



**JUNGLE SAFARI**

# MASTER PLAN

2022-2023 to 2041-2042

## NANDANVAN ZOO AND SAFARI

Naya Raipur, Chhattisgarh



**Department of  
Forest and Climate Change,  
Govt. of Chhattisgarh**

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Director

Cum Conservator of Forest,  
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Sambar  
(*Rusa unicolor*)



## PREFACE

Chhattisgarh is a pioneer state in the national movement for conservation of flora and fauna. Conservation oriented legal provision were made in the erstwhile Acts regulating hunting of game – birds and wild animals. In tune with the national consciousness towards conservation of flora and fauna, the State Government setup a network of in-situ and ex-situ conservation areas under the provision of the wildlife (Protection) Act, 1972.

Nandanvan is one of the premier man made safari and zoo in India. It has been widely celebrated and applauded for its steady progress within a short span of time since its inauguration in 2016 and has found a promising place amongst the best wildlife and biodiversity conservation centers in the country. On 5th October 2019, Honourable Chief Minister of Chhattisgarh inaugurated the Nandanvan Zoo. Spread out in a sprawling 320.15 ha area in the heart of the city of Raipur, Nandanvan has been masterfully crafted to excellence. This Revised master plan has outlined the development of the Nandanvan Zoo & Safari, Nava Raipur from its start to future development in two stages. I am happy to note that this plan will take care of animals, visitors and staff. This has ably been done by a team of zoo & safari officials, from the experts. This plan would not have seen the light of the day without the active guidance of the Central Zoo Authority, Official and consultants headed by Dr. Sanjay Kumar Shukla, IFS Member Secretary, Central Zoo Authority, New Delhi.

I congratulate the whole team members of Jungle Safari and Zoo and the experts for incorporating all the suggestions received from CZA, virtually rewriting this Master Plan in accordance with the guidelines by putting in hard work day and night thus bringing out this master plan in a short notice.

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**White Tiger**  
*(Panthera tigris tigris)*



**GOVERNMENT OF CHHATTISGARH  
PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE)  
&  
CHIEF WILDLIFE WARDEN CHHATTISGARH**

**FOREWORD**

Nandanvan Zoo & Safari mainly caters to not only the recreation and education of the people, but also have a strong emphasis on scientific research and species conservation.

It is designed to preserve and protect wild populations of animals as well as to sensitize the people at large about the threats faced by them leading to the brink of extinction.

The main trend as of now is giving the captive animals more space and creating natural habitats.

The master plan looks at the site in its entirety, laying a framework of how individual exhibits and facilities relate to one another and a phasing schedule of how this will be realized on the site and is a read map for the future planning of how the facilities for tourists as well as the animal species is realized.

Nandanvan Zoo & Safari Nava Raipur, established in 2016 has become the most famous tourist destination of Chhattisgarh and has enjoyed overwhelming patronage of the people of the State.

The first master plan for the period 2011-2021 has achieved its laid down objectives and has given a solid foundation to its present growth.

The present master plan for the period 2022-23 to 2041-42 aims at not only drawing strength from the previous one, but also delves into the ever increasing needs and aspirations of the people to see the Wildlife in its natural environs.

I hope the present master plant which looked into the ambit of various components of zoo management very methodically would go a long way in realizing the set objectives leading to the evolution of the Jungle Safari as a vibrant zoo of international standing.

**P.V. NARSINGA RAO, IFS**

Principal Chief Conservator of Forests  
(Wildlife) & Chief Wildlife Warden  
Chhattisgarh



Jackal  
(*Canis aureus*)

# MASTER PLAN

## 2022-23 to 2041-42

### Nandanvan Zoo and Safari

#### Nava Raipur, Chhattisgarh

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**Royal Bengal Tiger**  
(*Panthera tigris tigris*)



## Part-I

### Chapter-1

#### Introduction

Nandanvan Zoo and Safari, is a zoological garden located in Nava Raipur at a distance of 35 km from Raipur Railway station and 15km from the Swami Vivekananda Airport, Raipur. Spread over an area of 320.15 hectares (800 acres), including a 50 hectare (125acre) Zoo and 2 hectare (5 acres) of Rescue and Rehabilitation centre. The perennial Khandwa Dam of 52.52 hectares adds beauty to the zoo and safari. It is well connected from all directions by N.H. 6, N.H.200 and N.H. 43. The safari provides maximum possible freedom to animals similar to their natural habitat and allows visitors in vehicle to enjoy wildlife at close proximity. The safari includes four safaris such as Herbivore safari, Bear (*Melursus ursinus*) safari, Tiger (*Panthera tigris*) safari and Lion (*Panthera leo*) safari. As of 2021 the safari and zoo houses around 712 animals, including 33 endangered species, in its four safaris and 28 exhibits. The enclosures designed are environment friendly and are more or less a true replication of the natural habitat of the animals being housed here to give maximum comfort and natural feel to them. The Zoo is currently recognized and categorized as a medium zoo by the Central Zoo Authority, New Delhi.

#### 1.1 History

Established in 1979, The Nandanvan mini Zoo, Raipur, was a striving endeavour in form of a rescue shelter for animals in distress. The zoo was a recreational hub that serves as an educational centre besides being a haven for rescued animals. In the year 2008, Central Zoo Authority granted the status of a mini zoo to Nandanvan. Since then, it has been the paramount attraction for the people of Raipur. After the creation of Chhattisgarh, the state government formalized plans for the development of a new capital city, Nava Raipur, which includes establishment of Jungle safari. The Naya Raipur Development Authority (NRDA), allotted the stipulated area (320.15ha) to forest department for establishment of Nandanvan Zoo and Safari, Naya



Raipur (Relocation of Nandanvan Zoo Raipur). It was decided to shift the Nandanvan Mini Zoo to Nava Raipur and the permission of CZA was sought by sending a proposal. Master layout plan of the relocation of Nandanvan Zoo Raipur to Naya Raipur was authenticated by the Member Secretary on behalf of the CZA (letter no.F.no.19160/93CZA (149)(M) dated 29.08.2012). Scrutiny of the Master Plan of Nandanvan Zoo and Safari Naya Raipur was done by the expert group on Zoo designing of the CZA in its 56<sup>th</sup> meeting held on 8<sup>th</sup> Oct 2014 and the same was placed before the Technical committee for approval in the 72<sup>nd</sup> meeting dated 12<sup>th</sup> Dec 2014. The Technical committee of the CZA approved the master plan of the Nandanvan Zoo at Naya Raipur (letter no.F.no.19-160/93-CZA (147) vol.116474 dated 31.12.2014).

Once the Master Plan was approved, the implementation phase started at the site. After development of Herbivore safari, Bear (*Melursus ursinus*) safari and Tiger (*Panthera tigris*) safari the animals from the old Nandanvan Zoo Raipur were shifted to Naya Raipur with due diligence and care. On the occasion of Chhattisgarh's 16<sup>th</sup> foundation day on 1<sup>st</sup> Nov 2016, the Hon'ble Prime Minister of India Shri Narendra Modi inaugurated the man-made Jungle Safari, the Nandanvan Zoo and Safari at Naya Raipur.

From the year 2017 -18, the developmental work of zoo area was started with carnivore section. On 5<sup>th</sup> October 2019, Honorable Chief Minister of Chhattisgarh Shri Bhupesh Baghel inaugurated the Nandanvan Zoo including 11 enclosures for animals such as White Tiger (*Panthera tigris tigris*), Royal Bengal Tiger (*Panthera tigris tigris*), Lion (*Panthera leo*), ~~Panther~~ (*Panthera* Leopard *pardus*), Himalayan Bear (*Ursus thibetanus*), Hippopotamus (*Hippopotamus amphibius*), ~~Otter~~ Smooth-coated Otter (*Lutrogale perspicillata*), Monitor Lizard (*Varanus bengalensis*), Gharial (*Gavialis gangeticus*), Star Tortoise (*Geochelone elegans*) and Crocodile (*Crocodylus palustris*). There after Nandanvan Zoo has opened for public viewing and has become a major tourist attraction.

## 1.2 Vision

1. Act as a research centre, education and awareness hub for the propagation and dissemination of information about Wildlife, Ecology and Environment to the people in general and students in particular.
2. To develop it as a centre of excellence in the breeding and conservation of endangered animals especially the Wild Buffalo (*Bubalus arnee*) of the state.
3. To provide a serene and eco-friendly place to enjoy the nature in its full form.
4. To make the Nandanvan Zoo and Safari a major tourist attraction of not only Chhattisgarh but a tourist destination for the adjoining states of central India.

### 1.3 Mission

The Mission of Nandanvan Zoo and Safari, Nava Raipur are:-

- To house the animals in near natural conditions for giving them a feel of living in the wild.
- To help understand the ecological linkage with the life supporting process of nature and the need to keep them intact that by adopting lifestyle which is in harmony with nature.
- To develop as centre of excellence for Research on wild animals and conservation breeding of endangered wild animal species of the region.
- To function as a rescue centre for orphaned, injured and the rescued animals from the wild and subsequent rehabilitation.
- To develop Nandanvan Jungle Safari as a major tourist attraction and a focal point for Entertainment ~~Entrainment~~, Recreation, Education and Awareness to the visitors of Chhattisgarh in particular and adjoining state in general.

### 1.4 Strategy

- To conserve the existing flora and fauna that will elaborate captive breeding programme.
- To conserve natural resources.
- To develop expertise in animal care, wildlife education, awareness and research.
- To develop infrastructure and services of high standards.
- To inculcate a sense of empathy for wild animals and motivate them participate in the conservation of the nature.
- To Play a major role in conservation of animal species and their natural habitats by creating database of research activities and to share the information amongst agencies involved in In-situ and Ex-situ conservation.

### 1.5 Objectives

- To provide and facilitate research on animals in captivity to help in conservation efforts.
- To provide housing and upkeep to the orphaned animals of endangered species rescued from the wild.
- To assist in conservation of the ex-situ population of various species of endangered animals and their habitat by sensitizing the people.
- Involve in programs which assist the survival of wild populations.

- Conservation and breeding of endangered wild species.
- To increase the awareness, knowledge and understanding of visitors about animals, the environment and conservation.
- To provide ethical and healthy recreation, enjoyment and enrichment to the visitors.

## 1.6 Theme

The display of animals in the zoo exhibits are done on the basis of taxonomical system. The visitors would see the animals of a particular group at one location for better understanding of the biology and behavior of the species displayed. The following are the thematic display of animals in the zoo area:-

- (1) Large carnivores
- (2) Small carnivores
- (3) Large Herbivore
- (4) Small Herbivores
- (5) Nocturnal
- (6) Primates
- (7) ~~Birds aviaries~~ Aviaries
- (8) Reptiles
- (9) Exotics (non-native species)

## 1.7 Physical features

### 1.7.1 Topography

The topography of Nandanvan Zoo and Safari area is almost flat with moderate slope drainage towards northern direction. The Khandwa Dam spreaded over an area of 70 hectare lies in the North, out of which 52.72 hectare lies within the zoo & safari area. Banjari canal from the South-West corner of the area is connected with the Khandwa Dam. During the summer season, the water requirements are fulfilled by bringing the water from Mahanadi river through this canal with the help of Irrigation Department. There are two natural Nala type streams which enters into the area from South-West corner and South-East corner, helps in draining the whole catchment water into the Khandwa Dam. The area has naturally grown tree species as well as man-made plantations of Anjan (*Hardwickia binata*), Eucalyptus (*Eucalyptus*), Black Cutch (*Acacia catechu*), Amla (*Phyllanthus emblica*) and Indian Bael (*Aegle marmelos*) etc.

### 1.7.2 Geology, rock & soil

The Nava Raipur and its peripheral region falls under three stages of geological formation viz. Raipur Stage (Chandi Formation), Charmuria Stage and Gundardehi. It is part of Chhattisgarh basin of Chhattisgarh Super Group. It has a lower arenaceous and an upper argillaceous – calcareous sedimentary sequence and overlies the Archean Granite Gneiss and supracrustal Chilpi and Sonakhan groups. Raipur group overlies the Chandarpur Group with disconformities as evidenced by the layers of limestone with a clay sequence in the eroded Chandrapur Group surface. In the Charmuria Formation cherts layers are known in the clay beds which grades into a micrite (limestone) grading further up into a pink shale. The Gunderdehi Formation occurs as stromatolitic reef complexes and has three limestone members. The Raipur group indicates change in the depositional basin from a marginal subsiding basin that of a slow sinking platform. The micritic limestone indicates rapid precipitation and multiple nucleation's with reducing condition (with pyrite) in quiet waters below the wave base.

- As per IS: 1984, “Criteria for Earthquake Resistant Design of Structures”, the Nandanvan Zoo and Safari, Nava Raipur Site falls under seismic zone I which is considered fairly stable against seismic forces.
- The Nandanvan zoo and safari Nava Raipur, falls under Gunderdehi formation. The underlying rock is lateritic rock. The maximum part of safari has lateritic soil locally called "Bhata land". In some part of the area clay loam soil is found.
- Soil characteristics :- The bore-logs of geotechnical investigations, attached below, show the kind of soil in Safari area. The boreholes were carried out near the entry streams. As per the bore-log, the initial around 4M of layer is Yellowish to Greyish Silty Clay Further 10M consists of brownish gray to olive gray compact mudstone after which the boring was terminated.

### 1.7.3 Flora and fauna

More than 70 % of the area of Nandanvan Zoo and Safari, Nava Raipur is covered by middle aged trees; spacing is suitable for the herbivore and carnivore both. The level of site suitability can also be adjudged by the presence of all types of fauna i.e. Avi fauna, Mammals, Reptiles, Butterflies, and Insects etc. The details of available Flora and fauna are listed below;

### Existing Flora Of Nandan Van Safari, Nava Raipur

S.N.	Common Name	Botanical Name	Family
1	Anjan	<i>Hardwickia binata</i>	Leguminosae
2	Aonla	<i>Phyllanthus emblica</i>	Phyllanthaceae
3	Babool	<i>Acacia nilotica</i>	Mimaceae
4	Baheda	<i>Terminalia bellirica</i>	Combretaceae
5	Ber	<i>Ziziphus mauritiana</i>	Rhamnaceae
6	Bija	<i>Pterocarpus marsupium</i>	Fabaceae
7	Dhawai	<i>Woodfordia fruticosa</i>	Lythaceae
8	Dhawada	<i>Anogeissus latifolia</i>	Combretaceae
9	Eucalyptus	<i>Eucalyptus species</i>	Myrtaceae
10	Ganga Imli	<i>Pithecellobium dulce</i>	Mimosoideae
11	Ghont	<i>Ziziphus xylocarpa</i>	Rhamnaceae
12	Harra	<i>Terminalia chebula</i>	Combretaceae
13	Karra	<i>Lagerstroemia parviflora</i>	Lythaceae
14	Kumbhi	<i>Careya arborea</i>	Myrtaceae
15	Landia	<i>Lagerstroemia parviflora</i>	Lythaceae
16	Mahua	<i>Madhuca indica</i>	Sapotaceae
17	Moen	<i>Lannea coromandelica</i>	Anacardiaceae
18	Sishoo	<i>Dalbergia sissoo</i>	Fabaceae
19	Neem	<i>Azadirachta indica</i>	Meliaceae
20	Bael	<i>Aegle marmelose</i>	Rutaceae
21	Amaltas	<i>Cassia fistula</i>	Leguminosae
22	Khair	<i>Acacia catechu</i>	Leguminosae
23	Pipal	<i>Ficus religiosa</i>	Moraceae
24	Doodhi bel	<i>Cryptolepis</i>	Combretaceae
25	Mokoi	<i>Ziziphus oenoplia</i>	Rhamnaceae

### Existing Fauna Of Nandan Van Safari, Nava Raipur

During the flora fauna study of the area, the following Insects are reported in the Nandanvan Zoo and Safari, Nava Raipur.

### Insects in Nandanvan Zoo and Safari, Nava Raipur

S.N.	English Name	Zoological Name
1	White Ant	<i>Isoptera</i>
2	Grass Hopper	<i>Orthoptera caelifera</i>
3	Red hairy caterpillar	<i>Amsacta albistriga</i>
4	Paddy Stem Borer	<i>Scirpophaga incertulas</i>
5	Swarming Caterpillar	<i>Spodoptera mauritia</i>
6	Gundhi Bug	<i>Leptocorisa acuta</i>
7	Paddy Gallfly	<i>Oryza sativa Order</i>

A large number of butterflies were observed around the lake indicating an ecosystem with high diversity of both food plants as well as larval food plants of these butterflies. The list of butterflies observed around the Khandwa Dam is given below:

### Butterflies in Nandanvan Zoo and Safari, Nava Raipur

S.N.	English Name	Zoological Name
1	Plain Tiger	<i>Danaus chrysippus</i>
2	Common Grass Yellow	<i>Eurema hecabe</i>
3	Small Grass Yellow	<i>Eurema brigitta</i>
4	Psyche	<i>Leptosia nina</i>
5	Pioneer	<i>Anaphaeis aurota</i>
6	Blue Pansy	<i>Junonia orithya</i>
7	Common Emigrant	<i>Catopsilia pomona</i>
8	Common Parrot	<i>Castalius rosimon</i>
9	Zebra Blue	<i>Tarucus plinius</i>
10	Pale Grass Blue	<i>Pseudozizeeria maha</i>
11	Dark Grass Blue	<i>Zizeeria knysna</i>
12	Forget Me Not	<i>Catochrysops strabo</i>
13	Grass Jewel	<i>Chilades trochylus</i>
14	Gram Blue	<i>Euchrysops cnejus</i>
15	Lime Blue	<i>Chilades laius</i>

Flora Fauna Study revealed presence of following reptiles in the area;

**Reptiles in Nandanvan Zoo and Safari, Nava Raipur** Spaces between genus and species names as highlighted to be inserted

S.N.	English Name	Zoological Name
1	Talao Kachuwa	<i>Melanochelystrijuga</i>
2	Patthar Chhipkali (Rockgecao)	<i>Hemidactylus maculatus</i>
3	Common Garden Lizard	<i>Calotes versicolor</i>
4	Common shink	<i>Mabuyacarinata</i>
5	Chameleon	<i>Chamaelonzeyleanicus</i>
6	Common Warm/Blind Snake	<i>Typhlinabramina</i>
7	Indian Python	<i>Python molurus</i>
8	Dhaman/Rat Snake	<i>Ptyasmucosus</i>
9	Green or Bamboo Pit Viper	<i>Trimeresurus gramineus</i>
10	Common Indian Krait	<i>Bungarus caeruleus</i>
11	Banded Krait	<i>Bungarus fasciatus</i>
12	Indian Cobra	<i>Naja naja</i>

A large numbers of birds including various species of aquatic birds are noticed during survey.

The list of Birds is as below:

**Birds in Nandanvan Zoo and Safari, Nava Raipur** Spaces between genus and species names as highlighted to be inserted

S.N.	English Name	Zoological Name
1	Pond Heron	<i>Ardeolagravii</i>
2	Little Egret	<i>Egretta garzetta</i>
3	Cattle Egret	<i>Bubulcus ibis</i>
4	Large Cormorant	<i>Phalacrocorax carbo</i>
5	Little Cormorant	<i>Microcarboniger</i>
6	Common Teal	<i>Anas crecca</i>
7	Common Pochard	<i>Aythya ferina</i>
8	Common coot	<i>Fulicaatra</i>
9	Red Crested Pochard	<i>Nettarufina</i>
10	Little Ring Plover	<i>Charadrius dubius</i>
11	Small Blue Kingfisher/ Common Kingfisher	<i>Alcedoatthis</i>

S.N.	English Name	Zoological Name
12	White Fronted Kingfisher	<i>Amazona albifrons albifrons</i>
13	Pied Kingfisher	<del><i>Cerylerudis</i></del>
14	Chestnut Headed Bee Eater	<del><i>Meropsleschenaulti</i></del>
15	Wire Tailed Swallow	<del><i>Hirundosmithii</i></del>
16	Brahminiy Myna	<i>Sturniapagodarum</i>
17	Bank Myna	<del><i>Acridotheresginginianus</i></del> Acridotheres ginginianus
18	White Wagtail	<i>Motacilla alba</i>
19	Grey Wagtail	<i>Motacilla cinerea</i>
20	Stone Chat	<i>Saxicola</i>
21	Black Wind Kite	<i>Elanus caeruleus</i>
22	Grey Partridge	<i>F. pondicerianus</i>
23	Common Quail	<i>Coturnix coturnix</i>
24	Blossom Headed Parakeet	<i>P. cyanocephala</i>
25	Coucal	<i>Centropus sinensis</i>
26	Cuckoo	<del><i>Graucalusjevensis</i></del>
27	White Breasted Kingfisher	<i>Halcyon smyrnensis</i>
28	Wood Pecker	<del><i>Brachypslernus</i></del>
29	Red Vented Bulbul	<del><i>Pycnonotuscafer</i></del>
30	Bay Backed Shrike	<i>L.vittatus</i>
31	Black Bird	<i>Turdus merula</i>
32	Indian Parrot	<del><i>Psitaculaeupatria</i></del>
33	Myna	<i>Acridotherestrispris</i>
34	Koyal	<del><i>Eudunamisscolopaceres</i></del>
35	Pied Bush Chat	<i>S.caprata</i>
36	Tailorbird	<del><i>Orthotomussutorius</i></del>
37	Large Grey Babbler	<i>T. malcolmi</i>
38	Baya Weaver	<del><i>Ploceusphilippinus</i></del> Ploceus philippinus
39	Streaked Weaver	<i>P.manyar</i>
40	Black Throated Weaver	<i>P.benghalensis</i>
41	House sparrow	<i>Passer domesticus</i>
42	Indian Tree Pie	<del><i>Dendrocittavagabunda</i></del>

During the flora fauna study of the area following mammals are reported in the Nandanvan Safari, Nava Raipur.

### Mammals in Nandanvan Zoo and Safari, Nava Raipur

S.N.	English Name	Zoological Name
1	Jackal	<i>Canis aureus</i>
2	Langur	<i>Semnopithecus entellus</i>
3	Rabbit Hare	<i>Lepus cuniculus</i>

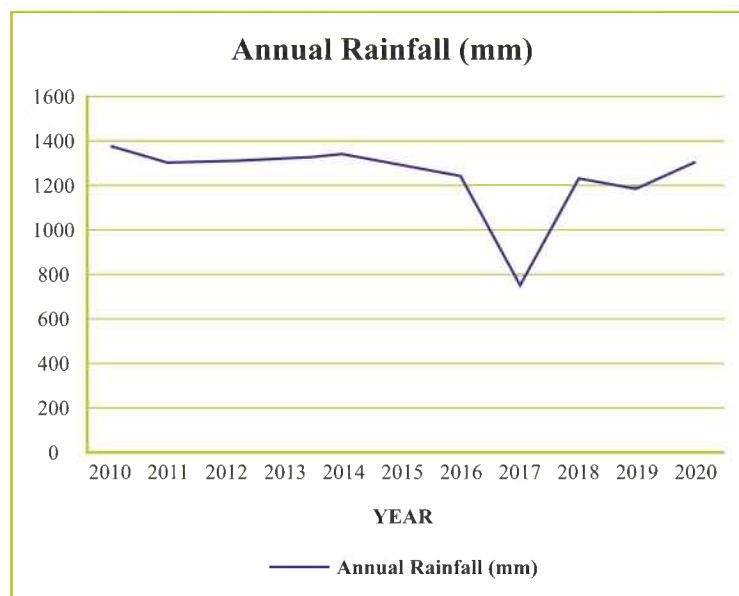
#### 1.7.4 Climate

Chhattisgarh lies between 21°15' N latitude and 81°41' E longitude. The Climate of Chhattisgarh is Tropical. It is hot and humid because of its positioning on the Tropic of Cancer and its dependence on the monsoons for rains. During a typically hot summer day, the mercury can shoot up to 47°C. The climate in Chhattisgarh shows a major shift from the sultry heat to the pleasantly cold during the winters. The temperature varies between 30 to 47°C in summer and in winter it varies from 5 to 25°C.

#### 1.7.5 Rainfall

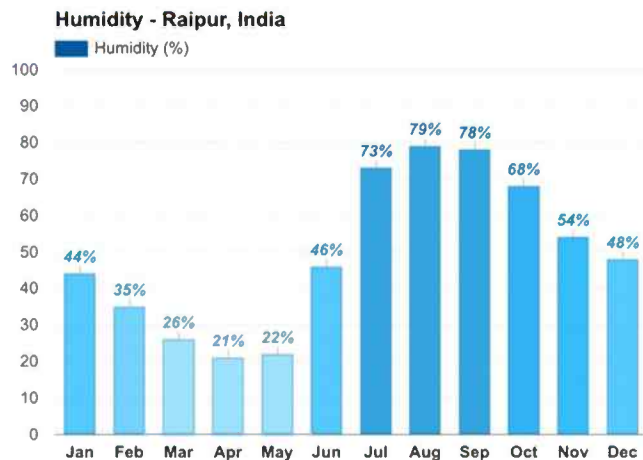
South-West Monsoon is the main source of rain in Chhattisgarh. The average annual rainfall in the area is generally around 1200 mm. The Raipur District receives 87.1 % of the total rainfall from the Southwest monsoon. Maximum rainfall occurs between the month of July and August where the mean monthly rainfall was recorded at 363.7mm and the mean annual rainfall is 1332mm. The winter – rainfall accounts for 9 % of the total rainfall. The details comparison of rainfall from 2010 onwards is shown through the following Chart.

Year	Annual Rainfall (mm)
2010	1373.3
2011	1307.3
2012	1316.9
2013	1327.1
2014	1339.8
2015	1299.4
2016	1247.2
2017	775.5
2018	1236.1
2019	1200.4
2020	1305.1



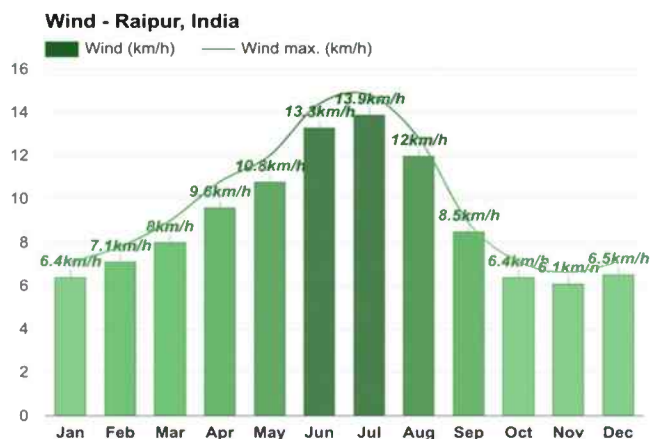
### 1.7.6 Humidity

The mean annual Humidity varies from 21% to 79%. The maximum humidity access during rainy season, the dewfall is normally experienced during December to mid January fog is experienced in between mid of December to mid of January. The khandawa water reservoir acts as buffer to maintain the humidity of Zoo & safari.



### 1.7.7 Wind Speed

During April to June experience dust storm rarely thunder storm with high wind velocity of exceeding 13.9 km./hr. the Nava Raipur is almost flat land and most of the area has red color lateritic soil with low fertility, hence devoid of tree vegetation. The impact of wind is rather greater in the area as compared to other. The Nandanvan Zoo and Safari has approximate 70% green cover with large tree species. A green belt has also been developed around all Safaris to act as wind barrier.



### 1.7.8 Season

Season is marked by hot, dry and humid summer from March to Mid June. The monsoon season is from late June to October and is a welcome respite from the heat. Winter is from November to February. Winters are pleasant with low temperatures and less humidity.

## 1.8 Approach

The Nandanvan Zoo and Safari, Nava Raipur is well connected from all directions with the Chhattisgarh state, Central Indian Region as well as with all part of India through NH-6, NH-43 and NH-200. There are 4 connecting links to the Nandanvan Zoo and Safari, Nava Raipur.

1. From Raipur- Telibandha Junction- NH-6, - Left for Cherikhedi flyover just before the Cherikhedi Village- Road No.-1 – Road No. 4- Road No.5- Road No.2, Road No.11 of Nandanvan Zoo and Safari, Nava Raipur.
2. From Raipur- Pachpedi Naka NH-43, - Left after Radiant Public School,Road No.-5 – Road No. 2- Road No.11 of Nandanvan Zoo and Safari, Nava Raipur.
3. From Abhanpur NH-43, Right at Road No.2, Road No.11 of Naya Raipur to Nandanvan Zoo and Safari, Naya Raipur.
4. From Mahasamund Nadi Moda at NH-6, - NH-6 Left at Road No.2, Road No.11 of Naya Raipur to Nandanvan Zoo and Safari, Naya Raipur. Location Map of New Raipur is shown in Annexure No. 1. Master Plan Nava Raipur location of Nandanvan Zoo and Safari is shown in Annexure No. 2. Google Map of Nandanvan Zoo and Safari is shown in Annexure No. 3.

### 1.9 Demography

The Villages around Nandanvan Zoo and Safari and human population as per 2011 Census data is as below:

S.N.	Name of villages	Male	Female	Total
1	Uparwara	1936	1958	3894
2	Khandwa	531	528	1059
3	Pacheda	1243	1198	2441
4	Bhelwadih	795	781	1576

### 1.10 Drought and Periodicity

Both Atmospheric drought and extreme soil drought is experienced due to erratic monsoon as a result of El-Nino and La-Nina effect. The intensity, duration and amount of rainfall together with distribution pattern lead to drought and flood. From last 10 Year it is experienced that drought season occurs almost every alternate year.

### 1.11 Legal status of land (Annexure: 10)

The legal status is Revenue Land. The ownership of the land of the Nandanvan Zoo and Safari, Nava Raipur belongs to Naya Raipur Development Authority (NRDA), Raipur, Government of Chhattisgarh. It does not have any human habitation inside the area. It is surrounded by four villages of Khandwa, Pacheda, Uparwara and Bhilwadih.

### 1.12 Pollution

The new state capital of Chhattisgarh at Nava Raipur is considered as a pollution free zone. Nandanvan Zoo and Safari is almost pollution free; there is no industry in and around Nandanvan Zoo and Safari, hence no air, soil and water pollution in the area.

### 1.13 Present Ground Situation

The Nandanvan Zoo and Safari is well connected with the road network of Nava Raipur. The Nandanvan Zoo and Safari and Botanical Garden has a common Entrance Gate. Adjacent to the entrance gate in the North Eastern Side, 2.00 Hectare Land is earmarked for Spacious Vehicle Parking with sufficient green cover: The ticket counter is situated 20 mt. away from the gate on the Eastern side. Presently the area of zoo and safari is 320.15ha protected by a 3 meter high boundary wall. The water reservoir Khandwa of 52.52 hectares situated at the northern area adds beauty to the safari and towards its west lies the monument zone of 7.67 hectares of garden with public amenities for the visitors.

The four safaris namely Herbivore, Bear (*Melursus ursinus*), Tiger (*Panthera tigris*) & Lion (*Panthera leo*) and are situated in the middle and North eastern part of the Nandanvan while the Zoo is situated in the southern position. The Rescue and Rehabilitation centre is situated in the North-East region. The Range Office is situated at the entrance gate of Nandanvan Zoo and Safari.

### 1.14 Layout

The Nandanvan zoo and safari is divided into three major parts

- (I) Safari
- (ii) Zoo
- (iii) Rescue and Rehabilitation Centre

#### 1.14.1 Safari

There are four Safaris in Nandanvan Zoo and Safari, namely Herbivore, Bear (*Melursus ursinus*), Tiger (*Panthera tigris*) & Lion (*Panthera leo*) and are situated in the middle and North eastern part of the Nandanvan which is well connected with the murrom road of 7.2 kms.

##### 1.14.1.A Herbivore Safari

The herbivore safari spreads across an area of 30.89 hectares of lush green forest land and is home to many species of herbivores such as Spotted Deer (*Axis axis*), Sambar (*Rusa unicolor*), Blackbuck (*Antelope cervicapra*) and Nilgai (*Boselaphus tragocamelus*).

##### 1.14.1.B Bear (*Melursus ursinus*) Safari

Dotted with flora Mahua (*Madhuca longifolia*), Sterculia (*Sterculia urens*), Bargad

(*Ficus benghalensis*), Peepal (*Ficus religiosa*), Bamboo (*Bambusoideae*), Ber (*Ziziphus mauritiana*), Anjan (*Hardwickia binata*) trees etc, the bears enjoy a near natural habitat to roam freely with freedom over 50 acres of rolling landscape.

#### 1.14.1.C Tiger (*Panthera tigris*) Safari

The Majestic King of the jungle lords over an area of 20.04 hectares of exclusive terrain made to resemble the true tiger terrain.

#### 1.14.1.D Lion (*Panthera leo*) Safari

The Lions (*Panthera leo*) are often found to sleep and walk lazily in the area of about 20.15 hectares.

#### 1.14.2 Zoo

Total area of the Zoo is 50 hectares. The display of animals in the zoo exhibits are done on the basis of taxonomical system. The following table shows the exhibits operational in the zoo at present.

S.No.	Name of Animals	M	F	U	Total
1	Royal Bengal Tiger ( <i>Panthera tigris tigris</i> )	1	1	-	2
2	Asiatic Lion ( <i>Panthera leo persica</i> )	1	1	-	2
3	Leopard ( <i>Panthera pardus</i> )	4	3	-	7
4	White Tiger ( <i>Panthera tigris tigris</i> )	1	1	-	2
5	Himalayan Bear ( <i>Ursus thibetanus</i> )	1	1	-	2
6	Hyena ( <i>Hyaena hyaena</i> )	3	2	-	5
7	Jackal ( <i>Canis aureus</i> )	2	2	-	4
8	Common Fox ( <i>Vulpes bengalensis</i> )	1	1	-	2
9	Nilgai - Blue Bull ( <i>Boselaphus tragocamelus</i> )	6	4	1	11
10	Barking Deer ( <i>Muntiacus muntjak</i> )	5	4	1	10
11	Black Buck ( <i>Antelope cervicapra</i> )	2	6	3	11
12	Four Horned Antelope ( <i>Tetracerus quadricornis</i> )	4	12	4	20
13	Common Palm Civet ( <i>Paradoxurus hermaphroditus</i> )	2	-	-	2
14	Hippopotamus ( <i>Hippopotamus amphibius</i> )	2	2	-	4
15	Indian Smooth Coated Otter ( <i>Lutrogale perspicillata</i> )	1	1	-	2
16	Bengal Monitor Lizard ( <i>Varanus bengalensis</i> )	-	-	3	3
17	Gharial ( <i>Gavialis gangeticus</i> )	1	1	-	2
18	Star Tortoise ( <i>Geochelone elegans</i> )	-	-	13	13
19	Crocodile ( <i>Crocodylus palustris</i> )	4	-	3	7
20	Wolf ( <i>Canis lupus</i> )	1	1	-	2

21	Wild Dog ( <i>Cuon alpinus</i> )	1	1	-	2
22	Gaur ( <i>Bos gaurus</i> )	1	1	-	2
23	Sambar ( <i>Rusa unicolor</i> )	1	1	-	2
24	Spotted Deer ( <i>Axis axis</i> )	2	4	-	6
25	Chinkara ( <i>Gazella bennettii</i> )	2	2	-	4
26	Porcupine ( <i>Hystrix indica</i> )	-	16	-	16
27	Snakes ( <i>Serpentes</i> )	5	4	2	11
<b>Total</b>		<b>54</b>	<b>72</b>	<b>30</b>	<b>156</b>

The following table depicts the area of the rescue centre enclosure:

S. No.	Name of Rescue Centre	SQM
1	Large Carnivores Rescue Centre	516.20
2	Small Carnivores Rescue Centre	375.60
3	Large Herbivores Rescue Centre	270.70
4	Small Herbivores Rescue Centre	270.70
5	Monkey ( <i>Macaca</i> ) Rescue Centre	500.00
6	Bear ( <i>Melursus ursinus</i> ) Rescue Centre	270.70
7	Reptiles ( <i>Reptilia</i> ) Rescue Centre	660.40
8	Crocodiles ( <i>Crocodylus palustris</i> ) Rescue Centre	991.70
9	Birds ( <i>Aves</i> ) Rescue Centre	293.00

The number of Rescued animals housed in the centre is as follows:

S. No.	Species	Male	Female	US	Total
1	Rescued Leopard ( <i>Panthera pardus</i> )	03	-	-	03
2	Rescued Bear ( <i>Melursus ursinus</i> )	03	02	-	05
3	Hyaena ( <i>Hyaena hyaena</i> )	00	01	-	01
4	Eurasian Otter ( <i>Lutra lutra</i> )	01	-	-	01
5	Crocodile ( <i>Crocodylus palustris</i> )	01	01	03	05
6	Honey Badger ( <i>Mellivora capensis</i> )	-	01	-	01
7	Rhesus Monkey ( <i>Macaca mulatta</i> )	-	01	-	01
<b>Total</b>		<b>08</b>	<b>06</b>	<b>03</b>	<b>17</b>

### 1.15 Description of different Facilities

The following are the facilities available for the visitors:

#### Guide services

Visitors are provided with guide services at free of cost for the safari ride. There are 26 guides on daily wages basis engaged from nearby villagers, who provide detailed information on the animals housed at Nandanvan zoo and safari. This will help the visitors more comfortable understanding the importance of nature conservation.

#### Parking Space

Nandanvan zoo and safari has a sufficient 2 hectare area of green parking space for the visitors

#### Garden

In addition to the Zoo's beautifully landscaped grounds, there are several unique garden spaces in the Nandanvan zoo and Safari with green carpet and lush green ornamented flowering plants giving lifetime experience to the visitors. A Statue of *Chendru*, the Tiger boy has been established at the entrance area which provides special attraction to the visitor regarding the co-existence of human and wild animals. The Gardens also contribute to climate change and is a perfect place to relax and feel inspired.

#### Toilet

The most basic facilities that the visitors should be provided are the toilets. There are four well spaced toilets available for the visitors throughout the zoo.

#### Other facilities

Nandanvan zoo and safari also provides various facilities for the convenience of the visitors, making the visit even more memorable one. Some of the facilities includes, safe drinking water, First aid facility, Battery operated vehicles, Benches and shelters for rest that have been placed throughout the park.

### 1.16 Difficulties faced in the management of Zoo & safari

The Zoo faced difficulties in the management during the year 2020 and 2021 due to COVID -19 Pandemic. The food supply for the animal during this period was the biggest challenge for management. The fund provided by the state government is insufficient as most of the zoo keepers are daily wage labourers. There is insufficient fund in gate money collection to carry out the maintenance of vehicles, which in turns affects the performances of the employees. There are insufficient residence facilities for the zoo and

safari staffs, so they use to travel 30 of 35 Km. from Raipur city and another place to reach Nandanvan Zoo and Safari. Recruitment of educational officer and Biologist are not done which hinders the conduction of educational awareness programmes. There is one permanent Veterinarian available at nandanvan zoo and safari, there is a need of one more permanent assistant veterinary officer to take care of the animal health in the absence of the senior veterinarian.

### 1.17 Achievement

Since Inauguration the Nandanvan zoo & safari has gathered the popularity of well planned safari. The main achievements are highlighted as follows.

1. Construction and Completion of four safaris such as Herbivore safari, Bear (*Melursus ursinus*) safari, Tiger safari (*Panthera tigris*) and Lion (*Panthera leo*) safari and was inaugurated by the Honourable Prime Minister of India, Shri Narendra Modi on 1<sup>st</sup> Nov 2016.
2. Construction and Completion of 11 different species of enclosure and is operational for the visitors. The Zoo was inaugurated by the Honourable Chief Minister of Chhattisgarh Shri Bhupesh Baghel on 5<sup>th</sup> October 2019.
3. Constructions of Rescue and Rehabilitation centre with 10 enclosures for different species.
5. Addition of new species such as White Tiger (*Panthera tigris tigris*), Hippopotamus (*Hippopotamus amphibius*), Gharial (*Gavialis gangeticus*), Smooth coated Otter (*Lutrogale perspicillata*), Fox (*Vulpes bengalensis*), Wolf (*Canis lupus*), Gaur (*Bos gaurus*), Chinkara (*Gazella bennettii*) and Wild Dog (*Cuon alpinus*) into the zoo from other Zoo through Animal exchange programme.
6. Constructions of Pathway, Gardens, Pagodas.
7. Conduction of different awareness Programme for school children on the eve of International and National day regarding environment, forest and wildlife viz, wildlife week, world Biodiversity day, World Environment Day, World forest day, world Tiger day etc.
8. Enclosures of Hyena (*Hyaena hyaena*), Jackal (*Canis aureus*), Fox (*Vulpes bengalensis*), Blackbuck (*Antelope cervicapra*), Nilgai (*Boselaphus tragocamelus*), Chowsingha (*Tetracerus quadricornis*), Barking Deer (*Muntiacus*) was inaugurated by the Honourable Chief Minister of Chhattisgarh on 6<sup>th</sup> November 2020.

## Chapter-2

### Appraisal of the present arrangement and constraints

The Nandanvan Mini zoo, Raipur was established 35 years back as a rescue shelter for animals in distress and in the year 2008, Central Zoo Authority granted the status of a Mini Zoo. Since then, it has undergone tremendous changes. In the year 2014, new master plan was approved by CZA and the old zoo was shifted to Naya Raipur with due diligence and utmost care. Due to its strategic location and Chhattisgarh Government support, it has flourished into the present important landmark of Naya Raipur. On account of untiring efforts over a period of time, the zoo has now well established administrative structure and management that caters to the needs of animals housed and meets the expectations of the visitors. This zoo is recognized for its innovative ideas like safari parks (Herbivore safari, Tiger (*Panthera tigris*) safari, Lion (*Panthera leo*) safari and Bear (*Melursus ursinus*) safari), modern Zoo with specific enclosures for many species of carnivores, herbivores and reptiles and conservation breeding centre for Wild Buffalo (*Bubalus arnee*).

#### 2.1 Animal Section

Animal section is the most important section which is the lifeline of any zoo. Every zoo has to ensure the welfare of its animals. Nandanvan zoo and safari has provided the best care for the housed animals to stay healthy and to have a longer lifespan. The zoo management put an effort to keep their animals in a way that resembles the life of the species in the wild, so that the animals are able to express their natural behavior. The Director is the overall in charge of Zoo who is assisted by the Assistant Director. Broadly this section has been divided into three sub sections such as Safari, Zoo and Rescue and Rehabilitation centre. All the three sub sections are considered as three units. Each Unit is headed by the Range Officer, assisted by deputy ranger.

##### 2.1.1 Safari

Safaris are the main attraction amongst visitors at Nandanvan which provides the visitors with exhilarating experience. The visitors are allowed in a secured safari vehicle for the ride. The safari guide escort the visitors around the Park to see animals up close and share stories of wildlife care and conservation. Nandanvan Zoo and Safari has four safaris namely Herbivore, Bear (*Melursus ursinus*), Tiger (*Panthera tigris*) and Lion (*Panthera leo*). The Range Officer is overall in charge of these safaris assisted by Deputy Ranger and Forest Guard.

### 2.1.1.1 Herbivore Safari

Area of the enclosure: 30.89 Hectares

Size of the paddock area: 27.6 hectares

Size of the cell in the night shelter: 3.95 x 5 m

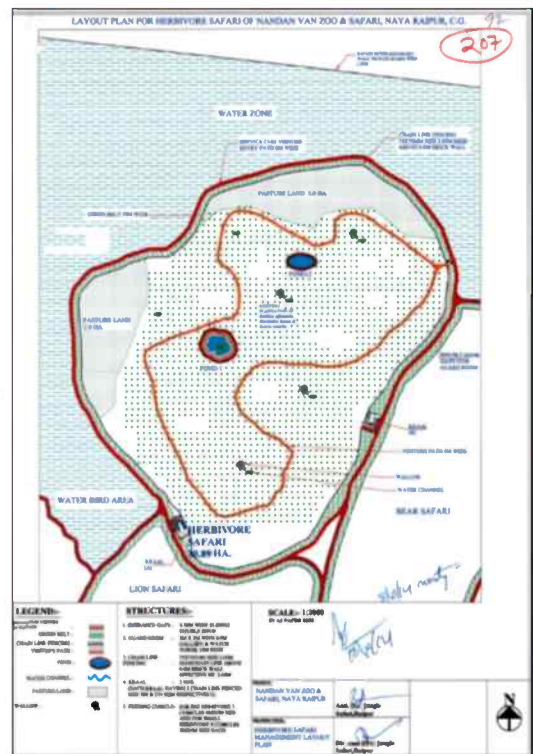
Size of the day kraal: 400 sq m

Number of cells in the night shelter: 6

Height of the chain link fence: 2.7 m



Established in 2016- The herbivore safari spreads across an area of 77.225 acres of lush green forest land and is home to many species of herbivores such as Spotted Deer (*Axis axis*), Sambhar (*Rusa unicolor*), Blackbuck (*Antelope cervicapra*) and Nilgai (*Boselaphus tragocamelus*). The area comprises of visitors path of 2.5km, a well equipped kraal, two night shelters for attending animals in need of special care, two water bodies and five water channels supplying water around the clock. The fencing is done in view of both safety and comfort – camouflaged 2.6 m high chain-link fencing has been laid to contain the herbivorous within their boundary limits. The entrance of the herbivore safari is designed to give one the experience of entering into a totally different world, an experience well appreciated by everyone who passes through them. Water Sprinklers have been developed at appropriate places to keep the animals hydrated and safeguard them from heat.



### 2.1.1.2 Bear (*Melursus ursinus*) Safari

Area of the enclosure: 20.03 hectares

Size of the paddock area: 19.88 hectares

Size of the cubicle/cell in the night shelter: 3.10 x 2 m

Size of the day kraal: 120 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 5.5 m



Bear (*Melursus ursinus*) safari in Nandanvan covers an area of 50.075 acres protected using chain linked mesh fence of 5.5m height with the top of the fence inclined in an angle of 120 degree with steel plate top to safeguard bears from climbing over. These omnivores are provided with a Day Kraal, shelters and Keepers room. A hillock and a man made cave have been developed to give the bears a natural setting and two water bodies to quench their thirst. The bear safari has been enhanced with fruit bearing trees and plants. Along with the entry cum exit gate an emergency gate facility has also been provided along the 2.4 km vehicle movement area. Bear (*Melursus ursinus*) friendly trees like Mahua (*Madhuca longifolia*), Sterculia (*Sterculia urens*), Bargad (*Ficus benghalensis*), Peepal (*Ficus religiosa*), Bamboo (*Bambusoideae*), Ber (*Ziziphus mauritiana*), and Anjan (*Hardwickia binata*) have been planted. Five bears namely Sohan, Gauri, Radha, Bholu 1 and Bholu 2 enjoy the expanse of 20.03 ha of paddock area, making full use of the water pond, trees and wonderful greenery made available to them.



### 2.1.1.3 Tiger (*Panthera tigris*) Safari

Area of the enclosure: 20.04 hectares

Size of the paddock area: 19.620 hectares

Number of Day kraal: 2

Size of the day kraal: 152 sq m

Number of cells in the night shelter: 5

Size of the cubicle in the night shelter: 3.2x2.9 m

Height of the chain link fence: 5.6m

Developed in an area of 20.04 ha area, the Tiger (*Panthera tigris*) safari has 5.6 m high chain link fencing which encompasses paddock area, day kraal night shelters and keepers room. This safari has the facilities of 2 animal housing complexes i.e. 2 day kraal with 10 animal cells/cubicle comprising





groups of Lions (*Panthera leo*) are allowed into the safari on a rotational basis regularly for the benefit of the visitors.



### 2.1.2 Zoo

Nandanvan Zoo spread over an area of 50 hectares was designed to house 37 species of mammals and reptiles. In this revised proposal, it is proposed to establish and house 43 species of mammals and reptiles. Nineteen new enclosures have been constructed and are operational for the visitors, nine new enclosures are under construction in this financial year 2021-2022 and fourteen new enclosures are proposed to be established in the coming years. The design of animal enclosures is one of the most complex aspects of zoo development. Each different species has its specific needs when it comes to housing and caring for it. When designing an enclosure it is important to design it in a way that guarantees safety and comfort for animals, staff and visitors. The enclosures designed are environment friendly and are more or less a true replication of the natural habitat of the animals being housed here to give maximum comfort and natural feel to them. A web of road network of 2.2kms making its way through the green landscape facilitates the visitors to visit and enjoy all the exhibits. Visitor's facilities like sit outs, Drinking water washroom have been provided appropriately.



Presently the zoo section has been further divided into the following sub-section:

- (A) Carnivore and Omnivore sub-section comprises of White Tiger (*Panthera tigris tigris*), Lion (*Panthera leo*), Royal Bengal Tiger (*Panthera tigris tigris*), Leopard (*Panthera pardus*), Hyena (*Hyaena hyaena*), Jackal (*Canis aureus*), Fox (*Vulpes bengalensis*) and Himalayan Bear (*Ursus thibetanus*).
- (B) Herbivore sub-section comprises of Blue Bull (*Boselaphus tragocamelus*), Barking Deer (*Muntiacus*), Blackbuck (*Antelope cervicapra*), Four Horned Antelope (*Tetracerus quadricornis*), and Hippopotamus (*Hippopotamus amphibius*).
- (C) Reptiles sub-section comprises of Gharial (*Gavialis gangeticus*), Monitor Lizard (*Varanus bengalensis*), Star Tortoise (*Geochelone elegans*) and Marsh Crocodiles (*Crocodylus palustris*)

### 2.1.2.1 White Tiger (*Panthera tigris tigris*)

Area of the enclosure: 2590 sq m

Size of the paddock area: 1999 sq m

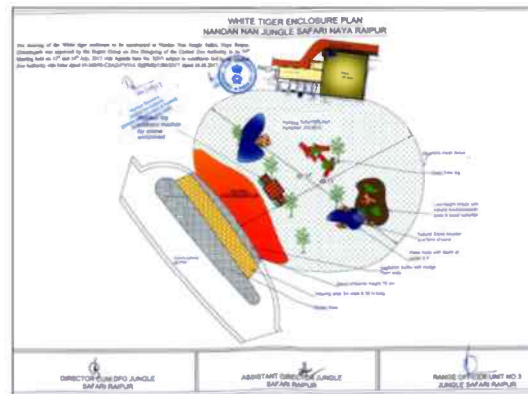
Size of the day kraal: 120 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 5m

Moat type: Dry (8m width and 5m depth)

Size of the cubicle in the night shelter: 2x 3 m



The drawing of the White Tiger (*Panthera tigris tigris*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 74<sup>th</sup> meeting held on 13<sup>th</sup> and 14<sup>th</sup> of July 2017.

Environmental enrichment makes the lives of the animals in the zoo more active and interesting. This enclosure ensures to offer a naturalistic habitat and is provided with a low height hillock with natural boulders with a small water fall to give a close connect with the forest ecosystem has been developed. A cave is made up of natural boulders enhance the authenticity. The enclosure has grass planted throughout and tall indigenous species are planted to provide cover and shade in the warm weather. Bamboo is used as it is a fast growing and flexible enough for the tigers to go into it and not damage the plant. Dead tree logs, wooden machan made and a water body of 2.5m depth at centre has been developed for the entertainment of the animals in the enclosure.

After getting proper permission from CZA through Animal Exchange Programme, the White Tigers (*Panthera tigris tigris*) are acquired from Kananpendari zoo, Bilaspur.



### 2.1.2.2 Asiatic Lion (*Panthera leo persica*)

Area of the enclosure: 2550 sq m

Size of the paddock area: 2511 sq m

Size of the cubicle in the night shelter: 2x 3 m

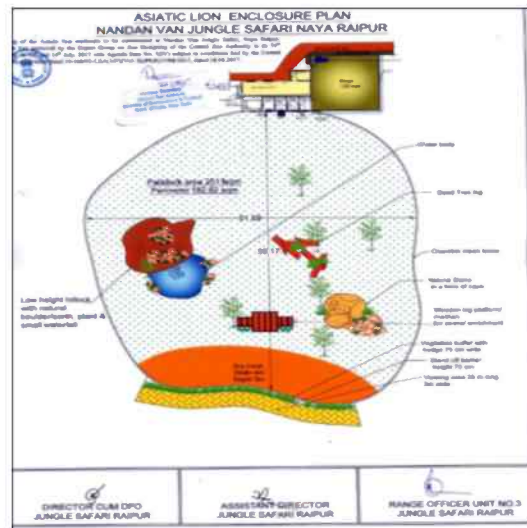
Size of the day kraal: 120 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 5m

Moat type: Dry moat (8m width and 5m depth)

The drawing of the Asiatic Lion (*Panthera leo persica*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 74<sup>th</sup> meeting held on 13<sup>th</sup> and 14<sup>th</sup> of July 2017. To improve the living conditions of the animals in captivity, environmental enrichment should be provided. The Lion (*Panthera leo*) enclosure is designed in a state of art fashion encompassing a low height hillock made of natural boulders and earth, plants and green cover and a small waterfall. The paddock area is provided with dead tree logs, natural stones in form of a cave and a wooden machan to keep the animals happy and make them feel at home.



### 2.1.2.3 Royal Bengal Tiger (*Panthera tigris tigris*)

Area of the enclosure: 2430 sq m

Size of the paddock area: 1945 sq m

Size of the cubicle/cell in the night shelter: 2x 3 m

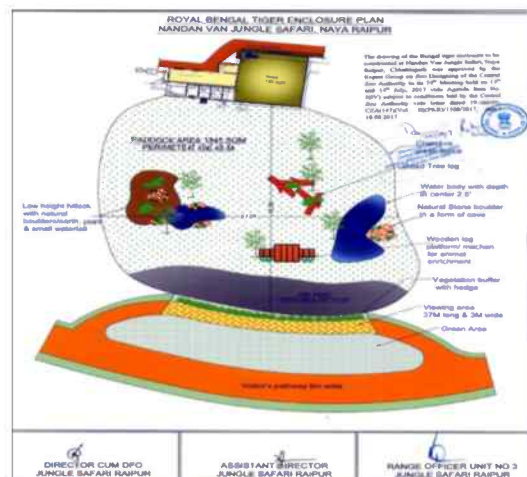
Size of the day kraal: 120 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 5m

Moat type: Dry moat (8m width and 5m depth)

The drawing of the Royal Bengal Tiger (*Panthera tigris tigris*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 74<sup>th</sup> meeting held on 13<sup>th</sup> and 14<sup>th</sup> of July 2017. The Royal Bengal Tiger (*Panthera tigris tigris*) enclosure has a paddock area enclosed



with chain link mesh. There is a water body with depth at centre 2.5m and a cave made of natural stone boulders is created. Enrichment is not necessarily expensive and can be implemented quite easily with a little imagination. A wooden log platform/machan has been erected for animal enrichment. The viewing area of 37 m length 3m wide is established for the visitors to move on. A low height hillock is made with natural boulders and wood with a waterfall and also lush green plants.



#### 2.1.2.4 Leopard (*Panthera pardus*)

Area of the enclosure: 2070 sq m

Size of the paddock area: 1670 sq m

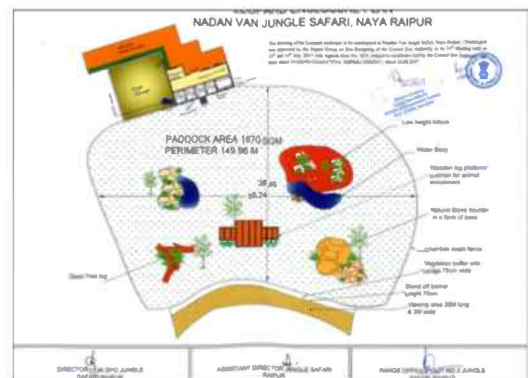
Size of the day kraal: 100 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 7m

Moat type: Toughened Glass

Size of the cubicle in the night shelter: 2x 1.8 m



The drawing of the Leopard (*Panthera pardus*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 74<sup>th</sup> meeting held on 13<sup>th</sup> and 14<sup>th</sup> of July 2017. The Leopard (*Panthera pardus*) enclosure is an open enclosure covered with toughened glass viewing area which makes it easy for visitors to observe this shy animal closer. The spacious Leopard (*Panthera pardus*) area offers the cats plenty of room for movement at ground level. The enclosure is rich in trees and is provided with a cave made out of natural boulders, dead tree logs, and water body to quench the thirst of the animals and also a wooden machan for entertainment. Enrichment for the animals also enhances the visitor experience as the animals show more natural behaviours and are much more active. The natural stone boulder cave gives inexorable allure to the enclosure. No trees are planted within the circumference of 8m from the inner side of the fence. Steel plates are erected at the top with 1.5 m width. The paddock area also contains a low height hillock and a standoff barrier of 75 cm. The viewing area is 36 m long and 3m wide giving visitors enough comfort.



### 2.1.2.5. Himalayan Bear (*Ursus thibetanus*)

Area of the enclosure: 1730 sq m

Size of the paddock area: 1699 sq m

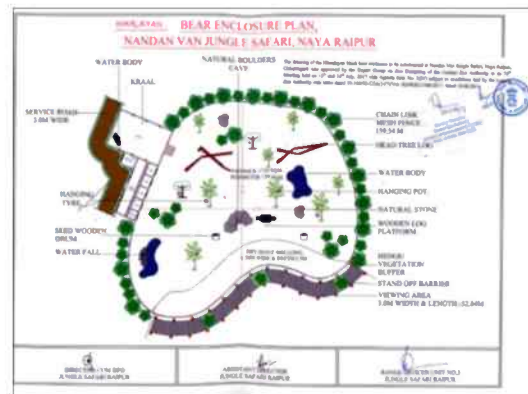
Size of the day kraal: 96 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 4.7 m

Moat type: Dry moat (5.5m width and 3.1 m depth)

Size of the cubicle in the night shelter: 2.2 x 2.5 m



The drawing of the Himalayan enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 74<sup>th</sup> meeting held on 13<sup>th</sup> and 14<sup>th</sup> of July 2017.

The enclosure is developed in an area encompassing a paddock area, day kraal, night shelter, dry moat and keeper's room. One meter width of steel plates is fixed at the top of the fence inclined in an angle of 60 degree to the vertical post. It also has a visitors viewing gallery with standoff barrier. It has a magnificent displaying area with habitat friendly enrichment and water fall with central pool. Providing natural environments that promote positive species-appropriate behaviours are a critical part of everyday enrichment.



### 2.1.2.6. Hyena (*Hyaena hyaena*)

Area of the enclosure: 860 sq m

Size of the paddock area: 790 sq m

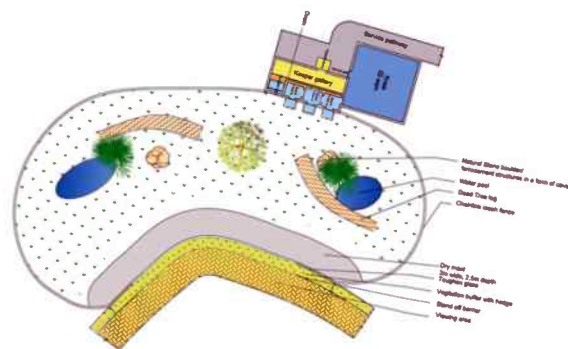
Size of the day kraal: 50 sq m

Number of cells in the night shelter: 3

Height of the chain link fence: 2.7 m

Moat type: Dry (2.5 width and 3m depth)

Size of the cubicle in the night shelter: 2.0 x 1.5m



The Hyena (*Hyaena hyaena*) enclosure with a paddock area of 860 sq m is provided with a high standard of accommodation for the inmates as well as appropriate display to the public. Three strings of barbed wire are fixed on the top of the fence inclined



in an angle of 120 degree to the vertical structural post. Wooden logs, natural stone boulders, trees and shrubs are placed inside the enclosure for enrichments. Enrichment helps satisfy both the physical and psychological needs of animals and allows them to make choices. Visitors can get a glimpse of these amazing creatures and learn more about their importance to the ecosystem.

### 2.1.2.7. Jackal (*Canis aureus*)

Area of the enclosure: 860 sq m

Size of the paddock area: 815 sq m

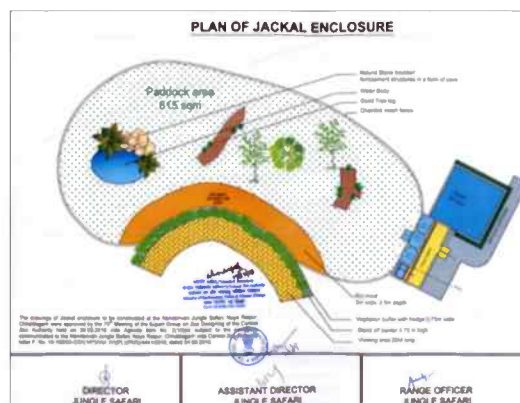
Size of the day kraal: 50 sq m

Number of cells in the night shelter: 3

Height of the chain link fence: 2.7 m

Size of the cubicle in the night shelter: 2.0 x 2.5 m

Moat type: Dry (2.5m width and 3m depth)



The drawing of the Jackal (*Canis aureus*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of August 2018. The Jackal (*Canis aureus*) Enclosure in an area of 860 sq m offers the animal to exhibit its natural behavior. Three strings of barbed wire are fixed on the top of the fence inclined in an angle of 120 degree to the vertical structural post. Enrichment should be considered part of the daily husbandry routine at all responsible animal care facilities. Waterproof huts has been erected which not only serve as sleeping quarters but also as a hideaway. Water containers are placed in an easily accessible and shaded area which is disinfected on a regular basis.



### 2.1.2.8. Fox (*Vulpes bengalensis*)

Area of the enclosure: 860 sq m

Size of the paddock area: 807 sq m

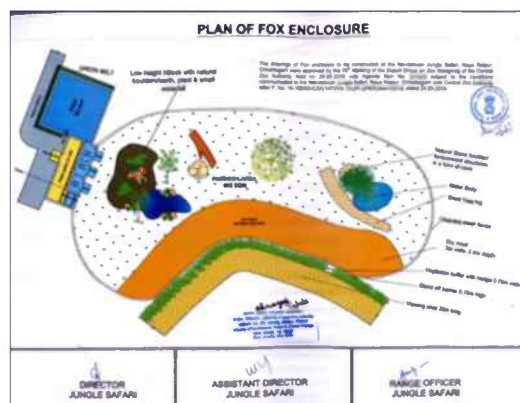
Size of the day kraal: 50 sq m

Number of cells in the night shelter: 3

Height of the chain link fence: 2.7 m

Moat type: Dry moat (3m width and 2.5m depth)

The Size of the cubicle in the night shelter: 2.0x 1.5 m



The drawing of the Fox (*Vulpes bengalensis*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of august 2018. The Fox (*Cerdocyon thous*) enclosure in an area of 860 sq m provided with habitat enrichment for the residents to facilitate their natural species specific behaviours. Three strings of barbed wire are fixed on the top of the fence inclined in an angle of 120 degree to the vertical structural post. Artifacts like dead logs, shrubs, soil for digging, waterproof huts are provided in the paddock area as animal enrichments.



#### 2.1.2.9. Blue Bull (*Boselaphus tragocamelus*)

Area of the enclosure: 2070 sq m

Size of the paddock area: 1830 sq m

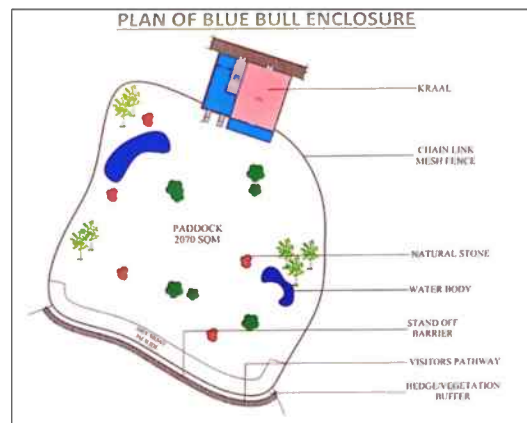
Size of the cubicle in the night shelter: 3x 2m

Size of the day kraal: 80 sq m

Number of cells in the night shelter: 2

Height of the chain link fence: 3.3 m

Moat type: Dry (4.6 m width and 2.5m depth)



The enclosure is of 2070 sqm with chain link fencing with open top dry moat to reflect the natural habitat of the antelope. This helps the visitors to view the animals without any visual barrier gives the feeling of being in the natural forests. Thatched sheds are erected in the paddock area to keep them comfortable during summer season. The facade of the night shelters are covered with natural boulders to give an appearance as a part of natural environment. Plants are planted along the chain link side as to hide the enclosure barrier to give it a natural feel.



### 2.1.2.10. Barking Deer (*Muntiacus muntjak*)

Area of the enclosure: 2010 sq m

Size of the paddock area: 1910 sq m

Size of the cubicle in the night shelter: 2x 3 m

Size of the day kraal: 100 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 3.1m

Moat type: Dry (6.1m width and 3m depth)

The enclosure in an area of 2070 sq m provides the inmates a feel of being in their natural habitat. Animals are stimulated to show their most natural behaviour by providing them with environmental enrichment. The enclosure is quite spacious with dry moat on the viewing side. The paddock area has 2 water channels, 2 thatched sheds and trees. The animals have bred here and they are doing well.



### 2.1.2.11. Blackbuck (*Antelope cervicapra*)

Area of the enclosure: 2100 sq m

Size of the paddock area: 2070 sq m

Size of the day kraal: 100 sq m

Number of cells in the night shelter: 4

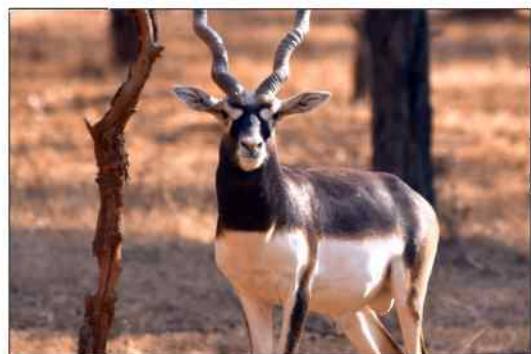
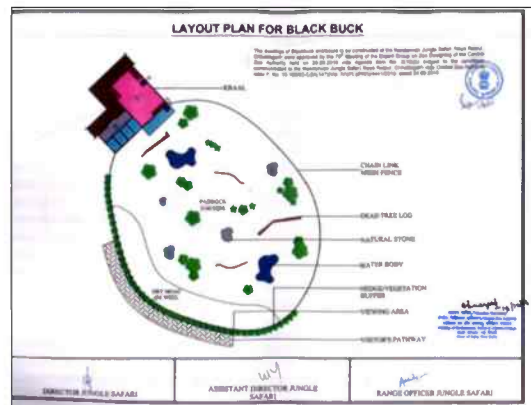
Height of the chain link fence: 3.1m

Moat type: Dry (6m width and 3m depth)

Size of the cubicle in the night shelter: 2x 3 m

The drawing of the Blackbuck (*Antelope cervicapra*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of August 2018.

The enclosure of 2070 sqm area is designed and developed in such a way to facilitate the behavioural expression of the residents. This enclosure is covered with chain link fence on all the three sides and dry moat on the viewing side. The paddock area is full of tall trees such as Neem (*Azadirachta indica*), karanj (*Millettia pinnata*), arjun (*Terminalia arjuna*) etc water channels and thatched sheds.



### 2.1.2.12. Four Horned Antelope (*Tetracerus quadricornis*)

Area of the enclosure: 2070 sq m

Size of the paddock area: 2350 sq m

Size of the cubicle/cell in the night shelter: 2x 3 m

Size of the day kraal: 100 sq m

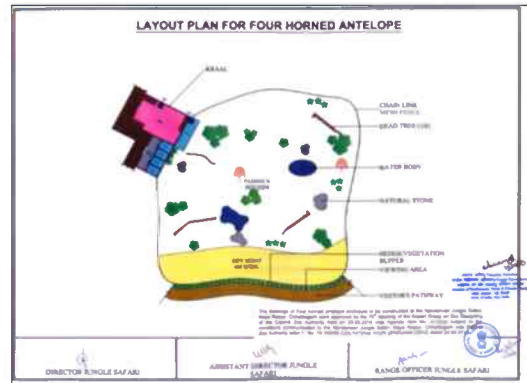
Number of cells in the night shelter: 4

Height of the chain link fence: 3.1m

Moat type: Dry moat (6m width and 3m depth)

The drawing of the Four Horned Antelope (*Tetracerus quadricornis*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of August 2018. The enclosure of 2350 sqm area provides the physical, biological and social requirements of the animals housed to reflect their natural habitat. This is one of the good enclosures

with enough space, good vegetation of tall trees, dry moat, day kraal and night shelters. Here the animals have bred and are doing well. From the visitors side, effective barrier with stand-off railing and hedges have been provided for a natural look and visitor's safety.



### 2.1.2.13. Common Palm Civet (*Paradoxurus hermaphroditus*)

Area of the enclosure: 460 sq m

Size of the paddock area: 400sq m

Size of the day kraal: 20 sq m

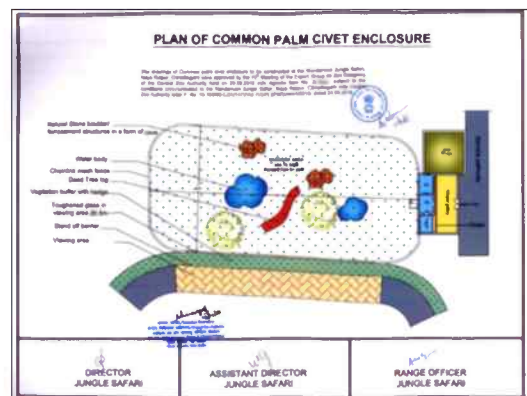
Number of cells in the night shelter: 2

Height of the chain link fence: 2.5m

Moat type: Toughened glass

Size of the cubicle in the night shelter: 2x1.5 m

The drawing of the Common Palm Civet (*Paradoxurus hermaphroditus*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of August 2018. The Paddock area of this enclosure is entirely covered with chain link mesh includes vegetation within, natural substrates, small sized shelter caves with shaded area. Visitors can view this animal through toughened glass.



### 2.1.2.14. Hippopotamus (*Hippopotamus amphibius*)

Area of the enclosure: 3220 sq m

Size of the paddock area: 3000 sq m

Size of the day kraal: 90 sq m

Number of cells in the night shelter: 4

Height of the wall fencing: 5m

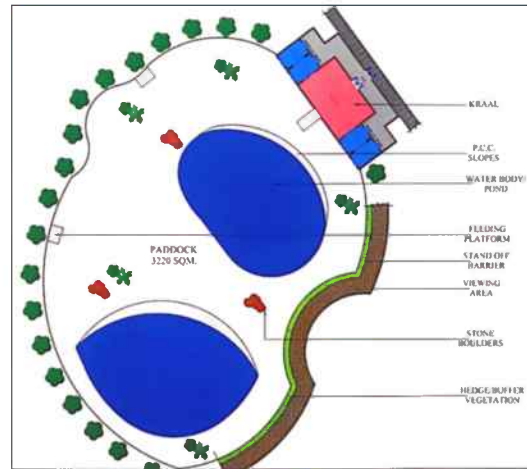
Size of the cubicle/cell in the night shelter: 5.2x 3 m

#### Hippopotamus (*Hippopotamus amphibius*)

Enclosure is the most mesmerizing area in the zoo.

Provided with a well equipped kraal, feeding platform and two water body with cemented floor, keeping them cool has been the major concern, enough water area has been ensured. The entire area is made safe with 1.50m high stone wall. For aesthetic purposes a stone boulder, wooden logs and green plants are placed at required places. After getting proper permission from CZA through

Animal Exchange Programme, pair of Hippopotamus (*Hippopotamus amphibius*) is acquired from Nandankanan zoo, Bhubhaneshwar. On 2<sup>nd</sup> January 2020 Hippopotamus (*Hippopotamus amphibius*) gave birth to a healthy male calf and on 28<sup>th</sup> July 2021 second time Hippopotamus (*Hippopotamus amphibius*) gave birth to a female calf which gives the zoo visitors to see the calf moving in and out of their pool.



