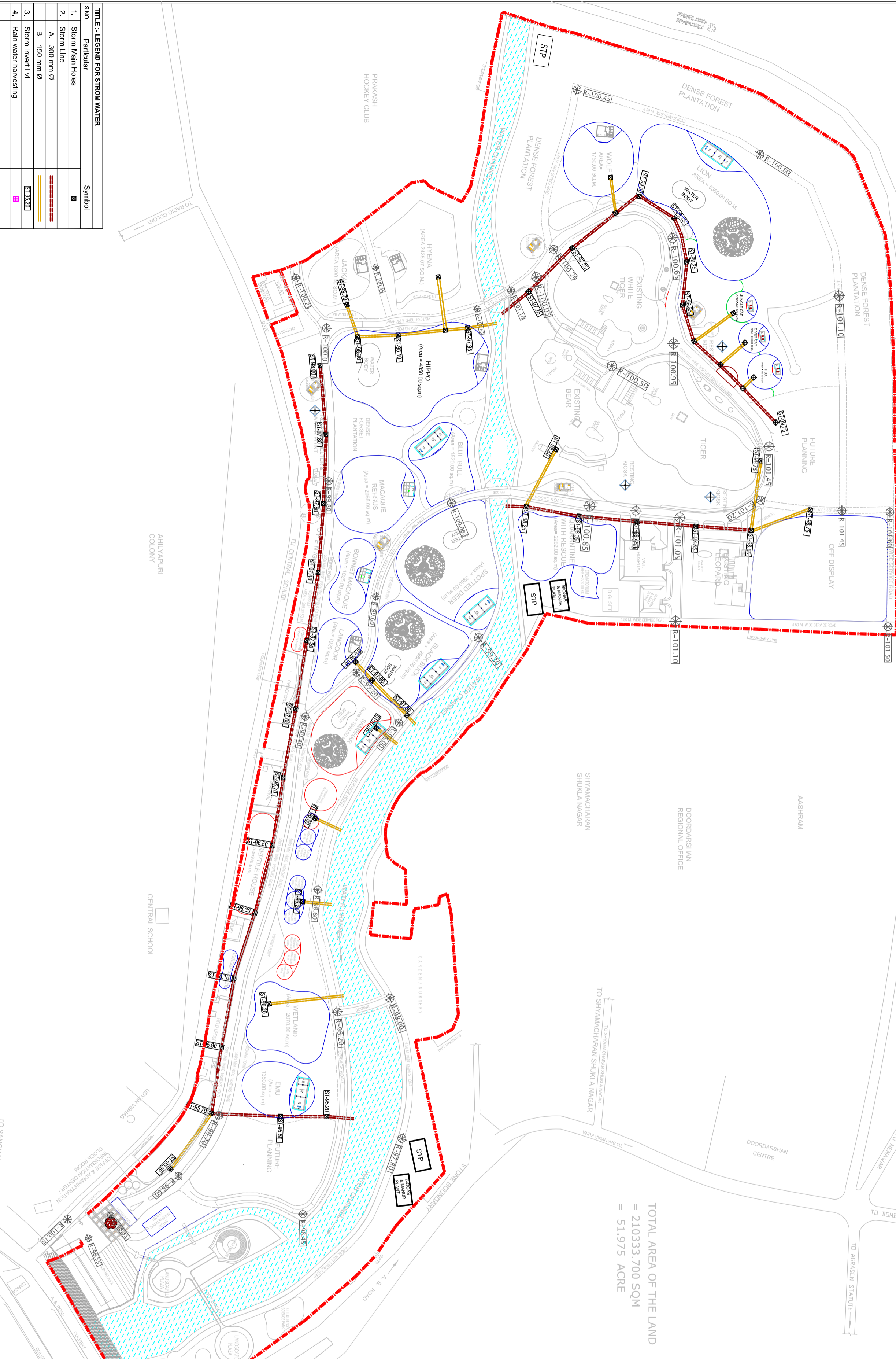
PROPOSED INTERNAL SEWAGE DISPOSAL SYSTEM FOR KAMLA NEHRU PRANI SANGRAHALAYA (ZOO) AT INDORE

FOR THE YEAR 2014-2034

SIGN. OF ZOO INDORE AUTHORITY

CLIENT		INDORE MUNICIPAL CORPORATION	
DRAWING	PROPOSED INTERNAL SEWAGE DISPOSAL SYSTEM LAYOUT PLAN	SCALE	NORTH
DEALT	H. MEHTA	DATE	
DESIGNED	J. MEHTA	DRG. NO.	6
CHECKED			