### 2.1.2.15. Smooth Coated Otter (*Lutrogale perspicillata*)

Area of the enclosure: 1050 sq m

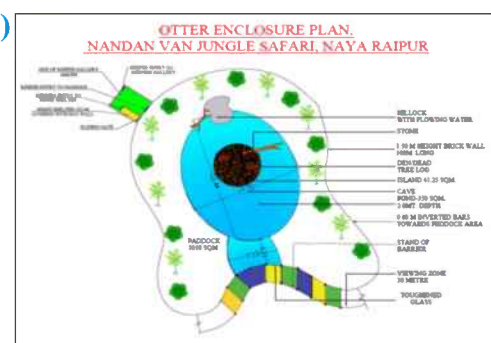
Size of the paddock area: 1050 sq m

Size of the day kraal: 20 sq m

Number of cells in the night shelter: 4

Height of the wall fencing: 2.5m

Moat type: Toughened Glass



The smooth coated otter enclosure is the most mesmerizing enclosure in the zoo with an area of 1050 sq m encouraging the animals to go about daily activity that satisfies its behavioural needs. The enclosure is protected with brick wall on all three sides with toughened glass

viewing area. Small night shelter is provided for the animals but the animal rarely uses it. The paddock area is enriched with logs and vegetation, a water pond with a portion of underwater viewing area which is very interesting to see them playing inside the water. After getting proper permission from CZA through Animal Exchange Programme, the Smooth coated Otters (*Lutrogale perspicillata*) are acquired from Surat Zoo.



#### 2.1.2.16. Gharial (*Gavialis gangeticus*)

Area of the enclosure: 800 sq m

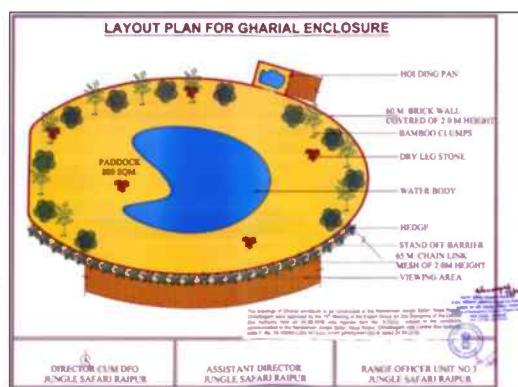
Size of the paddock area: 700 sq m

Size of the Holding pan: 120sq m

Height of the wall fencing: 1.6 m

The drawing of the Gharial (*Gavialis gangeticus*) enclosure was approved by the expert group on zoo designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of August 2018.

A pair of Gharials (*Gavialis gangeticus*) shares an area of 800 sq m comprising a huge island water body, hedge, dry area with bamboo clumps and dry leg stone. The perimeter is covered with 2m high brick wall. A standoff barrier of 65m is secured with chain link mesh and green hedges. The Kraal has a holding pan for easy handling of the reptiles.



#### 2.1.2.17. Bengal Monitor Lizard (*Varanus bengalensis*)

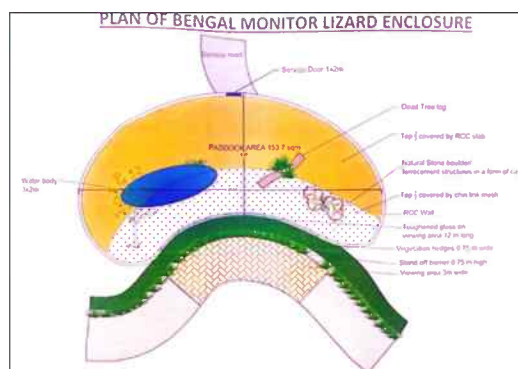
Area of the enclosure: 175 sq m

Size of the paddock area: 150 sq m

Height of the wall fence: 3.5 m

Moat type: toughened glass

Size of the holding pan: 20 sqm



The Monitored Lizard (*V. bengalensis*) enclosure is covered with RCC on all the three sides and toughened glass viewing gallery is provided to see this mystic reptile. The enclosure is secure and safe the animals to bask climb and search for a hideout. A small pool with ramps for easy entrance and exit is provided for monitors that take pleasure staying in the water. A lengthy fluorescent bulb that emits its light over a wide area is an added advantage in the enclosure.



### 2.1.2.18. Star Tortoise (*Geochelone elegans*)

Area of the enclosure: 70 sq m

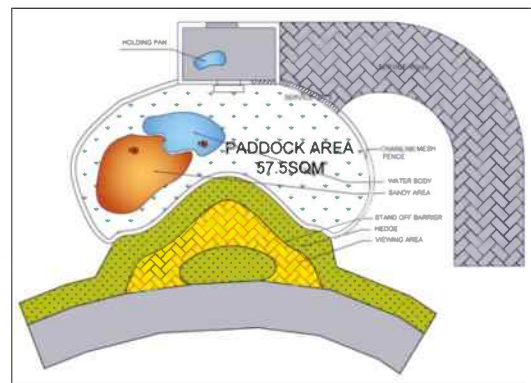
Size of the paddock area: 57.4sq m

Size of the holding pan: 5sq m

Height of the chain link fence: 2.5m

Constructed in an area of 70 sq m the tortoise (*Geochelone elegans*) enclosure houses more than a dozen tortoises, including adults and young ones.

The enclosure has a paddock area of 57.4 sqm with a water body a sandy area for free movement and reproductive activity for the reptiles. A holding pan has been developed aimed at keeping the reptiles feel at home.



### 2.1.2.19. Crocodile (*Crocodylus palustris*)

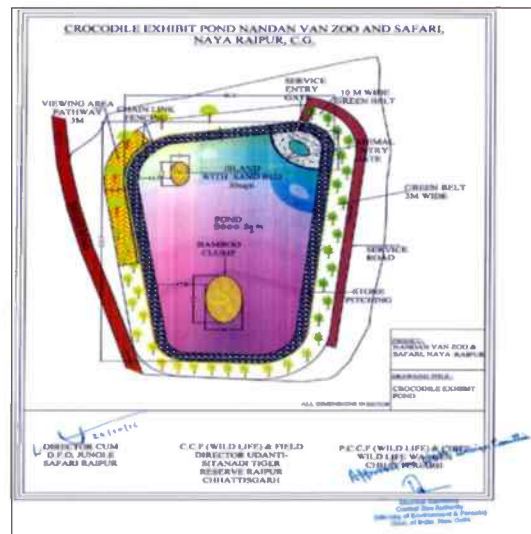
Area of the enclosure: 10850 sq m

Size of the paddock area: 9500 sq m

Size of the holding pan: 350sqm

Height of the chain link fence: 2.5m

Crocodiles (*Crocodylus palustris*) are an integral part of fresh water fauna of Chhattisgarh. In an attempt to provide shelter to the wild Crocodiles (*Crocodylus palustris*) and to impart education on their life and habits a Crocodile (*Crocodylus palustris*) exhibit park has been developed in an area of 9500 sq m area. The drawing of the Crocodile (*Crocodylus palustris*) enclosure was approved by the Expert Group on zoo designing of the central Zoo Authority in its 69<sup>th</sup> meeting held on 20<sup>th</sup> of October 2016. Suitably sheltered in chain link mesh up to 2m height these semi aquatic reptiles are provided with a manmade island within a pond so that they can bask in the sunlight and sink back into water to cool off. For visitors to get a better view basking arrangements on the visitor's side of the pond is also created.



### 2.1.2.20. Wild Dog (*Cuon alpinus*)

Area of the enclosure: 770 sq m

Size of the paddock area: 713 sq m

Size of the cell in the night shelter: 1.5 x 2 m

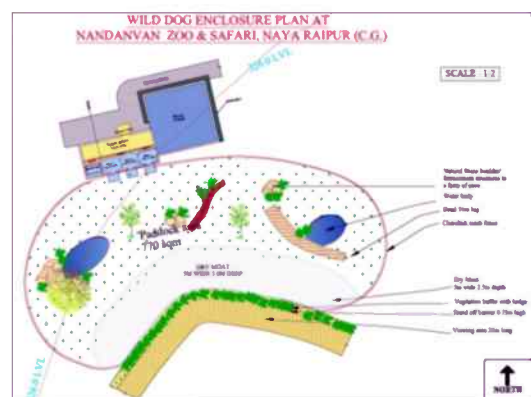
Size of the day kraal: 50 sq m

Number of cells in the night shelter: 3

Height of the chain link fence: 2.7 m

Moat type: Dry moat (5m width and 3m depth)

The design of the enclosure is naturalistic which provides an immersive experience for the visitors as well as for the inmates. Trees that existed prior to the construction were retained to provide shade for the animals. Wooden logs and natural stone boulders are placed inside the



enclosure for the habitat enrichments. The animals have been brought in from Sri Chamarajendra Zoological Garden, Mysuru through animal exchange programme duly approved by the Central Zoo Authority.

#### 2.1.2.21. Wolf (*Canis lupus*)

Area of the enclosure: 770 sq m

Size of the paddock area: 807 sq m

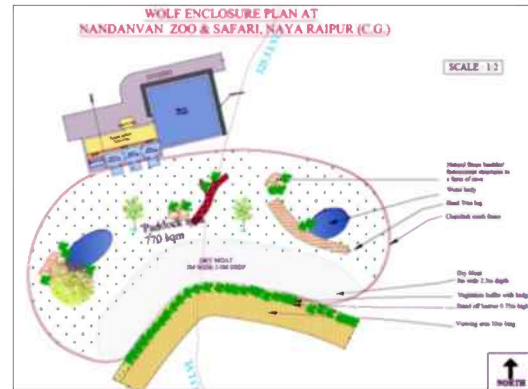
Size of the cubicle/cell in the night shelter: 1.5 x 2 m

Size of the day kraal: 50 sq m

Number of cells in the night shelter: 3

Height of the chain link fence: 2.7 m

Moat type: Dry moat (5m width and 3m depth)



The enclosure was constructed and completed in the year 2021-22 with adequate space for the animals to be housed. Three strings of barbed wire are fixed on the top of the fence inclined at an angle of 120 degree to the vertical structural post. The animals have been brought in from Sri Chamarajendra Zoological Garden, Mysuru through animal exchange programme duly approved by the Central Zoo Authority.

#### 2.1.2.22. Gaur (*Bos gaurus*)

Area of the enclosure: 4180 sq m

Size of the paddock area: 3710 sq m

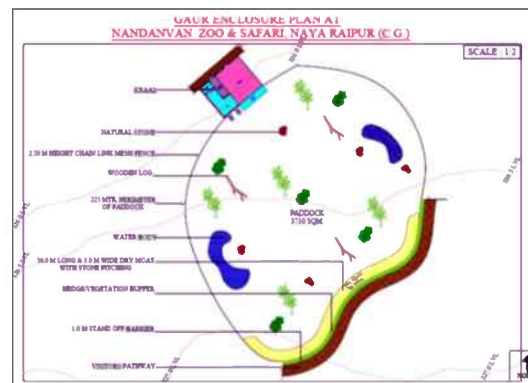
Size of the cell in the night shelter: 5.4 x 4.10 m

Size of the day kraal: 80 sq m

Number of cells in the night shelter: 3

Height of the chain link fence: 3.1 m

Moat type: Dry moat (3m width and 3m depth)



Landscape around the enclosure is comprised of plantations of appropriate trees, which ensures the visibility of enclosures to the visitors through the animal viewing area only. The enclosure is designed to provide as much possible space for the animals to meet the biological requirements and freely movement as in its own habitat. The animals have been brought in from Sri Chamarajendra Zoological Garden, Mysuru through animal exchange programme duly approved by the Central Zoo Authority.

### 2.1.2.23. Spotted Deer (*Axis axis*)

Area of the enclosure: 3120 sq m

Size of the paddock area: 2900 sq m

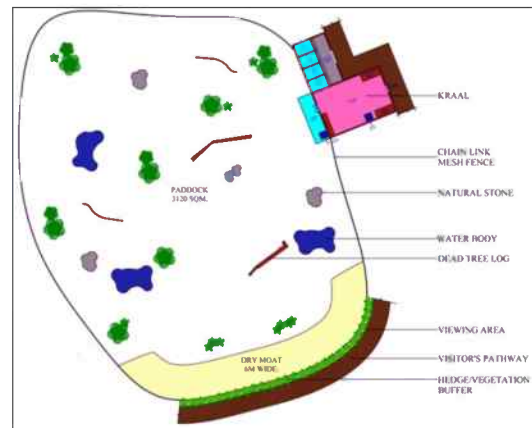
Size of the cell in the night shelter: 2x 3 m

Size of the day kraal: 80 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 3.2m

Moat type: Dry moat (6m width and 3m depth)



The spotted deer enclosure have been established in an area of 3120 sq m with feeding cubicle camouflaged with vegetation. It is ensured that the guidelines and norms prescribed by the Central Zoo Authority are followed properly during the execution of construction of enclosure. Proper care have been taken for the animal enrichment part to make the inmates of the enclosure to feel at home.

### 2.1.2.24. Sambar (*Rusa unicolor*)

Area of the enclosure: 2420 sq m

Size of the paddock area: 2200 sq m

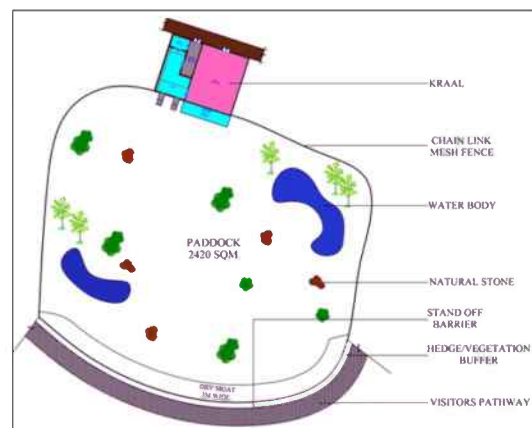
Size of the cell in the night shelter: 2x 3 m

Size of the day kraal: 80 sq m

Number of cells in the night shelter: 3

Height of the chain link fence: 3.1 m

Moat type: Dry moat (3m width and 3m depth)



This enclosure is constructed and the work has completed in the year 2021-22 with adequate space and facilities for the animals to perform its natural instinct. Different artefacts like logs, wallow ponds, rocks etc. are provided inside the paddock area.

### 2.1.2.25. Chinkara (*Gazella bennettii*)

Area of the enclosure: 2550 sq m

Size of the paddock area: 2250 sq m

Size of the cubicle/cell in the night shelter: 3x2 m

Size of the day kraal: 100 sq m

Number of cells in the night shelter: 4

Height of the chain link fence: 3.1m

Moat type: Dry moat (6 m width and 3 m depth)

The enclosure have been established with naturalistic habitat enrichments for the animals to be housed. Day kraal and feeding cells are provided with utmost care. The animals have been brought in from Nahargarh Biological Park, Jaipur, Rajasthan through animal exchange programme after obtaining permission from Central Zoo Authority.

#### 2.1.2.26. Porcupine (*Hystrix indica*)

Area of the enclosure: 200 sq m

Size of the paddock area: 80 sq m

Size of the cubicle/cell in the night shelter: 2x 1.5 m

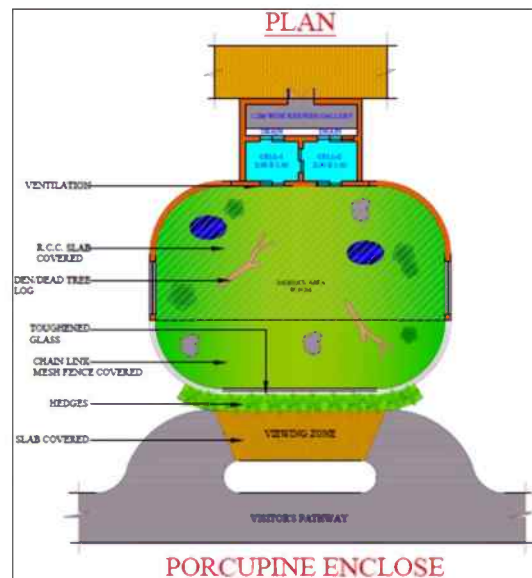
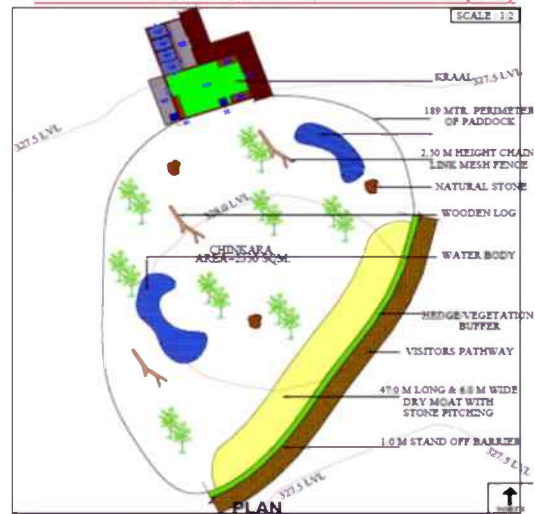
Number of cells in the night shelter: 2

Height of the wall fencing : 3.1m

Moat type: Toughened Glass

The enclosures have been constructed in an area of 200 sq m with night shelters, day kraal and paddock area. The three sides of the enclosure is enclosed with RCC structure, top covered and the flooring is done with RCC bed below the earthen part of the enclosure. Visitors can view these animals through toughened glass.

CHINKARA ENCLOSURE AT NANDANVAN ZOO & SAFARI, NAYA RAIPUR (C.G.)



#### 2.1.2.27. Pangolin (*Manis crassicaudata*)

Area of the enclosure: 200 sq m

Size of the paddock area: 80 sq m

Size of the cubicle/cell in the night shelter: 2x 1.5 m

Number of cells in the night shelter: 2

Moat type: Toughened Glass

The enclosure is designed according to the ecological needs of the species such as denning, burrowing behaviour etc. The acquisition of this species is difficult due to its sparsely availability in the captive collections across the Indian zoos. So this may be replaced with honey badger.



to be replaced with other species

### 2.1.2.28. Mongoose (*Herpestes edwardsii*)

Area of the enclosure: 410 sq m

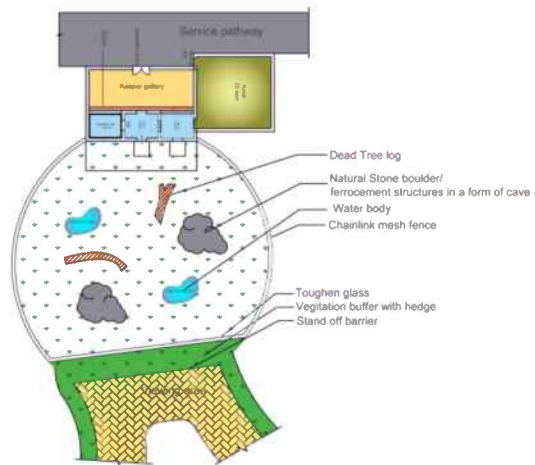
Size of the paddock area: 200 sq m

Size of the cubicle/cell in the night shelter: 2.20x 3 m

Number of cells in the night shelter: 3

Moat type: Toughened Glass

The area of this enclosure is 410 sq m. and is approved by CZA in the previous Layout plan. As this species comes under schedule 1/11, the drawings of the enclosures have been sent to CZA and it was approved by the expert group on zoo designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of August 2018. Construction of this enclosure is completed in the year 2021-22 with proper care for the animals to be housed.



### 2.1.2.29 Snake (*Serpentes*) Park

Total area of the enclosure: 970 sq m

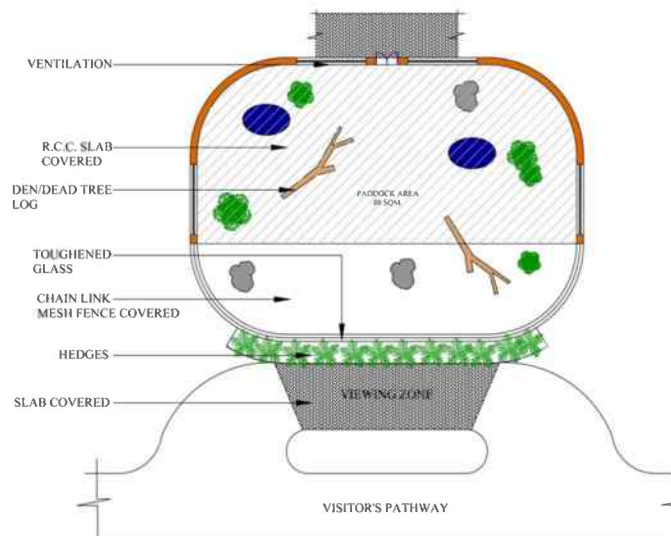
Number of enclosure: 10

Size of the paddock area in 8 enclosures:  
40 sq m each

Size of the paddock area in 2 enclosures:  
80 sq m each

Moat type: Toughened Glass

The snake park includes ten species of snakes such as Indian Rock Python (*Python molurus*), Indian Cobra (*Naja naja*), Russell Viper (*Daboia russelii*), Common Krait (*Bungarus caeruleus*), Banded Krait (*Bungarus fasciatus*), Rat Snake (*Ptyas mucosa*), Sand Boa (*Eryx johnii*), Checkered keelback (*Xenochrophis piscator*), Green Tree Python (*Morelia viridis*) and King Snake (*Lampropeltis triangulam*). The drawing of the Snake enclosure was approved by the Expert Group on Zoo Designing of the central Zoo Authority in its 79<sup>th</sup> meeting held on 29<sup>th</sup> of August 2018. It is ensured that the viewing side of the enclosure should be of toughened glass inclined at an angle so that the top portion should be outward and the bottom portion should be inward to avoid the reflection from the viewer side.



### 2.1.2.30 Open Butterfly Park

A large number of butterflies were observed inside the zoo area indicating a good ecosystem. So open butterfly garden in an area of 5200 sq m was created in the year 2021-22 with the aim to provide educational and recreational activity for the visitors to view the butterflies interacting with the environment. Flowering plants, shrubs, herbs and nectar-rich plants like Ixora, Alamanda, Lantana were planted to attract these winged beauties in the garden. Some puddling points have been developed as a source of drinking water and a way to obtain vital minerals. Survey was conducted to observe the species of butterflies thrives inside the park. The list are as follows : Plain Tiger (*Danaus chrysippus*), Common Grass Yellow (*Eurema hecabe*), Small Grass Yellow (*Eurema brigitta*), Psyche (*Leptosia nina*), Pioneer (*Anaphaeis aurota*), Blue Pansy (*Junonia orithya*), Common Emigrant (*Catopsilia pomona*), Common Parrot (*Castalius rosimon*), Zebra Blue (*Tarucus plinius*), Pale Grass Blue (*Pseudozizeeria maha*), Dark Grass Blue (*Zizeeria knysna*), Forget Me Not (*Catochrysops strabo*), Grass Jewel (*Chilades trochylus*), Gram Blue (*Euchrysops cnejus*) and Lime Blue (*Chilades laius*). Butterflies would automatically come if they find a habitat filled with colourful plants.

### 2.1.3 Rescue and Rehabilitation Centre

To care for the injured and sick animals, a rescue and rehabilitation center is established in off-the display areas of the zoo on an area of 2.00 hectares with the facilities of housing for large/small carnivores, large/small herbivores, bear, reptiles, monkey and birds. The drawing of the Rescue centre including large/small Carnivore, large/small Herbivore, Monkey, Langur, Bear, Reptiles, Crocodiles and Birds was approved by the Expert Group on zoo designing of the central Zoo Authority in its 80<sup>th</sup> meeting held on 26<sup>th</sup> of December 2018.

The rescue centre was constructed at Nandanvan Zoo and Safari near the veterinary hospital under the CAMPA fund during the year 2018-2019 and is now functional where in the rescued animals are brought in from different parts of the Chhattisgarh state. The animals brought here are treated and rehabilitate back to the wild within 30 days of treatment and the animals which need lifetime care is kept in the rescue centre. The health and hygiene of the housed animals are taken care of



by the veterinarian.

The National Zoo Policy, 1998 stipulates the mandates on animal housing, their upkeep, collections and their health care in the zoo setup stating as follows

- Every animal in the zoo shall be provided housing, upkeep and health care keeping the longevity of their life and sustainability.
- The enclosures for all the species displayed in the zoo shall be of such size that the animal gets adequate space for free movement.
- Each animal enclosures in a zoo shall have appropriate shelters, perches, wallow pools, drinking water facility etc.,
- Every animal shall be provided with diet of its natural kind with optimum quantity.



Here in Nandanvan Zoo and Safari, the management tries to adopt all the above said mandates for smooth functioning of the zoo and safari.

Animal keepers are entrusted with the task of feeding animals along with the cleaning of animal enclosures. They also observe animal behavior and report any abnormality of changes in the behavior, of animals' infighting among species of inter-species and in case of any sickness to the head Zoo Keeper (Forest Guard). In turn they will report to the Assistant Curator (Deputy Ranger) and as soon as the report is communicated to Assistant Curator, they immediately report to the Curator (Range Officer) and the curator, who in turn brings to the notice of the zoo doctors for needful action.

The in-charges of enclosures make regular visits around each safari boundary area and zoo periphery region to ensure the safety of animals and the visitors and report to Assistant Curator (Deputy Ranger) and Curator (Range Forest Officer). The Range Forest Officer will report to the Deputy Director regarding births, deaths, feeding, treatment, etc. in the prescribed format. At the closing time, all the animals are taken in to their night shelter and the keys are handed over to the zoo keepers, who in turn keep the keys in a safe locker.

#### **2.1.4 Constraints in Animal Section**

The animal section certainly has constraints that can be broadly listed as below:

- Lack of Permanent and Trained Staff
- Lack of adequate trained personnel.
- Lack of Permanent Security Personnel.
- Overcrowding in some specific holiday/occasion

## 2.2 Veterinary Section

The Nandanvan Zoo and Safari has a fairly better developed hospital which caters the needs of health care and management of animals housed in Nandanvan Zoo, Nandanvan Zoo and Safari and Nandanvan Rescue Center. The veterinary hospital is located



within the zoo premises. Some additional amenities require to be improved to make the hospital more responsive to the day to day treatment of the captive animals. For the establishment of high standard veterinary care facilities in the zoo, a modest beginning was made during 2020 to have a dedicated and well equipped veterinary hospital complex for the benefit of inmate animals. This section has one full time working Veterinarian, who looks after the animal health management in the zoo.

### 2.2.1 Zoo Hospital

#### Facilities available at Zoo Hospital

Zoo hospital has the following facilities to meet the requirements of Health care management of captive wild animals.

**Operation Theater:** The operation theater attached to the Zoo Hospital is serving to attend surgical operation on captive wild animals like Primates, Tigers (*Panthera tigris*), Lions (*Panthera leo*), Leopard (*Panthera pardus*), small herbivore animals and other small carnivores. Cases like infighting, tear wounds, abdominal injuries, fracture, hernia, has been successfully attended at Zoo Hospital. The equipments available in the operation theater are operation table, O.T. Light, surgical equipments etc.

**Pharmacy:** The required quantity of veterinary medicine, which includes emergency supplements, medicines, anesthetics, anti-venom, antibiotics, analgesics, antihistamines and anthelmintics, dressing materials and nutritional supplements are kept in Zoo Hospital pharmacy on ready to use basis.

**Sterilization and compounding room:** Sterilization is an important part of treatment being provided to the captive wild animals. All surgical equipment and tranquilizing equipment accessories are sterilized before using in hot water sterilization bath and autoclave. The

medicines are compounded and measured in this room before issuing to the sick animals.

**Tranquilizing equipments:** Chemical restraining is an important procedure for providing treatment, shifting and crating of wild animals kept under captivity. The Zoo Hospital is well equipped with tranquilizing equipments and drugs. The Zoo Hospital has got the following tranquilizing equipments.

1. Dist Inject Long Range Projectile Gun model 60 and accessories
2. Dist Inject Long Range Projectile Parmar capture and accessories
3. Dan-inject gun and accessories

**Diagnostic Ultrasound Scanning Facility:** GE Ultrasound portable equipment is purchased recently for pregnancy diagnosis and soft tissue scanning mainly in primates and carnivores.

**Laboratory:** Laboratory has basic facilities to conduct routine tests on daily basis. Routine blood, serum, urine and fecal examination are conducted in the zoo hospital lab for diagnostic purpose. The laboratory is having a Binocular microscope, blood biochemical analyzer, urine analyzer, refrigerator, water bath and autoclave.

**Inpatient Treatment wards:** The Zoo Hospital has inpatient facility to house animals to provide necessary treatment under close observation and monitoring. The inpatient wards have squeeze cage facility for restraining of animals.

**Identification of the animals:** The individual animal history cards and treatment cards are being maintained for each and every animal in the Zoo and safari, it is worthwhile to give identification mark to each animal. Transponders will be placed to all the bigger animals. Permanent records of these shall be maintained by the Animal, Veterinary and Research sections.

**Documentation facility:** The zoo hospital is provided with a dedicated computer and its infrastructure to record and document the various information required from the point of efficient management. All the information related to health care management of inmate animals are recorded in the format prescribed like animal stock register, animal history sheet, diet chart, treatment register, daily report and postmortem reports. There is an exclusive computer operator provided for this purpose.

**CCTV unit:** The zoo hospital has the facility of day and night vision cameras with continuous recording and display unit. This CCTV setup is mobile and regularly maintained. Wherever and whenever it is required is used for recording the information round the clock regarding the animal behaviour during parturition, lactation and parental care. This system is very regularly used in Lion (*Panthera leo*), tiger (*Panthera tigris*) and Leopard (*Panthera pardus*) enclosures.

**Postmortem facilities:** The zoo hospital also has the facility for conducting the postmortem of dead animals of Zoo, Safari and Rescue Centre. This facility is situated away from the zoo and rescue centre in an isolated area. Facilities such as good lighting, ventilation and examination platform are created. There is no incinerator facility in the park presently and therefore the animal bodies are burnt manually.



### 2.2.2 Zoo Hospital Activities

- Routine observation for health, hygiene and breeding management.
- Prophylactic measures to control viral and bacterial diseases among ungulates, carnivores and Birds.
- Periodic supplementation of mineral mixture, essential amino acids and vitamins to promote good health and to reduce stress on the animals.
- Treatment of sick and injured wild animals in captive situation.
- Chemical restraining of wild animals for treatment, crating and shifting purposes.
- Hand rearing of rescued wild animals, rejected young ones and young one separated from dam to avoid cannibalistic behavior of the mother.
- Census of all the mammals, birds and reptiles are done to prepare inventory report for submission to Central Zoo Authority, New Delhi, which is duly completed by 31st of March every year.
- The zoo veterinarians actively involved in the zoo education program meant for youths, students and trainees. Internship program for final year B.V.Sc., students is being conducted



for the veterinary graduates of the veterinary college of Anjora Dist Durg Chhattisgarh.

- All the data documentation of zoo hospital is made as per the guidelines of Central Zoo Authority, New Delhi and maintained for reference.

### 2.2.3 Constraints in Veterinary Section

The zoo hospital certainly needs a lot of support to upgrade and modernize its facilities keeping the new trends in mind. Following are some of the existing constraints in dealing with the health care management of the zoo animals.

**Small/Young animals care unit:** Separate hand-rearing section is required for raising orphaned and rescued neonatal animals.

**Absence Animal ambulance:** There is no Ambulance to carry the injured animals for treatment.

**Modern Operation theatre facility:** Operation theatre lacks preparation room and certain important equipments such as ECG, endoscopy, X-ray unit, Air Conditioned Operation Theater etc.

**Research and Reference library:** There is a need for research and reference library facility.

**Absence of health advisory committee:** There is need of health advisory committee in zoo. 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.

### 2.3 Stores and Feed Supply Section

This is the important section as far as animal diet is concerned. Feeding the right quality of food, which is nearer to their natural food both in quality and quantity to each individual animal, will keep the animal in their natural health. Well fed animals with hygienic food and water would develop the required resistance power to overcome all the diseases and any climatic adverse effects apart from resisting the psychological stress due to confinement. Storing of quality food, preparation and supply of food to all animals requires lot of logistics. The clean and safe diet goes a long way in maintaining the health and upkeep of animals. The Zoo Stores has a total number of two Employees. The overall charge of the stores lies with the Range Forest Officer. He is assisted by a Senior Assistant/ Stores in-charge. For effective receipt and distribution of quality food articles the following equipments are installed in the Zoo stores.

1. Small Weigh equipment - 150 kg capacity

2. Deep freezer – 3
3. Refrigerator- 2
4. Gas Stove - 1 Number
5. Food containers of different capacities
6. Feeding trough

The Zoo stores complex has two separate preparation rooms each for carnivorous and herbivorous animals and two Store rooms. One dry feed storage room is also furnished to keep dry feed items in a better condition. Required number of storage boxes for storage is being provided. Fly catchers are provided to reduce flies in the vicinity.

One new slaughter house has been made in zoo. Basic facilities like waste disposal system, water storage and supply system and other facilities have been provided. It is equipped with CCTV camera for better monitoring. This is also ensuring proper ante-mortem and post-mortem of the slaughter animals by zoo vets.

### **2.3.1 Pasture land**

A pasture land extending over 10 acre was established in zoo. This has helped in achieving self-sufficiency in fodder supply on a sustained basis for captive herbivores of zoo and safari.

The feeding articles for the Zoo animals are procured based on the tender contract for a period of one year. The total feeding and miscellaneous articles are divided into six units.

Unit I - Mutton

Unit II – Fish

Unit III - Chicken

Unit IV - Green Grass and others

Unit V - Food Grains

Unit VI - Miscellaneous items like Phenyl, dettol, ropes, brooms, etc.

Indents are placed on monthly basis, and the food items supplied to the Zoo premises are checked for both quality as well as quantity. The feed is supplied in feeding troughs to different animal houses, after sorting and mixing. The feed is supplied from the zoo stores to different animal houses by Zoo Trolley.

### **2.3.2 Feed Schedule and Diet Chart**

It is in order to ensure the proper supply of feed and fodder to all the captive animals

housed in the zoo, safari and rescue center, the distribution strategy has been worked. The feed schedule has been conveniently divided into three, as forenoon feed schedule, between 10.00 AM to 12.00 PM, afternoon feed schedule, between 3.30 PM to 4.30 PM and evening feed schedule, between 5.00 PM to 6.00 PM

All herbivore, fruitivore and omnivore animals are brought under the forenoon feed schedule and Afternoon schedule.

All the carnivore animals are brought under the “evening feed schedule” and they are given food during the evening only. The process of slaughtering of prey animals and transporting the meat to the feeding site will take sufficient time and the process of converting the carcass into pieces and certifying the quality by the doctors and deep freezing will take further more time during the day. Therefore, it is felt convenient to feed the entire carnivore animal during evening period.

The diet chart has been worked out considering the age, sex, size and other behavioural biology of animals and put in to practice since a decade. The seasonal variation factors are taken into consideration to revise the diet chart of certain animals during some seasons. One day fasting is observed presently on Sunday in a week for all the captive carnivore animals housed in the zoo, safari and rescue center except sick, old, pregnant and lactating animals.

All the food articles are supplied to the zoo on a daily basis except the items, which are obtained on monthly basis, such as hay, food grains and miscellaneous items such as dettol, ropes, brooms, phenyl, etc.

### 2.3.3 Constraints in Stores and Feed Supply Section

In case of any emergencies an alternate supply chain must be in place. There is requirement of some equipments and vehicles for Store and Feed Section which are mentioned below:

#### Equipments and vehicle requirement for stores and feed section:

S.N.	Particulars	Quantity
1	Computer	1
2	Weighing machine	1
3	Trolley	1
4	Keema machine	1
5	Fodder cutting machine	1
6	Utensils for kitchen	as per need
7	A small truck	1
8	Cooking gas	1

### 2.3.4 Disposal of Solid and Liquid Waste

The solid waste generated in the zoo is segregated at source itself and is being handled scientifically. The non-biodegradable wastes such as plastics are collected at the entrance itself and the collected non bio- degradable items are transported outside the zoo for proper disposal.

In the bio-degradable waste, the animal dung is separated and is taken to the dumping yard for decomposition. To prevent the accumulation of the plant waste in the zoo premises plant waste are being transported to pit. This helps in rodent control in the zoo premises.

The leftover meat is being collected by the labour and burnt manually on daily basis. Left over fodder is disposed off scientifically.

The water used for cleaning the animal enclosure is collected in small soak pits created for the purpose within the animal enclosures. The cleaned water from some of the aquatic enclosures such as Hippopotamus (*Hippopotamus amphibius*) enclosures is pumped out and used for irrigation.

### 2.3.5 Transportation of animals

Preparation of crates, translocation of animals is a routine affair. Transportation of animals takes place, whenever exchange of animals between Zoo to Zoos takes place, which is to be exercised carefully by ensuring all safety measures and cautiously to avoid injury to the animals as well as untoward incident. Transport cages for different species are available in zoo which is made as per norms of CZA.



### 2.3.6 Crisis Management and Safety Measures

Crisis management in the Zoo should be always prepared to combat exigencies. Fire fighting, mobilizing men and materials, by assessing the situation is an important task, which has to be managed efficiently for preventing major mishaps.

Regular vigil and routine checking of animals fence, visitors barricading, zoo boundary

wall, is ensured for the safety of animals and visitors. Periodical inspection of electrical fittings, pump sets and allied accessories and vehicles are being carried out as a part of safety measure.

#### **2.4 Security Section**

Employees of Nandanvan Zoo and Safari are responsible for the security related duties and responsibilities. Keeping in mind the incidents of sabotage, bomb blasts and such other anticipated happenings in and around the country, as a precautionary measure, the zoo procured hand metal detectors and installed a metal detector at the visitor entry spot, so as to screen the visitors before entering into the Zoo. The Security Personnel working at the entrance gate are supervising this job.

In order to strengthen the security system further the following are required:

1. Requirement of more staff.
2. Facility of round the clock (Digital Video Recording) in all points for viewing the incidents recorded earlier.
3. To install digital addressing systems at prominent spots to issue instructions to the visitors about Do's and Don'ts in the Zoo.
4. To provide a vehicle (Tata mobile) as standby during night hours for usage in case of emergency.

#### **2.5 Visitor Management**

The popularity of the zoo has been growing from strength to strength over the years. Nearly more than 211285 footfalls registered in the year 2019-20. The zoo and Safari is opened for the visitors year round except every Monday. The COVID pandemic has affected nearly every aspect of our daily lives and Nandanvan Zoo and Safari also faced a much more severe financial impact from the pandemic. First and foremost, even during this pandemic, our zoological facilities must continue to provide the animals housed with daily care, including husbandry, veterinary care, and enrichment. Maintaining zoo operations requires healthy staff who can come to work, require regular food supply for the animals, Under these new circumstances, approximately 30 employees camped inside the premises for providing care to our animals and maintaining our facilities.

The total number of visitors and gate revenue realized for the last 5 years are as follows:

S. No.	Year	No. of Visitors	Revenue Generated (in Rs.)
1	2016-2017	486789	316,41610.00
2	2017-2018	233649	415,48150.00
3	2018-2019	174560	349,09480.00
4	2019-2020	211285	246,32330.00
5	2020-2021	106032	127,17185.00

### 2.5.1 Entry Fee For Safari And Zoo

S.N.	Type	Details	Charges
1	Safari Non AC	Indian Adult	100
		Indian Child (0-12)	0
		Indian Child 12 -18	25
		<del>Foreign Adult</del> Foreign nationals (adult)	500
		<del>Foreign Child</del> Foreign nationals (children)	400
2	Safari AC	Indian Adult	150
		Indian Child (0-12)	0
		Indian Child 12-18	50
		<del>Foreign Adult</del>	1000
		<del>Foreign Child</del>	800
3	Photography	Still/Digital Camera	100
		Handycam/Video Camera Normal	500
		Video Camera Commercial	1000
4	Zoo	Adult	50
		Child (0-12)	0
		Child 12 -18	25
		Physically Challenged	0

Private vehicles, Eatables and Polythene bags are not allowed inside the premises.

### 2.5.2 Visitor Amenities

Visitors must be conducted very well. From the ticketing counter to exit point, he must be felt comfortable. Lot of open spaces with greenery and lawns, sitting places, drinking water points with well maintained toilets are must for the zoo. Following are the existing facilities listed here under:

- **Toilets**

Toilets for both men and women are available near the main gate, waiting hall and White Tiger (*Panthera tigris tigris*) enclosure with conditions to maintain it in hygienic condition

- **Shelters**

Visitors are provided with good number of shelters with resting benches in the zoo. Three gazebos are present in garden area.



- **Drinking Water**

Aqua-guard with chilled water facility is provided near Children Park and office building.

Filter water is also made available near the zoo gate, White Tiger (*Panthera tigris tigris*) enclosure and Blue Bull (*Boselaphus tragocamelus*) enclosure in zoo.

- **Parking Stand**

Visitors can park their two wheeler and four-wheeler vehicles against payment at the designated place.

- **First Aid facilities**

Available At office and Zoo Hospital.

- **Battery Operated Vehicles**

To prevent pollution zoo is providing Eco friendly Battery Vehicle services on payment. At present 4 battery operated vehicles are operating in the zoo.



- **Safari rides**

There are 26 buses with 26 guides for taking visitors into the safari complex which includes Herbivore safari, Lion (*Panthera leo*) safari, Tiger (*Panthera tigris*) safari and Bear (*Melursus ursinus*) safari. It is necessary to give attention to the maintenance of these buses. Activity not permitted as per extant guidelines and shall be excluded.



- **Boating facility**

Available near the entrance gate in Khandwa Dam

- **Wheel chairs**

At present there are 10 wheel chairs provided at the main entrance as a special provision for the Divyang at free of cost.

- **Children Play Area**

Presently there are two gardens with few randomly selected play equipments. These are often used for rest and play by children.

- **Cloak room facilities**

Available at the ticket counter.

- **Kiosks**

There are 8 kiosks available at various points to assist the visitors to refresh themselves.



### 2.5.3 Garden Section

At present there are three gardens in the campus. It plays important role in the beautification of the campus and gives excellent aesthetic look. The Garden area within the zoo is about six acres which includes seasonal and varieties of flower beds, large lawns, water ponds, pergolas children play area etc. The zoo enclosures are having live hedges around the green belt areas. However, we need to maintain this section regularly to sustain the aesthetic value. Mostly Sprinkler irrigation systems are installed for irrigation purpose.

## 2.6 Transport and Communication

Nandanvan zoo has following vehicles:

1. Vehicle – 05
2. Tata mobile - 01(For enrichment works etc.)
3. Rescue vehicle - 01
4. Battery Vehicle-4- For Visitors to go rounds inside zoo.
5. Buses- 26- For safari ride.
6. Animal Transport vehicle- 02 for transport of zoo animals.

Presently some of the vehicles are not in working condition and therefore it is utmost necessary to repair the vehicles for smooth functioning of the safari and zoo. In addition to this there is a requirement of an Ambulance Clinic Vehicle for the Zoo Hospital, to attend the sick animals, more effectively.

### 2.6.1 Constraints in Transport and Communication

The major and immediate requirement is to repair the safari vehicles. Other requirements include an Ambulance vehicle for zoo hospital, a vehicle for transporting solid waste, food and one or two more tram cars to carry the visitors.

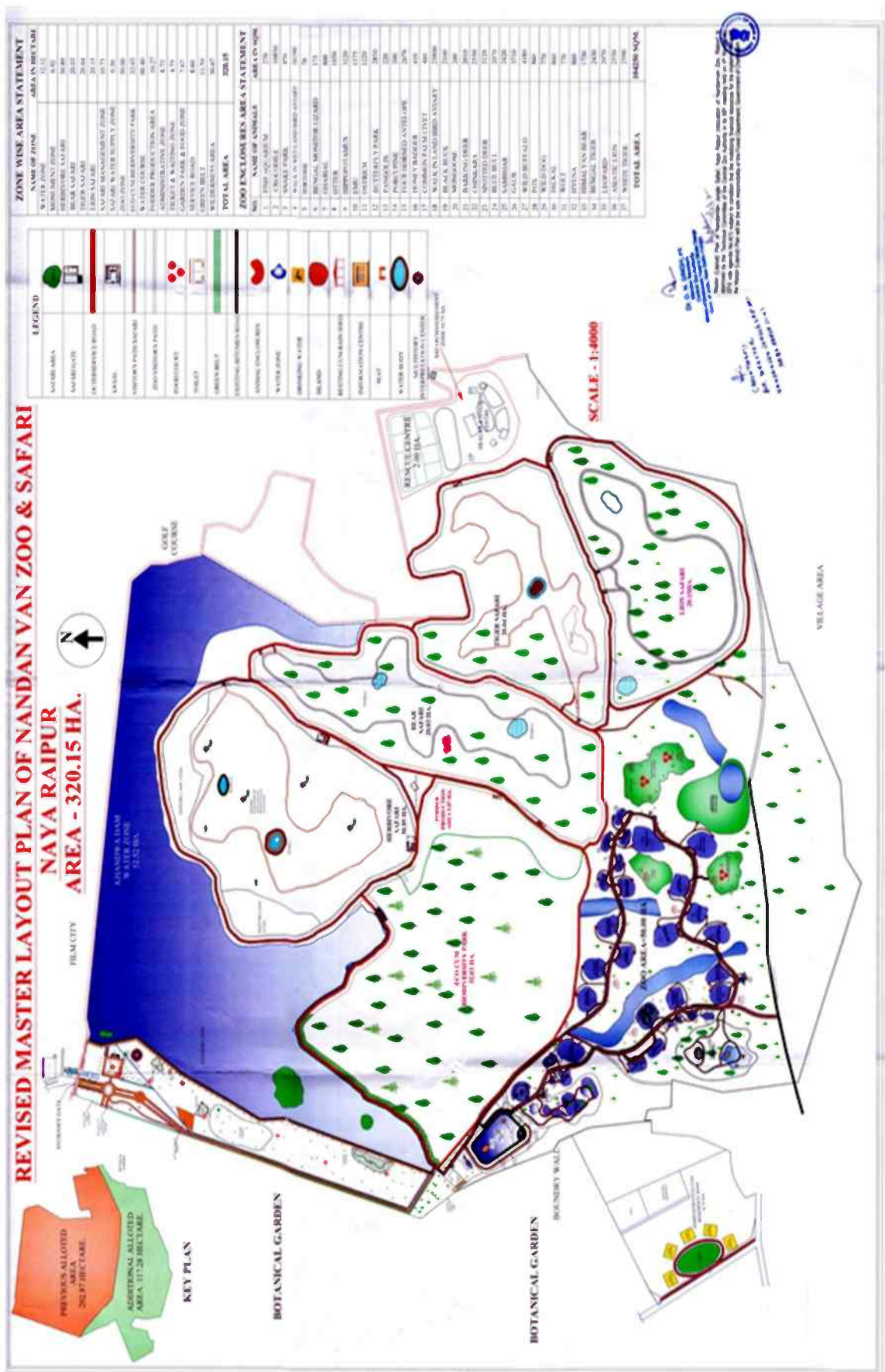
## 2.7 Existing Collection Plan

S. N.	Species	Existing Species				Proposed Collection				Animal to be Acquired/ Surplus*				Proposed Area in Sq. Mt.
		M	F	US	Total	M	F	US	Total	M	F	US	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>HERBIVORE SAFARI</b>														
Sambar	1 Blue Bull ( <i>Boselaphus tragocamelus</i> )	5	4	0	9	5	5	0	10	2	4	0	6	In herbivore safari only five sps. (Blue Bull ( <i>Boselaphus tragocamelus</i> ), Sambhar ( <i>Rusa unicolor</i> ), Spotted Deer ( <i>Axis axis</i> ), Black Buck ( <i>Antilope cervicapra</i> ), Gaur ( <i>Bos gaurus</i> ) will be kept. Remaining Sps. will be shifted in other Zoo.
	2 <del>Sambhar</del> ( <i>Rusa unicolor</i> )	1	5	0	6	5	5	0	10	1	5	0	6	
	3 Spotted Deer ( <i>Axis axis</i> )	35	53	19	107	30	41	19	90	4	16	0	20	
	4 Black Buck ( <i>Antilope cervicapra</i> )	12	16	24	52	12	16	12	40	4	16	0	20	
	5 Gaur ( <i>Bos gaurus</i> )	0	0	0	0	1	3	0	4	1	3	0	4	
	6 Barking Deer ( <i>Muntiacus</i> )	3	2	2	7	3	5	2	10	0	0	0	0	
	7 Four Horned Antelope ( <i>Tetracerus quadricornis</i> )	8	3	2	13	5	3	2	10	0	0	0	0	
<b>BEAR SAFARI</b>														
8 Sloth Bear ( <i>Melursus ursinus</i> )	2	2	0	4	2	2	0	4	2	2	0	4	Sloth Bear ( <i>Melursus ursinus</i> ) will be shifted in Bear safari and Himalayan Bear ( <i>Ursus thibetanus</i> ) will be shifted in other Zoo.	
9 Himalayan Black Bear ( <i>Ursus thibetanus</i> )	1	1	0	2	1	1	0	2	0	0	0	0		
<b>TIGER SAFARI</b>														
10 Royal Bengal Tiger ( <i>Panthera tigris tigris</i> )	1	2	0	3	2	2	0	4	1	2	0	3	Will be shifted in Tiger ( <i>Panthera tigris</i> ) safari	
<b>LION SAFARI</b>														
11 Lion ( <i>Panthera leo</i> )	5	3	0	8	2	5	0	7	5	3	0	8	Will be shifted in Lion ( <i>Panthera leo</i> ) safari	

ZOO ZONE														
12	Leopard ( <i>Panthera pardus</i> )	6	3	0	9	3	3	0	6	1	2	0	3	Remaining will be shifted in other Zoo.
13	Jackal ( <i>Canis aureus</i> )	1	1	0	2	3	3	0	6	2	2	0	4	Will be shifted in new site.
14	Common Fox ( <i>Cerdocyon thous</i> )	0	0	0	0	3	3	0	6	3	3	0	6	1000
15	Wolf ( <i>Canis lupus</i> )	0	0	0	0	2	3	0	5	2	3	0	5	1000
16	Hyena ( <i>Hyaena hyaena</i> )	2	1	0	3	3	3	0	6	1	2	0	3	1000
17	Pangolin ( <i>Pholidota</i> )	0	0	0	0	2	2	0	4	2	2	0	4	150
18	Mongoose ( <i>Herpestes edwardsii</i> )	0	0	0	0	2	2	0	4	2	2	0	4	50
19	Indian Porcupine ( <i>Hystrix indica</i> )	0	0	0	0	2	2	0	4	2	2	0	4	300
20	Jungle Cat ( <i>Felis chaus</i> )	0	0	0	0	3	3	0	6	3	3	0	6	200
21	Common Palm Civet ( <i>Paradoxurus hermaphroditus</i> )	0	0	0	0	2	2	0	4	2	2	0	4	200
22	Giant Squirrel ( <i>Ratufa indica</i> )	0	1	0	1	2	2	0	4	2	1	0	3	150
23	<del>Rattle</del> Ratel	0	1	0	1	2	2	0	4	2	1	0	3	50
24	Monitor Lizard ( <i>Varanus bengalensis</i> )	0	0	0	0	2	3	0	5	2	3	0	5	1000
25	Crocodile (Mugger) ( <i>Crocodylus palustris</i> )	4	4	1	9	4	4	1	9	0	0	0	0	2200
26	Gharial ( <i>Gavialis gangeticus</i> )	0	0	0	0	2	3	0	5	2	3	0	5	2700
27	Fresh Water Turtle ( <i>Testudines</i> )	0	0	49	49	0	0	20	20	0	0	29*	29*	1000
28	Star Turtle ( <i>Geochelone</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
29	Indian Rock Python ( <i>Python molurus</i> )	0	0	7	7	0	0	7	7	0	0	0	0	Snake ( <i>Serpentes</i> ) Exhibit Area 3000 Sqm.
30	King Cobra ( <i>Ophiophagus hannah</i> )	0	0	0	0	2	2	0	4	2	2	0	4	
31	Indian Cobra ( <i>Naja naja</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
32	Russell Viper ( <i>Daboia russelii</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
33	Bamboo Pit Viper ( <i>T. stejnegeri</i> )	0	0	0	0	2	3	0	5	2	3	0	5	

34	Common Krait ( <i>Bungarus caeruleus</i> )	0	0	0	0	2	3	0	5	2	3	0	5	Aviary Exhibit Area 1500 Sqm.
35	Wolf Snake ( <i>Lycodon aulicus</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
36	Banded Krait ( <i>Bungarus fasciatus</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
37	Rat Snake ( <i>Ptyas mucosa</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
38	Sand Boa ( <i>Eryx johnii</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
39	Reticulated Python ( <i>Malayopython reticulatus</i> )	0	0	0	0	2	2	0	4	2	2	0	4	
40	Pheasant Golden ( <i>Chrysolophus pictus</i> )	1	2	0	3	2	3	0	5	1	1	0	2	
41	Pheasant Silver ( <i>Lophura nycthemera</i> )	1	1	0	2	2	2	0	4	1	1	0	2	
42	Lady Amherst ( <i>Chrysolophus amherstiae</i> )	1	1	0	2	2	2	0	4	1	1	0	2	
43	Emu ( <i>Dromaius novaehollandiae</i> )	2	2	0	4	2	2	0	4	0	0	0	0	Aviary Exhibit Area 1500 Sqm.
44	Common Barn Owl ( <i>Tyto alba</i> )	0	0	4	4	0	0	4	4	0	0	0	0	
45	Love Birds ( <i>Agapornis</i> )	2	2	0	4	10	10	0	20	18	18	0	36	
46	Budgerigar ( <i>Melopsittacus undulatus</i> )	0	0	26	26	0	0	26	26	0	0	0	0	
47	Cockatiel ( <i>Nymphicus hollandicus</i> )	0	0	35	35	0	0	20	20	0	0	15*	15	
48	Peafowl ( <i>Pavo cristatus</i> )	12	6	0	18	12	6	0	18	0	0	0	0	
49	Rose Ring Parakeet ( <i>Psittacula krameri</i> )	0	0	20	20	0	0	20	20	0	0	0	0	
50	Moustache Parakeet ( <i>Psittacula alexandri</i> )	1	2	0	3	10	10	0	20	9	8	0	17	
51	Alexandrine Parakeet ( <i>Psittacula eupatria</i> )	7	0	0	7	10	10	0	20	3	10	0	13	
52	Rhesus Macaque ( <i>Macaca mulatta</i> )	4	6	0	10	0	0	0	0	4*	6*	0	10*	

Existing Master Layout Plan



## 2.8 General Zoo Administration Section

### 2.8.1 Current Organization Structure

The Director is the overall in charge of the zoo and safari who is assisted by the Assistant Director. Broadly it has been divided into three sub section such as Safari, Zoo and Rescue & Rehabilitation centre. All the three sub sections are considered as three units. Each Unit is headed by the Range Officer, assisted by deputy ranger.

### 2.8.2 Safari

For better management of the safari, it has been divided in to two further sub-parts

Part-A Herbivore and Bear (*Melursus ursinus*) Safari

Part-B Tiger (*Panthera tigris*) and Lion (*Panthera leo*) Safari

The Part-A comprises of Herbivore and Bear which is headed by Deputy Ranger, Assisted by Forest Guard as Zoo Keeper and Kraal Keeper.

Like wise Part-B also has a Deputy Ranger, Assisted by Forest Guard

The Current status of the staff working in the Safari Section is given below:

S.N.	Name of Post	No. of Post	Duty
1	Range Officer	1	Incharge of Zoo Section
2	Deputy Ranger	2	Incharge of Herbivore
3	Forest Guard	4	As Safari Keepers of each safari

### 2.8.3 Zoo

The Current status of the staff working in the Zoo Section is given below:

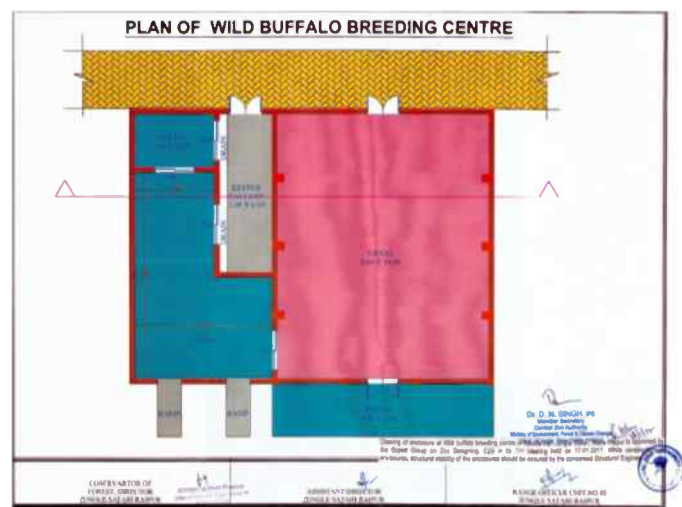
S.N.	Name of Post	No. of Post	Duty
1	Range Officer	1	Incharge of Zoo Section
2	Deputy Ranger	1	Incharge of Herbivore
3	Deputy Ranger	1	Incharge of Carnivore & Exotics
4	Forest Guard	4	Act as Zoo Keepers

## 2.9 Research

It is mandatory for a zoo to carry out detailed observations about the biological behavior, population dynamics and veterinary care of the animal exhibited, so that a detailed database could be developed. Nandanvan Zoo and safari management has put an effort to maintain most of the records such as Zoo Keepers diary, Daily diary report and Animal Treatment cards for each inmates. As Nandanvan zoo and safari is a newly established zoo, it is necessary to give focus on research oriented work. It is included in the future plan.

## 2.10 Conservation breeding

Ex situ conservaton breeding programme for Wild Buffalo (*Bubalus arnee*) has been initiated in an off display area of 2.5 hectares inside the zoo region, which is isolated and separated from the visitors zone. The clone of the only Wild Buffalo (*Bubalus arnee*) in Udanti Wildlife Sanctuary, Chhattisgarh, in semi-captivity has been produced through the 'Hand-guided Cloning Technique' at ICAR-NDRI. The female calf was named “Deepasha” and was born on December 12, 2014 has been brought from National Dairy Research Institute, Karnal. It is in the initial stage thriving to achieve its objective.



## 2.11 Education and Awareness

### Wildlife Week

Every year 'Wild life week' is celebrated at the Zoo from 1st to 7th October. As a part of the Celebration, Drawing Competition for students from L.K.G. to 10th Standard, Photography exhibition and competition are conducted in the photography competition. Many reputed photographer exhibits their best photographs while amateurs compete in the competition. Other than this, Bird watching, marathon, Global tiger day, environmental day, biodiversity day and Yoga day are also celebrated in zoo. A street play along with a cycle rally on environment is also organized.

## **Internship**

In house training is imparted to students of B.V.Sc. from Veterinary College, Anjora. These students stay with our Zoo vets and study all the relevant Health Care practices being adopted at Nandanvan zoo. They even get hands on experience in the field. These students during their 07 days stay at Nandanvan zoo get exposed to various aspects of zoo management including tranquilization, translocation, captive animal behavior, enrichment, National Zoo Policy, Nutrition and Diet, etc.

### **2.11.1 Constraints in Education Programs**

A full time educationist is to be appointed to take care of this activity. Zoo has not been able to reach the rural students and also local schools and colleges due to lack of a full time education officer.

## **2.12 Other Activity of the zoo**

### **Peoples Participation**

Nandanvan Zoo has Zoo Advisory Committee and Gate Money Committee involving public and experts in field to guide the zoo management. During the special day such as wildlife week, Zoo day, Tiger day etc, school children are involved in awareness programmes.

### **Wildlife Laws, Regulations and Policies**

The Nandanvan Zoo and safari strictly follows the Wildlife Protection Act 1972, with special emphasis on concerning the Zoos. The recent amendments of 2003, contemplates giving the powers to the Zoo officers to take cognizance of the violation of Section 38(j) of the Wildlife Protection Act, 1972. The Management of the Zoo has taken up several steps keeping in mind the National Zoo Policy, 1998 and the Guidelines and Rules issued by the Central Zoo Authority, from time to time. Apart from the above, Nandanvan zoo and safari is abided by several other acts like Cr.PC, IPC, The Customs Act 1962, The import – export policy, The Foreign Trade (Development and Regulation) Act 1992, The Prevention of Cruelty to Animals Act 1960, The Arms Act 1959, IUCN Guidelines, CITES, etc.

## Part-II

### Chapter-3

#### Future objectives

The Nandanvan Zoo & Safari serves as a great variety of roles to benefit both the animals it houses as well as the visiting public. Conservation Breeding Programmes can help propagate endangered species and continue gene pools for species whose habitats have been obliterated. Pure as well as applied research on animals in captivity can benefit not only the animals in the zoos but also in the wild. Educational programmes can help foster the respect that wild animals deserve and familiarize the visitors with the important role these animals play in the ecosystem. Large scale habitat destruction has resulted in the extinction of many species. Zoos may have to serve as the last base station for threatened and endangered species. Nandanvan zoo & Safari shall work for the conservation of the rich bio-diversity of the state to the following objectives:

- To provide and facilitate research on animals in captivity to help in conservation efforts.
- To provide housing and upkeep to the orphaned animals of endangered species rescued from the wild.
- To assist in conservation of the Ex-situ population of various species of endangered animals and their habitat by sensitizing the people.
- Involve in educational programs which assist the survival of wild populations.
- Conservation and breeding of endangered wild species.
- To increase the awareness, knowledge and understanding of visitors about animals, the environment and conservation.
- To provide ethical and healthy recreation, enjoyment and enrichment to the visitors.

#### 3.1 Vision

1. Act as a research centre, education and Awareness hub for the propagation and dissemination of information about Wildlife, Ecology and Environment to the people in general and students in particular.
2. To develop it as a centre of excellence in the breeding and conservation of endangered animals especially the Wild Buffalo (*Bubalus arnee*) of the state.
3. To provide a serene and eco-friendly place to enjoy the nature in its full form.
4. To make the Nandanvan-Jungle Safari a major tourist attraction of not only

Chhattisgarh but a tourist destination for the adjoining states of central India.

### 3.2 Mission

The Mission of Nandanvan Zoo and Safari, Nava Raipur are:-

- To house the animals in near natural conditions for giving them a feel of living in the wild.
- To help understand the ecological linkage with the life supporting process of nature and the need to keep them intact that by adopting lifestyle which is in harmony with nature.
- To develop as centre of excellence for Research on wild animals and conservation breeding of endangered wild animal species of the region.
- To function as a rescue centre for orphaned, injured and the rescued animals from the wild and subsequent rehabilitation.
- To develop Nandanvan Jungle Safari as a major tourist attraction and a focal point for

Entertainment ~~Entainment~~, Recreation, Education and Awareness to the visitors of Chhattisgarh in particular and adjoining state in general.

### 3.3 Theme

The display of animals in the zoo exhibits are done on the basis of taxonomical system. The visitors would see the animals of a particular group at one location for better understanding of the biology and behavior of the species displayed. The following are the thematic display of animals in the Nandanvan zoo and safari

#### 3.3.1 Safari

The displays of animals in safari are based on behavioral basis.

1. Herbivore.
2. Carnivore.
3. Omnivore.

#### 3.3.2 Zoo

The displays of animals in safari are based on taxonomical basis.

1. Large carnivores
2. Small carnivores
3. Large Herbivore

4. Small Herbivores
5. Nocturnal
6. Primates
7. ~~Birds aviaries~~ Aviaries
8. Reptiles
9. Exotics (non-native)

### 3.4 Strategy to achieve the objectives

Fostering sound techniques of husbandry that ensure the physical and psychological well being of the animals in our care through professional and veterinary care and comprehensive animal management plan.

#### 3.4.1 Ex-situ Conservation

- The Nandanvan Zoo & Safari, Nava Raipur displays a number of widespread species like small herbivore and large herbivore, tiger (*Panthera tigris*), lion (*Panthera leo*), panther (*Panthera*), hyena (*Hyaena hyaena*), wolf (*Canis lupus*), grey langur (*Semnopithecus entellus*), crocodile (*Crocodylus palustris*), gharial (*Gavialis gangeticus*) and exotic animals etc.
- Adequate space for the animals movement, provided with enough green belt around the enclosures to safeguard the animals from unduly excited or stressed due to visibility of animals housed in these enclosures.
- Proper care has been taken in regards to health care and balanced diet for the breeding and longevity of the animal housed.
- Special efforts have been taken to enrich the environments of the exhibits to meet the species specific behavioural requirements of the animals in accordance with the standards specified by the central zoo Authority.

#### 3.4.2 Housing, health care & environmental enrichment

Appropriate housing and health care is the key to planned breeding of the targeted species. Therefore, it is proposed to have high standard of animal health care and hygiene in the zoo.

- A set of protocol are being followed as a prophylactic measure against the dreaded diseases viz. pandemic COVID-19, Trypanosomiasis, Feline-Pan-Leucopenia and other blood borne parasitic disease.
- The health conditions and general behavior of the zoo animals are being monitored on daily

basis by the Zoo keepers and Veterinary staff. Although the zoo has all basic infrastructures yet there is urgent need for modernization of veterinary unit. Measures are ensured to equip the veterinary hospital with required machines to cater the need of health of the animals housed.

- Zoo management aims to provide all the animals housed with timely supply of quality food of such a composition to meet the nutritional and behavioural requirements of each animals.
- The Nandanvan Zoo and Safari aims in maintaining the detailed records of observations of biological and social behavior and health status of the animals including feed intake, medication and treatment provided in the keeper's diary, daily reports, Animal history cards and treatment cards as per standards specified by the Central Zoo Authority.

### 3.4.3 Research on wildlife

The Nandanvan Zoo and Safari, Nava Raipur offers plentiful opportunities for conducting research on wild life in captivity. For this a research section would be created with adequate staff & infrastructure. The section would be responsible to conduct research in ex-situ and in-situ conditions and also linkages with other eminent institutions and organization working in the field of wild animal healthcare for collaboration with the objectives to provide assistance in scientific diagnosis of diseases of serious nature and advice on the effective remedial treatment as well as the training and upgrading technical skills of Zoo staff. The probable research projects that can be taken up here in Nandanvan Zoo and safari are as follows:-

- Breeding behavior of endangered species.
- To study the nutritional requirement of captive animals.
- To study the health care, parasite load, occurrence of different diseases on animal housed in Nandanvan Zoo & Safari, Nava Raipur.
- The Biodiversity Conservation of Nandanvan Zoo and Safari.
- To identify the medicinal plants & their advantages.

### 3.4.4 Capacity Building

It is always desirable to have capacity building programme for front line staff of the zoo. There is need to have professionally skilled manpower and requires upgradation of professional success of the establishment. Human resource development planning is very important for the growth of the zoo and holistic management of the captive animals.

The zoos have to take advantage of various short-term training for zoo managers and

zoo veterinaries, conducted in collaboration with wildlife institute of India, Dehradun and Indian Veterinary Research Institute, Izatnagar (UP) and CZA. Zoo keepers training should be organized every year with the support of Central Zoo Authority.

### 3.4.5 Education and awareness

The Nandanvan Zoo and safari's most important mandate is Nature education and awareness.

- In order to assist in this work a group of volunteers to be registered who can spare more time in departing education programme are encouraged for this activity. The Zoo Volunteers to be given specific training regarding the information on Zoo mission, purpose, vision, goals and values which would be then shared with general public around the zoo.
- Proper wildlife education and awareness can be promoted through systematic display of animals in their near natural habitat, with neatly designed exhibits, signages interpretation center, conducted tours, laying self guided trails, audio-visual aids etc. Interpretation center depicting the values of the zoo and the protected area is proposed to establish near the waiting hall of the Zoo and safari which would helps in conveying the conservation message to the visitors. It is also proposed to establish an amphitheatre to conduct various educational programme for the school/college students.
- Keeping the latest trends in mind, the zoo education programme need to be upgraded and designed to make it more pragmatic for the visitors so as to understand the role of ex-situ conservation.
- It is contemplated to have a group of personnel lead by one zoo education officer to take up this specialized job to run the zoo education programme on day to day basis. The following are the educational programmes need to be taken up in Nandanvan zoo and safari:-
  - To conduct guided tour, organize lectures, Zoo keeper's talk and competitions for the School/college students.
  - To organize orientation programmes for the selected groups.
  - To carry out various competitions on the eve of wildlife week and other specific days.
  - To publish guide book, brochures, guide map & leaflets about the Nandanvan Zoo & Safari, Nava Raipur and its inmates.
  - To engage and involve registered volunteers and NGO'S to take up the awareness activities.

No physical handling or performances by animals shall be permitted as a part of educational activity as per the rules of Recognition of Zoo Rules 2009.

## Part-I

### Chapter-4

### Future Action Plan

Animals have been displayed in the Nandanvan zoo and Safari with well-designed enclosures as per the specification of Central Zoo Authority. In all the four Safari and nineteen completed animal enclosures, paddock area, night shelter and kraal has been constructed carefully to cater the need of animal housed with hygiene and cleanliness. This section deals with proposed new enclosures exhibits for visitors display in the zoo area and other developmental work in the Nandanvan Zoo and Safari. The enclosures shall be designed in such a way that it takes care of the safeguard of the animals escaping from the enclosure as well as to facilitate the visitors in having an unobstructed view of the animals without getting close to them. The animals housed would be provided with ample opportunities to express their natural behavior through planned environmental enrichment. At present there are twenty-nine Animal enclosures exhibits in the Zoo area which has been completed and is operational for the visitors, and fourteen new enclosures are proposed to be constructed during the plan period.

#### 4.1 Proposed Animal Collection Plan:

S. N.	Species	Existing Species				Proposed Collection				Animal to be Acquired/ Surplus*				Proposed Area in Sq. Mt.
		M	F	US	Total	M	F	US	Total	M	F	US	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>HERBIVORE SAFARI</b>														
1	Blue Bull ( <i>Boselaphus tragocamelus</i> )	8	26	10	44	5	5	0	10	3	21	10	34	30.89 ha Only four sps. will be kept. Gaur ( <i>Bos gaurus</i> ) is suspended from the previous plan
2	Sambhar ( <i>Rusa unicolor</i> )	4	7	1	12	5	5	0	10	1	2	0	3	
3	Spotted Deer ( <i>Axis axis</i> )	78	76	30	184	10	20	0	30	68	56	30	154	
4	Black Buck ( <i>Antilope cervicapra</i> )	26	32	0	58	10	15	0	25	16	17	0	33	
<b>BEAR SAFARI</b>														
5	Sloth Bear ( <i>Melursus ursinus</i> )	6	5	0	11	2	2	0	4	4	3	0	7	20.03 ha.

TIGER SAFARI														
6	Royal Bengal Tiger ( <i>Panthera tigris tigris</i> )	1	2	0	3	2	2	0	4	1	0	0	1	20.04 ha.
LION SAFARI														
7	Lion ( <i>Panthera leo</i> )	3	4	0	7	2	5	0	7	1	1	0	2	20.15 ha.
ZOO ZONE														
1	White Tiger ( <i>Panthera tigris tigris</i> )	1	1	0	2	2	2	0	4	1	1	0	2	2590
2	Asiatic Lion ( <i>Panthera leo persica</i> )	1	1	0	2	2	2	0	4	1	1	0	2	2550
3	Bengal Tiger ( <i>Panthera tigris tigris</i> )	1	1	0	2	2	2	0	4	1	1	0	2	2430
4	Leopard ( <i>Panthera pardus</i> )	4	3	0	7	2	2	0	4	2	1	0	3	2070
5	Himalayan Bear ( <i>Ursus thibetanus</i> )	1	0	0	1	2	2	0	4	1	2	0	3	1730
6	Hyena ( <i>Hyaena hyaena</i> )	3	2	0	5	2	2	0	4	1	0	0	1	860
7	Wolf ( <i>Canis lupus</i> )	1	1	0	2	2	2	0	4	1	1	0	2	770
8	Jackal ( <i>Canis aureus</i> )	2	2	0	4	2	2	0	4	0	0	0	0	860
9	Wild Dog ( <i>Cuon alpinus</i> )	1	1	0	2	2	2	0	4	1	1	0	2	770
10	Fox ( <i>Vulpes bengalensis</i> )	1	1	0	2	2	2	0	4	1	1	0	2	860
11	Gaur ( <i>Bos gaurus</i> )	1	1	0	2	2	2	0	4	1	1	0	2	4180
12	Wild Buffalo ( <i>Bubalus arnee</i> ) Enclosure + Breeding Centre	0	1	0	1	1	2	0	3	1	1	0	2	3710+25115 = 28825
13	Sambar Deer ( <i>Rusa unicolor</i> )	1	1	0	2	2	4	0	6	1	3	0	4	2420
14	Blue Bull ( <i>Boselaphus tragocamelus</i> )	6	4	0	10	2	4	0	6	4	0	0	4	2070
15	Spotted Deer ( <i>Axis axis</i> )	2	4	0	6	5	10	0	15	3	6	0	9	3120
16	Chinkara ( <i>Gazella bennettii</i> )	2	2	0	4	3	3	0	6	1	1	0	2	2550
17	Barking Deer ( <i>Muntiacus muntjak</i> )	5	4	1	10	2	6	0	8	3	2	0	5	2010
18	Mouse Deer ( <i>Tragulus meminna</i> )	0	0	0	0	3	3	0	6	3	3	0	6	200
19	Black Buck ( <i>Antelope cervicapra</i> )	2	6	3	11	5	10	0	15	3	4	0	7	2100
20	Common Palm Civet ( <i>Paradoxurus hermaphroditus</i> )	2	0	0	2	2	2	0	4	0	2	0	2	460
21	<del>Mongoose (<i>Herpestes edwardsii</i>)</del>	0	0	0	0	2	2	0	4	2	2	0	4	410

to be replaced as the species cannot be housed as per extant guidelines

22	Four Horned Antelope ( <i>Tetracerus quadricornis</i> )	4	12	4	20	2	6	0	8	2	6	4	12	2070
23	Porcupine ( <i>Hystrix indica</i> )	0	0	16	16	2	6	0	8	0	0	8	8	200
24	Honey badger ( <i>Mellivora capensis</i> )	0	0	0	0	2	2	0	4	2	2	0	4	200
25	Gray Langur ( <i>Semnopithecus entellus</i> )	0	0	0	0	2	2	0	4	2	2	0	4	700
26	Pig Tail Monkey ( <i>Macaca nemestrina</i> )	0	0	0	0	2	2	0	4	2	2	0	4	700
27	Assamese Monkey ( <i>Macaca assamensis</i> )	0	0	0	0	2	2	0	4	2	2	0	4	700
28	Rhesus Monkey ( <i>Macaca mulatta</i> )	0	0	31	31	2	2	0	4	0	0	27	27	700
29	Walk in Land Aviary													
29(a)	Alexandrine parakeet ( <i>Psittacula eupatria</i> )	5	12	0	17	10	20	0	30	5	8	0	13	
29(b)	Rose ring parakeet ( <i>Psittacula krameri</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
29(c)	Plum headed parakeet ( <i>Psittacula cyanocephala</i> )	0	0	42	42	5	10	0	15	0	0	27	27	
29(d)	Indian Peafowl ( <i>Pavo cristatus</i> )	5	5	0	10	5	5	0	10	0	0	0	0	
29(e)	White Peafowl ( <i>Pavo cristatus</i> )	0	0	0	0	2	2	0	4	2	2	0	4	
29(f)	Kalij pheasant ( <i>Lophura leucomelanos</i> )	0	0	0	0	4	4	0	8	4	4	0	8	
29(g)	Red jungle fowl ( <i>Gallus gallus</i> )	0	0	0	0	5	5	0	10	5	5	0	10	
29(h)	Gray jungle fowl ( <i>Gallus sonneratii</i> )	0	0	0	0	5	5	0	10	5	5	0	10	
29(I)	Dove diamond ( <i>Geopelia cuneata</i> )	0	0	0	0	5	5	0	10	5	5	0	10	
29(j)	Sparrow java ( <i>Padda oryzivora</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
														20000

30	Walk in wet land aviary															
30(a)	Ibis ( <i>Threskiornis melanocephalus</i> )	0	0	0	0	5	10	0	15	5	10	0	15			
30(b)	Greater flamingo ( <i>Phoenicopterus roseus</i> )	0	0	0	0	5	5	0	10	5	5	0	10			
30(c)	Lessor flamingo ( <i>Phoeniconaias minor</i> )	0	0	0	0	5	5	0	10	5	5	0	10			
30(d)	Spoon billed duck ( <i>Platalea leucorodia</i> )	0	0	0	0	5	10	0	15	5	10	0	15			
30(e)	Grey Pelican ( <i>Pelecanus philippensis</i> )	0	0	0	0	6	6	0	12	6	6	0	12	20000		
30(f)	Rosy pelican ( <i>Pelecanus onocrotalus</i> )	0	0	0	0	6	6	0	12	6	6	0	12			
30(g)	Herons ( <i>Ardeola grayii</i> )	0	0	0	0	10	10	0	20	10	10	0	20			
30(h)	Cranes ( <i>Gruidae</i> ) :- Sarus crane ( <i>Grus antigone</i> ), Common crane ( <i>Grus grus</i> ), Demoiselle crane ( <i>Grus virgo</i> )	0	0	0	0	2	2	0	4	2	2	0	4	0	4	
		0	0	0	0	2	2	0	4	2	2	0	4			
		0	0	0	0	2	2	0	4	2	2	0	4			
31	Hippopotamus ( <i>Hippopotamus amphibius</i> )	2	2	0	4	2	2	0	4	0	0	0	0	3220		
32	Otter ( <i>Lutrogale perspicillata</i> )	0	1	0	1	2	2	0	4	2	1	0	3	1050		
33	Gharial ( <i>Gavialis gangeticus</i> )	1	1	0	2	2	2	0	4	1	1	0	2	800		
34	Bengal Monitor Lizard ( <i>Varanus bengalensis</i> )	2	1	0	3	2	2	0	4	0	1	0	1	175		
35	Star Tortoise ( <i>Geochelone elegans</i> )	6	7	0	13	5	5	0	10	1	2	0	3	70		
36	Snake ( <i>Serpentes</i> ) Park															
36(a)	Indian Rock Python ( <i>Python molurus</i> )	3	2	2	7	3	3	0	6	0	1	0	1			
36(b)	Indian Cobra ( <i>Naja naja</i> )	1	1	0	2	2	3	0	5	1	2	0	3			
36(c)	Russell Viper ( <i>Daboia russelii</i> )	0	0	0	0	2	3	0	5	2	3	0	5			
36(d)	Common Krait ( <i>Bungarus caeruleus</i> )	0	0	0	0	2	3	0	5	2	3	0	5	970		
36(e)	Banded Krait ( <i>Bungarus fasciatus</i> )	0	0	0	0	2	3	0	5	2	3	0	5			
36(f)	Rat Snake ( <i>Ptyas mucosa</i> )	1	1	0	2	2	3	0	5	1	2	0	3			
36(g)	Sand Boa ( <i>Eryx johnii</i> )	0	0	0	0	2	3	0	5	2	3	0	5			
36(h)	Checkered keelback ( <i>Xenochrophis piscator</i> )	0	0	0	0	2	3	0	5	2	3	0	5			

36(i)	Green Tree Python ( <i>Morelia viridis</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
36(j)	King Snake ( <i>Lampropeltis triangulam</i> )	0	0	0	0	2	3	0	5	2	3	0	5	
37	Crocodile ( <i>Crocodylus palustris</i> )	4	3	0	7	4	4	0	8	0	1	0	1	10850
38	Fish ( <i>Pisces</i> ) Aquarium													
38(a)	Rohu ( <i>Labeo rohita</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(b)	Catla ( <i>Catla catla</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(c)	Mrigal ( <i>Cirrhinus cirrhosus</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(d)	Golden Mahseer ( <i>Tor putitora</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(e)	Hilsa or ilish ( <i>Tenualosa ilisha</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(f)	Kajoli ( <i>Ailla coila</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(g)	Tilapia or cichlid fish ( <i>Oreochromis niloticus</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(h)	Rani or pink perch ( <i>Zalembius rosaceus</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(i)	Calbasu ( <i>Labeo calbasu</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(j)	Tengra ( <i>Mystus tengara</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(k)	Karimeen or Green chromide ( <i>Etroplus suratensis</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(l)	Mangur ( <i>Clarias batrachus</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(m)	Helicopter catfish ( <i>Wallago attu</i> )	0	0	0	0	5	10	0	15	5	10	0	15	270
38(n)	River Eel ( <i>Anguilliformes sp.</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(o)	Pabda ( <i>Ompok bimaculatus</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(p)	Trout ( <i>Oncorhynchus mykiss</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(q)	Kokila Garfish ( <i>Xenentodon cancila</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(r)	Snakehead ( <i>Channa striata</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(s)	Indian Salmon ( <i>Eleutheronema tetradactylum</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(t)	Indian Mackerel ( <i>Rastrelliger kanagurta</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(u)	Indian Milkfish ( <i>Chanos chanos</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(v)	Cuttle fish ( <i>Sepia officinalis</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(w)	Butter fly fish ( <i>Chaetodon decussatus</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(x)	Chital ( <i>Chitala chitala</i> )	0	0	0	0	5	10	0	15	5	10	0	15	
38(y)	Pengba ( <i>Osteobrama belangeri</i> )	0	0	0	0	5	10	0	15	5	10	0	15	

39	Exotic Species (non-native species)													
39(a)	Zebra ( <i>Equus quagga</i> )	0	0	0	0	2	2	0	4	2	2	0	4	10800
39(b)	Oryx ( <i>Oryx gazella</i> )	0	0	0	0	2	2	0	4	2	2	0	4	
39(c)	Wildebeest ( <i>Connochaetes taurinus</i> )	0	0	0	0	2	2	0	4	2	2	0	4	
40	Chimpanzee ( <i>Pan troglodytes</i> )	0	0	0	0	2	2	0	4	2	2	0	4	1500
41	Ring tail Lemur ( <i>Lemur catta</i> )	0	0	0	0	2	2	0	4	2	2	0	4	550
42	Small monkeys ( <i>Cebidae</i> ) enclosure													
42(a)	Squirrel monkey ( <i>Saimiri sciureus</i> )	0	0	0	0	2	2	0	4	2	2	0	4	275
42(b)	Marmoset ( <i>Callithrix jacchus</i> )	0	0	0	0	2	2	0	4	2	2	0	4	
43	Meerkat ( <i>Suricatta suricatta</i> )	0	0	0	0	2	2	0	4	2	2	0	4	100
<b>Total Area</b>												139755 sqm		



#### 4.2 Description of the layout plan of the Nandanvan Zoo & Safari, Nava Raipur

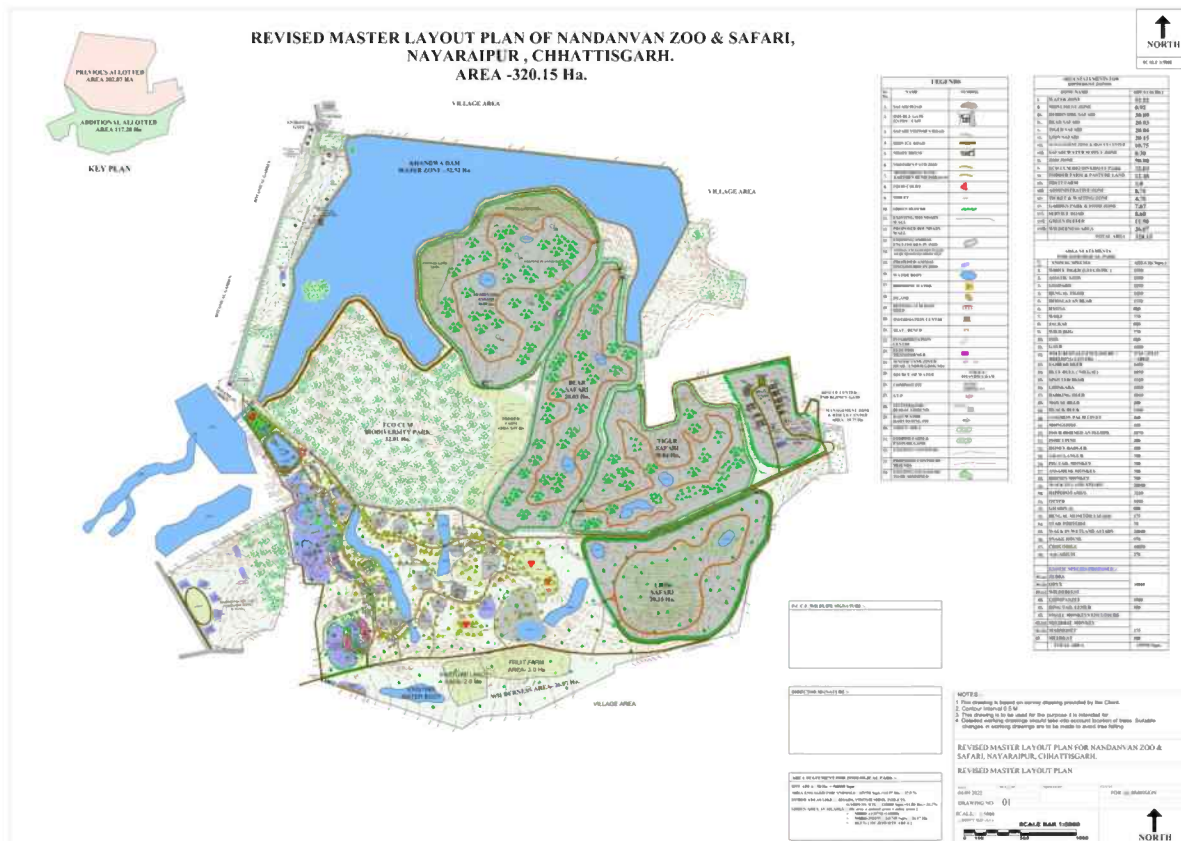
The Nandanvan Zoo & Safari, Nava Raipur is situated in Sector No. 39 of Nava Raipur. Nava Raipur is Approximately 25 KM away from the Old Raipur City. Nandanvan Zoo & Safari is about 7 Km from the capitol complex of Raipur. This Zoo & Safari has been created on modern concept of zoo & safari management. The total area of the Zoo and Safari is 320.15 hectares including 50.0 hectares area for the zoo. In the year 2016 the final master layout plan was approved by the Central Zoo Authority which is given in the Annexure 4.

According to this approved plan establishment work of safari and zoo has been started, four safari such as herbivore, bear (*Melursus ursinus*), tiger (*Panthera tigris*) and Lion (*Panthera leo*) have been completed in the year 2016-17 and is now operational for the public. Likewise in the Zoo section, twenty-nine new exhibits such as White Tiger (*Panthera tigris tigris*), Lion (*Panthera leo*), Royal Bengal Tiger (*Panthera tigris tigris*), Leopard (*Panthera pardus*), Himalayan Bear (*Ursus thibetanus*), Hyena (*Hyaena hyaena*), Jackal (*Canis aureus*), Fox (*Vulpes bengalensis*), Blue Bull (*Boselaphus tragocamelus*), Barking Deer (*Muntiacus*), Blackbuck (*Antelope cervicapra*), Four Horned Antelope (*Tetracerus quadricornis*), Common palm Civet (*Paradoxurus hermaphroditus*), Hippopotamus (*Hippopotamus amphibius*), Smooth coated Otter (*Lutrogale perspicillata*), Gharial (*Gavialis gangeticus*), Monitor Lizard (*Varanus bengalensis*), Tortoise (*Testudinidae*) and Crocodiles (*Crocodylus palustris*), Wild Dog (*Cuon alpinus*), Wolf (*Canis lupus*), Gaur (*Bos gaurus*), Spotted Deer (*Axis axis*), Sambhar (*Rusa unicolor*), Chinkara (*Gazella bennettii*), Porcupine (*Hystrix indica*), Pangolin (*Pholidota*) and Snake (*Serpentes*) Park have been established and is now operational for the visitors. At this point of time it is decided to go for some modifications such as deletion of ostrich (*Struthio camelus*) and Emu (*Dromaius novaehollandiae*) enclosure from the previous approved layout plan and instead of this Mouse deer (*Tragulidae*), Primate section of Gray Langur (*Semnopithecus*), Assamese Monkey (*Macaca assamensis*), Pig tail monkey (*Macaca nemestrina*) and Rhesus Monkey (*Macaca mulatta*), Exotic sections of Zebra (*Equus quagga*), Oryx, Wildebeest (*Connochaetes*), Chimpanzee (*Pan troglodytes*) and small monkey (*Macaca*) section are included. So there is a need for preparing a fresh Layout Plan.

The layout plan has been drawn on the scale of 1:5000 as per the topography of the site. Contour lines have taken at an interval of 0.5 meters. In the layout plan the existing features are marked and clearly shown which includes approach road to the Zoo & Safari, Parking Area, Ticket Counter, Entrance Gate, Administrative office, Roads and Paths, Garden, Interpretation Center, Waiting Area, Food Zone, Water Bodies, Safari Zone, Zoo Zone, Veterinary Hospital, Rescue center and Food Store Zone. The proposed enclosures are shown in blue colour. The colour code is done according to the guidelines of Central Zoo Authority. It is ensured that at least 30% of the area is earmarked for the safari and zoo shall be kept under greenbelt and

natural vegetation and the area for animal housing shall not exceed 30%. The future planning is aimed to provide guidelines for the development of the Nandanvan Zoo & Safari, Naya Raipur in the next 20 years i.e. 2022-2023 to 2041-2042 and will be reviewed thereafter.

Annexure 5.



Name of Zone	Area in (ha)	Name of Zone	Area in (ha)
<del>Water Zone</del>	52.52	<del>Water course</del>	0.40
Boating activities shall be not be undertaken as per extant guidelines			
Monument Zone	0.92	Fodder production area	5.20
Herbivorous Safari	30.89	Administrative Zone	8.75
Bear ( <i>Melursus ursinus</i> ) safari	20.03	Ticket and waiting Zone	4.75
Tiger ( <i>Panthera tigris</i> ) safari	20.04	Garden Park and Food zone	7.67
Lion ( <i>Panthera leo</i> ) Safari	20.01	Service Road	8.60
Safari management Zone	10.75	Green Belt	11.50
Safari water supply Zone	0.30	Wilderness Area	67.82
Zoo zone	50.00	<b>Total Area</b>	<b>320.15</b>

### 4.3 Existing enclosures – Proposed Modification

#### 4.3.1 Fox (*Vulpes bengalensis*) Enclosures

After getting prior approval of drawings and designs from Central Zoo Authority the Fox (*Vulpes bengalensis*) Enclosure was constructed and completed in the year 2020. The Animals was acquired from Kanan Pendari Zoo, Bilaspur. After quarantine periods the animals were released in the paddock area but after half an hour, the animals got escaped from the paddock area by holding the chain link with their mouth and jumped above the fence. Then immediately rescue team was set in operation to retrieve the escaped animals and after 3 days of rigorous operation the animals were retrieved and kept in the night shelter. It is observed that Foxes (*Vulpes bengalensis*) were able to jump up to 5 feet height, so it is necessary to modify the enclosure. The day kraal needs to be completely covered with chain link and there is a need to fix iron sheet plates over the chain link fence of the paddock area, So that the animals may not cross the fencing. Detailed drawings and designs of the modification of Fox (*Vulpes bengalensis*) enclosure may be submitted to Central Zoo Authority at the time of execution.

### 4.4 Development of enclosures and Exhibits

The proposal of development of fourteen new enclosures are based on the site requirements, climatic conditions & resources available with the management, availability of water & electricity, vegetation, the guidelines of Central Zoo Authority, advice from zoo experts and wild lifers have been taken into consideration.

#### 4.4.1 Wild Buffalo (*Bubalus arnee*)

The area of this enclosure is 3710 sq m. It is approved by CZA in the previous layout plan and this may be constructed in the future.

#### 4.4.2 Fish (*Pisces*) aquarium

The total area of the fish aquarium exhibit is 270.0 sqm. The individual aquarium size is of 2.5m wide 1.0m deep and 1.5m height with keepers service gallery 1.0m wide. This aquarium includes 29 different species of fishes. The aquarium may be constructed in the future plan.

#### 4.4.3 Mouse deer (*Tragulus meminna*)

The area of this enclosure is 200 sq m. This is newly proposed in this collection plan.

#### 4.4.4 Walk inland Aviary

The area proposed for this enclosure is 2 hectares. This section includes Alexandrine Parakeet (*Psittacula eupatria*), Rose ringed parakeet (*Psittacula krameri*), Plum headed parakeet (*Psittacula cyanocephala*), Indian Peafowl (*Pavo cristatus*), White Peafowl (*Pavo cristatus*), Kalij Pheasant (*Lophura leucomelanos*), Red Jungle fowl (*Gallus gallus*), Gray Jungle fowl (*Gallus sonneratii*), Dove Diamond (*Geopelia cuneata*) and Sparrow Java (*Padda oryzivora*). It is approved by CZA in the previous layout plan and this may be constructed in the future.

#### 4.4.5 Walk in Wetland Aviary

The area proposed for this enclosure is 2 hectares. This includes Ibis (*Threskiornis melanocephalus*), Greater Flamingo (*Phoenicopterus roseus*) Lesser Flamingo (*Phoeniconaias minor*), Spoon Billed Duck (*Platalea leucorodia*), Common Duck (*Anas platyrhynchos*), Rosy Pelican (*Pelecanus onocrotalus*), Herons (*Ardeola grayii*), Sarus Cranes (*Antigone antigone*), Common Cranes (*Grus grus*), Demoiselle crane (*Grus virgo*). It is approved by CZA in the previous layout plan and this may be constructed in the future.

#### 4.4.6 Primates section

This section is newly proposed in this current layout plan as the zoo has stock of Rhesus Monkey (*Macaca mulatta*) and Gray Langur (*Semnopithecus entellus*). The following table gives the species to be proposed in this section:

S. No.	Name of the Species	Area Sqm
1	Gray Langur ( <i>Semnopithecus entellus</i> )	700
2	Rhesus Monkey ( <i>Macaca mulatta</i> )	700
3	Assamese Monkey ( <i>Macaca assamensis</i> )	700
4	Pig tailed Monkey ( <i>Macaca nemestrina</i> )	700

#### 4.4.7 Exotic section

This section is newly proposed in this current layout plan as exotic species attract the visitors as well as the visitors' gets an opportunity to sight this animals in the zoo. The following table gives the species to be proposed in this section:

S. No.	Name of the Exotic Species	Area in Sqm
1	Zebra ( <i>Equus quagga</i> )	10800
2	Oryx ( <i>Oryx gazella</i> )	
3	Wildebeest ( <i>Connochaetes taurinus</i> )	
4	Chimpanzee ( <i>Pan troglodytes</i> )	1500
5	Ring tail Lemur ( <i>Lemur catta</i> )	550
6	Meerkat ( <i>Suricata suricatta</i> )	100
<b>Small monkeys enclosure</b>		
1	Squirrel monkey ( <i>Saimiri sciureus</i> )	275
2	Marmoset ( <i>Callithrix jacchus</i> )	

Detailed drawings and designs of proposed enclosures of the endangered species may be submitted to Central Zoo Authority at the time of execution once after the approval of master layout plan.

#### 4.5 Conservation Breeding Plan

One of the objectives of Nandanvan Jungle Safari is to promote “Conservation and Breeding of endangered wild species”. Wild buffalo (*Bubalus bubalis arnee*) is the state animal of Chhattisgarh and is listed in the Endangered category of species in the IUCN and schedule I of Wildlife Protection Act 1972. The Udanti Sitanadi Tiger Reserve and Indravati Tiger Reserve of Chhattisgarh have the natural habitat of the wild buffaloes in the state. Population of this species is declining in the wild due to many threats. The aim of the Conservation Breeding Programme is to conserve the genetic diversity of the species and restock or reintroduce the species to re-establish self sustaining population in its natural wild habitat. Nandanvan Zoo and Safari has been identified as the co-ordinating zoo for the conservation breeding programme of wild buffaloes.

##### 4.5.1. Establishment of Conservation Breeding Centre

Conservation Breeding Centre for wild Buffalo was approved in the master plan of nandanvan zoo and safari. The Layout plan and design of the proposed conservation breeding centre for wild buffalo was sent to CZA for approval and the proposal was approved by the Expert Group of Zoo. Designing of the Central Zoo Authority letter no. F.No 19-160/93-CZA(147)(Vol.II)276/2017, dated 13/02/2017. Then after detailed estimate has been prepared and sent to DIGF (WL), Ministry of Environment, Forest and climate change, GOI, New Delhi; for grant in aid. Letter no. 2017/990 dated 20/02/2017). The grant was sanctioned for the establishment of conservation breeding centre of wild buffalo during 2017-18 under the integrated development of wildlife habitat scheme with the condition of 60:40 sharing basis by the Government of India and the Government of Chhattisgarh - Letter No. F.No. 34 - 1/2012 WL

dated 13/12/2017. Thus a modern breeding centre at Nandanvan Zoo and Safari, Naya Raipur was established in an area of 2.5 hectares with all guidelines and norms of Central Zoo Authority.

#### 4.5.2 Development of Clone

With the objectives to conserve the species using application of assisted reproductive technique Forest department of Chhattisgarh with collaboration of Wild life Trust of India and National Dairy Research Institute, Karnal successfully cloned Chhattisgarh's state animal, the Wild Buffalo. The clone of the only Wild Buffalo in Udanti Sitanadi Tiger Reserve, Chhattisgarh, in semi-captivity has been produced through the 'Hand-guided Cloning Technique' at ICAR-NDRI. The female calf was named "Deepasha" and was born on December 12, 2014, by normal parturition, and the calf's weight at the time of birth was 32 kg. This step is a pioneering effort in the conservation of the wild buffalo species. After getting prior approval from Wildlife Division, Ministry of Environment, Forests and Climate Change, Government of India the clone named DEEPASHA was translocated from NDRI, Karnal to Nandanvan Zoo and Safari on 23<sup>rd</sup> August 2018. Ex situ conservaton breeding programme for wild buffalo (*Bubalus bubalus arnee*) has been initiated in an off display area inside the zoo region, which is isolated and separated from the visitors.

#### 4.5.3 Methods to be adopted

The objectives of the conservation breeding programme of wild buffalo is to develop genetically viable populations of healthy animals for the purpose of display in the zoo as well as to raise stock for rehabilitating them in the wild. Proposal for breeding of the clone with the male wild buffalo at udanti sitanadi in its natural habitat was sent to CZA for approval. With the guidance received from Central Zoo Authority as well as experts from IVRI, UP CCMB, Hyderabad and WII, Dehradun suggested for artificial insemination of cloned Wild buffalo "Deepasha". So it is decided to adopt the method of Artificial Insemination for the breeding of Deepasha. With the support of Wildlife Trust of India, the CCMB, Hyderabad has taken up the project to establish a restrainer for the collection of semen from the wild buffalo at Udanti Sitanadi. After success in this project, the breeding programme of Deepasha may be conducted, but it is still a challenging procedure.

#### 4.5.4 Future aspects

Captive breeding programmes should aim at the creation and conservation of healthy, self-sustaining captive populations that resemble their wild counterparts as closely as possible both in behavior and genetics. To make the breeding program more successful we should have effective population size as founder populations.

#### 4.5.5 Release of offspring into the wild

Captive breeding is carried with the aim of reintroducing the offspring into the wild. The process includes the release of individual species to the wild, after obtaining self sustained captive populations with enough breeding stock to provide a surplus as well as when there is sufficient natural habitat to support this new individuals. It requires an adequate and protected habitat for the offspring to be released. The location for reintroduction may be in its original range or in any other habitat which should suitable for the wild buffalo to survive on its own. The offspring must be free of disease before being released and the released animals must be closely monitored.

#### 4.6 Visitors and service circulation

Entrance point is the first impact face value of project. As the Nandanvan Zoo and Safari is established on international standard of Zoo and Safari, it should have all facilities, infrastructure and amenities planned and designed up to the international standard. Separate entry and exit gates with security system are designed. The entry gate is common for Botanical Garden and Nandanvan Zoo & Safari, just prior to entry gate; there is a well spacious parking area with sufficient green cover and a ticket counter adjacent to parking area of 20 meter away from the main road. The visitor's circulation is well defined that is from left to right. After entering from main gate, the path leads to garden area, which has attractive *Chendru "The tiger boy"* statue, monument zone and huge garden considered to be the best garden in Chhattisgarh State. After visiting the garden area there is a waiting zone for visitors where the visitors can get into the safari vehicle for Safari ride and those, who wish to visit Zoo can get in to the battery operated vehicle which take the visitors to the zoo animal display areas. The loop roads and sub loop roads are intersected the main road at prominent junction points, where appropriate signages are available indicating the directions of prominent animal exhibits. Due care is ensured by the management of the zoo that the visitors road does not pass through the adjoining animal feeding cells/feeding kraal and off exhibits areas. All civic amenities and visitors facilities are located by the side of main road only.

#### 4.7 Other Infrastructure facility of the zoo and Safari

##### 4.7.1 Construction of Administrative building

It is proposed to construct New Administrative block which includes the office of the Director, Asst Director, administrative and account staff. A separate chamber shall be constructed for each officer. The building shall have small conference room, store, parking, toilet and drinking water facilities etc. Director is the whole time officer and over all in charge of the safari and zoo operation. He/She would be responsible for smooth functioning of the safari and zoo, proper housing upkeep and health care of the animals, proper visitor management and

ensuring their safety. For discharge of these functions, He/She would be assisted by the Deputy Director, Veterinary officer, Curators and other support staff.

#### 4.7.1.1 Staff amenities

The population of the residential complex is each expected around 200 plus floating population. To serve the population following amenities are provided:-

1. Community centre
2. Shops/Commercial complex
3. Park
4. Dispensary
5. Club House

#### 4.7.1.2 Staff Quarters

The site of Nandanvan Zoo and Safari and Zoo, Naya Raipur is 25 km away from Raipur City. For ease of staff conveyance and to meet emergency situation in the Nandanvan Zoo and Safari, Naya Raipur, a residential complex in the administrative zone will be constructed. The following table depicts the residences and other amenities in the administrative zone:-

S. No.	Name of Building	Facilities Type	Area (Sq.ft.)	No.
1.	Director House	4BHK	4000	1
2.	Deputy Director House	4BHK	4000	1
3.	Assistant Director/Superintendant	3BHK	3000	2
4.	Chief Veterinary Officer/V.O.	3BHK	3000	3
5.	Range Officer/ Curator House	3BHK	2000	8
6.	Staff Complex – Tower-I	2BHK	850	50
7.	Staff Complex - Tower-II	2BHK	600	60
8.	Dormitory	Capacity of 25	1000	1
9.	Community / recreation / Club House	For Staff	5000	1
10.	Dispensary	For Staff	1000	1
11.	Shopping Complex	For staff	2500	1
12.	Park	For staff	10000	1

#### 4.7.1.3 Services

The residents will have the facilities of water supply, sewage, drainage, internal & external electrification, LED Street light and wide road. These services will be maintained by the construction and maintenance section of the zoo. A bus service will also be provided for the staff and children to go to city and schools. A regular health checkup of all staff and workers for zoonotic diseases shall be done periodically.

#### 4.7.2 Visitor amenities

The Zoo & Safari is likely to cater more than 5 Lakhs visitors annually. This includes adult, children, students, scientists, foresters, wild lifers, old, physically challenged and foreigners. The Park is opened on all the days throughout the years except every Monday for the visitors.

##### 4.7.2.1 Entry fee and other charges

S. No.	Type	Details	Charges/head (Rs.)
1	Safari (AC)	Adult	150
		Child (12-18 years)	100
		Child below 12 years	00
		<del>Foreign Adult</del>	1000
		<del>Foreign Child</del>	800
2	Safari (Non AC)	Adult	100
		Child (12-18 years)	50
		Child below 12 years	00
		<del>Foreign Adult</del>	500
		<del>Foreign Child</del>	400
3	Zoo	Adult	50
		Child (12-18 years)	25
		Child below 12 years	00
		Foreign Adult	500
4	Photography	Foreign Child	400
		Still/Digital Camera	100
		Handycam/Video Camera Normal	500
		Video camera Commercial	1000

#### 4.7.2.2 Zoo Timing

1. April to October: 10:00 am to 6:00 pm (last ticket to be issued at 4:30 pm)
2. November to March: 9:30 am to 5:30 pm (last ticket to be issued at 4:00 pm)

#### 4.7.3 Upgradation of Existing Veterinary Hospital

The Nandanvan zoo & safari has a veterinary hospital with basic facilities for the treatment of animals housed in the zoo and safari. Two full time veterinarians along with support staff shall be appointed to give care for the animals in the zoo. A separate facility shall be created for hand rearing of baby animals as and when it is needed. So, It is proposed to equip the hospitals with all modern facilities to meet the facilities appropriate to the size and type of the animal collection of the zoo and safari and also with full fledged veterinary unit with all basic diagnostic facilities, comprehensive range of drugs, operation theatre and in-patient wards. It is also mandatory that the Nandanvan zoo and safari shall have linkages with the eminent institutions and organizations working in the field of wild animals healthcare with the objectives to provide for the assistance in scientific diagnosis of diseases of serious nature and advise on the effective remedial treatment, assist in training and upgrading technical skills of zoo staffs and in the development of protocols for preventive medicines and vaccination.

It is proposed to have the following facilities :

##### 4.7.3.1 Operation Theatre Facilities:

- Scales for weighing animals
- Pulse Doppler
- Ultra-low freezer (-70°C) for serum banking and diagnostic samples
- Ophthalmoscope
- Otoscope,
- Thermometer
- Portable X-ray machine
- Laryngoscope and blades
- Endotracheal tubes Large animal
- Endotracheal tubes Small animal
- Oxygen support (regulators and demand valves)
- Inhalation anaesthesia machine that can support a tiger-sized animal
- Ultrasonography machine

- Anaesthesia monitoring equipment with capnography (single or multiparameter)
- Pulse oximeter with rectal probe
- ECG (blood pressure monitor included)
- Autoclave
- Basic dental instruments
- Operation theatre table (Major OT)
- Operation theatre table (Minor OT)
- Pen based electrocautery
- Physiotherapy machine
- Blowpipe
- Neonatal care unit

#### **4.7.3.2 Hemobiochemical Laboratory Facilities**

- Automated blood cell counter
- Biochemical analyser
- Urine analyser
- Centrifuge machine
- Microscope

#### **4.7.3.3 Microbiology Laboratory Facilities**

- Distilled water assembly
- Hot air oven
- BOD incubator
- Laminar air flow
- Recurring materials
- ELISA reader
- Digital weighing balance
- pH meter
- Vortexes
- Magnetic stirrers

#### 4.7.3.4 Tranquilization Expert Unit

Due to increasing man-animal conflict, capturing of animal is a day to day activity across the state. A tranquilization expert unit is very much required to tackle this problems as well as tranquilization of housed animal for treatment, research and separating animal to reduce animal in fighting. The unit must have vehicle, trained personnel, required equipment etc. to mobilize the unit immediately as and when demanded.

#### 4.7.4 Research Facilities

It is mandatory for a zoo to carry out detailed observations about the biological behavior, population dynamics and veterinary care of the animal exhibited, so that a detailed database could be developed. So that the data collected shall be shared with identified institutions for detailed analysis and thus helps in evolving the strategies for increasing the longevity, maintaining the genetic and behavioural viability and enhancing the reproductive potential of endangered species housed in the zoo. The data regarding the healthcare and nutrition provided to the animals shall also be regularly monitored and collated for assessing the quality of life being provided to the zoo animals. Data regarding the quantity of feed consumed by the animals shall also be compiled. The aforesaid data shall be shared with National Referral Centre as per the direction of the central zoo authority for improving the veterinary protocols and developing new feeding schedules. The nandanvan zoo and safari shall also endeavour for identifying the efficacious and easily implementable methods for controlling the population of prolifically breeding species.

The identified objectives of the research facilities in the Nandanvan zoo and safari will be as follows:

- i. To study and standardize the carrying capacity, habitat enrichment of various animals housed in the zoo, safari and rescue centre.
- ii. To study and standardize the techniques of important species housed in the zoo
- iii. To study the nutrition, psychology and animal ethnology of the species housed in the park
- iv. Study on the captive breeding of selected and locally endangered animal species housed
- v. To conduct research and standardize the techniques for infant care, hand rearing, orphan management and their nursing
- vi. To study the DNA finger printing, artificial insemination and cryo preservation on some of the selected species.

- vii. To standardize physical and chemical capture techniques for safe translocation and transportation of endangered species
- viii. To study on species specific reintroduction programme of endangered species.
- ix. To study on the epidemic management and to standardize the prophylactic treatment
- x. To study and standardize the techniques on clinical management important endangered species.

#### **4.7.4.1 Research Plan**

The National Zoo Policy 1998 states that “the zoos shall encourage research on the biology, behavior, nutrition and veterinary aspects of animals in their collection”. Beyond recreation, education and conservation of captive species, Nandanvan Zoo and Safari will focus on ex-situ research with topics like veterinary medicine and individual animal behavior etc which allows the researchers to study the animals very close and evaluate individual animal behaviors. This can help the zoos to learn how to take better care of their animals as well as in conservation efforts by providing information.

#### **Identify Research Topics:**

Experimentation in Nandanvan Zoo and Safari can provide useful data for the management of both wild and captive populations. The scope for research is huge, but the time and resources are always limited, so it is important to identify research priorities. For Example, The topics may be identified:

- ✓ Identification of threatened species according to the degree of threat.
- ✓ Species those are endemic to the State, biological issues in individual collections.
- ✓ Animal collections in the zoo provide a huge resource for potential research and their management in captivity.
- ✓ Captive-breeding programmes and maintenance of zoo records.
- ✓ Work on nutrition and reproduction in different species.
- ✓ Evaluating Environmental Enrichment Efforts
- ✓ Effects of Human Visitors on Zoo Animal Behaviour
- ✓ Analysis of post mortem data.

**Formulation of Research Team:**

Nandanvan Zoo and Safari needs to expand their research capacity in order to be taken it seriously as scientific institutions. Scientifically trained person with a research team needs to be recruited who will develop and deliver good quality, worthwhile research. The Animal section and the veterinary section should take up the research work and any protocol/management practices adopted in the zoo needs to be documented properly so that the zoo would have enough scientific information.

**Collaboration with other institutes:**

Nandanvan Zoo and Safari can significantly increase its research potential by developing collaboration with science-based organisations and institutions like local veterinary institutes named Dau Shri Vasudev Chandrakar Kamdhenu Vishwavidyalaya, Anjora, Durg, Wildlife Institute of India, IVRI, NDRI and TANUVAS. By working together, we can acquire sufficient support, exchange of knowledge and facilities to undertake research studies to make a contribution to scientific research.

**Research Publications:**

Nandanvan Zoo and Safari shall publish the research findings with the background of the study, methodology adopted and analytical features in reputed research journals. Making the knowledge obtained available to other people is a necessary part of any scientific research activity. So publication of research studies is as important as any other part of a study. In addition, the research team can write an article outlining the findings for newsletters or websites and to present a paper or poster in any conferences. Any of these methods of sharing the results and findings are extremely important for passing on the information to others. Publication of good-quality research enhances the reputation of the Zoo which would be known for carrying out interesting research, promoting the conservation and welfare of their animals.

**4.7.5 Interpretation Centre**

It is proposed to develop an interpretation centre to disseminate the knowledge of wildlife to the visitors. This section includes two major components, ie an Auditorium and a Permanent display of information. The display information includes the Forests of Chhattisgarh, Forest types; Services provided by the forests, Repository of Medicinal and

Aromatic Plants, Wild Animals, Avifauna of Chhattisgarh, Animals housed in zoo, Forests are home to tribes etc. An Auditorium may be set up to screen regular videos, slideshows or lectures to the visitors. It is also proposed to develop a library with latest books, journals and research papers related to nature, forestry and wildlife which adds attraction to the visitors. The main objective of interpretation centre is to increase the visitors understanding, awareness and appreciation of forestry management in Chhattisgarh.

#### **4.7.6 General Maintenance System**

##### **4.7.6.1 Sanitary Section**

It is an important section for the upkeep of zoo. The sanitary section will provide clean and pollution free environment. This section 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. Disinfection schedule will be followed round the year. Therefore it is proposed to construct a separate office with a store room in the composite office building for sanitary section.

##### **4.7.6.2 Security section**

The security section is presently managed by the executive staffs and the night chowkidars. This section will be responsible to safe guard zoo properties, animals and animal enclosures and to maintain law and order. It will also take care to check thefts, pick pocketing, trespassing, animal escape at night and entry of stray dogs and monkeys in the zoo premises. The present strength is not adequate for proper security cover to the Zoo and safari. Therefore it is necessary to strengthen the security level to meet out the standards of the zoo and safari. Security section with a security officer and security guards may be required.

#### **4.7.7 Education and Awareness programme**

The Nandanvan Zoo and safari's most important mandate is Nature education and awareness. In order to assist in this work a group of volunteers to be registered who can spare more time in departing education programme are encouraged for this activity. The Zoo Volunteers to be given specific training regarding the information on Zoo mission, purpose, vision, goals and values which would be then shared with general public around the zoo.

Proper wildlife education and awareness can be promoted through systematic display of animals in their near natural habitat, with neatly designed exhibits, signages interpretation, conducted tours, laying self guided trails, audio-visual aids etc. Interpretation center depicting the values of the zoo and the protected area is proposed to establish near the waiting hall of the Zoo and safari which would helps in conveying the conservation message to the visitors. It is also proposed to establish an amphitheatre to conduct various educational programme for the school/college students.

Keeping the latest trends in mind, the zoo education programme need to be upgraded and designed to make it more pragmatic for the visitors so as to understand the role of ex-situ conservation.

It is contemplated to have a group of personnel lead by one zoo education officer to take up this specialized job to run the zoo education programme on day to day basis. The following are the educational programmes need to be taken up in Nandanvan zoo and safari:-

- To conduct guided tour, organize lectures, Zoo keeper's talk and competitions for the School/college students.
- To organize orientation programmes for the selected groups.
- It is proposed to carry out various competitions among students and other visitors during the wildlife week and other specific days.
- To publish guide book, brochures, guide map & leaflets about the Nandanvan Zoo & Safari, Nava Raipur and its inmates.

#### 4.7.7.1 Education plan

The National Zoo Policy 1988 emphasizes that “Each Zoo should have a well drawn-up plan for educating the visitors as well as others in the community. Zoo shall keep a close liaison with other ex-situ facilities in this regard”. The main aim is to impart knowledge on biodiversity, create awareness among the citizens and to generate understanding of ecological and socio-economic relationship. So Education about the conservation of wildlife to the public is an important task of Zoos.

Nandanvan Zoo and Safari also offers enough opportunities to educate the visitors, school students and Youth through various programs and activities. Various special days have been celebrated throughout the year to achieve these objectives. The following are the proposed education plan throughout the year for the visitors as well as Non-visitors.

### Zoo event calendar

S. No.	Date	Event	Activities proposed
1.	2 <sup>nd</sup> February	World Wetland Day	Expert talk/Painting/Drawing competition/Short film on the subject
2.	3 <sup>rd</sup> March	World Wildlife Day	Expert talk/Painting/Drawing competition/Zoo Keepers Talk/On the spot Quiz Competition among the visitors.
3.	21 <sup>st</sup> March	Forestry Day	Organize Awareness programme among the visitors/ Marathon /Short film/On the spot quiz
4.	22 <sup>nd</sup> March	World Water Day	Lectures/Essay/Elocution/Drawing/Painting Competition may be organized.
5.	7 <sup>th</sup> April	World Health Day	General Health check-up may be arranged for the employee of the Zoo.
6.	8 <sup>th</sup> April	Zoo Day	Games may be organized for the Zoo staff/Best employee may be felicitated.
7.	22 <sup>nd</sup> May	Biodiversity Day	Various programmes related to wildlife may be conducted for the school/college students.
8.	5 <sup>th</sup> June	Environment Day	Expert Talk/Lectures/Workshops may be conducted.
9.	21 <sup>st</sup> June	Yoga Day	Awareness programme regarding fitness through Yoga may be organized.
10.	1 <sup>st</sup> week of July	Vanmahotsav	Plantation programme may be arranged in nearby villagers.
11.	29 <sup>th</sup> July	Tiger Day	Expert talk/Face Painting/Drawing competition/Zoo Keepers Talk/On the spot Quiz Competition among the visitors/Photography competition may be conducted.
12.	10 <sup>th</sup> August	Lion Day	Expert talk/Face Painting/Drawing competition/Zoo Keepers Talk/On the spot Quiz Competition among the visitors/Photography competition may be conducted.
13.	12 <sup>th</sup> August	Elephant Day	Expert talk/Face Painting/Drawing competition/Zoo Keepers Talk/On the spot Quiz Competition among the visitors/Photography competition may be conducted.
14.	2 <sup>nd</sup> to 8 <sup>th</sup> October	Wildlife Week	Every day various programs may be conducted involving the nearby school students like Cycle Rally, Marathon, Screening of Short films, Painting/Drawing/ Essay/Elocution competition, Zoo Keepers Talk, On the spot Quiz Competition among the visitors, Photography competition.
15.	21 <sup>st</sup> November	World Fisheries Day	Expert Talk/Lectures/Workshops may be conducted.

### **ii) Summer Camp:**

Nandanvan Zoo and Safari will contribute in creating awareness and educate school students through outreach program like summer camp in the zoo during vacations. The theme of the program may be wildlife related topic such as Environment and wildlife, Biodiversity, Wildlife Conservation, Role of Zoos in Conservation and Education, Zoo Management, Do's and Don'ts' in the zoos etc. Target group may includes student aged between 7 to 18 years.

Activity proposed:

- Identification of Animal Species, Scats, Pugmarks etc.
- Sensitizing participants and create awareness about the Poisonous and Non Poisonous Snakes.
- Visit to the Zoo Kitchen Area, Animal kraal, Animal Feeding.
- Learn names and identification of plants and trees.

### **iii) Zoo Youth Club**

Nandanvan Zoo and safari offers opportunities for the youth between the age of 12 to 18 years to register as Zoo Youth Club member. The duration may be of six months. The theme of the program may be Environment and wildlife, Biodiversity, Wildlife Conservation, Role of Zoos in Conservation and Education, Zoo Management, Health Care of Animals etc.

Activity proposed:

- Identification of Animal Species, Scats, Pugmarks etc.
- Sensitizing participants and create awareness about the Poisonous and Non Poisonous Snakes.
- Visit to the Zoo Kitchen Area, Animal kraal, Slaughter house and Animal Feeding.
- Learn names and identification of plants and trees.
- These club members may be involved in Bird watching, Gardening, Animal Behaviour studies, Plantation program etc.

### **iv) Program for college students:**

Internship course related to wildlife and hands on experience may be allowed after getting prior permission from CWLW for the students of veterinary institutes.

### **v) Zoo Volunteers Club:**

Guidelines for the utilization of volunteers in zoo management states that the purpose of the zoo volunteer programme to render services to zoo in a voluntary manner for the purpose of

assisting the management in its day to day function. People who are interested can register with Nandanvan zoo and safari to provide quality service to the zoo. Volunteer work areas may be information resource person, assist in zoo education and awareness programme, special event volunteer etc.

#### **vi) Safari Guides:**

As Nandanvan Zoo and Safari has four safaris where visitors are taken around through protected vehicle to view the freely moving captive animals. Here the safari guides plays a major role in educating the visitors as they directly interact with the visitors every day. They can act as the resource personnel to disseminate the concept of conservation of species in the minds of the visitors. The Safari guides are being given periodical training every year to strengthen their knowledge database about the zoo.

#### **vii) Signages:**

The National Zoo Policy 1998 states that “Attractive and effective signage methods and interactive displays to explain activities of various species to visitors, published education material and audio-visual devices are proven methods for driving home the conservations message. A formal education programme should also be persued for strengthening the education message” Nandanvan Zoo and Safari has provided accurate information about the exhibited species through attractive signages. This includes informative signages, interactive signages, pictorial signages and Zoo layout Map which depicts the name of the species exhibited, its natural habitat, biological characteristics and details about its conservation status. So these signages would help the visitors to identify and know some important aspects of the species displayed.

#### **viii) Interpretation Centre:**

The Master Plan of Nandanvan Zoo and Safari includes the establishment of interpretation centre which helps the visitors to get information on a variety of topics regarding extent of forest area, forest types, flora and fauna of the state, Minor forest produce, Endemic species of Chhattisgarh, Catchment area of major rivers etc. This can be done through a variety of methods like information panels, interative touch screens, 3D and 2D models, Dioramas and sound exhibit. It can serve as a resource centre to sensitize the visitors school students, college students, naturalists and researchers about the value and role of forest and wildlife.

### 4.8 Site for disposal of carcass

#### Post mortem room

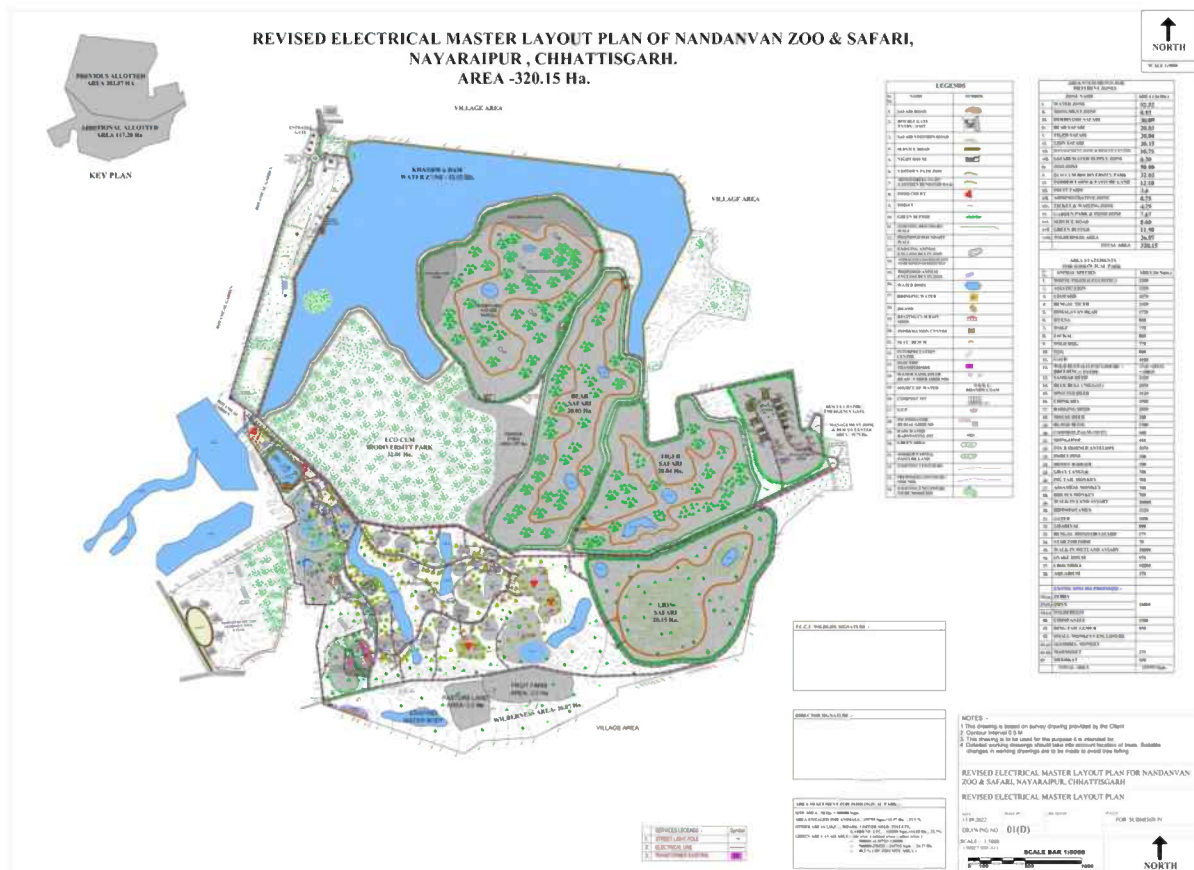
A 40 sq m post mortem room is constructed near the veterinary section. The carcasses and other wastes are disposed off manually by burning method. It is proposed to install an electrical incinerator facility in the zoo area to dispose off the carcass.

### 4.9 Electricity supply system

1. The underground cables power will be taken from 11 KVA grid through transformer as per requirement. The type of lighting on different areas/ roads is given as under:
2. Front, parking and residential area – Conventional type.
3. Main and service road – 1 meter high LED based down lights.
4. Secondary roads – Foot lights.
5. Patrol roads (security) 1 meter high LED based down lights.
6. Offices, veterinary hospital, interpretation center – Conventional type.

### Map for Electricity supply line

Annexure 6.



The estimated power requirements are as under:-

S. No.	Item	Power requirement (KW)
1.	Parking, Range Office, Ticket Counter and Entrance Gate	10.0
2.	Residential, Visitor, Service, secondary, and patrol roads, Store Room	50.0
3.	Residential area	100.0
4.	Front and parking area	25.0
5.	Offices	20.0
6.	Safari	10.0
7.	Zoo	30.0
8.	Veterinary hospital	10.0
9.	Rescue center and quarantine	10.0
10.	Interpretation center	10.0
11.	Pump houses	5.0
12.	Miscellaneous	20.0
Total :- Load (Electrical Power Required )		300 KW Appx. as mentioned above.

#### 4.10 Solid/Liquid waste disposal/drainage

##### 4.10.1 Solid waste disposal

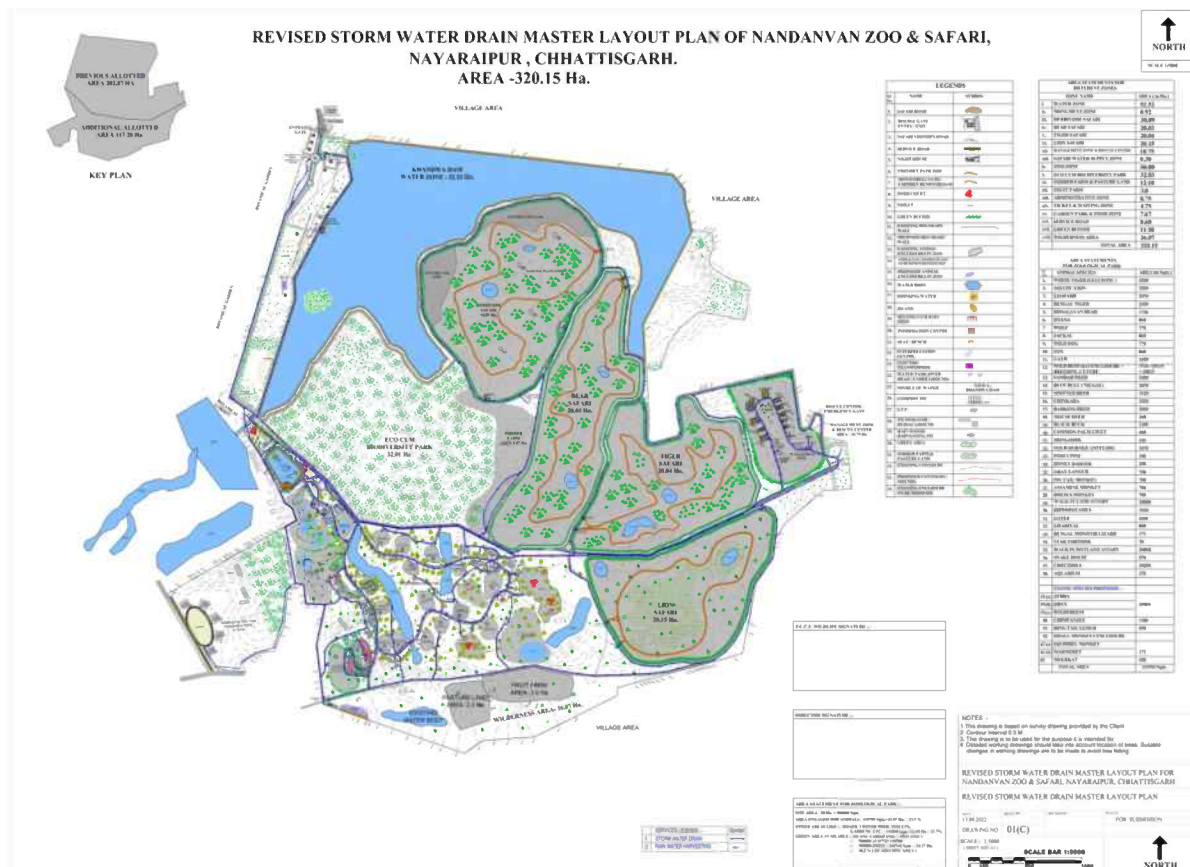
The solid wastes in Nandanvan Zoo and Safari are disposed off in an appropriate manner considering the bio-security risk of the product to prevent contamination to species and individual that no adverse impact on the hygiene and cleanliness of the zoo and landscape surrounding the zoo. The solid waste generated in the zoo and safari is segregated at source itself. The non-biodegradable wastes are collected and are transported outside the zoo. This waste will be disposed off by the authorized outsourced agency. The leftover meat and bones are being collected by the labour and are burnt manually on the daily basis and the branches of the fodder are transported to pit.

The bio-degradable waste such as the plant waste are being transported to pit and are used to make manure and for vermiculture and the same will be used as green fodder production area. So, it is proposed to construct vermicomposting unit to utilize the organic wastes to produce vermicompost which may further be able to be used as manure for the plants inside the

park. Good quality compost production in ambient temperature can be accomplished in shorter time by the process of vermicomposting that involves use of proper species of earthworms. The zoo management should avoid using of chemicals and other fertilizers instead the manure generated shall be used in the gardens, fodder farm and lawns.

### Map for solid/liquid waste disposal/drainage

Annexure 7.



#### 4.10.2 Liquid waste disposal

The liquid waste includes water from washing of enclosures, animal urine and excreta, toilets and drinking water points. However no quantity of liquid waste has been assessed at this moment. The area of the zoo is quite large, so it is not possible to make a centralized sewerage treatment plant. The whole buildings, enclosures toilets and water points will be divided into groups. The waste water of each group will be collected in a septic tank. The location of septic tanks will depend on contour so that water reaches to tank by gravity. The capacity of septic tank will be from 6000 liters to 10,000 liters. Waste water will be treated in septic tank, after primary treatment, the effluent of septic tanks will be further treated through root zone treatment system (A Biological Treatment) in a wetland. The clear water so obtained will be used to irrigate the nearby plantation. It should be ensured that the treated water of sewage should not be released in Khandwa Dam.

### GROUPS FOR WASTE WATER, TREATMENT SYSTEM

S. No.	Name of Group Location	Building/Enclosures included for Treatment Unit	Capacity of septic tank (Liter)
1.	Administrative Block	Administrative Block, Interpretation centre, Cafeteria etc.	10,000
2.	<b>Safari area</b>		
2a.	Herbivore	02 Kraal	10,000
2b.	Bear ( <i>Melursus ursinus</i> )	01 Kraal	6000
2c.	Tiger ( <i>Panthera tigris</i> )	02 Kraal	6000
2d.	Lion ( <i>Panthera leo</i> )	01 Kraal	10,000
3.	<b>Zoo Enclosures</b>		
3a.	Large carnivore Enclosures	White Tiger ( <i>Panthera tigris tigris</i> ), Lion ( <i>Panthera leo</i> ), Royal Bengal Tiger ( <i>Panthera tigris tigris</i> )	10000
3b.	Small Carnivore enclosures	Leopard ( <i>Panthera pardus</i> ), Hyena ( <i>Hyaena hyaena</i> ), Jackal ( <i>Canis aureus</i> ), Wolf ( <i>Canis lupus</i> ), Fox ( <i>Cerdocyon thous</i> )	10000
3c.	Herbivore enclosures	Small Herbivore Large herbivore	6000 10000
3d.	Omnivore	Himalayan Bear ( <i>Ursus thibetanus</i> )	10000
3e.	Reptiles	Gharial ( <i>Gavialis gangeticus</i> ), Crocodile ( <i>Crocodylus palustris</i> ) etc Monitor Lizard ( <i>Varanus bengalensis</i> )	10000 3000
3f.	Otter ( <i>Lutrogale perspicillata</i> )	Otter ( <i>Lutrogale perspicillata</i> )	6000
3g.	Exotic species	Hippopotamus ( <i>Hippopotamus amphibius</i> )	10000
3h.	Bird aviary	Bird Aviary	6000
4.	Slaughter House	Slaughter House	6000
5.	Veterinary Complex	All Building in veterinary section	10,000
6.	Postmortem	Postmortem	6000

#### 4.11 Potable Water Supply from Nava Raipur

Nava Raipur has a well planned potable water supply system in all sectors. There is a sump well point in Botanical Garden area adjacent to Nandanvan zoo & safari. With this linking point water supply pipe line is connected for Nandanvan Zoo and Safari and Zoo. There is an overhead tank in safari management area with the capacity of 100000/- (one lakh litre). Each safari kraal has water tank which is connected with safari management over head tank.

##### 4.11.1 Water Consumption in food zone

The water requires in canteen for food preparation, cleaning & washing of utensils, cleaning of floor, drinking water for visitors & staff of canteen is estimated to be 10 liter/visitor. Therefore Water Consumption is calculated as 12500 litre/day requires for canteen & Food points.

##### 4.11.2 Water Consumption in Ticket Counter washroom & Working Staff

There are 5 person engaged in ticket counter and the visitors also requires some quantity of water at the time of collecting ticket, it is estimated that 500 person are likely to use washroom hence 5000 litre water requires in using the washroom. There are nearly 50 person engaged in garden, bus waiting area. Each parson requires 10 liters water per day. That is 500 litre/ day. The total water requirement in this zone will be 7500 litre/ day.

##### 4.11.3 Water Consumption in Garden

The Total area of garden is 7.67 ha. (76700 sqmt) and average of 2.5 cm. of water per week is required in the landscape. Thus the water requirement in garden will be 19175 cubic meters per week, so, the daily consumption of water would be 2739 cubic meter that will be 2739000 liter per day.

##### 4.11.4 Water Consumption in safari

There are four safari in Nandanvan Zoo and safari namely Herbivore, Bear (*Melursus ursinus*), Tiger (*Panthera tigris*) and Lion (*Panthera leo*). The safari wise water requirements are given below.

**Herbivore safari:** - Total 230 animal of different species are kept in this safari. There are 2

artificial water body created in the safari. This needs filling of water through pump. 5 water channels are also constructed in safari. In all the water channel, 20 litres/ day water is required per animal/ day that is 4600 litre/ day. The two water body with an area of 3000 Sq mt filled by rain water during the month of July to September whereas from mid-march to mid-may these water bodies are filled by Khandwa Dam. Average depth of water body is 0.50 mt. requires 1500 cubic meter water to fill the water body. Approximately these water bodies are filled 24 times in a year, hence 36000 cubic meter water is required for a year, therefore approximately 1 lac litre/day water is required to fill the water body.

**Bear (*Melursus ursinus*) safari :-** There are 5 Bears (*Melursus ursinus*) kept in the safari each Bear (*Melursus ursinus*) requires 200 litre of water per day for drinking and regular cleaning of kraal appear from this 2 artificial water body has been created in 600 sqmt area. One water body has natural water source being situated in natural recharge zone. While other is on Upper side which requires average 50000 litre of water to fill the water body. Total water requirement in safari will be 51400 litre/ day.

**Tiger (*Panthera tigris*) safari:-** This Safari has a water body of 4700 sq mt with natural water source, only during summer season, it requires to fill the water body. There are 3 big cemented trough constructed with an average of 20 sq mt. and 60 cm. deep with water inlet and outlet point. Tigers (*Panthera tigris*) use these tubs during hot summer season. From march to June, every day fresh water is filled in these trough, in the month of July to September water is filled in these trough at an interval of every 15 days while from the month of October to March water is filled in these trough at an interval of every week. As per the above requirement these trough has to be filled 152 times in year or in short every alternate day. At one time 60 sqmtr. X 0.60 mt. = 60.6 cubic meter or 60600 litre of water requires in every alternate day that is 30300 litre per day. 3 Tigers are kept in the safari average 1000 liter Water requires for drinking & cleaning. The Total water requirement is 31300 litre/ day.

**Lion (*Panthera leo*) safari:-** The water Consumption in Lion (*Panthera leo*) safari is less as compared to others. 6 Lion (*Panthera leo*)s are kept in the safari. There is a natural depression in northern portion where water will be available from the month of July to September. Each Lion (*Panthera leo*) requires 150 ltr. of water for drinking & cleaning purpose of Kraal. From this the

water requirement in Lion (*Panthera leo*) safari would be 900 liter/day

#### 4.11.5 Water Requirement in zoo

The per day water requirement in different enclosure is as under –

S. No.	Name of Animal	Requirement of potable water (L)	Requirement of water in Kraal (L)
1.	Star Tortoise ( <i>Geochelone elegans</i> )	10	-
2.	Bengal Monitor Lizard ( <i>Varanus bengalensis</i> )	25	-
3.	Hippopotamus ( <i>Hippopotamus amphibius</i> )	5000	1000
4.	Chousingha ( <i>Tetracerus quadricornis</i> )	50	1000
5.	Black Buck ( <i>Antilope cervicapra</i> )	100	1000
6.	Barking Deer ( <i>Muntiacus muntjak</i> )	100	1000
7.	Blue Bull ( <i>Boselaphus tragocamelus</i> )	200	2000
8.	Wild Buffalo ( <i>Bubalus arnee</i> )	500	2500
9.	Fox ( <i>Vulpes bengalensis</i> )	50	1500
10.	Jackal ( <i>Canis aureus</i> )	50	1500
11.	Hyena ( <i>Hyaena hyaena</i> )	50	1500
12.	Himalayan Bear ( <i>Ursus thibetanus</i> )	200	3000
13.	Leopard ( <i>Panthera pardus</i> )	100	2000
14.	Lion ( <i>Panthera leo</i> )	100	2000
15.	Tiger ( <i>Panthera tigris</i> )	100	2000
16.	White Tiger ( <i>Panthera tigris tigris</i> )	100	3000
17.	Common Palm Civet ( <i>Paradoxurus hermaphroditus</i> )	100	1000
18.	Mongoose ( <i>Herpestes edwardsii</i> )	50	1000
19.	Wolf ( <i>Canis lupus</i> )	50	1000
20.	Wild Dog ( <i>Cuon alpinus</i> )	50	1000
21.	Gaur ( <i>Bos gaurus</i> )	200	2000
22.	Sambar ( <i>Rusa unicolor</i> )	100	1500
23.	Spotted Deer ( <i>Axis axis</i> )	100	2000
24.	Chinkara ( <i>Gazella bennettii</i> )	100	1000
25.	Porcupine ( <i>Hystrix indica</i> )	25	200
26.	Snake ( <i>Serpentes</i> )	100	1500
	<b>Total</b>	<b>7710</b>	<b>41700</b>

#### 4.11.6 Water Requirement in Green Belt & Herbivore Fodder Production Zone

All the four safari's enclosures are planted with 15 to 20 mt. wide green belts mostly native species on either side of the road with total area of 11.50 ha. The planted species are old enough which does not requires much of water but during winter & summer season it requires water for irrigation on an average of every fortnight. So total area of green belt is 115000 sqmt

which requires 1 cm. water in one irrigation means 1150 cum. Water requires every fortnight that is 76.66 cum. Equal to 76660 litre per day water requires in green belt. In the Fodder production zone, green fodder species have been planted to feed Herbivore during the summer season. The whole area is connected by sprinkler system and the Water requires for irrigation is 1 lakh Litre per hours water will be sprinkled over fodder on average water irrigation requires in every alternate day. Total 176600 litre water is required per day.

#### 4.11.7 Water Consumption in Hospital, Store and Rescue Centre

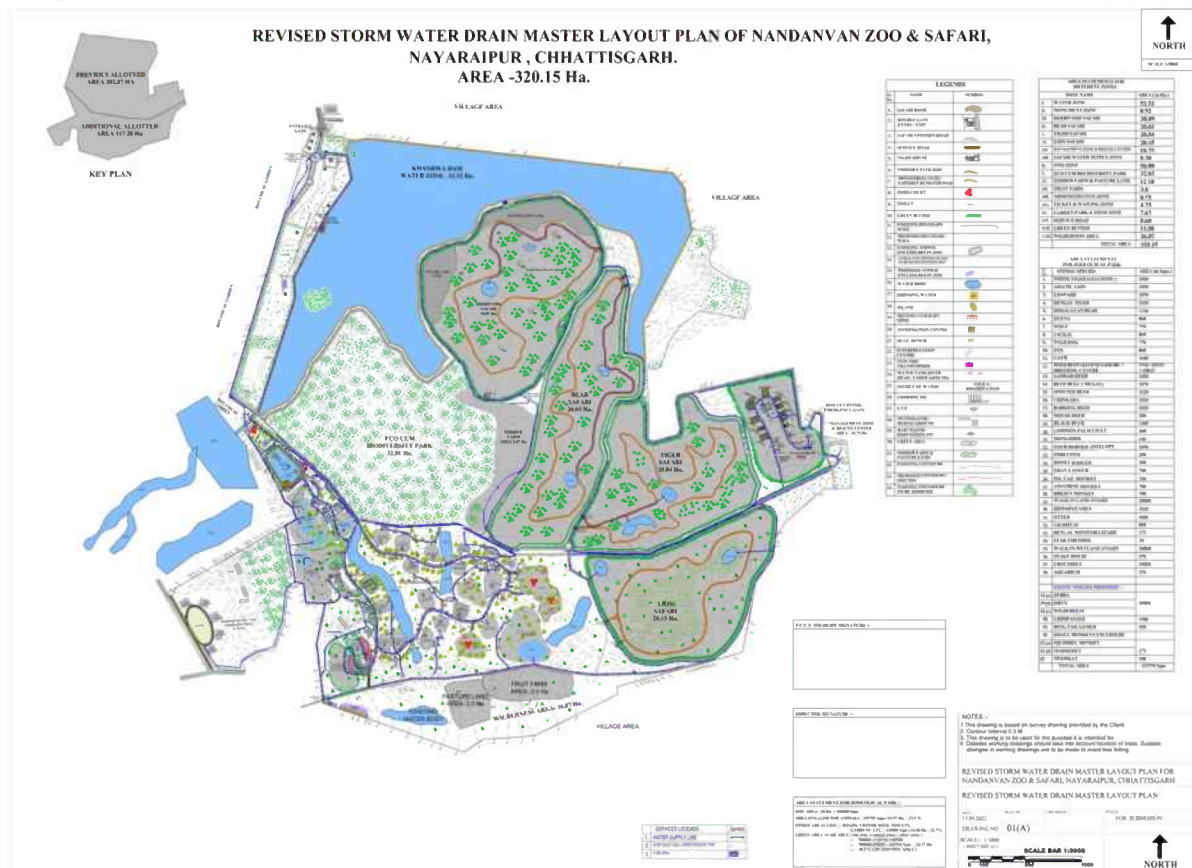
Zoo Hospital requires on an average of 4000 liter per day water for the treatment of sick/injured animals, drinking, cooking, cleaning, washing and toilet use for the staff, while in rescue center 3000 liter/ day water is required. Total 7000 litre water requires in this zone.

#### 4.11.8 Water Consumption in Administrative Zone

At present there are 8 numbers of residential cum office building inside the campus of Nandanvan Zoo and Safari. This zone requires on an average of 8000 litre per day potable water to cater the need.

#### Map for Water Distribution

Annexure 8.