MEHTA & ASSOCIATES
 ARCHITECTS PLANNERS LANDSCAPE DESIGNERS
 101-102, 1st floor, Navneet Plaza, 5/2, Old Palasia, Indore-452001
 Phone : +91-731-2561124, 4065064 Fax - 91-731 - 4065064
 Email : mhd@mehtaarchitects@gmail.com , mobile 98260-61124



TOTAL AREA OF THE LAND
= 210333.700 SQM
= 51.975 ACRE

LEGEND :-	
EXISTING ENCLOSURE	
PROPOSED NEW ENCLOSURE	
ENCLOSURE REDONE AFTER DEMOLISHING THE OLD STRUCTURE	
MODIFIED ENCLOSURE	
BOUNDARY LINE	

TITLE :- LEGEND FOR STORM WATER		
S.No.	Particular	Symbol
1.	Storm Main Holes	
2.	Storm Line	
	A. 300 mm Ø	
	B. 150 mm Ø	
3.	Storm Invert Lvl	
4.	Rain water harvesting	

PROPOSED INTERNAL STORM WATER LAYOUT PLAN FOR KAMLA NEHRU PRANI SANGRAHALAYA (ZOO) AT INDORE

CLIENT		INDORE MUNICIPAL CORPORATION	
DRAWING		PROPOSED INTERNAL STORM WATER LAYOUT PLAN	
DEALT	H. MEHTA	SCALE	NORTH
DESIGNED	J. MEHTA	DATE	
DRG. NO.	6	CHECKED	
MEHTA & ASSOCIATES		ARCHITECTS PLANNERS LANDSCAPE DESIGNERS	
101-102, 1st floor, Navneet Plaza, 5/2, Old Palasia, Indore-452001		Phone : +91-731-2561124, 4065064 Fax - 91-731 - 4065064	
Email : mehtandmehta.architect@gmail.com		mobile 98250-61124	