### Zone Wise total average water consumption per-day

S. No.	Name of zone/safari/enclosure	Water Consumption in liters		
		Potable water requirement	Water for irrigation & cleaning	Total water requirement
1.	Food Zone	12500	-	12500
2.	Ticket Counter Wash Room	7500	-	7500
3.	Garden	-	2739000	2739000
4.	Safari:			
	(i) Herbivore	4600	100000	104600
	(ii) Bear ( <i>Melursus ursinus</i> ) Safari	1400	50000	51400
	(iii) Tiger ( <i>Panthera tigris</i> ) Safari	3000	30300	33300
	(iv) Lion ( <i>Panthera leo</i> ) Safari	1800	-	1800
5.	Water Requirement in Zoo of 26 enclosures	7710	41700	49410
6.	Green belt & Herbivore Fodder production	-	176600	176600
7.	Hospital, Store & Rescue Center	7000	-	7000
8.	Administrative Zone	8000	-	8000

### Water Storage facility in Nandanvan Zoo & Safari

S. No.	Name of Zone	Name of Building/Place	Water Storage tank (in litre)
1.	Food Zone	Wash Room	3000
		Waiting Hall (water ATM)	500
		Waiting Hall (wash room)	2000
2.	Ticket Counter washroom & waiting staff room	Parking Office	500
		Parking wash room	500
		Ticket counter	1000
3.	Garden	Chendru Square	2000
		VIP waiting room	500
		Garden small food cart	1000

S. No.	Name of Zone	Name of Building/Place	Water Storage tank (in litre)
4.	Water Consumption of safari		
	Herbivore safari	Kraal A	2000
		Kraal B	2000
		Safari Gate	500
		Camp Office	500
	Bear ( <i>Melursus ursinus</i> ) safari	Kraal	1000
		Safari Gate	500
	Tiger ( <i>Panthera tigris</i> ) safari	Kraal	1000
		Gate	500
	Lion ( <i>Panthera leo</i> ) Safari	Kraal	1000
Gate		500	
5.	Zoo :		
	(i) Entrance Gate	Drinking Water Point	500
	(ii) Hippopotamus ( <i>Hippopotamus amphibius</i> ) Enclosure	Kraal	1000
	(iii) White Tiger ( <i>Panthera tigris tigris</i> ) Enclosure	Kraal	1000
	(iv) Royal Bengal Tiger ( <i>Panthera tigris tigris</i> )	Kraal	1000
	(v) Lion ( <i>Panthera leo</i> ) Enclosure	Kraal	1000
	(vi) Leopard ( <i>Panthera pardus</i> ) Enclosure	Kraal	1000
	(vii) Himalayan Bear ( <i>Ursus thibetanus</i> )	Kraal	1000
	(viii) Hyena ( <i>Hyaena hyaena</i> ) Enclosure	Kraal	1000
	(ix) Jackal ( <i>Canis aureus</i> ) Enclosure	Kraal	1000
	(x) Fox ( <i>Vulpes bengalensis</i> ) Enclosure	Kraal	1000
	(xi) Wild Buffalo ( <i>Bubalus arnee</i> )	Kraal	1000
	(xii) Blue Bull ( <i>Boselaphus tragocamelus</i> )	-	1000
	(xiii) Barking Deer ( <i>Muntiacus muntjak</i> )	Kraal	1000
	(xiv) Black Buck ( <i>Antilope cervicapra</i> )	Kraal	1000
	(xv) Chausingha ( <i>Tetracerus quadricornis</i> )	Kraal	1000
	(xvi) Common Palm Civet ( <i>Paradoxurus hermaphroditus</i> )	Kraal	1000
	(xvii) Indian Smooth Coated Otter ( <i>Lutrogale perspicillata</i> )	Kraal	1000
	(xviii) Bengal Monitor Lizard ( <i>Varanus bengalensis</i> )	Kraal	1000

	(xix) Mongoose ( <i>Herpestes edwardsii</i> )	Kraal	1000
	(xx) Wolf ( <i>Canis lupus</i> )	Kraal	1000
	(xxi) Wild Dog ( <i>Cuon alpinus</i> )	Kraal	1000
	(xxii) Gaur ( <i>Bos gaurus</i> )	Kraal	1000
	(xxiii) Sambar ( <i>Rusa unicolor</i> )	Kraal	1000
	(xxiv) Spotted Deer ( <i>Axis axis</i> )	Kraal	1000
	(xxv) Chinkara ( <i>Gazella bennettii</i> )	Kraal	1000
	(xxvi) Porcupine ( <i>Hystrix indica</i> )	Kraal	1000
	(xxvii) Snake ( <i>Serpentes</i> )	Snake ( <i>Serpentes</i> ) Park	1000
	(xxviii) Common Toilet	Wash Room	2000
	(xxix) Drinking Water Point	Near White Tiger ( <i>Panthera tigris tigris</i> )	500
	(xxx) Drinking Water Point	Near Fox ( <i>Cerdocyon thous</i> ) Enclosure	500
	(xxxi) Drinking Water Point	Near Blue Bull ( <i>Boselaphus tragocamelus</i> ) Enclosure	500
	(xxxii) Five Water Tanks (5000L)	Building	25000
6.	Administrative Zone	Building	4000
	Forest Guard Quarter 8 @ 500 each		
7.	Rescue Center :		
	(i) Large Carnivore	Kraal	1000
	(ii) Small Carnivore	Kraal	1000
	(iii) Bear ( <i>Melursus ursinus</i> )	Kraal	1000
	(iv) Large herbivore	Kraal	1000
	(v) Small herbivore	Kraal	1000
	(vi) Monkey ( <i>Macaca mulatta</i> )	Kraal	1000
	(vii) Langur ( <i>Semnopithecus entellus</i> )	Kraal	1000
	(viii) Water Tank	Building	20000
8.	Hospital/Store Zone:		
	(i) Slaughter House	Building	2000
	(ii) Zoo Hospital		4000
	(iii) Store Room		1000
	(iv) Vehicle Garage		5000
	(v) Incineration Room		5000
9.	Safari Management Zone	Overhead Tank	100000
	<b>Total</b>		<b>223500</b>

### Water Storage facility in paddock areas

S. No.	Name of the enclosure	Size of the water body (sq m)	Capacity of water storage in paddock area (cubic ltr.)
1.	Tiger ( <i>Panthera tigris</i> ) Safari	i) 6500	16250
		ii) 1200	3000
2.	Herbivore Safari	i) 3300	6600
		ii) 2500	4500
3.	Bear ( <i>Melursus ursinus</i> ) Safari	i) 2000	2000
		ii) 2400	2400
4.	Gharial ( <i>Gavialis gangeticus</i> ) enclosure	i) 600	270
5.	Hippopotamus ( <i>Hippopotamus amphibius</i> ) enclosure	i) 25	25
		ii) 25	25
6.	Smooth coated otter ( <i>Lutrogale perspicillata</i> ) enclosure	i) 200	160
7.	Crocodile ( <i>Crocodylus palustris</i> ) enclosure	i) 10000	13000

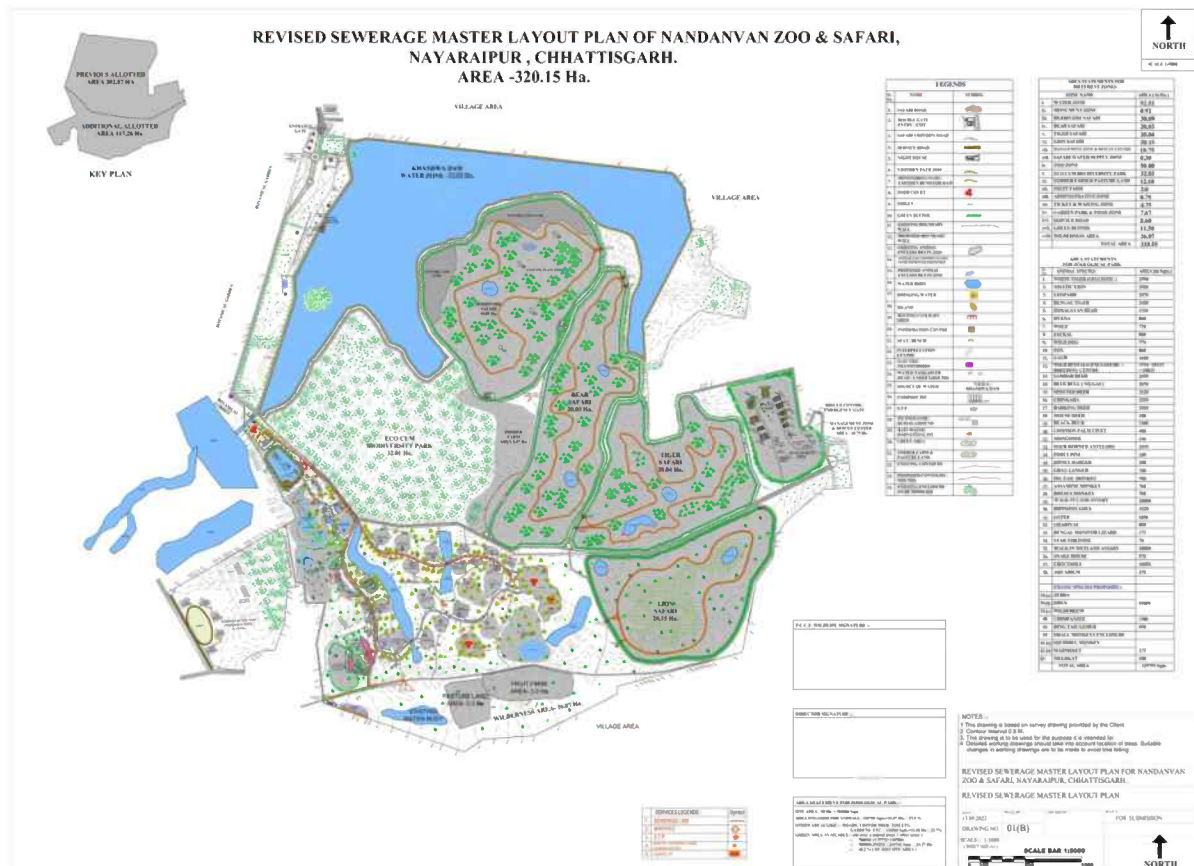
There is huge water requirement for the maintenance of garden, different public facilities, fodder production area, animal housed in the safari & zoo, hospital etc. The requirements of potable water for the animals and other purposes would be supplied from the Naya Raipur Development Authority (NRDA) and the water requirements for the maintenance of garden, fodder production area, cleaning & washing, green belt area would be done from Khandawa Reservoir of 52.52 hectare area of water table which is the lifeline of the Nandanvan Zoo and safari.

#### 4.12 Drainage system

During the monsoon season Nandanvan Zoo & Safari receives rain water from the catchment area of villages such as Uparwara, Bhelwadih and Pacheda. The catchment area is almost flat, there is a nala named bhanjari which acts as drainage line, runs from bhelwadi gate throughout the zoo and ultimately drains into the Khandawa Dam. The Dam has a sluice gate on its western corner, through this gate the excess water would be drained out to the main nala flowing 200 meter away from the safari.

## Map for Sewerage line

Annexure 9.



#### 4.13 Animal adoption scheme

Animal adoption scheme is an opportunity, where the general public gets an opportunity to take care of the animals in the zoos. This helps the zoos be in more direct public contact with enhanced accountability. This scheme is open to general public, animal lovers, corporate section, celebrities, educational Institutions etc. Adoption of Zoo animals would help the zoos in involving esteemed people and companies in bringing more awareness about the plight of the endangered species. It shall be benefited by adopter's interest towards conservation of animal wealth of our globe, the contribution would assist in improving the existing overall facilities for the animals and ultimately for their better care and conservation in the zoos. The Animal Adoption policy has been prepared and is submitted to the State Government of Chhattisgarh for approval. This may come in to effect after getting proper approval from the State Government.

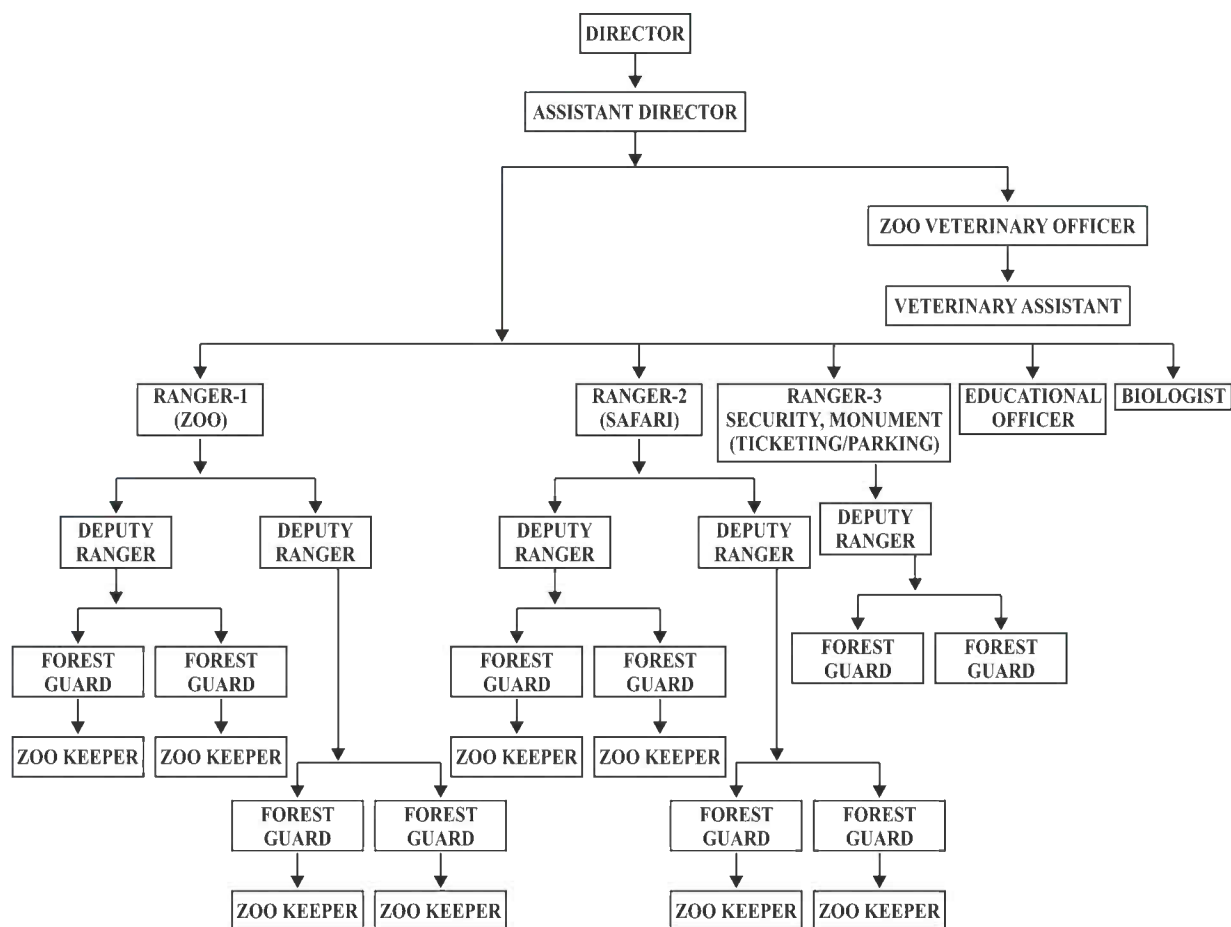
## Part-II

### Chapter-5

#### Personnel Planning

Nandanvan Zoo and Safari with an area of 320.15 hectare is also home to 712 animals. There are 31 regular employees of different cadre, who looks after this vast area and animal exhibits. The park provides amenities to nearly 3.0 lakhs visitors in a year. Expansion and modernization of this park have been envisaged in the Master Plan for the year 2021-22 to 2030-31 which includes strengthening and upgradation of sections like Animal, Veterinary, Research, Education, Maintenance, Security and Sanitation and also the Establishment and Construction of new enclosures for Primates, Aviary, Butterfly Park and Exotic animal enclosure have also been planned. In order to achieve its objectives, additional staff and outsourcing have been envisaged.

#### 5.1 Organizational Structure



### 5.2 Present Sanctioned Setup

Govt. of Chhattisgarh, Department of Forest vide his letter No. F. 03/10/2011/10-1/Van Raipur Dated 26.05.2012 has sanctioned following set up for Jungle Safari, Naya Raipur

S. No.	Name of Post	No. of Post	Pay Scale
1	Director Cum Divisional Forest Officer	01	15600-39100+76000 Grade Pay
2	Veterinary Surgeon	01	15600-39100+66000 Grade Pay
3	Veterinary Surgeon Compounder	01	9300-34100+4200 Grade Pay
4	Forest Ranger	01	9300-34100+4300 Grade Pay
5	Forest Guard	02	5200-20200+1900 Grade Pay
6	Assistant Grade-II/Clerk	01	5200-20200+2400 Grade Pay
7	Assistant Grade-III	02	5200-20200+1900 Grade Pay
8	Zoo Keeper	04	4750-7440+1300 Grade Pay
9	Peon	02	4750-7440+1300 Grade Pay
<b>Total</b>		<b>15</b>	

The Present working staff against the sanctioned post is listed below

S. No.	Name of Post	Sanctioned Post	Presently Working
1	Director Cum Divisional Forest Officer	01	01
2	Veterinary Surgeon	01	01
3	Veterinary Surgeon Compounder	01	-
4	Forest Ranger	01	01
5	Forest Guard	02	12
6	Assistant Grade-II/Clerk	01	03
7	Assistant Grade-III	02	02
8	Zoo Keeper	04	02
9	Peon	02	02
10	Assistant Director	-	01
11	Deputy Ranger/Forester	-	06
<b>Total</b>		<b>15</b>	<b>31</b>

The Nandanvan Zoo and safari expects 5.0 lakhs visitors per year in future and also the new works and initiatives proposed in the Master Plan require adequate staff which at present is insufficient. Hence the required and proposed administrative setup and staff pattern is detailed in table.

### 5.3 Objective Of Proposed Personnel Planning

- There is a need to bring in more personnel to cater to the ever increasing needs to the safari
- To monitor the performance of the staff, periodic performance review is to be undertaken.
- Change in work culture is proposed to be brought for enhanced performance.
- Identified staff at all level needs to be sent for training for capacity building.

#### 5.4 Justification of The New Hierarchy/staffing Pattern and Requirement of Posts

An expert committee on zoos was constituted by GOI on the recommendation of the then IBWL (now Indian Board for Wildlife) in 1973 to suggest administrative pattern for various categories of Zoos, besides other norms for management of Zoos in India.

The committee suggested that Director should be a whole time officer and should be overall in charge of the zoo operations at site. He/she is responsible to the governing body which may be the government of a departmental head or a management committee. It is proposed to upgrade post of the Director from the level of “Divisional Forest Officer” to “Conservator of forest”. Many Zoos have officer of that level. It will enhance administrative and financial power. There must be a second officer to assist the Director namely Assistant Director and to function as in-charge in his/her absence. In safari and zoo the various animal sections should be headed by qualified and trained curators. A Veterinarian should be in charge of Hospital, Quarantine, health and hygiene. He/she will also be responsible for checking the quality of food. An education officer is essential to educate the people, students and organize different International and National event regarding wildlife and Biodiversity conservation. He/she will also campaign various awareness activities for conservation of wildlife. According to WII, Dehradun the management of the zoo is a multi-disciplinary activity which requires inputs from various disciplines such as personnel management, planning, finance, biology, veterinary science, horticulture, sanitation, security, public relations, education, research, engineering etc. the organization set up of zoo should, therefore be suitably structured so as to provide for professional inputs from this discipline.

Under rule 10 sub rule-2 of standard and norms subject to which recognition under section 38 H of the act, the CZA has prescribed the requirement of scientific & technical staff to support the officer in-charge of the zoo in carrying out the responsibility of housing, upkeep and healthcare of zoo animals, research and visitors education as specified in the Table below:

S. No.	Category of Staff	Large Zoo	Medium Zoo	Small Zoo	Mini Zoo
1	Curator	1	1	1	Mini zoos shall avail the assistance of appropriately qualified individual available locally
2	Veterinarian	2	1	1	
3	Education Officer	1	1	1	
4	Biologist	1	1	1	

#### 5.5 Proposed Administrative Setup

Development and expansion have been envisaged in the master plan for the year 2022-2023 to 2041-2042. To achieve the objectives and goal as determined in the future planning of Nandanvan Zoo and Safari and Zoo as well as for the better management and smooth functioning of safari and zoo, the following sections and staff are proposed:

- Administrative Section consisting of the Director (CF) and Assistant Director Office.
- Animal Section consisting of the Veterinary and Range Office.
- Education & Research Section consisting of the Educational and Biologist Office.
- Commissary Section comprises of Store In-charge for Carnivore and Herbivore.

S. No.	Name of Post	No. of Proposed Staff
1	Director (CF)	1
2	Assistant Director (SDO)	1
3	Senior Veterinary Officer	1
4	Range Officer	3
5	Junior Veterinary Officer	1
6	Educational Officer	1
7	Biologist	1
8	Veterinary Assistant	3
9	Library Assistant	1
10	Assistant Engineer	1
11	Field Assistant	2
12	Deputy Ranger	6
13	Forester	6
14	Forest Guard	15
15	Zookeeper	45
16	Stenographer	3
17	Accountant	2
18	Assistant Grade-II	3
19	Assistant Grade-III	7
20	Draftsman	1
21	Ticket Clerk	2
22	Ticket Collector	2
23	Audio- Visual operator	1
24	Computer Operator	15
25	Driver	7
26	Peon/Attendant	10
27	Dak runner	5
28	Sweeper	6
	<b>Total</b>	<b>152</b>

#### 5.6 Outsourcing: -

The following services will be outsourced: -

1. Sanitation and Janitor Services:
2. Horticultural Operations
3. Maintenance of emergency services in the zoo and safari like electricity, water supply, welding and other maintenance works
4. Security: Patrolling of zoo area, maintenance of law and order, frisking, control of entry of stray animals, duty at office and gates and other security related works.
5. Cafeteria, kiosk and souvenir shop – on Rent.
6. Parking – on Rent.

## Part-II

### Chapter-6

### Disaster Management

#### 6.1 Disaster

The disaster management act 2005 defines “disaster” means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, 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 of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area. Disaster Management is an important part of any institutions and it is mandate for every zoo to prepare detailed plan to deal with crisis in management, arising out of natural disasters like cyclone, flood, drought and earthquake or accidental happenings like fire, animal escapes, outbreak of diseases etc. The main objective of the disaster management is to ensure emergency preparedness and to devise mitigation measures from adverse effects. It is a continuous and integrated process of planning, organizing, coordinating and implementing measures for:

1. Prevention of danger or threat of any disaster.
2. Mitigation or reduction of risk of any disaster, its severity or consequences
3. Capacity building.
4. Preparedness to deal with disaster situation.
5. Prompt response to calamities.
6. Evacuation, rescue, relief and rehabilitation.
7. Assessing the severity or magnitude of effects of any disaster.
8. Rehabilitation and reconstruction.

#### 6.2 The potential hazards of Nandanvan Zoo and Safari may be as follows

1. Fire
2. Heavy rains causes water logging
3. Earth quakes.
4. Thunder storm.
5. Epidemics
6. Drought

7. Law and Order break down.
8. Escape of zoo animals.
9. Feed supply during lockdown periods

In such of the any event the Safari should be in a position to assess the damage and to carry out immediate steps to tackle the situations.

- Assessment of risk.
- Impact and damage likely to be caused due to flooding of enclosure, snapping of power line, breaking of water supply, breaking of enclosure and escaping of animals,
- Equipment needed to speed up restoration measures.
- Training of the staff to meet such emergencies.
- Security personnel to be put on alert and in emergency mode.
- Equipments like cages, tranquilizing gun, chemicals, vehicles and other rescue tools to be kept ready in case of escape of animals from the zoo.
- First aid and ambulance van should be ready.
- Periodic mock drills needs to be conducted among staff and to test the working condition of equipment which shall be maintained all the times.
- Protection of and safe evacuation of the visitors from the affected areas.

### 6.2.1 Fire

This could be the common hazard particularly during the summer season due to under growth, dry leaves and grasses. Regular clearing of fire lines should be done before the onset of summer. The Zoo & Safari should acquire necessary fire extinguishing equipment in consultation with the fire services of the state and the staff must know how to operate fire extinguishing equipment. The water bodies and road network will act as a fire barrier. After the rainy season the area may be invaded with various types of weeds and grasses. These should be cleaned in the month of November. Collected weeds should be burnt at the safer places. Fire extinguishers should be put at the suitable points and the staff should be trained in its use. A water tanker should be kept ready during the summer months.

### 6.2.2 Flood

The Zoo and Safari is located on the bank of the Khandwa Dam, however the chances of flood cannot be ruled out. In the event of flood, following measures shall be taken:

1. The trees inside the enclosure should be trimmed off in a regular basis.
2. A truck with transport cages would also be kept ready.
3. Veterinary staff with medicine and equipment would be kept ready.
4. Co-operation of other departments would be sought.
5. Keep all drains and sewage lines clean.
6. Following equipment shall be kept ready.

S. No.	Items	No.
1	Flashlight / Torch light & Spare Batteries	8
2	First-aid Kit	4
3	Shovels	12
4	Axe	10
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
20	Hooter & whistle	10
21	Manual Saw	5
22	Water jet to drive the animals	2

The department shall keep the contact number 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

### **6.2.3 Thunderstorm**

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. Implements as mentioned above table will be made available.

### **6.2.4 Earthquake**

The whole Chhattisgarh falls under less sensitive seismic zone, but even then earth quake cannot be ruled out. In the event of an earthquake the response teams will swing into action to secure the people to clear open space and also ensure that no animals get trapped or escape. The drawing of all the buildings, service lines should be readily available. The telephone number of technical officer like structural engineer will be handy.

### **6.2.5 Epidemics**

Regular health checkup and vaccination to be done and will be continued in future but epidemics can occur anytime. So to counter the epidemic, sufficient quarantine wards need to be kept ready and task force would be formed to combat epidemics. Escape of animals from the safari and zoo is minimal as the whole area is protected by 3-meter-high masonry boundary wall. The entrance to safaris will be regulated through double gated entry system. The cleaning of enclosures and distribution of feed items should carried out by trained labour under the guidance of supervisors.

### **6.2.6 Law and order problem**

The law and order problem that may arise due to different reasons may cause disruption of the supplies for the animals housed in Zoo & Safaris. To meet such emergencies, the zoo & safari administration develop good rapport with the local police and civil administration, so that their services can be sought at the time of such an emergency. However, essential medicine, feeds of mammals etc. for at least a week should be maintained inside the zoo & safari, so that, uninterrupted supplies of food and medicine can made available to the animal housed in Zoo and Safari. The law and order problem will be tackled by taking the following measures:-

- A deep freezer would be available to store meat for 2-3 days
- In case the law and order problem arises in the city, it may be difficult for the staff to reach the zoo, so the essential staff like veterinarian, animal keepers, para-vet and sweeper may be provided residential accommodation near the zoo premises

### **6.2.7 Escape of Zoo animals**

The enclosures fence should be inspected regularly for identifying the weak points and getting

the same rectified and repaired on top priority. The trees standing close to the barrier should be regularly pruned and lopped as may be necessary to prevent the escape of animals. In the month of August 2021, two foxes (*Vulpes bengalensis*) escaped from the enclosures fence, but both the animals were inside the premises. Then immediate measures were carried out and the escaped two foxes (*Vulpes bengalensis*) were retrieved. It is essential to safeguard the captive animals on a 24x7 basis to ensure their safety and well being.

#### 6.2.8 Feed supply during lockdown period

For the first time, in the year 2020 and 2021 due to the pandemic situation in the country, zoo management faced the most difficult situation during lockdown especially in the supply of Animal feed. So it is necessary to have suitable disaster resistant storage provided to ensure maintenance of animal feed stock for atleast 7 days.

#### 6.3 Disaster handling manual

A manual has to be prepared based on the past experiences and also based on the information to all members working in the zoo for reference and as a guide for handling the situation and its underlying purpose is to assist disaster managers in attaining standards of professionalism that will enable them to deal with day-to-day disaster management circumstances and with actual disaster situations.

#### 6.4 Task force

The task force needs to be formed well in advance. They should be well aware of the Zoo & Safari topography, its inmates, facilities available and the contact person of other departments. We may need to seek support from outside agencies since all the disaster cannot be handled with the zoo personnel, therefore it is absolutely essential to maintain good rapport with government and non government agencies.

The agencies and personnel could be:

- Forest Headquarters.
- Police control room.
- Fire Brigade
- Disaster Management unit of state
- CSEB (Chhattisgarh State Electricity Board)
- District Hospital
- Veterinary Doctor
- Nava Raipur Development Authority
- Municipal Corporation
- Contract Agencies
- Volunteers, NGO. Wild Life lovers.
- Experienced Personnel.

The team members could be: -

1. Director of Zoo– For making plan and taking decision.
2. Co-Ordinator (Asst Director) –He/She has to ensure the implementation of the plan.
3. Unit co-ordinator (Range officer) – The Zoo and Safari can be divided into different units or sections. Each section will work under the control and direction of unit co-ordinator as per plan.

4. Skilled / unskilled personnel – These include, para-veterinary staff, animal keepers, mali, guard, sweeper, drivers, cutter, plumber, electricians and labour. The number depends upon the magnitude of the problem.

### 6.5 Precautionary measures

In spite of all possible precautions, disasters happen, but we can prepare to minimize damages. 'Prevention is better than cure' so prevention and mitigation measures are essential to reduce the risk of the potential disaster.

#### 6.5.1 Siren (alarm) system

An alarm (siren) system would be fixed in the zoo & safari premises with adequate range which would be under the control of Range Officer (security) and is located in the security office. The siren may be used when unpredicted incident happens in the zoo & safari premises to alert everyone about the incidents.

#### 6.5.2 Evacuation of the visitors

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

#### 6.5.3 Staff training and mock drill

Sensitization of the staff is highly essential during the emergency situations or any other untoward incidents which have the potential to cause injury or death. However, in most of the emergency situations organizations find themselves at back foot due to lack of resources or coordination. This is the reason; Mock drill needs to be conducted to inculcate the vibes of emergency preparedness and mobilization of the coordinated activities.

- Preparedness and Active and correct response of all the sections of the zoo.
- Quick Response time to address the issues.
- Co-ordination between different stakeholders
- Resolution of the issue in a time bound manner.

It is necessary to train all concerned staff to deal with the situation through periodic mock drills and to ensure that all equipments are fully functional and effective at all times.

### Mock Drill

A mock drill is a scenario in which participant's practice how they would react in the event of a disaster or emergency situations. It should be treated with the same seriousness as a real disaster, with all the required staff and equipments present. The main objective is to practice responding to a variety of disasters such as fires, animal escapes, medical emergencies and so on in any emergency situations.

### Crises to Consider

Zoo personnel have to deal with four basic types of emergency i.e. Fire, Environmental Emergency, Injury to staff or a visitor and Animal escape.

Other kinds of emergencies could be venomous animal bite, chemical spills, unauthorized human entering into the animal exhibits, missing child robbery etc.

### Animal Escape Drill

The best practice is that all the animal exhibits and holding areas to be secured to prevent animal escape, particularly attention must be given to doors, gates locking systems. Mock drill on animal escapes should be conducted at least **once in three month** so that different kinds of animals can be the subjects of drills throughout the year so that all the staff is exposed to drills. In case of animal escape, the following actions to be carried to overcome the situations.

- ✓ Report of the animal escaped and request for immediate gate closure
- ✓ Move the visitors/people into the secure buildings or towards the nearest exit of safe areas.
- ✓ Barricade the areas needed to control crowd flow back into the response operations areas.
- ✓ Keep the animal under observation from a safe distance until the response team arrives.
- ✓ The response team includes keepers, animal care staff, veterinary staff, Police staff; health unit should reach the rendezvous point immediately with required equipments.
- ✓ The veterinarian should be ready with the tranquilizing gun with proper dosages to recapture the escaped animal.
- ✓ The capturing team should develop a plan for isolating, monitoring and recapturing the escaped animal. This may includes the establishment of containment and monitoring perimeters to keep the animals from moving into less controlled areas, strategies for luring animals back to home enclosures, the use of chemical immobilization to control the situations.
- ✓ After the animal has been safely secured, the zoo management should convenes a review meeting to investigate how the escape occurred and determine immediate needs for preventing a reoccurrence of the escape.

### Emergency drills

Emergency drills should be conducted **at least twice annually** for each basic type of emergency (Fire, weather, earthquakes, Injury to staff or visitors etc) to determine whether all staff are aware of emergency procedures, as well as identify potential problem areas. These drills must be documented and evaluated to ensure that procedures are being followed, that staff training is effective, and that what is learned is then used to correct and/or improve the zoo's emergency procedures. Records of these drills must be maintained and improvements in the procedures duly noted; these documents may be assessed. Staff should take precautionary measures such as brush clearance, utilizing sprinkler systems throughout the zoo, and strategically placing fire extinguishers throughout the property, which staff has been trained to use. Alarms for fire, security, and other safety alerts must be in place and in working order.

#### 6.5.4 Strengthening of surveillances

An efficient surveillance and monitoring system can prevent most of the zoo accidents if carried out sincerely and diligently with professionalism. Round the clock security should be maintained to prevent the intruders entering the zoo and damaging the enclosures barriers, harm the animals in zoo and damage/steal other valuable property. A public addressing system should be installed so that the zoo authorities could warn the public over loud speakers placed throughout the zoo campus for any emergency situation and guide them accordingly. Placing security CCTV cameras in as many strategic locations as possible within the zoo campus for the security management team to keep an eye for any possible threat or accident that may happen inside the zoo.

## Part-II

### Chapter-7

#### Contingency Plan

The Total area of Nandanvan Zoo and Safari and Zoo is 320.15 hectares including Khandwa dam, the safari & zoo is housing more than 712 animals of different species including mammals, reptiles and birds. There is continuous stream of visitors in safari and zoo more than 2 lacs people in a year. Safety & protection of animals & visitors is the integral part of zoo management. Due to unexpected event the management may have to face crisis situation sometimes, as it involves risk to animals, keepers and visitors a detailed contingency plan must be in place based upon the past experiences. The plan must have details of person and their responsibilities fixed, the required precautionary measures should be taken in advance to prevent any untoward incidence like fire, flood, accident, animal escape, falling off weak and dry tree branches, attack of animals, in fighting of animals, electric short circuit etc.

#### 7.1 Animal rescued from wild

Nandanvan Zoo and Safari also engages in rescuing orphaned, injured, and displaced wildlife found in urban and rural environments across the State of Chhattisgarh. The Rapid Rescue team has saved the lives of various wild animals that have been trapped, injured, or caught in such conflict situations. After being rescued, the animals receive veterinary treatment if required, and are then released back into the wild. Injured or orphaned animals that cannot be released are given refuge at Nandanvan rescue center. This squad has all the possible equipments with them at present. A separate set of equipment along with staff will always be available in the zoo & safaris. The veterinary officer is the in-charge for the rescue squad and its operation. The other team members are as under: -

- Security officer/deputy ranger/forester.
- Forest guard/van chowkidar.
- Zoo keepers.
- Attendant.

The Vehicle and the transportation cages with the veterinary section are used for transportation of manpower, material and rescued animal.

## 7.2 Escape of animal from enclosures

Escape of the zoo animals can create unforeseen situations. One such incident happened in the zoo on 26<sup>th</sup> August 2021. After getting prior approval of drawings and designs from Central Zoo Authority the Fox (*Vulpes bengalensis*) Enclosure was constructed and completed in the year 2020. The Animals were acquired from the Kannan Pendari Zoo, Bilaspur. After the quarantine periods the foxes (*Vulpes bengalensis*) were released in the paddock area but after half an hour, the two foxes (*Vulpes bengalensis*) escaped from the paddock area of the enclosure by holding the chain link with their mouth and jumped above the fence. Efforts were made to restrict the escaped animals to be within the park premises. Then immediately rescue team was set in operation to retrieve the escaped animals and after 3 days of rigorous operation, both the animals were retrieved from the campus, the male fox (*Vulpes bengalensis*) was captured with the help of trap cage near the veterinary hospital and the female fox (*Vulpes bengalensis*) was sighted inside the hume pipe culvert and the same was reported by the staff and the rescue team captured it after 3 hours of hard work and both the foxes (*Vulpes bengalensis*) were kept in the night shelter. In this operation, lessons were learnt to avoid such happenings as well as how to retrieve the escaped animals. So in case of any escape of animals from enclosures is noted, the following are the important actions need to be set in with quickest possible time:-

- Any staff seeing an animal outside the enclosure should immediately report the same to the officers/management of the zoo.
- The required trap cages, nets, tranquilizing equipment, transport cages, medical care and treatment if necessary meant for rescuing animal should be kept ready to recapture the animals.
- Rapid Rescue team should be set in action and provision of vehicle to carry equipment and staff should be kept ready to avoid delay in capture of the animals.
- Announcement should be made to alert the security, staff and visitors. Public Address System and Siren should be used.
- Patience, planning and cooperation among the team members are very important for successful recapture of the animal.
- Entry of visitors shall be stopped when any animal escapes the enclosures.

As a preventive measure, the best way to check the escape of animal from the enclosure is

- To ensure that doors, shutter, and locks are closed, the chain link fence needs to be checked regularly,
- The trees inside the exhibits should be regularly pruned.
- Any weak point or gap identified during the inspection should be repaired and replaced immediately.

### 7.3 Monkey (*Cercopithecidae*) and Dog (*Canis lupus familiaris*) menace

Nandanvan Zoo and Safari spread over 320.15 hectares is fenced all around the Park. The park has a free-living population of langur and Rhesus Monkeys (*Macaca mulatta*). They are thriving on the forest produce. They are likely to stay for longer duration due to good vegetation and natural food availability in the area. All efforts have been taken to feed all the zoo & safari inmates in the feeding cells and covered kraals. The garbage and left-over food are put in the covered dustbins. The visitors are allowed to consume food in the prescribed area i.e., cafeteria and food points. As of now there is not much issues due to the Monkey (*Cercopithecidae*) population, but in future if the population becomes menace, then they would be captured, and they would be released in the nearby forests. Strict vigilance shall be kept at all the entry points by security staff to prevent entry of dogs (*Canis lupus familiaris*) and other stray animals. If any dog (*Canis lupus familiaris*) is sighted inside the 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)/or any other unforeseen circumstances

This problem arises when there is a general strike in the city or by the non cooperation of contractor. During the early stages of the COVID-19 pandemic, livestock transport across state and intrastate borders were restricted and thus supply chains were disrupted, which impact the welfare of animals in that chain. In the early weeks of the containment measures, there was panic in buying of red meat which put pressure on the supply chain and the demand for transport. Zoo was included in the essential services during the lockdown period by the Ministry of health and family welfare as well as the guidelines issued by the CZA helped to tackle the situations. It is necessary to be prepared to arrange the food for the captive animals in such cases. Therefore it is always required to maintain buffer stock of non perishable food items adequate for 7-10 days and perishable food items for 2-3 days in deep freezer.

### 7.5 Snake (*Serpentes*) bite

There are chances of visitors and animal keepers getting snake bite. The zoo and safari has dense stock of trees and is home for poisonous snakes (*Serpentes*) like Cobra (*Elapidae*), Viper (*Viperidae*) and krait (*Bungarus caeruleus*). In order to meet such incidents, following arrangements are likely to be made:

- To provide set of suitable devices for catching snake (*Serpentes*).
- To maintain enough stock of anti snake venom at the zoo hospital.



- To carry the patient to the hospital without loss of time.
- To keep first aid kits at important locations of the zoo & safaris i.e., security office, field office, safari entrance, veterinary hospital and reptiles house.

### 7.6 Visitors getting injured falling inside enclosure

The safari and zoo is likely to receive more than 2 lakh visitors annually. There is a standoff barrier in the viewing area of zoo enclosures to separate the animals from the visitors, but still there are instances from other zoo where people have accidentally and sometimes deliberately made their way into the paddock area and cages, finding themselves in danger. In such cases, the keepers will take the animal inside the cell immediately. If it does not materialize, chemical immobilization of the animal would be done by the veterinarian. Visitor would be taken out of the enclosure with the help of ladder / ropes. The Curator (animal) would be physically present at the site during such rescue operation. As of now Nandanvan Zoo has not come across with such incident yet. But to avoid such incidents, the following arrangements shall be made: -

- Display signages on all enclosures to urge visitors not to throw stones/stand on the railings to get a closer view, annoying the animal with noises to attract the attention of the animals.
- Provide appropriate and effective standoff barriers.
- To keep the first aid kits available at important locations as mentioned above.
- Take the injured visitors to nearby hospital, if required.
- Security personnel to keep an eagle eye view on the visitor's behavior.

### 7.7 In Fighting among animals

This is a very common problem which is bound to occur in the enclosures where large numbers of animals are kept. This type of problem is more in deer (*Cervidae*), antelopes (*Bovidae*) and monkeys. The older males show preference for females and attack the younger ones if they come close to the females. Monkeys (*Cercopithecidae*) also fight to show dominance or preference for food or females. As a result of this behavior, fights among the animals occur which result in getting the animals injured. The following arrangements have been made to check this problem:

- The Zoo & Safaris has proposed to have adequate cells and kraals to keep the fighter males separate.
- The veterinarian will provide them treatment from time to time.
- Adequate sound producing material would be available with keeper of enclosure of tiger

(*Panthera tigris*), panther (*Panthera*) and Lion (*Panthera leo*).

- Measures would be taken to shift surplus animals mainly deer species to other protected areas or to other zoo after getting prior permission from CZA.

### 7.8 Epidemics

The zoo & safaris shall follow the vaccination schedule strictly. A well-equipped veterinary hospital has been constructed with the required facilities. The vaccines for ungulates and carnivores will be required to be injected as per the schedule. Besides the above, following measures will be taken:

- Extensive disinfection measures like spraying of disinfectants will be undertaken.
- Remove the infected animal from the group and keep in isolation ward for treatment.
- Seek advice and guidance from the experts or veterinary institute.

### 7.9 Breakdown of power supply etc.

The zoo has 5 KW backup generator at zoo hospital, office building and water pumping station to meet the crisis. The maintenance section would keep liaison with power supply authorities. Two more generators are proposed to procure and installed in zoo area in future.

### Contingency Plan Chart

S. No.	Nature of Crises	Attending officers/Officials
<b>Fire Accidents</b>		
1	The present fire fighting system installed inside the zoo premises is okay. But care should be taken for refilling the cylinders in time and water and sand in the buckets should always be filled with.	Security officer/Security In-charge Person
2	To prevent fire occurrence at the Garbage dump yard inside the zoo premises, need to clean dried branches and to shift the accumulated garbage to Municipal Garbage Yards.	Security officer/Garden In-Charge
3	To give attention to office sections also where lot of records are preserved. To provide fire protection with available firefighting equipment.	Security officer and office staff

4	To have Regular check of electric installations, grounding, appliances, and to take up repairs, replacements, cleaning and servicing in time to avoid accidents and to keep them in good working condition.	Security officer/Electric In-Charge Person
5 (a)	Phone to fire services, Ambulance, Police, Municipal Corporation etc. whenever there is a fire.	Security officer/ administrative In-Charge
5 (b)	To provide hydrant jet points near all strategic locations	Security officer/Section In-Charge Person
<b>Escape of Animals</b>		
6	To keep personnel safety equipment for the persons attending crisis situation, such a helmet, gloves, chest guards, etc. (minimum 5 sets)	Asst. Director & Security officer
7	To check periodically and prune tree branches, remove weak and dried branches inside enclosures on animals which are prone to jump out from trees or escape with the help of fallen branches.	Range Forest Officer and Senior Assistant (Garden section)
8	To check regularly the existing barricades moat, walls, mesh and to provide necessary repairs, replacements and to provide weld mesh barricade wherever necessary.	Zoo In-Charge/ Range Officer
9	To check regularly the existing biological barricades particularly around animal enclosures and to provide required replanting so as to keep the barricade wherever necessary, in consultation with higher officers.	Zoo In-Charge/ Range Officer
10	To procure equipments to protect persons in danger, such as portable mechanical lifts to stretch in to enclosures from outside (which can also be used for other works) human size cylindrical metal ladders etc.	Assistant Director & Range Officer
11	To procure equipments to control animals creating danger/havoc, such as nylon nets, nylon ropes, chain linked mesh easy to unfurl and furl, water jets, tarpaulins, gunny bags.	Assistant Director/ Range Officer
12	Other equipments such as road dividers to control visitors and for other purposes, crackers to scare animals, movable crates , mesh cutter, forceps with long hand to catch big and small animals, device like Mango Plucker with long hand for trapping big and small animals etc.	Assistant Director/ Range Officer

13	To explore the possibilities of making use of suitable equipments and devices used in adventure sport by obtaining more details, pictorial brochures and rate list.	Assistant Director
14	To close main gate to avoid visitors, to cover the animal by holding/ wearing safety equipment, etc. whenever there is any escape.	Security Officer/ Security In-Charge
<b>Snake (<i>Serpentes</i>) Hazard</b>		
15	To check burrows daily in all enclosures and in garden section and to fill them with sand and put water on it. Special care to be taken at Northern part of visitors park area.	Security Officer/ Range Officer
16	To provide one set of suitable devices for catching snakes.	Veterinary Surgeon/ Expert Person
17	During rainy season, all underground drainages inside the zoo premises and open drains should be checked for easy flow of water.	Range Officer
18	To clean and desilt the pond in Hippopotamus ( <i>Hippopotamus amphibius</i> ) enclosure, Gharial ( <i>Gavialis gangeticus</i> ) and Crocodile ( <i>Crocodylus palustris</i> ) enclosure, which is by the side of natural drainage line to Khandawa dam	Range Officer
19	During rainy season, to keep the available portable pump sets in working condition for dewatering enclosure moats, if required.	Range Officer/ Zoo In-Charge
<b>To Control heavy vehicles and four wheelers entry at main gate</b>		
20	The entrance gate is common for Nandanvan Zoo and Safari and Botanical Garden, though botanical garden has not being open for people at present, there is a sufficient area for parking of 4 wheeler, but in future when botanical garden will be open for public the parking in restricted area may occur. To overcome this problem as a precaution, it is proposed to provide barrier at main entrance link road to check over crowd at entrance gate	Range Officer/ Parking Vendor

## Part-II

### Chapter-8

#### Capacity Building

Zoo & Safari management is a complex & sensitive subject under discussion which involves regular interaction between staff, experts and institutes to advance the skills required for the upkeep of the captive animals. As time changes, the new challenges will emerge and the staff requires upgrading their skill and potential to handle any eventualities. Capacity building of different category of office staff and frontline personal is very essential for better care of animals, providing better nature education and smooth function of Zoo.

##### 8.1 Training sponsored by CZA

The Central Zoo Authority conducts seminar, symposia and short term training, annual training programmes for Directors /zoo staff to upgrade their skills and promote interactions between them. It also sponsors various training programmes such as training for Zoo and Safari keepers in notable zoos of the country. This training is usually held for two days or one week. All the aspects of animal keeping, house cleaning, reporting, feeding and handling are covered. Experienced and retired staffs are involved for delivering lectures and presentation. Nandanvan Zoo and Safari should avail opportunity in participating and send the staff periodically to get benefits out of it. Presently animal keepers are sent to other zoo such as Nandankannan Zoo, Bhubhaneshwar, and Kanan Pendari Zoo, Bilaspur for training.

##### 8.2 In House Training

It is proposed to organize training session with experienced people. Regular demonstration of tranquilization, skill and knowledge acquired has to be done for the benefits of the staff. Zoo in house trainings are conducted for Government officers, Probationary trainees, Forest officials from the states and other region of the country, other staff and zoo keepers throughout the year. It is also conducted for the zoo keepers and visitors Guide in every six months to upgrade their skills and knowledge. This includes animal upkeep, crisis management and zoo emergencies, enrichment which covers the following subject. :-

- Wild life protection act 1972 & other zoo rules.
- Animal welfare and ethics and prevention of cruelty to animal
- Duties and responsibilities of keepers

- Enrichment of animal enclosure
- Animal feed
- Role of keepers in disaster management
- Role of keepers in animal care and treatment
- Handling of injured animal and first aid.
- Action during animal escape management.

### **8.3 Training for Zoo Veterinarian**

Zoo veterinarians are specialists who take care of the health of the captive animals. So it is mandatory that the veterinary officer would be sent for every possible training, seminars, and symposiums being held in the country to apprise him with the latest trend and methodology being adopted for treatment of animals. Efforts would be made to expose the Veterinary Officer and compounder to all the facilities being made available by the local Veterinary College and Hospitals.

### **8.4 Interaction with other Zoos**

There are three zoos in the State of Chhattisgarh. It is desirable to have interaction with other zoo for regional co-operation in planned conservation breeding of endangered species as well as sharing the knowledge and experiences.

### **8.5 Training abroad**

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

### **8.6 Rewards**

A conscientious zookeeper plays an important role in the health and well-being of animals, observes and monitors any changes in animal health and behavior, interacting with unique animals, rehabilitates injured animals found in the wild. Zookeepers also spend time educating the public on conservation and animal adaptations. In recognition of their commendable performance in the field of zoo keeping, rearing, incapacitated and injured/ sick animal, gardening, security, maintenance etc. the dedicated staff should be rewarded on the eve of foundation day, wild life week, World Tiger Day, etc.

## **Part-II**

### **Chapter-9**

### **E-governance**

E-governance is an important tool for bringing efficiency, transparency and reliability in the zoo & safari management. Nandanvan Zoo and Safari and Zoo has made us of significant advances in information technology sector and has put up lot of efforts to computerize in all aspects to make fast, accurate and paperless office and to store the required data for better management. Conservation education is one the important objective of Zoo. The available technology such as internet, website hosting, e-mail, digital photography, all helped the Zoo to reach out to many print and electronic mass media agencies with little expense in real time. The Director, Deputy Director, Asst. Director/Superintendent, Veterinarian, Curators and Research officer will have computers, which will be networked with a LAN, and internet and the data in the whole computer would be easily reached to every officer.

#### **9.1 GIS Mapping**

Using GIS and Satellite imaging the following maps proposed for preparation:

1. Location and access of Nandanvan Zoo and Safari.
2. Nandanvan Zoo and Safari as viewed by high resolution satellite imagery.
3. Vegetation type by density classes of Nandanvan Zoo and Safari.
4. Management Map showing public facility in Nandanvan Safari.
5. Tourism map of Nandanvan Zoo and Safari.

#### **9.2 Uses of E-Governance**

1. To keep up 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 book information.
11. To store animal history card information.
12. To record treatment of individual.

### **9.3 Official Website and E-Ticketing**

An official website [www.junglesafari.cg.nic.in](http://www.junglesafari.cg.nic.in) with online ticketing facility was launched on 14-10-2021 with a modern design and advanced features targeted at large, worldwide audience of animal lovers, nature conservators, tourists and children of all ages with a budding interest for the animal world. The service of online ticketing allows the customers to purchase, change and refund transactions from home itself, eliminating their need to visit the ticket counter. Each e-ticket is scanned at the entrance and its validity is checked using the unique bar code printed on each ticket. The principal advantage of e-ticketing is the fact that the customer comes to know the availability of safari tickets, it reduces long queue at the ticket counter and saves the time of the visitors.

### **9.4 Entrance Gate**

This is most important stage from the point of crowd regulation and revenue realization. The entrance tickets would be issued to the visitors computerized with facilities to monitor the flow of visitors and amount realized may be viewed by the Director's chamber in real time thus preventing any loss and the details can be stored in Director's computer system reducing the use of book ledgers. This facility enables accuracy, efficiency and transparency. There would be different layers of scrutiny and supervision over the entry of visitors with valid tickets. Security allows the visitors to enter after ensuring valid tickets.

### **9.5 Close Circuit Cameras with TV monitors**

Nandanvan Zoo and Safari has registered growth of 12% in visitors. It is inevitable to have different layers of security system in place. CCTV's would become very handy to monitor the movement of crowd and keep an eye on vandalism and theft on busy crowded weekends and festivals. It is proposed to install some more cameras at sensitive points to have continuous monitoring and to take collective steps in day to day behavior of sensitive animals, sick animals and movement of unauthorized persons and to detect the vandalism and thefts, so as to alert the security system..

### **9.6 Wireless Network**

There is an effective wireless network System with 14 handsets, which are provided to the field personnel stationed at strategic points. The field Officers would be monitoring and collecting the information for every 30 minutes throughout the day and several times. This helps the management to work efficiently to prevent major mishaps and to take corrective steps.

### **9.7 Media Management**

Press releases with photographs of all important events and any other development related to Zoo are communicated to both print and electronic media through e-mail attached with digital format. This would help the Zoo to reach out to large public and would attract crowds with little expense in real time. Correct and factual reporting of happenings in the Zoo helps us to maintain transparency and credibility. Also, the message of conservation education and importance of captive breeding & its significance could be effectively communicated to general public and animal lovers in particular.

### **9.8 Computerization of office work**

A computerized information system provides significant advantages to all the sections of the Office of Nandanvan Zoo and Safari. It has acquired the efficient and user-friendly software for monthly pay bill preparation, updating and maintaining daily, monthly & annual accounts. An account is being kept updated constantly and both revenue and expenditure is reconciled daily. Director cum-DFO Jungle safari could keep a check on both revenue & expenditure against the budgeted amount at any point of time in real time. In the stores, the feeding articles weight measurement is computerized to achieve accuracy and transparency. Currently there are insufficient computers and other ICT gadgets, hence it is needed to strengthen facility in various sections and they are being used for generation of reports, communication of office orders, accounting, exchanging information with other organizations and storing useful data. There is need for networking all the computers by LAN.

## Part-II

### Chapter-10

#### Broad Budget Analysis for Implementing the Plan

The Master Plan is a long-term planning document that provides a conceptual layout to guide future development of the safari and Zoo and in this chapter, the budget mainly focussed on for the development of new enclosures, establishment of infrastructure facilities and day to day maintenance works of the zoo & safari. The purpose of the implementation section is to organize all the recommendations and actions of the master plan into a manageable implementation program. Broad Budget requirement for implementation of the Master Plan from 2021-22 to 2030-31 for the management of Nandanvan Zoo and Safari has been estimated to be Rs 33016 lakhs. It is prepared based on the current cost of items with required estimated cost escalation over the years to come. The Broad Budget requirement is flexible and subject to revision as per prevailing cost norms at the time of implementation. The Director will mobilise the financial resources from different sources like State Schemes to be financed by the State Government, Central Sponsored Schemes to be financed by the Central Government and other donor agencies for the implementation of the Master Plan. Considering the past records of funding agencies and other future prospects, the following Agencies/Schemes will finance the budget required for the execution of the works proposed in the Master Plan.

- State Government Budget for wild life.
- Central Government assistance for ex-situ management of wild life
- State Campa fund for wild Life research and education
- Other Sources.

#### 10.1 Establishment New Enclosure and other developmental works

It is proposed to develop the zoo and to construct new enclosure with due guidance from CZA. This includes the following developmental work in different section and zone:

- Administrative, Parking and Ticket
- Garden, Monument and Public Amenities
- Vehicle
- Safari (Bear (*Melursus ursinus*), Tiger (*Panthera tigris*), Lion (*Panthera leo*))

Construction of New Enclosure such as Wild Buffalo (*Bubalus arnee*), Mongoose (*Herpestes edwardsii*), Butterfly Park, Gray Langur (*Semnopithecus*), Pigtail Monkey (*Macaca nemestrina*), Assamese Monkey (*Macaca assamensis*), Walk-in Bird Aviary, Walk-in wet land bird Aviary, Fish Aquarium, Exotic Species (Zebra (*Equus quagga*), Oryx (*Oryx gazella*) and Wildebeest (*Connochaetes*)), Chimpanzee (*Pan troglodytes*) and Orangutan (*Pongo*), Ring Tail Lemur (*Lemur catta*), Small Monkeys (*Macaca*), Veterinary rescue centre and Education and Research section.

TABLE-A: BUDGET FOR PROPOSED DEVELOPMENTAL

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
1	Administrative, Parking & Ticket	1.1	Residential Building	-	25.00	25.00	25.00	-	-
		1.2	Office Building	-	25.00	10.00	10.00	-	-
		1.3	Ticket Counter Building (Extension)	-	10.00	5.00	-	-	-
		1.4	Electrification	-	10.00	5.00	5.00	-	-
		1.5	Over head tank	-	10.00	10.00	5.00	-	-
		1.6	Water Supply	-	10.00	5.00	5.00	-	-
		1.7	Toilet	-	5.00	5.00	-	-	-
		1.8	Internal Road(CC/Bitumen)	-	20.00	20.00	10.00	-	-
		1.9	Parking Area development	-	20.00	20.00	20.00	10.00	10.00
		1.1	Installation of CCTV Camera	-	10.00	10.00	10.00	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>145.00</b>	<b>115.00</b>	<b>90.00</b>	<b>10.00</b>	<b>10.00</b>
2	Garden, Monument & Public Amenities	2.1	Establishment of Interpretation Centre	220.00	50.00	-	-	-	-
		2.2	Establishment of Auditorium Centre	40.00	10.00	-	-	-	-
		2.3	Construction of Information Centre	0.00	25.00	20.00	-	-	-
		2.4	Construction of Cafeteria	0.00	20.00	20.00	10.00	10.00	-
		2.5	Construction of Pagodas	0.00	10.00	5.00	5.00	-	-
		2.6	Construction of Resting Shed	0.00	15.00	10.00	5.00	-	-
		2.7	Enrichment of Souvenir Shop	10.00	10.00	10.00		-	-
		2.8	Dustbins	3.00	2.00	1.00	1.00	1.00	1.00
		2.9	Signages	3.00	3.00	3.00	3.00	2.00	2.00
		2.1	Garden & Landscape	15.00	15.00	10.00	5.00	2.00	2.00
		2.11	Electric Supply	10.00	5.00	5.00	2.00	1.00	-
		2.12	Water Supply	5.00	5.00	5.00	2.00	1.00	-
		2.13	Toilet	15.00	10.00	10.00	10.00	5.00	5.00
		2.14	Visitor Path	25.00	20.00	15.00	5.00	5.00	5.00
		2.15	Brochures, Pamphlets, Books	2.00	2.00	2.00	2.00	1.00	1.00
		2.16	Benches	5.00	5.00	5.00	2.00	2.00	-
		2.17	Children Play Toy/Structure	10.00	5.00	5.00	3.00	2.00	-
		2.18	Drinking Water	5.00	5.00	5.00	2.00	2.00	2.00
<b>Sub Total</b>				<b>368.00</b>	<b>217.00</b>	<b>131.00</b>	<b>57.00</b>	<b>34.00</b>	<b>18.00</b>

## WORKS IN NANDANVAN ZOO AND SAFARI

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	50.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	220.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>510.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	-	270.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	50.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	23.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	44.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	77.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	55.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	24.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	49.00
<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>8.00</b>	<b>937.00</b>

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
3	Vehicle	3.1	Purchase of Safari vehicle	-	-	50.00	50.00	25.00	-
		3.2	Purchase of Carriage Van	-	30.00	20.00	20.00	-	-
		3.3	Purchase of Mini Truck	-	20.00	20.00	-	-	-
		3.4	Purchase of Patrolling Vehicle	-	15.00	20.00	-	-	-
		3.5	Construction of Vehicle Shed and Garage	-	15.00	15.00	-	-	-
		3.6	Purchase of Tractor	-	25.00	25.00	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>105.00</b>	<b>150.00</b>	<b>70.00</b>	<b>25.00</b>	<b>0.00</b>
<b>4. Safari</b>									
4.1	Bear ( <i>Ursidae</i> ) Safari	4.1.1	Construction of Entrance Gate	-	-	-	-	55.00	20.00
4.2	Tiger ( <i>Panthera tigris</i> ) Safari	4.1.2	Construction of Entrance Gate	-	-	-	-	55.00	20.00
4.3	Lion ( <i>Panthera leo</i> ) Safari	4.1.3	Construction of Entrance Gate	-	-	-	-	55.00	20.00
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>165.00</b>	<b>60.00</b>
<b>5. Zoo</b>									
5.1	Wild Buffalo ( <i>Bubalus arnee</i> )	5.1.1	Construction of Enclosure	-	-	75.00	-	-	-
		5.1.2	Construction of Kraal & Night Shelter	-	-	45.00	-	-	-
		5.1.3	Construction of Moat	-	-	15.00	-	-	-
		5.1.4	Construction of Viewing Area	-	-	15.00	-	-	-
		5.1.5	Habitat Enrichment	-	-	10.00	-	-	-
		5.1.6	Electric Supply	-	-	6.00	-	-	-
		5.1.7	Water Supply	-	-	4.00	-	-	-
		5.1.8	Approach Road & Service Road	-	-	15.00	-	-	-
		5.1.9	Creation of Green Boundary & Land Scaping	-	-	8.00	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>193.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.2	Mouse Deer ( <i>Tragulus meminna</i> )	5.2.1	Construction of Enclosure	-	30.00	-	-	-	-
		5.2.2	Construction of Kraal & Night Shelter	-	15.00	-	-	-	-
		5.2.3	Construction of Moat	-	15.00	-	-	-	-
		5.2.4	Construction of Viewing Area	-	11.00	-	-	-	-
		5.2.5	Habitat Enrichment	-	5.00	-	-	-	-
		5.2.6	Electric Supply	-	3.00	-	-	-	-
		5.2.7	Water Supply	-	2.00	-	-	-	-

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	25.00	-	-	-	25.00	-	175.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	70.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	40.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	50.00
<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>25.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>25.00</b>	<b>0.00</b>	<b>400.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>225.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>193.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
		5.2.8	Approach Road & Service Road	-	15.00	-	-	-	-
		5.2.9	Creation of Green Boundary & Land Scaping	-	8.00	-	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>104.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.3	Open Butterfly ( <i>Rhopalocera</i> ) Park	5.3.1	Planting of host plants	25.00	10.00	10.00	-	-	-
		5.3.2	Electric Supply	5.00	5.00	-	-	-	-
		5.3.3	Water Supply	20.00	10.00	-	-	-	-
		5.3.4	Construction of Path Way	25.00	15.00	10.00	-	-	-
		5.3.5	Creation of Green Boundary	15.00	10.00	-	-	-	-
<b>Sub Total</b>				<b>90.00</b>	<b>50.00</b>	<b>20.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.4	Gray Langur ( <i>Semnopithecus</i> )	5.4.1	Construction of Enclosure	-	30.00	-	-	-	-
		5.4.2	Construction of Kraal & Night Shelter	-	15.00	-	-	-	-
		5.4.3	Construction of Moat	-	8.00	-	-	-	-
		5.4.4	Construction of Viewing Area	-	10.00	-	-	-	-
		5.4.5	Habitat Enrichment	-	5.00	-	-	-	-
		5.4.6	Electric Supply	-	2.00	-	-	-	-
		5.4.7	Water Supply	-	2.00	-	-	-	-
		5.4.8	Approach Road & Service Road	-	10.00	-	-	-	-
		5.4.9	Creation of Green Boundary & Land Scaping	-	10.00	-	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>92.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.5	Pigtail Monkey ( <i>Macaca nemestrina</i> )	5.5.1	Construction of Enclosure	-	30.00	-	-	-	-
		5.5.2	Construction of Kraal & Night Shelter	-	15.00	-	-	-	-
		5.5.3	Construction of Moat	-	8.00	-	-	-	-
		5.5.4	Construction of Viewing Area	-	10.00	-	-	-	-
		5.5.5	Habitat Enrichment	-	5.00	-	-	-	-
		5.5.6	Electric Supply	-	2.00	-	-	-	-
		5.5.7	Water Supply	-	2.00	-	-	-	-
		5.5.8	Approach Road & Service Road	-	10.00	-	-	-	-
		5.5.9	Creation of Green Boundary & Land Scaping	-	10.00	-	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>92.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	50.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
5.6	Assamese Monkey ( <i>Macaca assamensis</i> )	5.6.1	Construction of Enclosure	-	30.00	-	-	-	-
		5.6.2	Construction of Kraal & Night Shelter	-	15.00	-	-	-	-
		5.6.3	Construction of Moat	-	8.00	-	-	-	-
		5.6.4	Construction of Viewing Area	-	10.00	-	-	-	-
		5.6.5	Habitat Enrichment	-	5.00	-	-	-	-
		5.6.6	Electric Supply	-	2.00	-	-	-	-
		5.6.7	Water Supply	-	2.00	-	-	-	-
		5.6.8	Approach & Service Road	-	10.00	-	-	-	-
		5.6.9	Creation of Green Boundary & Land Scaping	-	10.00	-	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>92.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.7	Rhesus Monkey ( <i>Macaca mulatta</i> )	5.7.1	Construction of Enclosure	-	30.00	-	-	-	-
		5.7.2	Construction of Kraal & Night Shelter	-	15.00	-	-	-	-
		5.7.3	Construction of Moat	-	8.00	-	-	-	-
		5.7.4	Construction of Viewing Area	-	10.00	-	-	-	-
		5.7.5	Habitat Enrichment	-	5.00	-	-	-	-
		5.7.6	Electric Supply	-	2.00	-	-	-	-
		5.7.7	Water Supply	-	2.00	-	-	-	-
		5.7.8	Approach Road & Service Road	-	10.00	-	-	-	-
		5.7.9	Creation of Green Boundary & Land Scaping	-	10.00	-	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>92.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.8	Walk-in Bird Aviary	5.8.1	Ground Preparation & Levelling	-	-	75.00	25.00	-	-
		5.8.2	Land Scaping & Planting	-	-	25.00	15.00	-	-
		5.8.3	Construction of Enclosure	-	-	400.00	100.00	-	-
		5.8.4	Electric Supply	-	-	15.00	10.00	-	-
		5.8.5	Water Supply	-	-	15.00	15.00	-	-
		5.8.6	Construction of Path Way	-	-	100.00	25.00	-	-
		5.8.7	Creation of Green Boundary	-	-	15.00	15.00	-	-
		5.8.8	Habitat Enrichment	-	-	100.00	10.00	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>745.00</b>	<b>215.00</b>	<b>0.00</b>	<b>0.00</b>

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	40.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	500.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	125.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	110.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	960.00

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
5.9	Walk-in Wet Land Bird Aviary	5.9.1	Ground Preparation & Creation of Artificial Pond	-	-	100.00	75.00	-	-
		5.9.2	Land Scaping & Planting	-	-	100.00	50.00	-	-
		5.9.3	Construction of Enclosure	-	-	300.00	100.00	-	-
		5.9.4	Electric Supply	-	-	10.00	10.00	-	-
		5.9.5	Water Supply	-	-	10.00	15.00	-	-
		5.9.6	Construction of Path Way	-	-	100.00	50.00	-	-
		5.9.7	Creation of Green Boundary	-	-	5.00	5.00	-	-
		5.9.8	Habitat Enrichment	-	-	10.00	5.00	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>635.00</b>	<b>310.00</b>	<b>0.00</b>	<b>0.00</b>
5.10	Fish ( <i>Pisces</i> ) Aquarium	5.10.1	Construction of Fish Aquarium	-	-	-	-	800.00	-
		5.10.2	Land Scaping & Planting	-	-	-	-	45.00	15.00
		5.10.3	Construction of Path Way & Viewing Area and installation of water treatment, oxygenation plant	-	-	-	-	55.00	50.00
		5.10.4	Creation of Green Boundary	-	-	-	-	10.00	15.00
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>910.00</b>	<b>80.00</b>
5.1	Exotic Species ( <i>Zebra (Equus quagga)</i> , <i>Oryx</i> & <i>Wildebeest (Connochaetes)</i> )	5.11.1	Construction of Enclosure	150.00	-	-	-	-	-
		5.11.2	Construction of Kraal & Night Shelter	100.00	-	-	-	-	-
		5.11.3	Construction of Moat	35.00	-	-	-	-	-
		5.11.4	Construction of Viewing Area	30.00	-	-	-	-	-
		5.11.5	Habitat Enrichment	40.00	-	-	-	-	-
		5.11.6	Electric Supply	10.00	-	-	-	-	-
		5.11.7	Water Supply	10.00	-	-	-	-	-
		5.11.8	Approach Road & Service Road	30.00	-	-	-	-	-
		5.11.9	Creation of Green Boundary & Land Scaping	30.00	-	-	-	-	-
<b>Sub Total</b>				<b>435.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	175.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	400.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	945.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	800.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	105.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	990.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	40.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	435.00

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
5.1	Chimpanzee ( <i>Pan troglodytes</i> )	5.12.1	Construction of Enclosure	100.00	-	-	-	-	-
		5.12.2	Construction of Kraal & Night Shelter	50.00	-	-	-	-	-
		5.12.3	Construction of Moat	20.00	-	-	-	-	-
		5.12.4	Construction of Viewing Area	20.00	-	-	-	-	-
		5.12.5	Habitat Enrichment	10.00	-	-	-	-	-
		5.12.6	Electric Supply	3.00	-	-	-	-	-
		5.12.7	Water Supply	3.00	-	-	-	-	-
		5.12.8	Approach Road & Service Road	10.00	-	-	-	-	-
		5.12.9	Creation of Green Boundary & Land Scaping	10.00	-	-	-	-	-
<b>Sub Total</b>				<b>226.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.1	Ringtail Lemur ( <i>Lemur catta</i> )	5.13.1	Construction of Enclosure	35.00	-	-	-	-	-
		5.13.2	Construction of Kraal & Night Shelter	15.00	-	-	-	-	-
		5.13.3	Construction of Moat	10.00	-	-	-	-	-
		5.13.4	Construction of Viewing Area	10.00	-	-	-	-	-
		5.13.5	Habitat Enrichment	5.00	-	-	-	-	-
		5.13.6	Electric Supply	3.00	-	-	-	-	-
		5.13.7	Water Supply	3.00	-	-	-	-	-
		5.13.8	Approach Road & Service Road	15.00	-	-	-	-	-
		5.13.9	Creation of Green Boundary & Land Scaping	10.00	-	-	-	-	-
<b>Sub Total</b>				<b>106.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.1	Small Monkeys (Squirrel Monkey ( <i>Saimiri</i> ), Marmoset ( <i>Callithrix jacchus</i> ))	5.14.1	Construction of Enclosure	-	60.00	-	-	-	-
		5.14.2	Construction of Kraal & Night Shelter	-	30.00	-	-	-	-
		5.14.3	Construction of Moat	-	15.00	-	-	-	-
		5.14.4	Construction of Viewing Area	-	20.00	-	-	-	-
		5.14.5	Habitat Enrichment	-	20.00	-	-	-	-
		5.14.6	Electric Supply	-	4.00	-	-	-	-
		5.14.7	Water Supply	-	4.00	-	-	-	-
		5.14.8	Approach Road & Service Road	-	15.00	-	-	-	-

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	50.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	226.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	106.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.00

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
		5.14.9	Creation of Green Boundary & Land Scaping	-	10.00	-	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>178.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5.2	Meerkat ( <i>Suricata suricatta</i> )	5.15.1	Construction of Enclosure	-	30.00	-	-	-	-
		5.15.2	Construction of Kraal & Night Shelter	-	18.00	-	-	-	-
		5.15.3	Construction of Moat	-	10.00	-	-	-	-
		5.15.4	Construction of Viewing Area	-	10.00	-	-	-	-
		5.15.5	Habitat Enrichment	-	10.00	-	-	-	-
		5.15.6	Electric Supply	-	4.00	-	-	-	-
		5.15.7	Water Supply	-	4.00	-	-	-	-
		5.15.8	Approach Road & Service Road	-	10.00	-	-	-	-
		5.15.9	Creation of Green Boundary & Land Scaping	-	10.00	-	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>106.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6	Modification of Fox Enclosure	6.1	Upgradation of Paddock Area	25.00	-	-	-	-	-
		6.2	Upgradation of Moat and Viewing Area	10.00	-	-	-	-	-
		6.3	Upgradation of Kraal & Night Shelter	6.00	-	-	-	-	-
<b>Sub Total</b>				<b>41.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
7	Upgradation of Veterinary & Rescue Centre	7.1	Construction of Operation Theatre and Room for Installation of X-ray Machine	56.00	14.00	-	-	-	-
		7.2	Construction of Customized Incinerator Kraal & Night Shelter	-	200.00	-	-	-	-
		7.3	Construction of Neonatal Care Centre for Large Carnivore	63.00	7.00	-	-	-	-
		7.4	Construction of Neonatal Care Centre for Small Carnivore	52.00	8.00	-	-	-	-
		7.5	Construction of Neonatal Care Centre for Bear	52.00	8.00	-	-	-	-
		7.6	Construction of Neonatal Care Centre for Herbivore	51.00	9.00	-	-	-	-

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	106.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	70.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	200.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	70.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.00

S. No.	Name of Section/Zone	Sub S.No.	Details of Work Proposed	Financial Year Wise					
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
		7.7	Construction of Neonatal Care Centre for Birds	50.00	10.00	-	-	-	-
		7.8	Upgradation of Veterinary Hospital Building	15.00	5.00	-	-	-	-
		7.9	Upgradation of Rescue Centre	20.00	10.00	-	-	-	-
		7.1	Water & Electric Supply	5.00	5.00	-	-	-	-
		7.11	Construction of Diagnostic Complex	-	-	250.00	-	-	-
<b>Sub Total</b>				<b>364.00</b>	<b>276.00</b>	<b>250.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
8	Education & Research Section	8.1	Construction of Building	-	100.00	50.00	-	-	-
		8.2	Purchase of Equipment	-	20.00	10.00	-	-	-
		8.3	Purchase of Furniture	-	5.00	5.00	-	-	-
		8.4	Purchase of Computer, Photostat Machine	-	3.00	2.00	-	-	-
		8.5	Water & Electric Supply	-	5.00	3.00	-	-	-
		8.6	Miscellaneous charges	-	5.00	5.00	-	-	-
<b>Sub Total</b>				<b>0.00</b>	<b>138.00</b>	<b>75.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
9	Upgradation of Infrastructure	9.1	Installation of transformer and Cabling work at Safari and Zoo	5.00	-	-	-	-	-
		9.2	Installation of pipeline from Khandwa dam to zoo area	65.00	-	-	-	-	-
<b>Sub Total</b>				<b>70.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>GRAND TOTAL</b>				<b>1700.00</b>	<b>1687.00</b>	<b>2314.00</b>	<b>742.00</b>	<b>1144.00</b>	<b>168.00</b>

**TABLE-B : ABSTRACT OF THE BUDGET REQUIREMENT FOR THE PROPOSED**

S. No.	Activity	Financial Year							
		2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030
1	Construction and Development of Different Zone and Sections	1700.00	1687.00	2314.00	742.00	1144.00	168.00	18.00	18.00

### 10.2 Maintenance Works

Maintenance of the existing assets and also the newly constructed and developed assets are required for maintaining the strength and good look, longevity and hygienic condition of the assets, structures and enclosures. Day to day maintenance of the safari and zoo under the master plan broad budget will include maintenance of enclosure and shelter, enrichment of enclosures, visitors amenities, sewerage and drainage, waste disposal, general cleanliness of safari and zoo campus,

Budget Requirement (Rs. In Lacs)														Total
2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	60.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	250.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	890.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	213.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-	65.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.00
18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	43.00	18.00	18.00	18.00	43.00	18.00	8057.00

#### DEVELOPMENTAL WORKS PLAN PERIOD 2022-2023 TO 2041-2042 IS LISTED BELOW

Wise Budget Requirement (Rs. In Lacs)													Total
2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042		
18.00	18.00	18.00	18.00	18.00	18.00	43.00	18.00	18.00	18.00	43.00	18.00	8057.00	

veterinary facilities, transport and vehicle, rescue of animals, water supply and electricity, staff amenities, wages for contract workers, watch and ward of zoo and safari, feed and hygiene, different celebration on the eve of International and National Importance regarding Environment and Wild Life, maintenance of office and staff quarters, feed storage and feed preparation and distribution system, general office administration, maintenance of tools and equipment's.