FOR THE YEAR 2014-2034

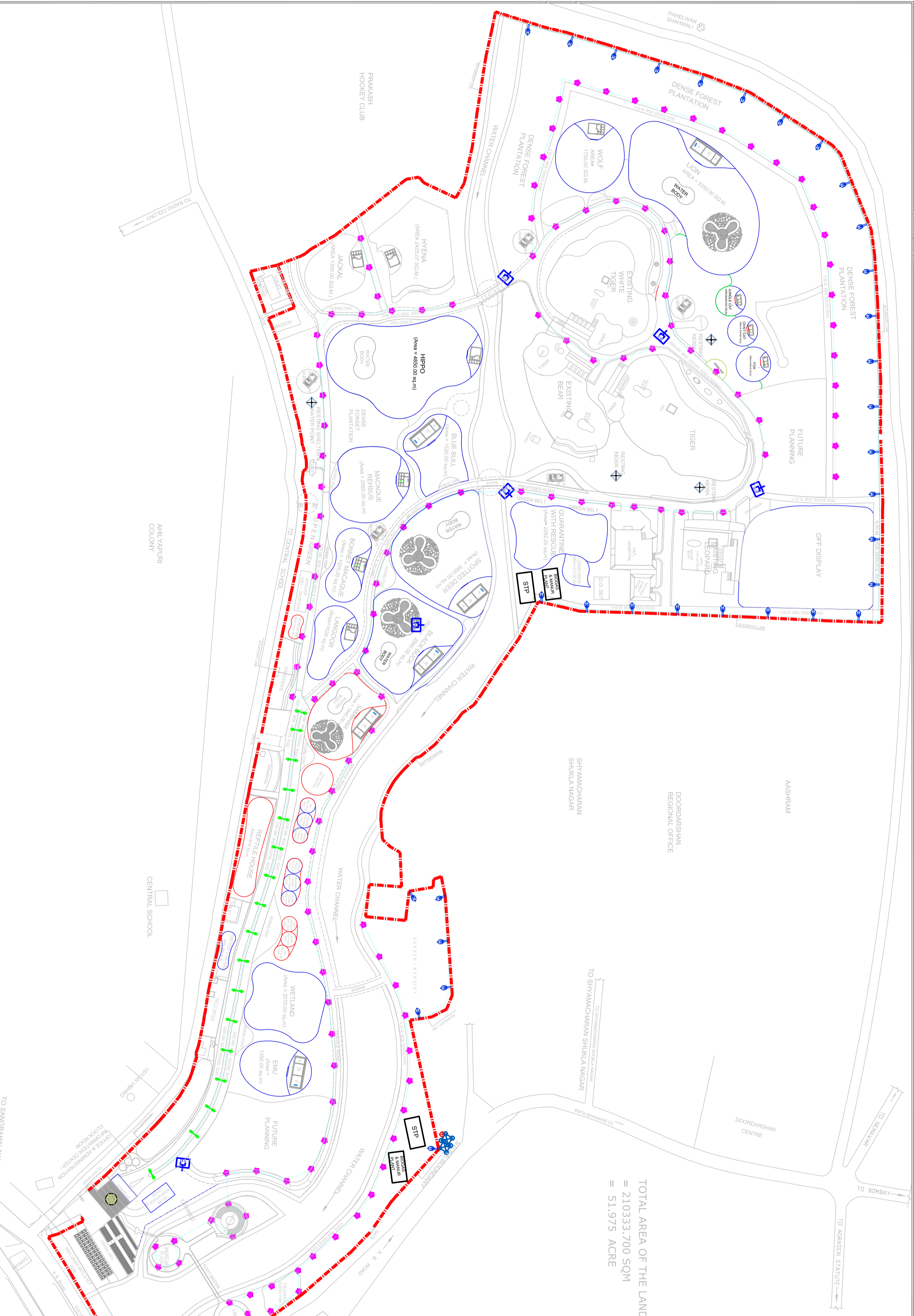
SIGN. OF ZOO INDORE AUTHORITY

LEGEND :-

EXISTING ENCLOSURE	
PROPOSED NEW ENCLOSURE	
ENCLOSURE REDONE AFTER DEMOLISHING THE OLD STRUCTURE	
MODIFIED ENCLOSURE	
BOUNDARY LINE	

PARTICULAR	SYMBOL
POST TOP 70W/132 NO.(3.5 M HT.) AT (20.0 M. DISTANCE)	
HIGH MAST 5 NO. (30.0 M. HT.)	
TRANSFORMER	
400 W. ST. LIGHT FTG. 33 NO. AT 30.0 M. DIST. (POLE HT. 12.0 M.)	
150 W. ST. LIGHT FTG. 17 NO. AT 20.0 M. DIST. (POLE HT. 10.0 M.)	
4 X 10 SQ.MM. ALU. ARMOURRED CABLE	