TABLE-C : BUDGET FOR THE MAINTENANCE WORK AT NANDANVAN ZOO AND SAFARI -

S. No.	Name of Section / Zone	Sub S.No.	Details of Work							
				2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
1	Administrative	1.1	Purchase of computer	3.00	2.00	2.00	-	-	2.00	-
		1.2	Purchase of Photostat machine	3.00	-	-	-	-	2.00	-
		1.3	Stationary	2.00	3.00	3.00	3.00	3.00	3.00	3.00
		1.4	POL	5.00	6.00	7.00	8.00	9.00	10.00	11.00
		1.5	Electricity bill	2.00	2.00	3.00	3.00	3.00	3.00	4.00
		1.6	Other charges	2.00	3.00	3.00	4.00	5.00	5.00	5.00
		1.7	Purchase of Furniture	3.00	2.00			3.00	1.00	1.00
<b>Sub Total</b>				<b>20.00</b>	<b>18.00</b>	<b>18.00</b>	<b>18.00</b>	<b>23.00</b>	<b>26.00</b>	<b>24.00</b>
2	Parking, Ticket, Garden & Public Amenities	2.1	Security	10.00	12.00	14.00	16.00	18.00	20.00	22.00
		2.2	Purchase of Computer	2.00	2.00	-	-	-	2.00	2.00
		2.3	Ticket Printing & Stationary	3.00	3.00	3.00	3.00	3.00	4.00	4.00
		2.4	Maintenance of lawn	40.00	45.00	50.00	55.00	60.00	65.00	70.00
		2.5	Maintenance of public toilet, Cleaning of Garden Path etc.	10.00	11.00	12.00	13.00	14.00	15.00	16.00
		2.6	Maintenance of Ticket Counter Building/Public Toilet Pagodas	5.00	6.00	7.00	8.00	9.00	10.00	10.00
		2.7	Electricity Bill	3.00	4.00	5.00	6.00	7.00	8.00	8.00
		2.8	Disposal of garbage, Sanitation & Hygiene	5.00	5.00	5.00	5.00	6.00	6.00	6.00
		2.9	Contingency and other charges	5.00	5.00	6.00	6.00	7.00	7.00	8.00
		2.10	Maintenance of Water Supply System	5.00	5.00	6.00	6.00	7.00	7.00	8.00
<b>Sub Total</b>				<b>88.00</b>	<b>98.00</b>	<b>108.00</b>	<b>118.00</b>	<b>131.00</b>	<b>144.00</b>	<b>154.00</b>
3	Zoo Zone Garden and Public Amenities	3.1	Security	9.00	9.00	10.00	10.00	10.00	10.00	10.00
		3.2	Maintenance of lawn	20.00	25.00	30.00	35.00	40.00	45.00	50.00
		3.3	Maintenance of public toilet, Cleaning of Garden Path etc.	10.00	11.00	12.00	13.00	14.00	15.00	16.00
		3.4	Maintenance of Public Toilet Pagodas	5.00	6.00	7.00	8.00	9.00	10.00	10.00
		3.5	Electricity Bill	3.00	3.00	3.00	3.00	3.00	4.00	4.00
		3.6	Disposal of garbage, Sanitation & Hygiene	3.00	3.00	4.00	4.00	4.00	5.00	5.00
		3.7	Contingency and other charges	3.00	3.00	3.00	4.00	4.00	4.00	4.00
		3.8	Maintenance of Water Supply System	3.00	3.00	3.00	4.00	4.00	4.00	4.00
<b>Sub Total</b>				<b>56.00</b>	<b>63.00</b>	<b>72.00</b>	<b>81.00</b>	<b>88.00</b>	<b>97.00</b>	<b>103.00</b>
4	Fodder Production Area	4.1	Purchase of seed and bio fertilizer	5.00	5.00	5.00	5.00	6.00	6.00	6.00
		4.2	Ploughing and preparation of beds and labour charges	3.00	3.00	4.00	4.00	4.00	4.00	4.00
		4.3	Machine and vehicle	5.00	-	-	3.00	-	-	2.00
		4.4	Labour charges/ watering, cutting and other charges	5.00	5.00	5.00	6.00	6.00	6.00	6.00
		4.5	Electricity bill	3.00	3.00	4.00	4.00	4.00	4.00	5.00
		4.6	Purchase of water supply system and maintenance	3.00	3.00	3.00	3.00	4.00	4.00	4.00
<b>Sub Total</b>				<b>24.00</b>	<b>19.00</b>	<b>21.00</b>	<b>25.00</b>	<b>24.00</b>	<b>24.00</b>	<b>27.00</b>
5	Safari Vehicle/ Transport Vehicle	5.1	Maintenance of Safari Vehicle	10.00	11.00	12.00	13.00	14.00	15.00	16.00
		5.2	Maintenance of Van & Other Vehicle	8.00	9.00	10.00	11.00	12.00	13.00	14.00
		5.3	POL	20.00	20.00	20.00	20.00	20.00	20.00	20.00

## PLAN PERIOD 2022-23 TO 2041-42

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
-	3.00	-		3.00	3.00	-	-	-	-	-	4.00	4.00	26.00
-	3.00	-	2.00	3.00	-	-	-	2.00	-	-	-	-	15.00
3.00	3.00	4.00	4.00	5.00	6.00	6.00	7.00	7.00	8.00	8.00	9.00	10.00	100.00
12.00	13.00	14.00	15.00	16.00	17.00	18.00	20.00	21.00	22.00	24.00	26.00	28.00	302.00
4.00	5.00	6.00	6.00	6.00	7.00	7.00	8.00	8.00	9.00	9.00	10.00	11.00	116.00
6.00	6.00	7.00	7.00	8.00	8.00	9.00	9.00	10.00	10.00	11.00	12.00	12.00	142.00
1.00	1.00	1.00	2.00	2.00	2.00						2.00	2.00	23.00
<b>26.00</b>	<b>34.00</b>	<b>32.00</b>	<b>36.00</b>	<b>43.00</b>	<b>43.00</b>	<b>40.00</b>	<b>44.00</b>	<b>48.00</b>	<b>49.00</b>	<b>52.00</b>	<b>63.00</b>	<b>67.00</b>	<b>724.00</b>
24.00	26.00	28.00	30.00	33.00	36.00	40.00	44.00	30.00	55.00	60.00	65.00	70.00	653.00
-	-	-	-	-	-	-	-	-	-	-	-	-	8.00
4.00	5.00	5.00	5.00	6.00	6.00	7.00	7.00	8.00	8.00	9.00	9.00	10.00	112.00
70.00	70.00	70.00	25.00	80.00	85.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	1625.00
17.00	18.00	19.00	20.00	22.00	23.00	24.00	25.00	27.00	28.00	29.00	30.00	30.00	403.00
10.00	10.00	10.00	10.00	10.00	10.00	12.00	12.00	12.00	13.00	13.00	15.00	15.00	207.00
8.00	9.00	9.00	10.00	10.00	11.00	12.00	13.00	14.00	15.00	15.00	15.00	16.00	198.00
6.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	10.00	10.00	139.00
8.00	9.00	10.00	10.00	10.00	10.00	11.00	11.00	11.00	12.00	12.00	13.00	13.00	184.00
8.00	9.00	9.00	9.00	10.00	10.00	10.00	9.00	9.00	9.00	10.00	9.00	10.00	165.00
<b>155.00</b>	<b>162.00</b>	<b>166.00</b>	<b>126.00</b>	<b>188.00</b>	<b>198.00</b>	<b>214.00</b>	<b>229.00</b>	<b>229.00</b>	<b>269.00</b>	<b>287.00</b>	<b>306.00</b>	<b>324.00</b>	<b>3694.00</b>
10.00	10.00	10.00	10.00	11.00	12.00	13.00	15.00	17.00	17.00	19.00	19.00	20.00	251.00
55.00	60.00	65.00	70.00	72.00	75.00	77.00	80.00	85.00	85.00	90.00	90.00	100.00	1249.00
17.00	18.00	19.00	20.00	20.00	21.00	21.00	22.00	22.00	23.00	24.00	24.00	25.00	367.00
10.00	10.00	10.00	10.00	10.00	11.00	11.00	12.00	12.00	13.00	13.00	14.00	14.00	205.00
4.00	5.00	5.00	5.00	5.00	6.00	6.00	7.00	7.00	8.00	8.00	9.00	10.00	108.00
5.00	5.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	6.00	6.00	7.00	7.00	102.00
4.00	4.00	4.00	5.00	5.00	5.00	6.00	6.00	7.00	7.00	8.00	8.00	9.00	103.00
4.00	4.00	4.00	4.00	5.00	6.00	6.00	6.00	7.00	7.00	8.00	9.00	9.00	104.00
<b>109.00</b>	<b>116.00</b>	<b>122.00</b>	<b>129.00</b>	<b>133.00</b>	<b>141.00</b>	<b>146.00</b>	<b>154.00</b>	<b>163.00</b>	<b>166.00</b>	<b>176.00</b>	<b>180.00</b>	<b>194.00</b>	<b>2489.00</b>
6.00	6.00	6.00	7.00	8.00	8.00	9.00	9.00	9.50	10.00	10.00	11.00	11.00	148.50
4.00	4.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	6.00	6.00	6.00	7.00	97.00
-	-	-	2.00	1.00	-	-	2.00	2.00	1.00	-	-	2.00	20.00
6.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	9.00	9.00	9.00	10.00	10.00	141.00
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	6.00	96.00
4.00	5.00	5.00	6.00	6.00	7.00	7.00	8.00	8.00	9.00	9.00	10.00	10.00	118.00
<b>25.00</b>	<b>26.00</b>	<b>27.00</b>	<b>32.00</b>	<b>32.00</b>	<b>32.00</b>	<b>35.00</b>	<b>38.00</b>	<b>39.50</b>	<b>41.00</b>	<b>40.00</b>	<b>43.00</b>	<b>46.00</b>	<b>620.50</b>
17.00	18.00	19.00	15.00	16.00	17.00	18.00	20.00	22.00	24.00	25.00	26.00	27.00	355.00
15.00	16.00	17.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	20.00	271.00
25.00	25.00	25.00	25.00	30.00	30.00	30.00	30.00	35.00	35.00	35.00	35.00	35.00	535.00

S. No.	Name of Section / Zone	Sub S.No.	Details of Work	2022-	2023-	2024-	2025-	2026-	2027-	2028-
				2023	2024	2025	2026	2027	2028	
		5.4	Maintenance of Vehicle Shed	2.00	2.00	2.00	2.00	2.00	2.00	2.00
		5.5	Safari Vehicle, Driver & Guide Charges	40.00	45.00	50.00	53.00	56.00	60.00	65.00
		5.6	Contingency and other charges	10.00	10.00	10.00	10.00	10.00	10.00	10.00
<b>Sub Total</b>				<b>90.00</b>	<b>97.00</b>	<b>104.00</b>	<b>109.00</b>	<b>114.00</b>	<b>120.00</b>	<b>127.00</b>
<b>6. Safari</b>										
6.1	Herbivore Safari	6.1.1	Animal Feed	15.00	16.00	17.00	18.00	19.00	20.00	21.00
		6.1.2	Sanitation, Hygiene and Cleaning	5.00	6.00	6.00	7.00	8.00	8.00	8.00
		6.1.3	Animal Upkeep	15.00	15.00	16.00	16.00	17.00	17.00	18.00
		6.1.4	Water & Electric Supply	5.00	6.00	6.00	6.00	7.00	7.00	8.00
		6.1.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		6.1.6	Misc Charges	3.00	3.00	3.00	3.00	3.00	3.00	3.00
<b>Sub Total</b>				<b>53.00</b>	<b>56.00</b>	<b>58.00</b>	<b>60.00</b>	<b>64.00</b>	<b>65.00</b>	<b>68.00</b>
6.2	Bear ( <i>Ursidae</i> ) Safari	6.2.1	Animal Feed	7.00	7.00	8.00	8.00	9.00	9.00	10.00
		6.2.2	Sanitation, Hygiene and Cleaning	3.00	4.00	4.00	4.00	5.00	5.00	5.00
		6.2.3	Animal Upkeep	6.00	7.00	7.00	8.00	8.00	9.00	9.00
		6.2.4	Water & Electric Supply	2.00	3.00	3.00	4.00	4.00	5.00	5.00
		6.2.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		6.2.6	Misc Charges	2.00	2.00	2.00	2.00	2.00	2.00	2.00
<b>Sub Total</b>				<b>30.00</b>	<b>33.00</b>	<b>34.00</b>	<b>36.00</b>	<b>38.00</b>	<b>40.00</b>	<b>41.00</b>
6.3	Tiger ( <i>Panthera tigris</i> ) Safari	6.3.1	Animal Feed	100.00	110.00	120.00	130.00	140.00	150.00	160.00
		6.3.2	Sanitation, Hygiene and Cleaning	3.00	4.00	4.00	4.00	5.00	5.00	5.00
		6.3.3	Animal Upkeep	4.00	5.00	5.00	6.00	6.00	6.00	7.00
		6.3.4	Water & Electric Supply	3.00	3.00	3.00	4.00	4.00	5.00	5.00
		6.3.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		6.3.6	Misc Charges	3.00	3.00	3.00	4.00	4.00	5.00	5.00
<b>Sub Total</b>				<b>123.00</b>	<b>135.00</b>	<b>145.00</b>	<b>158.00</b>	<b>169.00</b>	<b>181.00</b>	<b>192.00</b>
6.4	Lion ( <i>Panthera leo</i> ) Safari	6.4.1	Animal Feed	125.00	135.00	145.00	155.00	165.00	175.00	185.00
		6.4.2	Sanitation, Hygiene and Cleaning	3.00	3.00	3.00	4.00	4.00	4.00	5.00
		6.4.3	Animal Upkeep	4.00	4.50	5.00	5.50	6.00	6.50	7.00
		6.4.4	Water & Electric Supply	3.00	3.00	3.00	4.00	4.00	5.00	5.00
		6.4.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		6.4.6	Misc Charges	2.00	2.00	2.00	2.00	2.00	3.00	3.00
<b>Sub Total</b>				<b>147.00</b>	<b>157.50</b>	<b>168.00</b>	<b>180.50</b>	<b>191.00</b>	<b>203.50</b>	<b>215.00</b>
<b>7. Zoo</b>										
7.1	White Tiger ( <i>Panthera tigris tigris</i> )	7.1.1	Animal Feed	50.00	60.00	70.00	80.00	90.00	100.00	110.00
		7.1.2	Sanitation, Hygiene and Cleaning	2.00	3.00	3.00	3.00	4.00	4.00	5.00
		7.1.3	Animal Upkeep	4.00	4.00	5.00	5.00	6.00	6.00	6.00
		7.1.4	Water & Electric Supply	3.00	3.00	3.00	4.00	4.00	5.00	5.00
		7.1.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.1.6	Misc Charges	2.00	2.00	3.00	3.00	4.00	4.00	5.00
<b>Sub Total</b>				<b>71.00</b>	<b>82.00</b>	<b>94.00</b>	<b>105.00</b>	<b>118.00</b>	<b>129.00</b>	<b>141.00</b>
7.2	Asiatic Lion ( <i>Panthera leo persica</i> )	7.2.1	Animal Feed	50.00	60.00	70.00	80.00	90.00	100.00	110.00
		7.2.2	Sanitation, Hygiene and Cleaning	2.00	2.00	3.00	3.00	4.00	4.00	5.00
		7.2.3	Animal Upkeep	4.00	4.00	5.00	5.00	6.00	6.00	7.00
		7.2.4	Water & Electric Supply	2.00	2.00	2.00	3.00	3.00	3.00	4.00
		7.2.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.2.6	Misc Charges	2.00	2.00	2.00	2.00	3.00	3.00	3.00
<b>Sub Total</b>				<b>70.00</b>	<b>80.00</b>	<b>92.00</b>	<b>103.00</b>	<b>116.00</b>	<b>126.00</b>	<b>139.00</b>
7.3	Royal Bengal Tiger ( <i>Panthera tigris tigris</i> )	7.3.1	Animal Feed	50.00	60.00	70.00	80.00	90.00	100.00	110.00
		7.3.2	Sanitation, Hygiene and Cleaning	2.00	3.00	3.00	3.00	4.00	4.00	4.00

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	40.00
65.00	70.00	70.00	70.00	73.00	75.00	80.00	83.00	85.00	87.00	90.00	95.00	95.00	1407.00
10.00	10.00	10.00	12.00	12.00	13.00	13.00	14.00	14.00	15.00	15.00	16.00	16.00	240.00
<b>134.00</b>	<b>141.00</b>	<b>143.00</b>	<b>134.00</b>	<b>144.00</b>	<b>149.00</b>	<b>156.00</b>	<b>163.00</b>	<b>173.00</b>	<b>179.00</b>	<b>184.00</b>	<b>192.00</b>	<b>195.00</b>	<b>2848.00</b>
22.00	23.00	25.00	26.00	27.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00	40.00	527.00
9.00	10.00	10.00	10.00	10.00	10.00	12.00	12.00	12.00	13.00	13.00	15.00	15.00	199.00
18.00	19.00	20.00	20.00	25.00	22.00	22.00	24.00	24.00	26.00	26.00	28.00	28.00	416.00
9.00	10.00	10.00	10.00	10.00	10.00	12.00	12.00	12.00	12.00	14.00	14.00	14.00	194.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.50	4.50	4.50	4.00	5.00	5.00	73.50
<b>71.00</b>	<b>75.00</b>	<b>78.00</b>	<b>80.00</b>	<b>86.00</b>	<b>84.00</b>	<b>90.00</b>	<b>94.50</b>	<b>96.50</b>	<b>101.50</b>	<b>105.00</b>	<b>112.00</b>	<b>112.00</b>	<b>1609.50</b>
10.00	10.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	243.00
6.00	6.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	8.00	8.00	123.00
10.00	10.00	10.00	10.00	10.00	12.00	12.00	13.00	13.00	14.00	14.00	15.00	15.00	212.00
6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	8.00	8.00	9.00	123.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.50	3.50	3.50	3.50	3.50	52.50
<b>44.00</b>	<b>44.00</b>	<b>45.00</b>	<b>47.00</b>	<b>49.00</b>	<b>52.00</b>	<b>54.00</b>	<b>57.00</b>	<b>58.50</b>	<b>60.50</b>	<b>61.50</b>	<b>63.50</b>	<b>65.50</b>	<b>953.50</b>
170.00	180.00	200.00	210.00	220.00	230.00	240.00	250.00	260.00	270.00	280.00	290.00	300.00	4010.00
6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	9.00	123.00
7.00	8.00	8.00	8.00	9.00	9.00	9.00	9.00	10.00	10.00	11.00	11.00	11.00	159.00
6.00	6.00	7.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	9.00	9.00	124.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
6.00	7.00	7.00	7.00	7.00	3.00	8.00	8.00	8.00	8.00	8.00	9.00	9.00	122.00
<b>205.00</b>	<b>217.00</b>	<b>238.00</b>	<b>248.00</b>	<b>260.00</b>	<b>266.00</b>	<b>281.00</b>	<b>292.00</b>	<b>304.00</b>	<b>314.00</b>	<b>325.00</b>	<b>337.00</b>	<b>348.00</b>	<b>4738.00</b>
195.00	205.00	215.00	220.00	230.00	240.00	250.00	260.00	270.00	280.00	290.00	300.00	300.00	4340.00
5.00	6.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	113.00
7.50	8.00	8.50	8.50	9.00	9.00	9.50	9.50	10.00	10.00	10.00	11.00	11.00	160.00
6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	9.00	9.00	9.00	129.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
3.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	6.00	79.00
<b>226.50</b>	<b>239.00</b>	<b>250.50</b>	<b>255.50</b>	<b>266.00</b>	<b>278.00</b>	<b>289.50</b>	<b>299.50</b>	<b>311.00</b>	<b>322.00</b>	<b>333.00</b>	<b>344.00</b>	<b>344.00</b>	<b>5021.00</b>
120.00	130.00	140.00	145.00	150.00	155.00	160.00	165.00	170.00	180.00	190.00	200.00	210.00	2675.00
5.00	6.00	7.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	8.00	8.00	118.00
7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	9.00	10.00	10.00	10.50	10.50	149.00
6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	9.00	92.00	9.00	209.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
5.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	10.00	10.00	123.00
<b>153.00</b>	<b>165.00</b>	<b>177.00</b>	<b>184.00</b>	<b>189.00</b>	<b>194.00</b>	<b>202.00</b>	<b>208.00</b>	<b>213.00</b>	<b>225.00</b>	<b>236.00</b>	<b>330.50</b>	<b>257.50</b>	<b>3474.00</b>
120.00	130.00	140.00	150.00	160.00	180.00	200.00	220.00	230.00	240.00	250.00	260.00	270.00	3110.00
5.00	6.00	6.00	7.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	9.00	116.00
7.00	8.00	8.00	8.00	9.00	9.00	10.00	10.00	10.00	11.00	12.00	12.00	12.00	163.00
4.00	4.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	92.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
3.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	6.00	80.00
<b>149.00</b>	<b>162.00</b>	<b>173.00</b>	<b>184.00</b>	<b>195.00</b>	<b>216.00</b>	<b>238.00</b>	<b>258.00</b>	<b>269.00</b>	<b>281.00</b>	<b>293.00</b>	<b>303.00</b>	<b>314.00</b>	<b>3761.00</b>
120.00	130.00	140.00	145.00	150.00	160.00	170.00	180.00	190.00	200.00	210.00	220.00	230.00	2805.00
5.00	5.00	5.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	9.00	108.00

S. No.	Name of Section / Zone	Sub S.No.	Details of Work	2022-	2023-	2024-	2025-	2026-	2027-	2028-
				2023	2024	2025	2026	2027	2028	2029
		7.3.3	Animal Upkeep	4.00	4.00	4.00	5.00	5.00	5.00	6.00
		7.3.4	Water & Electric Supply	2.00	3.00	3.00	3.00	4.00	4.00	4.00
		7.3.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.3.6	Misc Charges	2.00	2.00	2.00	3.00	3.00	3.00	4.00
<b>Sub Total</b>				<b>70.00</b>	<b>82.00</b>	<b>92.00</b>	<b>104.00</b>	<b>116.00</b>	<b>126.00</b>	<b>138.00</b>
7.4	Leopard ( <i>Panthera pardus</i> )	7.4.1	Animal Feed	50.00	60.00	70.00	80.00	90.00	100.00	110.00
		7.4.2	Sanitation, Hygiene and Cleaning	2.00	2.00	2.00	2.00	3.00	3.00	3.00
		7.4.3	Animal Upkeep	4.00	4.00	5.00	5.00	5.00	5.00	6.00
		7.4.4	Water & Electric Supply	2.00	2.00	2.00	3.00	3.00	3.00	4.00
		7.4.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.4.6	Misc Charges	2.00	2.00	2.00	3.00	3.00	3.00	4.00
<b>Sub Total</b>				<b>70.00</b>	<b>80.00</b>	<b>91.00</b>	<b>103.00</b>	<b>114.00</b>	<b>124.00</b>	<b>137.00</b>
7.5	Himalayan Bear ( <i>Ursus thibetanus</i> )	7.5.1	Animal Feed	25.00	30.00	35.00	40.00	45.00	50.00	55.00
		7.5.2	Sanitation, Hygiene and Cleaning	2.00	2.00	2.00	3.00	3.00	4.00	4.00
		7.5.3	Animal Upkeep	4.00	4.00	5.00	5.00	6.00	6.00	7.00
		7.5.4	Water & Electric Supply	2.00	3.00	3.00	4.00	4.00	5.00	5.00
		7.5.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.5.6	Misc Charges	2.00	2.00	3.00	3.00	4.00	4.00	5.00
<b>Sub Total</b>				<b>45.00</b>	<b>51.00</b>	<b>58.00</b>	<b>65.00</b>	<b>72.00</b>	<b>79.00</b>	<b>86.00</b>
7.6	Hyena ( <i>Hyaena hyaena</i> )	7.6.1	Animal Feed	50.00	60.00	70.00	80.00	90.00	100.00	110.00
		7.6.2	Sanitation, Hygiene and Cleaning	2.00	3.00	3.00	3.00	4.00	4.00	4.00
		7.6.3	Animal Upkeep	4.00	4.00	5.00	5.00	5.00	6.00	6.00
		7.6.4	Water & Electric Supply	3.00	3.00	3.00	4.00	4.00	4.00	5.00
		7.6.5	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.6.6	Misc Charges	2.00	3.00	3.00	4.00	4.00	4.00	5.00
<b>Sub Total</b>				<b>61.00</b>	<b>73.00</b>	<b>94.00</b>	<b>106.00</b>	<b>117.00</b>	<b>128.00</b>	<b>140.00</b>
7.7	Wolf ( <i>Canis lupus</i> )	7.7.1	Animal Feed	50.00	60.00	70.00	80.00	90.00	100.00	110.00
		7.7.2	Sanitation, Hygiene and Cleaning	2.00	2.00	3.00	3.00	3.00	4.00	4.00
		7.7.3	Animal Upkeep	4.00	4.50	5.00	5.50	6.00	6.50	7.00
		7.7.4	Water & Electric Supply	2.50	3.00	3.50	4.00	4.50	5.00	5.50
		7.7.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.7.6	Misc Charges	2.50	3.00	3.50	4.00	4.50	5.00	5.50
<b>Sub Total</b>				<b>61.00</b>	<b>72.50</b>	<b>85.00</b>	<b>106.50</b>	<b>118.00</b>	<b>130.50</b>	<b>142.00</b>
7.8	Jackal ( <i>Canis aureus</i> )	7.8.1	Animal Feed	20.00	25.00	30.00	35.00	40.00	45.00	50.00
		7.8.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.8.3	Animal Upkeep	4.00	4.50	5.00	5.50	6.00	6.50	7.00
		7.8.4	Water & Electric Supply	2.50	3.00	3.50	4.00	4.50	5.00	5.50
		7.8.5	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.8.6	Misc Charges	2.50	3.00	3.50	4.00	4.50	5.00	5.50
<b>Sub Total</b>				<b>31.00</b>	<b>38.00</b>	<b>55.00</b>	<b>62.00</b>	<b>69.00</b>	<b>76.00</b>	<b>83.00</b>
7.9	Wild Dog ( <i>Cuon alpinus</i> )	7.9.1	Animal Feed	15.00	20.00	25.00	30.00	35.00	40.00	45.00
		7.9.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.9.3	Animal Upkeep	4.00	4.50	5.00	5.50	6.00	6.50	7.00
		7.9.4	Water & Electric Supply	2.50	3.00	3.50	4.00	4.50	5.00	5.50
		7.9.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.9.6	Misc Charges	2.50	3.00	3.50	4.00	4.50	5.00	5.50
<b>Sub Total</b>				<b>26.00</b>	<b>33.00</b>	<b>40.00</b>	<b>57.00</b>	<b>64.00</b>	<b>71.00</b>	<b>78.00</b>
7.10	Fox ( <i>Cerdocyon thous</i> )	7.10.1	Animal Feed	12.00	14.00	16.00	18.00	20.00	22.00	24.00
		7.10.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.10.3	Animal Upkeep	4.00	4.50	5.00	5.50	6.00	6.50	7.00
		7.10.4	Water & Electric Supply	2.50	3.00	3.50	4.00	4.50	5.00	5.50
		7.10.5	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.10.6	Misc Charges	2.50	3.00	3.50	4.00	4.50	5.00	5.50
<b>Sub Total</b>				<b>23.00</b>	<b>27.00</b>	<b>41.00</b>	<b>45.00</b>	<b>49.00</b>	<b>53.00</b>	<b>57.00</b>

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	10.00	10.00	10.00	138.00
5.00	5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	9.00	107.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
4.00	4.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	93.00
<b>150.00</b>	<b>160.00</b>	<b>172.00</b>	<b>178.00</b>	<b>184.00</b>	<b>195.00</b>	<b>206.00</b>	<b>218.00</b>	<b>229.00</b>	<b>240.00</b>	<b>253.00</b>	<b>263.00</b>	<b>275.00</b>	<b>3451.00</b>
120.00	130.00	140.00	140.00	150.00	160.00	170.00	180.00	190.00	200.00	210.00	220.00	230.00	2800.00
4.00	4.00	4.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	88.00
6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	9.00	10.00	10.00	138.00
4.00	4.00	5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	8.00	82.00	171.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
4.00	4.00	5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	8.00	8.00	9.00	99.00
<b>148.00</b>	<b>158.00</b>	<b>171.00</b>	<b>172.00</b>	<b>182.00</b>	<b>195.00</b>	<b>205.00</b>	<b>216.00</b>	<b>229.00</b>	<b>239.00</b>	<b>251.00</b>	<b>263.00</b>	<b>348.00</b>	<b>3496.00</b>
60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00	100.00	105.00	110.00	115.00	120.00	1450.00
4.00	5.00	5.00	5.00	6.00	6.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	107.00
7.00	8.00	8.00	9.00	9.00	9.00	9.00	10.00	10.00	11.00	11.00	11.00	11.00	160.00
6.00	6.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	119.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
5.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	10.00	10.00	123.00
<b>92.00</b>	<b>100.00</b>	<b>106.00</b>	<b>113.00</b>	<b>119.00</b>	<b>124.00</b>	<b>131.00</b>	<b>137.00</b>	<b>143.00</b>	<b>151.00</b>	<b>156.00</b>	<b>163.00</b>	<b>168.00</b>	<b>2159.00</b>
120.00	130.00	140.00	140.00	145.00	150.00	150.00	150.00	155.00	155.00	155.00	160.00	160.00	2470.00
5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	111.00
7.00	7.00	8.00	8.00	8.00	8.00	9.00	9.00	9.00	9.00	10.00	10.00	10.00	147.00
5.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	120.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	113.00
<b>152.00</b>	<b>163.00</b>	<b>176.00</b>	<b>177.00</b>	<b>182.00</b>	<b>189.00</b>	<b>191.00</b>	<b>191.00</b>	<b>196.00</b>	<b>198.00</b>	<b>199.00</b>	<b>204.00</b>	<b>204.00</b>	<b>3141.00</b>
120.00	130.00	140.00	140.00	140.00	140.00	150.00	150.00	150.00	160.00	160.00	160.00	160.00	2460.00
4.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	8.00	9.00	101.00
7.50	8.00	8.50	9.00	9.00	9.00	9.50	9.50	9.50	10.00	10.00	10.00	10.50	158.50
6.00	6.50	7.00	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	123.50
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
6.00	6.50	7.00	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	123.50
<b>153.50</b>	<b>166.00</b>	<b>177.50</b>	<b>178.00</b>	<b>178.00</b>	<b>179.00</b>	<b>190.50</b>	<b>190.50</b>	<b>191.50</b>	<b>203.00</b>	<b>203.00</b>	<b>204.00</b>	<b>206.50</b>	<b>3136.50</b>
55.00	60.00	65.00	65.00	70.00	70.00	70.00	75.00	75.00	80.00	80.00	85.00	85.00	1180.00
5.50	6.00	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.50	8.50	119.00
7.50	8.00	8.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.50	8.50	139.00
6.00	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	8.50	125.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
6.00	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	8.50	125.00
<b>90.00</b>	<b>97.00</b>	<b>104.00</b>	<b>103.00</b>	<b>108.00</b>	<b>109.00</b>	<b>110.00</b>	<b>115.00</b>	<b>116.00</b>	<b>122.00</b>	<b>122.00</b>	<b>129.00</b>	<b>129.00</b>	<b>1868.00</b>
50.00	55.00	60.00	60.00	60.00	65.00	65.00	65.00	70.00	70.00	70.00	75.00	75.00	1050.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	115.00
7.50	8.00	8.50	8.50	8.50	9.00	9.00	9.00	9.50	9.50	9.50	10.00	10.00	155.00
6.00	6.50	7.00	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	123.50
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
6.00	6.50	7.00	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	123.50
<b>85.00</b>	<b>92.00</b>	<b>99.00</b>	<b>99.00</b>	<b>99.00</b>	<b>105.00</b>	<b>106.00</b>	<b>106.00</b>	<b>112.00</b>	<b>113.00</b>	<b>113.00</b>	<b>119.00</b>	<b>120.00</b>	<b>1737.00</b>
26.00	28.00	30.00	30.00	30.00	35.00	35.00	40.00	40.00	45.00	45.00	50.00	50.00	610.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.00	7.50	7.50	8.00	8.00	114.50
7.50	8.00	8.50	8.50	8.50	9.00	9.00	9.00	9.50	9.50	10.00	10.00	10.00	155.50
6.00	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.50	8.50	9.00	126.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
6.00	6.50	7.00	7.00	7.00	7.50	7.50	8.00	8.00	8.50	8.50	9.00	9.00	127.50
<b>61.00</b>	<b>65.00</b>	<b>69.00</b>	<b>69.00</b>	<b>69.00</b>	<b>76.00</b>	<b>76.00</b>	<b>81.50</b>	<b>82.50</b>	<b>88.50</b>	<b>89.50</b>	<b>95.50</b>	<b>96.00</b>	<b>1313.50</b>

S. No.	Name of Section / Zone	Sub S.No.	Details of Work	2022-	2023-	2024-	2025-	2026-	2027-	2028-
				2023	2024	2025	2026	2027	2028	
7.11	Gaur ( <i>Bos gaurus</i> )	7.11.1	Animal Feed	20.00	22.00	24.00	26.00	28.00	30.00	32.00
		7.11.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.11.3	Animal Upkeep	4.00	4.50	5.00	5.50	6.00	6.50	7.00
		7.11.4	Water & Electric Supply	2.50	3.00	3.50	4.00	4.50	5.00	5.50
		7.11.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.11.6	Misc Charges	2.50	3.00	3.50	4.00	4.50	5.00	5.50
<b>Sub Total</b>				<b>31.00</b>	<b>35.00</b>	<b>39.00</b>	<b>53.00</b>	<b>57.00</b>	<b>61.00</b>	<b>65.00</b>
7.12	Black Buck ( <i>Antelope cervicapra</i> )	7.12.1	Animal Feed	15.00	16.00	17.00	18.00	20.00	22.00	24.00
		7.12.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.12.3	Animal Upkeep	3.00	3.00	3.50	3.50	4.00	4.00	4.50
		7.12.4	Water & Electric Supply	1.00	1.20	1.30	1.40	1.50	1.60	1.70
		7.12.5	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.12.6	Misc Charges	1.00	1.20	1.30	1.40	1.50	1.60	1.70
<b>Sub Total</b>				<b>22.00</b>	<b>23.90</b>	<b>36.10</b>	<b>37.80</b>	<b>41.00</b>	<b>43.70</b>	<b>46.90</b>
7.13	Wild Buffalo ( <i>Bubalus arnee</i> ) Breeding Centre	7.13.1	Animal Feed	25.00	27.00	30.00	35.00	37.00	40.00	42.00
		7.13.2	Sanitation, Hygiene and Cleaning	3.00	3.50	4.00	4.50	5.00	5.50	6.00
		7.13.3	Animal Upkeep	3.00	3.00	3.50	3.50	4.00	4.00	4.50
		7.13.4	Water & Electric Supply	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.13.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.13.6	Misc Charges	1.50	1.50	2.00	2.00	2.50	2.50	3.00
<b>Sub Total</b>				<b>44.50</b>	<b>47.50</b>	<b>52.50</b>	<b>58.50</b>	<b>62.50</b>	<b>66.50</b>	<b>70.50</b>
7.14	Wild Buffalo ( <i>Bubalus arnee</i> ) Enclosure	7.14.1	Animal Shifting	-	-	-	-	-	-	-
		7.14.2	Animal Feed	-	-	-	30.00	35.00	37.00	40.00
		7.14.3	Sanitation, Hygiene and Cleaning	-	-	-	4.00	4.50	5.00	5.50
		7.14.4	Animal Upkeep	-	-	-	3.50	3.50	4.00	4.00
		7.14.5	Water & Electric Supply	-	-	-	3.00	3.50	4.00	4.50
		7.14.6	Maintenance of Enclosure	-	-	-	-	-	-	-
		7.14.7	Misc Charges	-	-	-	2.00	2.00	2.50	2.50
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>42.50</b>	<b>48.50</b>	<b>52.50</b>	<b>56.50</b>
7.15	Sambar ( <i>Rusa unicolor</i> )	7.15.1	Animal Feed	15.00	16.00	17.00	18.00	20.00	22.00	24.00
		7.15.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.15.3	Animal Upkeep	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.15.4	Water & Electric Supply	1.00	1.20	1.30	1.40	1.50	1.60	1.70
		7.15.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.15.6	Misc Charges	1.00	1.20	1.30	1.40	1.50	1.60	1.70
<b>Sub Total</b>				<b>21.00</b>	<b>23.40</b>	<b>25.60</b>	<b>37.80</b>	<b>41.00</b>	<b>44.20</b>	<b>47.40</b>
7.16	Blue Bull ( <i>Boselaphus tragocamelus</i> )	7.16.1	Animal Feed	15.00	16.00	17.00	18.00	20.00	22.00	24.00
		7.16.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.16.3	Animal Upkeep	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.16.4	Water & Electric Supply	1.00	1.20	1.30	1.40	1.50	1.60	1.70
		7.16.5	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.16.6	Misc Charges	1.00	1.20	1.30	1.40	1.50	1.60	1.70
<b>Sub Total</b>				<b>21.00</b>	<b>23.40</b>	<b>35.60</b>	<b>37.80</b>	<b>41.00</b>	<b>44.20</b>	<b>47.40</b>
7.17	Spotted Deer ( <i>Axis axis</i> )	7.17.1	Animal Feed	12.00	13.00	14.00	15.00	16.00	17.00	18.00
		7.17.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.17.3	Animal Upkeep	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.17.4	Water & Electric Supply	1.00	1.20	1.30	1.40	1.50	1.60	1.70
		7.17.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.17.6	Misc Charges	1.00	1.20	1.30	1.40	1.50	1.60	1.70
<b>Sub Total</b>				<b>18.00</b>	<b>20.40</b>	<b>22.60</b>	<b>34.80</b>	<b>37.00</b>	<b>39.20</b>	<b>41.40</b>
7.18	Chinkara ( <i>Gazella bennettii</i> )	7.18.1	Animal Feed	8.00	9.00	10.00	11.00	12.00	13.00	14.00
		7.18.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.18.3	Animal Upkeep	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.18.4	Water & Electric Supply	1.00	1.20	1.30	1.40	1.50	1.60	1.70
		7.18.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.18.6	Misc Charges	1.00	1.20	1.30	1.40	1.50	1.60	1.70
<b>Sub Total</b>				<b>14.00</b>	<b>16.40</b>	<b>18.60</b>	<b>30.80</b>	<b>33.00</b>	<b>35.20</b>	<b>37.40</b>

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
34.00	36.00	38.00	38.00	40.00	42.00	44.00	46.00	48.00	50.00	52.00	56.00	58.00	764.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	115.00
7.50	8.00	8.50	8.50	8.50	9.00	9.00	9.00	9.50	9.50	9.50	10.00	10.00	155.00
6.00	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	8.50	125.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
6.00	6.50	7.00	7.00	7.00	7.50	7.50	8.00	8.00	8.50	8.50	9.00	9.00	127.50
<b>69.00</b>	<b>73.00</b>	<b>77.00</b>	<b>77.00</b>	<b>79.00</b>	<b>83.00</b>	<b>85.00</b>	<b>87.50</b>	<b>91.00</b>	<b>93.50</b>	<b>95.50</b>	<b>101.50</b>	<b>103.50</b>	<b>1456.50</b>
26.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00	45.00	50.00	52.00	54.00	56.00	653.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	115.00
4.50	5.00	5.00	5.00	5.00	5.50	5.50	5.50	6.00	6.00	6.00	6.50	6.50	97.50
1.80	1.90	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.50	2.50	2.50	2.70	38.20
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
1.80	1.90	2.00	2.00	2.00	2.10	2.20	2.30	2.40	2.40	2.50	2.50	2.50	38.30
<b>49.60</b>	<b>52.80</b>	<b>55.50</b>	<b>57.50</b>	<b>59.50</b>	<b>62.60</b>	<b>64.90</b>	<b>67.00</b>	<b>73.10</b>	<b>78.40</b>	<b>80.50</b>	<b>83.50</b>	<b>85.70</b>	<b>1122.00</b>
45.00	47.00	50.00	55.00	55.00	60.00	60.00	65.00	65.00	70.00	70.00	75.00	75.00	1028.00
6.50	7.00	7.50	7.50	7.50	8.00	8.00	8.00	8.50	8.50	8.50	9.00	9.00	135.00
4.50	5.00	5.00	5.00	5.00	5.50	5.50	5.50	6.00	6.00	6.50	6.50	7.00	98.50
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.00	7.50	7.50	7.50	8.00	114.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
3.00	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.50	4.50	5.00	5.00	5.00	68.00
<b>74.50</b>	<b>78.50</b>	<b>82.50</b>	<b>87.50</b>	<b>87.50</b>	<b>94.50</b>	<b>94.50</b>	<b>99.50</b>	<b>101.00</b>	<b>106.50</b>	<b>107.50</b>	<b>113.00</b>	<b>114.00</b>	<b>1643.50</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
42.00	45.00	47.00		49.00	50.00	50.00	50.00	55.00	55.00	55.00	60.00	60.00	760.00
6.00	6.50	7.00	7.00	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.00	113.00
4.50	4.50	5.00	-	5.00	5.00	5.00	5.50	5.50	5.50	6.00	6.00	6.00	78.50
5.00	5.50	6.00	6.00	6.00	6.00	6.50	6.50	7.00	7.00	7.00	7.50	7.50	98.50
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	130.00
3.00	3.00	3.50		3.50	3.50	4.00	4.00	4.00	4.50	4.50	4.50	5.00	56.00
<b>70.50</b>	<b>74.50</b>	<b>78.50</b>	<b>23.00</b>	<b>80.50</b>	<b>81.50</b>	<b>82.50</b>	<b>83.50</b>	<b>89.00</b>	<b>89.50</b>	<b>90.50</b>	<b>96.00</b>	<b>96.50</b>	<b>1236.00</b>
26.00	28.00	30.00	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	288.50
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	8.00	8.00	8.00	115.50
5.50	6.00	6.50	2.00	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.70	66.00
1.80	1.90	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.30	2.30	2.50	2.50	37.60
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
1.80	1.90	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.30	2.30	2.50	2.50	37.60
<b>50.60</b>	<b>53.80</b>	<b>57.00</b>	<b>29.00</b>	<b>29.00</b>	<b>30.10</b>	<b>30.60</b>	<b>30.70</b>	<b>31.80</b>	<b>32.10</b>	<b>32.70</b>	<b>33.70</b>	<b>33.70</b>	<b>715.20</b>
26.00	28.00	30.00	30.00	30.00	35.00	35.00	40.00	40.00	45.00	45.00	50.00	50.00	616.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	115.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	115.00
1.80	1.90	2.00	2.00	2.00	2.20	2.50	2.50	2.60	2.80	3.00	3.00	3.50	41.50
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
1.80	1.90	2.00	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.00	3.50	3.50	42.90
<b>50.60</b>	<b>53.80</b>	<b>57.00</b>	<b>57.00</b>	<b>57.00</b>	<b>63.70</b>	<b>64.00</b>	<b>69.00</b>	<b>70.60</b>	<b>75.80</b>	<b>76.00</b>	<b>82.50</b>	<b>83.00</b>	<b>1110.40</b>
19.00	20.00	21.00	21.00	21.00	22.00	22.00	25.00	25.00	25.00	30.00	30.00	30.00	416.00
5.50	6.00	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	8.50	8.50	119.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	115.00
1.80	1.90	2.00	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	3.50	43.40
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
1.80	1.90	2.00	2.00	2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.50	3.50	42.60
<b>43.60</b>	<b>45.80</b>	<b>48.00</b>	<b>48.50</b>	<b>48.50</b>	<b>50.70</b>	<b>51.40</b>	<b>54.60</b>	<b>55.80</b>	<b>56.50</b>	<b>62.20</b>	<b>63.50</b>	<b>63.50</b>	<b>906.00</b>
15.00	16.00	17.00	17.00	17.00	20.00	20.00	22.00	22.00	24.00	24.00	25.00	25.00	341.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	7.50	8.00	8.00	115.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	8.00	8.00	8.00	115.50
1.80	1.90	2.00	2.00	2.00	2.20	2.20	2.50	2.50	2.50	3.00	3.00	3.00	40.30
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
1.80	1.90	2.00	2.00	2.00	2.20	2.20	2.40	2.40	2.50	2.50	2.50	2.60	38.70
<b>39.60</b>	<b>41.80</b>	<b>44.00</b>	<b>44.00</b>	<b>44.00</b>	<b>48.40</b>	<b>48.40</b>	<b>50.90</b>	<b>51.90</b>	<b>54.00</b>	<b>55.00</b>	<b>56.50</b>	<b>56.60</b>	<b>820.50</b>

S. No.	Name of Section / Zone	Sub S.No.	Details of Work	2022-	2023-	2024-	2025-	2026-	2027-	2028-
				2023	2024	2025	2026	2027	2028	
7.19	Barking Deer ( <i>Muntiacus</i> )	7.19.1	Animal Feed	8.00	9.00	10.00	11.00	12.00	13.00	14.00
		7.19.2	Sanitation, Hygiene and Cleaning	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.19.3	Animal Upkeep	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.19.4	Water & Electric Supply	1.00	1.20	1.30	1.40	1.50	1.60	1.70
		7.19.5	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.19.6	Misc Charges	1.00	1.20	1.30	1.40	1.50	1.60	1.70
<b>Sub Total</b>				<b>14.00</b>	<b>16.40</b>	<b>28.60</b>	<b>30.80</b>	<b>33.00</b>	<b>35.20</b>	<b>37.40</b>
7.20	Mouse Deer ( <i>Tragulidae</i> )	7.20.1	Animal Shifting	-	-	1.00	-	-	-	-
		7.20.2	Animal Feed	-	-	8.00	9.00	10.00	11.00	12.00
		7.20.3	Sanitation, Hygiene and Cleaning	-	-	2.00	2.50	3.00	3.50	4.00
		7.20.4	Animal Upkeep	-	-	2.00	2.50	3.00	3.50	4.00
		7.20.5	Water & Electric Supply	-	-	1.00	1.20	1.30	1.40	1.50
		7.20.6	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.20.7	Misc Charges	-	-	1.00	1.20	1.30	1.40	1.50
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>15.00</b>	<b>16.40</b>	<b>18.60</b>	<b>30.80</b>	<b>33.00</b>
7.21	Common Palm Civet ( <i>Paradoxurus hermaphroditus</i> )	7.21.1	Animal Feed	5.00	5.50	5.50	6.00	6.00	6.50	6.50
		7.21.2	Sanitation, Hygiene and Cleaning	1.00	1.00	1.00	1.25	1.25	1.25	1.50
		7.21.3	Animal Upkeep	1.00	1.10	1.10	1.20	1.20	1.30	1.30
		7.21.4	Water & Electric Supply	0.50	0.60	0.70	0.80	0.90	1.00	1.10
		7.21.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.21.6	Misc Charges	0.50	0.50	0.60	0.60	0.70	0.70	0.80
<b>Sub Total</b>				<b>8.00</b>	<b>8.70</b>	<b>8.90</b>	<b>19.85</b>	<b>20.05</b>	<b>20.75</b>	<b>21.20</b>
7.22	Mongoose ( <i>Herpestes edwardsii</i> )	7.22.1	Animal Shifting	-	1.00	-	-	-	-	-
		7.22.2	Animal Feed	-	2.50	5.50	5.50	6.00	6.00	6.50
		7.22.3	Sanitation, Hygiene and Cleaning	-	0.50	1.00	1.00	1.25	1.25	1.25
		7.22.4	Animal Upkeep	-	0.50	1.10	1.10	1.20	1.20	1.30
		7.22.5	Water & Electric Supply	-	0.50	0.60	0.70	0.80	0.90	1.00
		7.22.6	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.22.7	Misc Charges	-	0.50	0.50	0.60	0.60	0.70	0.70
<b>Sub Total</b>				<b>0.00</b>	<b>5.50</b>	<b>8.70</b>	<b>18.90</b>	<b>19.85</b>	<b>20.05</b>	<b>20.75</b>
7.23	Four Horned Antelope ( <i>Tetracerus quadricornis</i> )	7.23.1	Animal Feed	7.00	7.50	8.00	8.50	9.00	9.50	10.00
		7.23.2	Sanitation, Hygiene and Cleaning	1.00	1.00	1.00	1.25	1.25	1.25	1.50
		7.23.3	Animal Upkeep	1.00	1.10	1.10	1.20	1.20	1.30	1.30
		7.23.4	Water & Electric Supply	0.50	0.60	0.70	0.80	0.90	1.00	1.10
		7.23.5	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.23.6	Misc Charges	0.50	0.50	0.60	0.60	0.70	0.70	0.80
<b>Sub Total</b>				<b>10.00</b>	<b>10.70</b>	<b>21.40</b>	<b>22.35</b>	<b>23.05</b>	<b>23.75</b>	<b>24.70</b>
7.24	Porcupine ( <i>Hystrix indica</i> )	7.24.1	Animal Feed	5.00	5.50	5.50	6.00	6.00	6.50	6.50
		7.24.2	Sanitation, Hygiene and Cleaning	1.00	1.00	1.00	1.25	1.25	1.25	1.50
		7.24.3	Animal Upkeep	1.00	1.10	1.10	1.20	1.20	1.30	1.30
		7.24.4	Water & Electric Supply	0.50	0.60	0.70	0.80	0.90	1.00	1.10
		7.24.5	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.24.6	Misc Charges	0.50	0.50	0.60	0.60	0.70	0.70	0.80
<b>Sub Total</b>				<b>8.00</b>	<b>8.70</b>	<b>8.90</b>	<b>19.85</b>	<b>20.05</b>	<b>20.75</b>	<b>21.20</b>
7.25	Honey badger ( <i>Mellivora capensis</i> )	7.25.1	Animal Shifting	-	1.00	-	-	-	-	-
		7.25.2	Animal Feed	-	5.50	5.50	6.00	6.00	6.50	6.50
		7.25.3	Sanitation, Hygiene and Cleaning	-	1.00	1.00	1.25	1.25	1.25	1.50
		7.25.4	Animal Upkeep	-	1.10	1.10	1.20	1.20	1.30	1.30
		7.25.5	Water & Electric Supply	-	0.60	0.70	0.80	0.90	1.00	1.10
		7.25.6	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.25.7	Misc Charges	-	0.50	0.60	0.60	0.70	0.70	0.80
<b>Sub Total</b>				<b>0.00</b>	<b>9.70</b>	<b>8.90</b>	<b>19.85</b>	<b>20.05</b>	<b>20.75</b>	<b>21.20</b>

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
15.00	16.00	17.00	17.00	17.00	17.00	20.00	20.00	20.00	22.00	22.00	25.00	25.00	330.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	8.00	8.00	8.00	115.50
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	8.00	8.00	8.00	115.50
1.80	1.90	2.00	2.00	2.00	2.20	2.20	2.30	2.30	2.40	2.40	2.50	2.50	38.20
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
1.80	1.90	2.00	2.00	2.00	2.20	2.20	2.50	2.50	2.80	2.80	3.00	3.00	40.40
<b>39.60</b>	<b>41.80</b>	<b>44.00</b>	<b>44.00</b>	<b>44.00</b>	<b>45.40</b>	<b>48.40</b>	<b>48.80</b>	<b>49.80</b>	<b>52.20</b>	<b>53.20</b>	<b>56.50</b>	<b>56.50</b>	<b>819.60</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
13.00	14.00	15.00	15.00	15.00	15.00	15.00	17.00	17.00	18.00	18.00	19.00	19.00	260.00
4.50	5.00	5.50	5.50	5.50	5.50	6.00	6.00	6.50	6.50	6.50	7.00	7.00	92.00
4.50	5.00	5.50	-	-	5.50	6.00	6.00	6.00	7.50	7.50	8.00	8.00	84.50
1.60	1.70	1.80	1.80	1.80	1.80	2.00	2.00	2.20	2.20	2.50	2.50	2.50	32.80
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
1.60	1.70	1.80	-	-	1.80	1.80	2.00	2.00	2.00	2.00	2.20	2.50	27.80
<b>35.20</b>	<b>37.40</b>	<b>39.60</b>	<b>32.30</b>	<b>32.30</b>	<b>39.60</b>	<b>40.80</b>	<b>43.00</b>	<b>43.70</b>	<b>46.20</b>	<b>46.50</b>	<b>48.70</b>	<b>49.00</b>	<b>648.10</b>
6.00	6.00	6.00	6.00	6.00	6.50	6.50	7.00	7.00	7.50	7.50	8.00	8.00	129.00
1.50	1.50	2.00	2.00	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	39.75
1.40	1.40	1.50	1.50	1.50	2.00	2.00	2.00	2.50	2.50	2.50	3.00	3.00	35.00
1.20	1.30	1.40	1.40	1.40	1.60	1.60	1.70	1.70	1.80	1.80	2.00	2.00	26.50
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
0.80	0.90	10.00	1.00	1.00	1.00	1.10	1.10	1.10	1.50	1.50	1.50	1.70	28.60
<b>20.90</b>	<b>21.10</b>	<b>30.90</b>	<b>21.90</b>	<b>21.90</b>	<b>23.10</b>	<b>23.70</b>	<b>24.30</b>	<b>24.80</b>	<b>26.30</b>	<b>26.30</b>	<b>28.00</b>	<b>28.20</b>	<b>428.85</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
6.50	6.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.50	7.50	8.00	8.00	120.50
1.50	1.50	1.50	1.50	1.50	1.50	2.00	2.00	2.00	2.20	2.30	2.40	2.50	30.65
1.30	1.40	1.40	1.40	1.40	1.50	1.50	1.50	1.70	1.70	1.00	1.90	2.00	26.10
1.10	1.20	1.30	1.30	1.30	1.30	1.40	1.40	1.50	1.50	1.20	1.70	1.70	22.40
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
0.80	0.80	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.10	1.10	1.10	1.20	16.30
<b>21.20</b>	<b>20.90</b>	<b>21.10</b>	<b>21.10</b>	<b>21.10</b>	<b>21.20</b>	<b>22.90</b>	<b>22.90</b>	<b>23.20</b>	<b>24.00</b>	<b>23.10</b>	<b>25.10</b>	<b>25.40</b>	<b>386.95</b>
10.50	11.00	11.50	11.50	11.50	12.00	12.00	12.00	12.60	12.50	12.50	13.00	13.00	215.10
1.50	1.50	2.00	2.00	2.00	2.00	2.20	2.20	2.20	2.50	2.50	2.50	3.00	36.35
1.40	1.40	1.50	1.50	1.50	1.70	1.70	1.70	1.80	1.90	2.00	2.00	2.00	30.30
1.20	1.30	1.40	1.40	1.40	1.50	1.50	1.50	1.60	1.60	1.60	1.80	2.00	25.40
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
0.80	0.90	10.00	1.00	1.00	1.00	1.10	1.10	1.10	1.20	1.20	1.30	1.50	27.60
<b>25.40</b>	<b>26.10</b>	<b>36.40</b>	<b>27.40</b>	<b>27.40</b>	<b>28.20</b>	<b>28.50</b>	<b>28.50</b>	<b>29.30</b>	<b>29.70</b>	<b>29.80</b>	<b>30.60</b>	<b>31.50</b>	<b>514.75</b>
6.00	6.00	6.00	6.00	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	126.50
1.50	1.50	2.00	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.00	3.50	3.50	40.75
1.40	1.40	1.50	1.50	1.50	2.00	2.00	2.00	2.50	2.50	2.50	3.00	3.00	35.00
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.70	1.80	1.80	1.80	25.90
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
0.80	0.90	10.00	1.00	1.00	1.00	1.20	1.20	1.20	1.40	1.40	1.50	1.50	28.50
<b>20.90</b>	<b>21.10</b>	<b>30.90</b>	<b>21.90</b>	<b>22.00</b>	<b>23.50</b>	<b>23.80</b>	<b>23.80</b>	<b>25.40</b>	<b>25.60</b>	<b>25.70</b>	<b>27.30</b>	<b>27.30</b>	<b>426.65</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
6.00	6.00	6.00	6.00	6.00	6.50	6.50	7.00	7.00	7.50	7.50	8.00	8.00	124.00
1.50	1.50	2.00	2.00	2.00	2.00	2.50	2.50	2.50	2.80	2.80	3.00	3.00	37.35
1.40	1.40	1.50	1.50	1.50	1.70	1.70	1.90	1.90	2.00	2.00	2.20	2.20	30.10
1.20	1.30	1.40	1.40	1.40	1.50	1.50	1.60	1.60	1.60	1.70	1.70	1.80	24.80
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
0.80	0.90	10.00	1.00	1.00	1.10	1.10	1.20	1.20	1.30	1.40	1.40	1.50	27.80
<b>20.90</b>	<b>21.10</b>	<b>30.90</b>	<b>21.90</b>	<b>21.90</b>	<b>22.80</b>	<b>23.30</b>	<b>24.20</b>	<b>24.20</b>	<b>25.20</b>	<b>25.40</b>	<b>26.30</b>	<b>26.50</b>	<b>415.05</b>

S. No.	Name of Section / Zone	Sub S.No.	Details of Work	2022-	2023-	2024-	2025-	2026-	2027-	2028-
				2023	2024	2025	2026	2027	2028	
7.26	Open Butterfly ( <i>Rhopalocera</i> ) Park	7.26.1	Land Scaping and Upkeep	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.26.2	Water &Electric Supply	2.00	2.00	2.00	2.00	2.00	2.00	2.00
		7.26.3	Sanitation, Hygiene and Cleaning	1.00	1.00	1.00	1.10	1.10	1.20	1.20
		7.26.4	Misc Charges	3.00	3.00	3.00	3.00	3.50	3.50	3.50
<b>Sub Total</b>				<b>16.00</b>	<b>16.00</b>	<b>16.00</b>	<b>16.10</b>	<b>16.60</b>	<b>16.70</b>	<b>16.70</b>
7.27	Gray Langur ( <i>Semnopithecus</i> )	7.27.1	Animal Shifting	-	-	1.00	-	-	-	-
		7.27.2	Animal Feed	-	-	2.00	3.00	4.00	5.00	6.00
		7.27.3	Sanitation, Hygiene and Cleaning	-	-	1.50	1.50	2.00	2.00	2.50
		7.27.4	Animal Upkeep	-	-	1.00	1.50	2.00	2.50	2.50
		7.27.5	Water &Electric Supply	-	-	1.00	1.10	1.20	1.30	1.40
		7.27.6	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.27.7	Misc Charges	-	-	0.50	0.60	0.70	0.80	0.90
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>7.00</b>	<b>7.70</b>	<b>9.90</b>	<b>21.60</b>	<b>23.30</b>
7.28	Pig Tail Monkey ( <i>Macaca nemestrina</i> )	7.28.1	Animal Shifting	-	-	1.00	-	-	-	-
		7.28.2	Animal Feed	-	-	2.00	3.00	4.00	5.00	6.00
		7.28.3	Sanitation, Hygiene and Cleaning	-	-	1.50	1.50	2.00	2.00	2.50
		7.28.4	Animal Upkeep	-	-	1.00	1.50	2.00	2.50	2.50
		7.28.5	Water &Electric Supply	-	-	1.00	1.10	1.20	1.30	1.40
		7.28.6	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.28.7	Misc Charges	-	-	0.50	0.60	0.70	0.80	0.90
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>7.00</b>	<b>7.70</b>	<b>9.90</b>	<b>21.60</b>	<b>23.30</b>
7.29	Assamese Monkey ( <i>Macaca assamensis</i> )	7.29.1	Animal Shifting	-	-	1.00	-	-	-	-
		7.29.2	Animal Feed	-	-	2.00	3.00	4.00	5.00	6.00
		7.29.3	Sanitation, Hygiene and Cleaning	-	-	1.50	1.50	2.00	2.00	2.50
		7.29.4	Animal Upkeep	-	-	1.00	1.50	2.00	2.50	2.50
		7.29.5	Water &Electric Supply	-	-	1.00	1.10	1.20	1.30	1.40
		7.29.6	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.29.7	Misc Charges	-	-	0.50	0.60	0.70	0.80	0.90
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>7.00</b>	<b>7.70</b>	<b>9.90</b>	<b>21.60</b>	<b>23.30</b>
7.30	Rhesus Monkey ( <i>Macaca mulatta</i> )	7.30.1	Animal Shifting	-	-	1.00	-	-	-	-
		7.30.2	Animal Feed	-	-	2.00	3.00	4.00	5.00	6.00
		7.30.3	Sanitation, Hygiene and Cleaning	-	-	1.50	1.50	2.00	2.00	2.50
		7.30.4	Animal Upkeep	-	-	1.00	1.50	2.00	2.50	2.50
		7.30.5	Water &Electric Supply	-	-	1.00	1.10	1.20	1.30	1.40
		7.30.6	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.30.7	Misc Charges	-	-	0.50	0.60	0.70	0.80	0.90
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>7.00</b>	<b>7.70</b>	<b>9.90</b>	<b>21.60</b>	<b>23.30</b>
7.31	Walk-in Bird Aviary	7.31.1	Bird Purchase/Shifting	-	-	-	10.00	10.00	10.00	-
		7.31.2	Animal Feed	-	-	-	6.00	6.50	7.00	7.50
		7.31.3	Sanitation, Hygiene and Cleaning	-	-	-	2.50	2.50	3.00	3.00
		7.31.4	Animal Upkeep	-	-	-	1.00	1.25	1.25	1.25
		7.31.5	Water &Electric Supply	-	-	-	3.00	3.50	4.00	4.50
		7.31.6	Maintenance of Plant &Green Boundary	-	-	-	2.50	2.50	3.00	3.00
		7.31.7	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.31.8	Misc Charges	-	-	-	2.00	2.00	2.50	2.50
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>27.00</b>	<b>28.25</b>	<b>40.75</b>	<b>31.75</b>
7.32	Walk-in Wet Land Bird Aviary	7.32.1	Bird Purchase/Shifting	-	-	-	10.00	10.00	-	-
		7.32.2	Animal Feed	-	-	-	8.00	8.50	9.00	9.50
		7.32.3	Sanitation, Hygiene and Cleaning	-	-	-	3.00	3.00	3.50	3.50
		7.32.4	Animal Upkeep	-	-	-	1.00	1.25	1.25	1.25
		7.32.5	Water &Electric Supply	-	-	-	3.25	3.25	3.50	3.50
		7.32.6	Maintenance of Plant &Green Boundary	-	-	-	2.50	2.50	3.00	3.00
		7.32.7	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.32.8	Misc Charges	-	-	-	2.00	2.00	2.50	2.50
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>29.75</b>	<b>30.50</b>	<b>32.75</b>	<b>33.25</b>

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
2.00	2.00	2.00	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.00	3.50	3.50	47.50
1.30	1.30	1.50	1.50	1.50	1.70	1.70	1.70	2.00	2.00	2.00	2.20	2.20	30.20
4.00	4.00	4.00	4.00	4.00	4.50	4.50	4.50	5.00	5.00	5.00	5.50	5.50	82.00
<b>17.30</b>	<b>17.30</b>	<b>17.50</b>	<b>17.50</b>	<b>17.50</b>	<b>18.70</b>	<b>18.70</b>	<b>18.70</b>	<b>20.00</b>	<b>20.00</b>	<b>20.00</b>	<b>21.20</b>	<b>21.20</b>	<b>359.70</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
7.00	8.00	9.00	9.00	9.00	10.00	10.00	10.00	10.50	10.50	11.00	11.00	11.00	146.00
2.50	3.00	3.00	3.00	3.00	3.30	3.30	3.70	3.70	4.00	4.00	4.50	4.50	55.00
3.00	3.00	3.50	3.50	3.50	4.00	4.00	4.00	4.50	4.50	4.50	5.00	5.00	61.50
1.50	1.60	1.70	1.70	1.90	1.90	2.00	2.00	2.20	2.20	2.20	2.50	2.50	31.90
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
1.00	1.10	1.20	1.20	1.40	1.40	1.40	1.50	1.50	1.50	1.70	1.70	1.70	21.80
<b>25.00</b>	<b>26.70</b>	<b>28.40</b>	<b>28.40</b>	<b>28.80</b>	<b>30.60</b>	<b>30.70</b>	<b>31.20</b>	<b>32.40</b>	<b>32.70</b>	<b>33.40</b>	<b>34.70</b>	<b>34.70</b>	<b>467.20</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
7.00	8.00	9.00	9.00	10.00	11.00	11.00	12.00	12.00	12.00	13.00	14.00	14.00	162.00
2.50	3.00	3.00	3.00	3.00	3.30	3.30	3.30	3.60	3.60	4.00	4.00	4.00	53.10
3.00	3.00	3.50	3.50	3.50	3.80	3.80	4.00	4.00	4.00	4.40	4.40	4.40	58.80
1.50	1.60	1.70	1.70	1.70	1.80	1.80	1.80	2.00	2.00	2.20	2.20	2.20	30.20
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
1.00	1.10	1.20	1.20	1.20	1.20	1.30	1.30	1.30	1.40	1.40	1.50	1.50	20.10
<b>25.00</b>	<b>26.70</b>	<b>28.40</b>	<b>28.40</b>	<b>29.40</b>	<b>31.10</b>	<b>31.20</b>	<b>32.40</b>	<b>32.90</b>	<b>33.00</b>	<b>35.00</b>	<b>36.10</b>	<b>36.10</b>	<b>475.20</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
7.00	8.00	9.00	9.00	10.00	10.00	11.00	11.00	12.00	12.00	13.00	13.00	14.00	159.00
2.50	3.00	3.00	3.00	3.00	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.00	54.00
3.00	3.00	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.00	4.50	4.50	4.50	59.00
1.50	1.60	1.70	1.70	1.70	1.70	2.00	2.00	2.00	2.50	2.50	3.00	3.00	32.90
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
1.00	1.10	1.20	1.20	1.20	1.30	1.30	1.40	1.40	1.40	1.50	1.50	1.50	20.50
<b>25.00</b>	<b>26.70</b>	<b>28.40</b>	<b>28.40</b>	<b>29.40</b>	<b>30.00</b>	<b>31.80</b>	<b>31.90</b>	<b>32.90</b>	<b>33.90</b>	<b>35.50</b>	<b>36.00</b>	<b>37.00</b>	<b>476.40</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	1.00
7.00	8.00	9.00	9.00	9.00	10.00	10.00	11.00	11.00	12.00	12.00	13.00	13.00	154.00
2.50	3.00	3.00	3.00	3.00	3.50	3.50	3.75	3.75	4.00	4.00	4.25	4.50	55.25
3.00	3.00	3.50	3.50	3.50	4.00	4.00	4.00	4.50	4.50	4.50	5.00	5.00	61.50
1.50	1.60	1.70	1.70	1.70	1.80	1.80	1.90	1.90	2.00	2.00	2.10	2.10	29.80
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
1.00	1.10	1.20			0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	13.60
<b>25.00</b>	<b>26.70</b>	<b>28.40</b>	<b>27.20</b>	<b>27.20</b>	<b>29.80</b>	<b>29.90</b>	<b>31.35</b>	<b>31.95</b>	<b>33.40</b>	<b>33.50</b>	<b>35.45</b>	<b>35.80</b>	<b>465.15</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	30.00
8.00	8.50	9.00	9.00	9.00	9.50	9.50	10.00	10.00	10.00	10.50	10.50	10.50	151.00
3.50	3.50	4.00	4.00	4.00	4.50	4.50	4.50	5.00	5.00	5.50	5.50	5.50	70.00
1.25	1.50	1.50	1.50	1.50	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.00	32.50
5.00	5.50	6.00	6.00	6.00	6.50	6.50	6.50	7.00	7.00	7.00	7.50	7.50	99.00
3.50	3.50	4.00	4.00	4.00	4.40	4.40	5.00	5.00	5.50	5.50	6.00	6.00	71.80
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
3.00	3.00	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.50	4.50	4.50	5.00	59.50
<b>34.25</b>	<b>35.50</b>	<b>38.00</b>	<b>38.00</b>	<b>38.00</b>	<b>40.40</b>	<b>40.90</b>	<b>42.50</b>	<b>43.50</b>	<b>44.50</b>	<b>46.00</b>	<b>47.00</b>	<b>47.50</b>	<b>663.80</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	20.00
10.00	10.50	11.00	11.00	12.00	12.00	12.00	13.00	13.00	14.00	14.00	15.00	15.00	197.50
4.00	4.00	4.00	4.00	4.00	4.50	4.50	4.50	5.00	5.00	5.50	5.50	6.00	73.50
1.25	1.50	1.50	1.50	1.50	1.70	1.70	2.00	2.00	2.00	2.30	2.30	2.50	28.50
3.75	3.75	4.00	4.00	4.00	4.40	4.40	5.00	5.00	5.50	5.50	5.50	6.00	74.30
3.50	3.50	4.00	4.00	4.00	4.00	4.40	4.40	4.60	4.60	4.80	5.00	5.00	66.80
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
3.00	3.00	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.50	4.50	4.50	5.00	59.50
<b>35.50</b>	<b>36.25</b>	<b>38.00</b>	<b>38.00</b>	<b>39.00</b>	<b>40.10</b>	<b>41.00</b>	<b>42.90</b>	<b>43.60</b>	<b>45.60</b>	<b>46.60</b>	<b>47.80</b>	<b>49.50</b>	<b>670.10</b>