TOTAL AREA OF THE LAND
= 210333.700 SQM
= 51.975 ACRE

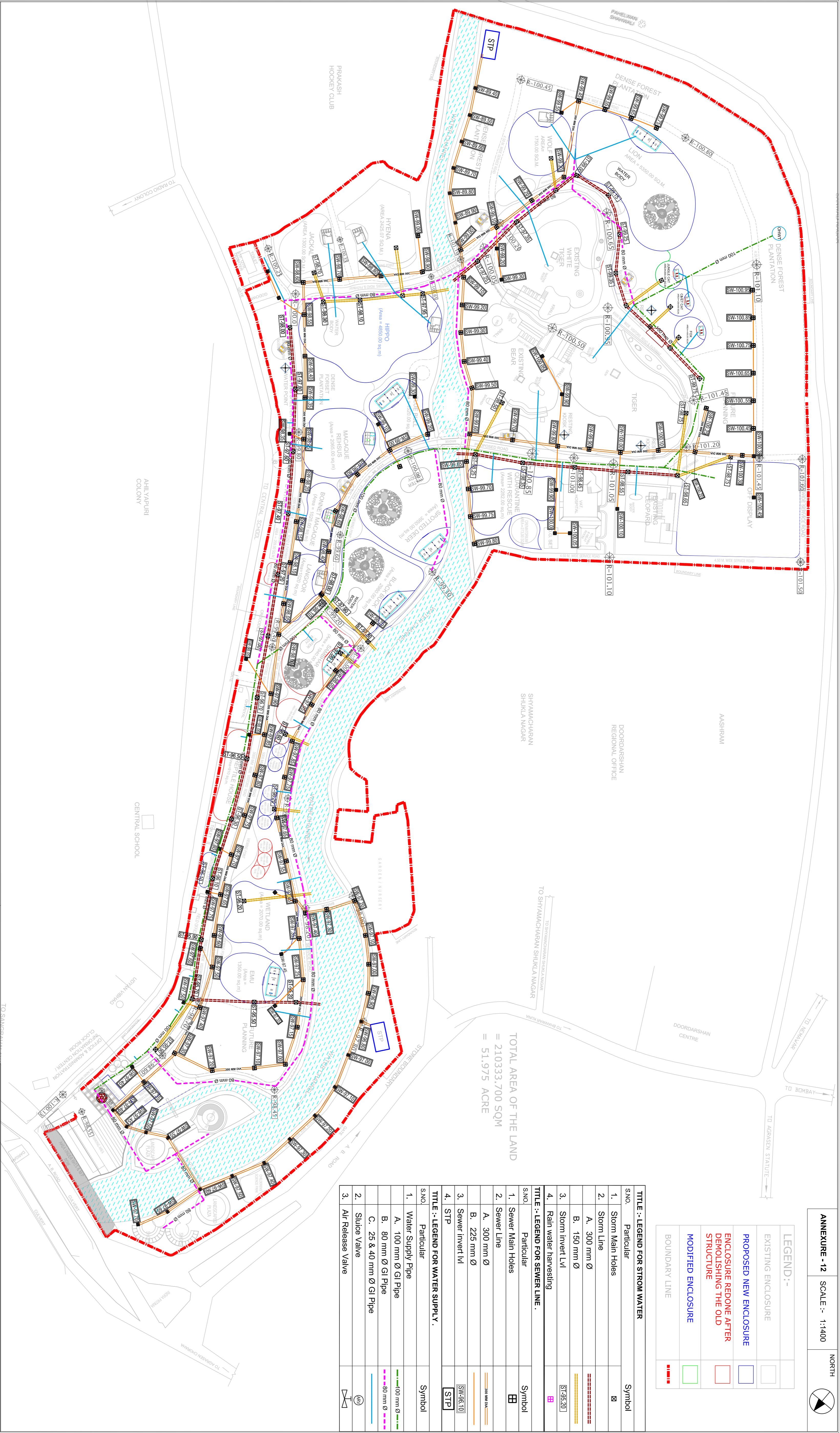


PROPOSED INTERNAL LAYOUT PLAN FOR STREET LIGHT AND ELECTRICITY DISTRIBUTION SYSTEM FOR KAMLA NEHRU PRANI SANGRAHALAYA (ZOO) AT INDORE

FOR THE YEAR 2014-2034

SIGN. OF ZOO INDORE AUTHORITY

CLIENT		INDORE MUNICIPAL CORPORATION	
DRAWING	PROPOSED INTERNAL S.L. & ELECTRICITY DIST. SYSTEM LAYOUT PLAN	DESIGNED	J. MEHTA
DATE	NORTH	CHECKED	
MEHTA & ASSOCIATES		ARCHITECTS PLANNERS LANDSCAPE DESIGNERS	
101-102, 1st floor, Navneet Plaza, 5/2, Old Palasia, Indore-462001		Phone : +91-731-2561124, 4065054 Fax - 91-731 - 4065054	
Email : mehtamehta.architect@gmail.com		mobile 98250-61124	



ANNEXURE - 12 SCALE :- 1:1400 NORTH

LEGEND:-

EXISTING ENCLOSURE	[Symbol]
PROPOSED NEW ENCLOSURE	[Symbol]
ENCLOSURE REDONE AFTER DEMOLISHING THE OLD STRUCTURE	[Symbol]
MODIFIED ENCLOSURE	[Symbol]
BOUNDARY LINE	[Symbol]

TITLE :- LEGEND FOR STORM WATER

S.NO.	Particular	Symbol
1.	Storm Main Holes	[Symbol]
2.	Storm Line	[Symbol]
	A. 300 mm Ø	[Symbol]
	B. 150 mm Ø	[Symbol]
3.	Storm Invert Lvl	[Symbol]
4.	Rain water harvesting	[Symbol]

TITLE :- LEGEND FOR SEWER LINE.

S.NO.	Particular	Symbol
1.	Sewer Main Holes	[Symbol]
2.	Sewer Line	[Symbol]
	A. 300 mm Ø	[Symbol]
	B. 225 mm Ø	[Symbol]
3.	Sewer Invert lvl	[Symbol]
4.	STP	[Symbol]

TITLE :- LEGEND FOR WATER SUPPLY.