S. No.	Name of Section / Zone	Sub S.No.	Details of Work	2022-	2023-	2024-	2025-	2026-	2027-	2028-
				2023	2024	2025	2026	2027	2028	
7.33	Hippopotamus ( <i>Hippopotamus amphibius</i> )	7.33.1	Animal Feed	25.00	27.00	30.00	35.00	37.00	40.00	42.00
		7.33.2	Sanitation, Hygiene and Cleaning	3.00	3.50	4.00	4.50	5.00	5.50	6.00
		7.33.3	Animal Upkeep	3.00	3.00	3.50	3.50	4.00	4.00	4.50
		7.33.4	Water & Electric Supply	2.00	2.50	3.00	3.50	4.00	4.50	5.00
		7.33.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.33.6	Misc Charges	1.50	1.50	2.00	2.00	2.50	2.50	3.00
<b>Sub Total</b>				<b>44.50</b>	<b>47.50</b>	<b>52.50</b>	<b>58.50</b>	<b>62.50</b>	<b>66.50</b>	<b>70.50</b>
7.34	Otter ( <i>Lutrogale perspicillata</i> )	7.34.1	Animal Feed	2.50	2.75	3.00	3.20	3.40	3.60	3.80
		7.34.2	Sanitation, Hygiene and Cleaning	1.00	1.00	1.00	1.25	1.25	1.25	1.35
		7.34.3	Animal Upkeep	1.50	1.50	1.50	1.75	1.75	1.75	2.00
		7.34.4	Water & Electric Supply	1.00	1.10	1.20	1.30	1.40	1.50	1.60
		7.34.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.34.6	Misc Charges	1.00	1.00	1.00	1.25	1.25	1.25	1.50
<b>Sub Total</b>				<b>17.00</b>	<b>17.35</b>	<b>17.70</b>	<b>18.75</b>	<b>19.05</b>	<b>19.35</b>	<b>20.25</b>
7.35	Gharial ( <i>Gavialis gangeticus</i> )	7.35.1	Animal Feed	4.00	4.25	4.50	4.75	5.00	5.25	5.50
		7.35.2	Sanitation, Hygiene and Cleaning	1.00	1.00	1.00	1.25	1.25	1.25	1.35
		7.35.3	Animal Upkeep	1.50	1.50	1.50	1.75	1.75	1.75	2.00
		7.35.4	Water & Electric Supply	1.00	1.10	1.20	1.30	1.40	1.50	1.60
		7.35.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.35.6	Misc Charges	1.00	1.00	1.00	1.25	1.25	1.25	1.50
<b>Sub Total</b>				<b>18.50</b>	<b>18.85</b>	<b>19.20</b>	<b>20.30</b>	<b>20.65</b>	<b>21.00</b>	<b>21.95</b>
7.36	Bengal Monitor Lizard ( <i>Varanus bengalensis</i> )	7.36.1	Animal Feed	1.20	1.30	1.40	1.50	1.60	1.70	1.80
		7.36.2	Sanitation, Hygiene and Cleaning	1.00	1.00	1.00	1.25	1.25	1.25	1.35
		7.36.3	Animal Upkeep	1.50	1.50	1.50	1.75	1.75	1.75	2.00
		7.36.4	Water & Electric Supply	0.50	0.50	0.60	0.60	0.70	0.70	0.80
		7.36.5	Maintenance of Enclosure	5.00	5.00	5.00	5.00	5.00	5.00	5.00
		7.36.6	Misc Charges	1.00	1.00	1.00	1.25	1.25	1.25	1.50
<b>Sub Total</b>				<b>10.20</b>	<b>10.30</b>	<b>10.50</b>	<b>11.35</b>	<b>11.55</b>	<b>11.65</b>	<b>12.45</b>
7.37	Star Tortoise ( <i>Geochelone</i> )	7.37.1	Animal Feed	0.50	0.50	0.55	0.55	0.60	0.60	0.65
		7.37.2	Sanitation, Hygiene and Cleaning	0.25	0.25	0.25	0.30	0.30	0.30	0.35
		7.37.3	Animal Upkeep	0.25	0.25	0.25	0.30	0.30	0.30	0.35
		7.37.4	Water & Electric Supply	0.25	0.26	0.27	0.28	0.29	0.30	0.31
		7.37.5	Maintenance of Enclosure	5.00	5.00	5.00	5.00	5.00	5.00	5.00
		7.37.6	Misc Charges	1.00	1.00	1.00	1.00	1.00	1.00	2.00
<b>Sub Total</b>				<b>7.25</b>	<b>7.26</b>	<b>7.32</b>	<b>7.43</b>	<b>7.49</b>	<b>7.50</b>	<b>8.66</b>
7.38	Snake ( <i>Serpentes</i> ) Park	7.38.1	Animal Shifting	2.00	2.00	-	-	-	-	-
		7.38.2	Animal Feed	1.00	2.00	2.00	3.00	3.00	4.00	4.00
		7.38.3	Sanitation, Hygiene and Cleaning	1.00	1.00	2.00	2.00	2.00	2.00	3.00
		7.38.4	Animal Upkeep	1.00	1.00	1.00	2.00	2.00	2.00	2.00
		7.38.5	Water & Electric Supply	1.00	1.00	1.00	1.00	2.00	2.00	2.00
		7.38.6	Maintenance of Enclosure	-	-	-	10.00	10.00	10.00	10.00
		7.38.7	Misc Charges	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Sub Total</b>				<b>7.00</b>	<b>8.00</b>	<b>7.00</b>	<b>19.00</b>	<b>20.00</b>	<b>21.00</b>	<b>22.00</b>
7.39	Crocodile ( <i>Crocodylus palustris</i> )	7.39.1	Animal Feed	8.00	8.00	8.00	8.00	9.00	9.00	9.00
		7.39.2	Sanitation, Hygiene and Cleaning	2.00	2.00	2.00	2.00	2.00	2.00	2.00
		7.39.3	Animal Upkeep	2.00	2.00	2.00	3.00	3.00	3.00	3.00
		7.39.4	Water & Electric Supply	2.00	2.00	2.00	2.00	2.00	2.00	2.00
		7.39.5	Maintenance of Enclosure	10.00	10.00	10.00	10.00	10.00	10.00	10.00
		7.39.6	Misc Charges	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Sub Total</b>				<b>25.00</b>	<b>25.00</b>	<b>25.00</b>	<b>26.00</b>	<b>27.00</b>	<b>27.00</b>	<b>27.00</b>
7.40	Fish ( <i>Pisces</i> ) Aquarium	7.40.1	Fish Purchase	-	-	-	-	-	10.00	-
		7.40.2	Animal Feed	-	-	-	-	-	7.00	7.00
		7.40.3	Sanitation, Hygiene and Cleaning	-	-	-	-	-	3.00	3.00
		7.40.4	Animal Upkeep	-	-	-	-	-	3.00	3.00
		7.40.5	Water & Electric Supply	-	-	-	-	-	3.00	3.00
		7.40.6	Maintenance of Enclosure	-	-	-	-	-	10.00	10.00
		7.40.7	Misc Charges	-	-	-	-	-	2.00	2.00
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>38.00</b>	<b>28.00</b>

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
45.00	47.00	50.00	50.00	52.00	52.00	55.00	55.00	60.00	60.00	65.00	65.00	70.00	962.00
6.50	7.00	7.50	7.50	8.00	8.00	8.50	8.50	8.50	9.00	7.00	9.50	9.50	136.50
4.50	5.00	5.00	5.00	5.00	5.50	5.50	6.00	6.00	6.50	6.50	7.00	7.00	100.00
5.50	6.00	6.50	6.50	6.50	7.00	7.00	7.50	7.50	8.00	8.00	8.50	8.50	117.50
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
3.00	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.50	4.50	5.00	5.50	5.50	69.00
<b>74.50</b>	<b>78.50</b>	<b>82.50</b>	<b>82.50</b>	<b>85.00</b>	<b>86.50</b>	<b>90.00</b>	<b>91.00</b>	<b>96.50</b>	<b>98.00</b>	<b>101.50</b>	<b>105.50</b>	<b>110.50</b>	<b>1585.00</b>
4.00	4.25	4.50	4.50	4.50	5.00	5.00	5.00	5.50	5.50	6.00	6.00	6.50	88.50
1.35	1.50	1.50	1.50	1.50	1.70	1.70	2.00	2.00	2.25	2.25	2.50	2.50	32.35
2.00	2.00	2.00	2.00	2.00	2.20	2.30	2.40	2.50	2.60	2.70	2.80	3.00	42.25
1.70	1.80	1.90	1.90	2.00	2.00	2.20	2.20	2.40	2.60	2.60	2.80	2.80	38.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
1.50	1.50	2.00	2.00	2.00	2.20	2.20	2.40	2.40	2.60	2.60	2.80	2.80	37.25
<b>20.55</b>	<b>21.05</b>	<b>21.90</b>	<b>21.90</b>	<b>22.00</b>	<b>23.10</b>	<b>23.40</b>	<b>24.00</b>	<b>24.80</b>	<b>25.55</b>	<b>26.15</b>	<b>26.90</b>	<b>27.60</b>	<b>438.35</b>
5.75	6.00	6.25	6.50	6.50	6.50	7.00	7.00	7.00	7.50	8.00	8.00	6.00	121.25
1.35	1.50	1.50	1.50	1.50	1.70	1.70	1.90	1.90	2.00	2.00	2.20	2.20	31.05
2.00	2.00	2.00	2.00	2.00	2.20	2.20	2.40	2.40	2.60	2.60	3.00	3.00	42.15
1.70	1.80	1.90	1.90	2.00	2.20	2.30	2.40	2.50	2.70	2.70	2.90	3.00	39.10
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
1.50	1.50	2.00	2.00	2.00	2.50	2.50	3.00	3.00	3.50	3.50	4.00	4.00	43.25
<b>22.30</b>	<b>22.80</b>	<b>23.65</b>	<b>23.90</b>	<b>24.00</b>	<b>25.10</b>	<b>25.70</b>	<b>26.70</b>	<b>26.80</b>	<b>28.30</b>	<b>28.80</b>	<b>30.10</b>	<b>28.20</b>	<b>476.80</b>
1.90	2.00	2.10	2.20	2.20	2.30	2.30	2.40	2.40	2.60	2.60	2.60	2.60	40.70
1.35	1.50	1.50	1.50	1.50	1.70	1.70	1.70	1.80	1.80	1.90	1.90	2.00	29.95
2.00	2.00	2.00	2.00	2.00	2.20	2.20	2.40	2.40	2.60	2.60	2.80	3.00	41.95
0.80	0.90	1.00	1.00	1.00	1.20	1.20	1.40	1.40	1.40	1.60	1.60	1.60	20.50
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	100.00
1.50	1.50	2.00	2.00	2.00	2.20	2.20	2.40	2.60	2.60	3.00	3.00	3.00	38.25
<b>12.55</b>	<b>12.90</b>	<b>13.60</b>	<b>13.70</b>	<b>13.70</b>	<b>14.60</b>	<b>14.60</b>	<b>15.30</b>	<b>15.60</b>	<b>16.00</b>	<b>16.70</b>	<b>16.90</b>	<b>17.20</b>	<b>271.35</b>
0.65	0.70	0.70	0.70	0.70	0.80	0.80	0.80	0.90	0.90	1.00	1.00	1.00	14.60
0.35	0.35	0.40	0.40	0.40	0.45	0.45	0.50	0.50	0.50	0.60	0.60	0.60	8.10
0.35	0.35	0.40	0.40	0.40	0.50	0.50	0.60	0.60	0.70	0.70	0.80	0.80	9.10
0.32	0.33	0.34	0.35	0.35	0.40	0.40	0.40	0.45	0.45	0.50	0.50	0.50	7.25
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	100.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	34.00
<b>8.67</b>	<b>8.73</b>	<b>8.84</b>	<b>8.85</b>	<b>8.85</b>	<b>9.15</b>	<b>9.15</b>	<b>9.30</b>	<b>9.45</b>	<b>9.55</b>	<b>9.80</b>	<b>9.90</b>	<b>9.90</b>	<b>173.05</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	4.00
5.00	5.00	6.00	6.00	6.00	6.00	7.00	7.00	8.00	8.00	8.00	8.00	8.00	107.00
3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	63.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	56.00
2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	43.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	170.00
1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	30.00
<b>24.00</b>	<b>24.00</b>	<b>25.00</b>	<b>26.00</b>	<b>26.00</b>	<b>27.00</b>	<b>29.00</b>	<b>30.00</b>	<b>31.00</b>	<b>31.00</b>	<b>32.00</b>	<b>32.00</b>	<b>32.00</b>	<b>473.00</b>
10.00	10.00	11.00	11.00	12.00	13.00	13.00	13.00	13.00	14.00	14.00	14.00	15.00	222.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	56.00
3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	64.00
2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	50.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	200.00
1.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	38.00
<b>29.00</b>	<b>30.00</b>	<b>31.00</b>	<b>32.00</b>	<b>33.00</b>	<b>34.00</b>	<b>35.00</b>	<b>36.00</b>	<b>36.00</b>	<b>37.00</b>	<b>38.00</b>	<b>38.00</b>	<b>39.00</b>	<b>630.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	10.00
8.00	8.00	8.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	10.00	10.00	10.00	131.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	51.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	50.00
3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	52.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	150.00
2.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	5.00	56.00
<b>29.00</b>	<b>30.00</b>	<b>30.00</b>	<b>31.00</b>	<b>32.00</b>	<b>32.00</b>	<b>33.00</b>	<b>34.00</b>	<b>36.00</b>	<b>36.00</b>	<b>37.00</b>	<b>37.00</b>	<b>37.00</b>	<b>500.00</b>

S. No.	Name of Section / Zone	Sub S.No.	Details of Work							
				2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
7.41	Exotic Species (Zebra ( <i>Equus quagga</i> ), Oryx and Wildebeest ( <i>Connochaetes</i> ))	7.41.1	Animal Shifting	-	100.00	100.00	-	-	-	-
		7.41.2	Animal Feed	-	10.00	10.00	20.00	30.00	40.00	50.00
		7.41.3	Sanitation, Hygiene and Cleaning	-	3.00	3.00	4.00	5.00	6.00	7.00
		7.41.4	Animal Upkeep	-	3.00	3.00	5.00	5.00	5.00	5.00
		7.41.5	Water & Electric Supply	-	1.00	1.00	3.00	5.00	3.00	3.00
		7.41.6	Maintenance of Enclosure	-	10.00	10.00	10.00	10.00	10.00	10.00
		7.41.7	Misc Charges	-	1.00	1.00	1.00	1.00	2.00	2.00
<b>Sub Total</b>				<b>0.00</b>	<b>128.00</b>	<b>128.00</b>	<b>43.00</b>	<b>56.00</b>	<b>66.00</b>	<b>77.00</b>
7.42	Chimpanzee ( <i>Pan troglodytes</i> )	7.42.1	Animal Shifting	-	50.00	0.00	-	-	-	-
		7.42.2	Animal Feed	-	5.00	7.00	7.00	9.00	11.00	13.00
		7.42.3	Sanitation, Hygiene and Cleaning	-	1.00	1.00	1.00	1.00	1.00	2.00
		7.42.4	Animal Upkeep	-	1.00	2.00	2.00	2.00	2.00	2.00
		7.42.5	Water & Electric Supply	-	1.00	1.00	1.00	1.00	1.00	1.00
		7.42.6	Maintenance of Enclosure	-	10.00	10.00	10.00	10.00	10.00	10.00
		7.42.7	Misc Charges	-	1.00	1.00	1.00	1.00	1.00	1.00
<b>Sub Total</b>				<b>0.00</b>	<b>69.00</b>	<b>22.00</b>	<b>22.00</b>	<b>24.00</b>	<b>26.00</b>	<b>29.00</b>
7.43	Ring Tail Lemur ( <i>Lemur catta</i> )	7.43.1	Animal Shifting	-	50.00	0.00	-	-	-	-
		7.43.2	Animal Feed	-	1.00	1.00	1.00	1.00	1.00	2.00
		7.43.3	Sanitation, Hygiene and Cleaning	-	1.00	1.00	1.00	1.00	1.00	1.00
		7.43.4	Animal Upkeep	-	1.00	1.00	1.00	1.00	1.00	2.00
		7.43.5	Water & Electric Supply	-	1.00	1.00	1.00	1.00	1.00	1.00
		7.43.6	Maintenance of Enclosure	-	10.00	10.00	10.00	10.00	10.00	10.00
		7.43.7	Misc Charges	-	1.00	1.00	1.00	1.00	1.00	1.00
<b>Sub Total</b>				<b>0.00</b>	<b>65.00</b>	<b>15.00</b>	<b>15.00</b>	<b>15.00</b>	<b>15.00</b>	<b>17.00</b>
7.44	Small Monkey (Squirrel Monkey ( <i>Saimiri</i> ), Marmoset ( <i>Callithrix jacchus</i> )) Enclosure	7.44.1	Animal Shifting	-	-	50.00	25.00	-	-	-
		7.44.2	Animal Feed	-	-	1.00	1.00	1.00	1.00	2.00
		7.44.3	Sanitation, Hygiene and Cleaning	-	-	1.00	1.00	1.00	1.00	1.00
		7.44.4	Animal Upkeep	-	-	1.00	1.00	1.00	2.00	2.00
		7.44.5	Water & Electric Supply	-	-	2.00	2.00	2.00	2.00	2.00
		7.44.6	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.44.7	Misc Charges	-	-	1.00	1.00	1.00	1.00	1.00
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>66.00</b>	<b>41.00</b>	<b>16.00</b>	<b>17.00</b>	<b>18.00</b>
7.45	Meerkat ( <i>Suricata suricatta</i> ) Enclosure	7.45.1	Animal Shifting	-	-	50.00	25.00	-	-	-
		7.45.2	Animal Feed	-	-	1.00	1.00	1.00	1.00	2.00
		7.45.3	Sanitation, Hygiene and Cleaning	-	-	1.00	1.00	1.00	1.00	1.00
		7.45.4	Animal Upkeep	-	-	1.00	1.00	1.00	2.00	2.00
		7.45.5	Water & Electric Supply	-	-	2.00	2.00	2.00	2.00	2.00
		7.45.6	Maintenance of Enclosure	-	-	10.00	10.00	10.00	10.00	10.00
		7.45.7	Misc Charges	-	-	1.00	1.00	1.00	1.00	1.00
<b>Sub Total</b>				<b>0.00</b>	<b>0.00</b>	<b>66.00</b>	<b>41.00</b>	<b>16.00</b>	<b>17.00</b>	<b>18.00</b>
8	Veterinary & Rescue Center	8.1	Maintenance of Building	3.00	3.00	3.00	3.00	3.00	3.00	3.00
		8.2	Maintenance of Enclosure & Kraal	2.00	3.00	3.00	3.00	3.00	3.00	3.00
		8.3	Purchase of Medicine	15.00	17.00	19.00	23.00	25.00	27.00	29.00
		8.4	Purchase of Equipment & Surgical Instruments	5.00	5.00	5.00	6.00	6.00	6.00	6.00
		8.5	Water & Electric Supply	2.00	2.00	2.00	3.00	3.00	3.00	3.00
		8.6	Hygiene & Upkeep	5.00	5.00	5.00	6.00	6.00	6.00	6.00
<b>Sub Total</b>				<b>32.00</b>	<b>35.00</b>	<b>37.00</b>	<b>44.00</b>	<b>46.00</b>	<b>48.00</b>	<b>50.00</b>
9	Education & Research	9.1	Purchase of Equipment & Essentials	-	25.00	25.00	29.00	5.00	5.00	5.00
		9.2	Organization of Awareness Camp	-	12.00	15.00	15.00	15.00	15.00	15.00
		9.3	Printing of Brochures, Guide Book etc.	5.00	6.00	6.00	6.00	7.00	7.00	7.00
		9.4	Organization of Audio Visual Show	-	5.00	5.00	5.00	6.00	6.00	6.00
<b>Sub Total</b>				<b>5.00</b>	<b>48.00</b>	<b>51.00</b>	<b>55.00</b>	<b>33.00</b>	<b>33.00</b>	<b>33.00</b>
<b>GRAND TOTAL</b>				<b>1552.95</b>	<b>2039.96</b>	<b>2368.62</b>	<b>2648.98</b>	<b>2799.84</b>	<b>3112.15</b>	<b>3311.66</b>

Financial Year Wise Expenditure (Rs. In Lacs)													Total
2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
-	-	-	-	-	-	-	-	-	-	-	-	-	200.00
60.00	70.00	80.00	80.00	80.00	90.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	1460.00
8.00	9.00	10.00	10.00	10.00	10.00	12.00	12.00	12.00	14.00	14.00	14.00	15.00	178.00
6.00	6.00	6.00	6.00	7.00	7.00	7.00	8.00	8.00	8.00	9.00	9.00	9.00	122.00
3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	69.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	190.00
2.00	2.00	3.00	3.00	3.00	3.00	34.00	4.00	4.00	4.00	4.00	4.00	4.00	82.00
<b>89.00</b>	<b>100.00</b>	<b>113.00</b>	<b>113.00</b>	<b>114.00</b>	<b>124.00</b>	<b>157.00</b>	<b>138.00</b>	<b>148.00</b>	<b>160.00</b>	<b>172.00</b>	<b>182.00</b>	<b>193.00</b>	<b>2301.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	50.00
15.00	17.00	19.00	20.00	20.00	22.00	22.00	25.00	25.00	28.00	28.00	30.00	30.00	353.00
2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	47.00
2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	5.00	55.00
1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	27.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	190.00
1.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	38.00
<b>31.00</b>	<b>35.00</b>	<b>37.00</b>	<b>38.00</b>	<b>39.00</b>	<b>42.00</b>	<b>43.00</b>	<b>46.00</b>	<b>48.00</b>	<b>51.00</b>	<b>51.00</b>	<b>53.00</b>	<b>54.00</b>	<b>760.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	50.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	37.00
1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	31.00
2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	40.00
2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	39.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	190.00
1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	27.00
<b>18.00</b>	<b>19.00</b>	<b>19.00</b>	<b>19.00</b>	<b>19.00</b>	<b>20.00</b>	<b>22.00</b>	<b>22.00</b>	<b>22.00</b>	<b>23.00</b>	<b>23.00</b>	<b>23.00</b>	<b>23.00</b>	<b>414.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	39.00
1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	27.00
2.00	2.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	56.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	52.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	26.00
<b>19.00</b>	<b>19.00</b>	<b>20.00</b>	<b>20.00</b>	<b>21.00</b>	<b>23.00</b>	<b>24.00</b>	<b>24.00</b>	<b>24.00</b>	<b>25.00</b>	<b>26.00</b>	<b>26.00</b>	<b>26.00</b>	<b>455.00</b>
-	-	-	-	-	-	-	-	-	-	-	-	-	75.00
2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	39.00
1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	27.00
2.00	2.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	56.00
3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	52.00
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	180.00
1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	26.00
<b>19.00</b>	<b>19.00</b>	<b>20.00</b>	<b>20.00</b>	<b>21.00</b>	<b>23.00</b>	<b>24.00</b>	<b>24.00</b>	<b>24.00</b>	<b>25.00</b>	<b>26.00</b>	<b>26.00</b>	<b>26.00</b>	<b>455.00</b>
3.00	3.00	3.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	5.00	7.00	7.00	81.00
3.00	3.00	3.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	76.00
31.00	32.00	35.00	35.00	37.00	40.00	42.00	44.00	46.00	50.00	52.00	55.00	60.00	714.00
6.00	6.00	7.00	7.00	7.00	8.00	8.00	9.00	9.00	10.00	10.00	11.00	11.00	148.00
4.00	4.00	4.00	5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	8.00	8.00	93.00
6.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	8.00	129.00
<b>53.00</b>	<b>54.00</b>	<b>58.00</b>	<b>61.00</b>	<b>63.00</b>	<b>68.00</b>	<b>73.00</b>	<b>76.00</b>	<b>78.00</b>	<b>85.00</b>	<b>87.00</b>	<b>94.00</b>	<b>99.00</b>	<b>1241.00</b>
5.00	5.00	5.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	8.00	8.00	8.00	179.00
15.00	15.00	14.00	15.00	15.00	15.00	17.00	17.00	17.00	20.00	20.00	20.00	20.00	307.00
7.00	7.00	7.00	8.00	8.00	10.00	10.00	10.00	12.00	12.00	12.00	15.00	15.00	177.00
6.00	7.00	7.00	7.00	7.00	8.00	8.00	9.00	9.00	10.00	10.00	10.00	12.00	143.00
<b>33.00</b>	<b>34.00</b>	<b>33.00</b>	<b>36.00</b>	<b>36.00</b>	<b>39.00</b>	<b>42.00</b>	<b>43.00</b>	<b>45.00</b>	<b>49.00</b>	<b>50.00</b>	<b>53.00</b>	<b>55.00</b>	<b>806.00</b>
<b>3530.72</b>	<b>3749.33</b>	<b>4002.89</b>	<b>3911.25</b>	<b>4148.45</b>	<b>4354.45</b>	<b>4562.75</b>	<b>4720.45</b>	<b>4890.50</b>	<b>5120.50</b>	<b>5283.85</b>	<b>5598.75</b>	<b>5733.60</b>	<b>77441.65</b>

**TABLE-D : ABSTRACT OF THE BUDGET REQUIREMENT FOR THE MAINTENANCE WORKS - PLAN PERIOD 2022-2023 TO 2041-2042 IS LISTED BELOW**

S. No.	Activity	Financial Year Wise Budget Requirement (Rs. In Laacs)																				Total
		2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
1	Day to Day Maintenance Cost	1552.95	2368.62	2648.98	2799.84	3112.15	3311.66	3530.72	3749.33	4002.89	3911.25	4148.45	4354.45	4562.75	4720.45	4890.50	5120.50	5283.85	5598.75	5733.60	77441.65	

**TABLE-E : SHOWS THE TOTAL BUDGET FOR THE DEVELOPMENTAL WORKS AS WELL AS THE MAINTENANCE WORK FOR THE PLAN PERIOD 2022-2023 TO 2041-2042**

S. No.	Activity	Financial Year Wise Budget Requirement (Rs. In Laacs)																				Total
		2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	
1	Construction and Development of Different Zone and Sections	1700.00	1687.00	2314.00	742.00	1144.00	168.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	43.00	18.00	18.00	18.00	43.00	18.00	8057.00	
2	Day to Day Maintenance Cost	1552.95	2039.96	2368.62	2648.98	2799.84	3112.15	3311.66	3530.72	3749.33	4002.89	3911.25	4148.45	4354.45	4562.75	4720.45	4890.50	5120.50	5283.85	5598.75	5733.60	77441.65
	<b>Grand Total</b>	3252.95	3726.96	4682.62	3390.98	3943.84	3280.15	3548.72	3767.33	4020.89	3929.25	4166.45	4372.45	4580.75	4763.45	4908.50	5138.50	5301.85	5641.75	5751.60	85498.65	

## Part-II

### Chapter-11

#### Management Plan (Budget)

The budget reflects the anticipated expenditure to be incurred in carrying out the activities as indicated in the Master Plan for a period of 20 years (2022-23 to 2041-42). The estimate of the budget has been prepared with prioritisation of works for each financial year based on realistic estimated amount for the proposed works considering the high price of building materials in the state of Chhattisgarh and also the expected cost escalation over the years to come. The estimation of cost has been based on RES S.O.R., PWD S.O.R., PHE S.O.R., CSIDC Contract Rates and market price. Market rates have been applied for few items of works, which are not mentioned in any of the S.O.R. Estimated budget for the developmental works and day to day maintenance for 20 years plan period (2022-23 to 2041-42) is Rs 85498.65 Lakhs.

Table A shows the required financial budget for the period of 2022-23 to 2041-42. This includes both the developmental works as well as day to day maintenance work.

**TABLE-A**

S. No.	Financial Year	Proposed Financial Requirement (Rs. in Lacs)	S. No.	Financial Year	Proposed Financial Requirement (Rs. in Lacs)
1	2022-2023	3252.95	11	2032-2033	3929.25
2	2023-2024	3726.96	12	2033-2034	4166.45
3	2024-2025	4682.62	13	2034-2035	4372.45
4	2025-2026	3390.98	14	2035-2036	4580.75
5	2026-2027	3943.84	15	2036-2037	4763.45
6	2027-2028	3280.15	16	2037-2038	4908.50
7	2028-2029	3329.66	17	2038-2039	5138.50
8	2029-2030	3548.72	18	2039-2040	5301.85
9	2030-2031	3767.33	19	2040-2041	5641.75
10	2031-2032	4020.89	20	2041-2042	5751.60
<b>Grand Total</b>					<b>85498.65</b>

The detailed activity wise budget for implementation of the Master Plan works on priority basis for fulfilment of the proposals in the Master Plan For the development of Nandanvan Zoo and Safari is given in the following Tables.

**TABLE 1**  
**Financial Year 2022-2023**

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)		
1	Construction and Development	Construction and Development			
		1. Garden, Monument and Public Amenities	368		
		2. Zoo (Construction of Enclosure, Kraal, Moat, Electric and Water Supply Landscaping etc.)			
		2.1 Exotic species (Zebra ( <i>Equus quagga</i> ), Oryx ( <i>Oryx gazella</i> ), Wildebeest ( <i>Connochaetes taurinus</i> ))	435		
		2.2 Chimpanzee ( <i>Pan troglodytes</i> )	226		
		2.3 Ringtail Lemur ( <i>Lemur catta</i> )	106		
		2.4 Modification of Fox ( <i>Vulpes bengalensis</i> ) Enclosure	41		
		2.5 Open Butterfly ( <i>Rhopalocera</i> ) Park	90		
		3. Upgradation of Veterinary and Rescue Centre	364		
		4. Upgradation of infrastructure	70		
		2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
				1. Administrative	20
				2. Parking, Ticket, Garden and Public Amenities	88
3. Zoo Zone Garden and Public Amenities	56				
4. Fodder Production area	24				
5. Safari Vehicle and Transport Vehicle	90				
6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	353				
7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	884.95				
8. Veterinary and Rescue Centre	32				
9. Education and Research	5				
<b>Sub Total</b>			<b>3252.95</b>		

## Financial Year 2023-2024

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	145
		2. Garden, Monument and Public Amenities	217
		3. Vehicle	105
		4. Zoo (Construction of Enclosure, Kraal, Moat, Electric and Water Supply Landscaping etc.)	
		a. Mouse Deer ( <i>Tragulus meminna</i> )	104
		b. Grey Langur ( <i>Semnopithecus entellus</i> )	92
		c. Pigtail Monkey ( <i>Macaca nemestrina</i> )	92
		d. Assamese Monkey ( <i>Macaca assamensis</i> )	92
		e. Rhesus Monkey ( <i>Macaca mulatta</i> )	92
		f. Open Butterfly ( <i>Rhopalocera</i> ) Park	50
		g. Small Monkey (Squirrel Monkey ( <i>Saimiri sciureus</i> ), Marmoset ( <i>Callitrix jacchus</i> ))	178
		h. Meerkat ( <i>Suricata suricatta</i> )	106
		5. Upgradation of Veterinary and Rescue Centre	276
		6. Education and Research	138
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	18
		2. Parking, Ticket, Garden and Public Amenities	98
		3. Zoo Zone Garden and Public Amenities	63
		4. Fodder Production area	19
		5. Safari Vehicle and Transport Vehicle	97
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	381.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	1280.46
		8. Veterinary and Rescue Centre	35
		9. Education and Research	48
<b>Sub Total</b>			<b>3726.96</b>

## Financial Year 2024-2025

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Laacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	115
		2. Garden, Monument and Public Amenities	131
		3. Vehicle	150
		4. Zoo (Construction of Enclosure, Kraal, Moat, Electric and Water Supply Landscaping etc.)	
		a. Wild Buffalo ( <i>Bubalus arnee</i> )	193
		b. Butterfly ( <i>Rhopalocera</i> ) Park	20
		c. Walk-in-Bird Aviary	745
		d. Walk-in-Wetland Bird Aviary	635
		5. Upgradation of Veterinary and Rescue Centre	250
		6. Education and Research	75
		2	Maintenance Of Different Sections and Zones
1. Administrative	18		
2. Parking, Ticket, Garden and Public Amenities	108		
3. Zoo Zone Garden and Public Amenities	72		
4. Fodder Production area	21		
5. Safari Vehicle and Transport Vehicle	104		
6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	405		
7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	1552.62		
8. Veterinary and Rescue Centre	37		
9. Education and Research	51		
<b>Sub Total</b>			<b>4682.62</b>

## Financial Year 2025-2026

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	90
		2. Garden, Monument and Public Amenities	57
		3. Vehicle	70
		4. Walk-in-Bird Aviary	215
		5. Walk-in-Wetland Bird Aviary	310
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	18
		2. Parking, Ticket, Garden and Public Amenities	118
		3. Zoo Zone Garden and Public Amenities	81
		4. Fodder Production area	25
		5. Safari Vehicle and Transport Vehicle	109
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	434.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	1764.48
		8. Veterinary and Rescue Centre	44
		9. Education and Research	55
<b>Sub Total</b>			<b>3390.98</b>



## Financial Year 2026-2027

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	34
		3. Vehicle	25
		4. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	165
		5. Fish ( <i>Pisces</i> ) Aquarium	910
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	23
		2. Parking, Ticket, Garden and Public Amenities	131
		3. Zoo Zone Garden and Public Amenities	88
		4. Fodder Production area	24
		5. Safari Vehicle and Transport Vehicle	114
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	462
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	1878.84
		8. Veterinary and Rescue Centre	46
		9. Education and Research	33
<b>Sub Total</b>			<b>3943.84</b>



## Financial Year 2027-2028

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative, Parking and Ticket	10
		2. Garden, Monument and Public Amenities	18
		3. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	60
		4. Fish ( <i>Pisces</i> ) Aquarium	80
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	26
		2. Parking, Ticket, Garden and Public Amenities	144
		3. Zoo Zone Garden and Public Amenities	97
		4. Fodder Production area	24
		5. Safari Vehicle and Transport Vehicle	120
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	489.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	2130.65
		8. Veterinary and Rescue Centre	48
		9. Education and Research	33
<b>Sub Total</b>			<b>3280.15</b>



### Financial Year 2028-2029

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	24
		2. Parking, Ticket, Garden and Public Amenities	154
		3. Zoo Zone Garden and Public Amenities	103
		4. Fodder Production area	27
		5. Safari Vehicle and Transport Vehicle	127
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	516
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	2277.66
		8. Veterinary and Rescue Centre	50
9. Education and Research	33		
<b>Sub Total</b>			<b>3329.66</b>

### Financial Year 2029-2030

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	26
		2. Parking, Ticket, Garden and Public Amenities	155
		3. Zoo Zone Garden and Public Amenities	109
		4. Fodder Production area	25
		5. Safari Vehicle and Transport Vehicle	134
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	546.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	2449.22
		8. Veterinary and Rescue Centre	53
9. Education and Research	33		
<b>Sub Total</b>			<b>3548.72</b>

### Financial Year 2030-2031

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	34
		2. Parking, Ticket, Garden and Public Amenities	162
		3. Zoo Zone Garden and Public Amenities	116
		4. Fodder Production area	26
		5. Safari Vehicle and Transport Vehicle	141
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	575
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	2607.33
		8. Veterinary and Rescue Centre	54
9. Education and Research	34		
<b>Sub Total</b>			<b>3767.33</b>

### Financial Year 2031-2032

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	32
		2. Parking, Ticket, Garden and Public Amenities	166
		3. Zoo Zone Garden and Public Amenities	122
		4. Fodder Production area	27
		5. Safari Vehicle and Transport Vehicle	143
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	611.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	2810.39
		8. Veterinary and Rescue Centre	58
9. Education and Research	33		
<b>Sub Total</b>			<b>4020.89</b>

### Financial Year 2032-2033

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	36
		2. Parking, Ticket, Garden and Public Amenities	126
		3. Zoo Zone Garden and Public Amenities	129
		4. Fodder Production area	32
		5. Safari Vehicle and Transport Vehicle	134
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	630.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	2726.75
		8. Veterinary and Rescue Centre	61
9. Education and Research	36		
<b>Sub Total</b>			<b>3929.25</b>

### Financial Year 2033-2034

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	43
		2. Parking, Ticket, Garden and Public Amenities	188
		3. Zoo Zone Garden and Public Amenities	133
		4. Fodder Production area	32
		5. Safari Vehicle and Transport Vehicle	144
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	661
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	2848.45
		8. Veterinary and Rescue Centre	63
9. Education and Research	36		
<b>Sub Total</b>			<b>4166.45</b>

### Financial Year 2034-2035

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	43
		2. Parking, Ticket, Garden and Public Amenities	198
		3. Zoo Zone Garden and Public Amenities	141
		4. Fodder Production area	32
		5. Safari Vehicle and Transport Vehicle	149
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	680
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3004.45
		8. Veterinary and Rescue Centre	68
9. Education and Research	39		
<b>Sub Total</b>			<b>4372.45</b>

### Financial Year 2035-2036

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	40
		2. Parking, Ticket, Garden and Public Amenities	214
		3. Zoo Zone Garden and Public Amenities	146
		4. Fodder Production area	35
		5. Safari Vehicle and Transport Vehicle	156
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	714.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3142.25
		8. Veterinary and Rescue Centre	73
9. Education and Research	42		
<b>Sub Total</b>			<b>4580.75</b>

### Financial Year 2036-2037

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
		3. Vehicle	25
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	44
		2. Parking, Ticket, Garden and Public Amenities	229
		3. Zoo Zone Garden and Public Amenities	154
		4. Fodder Production area	38
		5. Safari Vehicle and Transport Vehicle	163
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	743
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3230.45
		8. Veterinary and Rescue Centre	76
		9. Education and Research	43
<b>Sub Total</b>			<b>4763.45</b>

### Financial Year 2037-2038

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	48
		2. Parking, Ticket, Garden and Public Amenities	229
		3. Zoo Zone Garden and Public Amenities	163
		4. Fodder Production area	39.50
		5. Safari Vehicle and Transport Vehicle	173
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	770
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3345
		8. Veterinary and Rescue Centre	78
		9. Education and Research	45
<b>Sub Total</b>			<b>4908.50</b>

### Financial Year 2038-2039

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	49
		2. Parking, Ticket, Garden and Public Amenities	269
		3. Zoo Zone Garden and Public Amenities	166
		4. Fodder Production area	41
		5. Safari Vehicle and Transport Vehicle	179
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	798
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3484.50
		8. Veterinary and Rescue Centre	85
9. Education and Research	49		
<b>Sub Total</b>			<b>5138.50</b>

### Financial Year 2039-2040

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	52
		2. Parking, Ticket, Garden and Public Amenities	287
		3. Zoo Zone Garden and Public Amenities	176
		4. Fodder Production area	40
		5. Safari Vehicle and Transport Vehicle	184
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	824.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3583.35
		8. Veterinary and Rescue Centre	87
9. Education and Research	50		
<b>Sub Total</b>			<b>5301.85</b>

### Financial Year 2040-2041

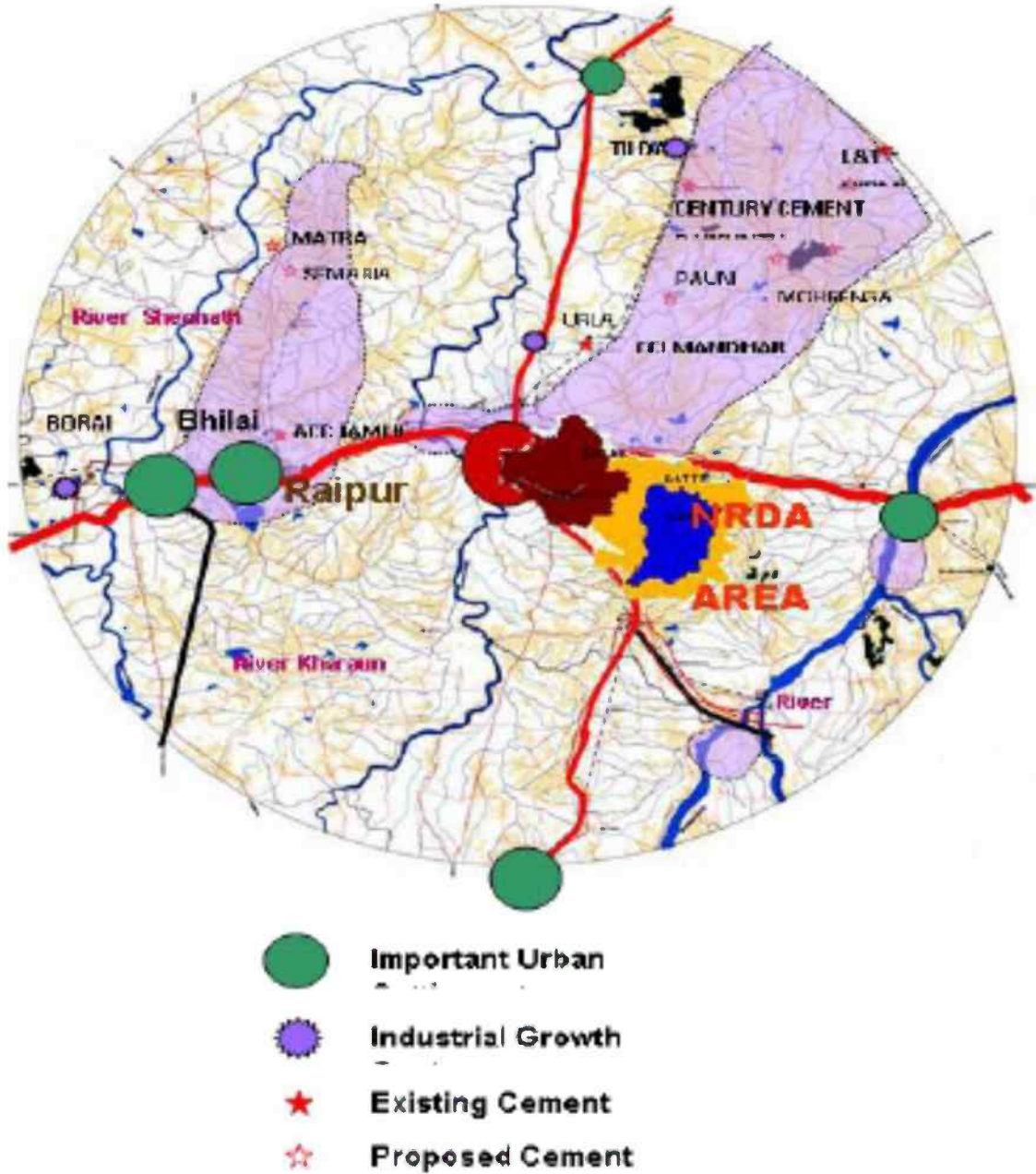
S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
		3. Vehicle	25
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	63
		2. Parking, Ticket, Garden and Public Amenities	306
		3. Zoo Zone Garden and Public Amenities	180
		4. Fodder Production area	43
		5. Safari Vehicle and Transport Vehicle	192
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	856.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3811.25
		8. Veterinary and Rescue Centre	94
		9. Education and Research	53
<b>Sub Total</b>			<b>5641.75</b>

### Financial Year 2041-2042

S. No.	Activity	Proposed Zone/Sections and Work Details	Financial Requirement (Rs. in Lacs)
1	Construction and Development	Construction and Development	
		1. Administrative. Parking and Ticket	10
		2. Garden, Monument and Public Amenities	8
2	Maintenance Of Different Sections and Zones	Maintenance and Upkeep of different section & zone :	
		1. Administrative	67
		2. Parking, Ticket, Garden and Public Amenities	324
		3. Zoo Zone Garden and Public Amenities	194
		4. Fodder Production area	46
		5. Safari Vehicle and Transport Vehicle	195
		6. Safari (Herbivore, Bear ( <i>Melursus ursinus</i> ), Tiger ( <i>Panthera tigris</i> ), Lion ( <i>Panthera leo</i> ))	869.50
		7. Zoo (Animal Feed, Sanitation, Hygiene, Animal Upkeep, Water and Electric Supply and Other Charges)	3884.10
		8. Veterinary and Rescue Centre	99
		9. Education and Research	55
<b>Sub Total</b>			<b>5751.60</b>

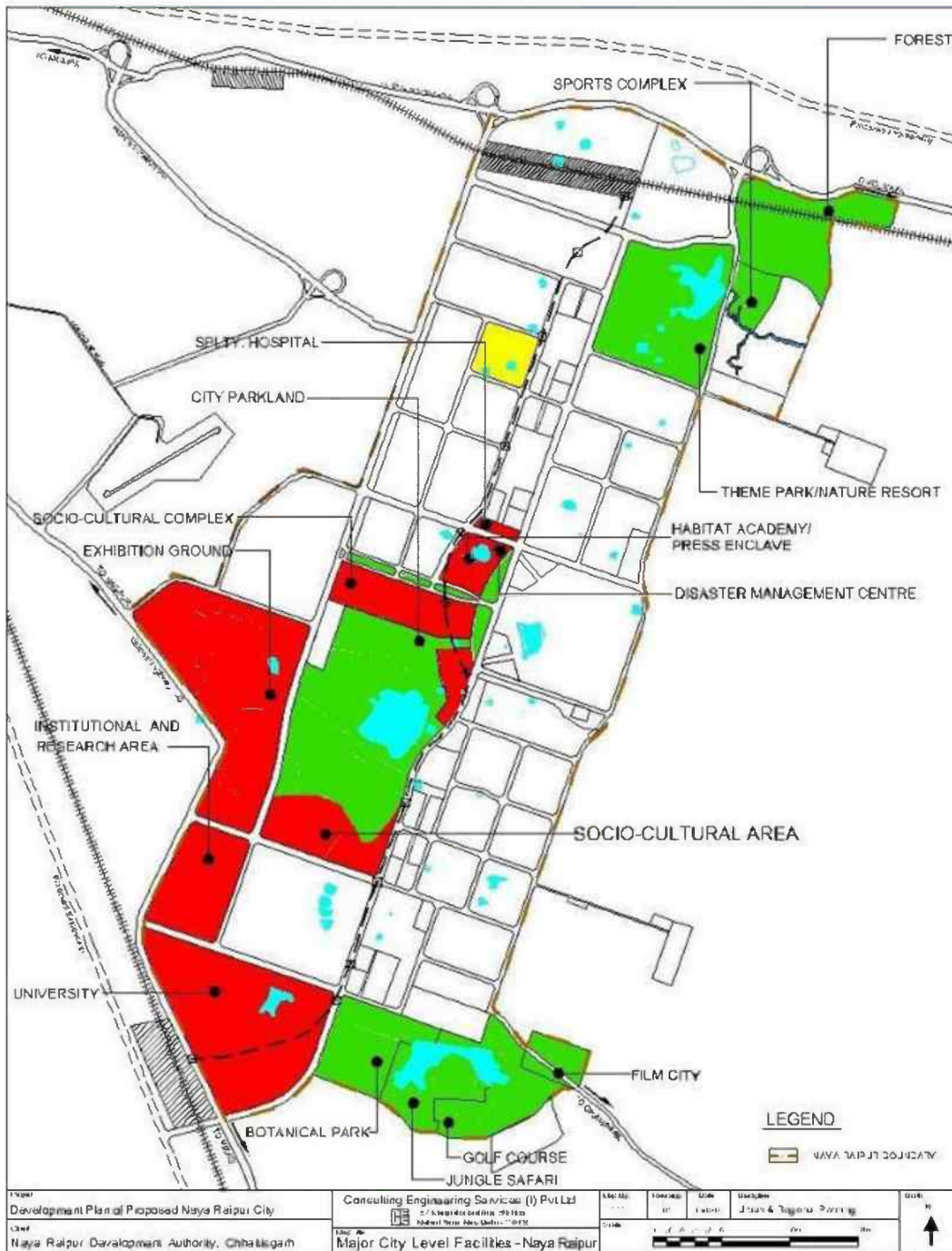
Annexure-1

Location Map of Nava Raipur



Annexure-2

Master Plan, Nava Raipur,  
Location of Nandanvan Zoo and Safari



### Annexure-3

## Google Map of Nandanvan Zoo and Safari







Annexure-6

Revised Electrical Master Layout Plan



Annexure-7

Revised Storm Water Drain Master Layout Plan



Annexure-8

Revised Water Supply Master Layout Plan

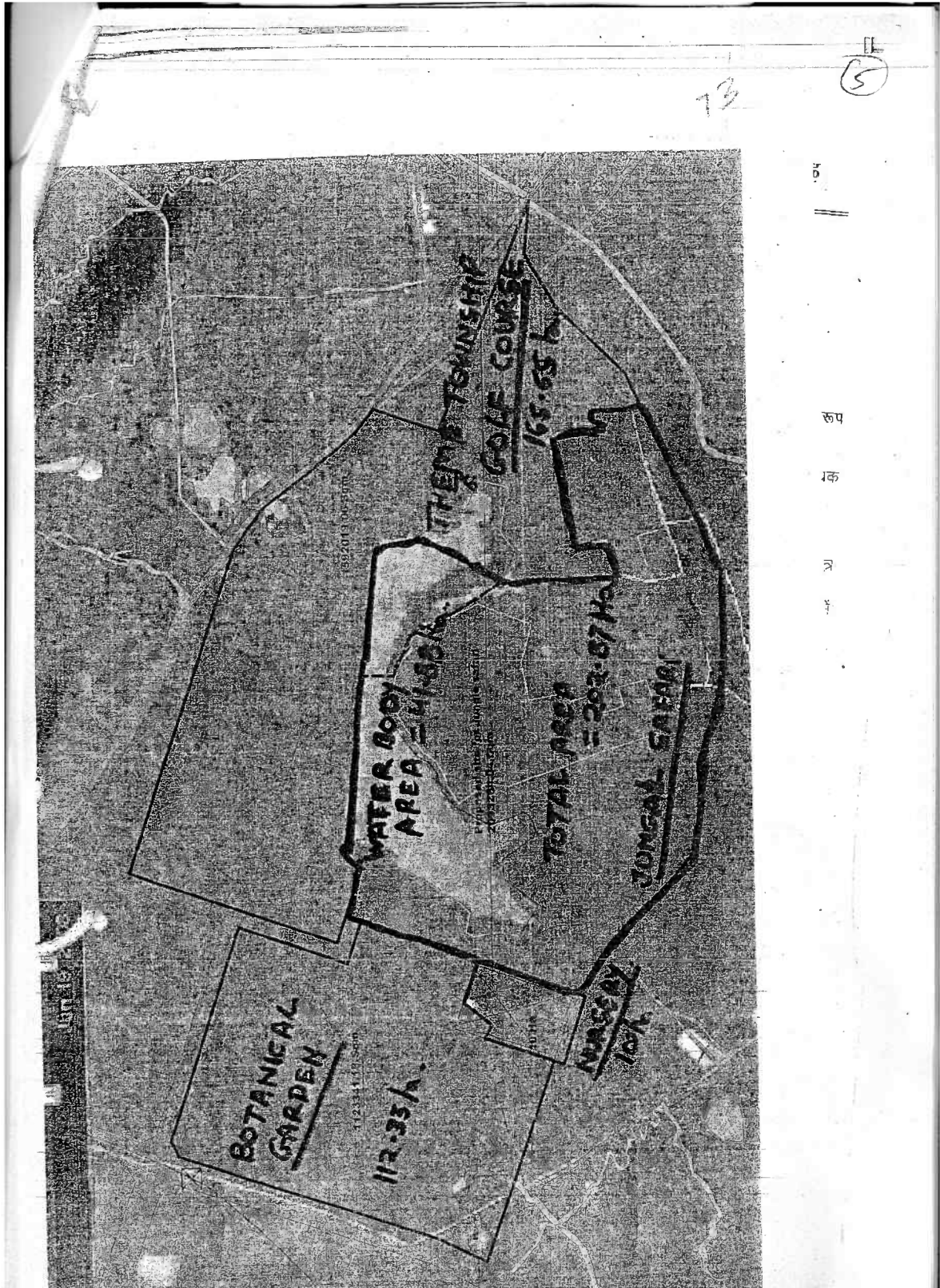


Annexure-9

Revised Sewerage Master Layout Plan







पृष्ठ-3 (6)

**नया रायपुर डेव्हलपमेंट अथारिटी**  
मंत्रालय महानदी द्वार के पास रायपुर (छत्तीसगढ़)

**कब्जा प्रमाण-पत्र**

ग्राम उपरवारा, भेलवाडीह, खंडवा, पचेड़ा, रा.नि.मं.-अभनपुर, तहसील-अभनपुर, जिला-रायपुर स्थित ग्राम उपरवारा, के निजि भूमि ख.नं. 3250 रकबा 0.10 हे. एवं ख.नं. 3252, 3261 रकबा क्रमशः 0.08, 0.01 हे. कुल ख.नं. 02 कुल रकबा 0.09 हे. शासकीय भूमि तथा ग्राम भेलवाडीह के निजि भूमि ख.नं. 571, 572 रकबा क्रमशः 0.10, 0.02 हे. कुल ख.नं. 02 कुल रकबा 0.12 हे. एवं शासकीय भूमि ख.नं. 556 रकबा 2.80 ग्राम खंडवा की निजि भूमि 175, 176, 177, 178, 183, 193, 195, 196, 198, 199, 201, 202, 203, 205, 208, 209, 213, 633 रकबा क्रमशः 0.43, 0.19, 0.22, 0.04, 0.40, 0.34, 2.40, 1.03, 0.50, 10.06, 5.56, 1.10, 3.37, 6.28, 4.66, 0.67, 0.02, 0.30 हैं. कुल ख.नं. 18 कुल रकबा 37.57 एवं शासकीय भूमि ख.नं. 190, 191, 192, 194, 197, 200, 204, 206, 207, 210, 211, 214, 630, 631, 632 एवं 635 रकबा क्रमशः 0.74, 0.11, 19.92, 3.42, 3.04, 0.03, 1.81, 0.05, 0.06, 0.12, 3.84, 0.36, 0.30, 0.07, 14.05 एवं 2.18 हे. कुल ख.नं. 16 कुल रकबा 50.10 हे. इसके अतिरिक्त ग्राम खंडवा को जलाशय में से ख.नं. 215 का भाग रकबा 71.23 हे तथा ग्राम पचेड़ा जो कि अभिलेख में शासकीय वन भूमि दर्ज है ख.नं. 1 में से रकबा 4.00 हे. एवं ख.नं. 253 में से रकबा 4.00 हे. इस प्रकार कुल चार ग्रामों में से कुल ख.नं. 43 कुल रकबा 170.01 हे. भूमि का अग्रिम आधिपत्य संलग्न नक्शा अनुसार दिनांक 25/03/2011 एवं 04/04/2011 को (सलाहकार, एन.आर.डी.ए.) के द्वारा जंगल सफारी परियोजना के अधिकृत अधिकारी श्री बृजमोहन सिंह वनपाल रायपुर को स्थल पर कब्जा सौंपा गया है। शेष भूमि का अधिपत्य एन.आर.डी.ए. द्वारा क्रय करने के पश्चात् दिया जावेगा।

(मुहर)  
**बृजमोहन सिंह**  
(वनपाल)  
कब्जा लेने वाले अधिकारी  
मुहर सहित हस्ताक्षर

(मुहर)  
**Jurain**  
Consultant  
N.R.D.A. RAIPUR  
कब्जा देने वाले अधिकारी का  
का मुहर सहित हस्ताक्षर

(7)

पंचतासा

पुण्य कार्य-पालक अधिकारी रन० कम० डी० ए० नामपुर  
 के शासन क्र० 1275/6(2)179 अ.आ.प्र०/रन.आ.डी.ए./2010 नामपुर  
 दिनांक 19/3/2011 के परिचालन में आज दिनांक 25/3/2011 एवं 24/1/2011 को  
 अंगत सफारी हेतु प्रस्तावित भूमि सार्वजनिक आधिकार में  
 ग्राम. उपखण्ड, मण्डला, भैलवा डी० एवं चनेडा में स्थित है,  
 202-877 हे० भूमि के हलका परतारीयों के उपस्थिति में  
 स्थल पर नाप कर के श्री वृजमोहन सिंग वनपाल को  
 भोका बताया गया। स्थल अंक के समय में स्वयं  
 एवं प्रमारी बाबू सिंह श्री जी० एल० चूधरी, श्री राजेश साहू,  
 श्री अ० एल० शर्मा, गद्यश्री आर० जे० वर्मा, रा० निर, श्री सुतोदास  
 परवारी सभी एन० आर० डी० ए० वाय० (ए) के सहयोग से  
 सन्तुष्ट कार्य सम्पन्न किया गया।

श्री-  
 वृजमोहन सिंह  
 (वनपाल)

शुसा  
 Assistant  
 N.R.O.A. RAIPUR

श्री  
 श्री  
 B  
 Colonel R.I.

श्री  
 13/3/11

श्री  
 04/03/11 R.I.

(8)

**कार्यालय वन संरक्षक (वन्यप्राणी) रायपुर**  
**एवं क्षेत्रीय संचालक उदंती-सीतानदी टायगर रिजर्व, छत्तीसगढ़**  
 ☎ 0771-4017890(O), 4017890(Fax), E-mail - fielddir\_udantisitanadi@rediffmail.com

क्रमांक/व्यय/ 503

रायपुर, दिनांक: 15/03/2011

प्रति,

मुख्य कार्यपालन अधिकारी  
 नया रायपुर विकास प्राधिकरण  
 रायपुर, छत्तीसगढ़

विषय:-

नया रायपुर में जंगल सफारी हेतु आरक्षित भूमि का हस्तांतरण करने बाबत।

संदर्भ:-

इस कार्यालय का पत्र क्र. 00/887/7(1)/31/पर्यावरण/ एन.आर.डी.ए./2011 रायपुर  
 दिनांक 01/03/2011

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विषयांतर्गत संदर्भ में अनुरोध है कि नया रायपुर में नया रायपुर डेवलपमेंट-अथॉरिटी द्वारा जंगल सफारी के विकास हेतु अनुमोदित 202.870 हे. क्षेत्र इस कार्यालय को हस्तांतरित करने का कष्ट करें। ताकि जंगल सफारी निर्माण हेतु अग्रिम कार्यवाही की जा सकें।

जंगल सफारी हेतु आरक्षित 202.870 हे. क्षेत्र का प्रभार लेने हेतु इस कार्यालय से श्री बृजमोहन सिंह (वनपाल) को अधिकृत किया जा रहा है।

क्रमांक

वन संरक्षक (वन्यप्राणी) एवं

क्षेत्रीय संचालक उदंती-सीतानदी

टायगर रिजर्व रायपुर (छत्तीसगढ़)

रायपुर, दिनांक: 15/03/2010

प.क्रमांक/व्यय/ 504

प्रतिलिपि:-

(1) मुख्य वन संरक्षक (वन्यप्राणी) छत्तीसगढ़ को सूचनाार्थ संप्रेषित।

(2) प्रभारी अधिकारी जंगल सफारी नया रायपुर की ओर भेजकर एतद् द्वारा निर्देशित किया जाता है कि श्री बृजमोहन सिंह (वनपाल) के माध्यम से जंगल सफारी हेतु आरक्षित भूमि का प्रभार प्राप्त कर इस कार्यालय को अवगत करावें।

क्रमांक

वन संरक्षक (वन्यप्राणी) एवं



nayaripur  
नया रायपुर

## नया रायपुर डेव्हलपमेंट अथारिटी

गोविन्द सारंग परिसर (द्वितीय तल) न्यू राजेन्द्र नगर, सेक्टर - 7, रायपुर (छत्तीसगढ़)

क्र. 1630/भू-प्रबंधन/NRDA/2011,  
प्रति,

रायपुर, दिनांक 06/04/2011

✓ महाप्रबंधक (प्रशासन),  
एन.आर.डी.ए.  
रायपुर (छ.ग.)

विषय:- सीमांकन पर अग्रिम अधिपत्य प्रदान करने बाबत।

संदर्भ:- पत्र क्र. 1275/6(2)/179/मू.आ.प्र./एन.आर.डी.ए./2010 रायपुर,  
दिनांक 18/03/2011

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संदर्भित पत्र के अनुसार जंगल सफाई परियोजना के अधिकारियों के समक्ष सीमांकन कर ग्राम उपरवारा, गेलवाडीह, खंडवा, पचेड़ा में स्थित ग्राम उपरवारा, के निजी भूमि ख.नं. 3250 रकबा 0.10 हे. एवं ख.नं. 3252, 3261 रकबा क्रमशः 0.08, 0.01 हे. कुल ख.नं. 02 कुल रकबा 0.09 हे. शासकीय भूमि तथा ग्राम गेलवाडीह के निजी भूमि ख.नं. 571, 572 रकबा क्रमशः 0.10, 0.02 हे. कुल ख.नं. 02 कुल रकबा 0.12 हे. एवं शासकीय भूमि ख.नं. 556 रकबा 2.80 ग्राम खंडवा की निजी भूमि रकबा क्रमशः 0.43, 0.19, 0.22, 0.04, 0.40, 0.34, 2.40, 1.03, 0.50, 10.06, 5.56, 1.10, 3.37, 6.28, 4.66, 0.67, 0.02, 0.30 हे. कुल ख.नं. 18 कुल रकबा 37.57 एवं शासकीय भूमि ख.नं. 190, 191, 192, 194, 197, 200, 204, 206, 207, 210, 211, 214, 630, 631, 632 एवं 635 रकबा क्रमशः 0.74, 0.11, 19.92, 3.42, 3.04, 0.03, 1.81, 0.05, 0.06, 0.12, 3.84, 0.36, 0.30, 0.07, 14.05 एवं 2.18 हे. कुल ख. नं. 16 कुल रकबा 50.10 हे. इसके अतिरिक्त ग्राम खंडवा को जलाशय में से ख.नं. 215 का भाग रकबा 71.23 हे तथा ग्राम पचेड़ा जो कि अभिलेख में वन भूमि दर्ज है ख.नं. 1 में से रकबा 4.00 हे. एवं ख.नं. 253 में से रकबा 4.00 हे. इस प्रकार कुल दार ग्रामों में से कुल ख.नं. 43 कुल रकबा 170.01 हे. भूमि का मौका सीमांकन कर दिनांक 25/03/2011 एवं 04/04/2011 को बताया गया। नक्शा की प्रतिलिपि संलग्न कर प्रेषित किया जा रहा है।

संलग्न :-  
नक्शा की प्रतिलिपि।

Consulter  
N. सलाहकार

नया रायपुर डेव्हलपमेंट अथारिटी  
रायपुर (छ.ग.)

नया रायपुर डेव्हलपमेंट अथॉरिटी  
 केपिटल कॉम्प्लेक्स, सेक्टर-19, नया रायपुर (छ.ग.)-492002  
 कार्यालय फोन : 0771-2511500, फैक्स : 2511400, ई-मेल cco@nayarapur.com

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क्र./312 /6(2)/757/सम्पदा/एन.आर.डी.ए./2012 नया रायपुर, दि. 21/01/2015

प्रति, प्रधान मुख्य वन संरक्षक (वन्यप्राणी)

अरुण्य भवन,  
 मेडिकल कॉलेज रोड,  
 रायपुर (छ.ग.)

विषय- नया रायपुर में जंगल सफारी के विकास हेतु भूमि का अग्रिम आधिपत्य दिये जाने बाबत।

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छत्तीसगढ़ शासन, आवास एवं पर्यावरण विभाग, मंत्रालय के आदेश क्रमांक एफ 2-19/2010/32 रायपुर, दिनांक 07.10.2011 के द्वारा वन विभाग को आर्बिटी भूमि रकबा 202.87 हेक्टेयर का आवंटन निरस्त किया जाता है। नया रायपुर क्षेत्र में जंगल सफारी के विकास हेतु वन विभाग को ग्राम- उपरवारा, भेलवाडीह खण्डवा एवं पचेड़ा में भूमि रकबा क्रमशः 2.58 हे०, 28.23 हे०, 190.86 हे० एवं 98.48 हे० इस प्रकार कुल रकबा 320.15 हेक्टेयर भूमि का संलग्न नक्शा अनुसार वन विभाग को निम्न शर्तों के अधीन अग्रिम आधिपत्य में दिये जाने की सैद्धांतिक सहमति प्रदान की जाती है :-

- (1) प्रस्तावित भूमि पर स्वामित्व नया रायपुर विकास प्राधिकरण का होगा।
- (2) उपरोक्त प्रश्नाधीन भूमि पर संबंधित विभाग की भूमिका मात्र विशेषज्ञ सलाहकार की होगी।
- (3) जिनका मुख्य कार्य प्रोजेक्ट के तकनीकी मांग को क्रियान्वित करना होगा।
- (4) प्रश्नाधीन भूमि पर भू-उपयोग के अनुसार जैव विविधता (Bio-Diversity) एवं पर्यावरणीय संतुलन (Environmental Balance) को बनाये रखने का दायित्व संबंधित का होगा।
- (5) जैव विविधता एवं पर्यावरणीय संतुलन को बनाये रखने हेतु भूमि पर निर्माण कार्य नहीं किया जावेगा। यदि प्रोजेक्ट को क्रियान्वित करने हेतु निर्माण कार्य किया जाना अत्यावश्यक हो तो ऐसी स्थिति में किसी भी प्रकार का निर्माण कार्य किये जाने के पूर्व प्राधिकरण की अनुमति आवश्यक होगी। उपरोक्त प्रश्नाधीन भूमि प्रोजेक्ट के मात्र क्रियान्वयन हेतु तकनीकी विशेषज्ञ के रूप में वन विभाग को अग्रिम आधिपत्य में दी जा रही है। जंगल सफारी के विकास हेतु दी जा रही भूमि किसी भी स्थिति में वन भूमि या वन विभाग की भूमि के रूप में परिभाषित नहीं होगी, ना ही इस भूमि पर वन विभाग का कोई स्थायित्व होगा।

संलग्न :- नक्शा।

मुख्य कार्यपालन अधिकारी  
 नया रायपुर डेव्हलपमेंट अथॉरिटी  
 नया रायपुर (छ.ग.)

नया रायपुर, दि. 21/01/2015

पू.क्र./312/6(2)/757/सम्पदा/एन.आर.डी.ए./2012

प्रतिलिपि:-

1. स्टाफ आफिसर, अतिरिक्त मुख्य सचिव, आवास & पर्यावरण विभाग एवं अध्यक्ष, नया रायपुर डेव्हलपमेंट अथॉरिटी, नया रायपुर को सादर सूचनार्थ।
2. मुख्य अभियंता (अभियांत्रिकी), एन.आर.डी.ए., नया रायपुर को सूचनार्थ।
3. महाप्रबंधक (वित्त/लेखा) एन.आर.डी.ए., नया रायपुर को सूचनार्थ।
4. अधीक्षण अभियंता (प्रोजेक्ट), एन.आर.डी.ए., नया रायपुर को सूचनार्थ।
5. उप महाप्रबंधक (नियोजन), एन.आर.डी.ए., नया रायपुर को सूचनार्थ।
6. कार्यपालन अभियंता (विद्युत), एन.आर.डी.ए., नया रायपुर को सूचनार्थ।
7. कार्यपालन अभियंता (जल प्रदाय), एन.आर.डी.ए., नया रायपुर को सूचनार्थ।
8. कार्यपालन अभियंता (सड़क), एन.आर.डी.ए., नया रायपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु।
9. श्री फैय्याज हुसैन, सलाहकार, एन.आर.डी.ए., नया रायपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु। कृपया उपरोक्तानुसार भूमि का मौके पर कब्जा प्रदान कर अवगत करावे।

मुख्य कार्यपालन अधिकारी  
 नया रायपुर डेव्हलपमेंट अथॉरिटी  
 नया रायपुर (छ.ग.)

## Annexure-11

## Constitution of Health Committee

छत्तीसगढ़ शासन  
वन विभाग  
मंत्रालय, महानदी भवन, नया राय

// आदेश //

नया रायपुर,

क्रमांक एफ 8-26/2017/10-2 :: राज्य शासन एतद् द्वारा चिड़ियाघर अंतर्गत धारा 10(5) में दर्शित प्रावधानों के प्रकाश में राज्य में स्थापित वन्यजीवों के स्वास्थ्य संबंधी मामलों में आवश्यक निर्देश दिए जाने एवं स्वास्थ्य सबाधत मानकों का पालन सुनिश्चित करवाने हेतु निम्नानुसार 'राज्य स्तरीय स्वास्थ्य सलाहकार समिति' का गठन करता है:-

1. मुख्य वन संरक्षक, वन्यप्राणी एवं क्षेत्र संचालक, उदती-सीतानदी टायगर रिजर्व, रायपुर	अध्यक्ष
2. नदनवन चिड़ियाघर में पदस्थ पशु चिकित्सक	सदस्य
3. कानन पेण्डारी चिड़ियाघर में पदस्थ पशु चिकित्सक	सदस्य
4. प्राध्यापक एवं विभागाध्यक्ष, मेडीसीन विभाग, पशु चिकित्सा एवं पशुपालन महाविद्यालय, अंजोरा, दुर्ग।	सदस्य

2/ उक्त समिति निम्नानुसार कार्यो को संपादित करेगी:-

- (1) समिति द्वारा चिड़ियाघरों में निरीक्षण का व्यवस्थित और व्यापक रिकॉर्ड संधारित किया जावेगा।
- (2) केन्द्रीय चिड़ियाघर प्राधिकरण द्वारा निर्धारित मानक प्रक्रिया का पालन किया जावेगा।
- (3) वन्यप्राणियों को उपलब्ध कराये गये आवास सुविधा, खान-पान आदि का निरीक्षण किया जावेगा एवं इस संबंध में आवश्यक सुझाव भी प्रतिवेदन के साथ प्रेषित करेंगे।
- (4) समिति द्वारा प्रत्येक चिड़ियाघर का हर तीसरे महीने में दौरा कर अद्यतन स्थिति से प्रधान मुख्य वन संरक्षक (वन्यप्राणी) सह मुख्य वन्यप्राणी अभिरक्षक को अवगत करायेगे।

छत्तीसगढ़ के राज्यपाल के नाम से  
तथा आदेशानुसार

(एम.एन.राजूरकर)  
अवर सचिव

छत्तीसगढ़ शासन, वन विभाग  
नया रायपुर, दिनांक 19/02/2018

क्रमांक एफ 8-26/2017/10-2  
प्रतिलिपि:-

1. विशेष सहायक, माननीय मंत्री जी, वन विभाग, मंत्रालय, नया रायपुर
2. प्रधान मुख्य वन संरक्षक, छत्तीसगढ़ नया रायपुर
3. प्रधान मुख्य वन संरक्षक, (वन्यप्राणी), छत्तीसगढ़, नया रायपुर
4. संबंधित अधिकारी .....
5. की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित ।  
आदेश फोल्डर ।

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21.02.2018

APCCF (P/1)

अवर सचिव

छत्तीसगढ़ शासन, वन विभाग

## Annexure-12

## Constitution of State Level Coordination Committee for the Expenditure of Gatemoney

# 12

**छत्तीसगढ़ शासन**  
**वन विभाग**  
**मंत्रालय, महानदी भवन, नया रायपुर**  
**// आदेश //**

रायपुर, दिन

क्रमांक एफ 03-04/2004/10-2 प्रदेश के समस्त प्रोजेक्ट टॉयगर अभ्यारण्यों/वन विभाग द्वारा संचालित चिड़ियाघरों में विकास के ऐसे कार्य, प्रावधान नहीं रहता है अथवा बहुत कम प्रावधान रहता है, के लिए राज्य शासन वन्यप्राणी (संरक्षण) नियम 1974 के नियम 34 एवं 35 के प्रावधानों के अंतर्गत संरक्षित क्षेत्रों हेतु क्षेत्रवार पृथक-पृथक विकास निधि का निर्माण करता है।

2/- उक्त विकास निधि से विकास कार्यों की स्वीकृति के लिए राज्य शासन एतद्वारा एक राज्य स्तरीय समन्वय समिति, जो निम्नलिखित सदस्यों से मिलकर बनेगी, का गठन करता है :-

- |                                                    |   |            |
|----------------------------------------------------|---|------------|
| 1. प्रधान मुख्य वन संरक्षक (वन्यप्राणी)            | - | अध्यक्ष    |
| 2. मुख्य वन संरक्षक (ईकोटूरिज्म)                   | - | सदस्य      |
| 3. छत्तीसगढ़ शासन, वन विभाग के प्रतिनिधि           | - | सदस्य      |
| 4. छत्तीसगढ़ शासन, पर्यटन विभाग के प्रतिनिधि       | - | सदस्य      |
| 5. विश्व प्रकृति निधि/ट्रैफिक इन्डिया के प्रतिनिधि | - | सदस्य      |
| 6. दो अशासकीय व्यक्ति अथवा अशासकीय संस्थाओं के     | - | सदस्य      |
| 7. अपर प्रधान मुख्य वन संरक्षक (वन्यप्राणी)        | - | सदस्य/सचिव |

के प्रतिनिधि जिन्हें राज्य शासन 2 वर्ष की अधिकतम अवधि के लिए नामांकित करें।

समन्वय समिति की बैठक प्रत्येक तिमाही में एक बार होगी, किन्तु आवश्यकता पड़ने पर यह बैठक तिमाही में एक से अधिक बार भी हो सकती है। तिमाही की गणना कैलेंडर वर्ष के प्रारंभ से की जाएगी।

3/- उक्त निधि से स्वीकृत कार्यों का क्रियान्वयन इस हेतु स्वीकृत कार्य संचालन नियमों के अंतर्गत किया जावेगा।

छत्तीसगढ़ के राज्यपाल के नाम से  
तथा आदेशानुसार,

(अनिल कुमार साहू)  
सचिव

छत्तीसगढ़ शासन, वन विभाग

*Handwritten signature and stamp:*  
राज्य  
मुख्य वन संरक्षक (वन्य प्राणी)  
छत्तीसगढ़ शासन

*Handwritten note:*  
uploaded to website  
19/Jan/15

—2—

पृ. क्रमांक एफ 08-04/2024/10-2,

रायपुर, दिनांक 15/06/2015

प्रतिलिपि :-

1. महामहिम रज्यपाल के सचिव, राजमवन, रायपुर।
2. साचव, मुख्य मन्त्रा जा, मन्त्रालय, रायपुर।
3. मुख्य सचिव के संयुक्त सचिव, मन्त्रालय, रायपुर।
4. स्टॉफ 'ऑफिसर, प्रमुख सचिव, छत्तीसगढ़ शासन, वन विभाग।
5. प्रधान मुख्य वन संरक्षक, छत्तीसगढ़, रायपुर।
6. प्रधान मुख्य वन संरक्षक (वन्यप्राणी), छत्तीसगढ़, रायपुर।
7. सचिव, छत्तीसगढ़ शासन, वित्त विभाग।
8. सचिव, छत्तीसगढ़ शासन, पर्यटन विभाग।
9. महालेखाकार (लेखा एवं हकदारी) छत्तीसगढ़, रायपुर।
10. महालेखाकार (आडिट) छत्तीसगढ़, रायपुर।
11. विश्व प्रकृतिनिधि / ट्रैफिक इन्डिया, भोपाल।
12. समस्त अपर प्रधान मुख्य वन संरक्षक, छत्तीसगढ़, रायपुर।
13. समस्त मुख्य वन संरक्षक, छत्तीसगढ़, रायपुर।
14. मुख्य वन संरक्षक (ईकोटूरिज्म), छत्तीसगढ़, रायपुर।
15. समस्त मुख्य वन संरक्षक (वन्यप्राणी) एवं परियोजना संचालक, छत्तीसगढ़।
16. समस्त संचालक / वनमंडलाधिकारी एवं अधीक्षक, राष्ट्रीय उद्यान, अभ्यारण्य छत्तीसगढ़ की ओर संचालन नियमों की प्रतिलिपि के साथ सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।


सचिव  
छत्तीसगढ़ शासन, वन विभाग

12

छत्तीसगढ़ शासन  
वन एवं जलवायु परिवर्तन विभाग  
मंत्रालय,  
महानदी भवन, अटल नगर, नवा रायपुर

:- आदेश :-

अटल नगर, नवा रायपुर दिनांक 04/03/2021

क्रमांक एक 8-4/2004/10-2: विभागीय समसंख्यक आदेश दिनांक 15.06.2015 द्वारा प्रदेश के समस्त प्रोजेक्ट टायगर क्षेत्र/राष्ट्रीय उद्यान/अभ्यारण्य/वन विभाग के द्वारा संचालित चिड़ियाघरों में विकास के ऐसे कार्य, जिनके लिए बजट में प्रावधान नहीं रहता है अथवा बहुत कम प्रावधान रहता है, के लिए राज्य शासन एतद्वारा छत्तीसगढ़ वन्यप्राणी (संरक्षण) नियम 1974 के नियम 34 एवं 35 के प्रावधानों के अंतर्गत संदेय फीस से उपरोक्त संरक्षित क्षेत्रों हेतु क्षेत्रवार पृथक-पृथक विकास कार्य की स्वीकृति हेतु राज्य स्तरीय समन्वय समिति गठित की गई है, जिसमें दो अशासकीय व्यक्ति अथवा अशासकीय संस्थाओं के प्रतिनिधि को दो वर्ष की अधिकतम अवधि के लिए सदस्य के रूप में मनोनीत किया जाना है।

2/- राज्य शासन एतद्वारा उक्त समिति हेतु निम्नानुसार अशासकीय व्यक्ति अथवा अशासकीय संस्था के प्रतिनिधि को सदस्य के रूप में मनोनीत करता है :-

1. Wildlife Trust of India. छत्तीसगढ़ के प्रतिनिधि - (अशासकीय संस्था)
2. श्री शेख इसमाईल, - (अशासकीय व्यक्ति)

3/- समन्वय समिति की बैठक प्रत्येक तिमाही में एक बार होगी, किन्तु आवश्यकता पड़ने पर यह बैठक तिमाही में एक से अधिक बार भी हो सकती है। तिमाही की गणना कैलेंडर वर्ष के प्रारंभ से की जाएगी।

छत्तीसगढ़ के राज्यपाल के नाम से  
तथा आदेशानुसार,

*K. P. Rajput*  
4.3.2021  
(के.पी.राजपूत)

अवर सचिव

छत्तीसगढ़ शासन,  
वन एवं जलवायु परिवर्तन विभाग

संभार

-2-

पृष्ठांकनांक एक 8-4/2004/10-2: अटल नगर, नवा रायपुर दिनांक 4/03/2021  
प्रतिलिपि :-

1. विशेष सहायक, मान. मंत्रीजी वन एवं जलवायु परिवर्तन विभाग, छ.ग. रायपुर,
2. स्टाफ आफिसर, प्रमुख सचिव, छ.ग. शासन वन एवं जलवायु परिवर्तन विभाग, मंत्रालय रायपुर,
3. सचिव, छत्तीसगढ़ शासन, वित्त विभाग, मंत्रालय रायपुर,
4. सचिव, छत्तीसगढ़ शासन, पर्यटन विभाग, मंत्रालय रायपुर,
5. महालेखाकार (लेखा एवं हकदारी), छत्तीसगढ़, रायपुर,
6. प्रधान मुख्य वन संरक्षक, छत्तीसगढ़, अरण्य भवन, सेक्टर-19, नवा रायपुर, अटल नगर, छत्तीसगढ़,
7. प्रधान मुख्य वन संरक्षक (वन्यप्राणी प्रबंधन एवं जैव विविधता संरक्षण), छत्तीसगढ़, अरण्य भवन, सेक्टर-19, नवा रायपुर, अटल नगर, छत्तीसगढ़,
8. सगस्त मुख्य वन संरक्षक (क्षेत्रीय), छत्तीसगढ़, रायपुर,
9. समस्त मुख्य वन संरक्षक/क्षेत्र संचालक, प्रोजेक्ट टायगर, छत्तीसगढ़,
10. समस्त संचालक/अधीक्षक/प्रभारी राष्ट्रीय उद्यान/अभ्यारण्य/वन विभाग द्वारा संचालित विडियाघर,
11. Wildlife Trust of India, हेड ऑफिस: F-13, सेक्टर 8, नौएडा-201301, उत्तर प्रदेश, कृपया उक्त समिति हेतु एक प्रतिनिधि नामांकित कर अवगत कराने का कष्ट करें।
12. श्री शेख इसमाईल, शुक्रवारी बाजार, गुदियारी, जिला- रायपुर, छत्तीसगढ़ की ओर सूचनार्थ प्रेषित ।
13. आदेश फोल्डर।

V. Raju  
4.3.2021  
अवर सचिव

छत्तीसगढ़ शासन,  
वन एवं जलवायु परिवर्तन विभाग  
A

## Annexure-13

## Approval Obtained from CZA for Construction of Enclosures for Endangered Species



F. No. 19-160/93-CZA(147)(Vol. I)(AK)/6031

DAT

To

The Director cum Divisional Forest Officer,  
Jungle Safari,  
Naya Raipur,  
Chattisgarh

**Sub:- Signed copy of the proposed designs of structural components of safaris at Nandanvan Zoo & Safari, Naya Raipur - reg**

Sir,

Reference is invited to your letter dt. 09.10.2014.

Please find enclosed herewith approved and signed copies of the designs of the following proposed safaris to be constructed at Nandanvan Zoo & Safari, Naya Raipur for favour of information and necessary action at your end.

1. Herbivore Safari
2. Sloth Bear Safari
3. Tiger & Lion Safari

Yours faithfully,

Sd/-  
(B. S. Bonal)  
Member Secretary

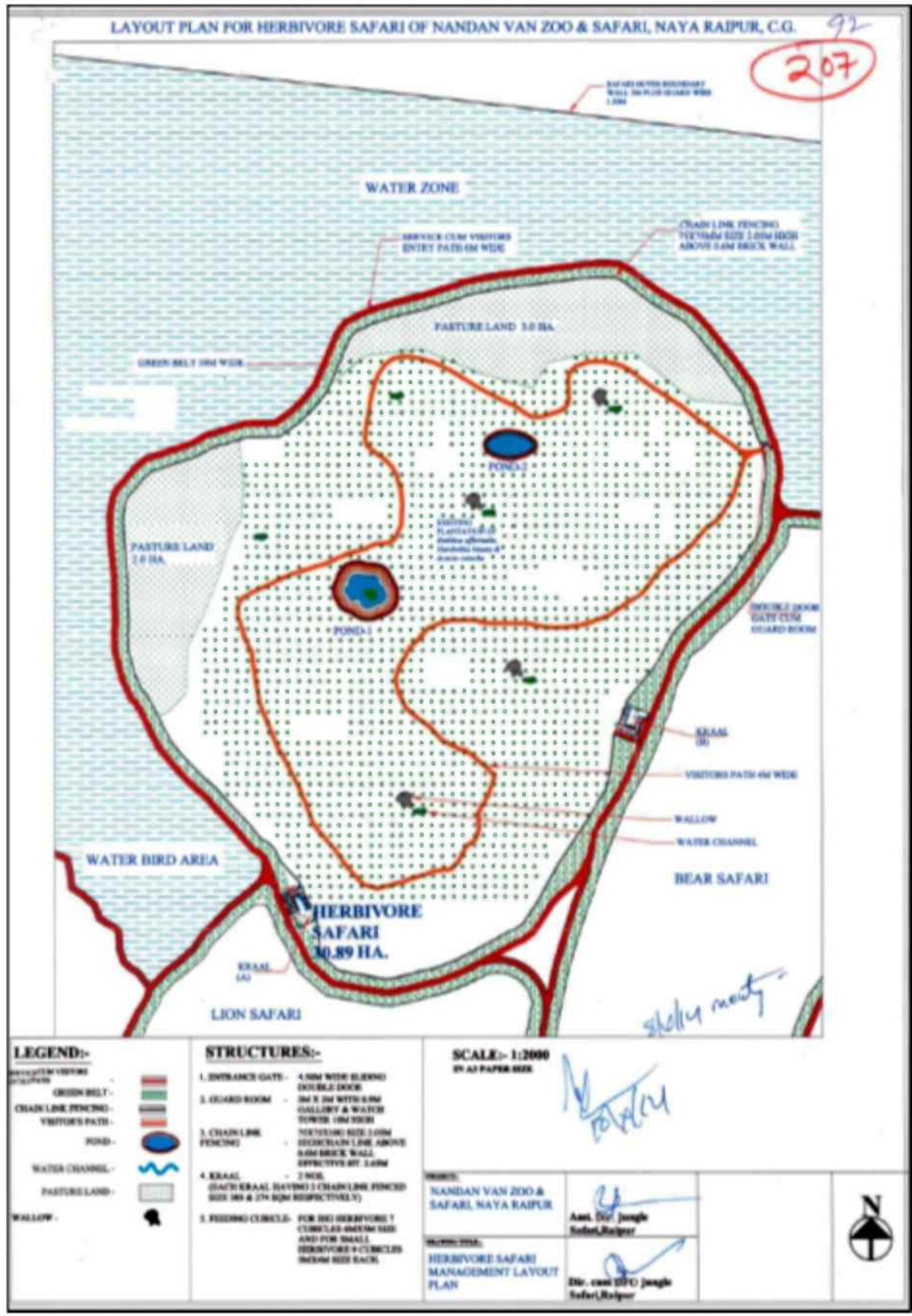
Encl: as above

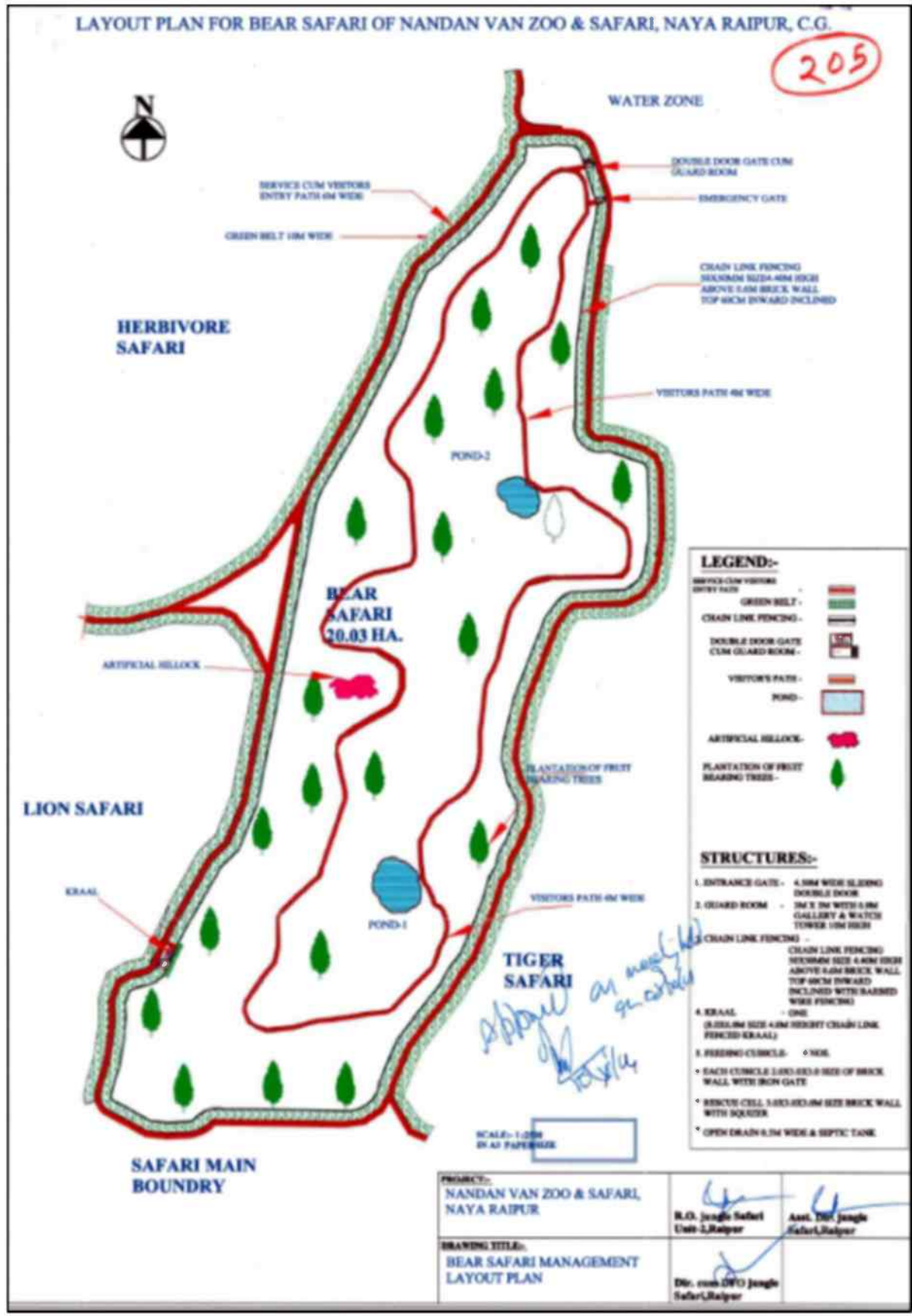
Copy to for favour of information and necessary action to:-

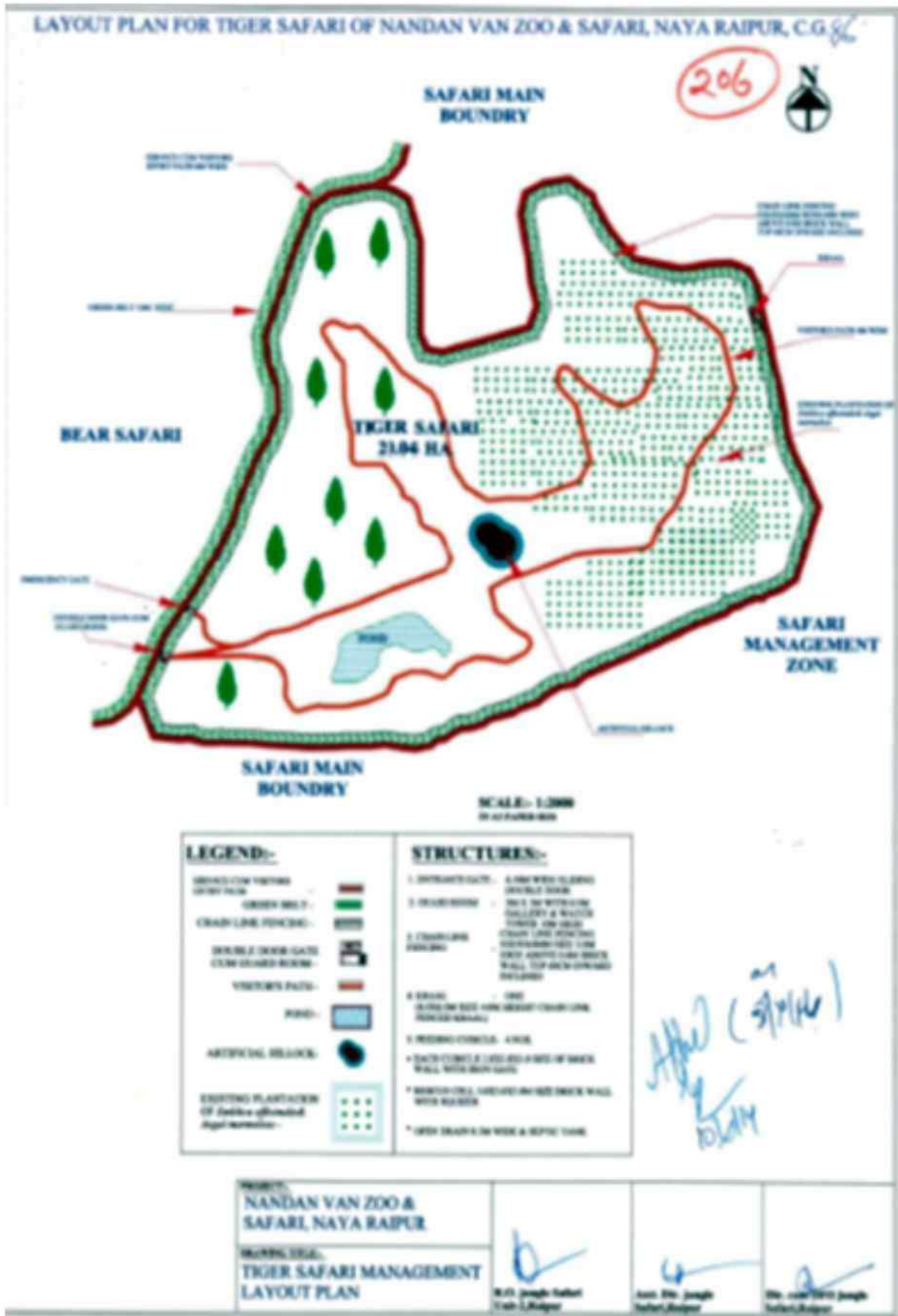
1. The Chief Wildlife Warden, Government of Chattisgarh, Raipur.

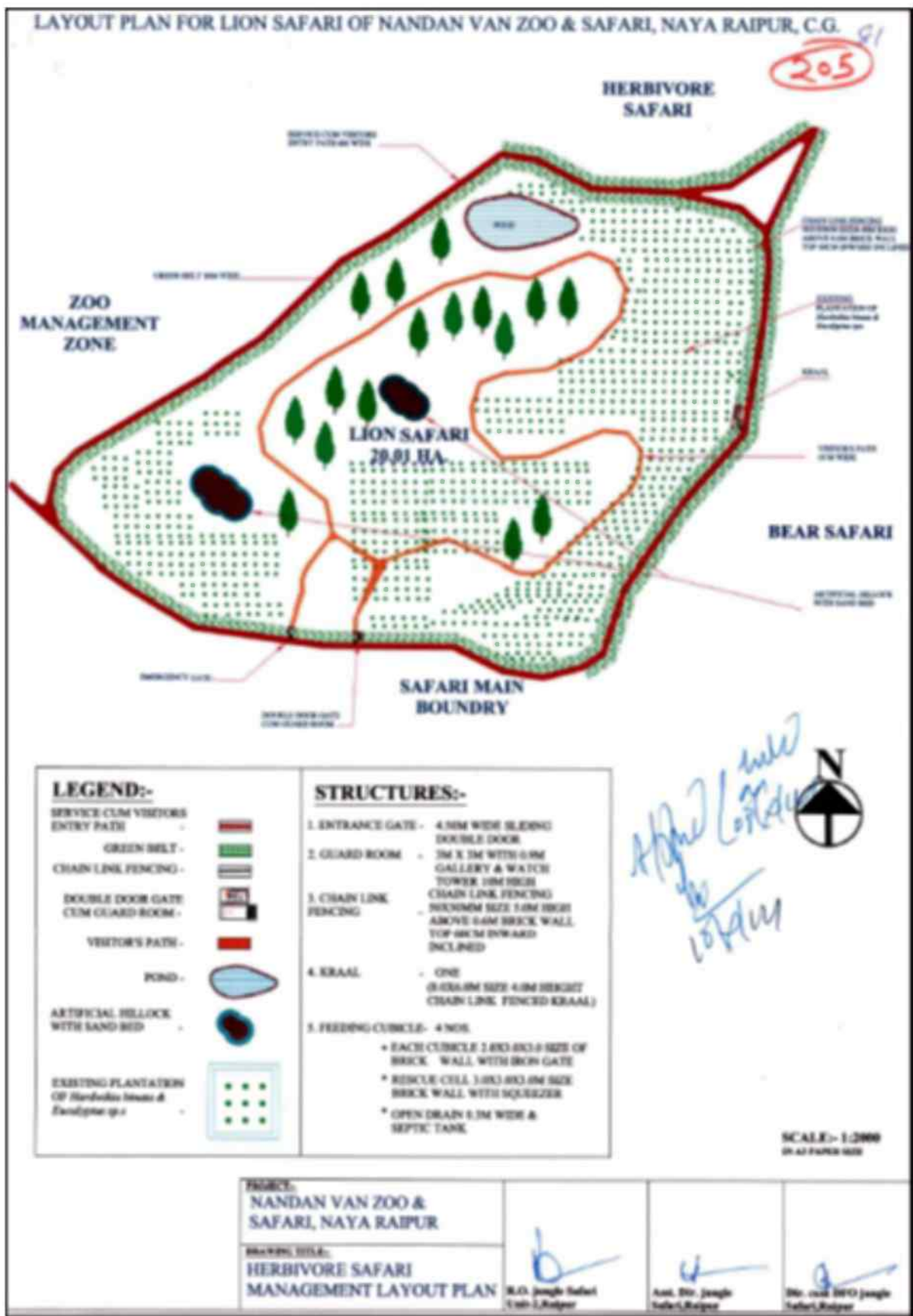
Recd  
10.10.2014  
o/c

(Dr. Brij Kishor Gupta)  
Evaluation & Monitoring Officer

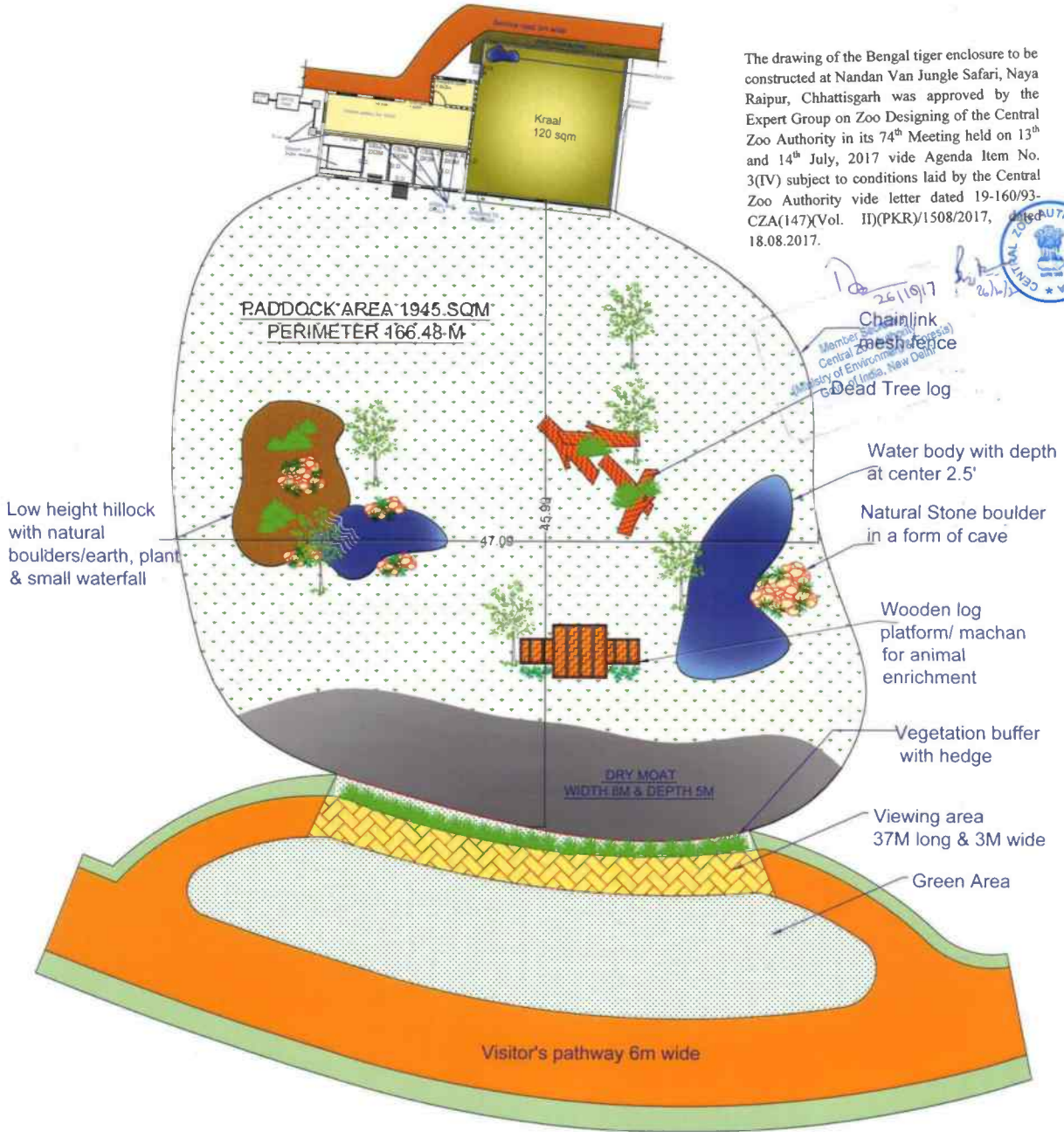








**ROYAL BENGAL TIGER ENCLOSURE PLAN  
NANDAN VAN JUNGLE SAFARI, NAYA RAIPUR**



The drawing of the Bengal tiger enclosure to be constructed at Nandan Van Jungle Safari, Naya Raipur, Chhattisgarh was approved by the Expert Group on Zoo Designing of the Central Zoo Authority in its 74<sup>th</sup> Meeting held on 13<sup>th</sup> and 14<sup>th</sup> July, 2017 vide Agenda Item No. 3(IV) subject to conditions laid by the Central Zoo Authority vide letter dated 19-160/93-CZA(147)(Vol. II)(PKR)/1508/2017, 18.08.2017.



26/10/17  
Chainlink mesh fence  
Dead Tree log

Water body with depth at center 2.5'

Natural Stone boulder in a form of cave

Wooden log platform/ mahan for animal enrichment

Vegetation buffer with hedge

Viewing area 37M long & 3M wide

Green Area

Visitor's pathway 6m wide

DRY MOAT WIDTH 8M & DEPTH 5M

PADDOCK AREA 1945 SQM  
PERIMETER 166.48 M

47.05

45.84

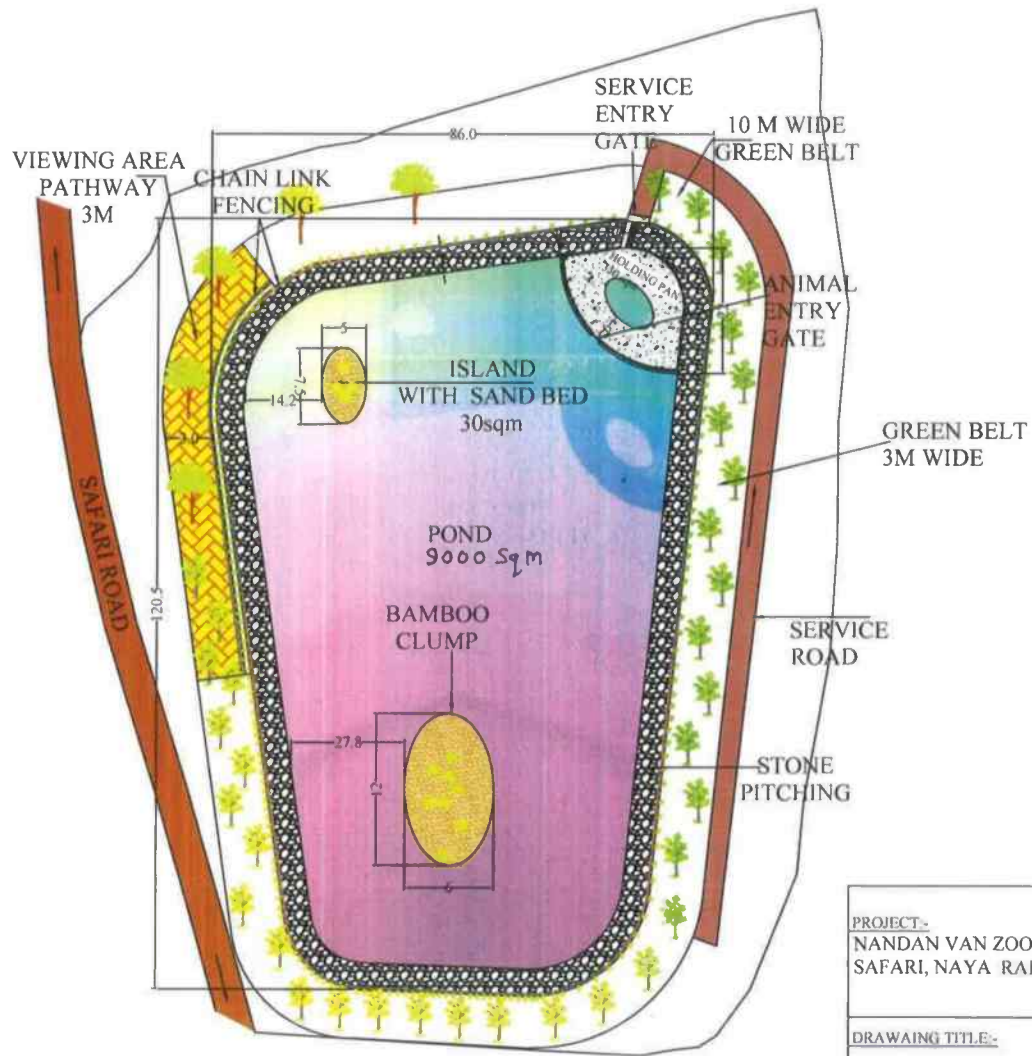
Low height hillock with natural boulders/earth, plant & small waterfall

  
DIRECTOR CUM DFO  
JUNGLE SAFARI RAIPUR

  
ASSISTANT DIRECTOR  
JUNGLE SAFARI RAIPUR

  
RANGE OFFICER UNIT NO.3  
JUNGLE SAFARI RAIPUR

### CROCODILE EXHIBIT POND NANDAN VAN ZOO AND SAFARI, NAYA RAIPUR, C.G.



PROJECT:-  
 NANDAN VAN ZOO &  
 SAFARI, NAYA RAIPUR

DRAWAING TITLE:-  
 CROCODILE EXHIBIT  
 POND

ALL DIMENSIONS IN METER

*24/10/22*  
 DIRECTOR CUM  
 D.F.O. JUNGLE  
 SAFARI RAIPUR

C.C.F (WILD LIFE) & FIELD  
 DIRECTOR UDANTI-  
 SITANADI TIGER  
 RESERVE RAIPUR  
 CHHATTISGARH

P.C.C.F (WILD LIFE) & CHIEF  
 WILD LIFE WARDEN  
 CHHATTISGARH  
*Approved by Design Committee*

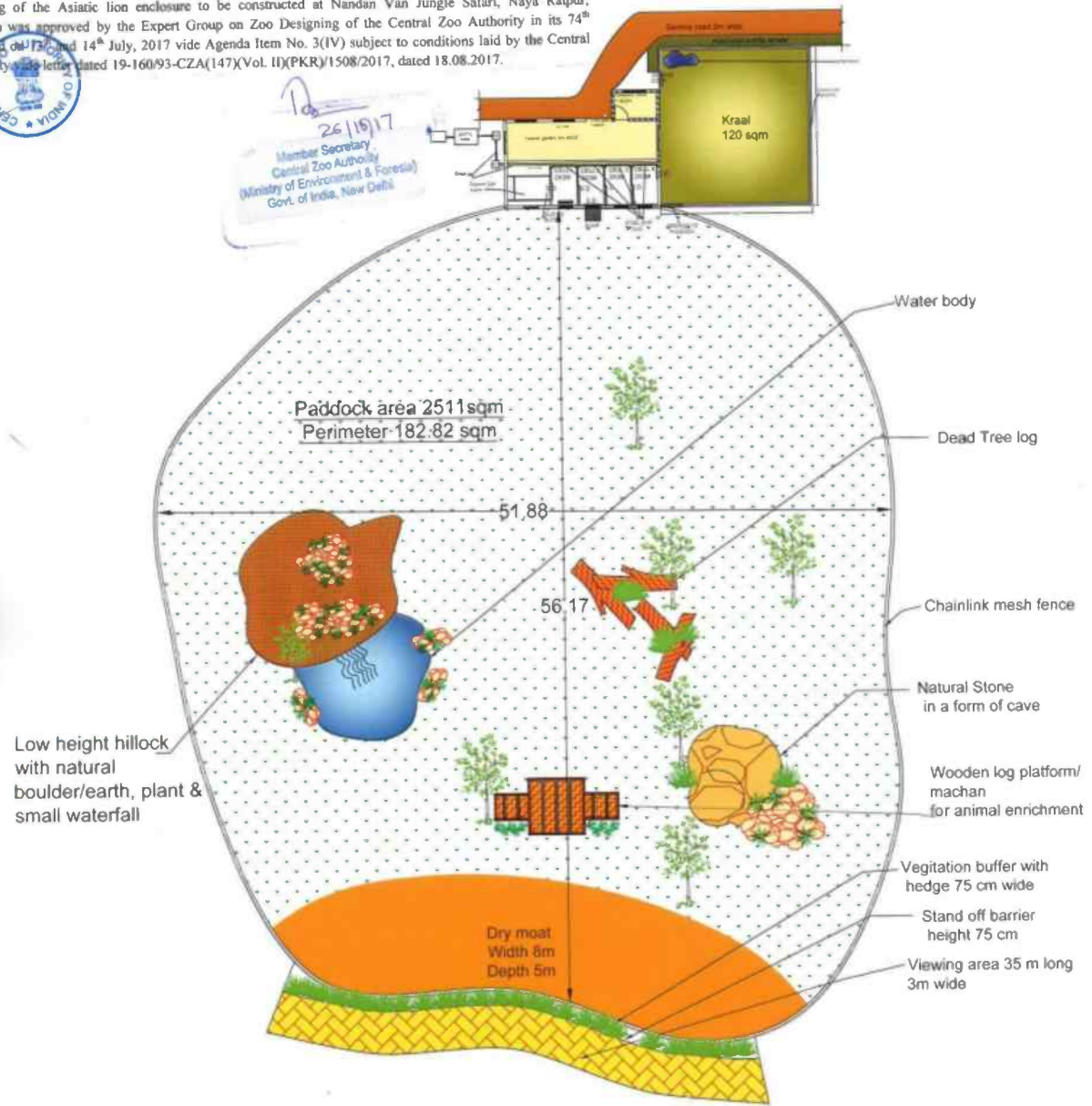
Member Secretary  
 Central Zoo Authority  
 (Ministry of Environment & Forests)  
 Govt. of India, New Delhi

### ASIATIC LION ENCLOSURE PLAN NANDAN VAN JUNGLE SAFARI NAYA RAIPUR

Plan of the Asiatic lion enclosure to be constructed at Nandan Van Jungle Safari, Naya Raipur, which was approved by the Expert Group on Zoo Designing of the Central Zoo Authority in its 74<sup>th</sup> meeting on 13<sup>th</sup> and 14<sup>th</sup> July, 2017 vide Agenda Item No. 3(IV) subject to conditions laid by the Central Zoo Authority vide letter dated 19-160/93-CZA(147)(Vol. II)(PKR)/1508/2017, dated 18.08.2017.



26/10/17  
Member Secretary  
Central Zoo Authority  
(Ministry of Environment & Forests)  
Govt. of India, New Delhi

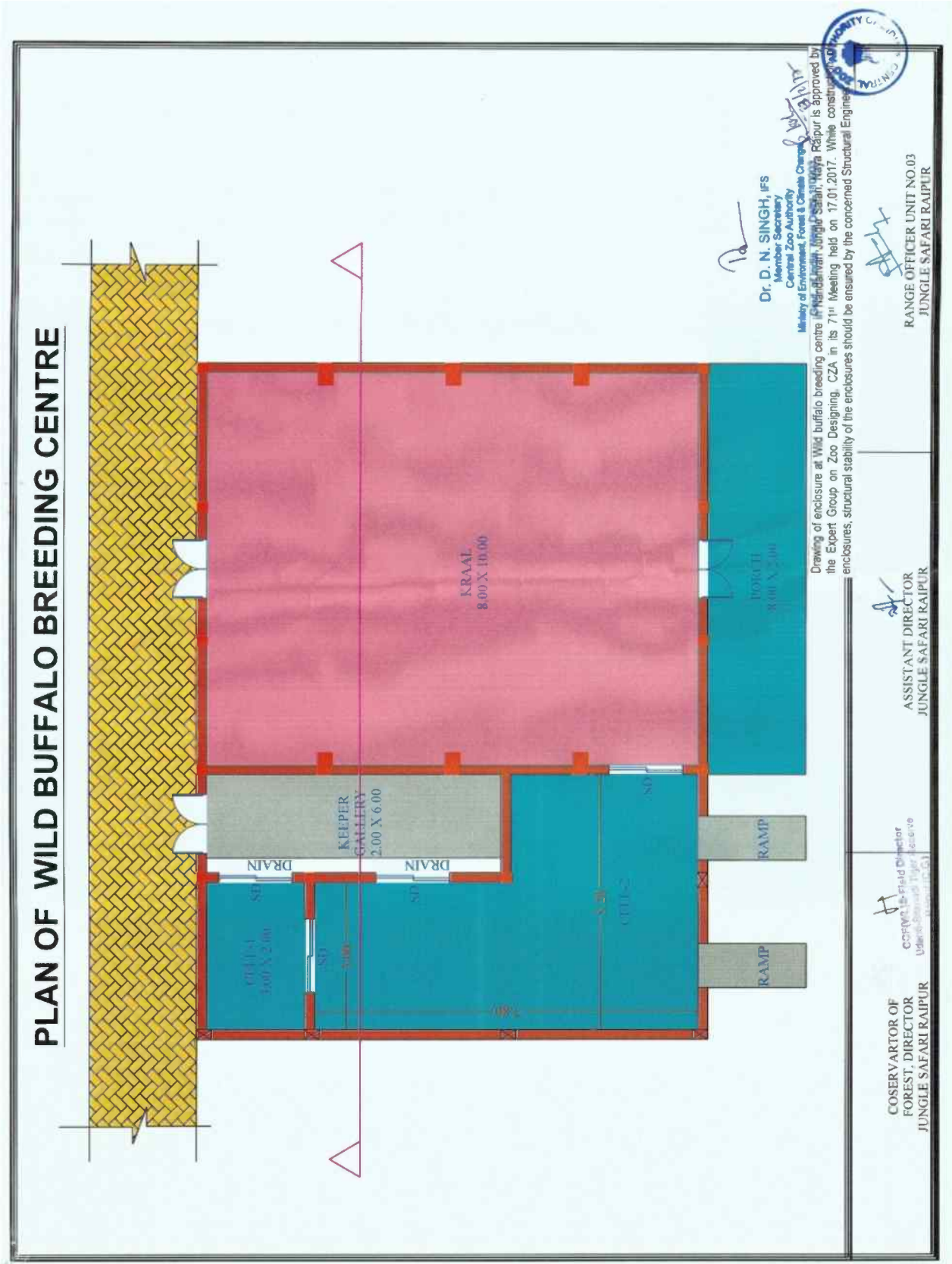


DIRECTOR CUM DFO  
JUNGLE SAFARI RAIPUR

ASSISTANT DIRECTOR  
JUNGLE SAFARI RAIPUR

RANGE OFFICER UNIT NO.3  
JUNGLE SAFARI RAIPUR

# PLAN OF WILD BUFFALO BREEDING CENTRE



Dr. D. N. SINGH, IFS  
 Member Secretary  
 Central Zoo Authority



Drawing of enclosure at Wild buffalo breeding centre at Mandla Wildlife Sanctuary, Mandla Raipur is approved by the Expert Group on Zoo Designing, CZA in its 7<sup>th</sup> Meeting held on 17.01.2017. While construction of enclosures, structural stability of the enclosures should be ensured by the concerned Structural Engineer.

COSERVARTOR OF  
 FOREST, DIRECTOR  
 JUNGLE SAFARI RAIPUR

CCFV, Field Director  
 Udaipur Wildlife Sanctuary  
 (Mandla Wildlife Sanctuary)

ASSISTANT DIRECTOR  
 JUNGLE SAFARI RAIPUR

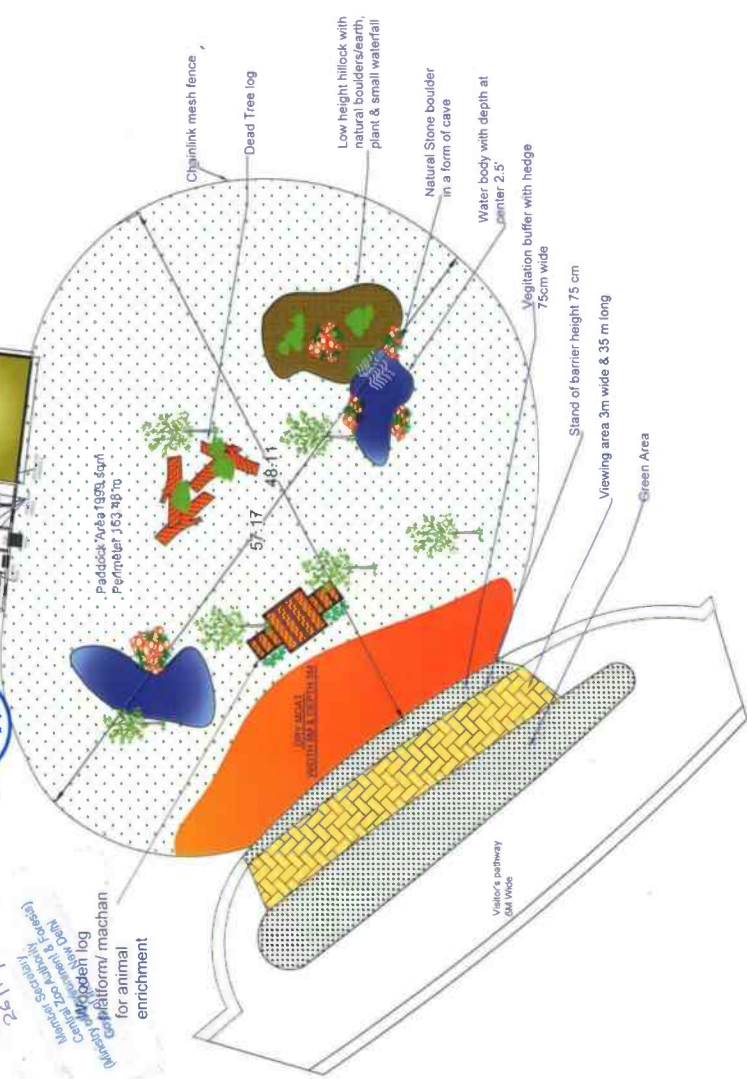
RANGE OFFICER UNIT NO.03  
 JUNGLE SAFARI RAIPUR

**WHITE TIGER ENCLOSURE PLAN  
NANDAN NAN JUNGLE SAFARI NAYA RAIPUR**

The drawing of the White tiger enclosure to be constructed at Nandan Van Jungle Safari, Naya Raipur, Chhattisgarh was approved by the Expert Group on Zoo Designing of the Central Zoo Authority in its 74<sup>th</sup> Meeting held on 13<sup>th</sup> and 14<sup>th</sup> July, 2017 vide Agenda Item No. 3(IV) subject to conditions laid by the Authority. Zoo Authority vide letter dated 19-160/93-CZA(147X)Vol. II(PKR)/1508/2017, dated 18.08.2017.



11.06.17  
Minister Secretary  
Central Zoo Authority  
New Delhi  
Milestone Central Zoo Authority  
for animal enrichment



DIRECTOR CUM DFO JUNGLE  
SAFARI RAIPUR

ASSISTANT DIRECTOR JUNGLE  
SAFARI RAIPUR

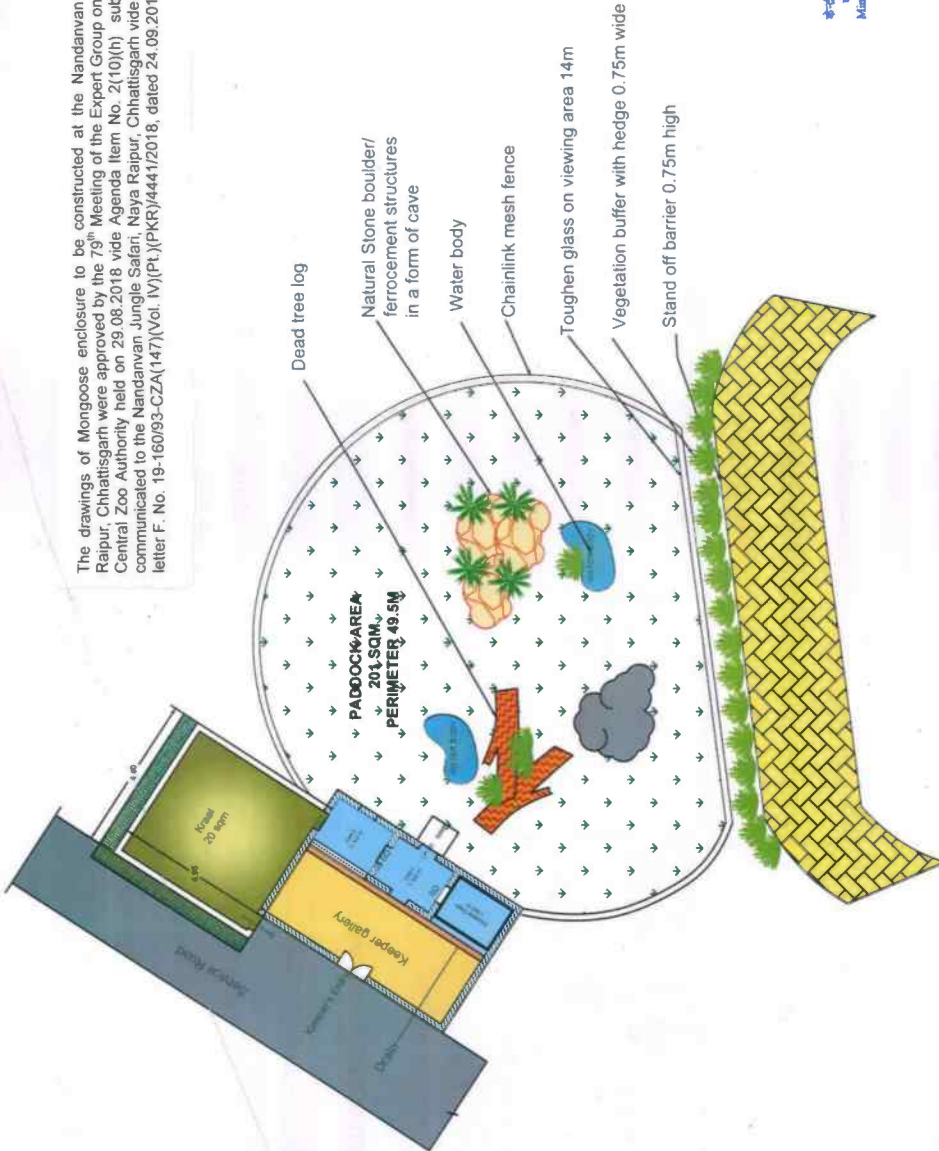
RANGE OFFICER UNIT NO.3  
JUNGLE SAFARI RAIPUR

# PLAN OF MANGOOSE ENCLOSURE

The drawings of Mongoose enclosure to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh were approved by the 79<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 29.08.2018 vide Agenda Item No. 2(10)(h) subject to the conditions communicated to the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh vide Central Zoo Authority letter F. No. 19-160/93-CZA(147)(Vol. IV)(Pt. X)(PKR)/4441/2018, dated 24.09.2018.



*अनूप कुमार*  
 Member Secretary  
 संयुक्त विज्ञान अभिलेख/Central Zoo Authority  
 प्रकृति एवं जीव विज्ञान विभाग, नया रायपुर  
 Ministry of Environment, Forest & Climate Change  
 प्रकृति संरक्षण विभाग,  
 संयुक्त विज्ञान अभिलेख,  
 नया रायपुर, छत्तीसगढ़  
 Cent. of India, New Delhi



*g*  
 DIRECTOR  
 JUNGLE SAFARI

*mm*  
 ASSISTANT DIRECTOR  
 JUNGLE SAFARI

*Amr*  
 RANGE OFFICER  
 JUNGLE SAFARI

# LEOPARD ENCLOSURE PLAN NADAN VAN JUNGLE SAFARI, NAYA RAIPUR

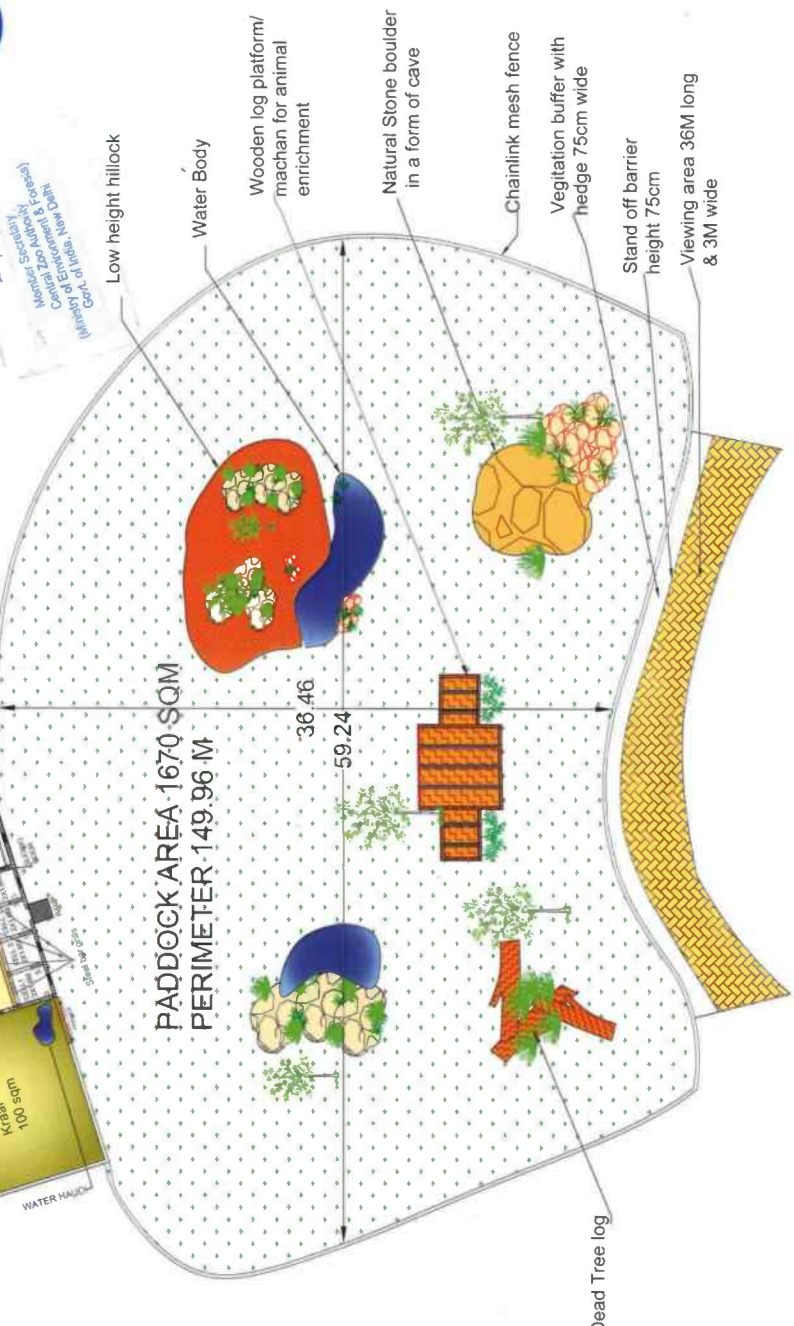
The drawing of the Leopard enclosure to be constructed at Nandan Van Jungle Safari, Naya Raipur, Chhattisgarh was approved by the Expert Group on Zoo Designing of the Central Zoo Authority in its 74<sup>th</sup> Meeting held on 13<sup>th</sup> and 14<sup>th</sup> July, 2017 vide Agenda Item No. 3(IV) subject to conditions laid by the Central Zoo Authority. Ministry of Environment, Government of India, letter dated 19-11-2017, dated 18.08.2017.



26/11/17  
Member Secretary  
Central Zoo Authority  
Ministry of Environment, Government of India



Paddock Area - 1670 SQM  
PERIMETER - 149.96 M

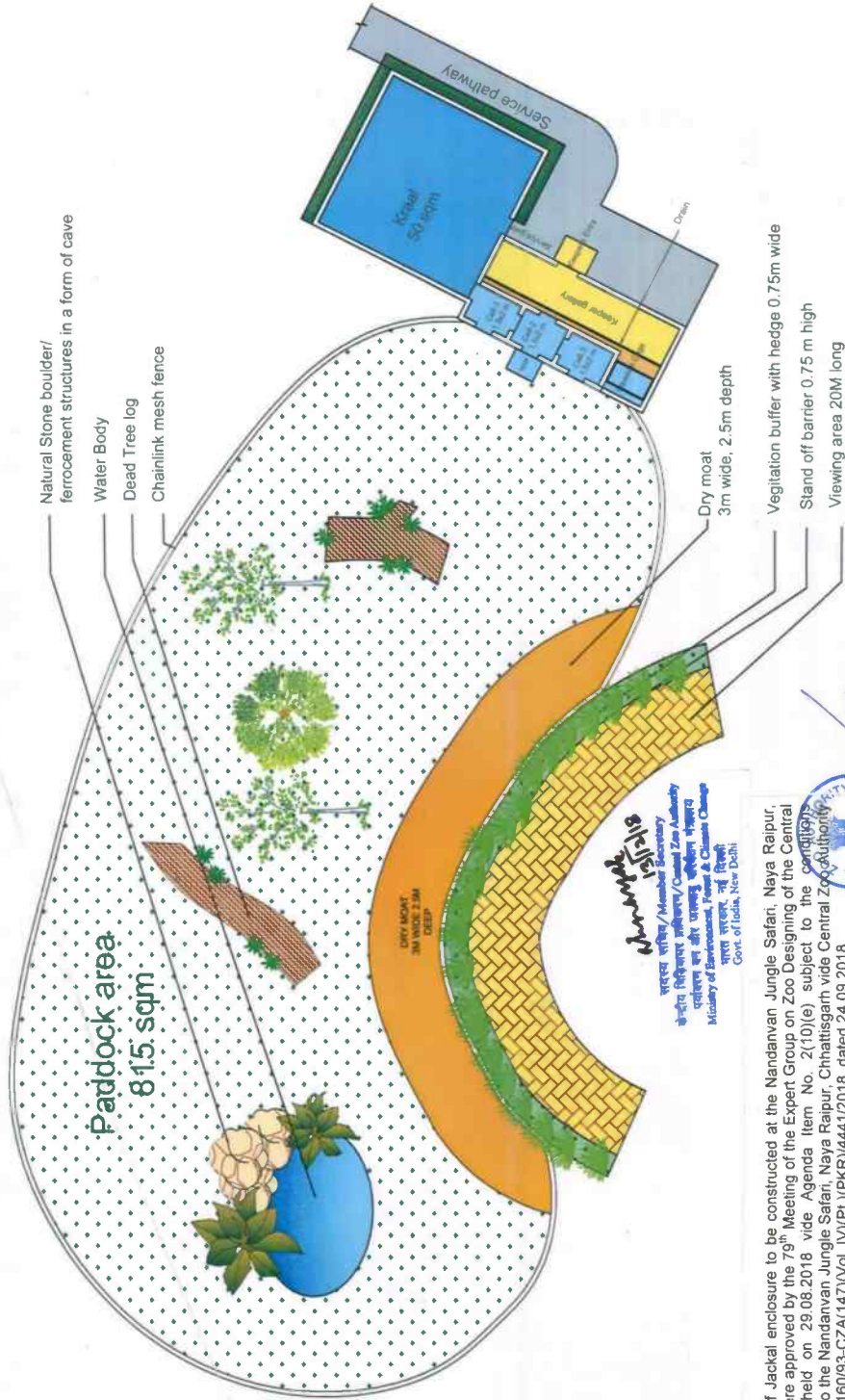


DIRECTOR CUM DFO JUNGLE SAFARI RAIPUR

ASSISTANT DIRECTOR JUNGLE SAFARI RAIPUR

RANGE OFFICER UNIT NO.3 JUNGLE SAFARI RAIPUR

# PLAN OF JACKAL ENCLOSURE

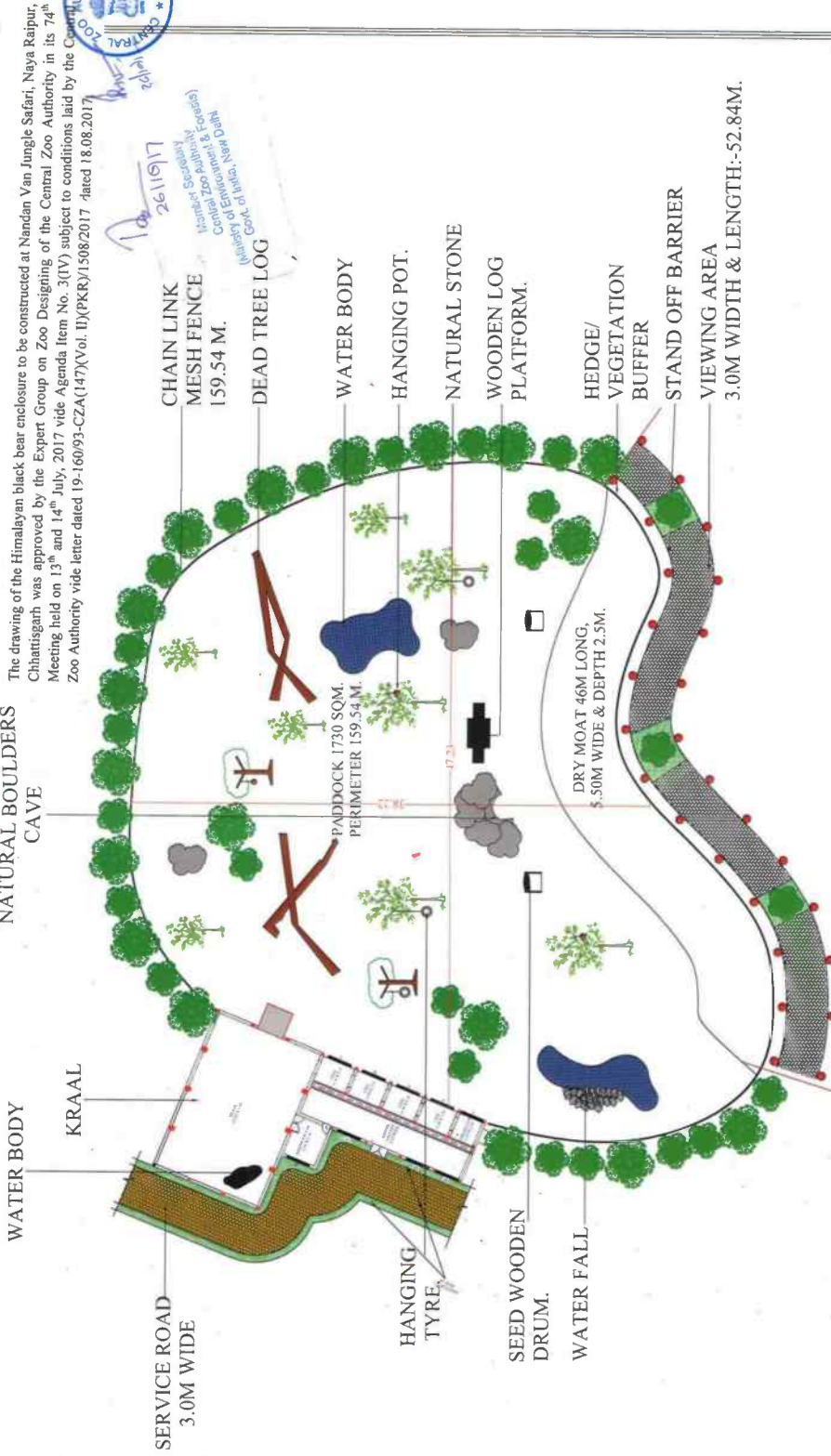


The drawings of Jackal enclosure to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh were approved by the 79<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 29.08.2018 vide Agenda Item No. 2(10)(e) subject to the conditions communicated to the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh vide Central Zoo Authority letter F. No. 19-16093-CZA(147)(Vol. IV)(Pt. I)(PKR)/444/12018, dated 24.09.2018.

श्रीकांत शर्मा / Member Secretary  
 वन्य जीव संरक्षण विभाग / Central Zoo Authority  
 संजय गांधी वन्य जीव अभयारण्य  
 Ministry of Environment, Forest & Climate Change  
 Government of India, New Delhi

<p><b>DIRECTOR</b> JUNGLE SAFARI</p>	<p><b>ASSISTANT DIRECTOR</b> JUNGLE SAFARI</p>	<p><b>RANGE OFFICER</b> JUNGLE SAFARI</p>
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**HIMALAYAN BEAR ENCLOSURE PLAN,  
NANDAN VAN JUNGLE SAFARI, NAYA RAIPUR**



The drawing of the Himalayan black bear enclosure to be constructed at Nandan Van Jungle Safari, Naya Raipur, Chhattisgarh was approved by the Expert Group on Zoo Designing of the Central Zoo Authority in its 74<sup>th</sup> Meeting held on 13<sup>th</sup> and 14<sup>th</sup> July, 2017 vide Agenda Item No. 3(CV) subject to conditions laid by the Central Zoo Authority vide letter dated 19-160/93-CZA(147)(Vol. II)(PKR)/1508/2017 dated 18.08.2017.



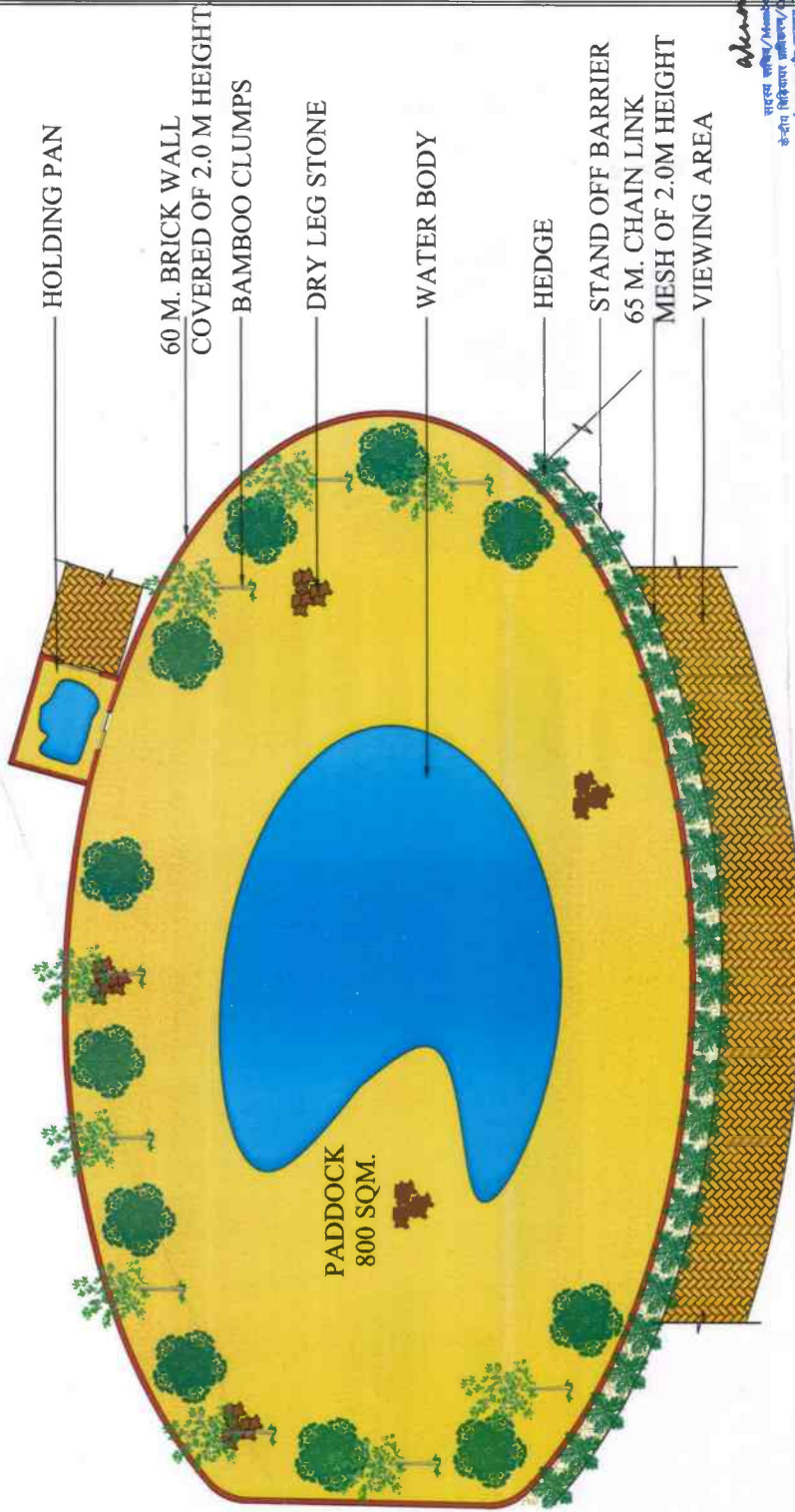
26/11/17  
 Member Secretary  
 Central Zoo Authority  
 (Ministry of Environment, New Delhi)

*[Signature]*  
 DIRECTOR CUM DFO  
 JUNGLE SAFARI RAIPUR

*[Signature]*  
 ASSISTANT DIRECTOR  
 JUNGLE SAFARI RAIPUR

*[Signature]*  
 RANGE OFFICER UNIT NO.3  
 JUNGLE SAFARI RAIPUR

# LAYOUT PLAN FOR GHARIAL ENCLOSURE



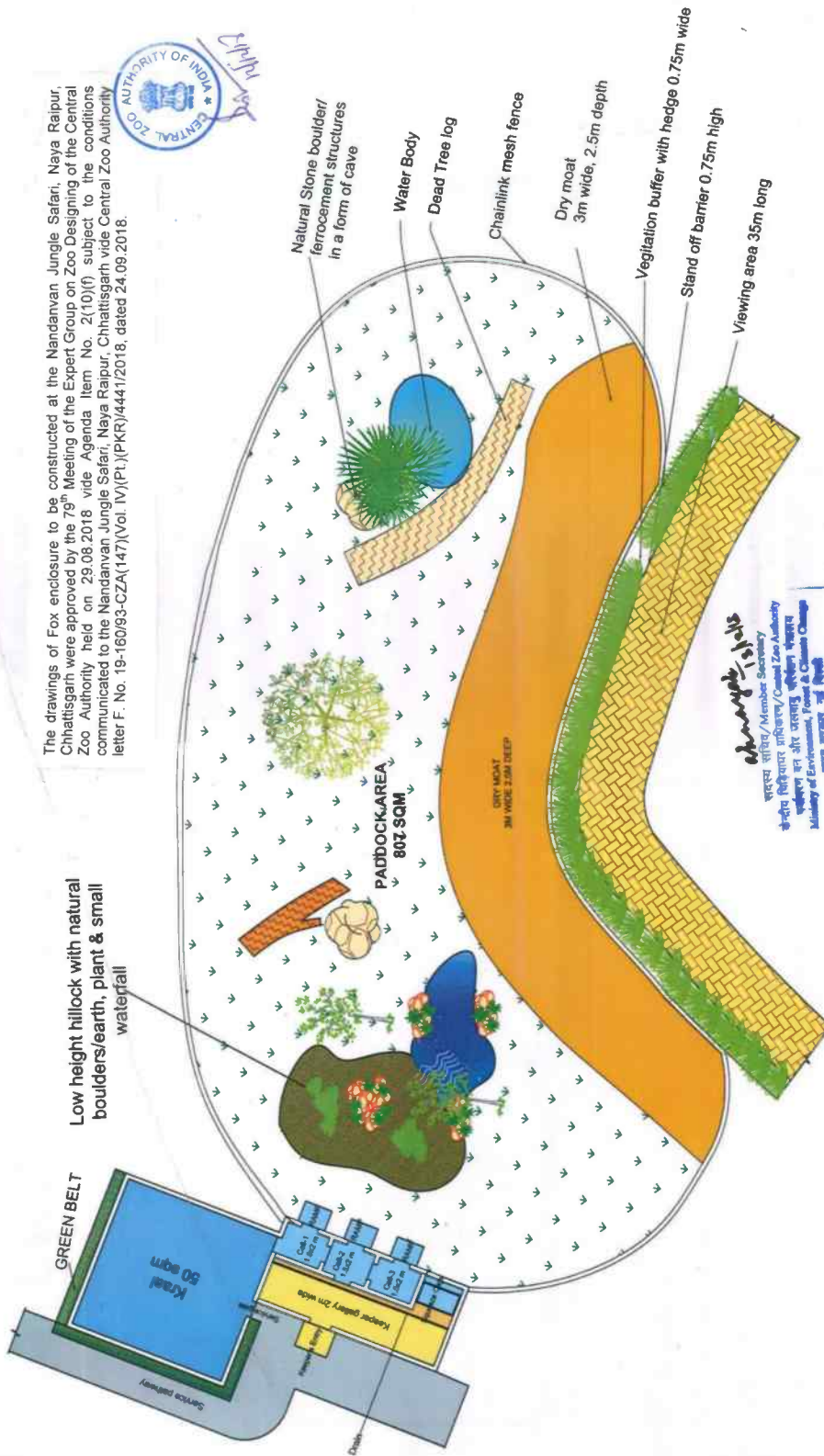
श्रीवत्सल सिंह/Member Secretary  
 नया रायपुर जंगल अभयारण्य/ Central Zoo Authority  
 नया रायपुर, छत्तीसगढ़  
 The drawings of Gharial enclosure to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh were approved by the 79<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 29.08.2018 vide Agenda Item No. 2(10)(c) subject to the conditions communicated to the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh vide Central Zoo Authority letter F. No. 19-160/93-CZA(147)(Vol. IV)(Pt.)/PKR/4441/2018, dated 24.09.2018.