S.NO.	Particular	Symbol
1.	Water Supply Pipe	[Symbol]
	A. 100 mm Ø GI Pipe	[Symbol]
	B. 80 mm Ø GI Pipe	[Symbol]
	C. 25 & 40 mm Ø GI Pipe	[Symbol]
2.	Sluice Valve	[Symbol]
3.	Air Release Valve	[Symbol]

TOTAL AREA OF THE LAND
= 210333.700 SQM
= 51.975 ACRE

PROPOSED INTERNAL COMBINED SERVICES STORM, SEWER & WATER LINE LAYOUT PLAN FOR KAMILA NEHRU PRANI SANGRAHALAYA (ZOO) AT INDORE

FOR THE YEAR 2014-2034 SIGN. OF ZOO INDORE AUTHORITY

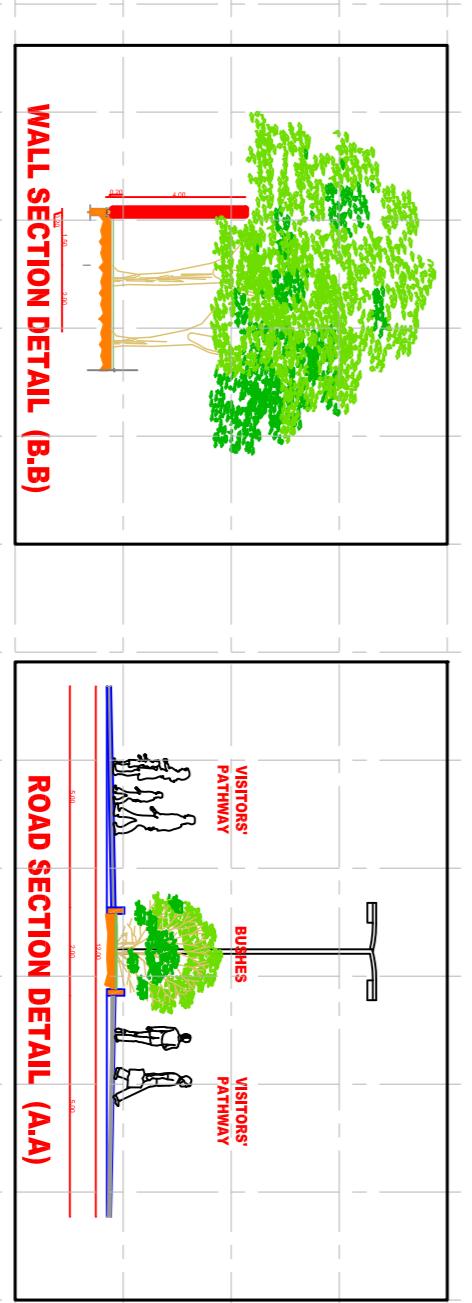
CLIENT		INDORE MUNICIPAL CORPORATION	
DRAWING		PROPOSED INTERNAL COMBINED SERVICES LAYOUT PLAN	
DEALT	H. MEHTA	SCALE	NORTH
DESIGNED	J. MEHTA	DATE	
DWG. NO.	6	CHECKED	
ARCHITECTS PLANNERS LANDSCAPE DESIGNERS		MEHTA & ASSOCIATES	
101-102, 1st floor, Navnari Plaza, 5/2, Old Palasia, Indore-452001		Phone : +91-731-2561124, 4065004 Fax : 91-731 - 4065004	
Email : hiteer@mehtaarchitects@gmail.com, mobile 98260461724			

PROPOSED MASTER LAYOUT PLAN WITH CONTOUR FOR KAMLA NEHRU PRANI SANGRAHALAYA (ZOO) AT INDORE



TOTAL AREA OF THE LAND
= 21033.700 SQM
= 51.975 ACRE

LEGEND :-	
	EXISTING ENCLOSURE
	PROPOSED NEW ENCLOSURE
	ENCLOSURE REDONE AFTER DEMOLISHING THE OLD STRUCTURE
	MODIFIED ENCLOSURE
	WATER CHANNEL
	ENCLOSURE HATCH
	BOUNDARY LINE
	WATER BODY
	GARDEN
	MAIN ROAD
	SERVICE ROAD



NOTE:-
IN CONJUNCTION WITH EARLIER PLAN 2002-2007

SIGN. OF CZA AUTHORITY

SIGN. OF ZOO INDORE AUTHORITY

CLIENT	INDORE MUNICIPAL CORPORATION
DRAWING	LAYOUT PLAN OF KAMLA NEHRU PRANI SANGRAHALAYA AT INDORE (REVISED)
DEALT	H. MEHTA
DESIGNED	J. MEHTA
DRG. NO.	2
CHECKED	
SCALE	1:1400
DATE	NORTH
MEHTA & ASSOCIATES ARCHITECTS PLANNERS LANDSCAPE DESIGNERS 101-102, 1st floor, Narmad, Plaza, 5/2, Old Palasia, Indore-452001 Phone : +91-731-2561124-4055064 Fax - 91-731 - 4055064 Email : ihindramehta.architect@gmail.com	

GRID SIZE 20.0 M. X20.0 M