<p><b>DIRECTOR CUM DFO</b>                  JUNGLE SAFARI RAIPUR</p>	<p><b>ASSISTANT DIRECTOR</b>                  JUNGLE SAFARI RAIPUR</p>	<p><b>RANGE OFFICER UNIT NO.3</b>                  JUNGLE SAFARI RAIPUR</p>
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# PLAN OF FOX ENCLOSURE

The drawings of Fox enclosure to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh were approved by the 79<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 29.08.2018 vide Agenda Item No. 2(10)(f) subject to the conditions communicated to the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh vide Central Zoo Authority letter F. No. 19-160/93-CZA(147)(Vol. IV)(P1)(PKR)/444/12018, dated 24.09.2018.



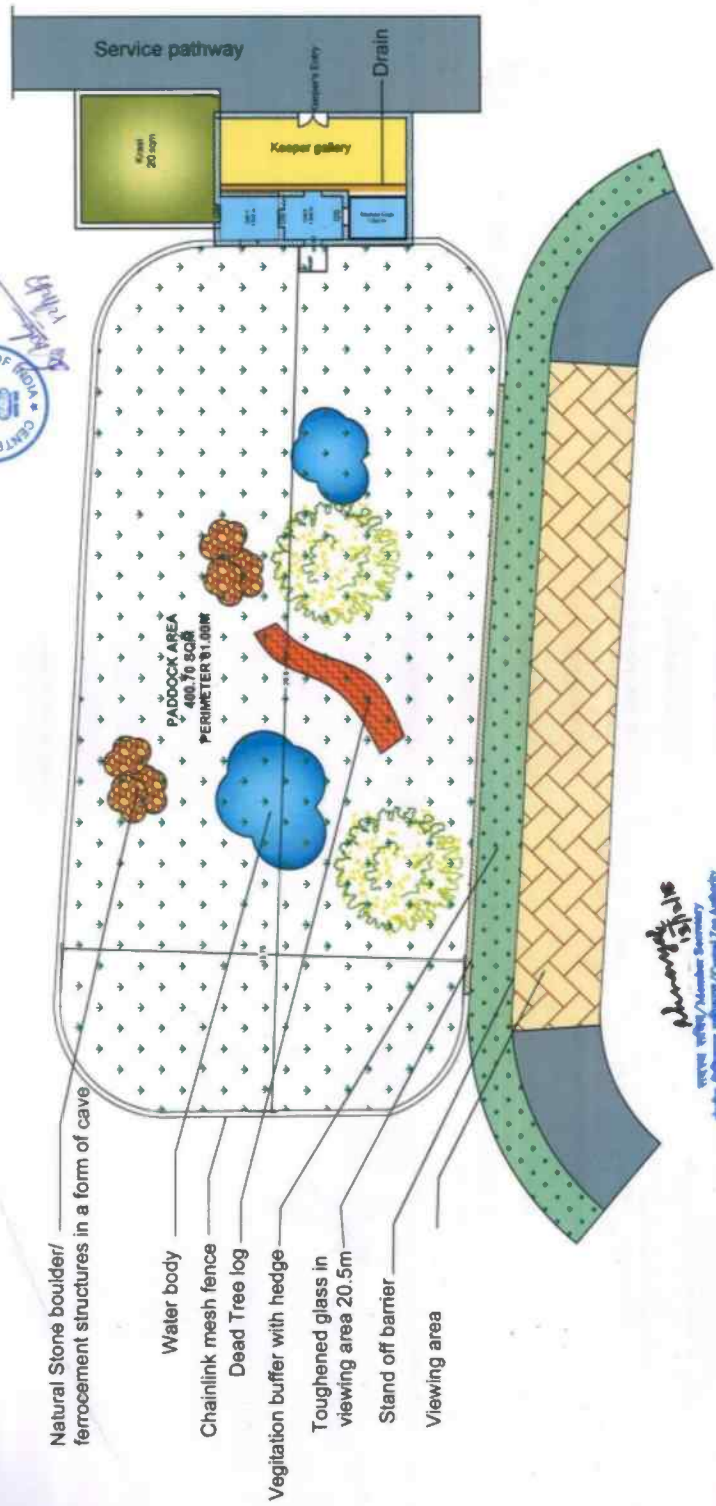
*Chhatrapati*  
 Member Secretary  
 Range Officer, Nandanvan Jungle Safari  
 Ministry of Environment, Forest & Climate Change  
 Govt. of India, New Delhi

<p><i>Arjun</i>                  RANGE OFFICER                  JUNGLE SAFARI</p>	<p><i>WV</i>                  ASSISTANT DIRECTOR                  JUNGLE SAFARI</p>	<p><i>Q</i>                  DIRECTOR                  JUNGLE SAFARI</p>
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# PLAN OF COMMON PALM CIVET ENCLOSURE

The drawings of Common palm civet enclosure to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh were approved by the 79<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 29.06.2018 vide Agenda Item No. 2(10)(i) subject to the conditions communicated to the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh vide Central Zoo Authority letter F. No. 19-160/93-CZA(147)(Vol. IV)(Pt.)PKRY/444/2018, dated 24.09.2018.



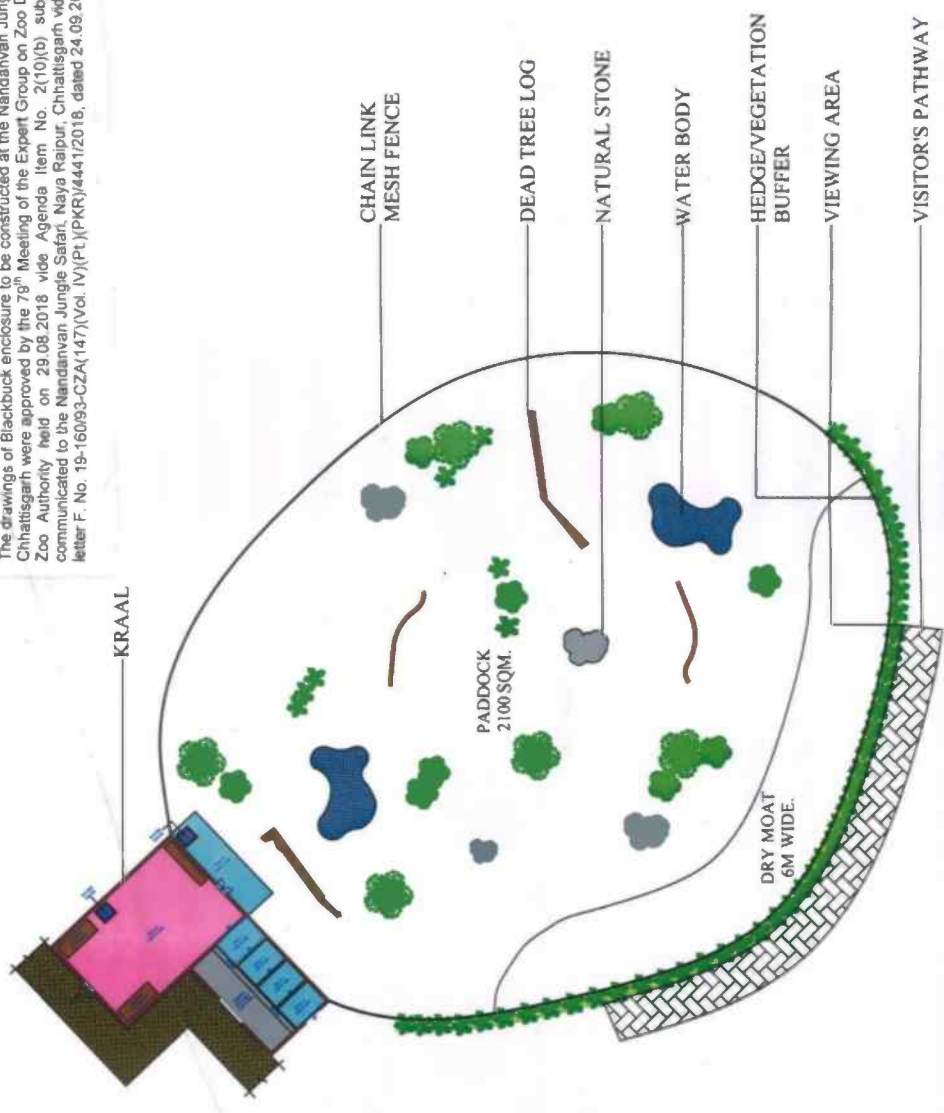
- Natural Stone boulder/ferrocement structures in a form of cave
- Water body
- Chainlink mesh fence
- Dead Tree log
- Vegetation buffer with hedge
- Toughened glass in viewing area 20.5m
- Stand off barrier
- Viewing area

*Pranav K. Singh*  
 Project Officer/Assistant Secretary  
 Wildlife Conservation/Conservation Zoo Authority  
 Ministry of Environment, Forest and Climate Change  
 Office of the Secretary, New Delhi

<p><b>DIRECTOR</b> JUNGLE SAFARI</p>	<p><b>ASSISTANT DIRECTOR</b> JUNGLE SAFARI</p>	<p><b>RANGE OFFICER</b> JUNGLE SAFARI</p>
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# LAYOUT PLAN FOR BLACK BUCK

The drawings of Blackbuck enclosure to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh were approved by the 79<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 29.08.2018 vide Agenda Item No. 2(10)(b), subject to the conditions communicated to the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh vide Central Zoo Authority letter F. No. 19-16093-CZA(147)(Vol. IV)(PL)(PKR)/4441/2018, dated 24.09.2018.



*change 15/11/2018*  
 Naya Raipur/Assistant Secretary  
 Wildlife Department/Central Zoo Authority  
 Wildlife and Nature Conservation  
 Ministry of Environment, Forest & Climate Change  
 New Block, 1st Floor  
 Govt. of India, New Delhi

<p>DIRECTOR JUNGLE SAFARI</p>	<p><i>WJ</i></p> <p>ASSISTANT DIRECTOR JUNGLE SAFARI</p>	<p><i>Amish</i></p> <p>RANGE OFFICER JUNGLE SAFARI</p>
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**PARTICULARS**

NAME OF ZONE	SQM
BEAR	270.78
SMALL CARNIVORE	375.66
LARGE CARNIVORE	516.24
REPTILE & PYTHON	669.60
CROCODILE	891.78
BIRDS	180.00
MONKEY	262.68
LANGUR	261.60
LARGE HERBIVORE	270.78
SMALL HERBIVORE	270.78
RAJAH'S AREA	7500.00
SERVICE ROAD	4995.00
OPEN WILDERNESS AREA	12000.00

**LEGEND**

RESCUE CENTRE AREA	
GATE	
OUTER SERVICE ROAD	
ANIMAL ENCLOSURES	
SERVICE ROAD	
TOILET	
GREEN BELT	
DRINKING WATER	
ISLAND	
RESTING CUM BAIN SHELTER	
SEAT	
DRINKING WATER	
ISLAND	
RESTING CUM BAIN SHELTER	
MULTISTORY INTERPRETATION CENTER	

**ARCHITECT SEAL/SIGN;**  
**Ar. Deepesh Verma**  
 Regd. by COA  
 Reg. No. GA/2015/72955  
 Prop. Verma & Associates,  
 Raipur (C.G.), Mob. 91117-20001

**LAYOUT PLAN**

**DIRECTOR CUM DFO**  
 JUNGLE SAFARI RAIPUR

**ASSISTANT DIRECTOR**  
 JUNGLE SAFARI RAIPUR

**RANGE OFFICER UNIT NO.2**  
 JUNGLE SAFARI RAIPUR



GOVERNMENT OF INDIA  
भारत सरकार

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE  
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय

### Central Zoo Authority

कन्द्रीय चिडियाघर प्राधिकरण



F. No. 19-160/93-CZA(147)(Vol. II)(Pt.)(PKR) / 2333 / 2020

By Post / E-mail  
Date: 27.02.2020

To,

The Chief Wildlife Warden,  
Government of Chhattisgarh,  
Aranya Bhavan, Jail Road,  
Fafadih Chowk,  
Raipur – 492 001,  
Chhattisgarh  
(E-mail: pccfwildlifecg@gmail.com, cwllwgc@gmail.com).



**Sub:-** Permission of mating of female wild buffalo housed in the Wild Buffalo Conservation Breeding Centre, Nandanvan Jungle Safari, Naya Raipur with the wild mating animals in its natural habitat – reg.

**Ref:-** Telephonic discussion of the Chief Wildlife Warden, Chhattisgarh with the Member Secretary, Central Zoo Authority.

Sir,

With reference to above, I am directed to inform that the proposal for permission of mating of female wild buffalo housed in the Wild Buffalo Conservation Breeding Centre, Nandanvan Jungle Safari, Naya Raipur with the wild mating animals in its natural habitat was placed before the Technical Committee of the Central Zoo Authority in its 94<sup>th</sup> meeting held on 03.02.2020.

The Technical Committee of the Central Zoo Authority did not approve the said proposal. However, the Committee made following suggestion:-

- The cloned animal is too precious for the purpose of Conservation Breeding Programme, hence, should not be put at risk as there are enough chances of the animal getting injured in wild.
- Option should be explored for artificial insemination with the help of Indian Veterinary Research Institute (IVRI), Bareilly, Uttar Pradesh, LaCONES – CCMB, Hyderabad and Wildlife Institute of India, Dehradun.

This is for your information and necessary action.


Yours sincerely,

(Dr. Sonali Ghosh)  
DIG (HQ)


Steno  
संचालक सह वन वन संरक्षण  
जंगल सफारी, रायपुर

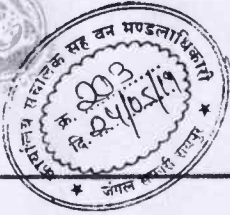
For information and necessary action to:-  
The Divisional Forest Officer, Jungle Safari Division and Director, Nandanvan Jungle Safari, Naya Raipur – 492 002, Chhattisgarh (E-mail: dfojunglesafari@yahoo.com).

15/02/2020  
B-1 Wing, 6<sup>th</sup> Floor, Pt. Deendayal Antyodaya Bhawan, CGO Complex, Lodhi Road, New Delhi-110003  
बी-1 विंग, छठा तल, पंडित दीनदयाल अन्तोदय भवन, रीजीओ परिसर, लोधी रोड, नई दिल्ली-110003  
Tel.: 011-24367846, 24367851, 24367852, Fax: 011-24367849  
E-mail: cza@nic.in, Website: http://www.cza.nic.in



भारत सरकार  
Government of India  
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय  
Ministry of Environment, Forest & Climate Change





**केंद्रीय चिड़ियाघर प्राधिकरण**  
**Central Zoo Authority**

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F. No. 19-160/93-CZA(147)(Vol. IV)(PKR) / 835/2019

By Post / E-mail  
Dated: 22.05.2019

To,

The Chief Wildlife Warden,  
Government of Chhattisgarh,  
Aranya Bhavan, Jail Road,  
Fafadih Chowk, Raipur – 492 001 (Chhattisgarh),  
E-mail: [cwlwca@gmail.com](mailto:cwlwca@gmail.com)

Sub:- Drawing of the Rescue Centre (Large Carnivore, Small Carnivore, Large Herbivore, Small Herbivore, Monkey, Langur, Bear, Reptiles, Crocodile and Birds) proposed to be constructed at the Nandanvan Zoo and Jungle Safari, Naya Raipur, Chhattisgarh – reg.

Ref:-

1. This office letter No. 19-160/93-CZA(147)(Vol. IV)(NS)/117/2019, dated 16.01.2019.
2. Your letter No. प्रबंध/2980, dated 20.05.2019.

Sir,


Reference is invited to the above cited correspondences.

The drawing of the Rescue Centre (Large Carnivore, Small Carnivore, Large Herbivore, Small Herbivore, Monkey, Langur, Bear, Reptiles, Crocodile and Birds) proposed to be constructed at the Nandanvan Zoo and Jungle Safari, Naya Raipur, Chhattisgarh was placed before the 80<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 26.12.2018 and approved subject to compliance with the conditions. The same was communicated to the Zoo vide letter referred at S. No. 1. As the Zoo have complied with the stipulated condition, as communicated to this office vide letter referred at S. No. 2, the approval of this Authority on the drawing of the Rescue Centre is communicated herewith.

Signed copy of the drawing of the Rescue Centre is enclosed with this letter for necessary action at your end and records.

Encl. As above.

हस्ता



संचालक सह व.म.अ.  
जंगल सफारी, रायपुर

Yours sincerely,

*Dr. Anup Kumar Nayak*  
(Dr. Anup Kumar Nayak)  
Member Secretary

Copy for information and necessary action to:-

The Divisional Forest Officer, Jungle Safari Division and Director, Nandanvan Jungle Safari, Naya Raipur – 492 002 (Chhattisgarh), E-mail: [dfojunglesafari@yahoo.com](mailto:dfojunglesafari@yahoo.com)

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बी -1 विंग, 6 तल, पं.दीनदयाल अंत्योदय भवन, सी.जी.ओ कॉम्प्लेक्स, लोधी रोड, नई दिल्ली - 110003  
B-1 Wing, 6<sup>th</sup> Floor, Pt. Deendayal Antyodaya Bhawan, C.G.O. Complex, Lodhi Road, New Delhi - 110003  
दूरभाष (Tel) : 011-24367846, 24367851, 24367852 फैक्स (Fax) : 011-24367849  
ईमेल (Email): [cza@nic.in](mailto:cza@nic.in), वेबसाइट (Website): <http://www.cza.nic.in>



भारत सरकार  
Government of India  
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय  
Ministry of Environment, Forest & Climate Change



केंद्रीय चिड़ियाघर प्राधिकरण  
Central Zoo Authority

Email/Post

F. No. 19-160/93-CZA(147) (Vol. IV)(NS)/117/2019

DATE: 16.01.2019

To

The Principle Chief Conservator of Forests  
-cum-Chief Wildlife Warden,  
Government of Chhattisgarh,  
Sector-19, North Block, Aranya Bhawan, First Floor,  
Atal Nagar, Raipur, Chhattisgarh  
Email: cwlwgc@gmail.com

- Sub:-** Drawings of Rescue Centre (large carnivore, small carnivore, large herbivore, small herbivore, monkeys, langur, Bear, Reptiles, Crocodile and Birds), amended drawing of Otter enclosure, amended drawing of Snake Park and amended drawing of Bengal monitor enclosure proposed to be constructed at Nandanvan Zoo and Jungle Safari, Naya Raipur, Chhattisgarh - Reg.

- Ref:-** (i) Your office letter क्रमक/ व.प्रा. / प्रबंध-445/18/3563, dated 18.06.2018  
(ii) This Office letter No. 19-160/93-CZA(147) (Vol. IV)(Pt.)(PKR)/4441/2018, dated 24.09.2018  
(iii) Your office letter No. 6356, dated 22.11.2018.  
(iv) Your office letter क्रमक/ व.प्रा. / प्रबंध-445/18/6256, dated 15.11.2018

Sir,

Reference is invited to the above cited correspondence.

The drawings of Rescue Centre (large carnivore, small carnivore, large herbivore, small herbivore, monkeys, langur, Bear, Reptiles, Crocodile and Birds), amended drawing of Otter enclosure, amended drawing of Snake Park and amended drawing of Bengal monitor enclosure proposed to be constructed at Nandanvan Zoo and Jungle Safari, Naya Raipur, Chhattisgarh were placed before the 80<sup>th</sup> meeting of the Expert Group on Zoo Designing of the Central Zoo Authority (CZA) held on 26.12.2018. The observations of the Expert Group on Zoo Designing of the Central Zoo Authority (CZA) are given below:-

- a. Drawing of Rescue Centre (large carnivore, small carnivore, large herbivore, small herbivore, monkeys, langur, Bear, Reptiles, Crocodile and Birds)**

The members scrutinized the drawing of the composite rescue centre and approved subject to the compliance of the following observations:

- The rescue centre for birds should have provision of night house.
- The rescue centre for snakes should have 2 small cells and one big cell for housing of snakes.
- The crocodile should be provided with 400 sq mt area.
- The rescue centre for bear should have provision of squeeze cage in one of the night cell.

-1-

Continued

बी -1 विंग, 6 तल, पं.दीनदयाल अंत्योदय भवन, सी.जी.ओ. कॉम्प्लेक्स, लोधी रोड, नई दिल्ली - 110003  
B-1 Wing, 6<sup>th</sup> Floor, Pt. Deendayal Antyodaya Bhawan, C.G.O. Complex, Lodhi Road, New Delhi - 110003  
दूरभाष (Tel) : 011-24367846, 24367851, 24367852 फैक्स (Fax) : 011-24367849

ईमेल (Email): cza@nic.in, वेबसाइट (Website): http://www.cza.nic.in

F. No. 19-160/93-CZA(147) (Vol. IV)(NS), Dt. 16.01.2019

Central Zoo Authority

**b. Amended drawing of Otter enclosure**

The design was scrutinized by the members and approved as the Zoo has complied with the observations of the CZA. The members desired that while erecting the glass viewing, it should be ensured that there is no reflection towards visitor's side.

**c. Amended drawing of Snake Park**

The design was scrutinized by the members and approved as the Zoo has complied with the observations of the CZA. The members desired that each cell in snake house should have provision for feeding the snakes from keeper's gallery side.


**d. Amended drawing of Bengal monitor enclosure**

The design was scrutinized by the members and approved as the Zoo has complied with the observations of the CZA.

The structural stability of the above mentioned proposed drawings of the enclosures has not been examined by the Members of the Expert Group of Zoo Designing of the CZA. The Zoo Operator should ascertain the structural stability of the proposed structures.

You are requested to submit amended copy of the drawings of the above mentioned enclosures proposed to be constructed at Nandanvan Zoo and Jungle Safari, Naya Raipur, Chhattisgarh for signatures of the Member Secretary, Central Zoo Authority.

Yours sincerely,

  
(Dr. Anup Kumar Nayak)  
Member Secretary

**Copy for information to:-**

The Divisional Forest Officer, Jungle Safari Division and Director, Nandanvan Jungle Safari, Naya Raipur- 492 002 (Chhattisgarh). Email: dfojunglesafari@yahoo.com



भारत सरकार  
Government of India  
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय  
Ministry of Environment, Forest & Climate Change



केंद्रीय चिड़ियाघर प्राधिकरण  
Central Zoo Authority

F. No. 19-160/93-CZA(147)(Vol. IV)(PKR)/4961/2018

By Post / E-mail  
Date: 12.12.2018

To,  
The Chief Wildlife Warden,  
Government of Chhattisgarh,  
Aranya Bhavan, Jail Road,  
Fafadih Chowk,  
Raipur – 492 001 (Chhattisgarh)

Sub:- Drawing of animal enclosures to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh - reg.

Ref:-

1. This office letter F. No. 19-160/93-CZA(147)(Vol. IV)(Pt.)(PKR)/4441/2018, dated 24.09.2018.
2. Your letter No. 6356, dated 22.11.2018.

Sir,

Reference is invited to the above cited correspondences.

The drawings of Four horned antelope, Blackbuck, Gharial, Jackal, Fox, Mongoose and Common palm civet enclosure to be constructed at the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh were placed before the 79<sup>th</sup> Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 29.08.2018 and the same was approved subject to compliance of the conditions communicated to the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh vide Central Zoo Authority letter referred at S. No. 1. As the Nandanvan Jungle Safari, Naya Raipur, Chhattisgarh have complied with the stipulated condition, as communicated to this office vide letter referred at S. No. 2, the approval of this Authority on the drawings of Four horned antelope, Blackbuck, Gharial, Jackal, Fox, Mongoose and Common palm civet enclosure is communicated herewith.

Signed copy of the drawings of Four horned antelope, Blackbuck, Gharial, Jackal, Fox, Mongoose and Common palm civet enclosure is enclosed with this letter for necessary action at your end and records.

Yours sincerely,

*Dr. Anup Kumar Nayak*  
(Dr. Anup Kumar Nayak)  
Member Secretary

Encl.: As above.

Copy for information and necessary action to:-

The Divisional Forest Officer, Jungle Safari Division and Director, Nandanvan Jungle Safari, Naya Raipur – 492 002 (Chhattisgarh), E-mail: dfojunglesafari@yahoo.com



GOVERNMENT OF INDIA  
भारत सरकार

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE  
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय  
**Central Zoo Authority**  
केन्द्रीय चिड़ियाघर प्राधिकरण



मि० सं० 19-160/93-के.चि.प्रा.(147)(खण्ड - 3)(प्र.कु.रा.)/1844/2017 पोस्ट / ई-मेल द्वारा  
दिनांक: 27.10.2017

सेवा में,

मुख्य वन्यप्राणी अभिरक्षक,  
वन विभाग,  
अरण्य भवन, मेडिकल कॉलेज मार्ग,  
फफादीह, रायपुर - 492 001 (छत्तीसगढ़)  
ई-मेल: cwlwcg@gmail.com

विषय:- नंदनवन जंगल सफारी, नया रायपुर में प्रस्तावित कार्निवोर एनक्लोजर की ड्राइंग डिजाइन के संबंध में।

संदर्भ:- आपके कार्यालय का पत्र क्रमांक व्यय/5166 दिनांक 23.10.2017।

महोदय,

कृपया उपरोक्त संदर्भित पत्र का अवलोकन करें।

नंदनवन जंगल सफारी, नया रायपुर, छत्तीसगढ़ में प्रस्तावित कार्निवोर एनक्लोजर की ड्राइंग डिजाइन 1. ब्राइट टाईगर 2. रॉयल बंगाल टाईगर 3. एशियॉटिक लॉयन 4. स्लॉथ बियर 5. लेपर्ड की ड्राइंग डिजाइन केन्द्रीय चिड़ियाघर प्राधिकरण द्वारा अनुमोदित कर दी गई है।

उपर्युक्त अंकित एनक्लोजर की हस्ताक्षरित ड्राइंग डिजाइन इस पत्र के साथ संलग्नित कर आपको आवश्यक कार्यवाही हेतु भेजी जाती है।

संलग्न: यथोपरि

भवदीय,

(डॉ. डी. एन. सिंह)  
सदस्य सचिव



GOVERNMENT OF INDIA  
भारत सरकार

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय

**Central Zoo Authority**

केन्द्रीय चिड़ियाघर प्राधिकरण



F. No 19-160/93-CZA(147)(Vol.II) / 276/2017

By Post / E-mail  
Date: 13.02.2017

To,

The Principal Chief Conservator of Forests,  
(Wildlife) & Chief Wildlife Warden, Chattisgarh,  
Aranya Bhawan, Medical College Road, Fafadih,  
Raipur - 492001 (Chattisgarh).

**Subject: Establishment of Conservation Breeding Centre for wild buffalo (*Bubalus bubalis* arnee), in Nandanvan Jungle Safari, Naya Raipur - reg.**

**Reference: Your office letter No. 100 dated 09.01.2017.**

Sir,

Reference is invited to above cited correspondence.

The above proposal was placed before the 71<sup>st</sup> meeting of the Expert Group on Zoo Designing of the Central Zoo Authority held on 17.01.2017. The members scrutinized the layout plan and design of the proposed Conservation Breeding Centre for Wild buffalo at Nandanvan Jungle Safari, New Raipur and recommended for placing before the Technical Committee for its approval.

The above layout plan was placed before the 81<sup>st</sup> meeting of Technical Committee of Central Zoo Authority held on 24.01.2017 and the members approved the same.

The approved and signed copies of layout plan and design of proposed Conservation Breeding Centre for Wild buffalo at Nandanvan Jungle Safari, New Raipur are sent herewith for your perusal.

Yours sincerely,

(Dr. D. N. Singh)  
Member Secretary

Encl. As above.

**Copy to:-** The Director cum Divisional Forest Officer, Jungle Safari, Raipur, Chattisgarh for information and necessary action.

B-1 Wing, 6<sup>th</sup> Floor, Pt. Deendayal Antyodaya Bhawan, CGO Complex, Lodhi Road, New Delhi-110003

बी-1 विंग, छठा तल, पंडित दीनदयाल अन्तोदय भवन, सीजीओ परिसर, लोधी रोड़, नई दिल्ली-110003

Tel.: 011-24367846, 24367851, 24367852, Fax: 011-24367849

E-mail: cza@nic.in. Website: http://www.cza.nic.in

## Annexure-14

## List of Animals that are Permanently Marked

कार्यालय वन्यप्राणी चिकित्सा अधिकारी नंदनवन चिड़ियाघर एवं सफारी  
अटल नगर नवा रायपुर (छ.ग.)

प्रति,

संचालक सह वन संरक्षक  
नंदनवन चिड़ियाघर एवं सफारी  
नवा रायपुर, अटल नगर (छ.ग.)

विषय:- स्थाई रूप से पहचान चिन्ह से युक्त वन्यप्राणियों की जानकारी बाबत।

संदर्भ:- आपका कार्यालयीन पत्र क्र./स्टेनो/271/दिनांक 15.09.2022

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विषयांतर्गत लेख है कि नंदनवन चिड़ियाघर एवं सफारी नवा रायपुर, अटल नगर (छ.ग.) में स्थाई रूप से पहचान चिन्ह से युक्त वन्यप्राणियों की जानकारी निम्नानुसार है :-

S.No	Name of the Animals	Species	Type of Marking	Details of Marking
1	Yukti	indian gray wolf	microchip	968000010961038
2	Lakshya	indian gray wolf	microchip	968000010961039
3	Wild dog male	Wild dog	microchip	968000010961537
4	Wild dog female	Wild dog	microchip	968000010961950
5	Gaur male	Indian Bison	microchip	968000010741678
6	Gaur female	Indian Bison	microchip	968000010962187
7	Dolly Female	Leopard	microchip	00075F72F0
8	Tipu male	Leopard	microchip	0007696DB3
9	Kishori Female	RB Tiger	microchip	00066EFD21E
10	Gopal Male	Leopard	microchip	000757F142
11	Indira Female	Leopard	microchip	00075FAA6C
12	Hyena -3	Hyena	microchip	00075F8D1B
13	Hyena -2	Hyena	microchip	00076985A1
14	Hyena -1	Hyena	microchip	000757CB7B
15	Fafori Female	H. bear	microchip	00075F5507
16	Prince	Lion	microchip	000757B51C

( डॉ. राकेश कुमार वर्मा )  
वन्यप्राणी चिकित्सा अधिकारी  
नंदनवन चिड़ियाघर एवं सफारी  
नवा रायपुर, अटल नगर (छ.ग.)



## NANDANVAN SAFARI AND ZOO

Sector-39, Nava Raipur, Atal Nagar, Chhattisgarh - 493661

E-mail: [dfojunglesafari@yahoo.com](mailto:dfojunglesafari@yahoo.com), Website: [www.junglesafari.cg.nic.in](http://www.junglesafari.cg.nic.in)



JungleSafariRaipur



safariraipur



jungle\_safari\_raipur

# REVISED MASTER LAYOUT PLAN OF NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH. AREA -320.15 Ha.



KEY PLAN



LEGENDS		
Sr. No.	NAME	SYMBOL
1.	SAFARI ROAD	[Symbol]
2.	DOUBLE GATE ENTRY / EXIT	[Symbol]
3.	SAFARI VISITOR'S ROAD	[Symbol]
4.	SERVICE ROAD	[Symbol]
5.	NIGHT HOUSE	[Symbol]
6.	VISITOR'S PATH ZOO	[Symbol]
7.	MONITORING PATH / EARTHEN BUND FOR DAM	[Symbol]
8.	FOOD COURT	[Symbol]
9.	TOILET	[Symbol]
10.	GREEN BUFFER	[Symbol]
11.	EXISTING BOUNDARY WALL	[Symbol]
12.	PROPOSED BOUNDARY WALL	[Symbol]
13.	EXISTING ANIMAL ENCLOSURES IN ZOO	[Symbol]
14.	ANIMAL ENCLOSURES IN ZOO TO BE REMOVED FROM S.M.P	[Symbol]
15.	PROPOSED ANIMAL ENCLOSURES IN ZOO	[Symbol]
16.	WATER BODY	[Symbol]
17.	DRINKING WATER	[Symbol]
18.	ISLAND	[Symbol]
19.	RESTING CUM RAIN SHED	[Symbol]
20.	INFORMATION CENTRE	[Symbol]
21.	SEAT / BENCH	[Symbol]
22.	INTERPRETATION CENTRE	[Symbol]
23.	ELECTRIC TRANSFORMER	[Symbol]
24.	WATER TANK (OVER HEAD / UNDER GROUND)	[Symbol]
25.	SOURCE OF WATER	[Symbol]
26.	COMPOST PIT	[Symbol]
27.	S.T.P.	[Symbol]
28.	INCINERATOR / BURIAL GROUND	[Symbol]
29.	RAIN WATER HARVESTING PIT	[Symbol]
30.	GREEN AREA	[Symbol]
31.	FODDER FARM & PASTURE LAND	[Symbol]
32.	EXISTING CONTOURS	[Symbol]
33.	PROPOSED CONTOURS / MOUNDS	[Symbol]
34.	EXISTING ENCLOSURE TO BE MODIFIED	[Symbol]

AREA STATEMENTS FOR DIFFERENT ZONES		
ZONE NAME	AREA (in Ha.)	
i.	WATER ZONE	52.52
ii.	MONUMENT ZONE	0.92
iii.	HERBIVORE SAFARI	30.89
iv.	BEAR SAFARI	20.03
v.	TIGER SAFARI	20.04
vi.	LION SAFARI	20.15
vii.	MANAGEMENT ZONE & RESCUE CENTER	10.75
viii.	SAFARI WATER SUPPLY ZONE	0.30
ix.	ZOO ZONE	50.00
x.	ECO CUM BIO DIVERSITY PARK	32.03
xi.	FODDER FARM & PASTURE LAND	12.18
xii.	FRUIT FARM	3.0
xiii.	ADMINISTRATIVE ZONE	8.75
xiv.	TICKET & WAITING ZONE	4.75
xv.	GARDEN PARK & FOOD ZONE	7.67
xvi.	SERVICE ROAD	8.60
xvii.	GREEN BUFFER	11.50
xviii.	WILDERNESS AREA	26.07
TOTAL AREA		320.15

AREA STATEMENTS FOR ZOOLOGICAL PARK		
Sr. No.	ANIMAL SPECIES	AREA (in Sqm.)
1.	WHITE TIGER (LEUCISTIC)	2590
2.	ASIATIC LION	2550
3.	LEOPARD	2070
4.	BENGAL TIGER	2430
5.	HIMALAYAN BEAR	1730
6.	HYENA	860
7.	WOLF	770
8.	JACKAL	860
9.	WILD DOG	770
10.	FOX	860
11.	GAUR	4180
12.	WILD BUFFALO ENCLOSURE + BREEDING CENTRE	3710 + 25115 = 28825
13.	SAMBAR DEER	2420
14.	BLUE BULL (NILGAI)	2070
15.	SPOTTED DEER	3120
16.	CHINKARA	2550
17.	BARKING DEER	2010
18.	MOUSE DEER	200
19.	BLACK BUCK	2100
20.	COMMON PALM CIVET	460
21.	MONGOOSE	410
22.	FOUR HORNED ANTELOPE	2070
23.	PORCUPINE	200
24.	HONEY BADGER	200
25.	GRAY LANGUR	700
26.	PIG TAIL MONKEY	700
27.	ASSAMESE MONKEY	700
28.	RHESUS MONKEY	700
29.	WALK IN LAND AVIARY	20000
30.	HIPPOPOTAMUS	3220
31.	OTTER	1050
32.	GHARIAL	800
33.	BENGAL MONITOR LIZARD	175
34.	STAR TORTOISE	70
35.	WALK IN WETLAND AVIARY	20000
36.	SNAKE HOUSE	970
37.	CROCODILE	10850
38.	AQUARIUM	270
EXOTIC SPECIES PROPOSED :-		
39.(a)	ZEBRA	
39.(b)	ORYX	10800
39.(c)	WILDBEEST	
40.	CHIMPANZEE	1500
41.	RING TAIL LEMUR	550
42.	SMALL MONKEYS ENCLOSURE	
42.(a)	SQUIRREL MONKEY	
42.(b)	MARMOSET	275
43.	MEERKAT	100
TOTAL AREA		139755 Sqm.

P.C.C.F. WILDLIFE SIGNATURE :-  
[Signature Line]

DIRECTOR SIGNATURE :-  
[Signature Line]

AREA STATEMENT FOR ZOOLOGICAL PARK :-	
SITE AREA - 50 Ha. = 500000 Sqm.	
AREA ENGAGED FOR ANIMALS - 139755 Sqm. = 13.97 Ha. - 27.9 %	
OTHER AREAS LIKE :- ROADS, VISITOR SHED, TOILETS, GARDENS ETC. - 118500 Sqm. = 11.85 Ha. - 23.7%	
GREEN AREA AVAILABLE = site area - (animal areas + other areas)	
= 500000 - (139755 + 118500)	
= 500000 - 258255 = 241745 Sqm. - 24.17 Ha.	
= 48.3 % (OF ZOO SITE AREA)	

NOTES :-  
1. This drawing is based on survey drawing provided by the Client.  
2. Contour Interval 0.5 M.  
3. This drawing is to be used for the purpose it is intended for.  
4. Detailed working drawings should take into account location of trees. Suitable changes in working drawings are to be made to avoid tree felling.

REVISED MASTER LAYOUT PLAN FOR NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH.

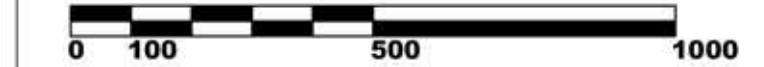
REVISED MASTER LAYOUT PLAN

DATE- 04.09.2022	DEALT BY-	CHECKED BY-	STATUS FOR SUBMISSION
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DRAWING NO. 01

SCALE:- 1:5000  
(SHEET SIZE-A1)

SCALE BAR 1:5000



(1)The Master Plan of Nandanvan Zoo and Safari, Naya Raipur, Chhattisgarh was accorded approval in the 39th Meeting of the Central Zoo Authority held on July 31, 2022 based on recommendation of the Expert Group on Zoo Designing in its 103rd Meeting held on March 22, 2022 and the Technical Committee in its 104th Meeting held on March 30, 2022.  
(2)The decision was communicated vide letter bearing Computer No: 146975 (I/10219/2022) dated August 8, 2022.  
(3)The revised plan submitted vide 770032/2022/CZA dated September 19, 2022 satisfactorily complies to the conditions stipulated in letter at (2).

सदस्य सचिव/Member Secretary  
केन्द्रीय विज्ञानपर प्राधिकरण/Central Zoo Authority  
पर्यावरण वन और जलवायु परिवर्तन मंत्रालय  
Ministry of Environment, Forest & Climate Change  
भारत सरकार, नई दिल्ली  
Govt. of India, New Delhi





# REVISED SEWERAGE MASTER LAYOUT PLAN OF NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH. AREA -320.15 Ha.



KEY PLAN



LEGENDS		
Sr. No.	NAME	SYMBOL
1.	SAFARI ROAD	[Symbol]
2.	DOUBLE GATE ENTRY / EXIT	[Symbol]
3.	SAFARI VISITOR'S ROAD	[Symbol]
4.	SERVICE ROAD	[Symbol]
5.	NIGHT HOUSE	[Symbol]
6.	VISITOR'S PATH ZOO	[Symbol]
7.	MONITORING PATH / EARTHEN BUND FOR DAM	[Symbol]
8.	FOOD COURT	[Symbol]
9.	TOILET	[Symbol]
10.	GREEN BUFFER	[Symbol]
11.	EXISTING BOUNDARY WALL	[Symbol]
12.	PROPOSED BOUNDARY WALL	[Symbol]
13.	EXISTING ANIMAL ENCLOSURES IN ZOO	[Symbol]
14.	ANIMAL ENCLOSURES IN ZOO TO BE REMOVED FROM S.M.P	[Symbol]
15.	PROPOSED ANIMAL ENCLOSURES IN ZOO	[Symbol]
16.	WATER BODY	[Symbol]
17.	DRINKING WATER	[Symbol]
18.	ISLAND	[Symbol]
19.	RESTING CUM RAIN SHED	[Symbol]
20.	INFORMATION CENTRE	[Symbol]
21.	SEAT / BENCH	[Symbol]
22.	INTERPRETATION CENTRE	[Symbol]
23.	ELECTRIC TRANSFORMER	[Symbol]
24.	WATER TANK (OVER HEAD / UNDER GROUND)	[Symbol]
25.	SOURCE OF WATER	[Symbol]
26.	COMPOST PIT	[Symbol]
27.	S.T.P.	[Symbol]
28.	INCINERATOR / BURIAL GROUND	[Symbol]
29.	RAIN WATER HARVESTING PIT	[Symbol]
30.	GREEN AREA	[Symbol]
31.	FODDER FARM & PASTURE LAND	[Symbol]
32.	EXISTING CONTOURS	[Symbol]
33.	PROPOSED CONTOURS / MOUNDS	[Symbol]
34.	EXISTING ENCLOSURE TO BE MODIFIED	[Symbol]

AREA STATEMENTS FOR DIFFERENT ZONES		
ZONE NAME	AREA (in Ha.)	
i.	WATER ZONE	52.52
ii.	MONUMENT ZONE	0.92
iii.	HERBIVORE SAFARI	30.89
iv.	BEAR SAFARI	20.03
v.	TIGER SAFARI	20.04
vi.	LION SAFARI	20.15
vii.	MANAGEMENT ZONE & RESCUE CENTER	10.75
viii.	SAFARI WATER SUPPLY ZONE	0.30
ix.	ZOO ZONE	50.00
x.	ECO CUM BIO DIVERSITY PARK	32.03
xi.	FODDER FARM & PASTURE LAND	12.18
xii.	FRUIT FARM	3.0
xiii.	ADMINISTRATIVE ZONE	8.75
xiv.	TICKET & WAITING ZONE	4.75
xv.	GARDEN PARK & FOOD ZONE	7.67
xvi.	SERVICE ROAD	8.60
xvii.	GREEN BUFFER	11.50
xviii.	WILDERNESS AREA	26.07
TOTAL AREA		320.15

AREA STATEMENTS FOR ZOOLOGICAL PARK		
Sr. No.	ANIMAL SPECIES	AREA (in Sqm.)
1.	WHITE TIGER (LEUCISTIC)	2590
2.	ASIATIC LION	2550
3.	LEOPARD	2070
4.	BENGAL TIGER	2430
5.	HIMALAYAN BEAR	1730
6.	HYENA	860
7.	WOLF	770
8.	JACKAL	860
9.	WILD DOG	770
10.	FOX	860
11.	GAUR	4180
12.	WILD BUFFALO ENCLOSURE + BREEDING CENTRE	3710 + 25115 = 28825
13.	SAMBAR DEER	2420
14.	BLUE BULL (NILGAI)	2070
15.	SPOTTED DEER	3120
16.	CHINKARA	2550
17.	BARKING DEER	2010
18.	MOUSE DEER	200
19.	BLACK BUCK	2100
20.	COMMON PALM CIVET	460
21.	MONGOOSE	410
22.	FOUR HORNED ANTELOPE	2070
23.	PORCUPINE	200
24.	HONEY BADGER	200
25.	GRAY LANGUR	700
26.	PIG TAIL MONKEY	700
27.	ASSAMESE MONKEY	700
28.	RHESUS MONKEY	700
29.	WALK IN LAND AVIARY	20000
30.	HIPPOPOTAMUS	3220
31.	OTTER	1050
32.	GHARIVAL	800
33.	BENGAL MONITOR LIZARD	175
34.	STAR TORTOISE	70
35.	WALK IN WETLAND AVIARY	20000
36.	SNAKE HOUSE	970
37.	CROCODILE	10850
38.	AQUARIUM	270
EXOTIC SPECIES PROPOSED :-		
39.(a)	ZEBRA	
39.(b)	ORYX	10800
39.(c)	WILDBEEST	
40.	CHIMPANZEE	1500
41.	RING TAIL LEMUR	550
42.	SMALL MONKEYS ENCLOSURE	
42.(a)	SQUIRREL MONKEY	
42.(b)	MARMOSET	275
43.	MEERKAT	100
TOTAL AREA		139755 Sqm.

P.C.C.F. WILDLIFE SIGNATURE :-  
[Signature Line]

DIRECTOR SIGNATURE :-  
[Signature Line]

SERVICES LEGENDS :-		Symbol
1.	SEWERAGE LINE	[Symbol]
2.	MANHOLE	[Symbol]
3.	S.T.P.	[Symbol]
4.	SOAK PIT (FOR NIGHT HOUSE CLEANING WATER)	[Symbol]
5.	COMPOST PIT	[Symbol]

NOTES :-  
1. This drawing is based on survey drawing provided by the Client.  
2. Contour Interval 0.5 M.  
3. This drawing is to be used for the purpose it is intended for.  
4. Detailed working drawings should take into account location of trees. Suitable changes in working drawings are to be made to avoid tree felling.

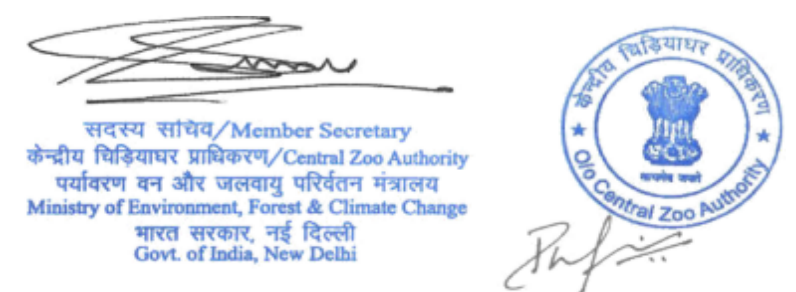
REVISED SEWERAGE MASTER LAYOUT PLAN FOR NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH.

REVISED SEWERAGE MASTER LAYOUT PLAN

DATE- 13.09.2022	DEALT BY-	CHECKED BY-	STATUS FOR SUBMISSION
DRAWING NO. 01(B)			



(1)The Master Plan of Nandanvan Zoo and Safari, Naya Raipur, Chhattisgarh was accorded approval in the 39th Meeting of the Central Zoo Authority held on July 31, 2022 based on recommendation of the Expert Group on Zoo Designing in its 103rd Meeting held on March 22, 2022 and the Technical Committee in its 104th Meeting held on March 30, 2022.  
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(3)The revised plan submitted vide 770032/2022/CZA dated September 19, 2022 satisfactorily complies to the conditions stipulated in letter at (2).



SERVICES LEGENDS :-		Symbol
1.	SEWERAGE LINE	[Symbol]
2.	MANHOLE	[Symbol]
3.	S.T.P.	[Symbol]
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SITE AREA - 50 Ha. = 500000 Sqm.	
AREA ENGAGED FOR ANIMALS - 139755 Sqm. = 13.97 Ha. - 27.9 %	
OTHER AREAS LIKE :- ROADS, VISITOR SHED, TOILETS, GARDENS ETC. - 118500 Sqm. = 11.85 Ha. - 23.7%	
GREEN AREA AVAILABLE = site area - (animal areas + other areas) = 500000 - (139755 + 118500) = 500000 - 258255 = 241745 Sqm. = 24.17 Ha. = 48.3 % (OF ZOO SITE AREA)	

# REVISED STORM WATER DRAIN MASTER LAYOUT PLAN OF NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH. AREA -320.15 Ha.



KEY PLAN



LEGENDS		
Sr. No.	NAME	SYMBOL
1.	SAFARI ROAD	[Symbol]
2.	DOUBLE GATE ENTRY / EXIT	[Symbol]
3.	SAFARI VISITOR'S ROAD	[Symbol]
4.	SERVICE ROAD	[Symbol]
5.	NIGHT HOUSE	[Symbol]
6.	VISITOR'S PATH ZOO	[Symbol]
7.	MONITORING PATH / EARTHEN BUND FOR DAM	[Symbol]
8.	FOOD COURT	[Symbol]
9.	TOILET	[Symbol]
10.	GREEN BUFFER	[Symbol]
11.	EXISTING BOUNDARY WALL	[Symbol]
12.	PROPOSED BOUNDARY WALL	[Symbol]
13.	EXISTING ANIMAL ENCLOSURES IN ZOO	[Symbol]
14.	ANIMAL ENCLOSURES IN ZOO TO BE REMOVED FROM SLP	[Symbol]
15.	PROPOSED ANIMAL ENCLOSURES IN ZOO	[Symbol]
16.	WATER BODY	[Symbol]
17.	DRINKING WATER	[Symbol]
18.	ISLAND	[Symbol]
19.	RESTING CUM RAIN SHED	[Symbol]
20.	INFORMATION CENTRE	[Symbol]
21.	SEAT / BENCH	[Symbol]
22.	INTERPRETATION CENTRE	[Symbol]
23.	ELECTRIC TRANSFORMER	[Symbol]
24.	WATER TANK (OVER HEAD / UNDER GROUND)	[Symbol]
25.	SOURCE OF WATER	[Symbol]
26.	COMPOST PIT	[Symbol]
27.	S.T.P.	[Symbol]
28.	INCINERATOR / BURIAL GROUND	[Symbol]
29.	RAIN WATER HARVESTING PIT	[Symbol]
30.	GREEN AREA	[Symbol]
31.	FODDER FARM & PASTURE LAND	[Symbol]
32.	EXISTING CONTOURS	[Symbol]
33.	PROPOSED CONTOURS / MOUNDS	[Symbol]
34.	EXISTING ENCLOSURE TO BE MODIFIED	[Symbol]

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xv.	GARDEN PARK & FOOD ZONE	7.67
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TOTAL AREA		320.15

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7.	WOLF	770
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10.	FOX	860
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14.	BLUE BULL (NILGAI)	2070
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35.	WALK IN WETLAND AVIARY	20000
36.	SNAKE HOUSE	970
37.	CROCODILE	10850
38.	AQUARIUM	270
EXOTIC SPECIES PROPOSED :-		
39.(a)	ZEBRA	
39.(b)	ORYX	10800
39.(c)	WILDBEEST	
40.	CHIMPANZEE	1500
41.	RING TAIL LEMUR	550
42.	SMALL MONKEYS ENCLOSURE	
42.(a)	SQUIRREL MONKEY	
42.(b)	MARMOSET	275
43.	MEERKAT	100
TOTAL AREA		139755 Sqm.

P.C.C.F. WILDLIFE SIGNATURE :-

DIRECTOR SIGNATURE :-

AREA STATEMENT FOR ZOOLOGICAL PARK :-	
SITE AREA - 50 Ha. = 500000 Sqm.	
AREA ENGAGED FOR ANIMALS - 139755 Sqm. = 13.97 Ha. = 27.9 %	
OTHER AREAS LIKE :- ROADS, VISITOR SHED, TOILETS, GARDENS ETC. - 118500 Sqm. = 11.85 Ha. = 23.7%	
GREEN AREA AVAILABLE = site area - (animal areas + other areas)	
= 500000 - (139755 + 118500)	
= 500000 - 258255 = 241745 Sqm. = 24.17 Ha.	
= 48.3 % (OF ZOO SITE AREA)	

NOTES :-  
1. This drawing is based on survey drawing provided by the Client.  
2. Contour Interval 0.5 M.  
3. This drawing is to be used for the purpose it is intended for.  
4. Detailed working drawings should take into account location of trees. Suitable changes in working drawings are to be made to avoid tree felling.

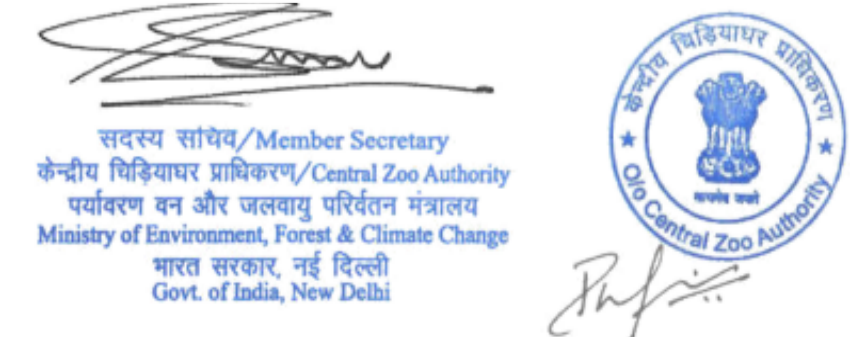
REVISED STORM WATER DRAIN MASTER LAYOUT PLAN FOR NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH.

REVISED STORM WATER DRAIN MASTER LAYOUT PLAN

DATE- 13.09.2022	DEALT BY-	CHECKED BY-	STATUS FOR SUBMISSION
DRAWING NO. 01(C)			



(1)The Master Plan of Nandanvan Zoo and Safari, Naya Raipur, Chhattisgarh was accorded approval in the 39th Meeting of the Central Zoo Authority held on July 31, 2022 based on recommendation of the Expert Group on Zoo Designing in its 103rd Meeting held on March 22, 2022 and the Technical Committee in its 104th Meeting held on March 30, 2022.  
(2)The decision was communicated vide letter bearing Computer No: 146975 (I/10219/2022) dated August 8, 2022.  
(3)The revised plan submitted vide 770032/2022/CZA dated September 19, 2022 satisfactorily complies to the conditions stipulated in letter at (2).



SERVICES LEGENDS :-		Symbol
1.	STORM WATER DRAIN	[Symbol]
2.	RAIN WATER HARVESTING	[Symbol]

# REVISED ELECTRICAL MASTER LAYOUT PLAN OF NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH. AREA -320.15 Ha.



KEY PLAN



LEGENDS		
Sr. No.	NAME	SYMBOL
1.	SAFARI ROAD	[Symbol]
2.	DOUBLE GATE ENTRY / EXIT	[Symbol]
3.	SAFARI VISITOR'S ROAD	[Symbol]
4.	SERVICE ROAD	[Symbol]
5.	NIGHT HOUSE	[Symbol]
6.	VISITOR'S PATH ZOO	[Symbol]
7.	MONITORING PATH / EARTHEN BUND FOR DAM	[Symbol]
8.	FOOD COURT	[Symbol]
9.	TOILET	[Symbol]
10.	GREEN BUFFER	[Symbol]
11.	EXISTING BOUNDARY WALL	[Symbol]
12.	PROPOSED BOUNDARY WALL	[Symbol]
13.	EXISTING ANIMAL ENCLOSURES IN ZOO	[Symbol]
14.	ANIMAL ENCLOSURES IN ZOO TO BE REMOVED FROM SLP	[Symbol]
15.	PROPOSED ANIMAL ENCLOSURES IN ZOO	[Symbol]
16.	WATER BODY	[Symbol]
17.	DRINKING WATER	[Symbol]
18.	ISLAND	[Symbol]
19.	RESTING CUM RAIN SHED	[Symbol]
20.	INFORMATION CENTRE	[Symbol]
21.	SEAT / BENCH	[Symbol]
22.	INTERPRETATION CENTRE	[Symbol]
23.	ELECTRIC TRANSFORMER	[Symbol]
24.	WATER TANK (OVER HEAD / UNDER GROUND)	[Symbol]
25.	SOURCE OF WATER	[Symbol]
26.	COMPOST PIT	[Symbol]
27.	S.T.P.	[Symbol]
28.	INCINERATOR / BURIAL GROUND	[Symbol]
29.	RAIN WATER HARVESTING PIT	[Symbol]
30.	GREEN AREA	[Symbol]
31.	FODDER FARM & PASTURE LAND	[Symbol]
32.	EXISTING CONTOURS	[Symbol]
33.	PROPOSED CONTOURS / MOUNDS	[Symbol]
34.	EXISTING ENCLOSURE TO BE MODIFIED	[Symbol]

AREA STATEMENTS FOR DIFFERENT ZONES		
ZONE NAME	AREA (in Ha.)	
i.	WATER ZONE	52.52
ii.	MONUMENT ZONE	0.92
iii.	HERBIVORE SAFARI	30.89
iv.	BEAR SAFARI	20.03
v.	TIGER SAFARI	20.04
vi.	LION SAFARI	20.15
vii.	MANAGEMENT ZONE & RESCUE CENTER	10.75
viii.	SAFARI WATER SUPPLY ZONE	0.30
ix.	ZOO ZONE	50.00
x.	ECO CUM BIO DIVERSITY PARK	32.03
xi.	FODDER FARM & PASTURE LAND	12.18
xii.	FRUIT FARM	3.0
xiii.	ADMINISTRATIVE ZONE	8.75
xiv.	TICKET & WAITING ZONE	4.75
xv.	GARDEN PARK & FOOD ZONE	7.67
xvi.	SERVICE ROAD	8.60
xvii.	GREEN BUFFER	11.50
xviii.	WILDERNESS AREA	26.07
TOTAL AREA		320.15

AREA STATEMENTS FOR ZOOLOGICAL PARK		
Sr. No.	ANIMAL SPECIES	AREA (in Sqm.)
1.	WHITE TIGER (LEUCISTIC)	2590
2.	ASIATIC LION	2550
3.	LEOPARD	2070
4.	BENGAL TIGER	2430
5.	HIMALAYAN BEAR	1730
6.	HYENA	860
7.	WOLF	770
8.	JACKAL	860
9.	WILD DOG	770
10.	FOX	860
11.	GAUR	4180
12.	WILD BUFFALO ENCLOSURE + BREEDING CENTRE	3710 + 25115 = 28825
13.	SAMBAR DEER	2420
14.	BLUE BULL (NILGAI)	2070
15.	SPOTTED DEER	3120
16.	CHINKARA	2550
17.	BARKING DEER	2010
18.	MOUSE DEER	200
19.	BLACK BUCK	2100
20.	COMMON PALM CIVET	460
21.	MONGOOSE	410
22.	FOUR HORNED ANTELOPE	2070
23.	PORCUPINE	200
24.	HONEY BADGER	200
25.	GRAY LANGUR	700
26.	PIG TAIL MONKEY	700
27.	ASSAMESE MONKEY	700
28.	RHESUS MONKEY	700
29.	WALK IN LAND AVIARY	20000
30.	HIPPOPOTAMUS	3220
31.	OTTER	1050
32.	GHARIAL	800
33.	BENGAL MONITOR LIZARD	175
34.	STAR TORTOISE	70
35.	WALK IN WETLAND AVIARY	20000
36.	SNAKE HOUSE	970
37.	CROCODILE	10850
38.	AQUARIUM	270
EXOTIC SPECIES PROPOSED :-		
39.(a)	ZEBRA	
39.(b)	ORYX	10800
39.(c)	WILDBEEST	
40.	CHIMPANZEE	1500
41.	RING TAIL LEMUR	550
42.	SMALL MONKEYS ENCLOSURE	
42.(a)	SQUIRREL MONKEY	
42.(b)	MARMOSET	275
43.	MEERKAT	100
TOTAL AREA		139755 Sqm.

P.C.C.F. WILDLIFE SIGNATURE :-  
[Signature Line]

DIRECTOR SIGNATURE :-  
[Signature Line]

AREA STATEMENT FOR ZOOLOGICAL PARK :-	
SITE AREA - 50 Ha. = 500000 Sqm.	
AREA ENGAGED FOR ANIMALS - 139755 Sqm. = 13.97 Ha. - 27.9 %	
OTHER AREAS LIKE :- ROADS, VISITOR SHED, TOILETS, GARDENS ETC. - 118500 Sqm. = 11.85 Ha. - 23.7 %	
GREEN AREA AVAILABLE = site area - (animal areas + other areas)	
= 500000 - (139755 + 118500)	
= 500000 - 258255 = 241745 Sqm. - 24.17 Ha.	
= 48.3 % (OF ZOO SITE AREA)	

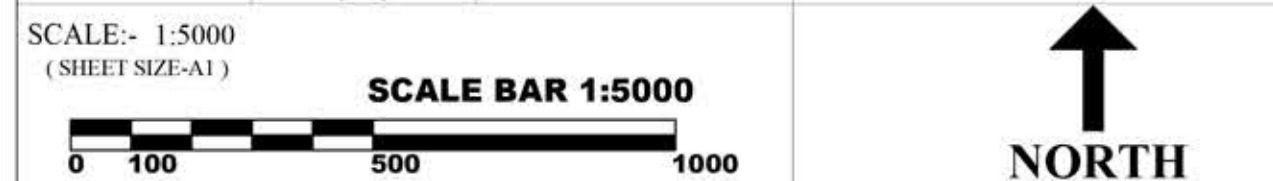
SERVICES LEGENDS :-	
Sr.	Symbol
1.	STREET LIGHT POLE
2.	ELECTRICAL LINE
3.	TRANSFORMER EXISTING

NOTES :-  
1. This drawing is based on survey drawing provided by the Client.  
2. Contour Interval 0.5 M.  
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REVISED ELECTRICAL MASTER LAYOUT PLAN FOR NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH.

REVISED ELECTRICAL MASTER LAYOUT PLAN

DATE- 13.09.2022	DEALT BY-	CHECKED BY-	STATUS FOR SUBMISSION
DRAWING NO. 01(D)			



(1) The Master Plan of Nandanvan Zoo and Safari, Naya Raipur, Chhattisgarh was accorded approval in the 39th Meeting of the Central Zoo Authority held on July 31, 2022 based on recommendation of the Expert Group on Zoo Designing in its 103rd Meeting held on March 22, 2022 and the Technical Committee in its 104th Meeting held on March 30, 2022.

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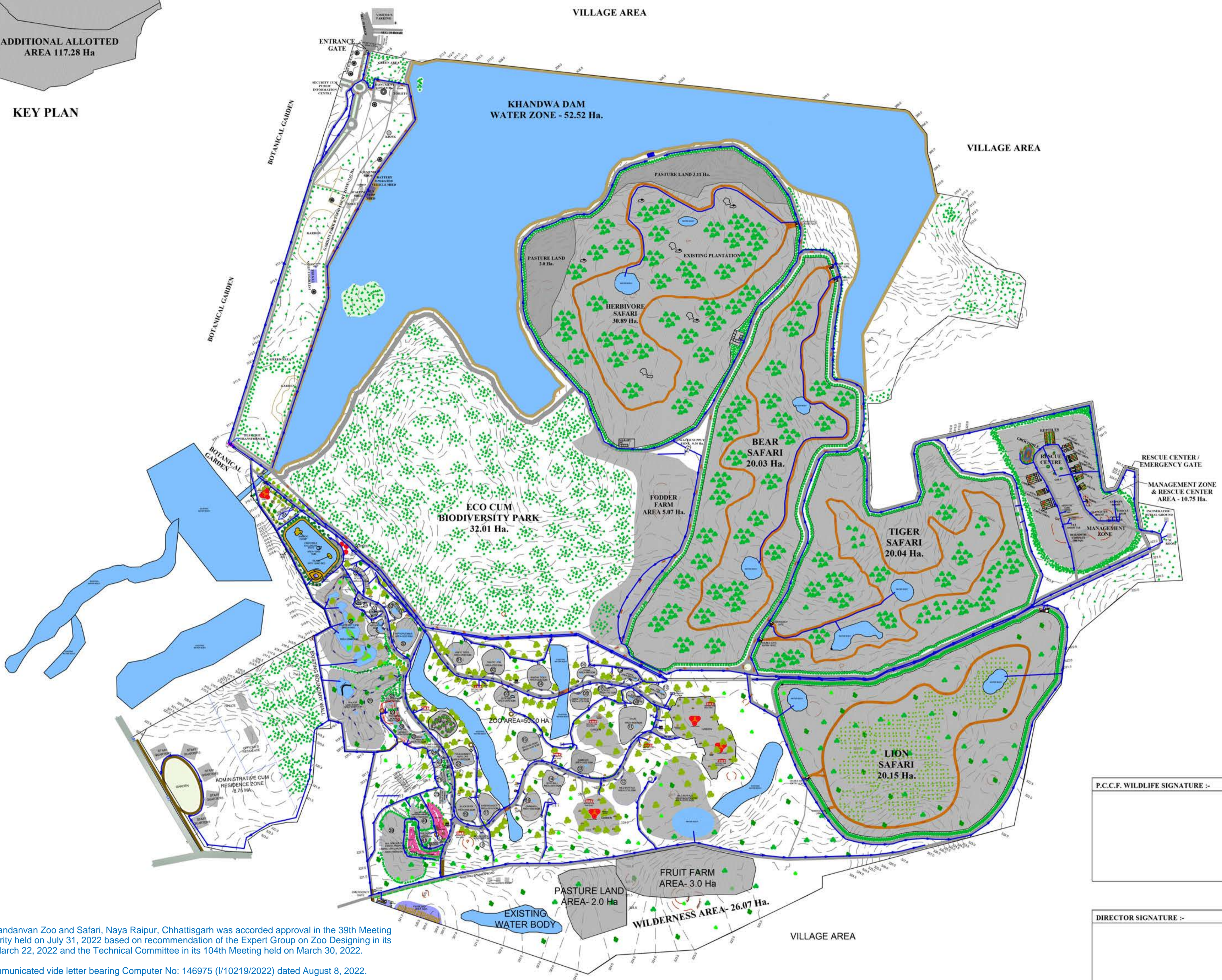
सदस्य सचिव / Member Secretary  
 केन्द्रीय विज्ञानपर प्राधिकरण / Central Zoo Authority  
 पर्यावरण वन और जलवायु परिवर्तन मंत्रालय  
 Ministry of Environment, Forest & Climate Change  
 भारत सरकार, नई दिल्ली  
 Govt. of India, New Delhi

केन्द्रीय विज्ञानपर प्राधिकरण  
 Central Zoo Authority

# REVISED WATER SUPPLY MASTER LAYOUT PLAN OF NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH. AREA -320.15 Ha.



KEY PLAN



LEGENDS		
Sr. No.	NAME	SYMBOL
1.	SAFARI ROAD	[Symbol]
2.	DOUBLE GATE ENTRY / EXIT	[Symbol]
3.	SAFARI VISITOR'S ROAD	[Symbol]
4.	SERVICE ROAD	[Symbol]
5.	NIGHT HOUSE	[Symbol]
6.	VISITOR'S PATH ZOO	[Symbol]
7.	MONITORING PATH / EARTHEN BUND FOR DAM	[Symbol]
8.	FOOD COURT	[Symbol]
9.	TOILET	[Symbol]
10.	GREEN BUFFER	[Symbol]
11.	EXISTING BOUNDARY WALL	[Symbol]
12.	PROPOSED BOUNDARY WALL	[Symbol]
13.	EXISTING ANIMAL ENCLOSURES IN ZOO	[Symbol]
14.	ANIMAL ENCLOSURES IN ZOO TO BE REMOVED FROM SLP	[Symbol]
15.	PROPOSED ANIMAL ENCLOSURES IN ZOO	[Symbol]
16.	WATER BODY	[Symbol]
17.	DRINKING WATER	[Symbol]
18.	ISLAND	[Symbol]
19.	RESTING CUM RAIN SHED	[Symbol]
20.	INFORMATION CENTRE	[Symbol]
21.	SEAT / BENCH	[Symbol]
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23.	ELECTRIC TRANSFORMER	[Symbol]
24.	WATER TANK (OVER HEAD / UNDER GROUND)	[Symbol]
25.	SOURCE OF WATER	[Symbol]
26.	COMPOST PIT	[Symbol]
27.	S.T.P.	[Symbol]
28.	INCINERATOR / BURIAL GROUND	[Symbol]
29.	RAIN WATER HARVESTING PIT	[Symbol]
30.	GREEN AREA	[Symbol]
31.	FODDER FARM & PASTURE LAND	[Symbol]
32.	EXISTING CONTOURS	[Symbol]
33.	PROPOSED CONTOURS / MOUNDIS	[Symbol]
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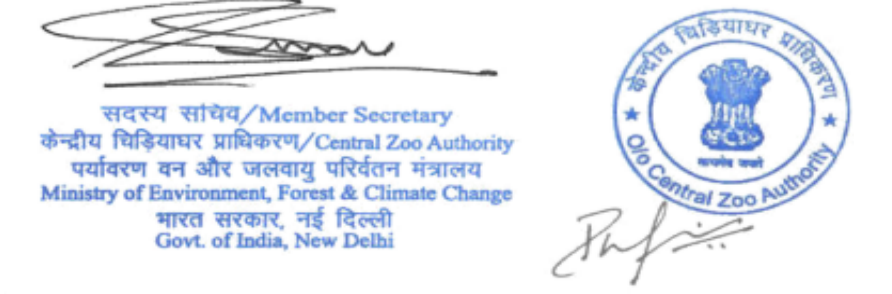
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	Symbol
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2. OVER HEAD TANK / UNDER GROUND TANK	[Symbol]
3. TUBE WELL	[Symbol]

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REVISED WATER SUPPLY MASTER LAYOUT PLAN FOR NANDANVAN ZOO & SAFARI, NAYARAIPUR, CHHATTISGARH.

REVISED WATER SUPPLY MASTER LAYOUT PLAN

DATE- 13.09.2022	DEALT BY-	CHECKED BY-	STATUS FOR SUBMISSION
DRAWING NO. 01(A)			

