Master Plan

G. B. Pant High Altitude Zoo, Nainital
Uttarakhand
(2019-20 to 2028-29)

उत्तराखण्ड शासन

Uttarakhand Forest Department
Government of Uttarakhand

CERTIFICATE

This is to certify that the Master Plan (2019-20 to 2028-29) for Scientific and long term Management of G. B. Pant High Altitude Zoo, Nainital has been prepared by Uttarakhand Forest Department, through Mr. Bijulal T.R., Director, G. B. Pant High Altitude Zoo in consultation with the expert group on Zoo Designing of the Central Zoo Authority (CZA) and the Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Government of Uttarakhand.

The PCCF (Wildlife) &
Chief Wildlife Warden,
Government of Uttarakhand

Director,
G. B. Pant high Altitude Zoo
Nainital, Uttarakhand

28.2.2020

Member Secretary,
Central Zoo Authority,
New Delhi.

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Ministry of Environment, Forest & Climate Change
भारत सरकार, नई दिल्ली
Govt. of India, New Delhi

The Master Plan of Pt. G.B. Pant High Altitude Zoo, Nainital, Uttarakhand was placed before the 89th Meeting of the Expert Group on Zoo Designing of the Central Zoo Authority (CZA) held on 25.10.2019, Technical Committee, Central Zoo Authority in its 93rd Meeting held on 28.10.2019 & subsequently in the Central Zoo Authority in its 36th meeting held on 17.12.2019. This has been approved by the Central Zoo Authority subject to the conditions communicated to the Zoo vide letter No. 19-114/92-CZA(271)(Vol. V)(PKR)/1709/2019, dated 12.11.2019.

Authenticated
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केन्द्रीय चिड़ियाघर प्राधिकरण
Central Zoo Authority

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PART-1

Chapter – 1

Introduction

The G. B. Pant High Altitude zoo is situated in the city of Nainital, Uttarakhand. The zoo was established in 1984 and it was opened to visitors on 1 June 1995. As the name indicates, the zoo is situated at high altitude of 2084 m above sea level. The zoo was establish with main objective to conserve the high altitude fauna and flora and spreading the awareness of importance of conserving the high altitude fauna and flora through education and display the high altitude fauna and flora among the public. Accordingly, the zoo is home and displaying various high altitude wild animal species most of them are falls under endangered category.

The Nainital is popular hill station set in a valley containing a mango-shaped lake. It has also associated with Mythological history. It is believed that the Naini Lake is one of the 51 *Shakti Peeths,* and is based on the story of the death of the goddess Sati. Out of grief and sorrow, Shiva carried Sati's body, reminiscing about their moments as a couple, and roamed around the universe with it. Vishnu had cut her body into 52 body parts, using his Sudarshana Chakra, which fell on Earth to become sacred sites where all the people can pay homage to the Goddess. The spot where Sati's eyes (or *Nain*) fell came to be called Nain-tal or lake of the eye. The goddess Shakti is worshiped at the Naina Devi Temple, known by locals as Naini Mata Temple on the north shore of the present day lake (https://en.wikipedia.org/wiki/Nainital).

The tourist's inflows Nainital throughout the year, however, the number increases in summer season. The people along with children from various part of country visit Nainital to enjoy summer holidays. It provides the zoo with opportunity to spread awareness of wildlife conservation among general public and students. The zoo makes benefit of the opportunity and organize various education activities during the season.

a. History of the Zoo

The G. B. Pant High Altitude zoo is an only zoo in newly born state of Uttarakhand. It is situated in hills of Sher ka Danda at about 2 km. from Tallital

bus station at an elevation of 2100 m above mean sea level, where the Mountain quail was last seen in 1876.

The zoo was established in the year 1984 and was opened for visitors on 1st June 1995. The zoo is consisting of mainly two parts. Zoo displaying area spread over an area of 4.592 hectare and its rescue center having an area of 1.910 hectare situated at Ranibag. The total area is 6.502 hectare. The zoo and is managed by, "The G. B. Pant High Altitude zoo Management Society Nainital" from 1st march 2002.

b. Vision of the Zoo

i. *ex-situ* conservation of endemic and endangered high altitude Himalayan fauna
ii. To protect, conserve, breeding and display of Himalayan flora and fauna.
iii. Rescue and rehabilitation of endangered animal species

c. Mission of the Zoo

i. To create awareness about rich Himalayan fauna amongst general public.
ii. Education and extension of knowledge for management of animals in captivity.
iii. Facilitate research and coordinate breeding of endemic and endangered Himalayan fauna
iv. Prevention and cure of major and minor diseases among animals

d. Strategy of the Zoo

Actively carrying out conservation and breeding activities of various animals and specifically pheasants through development its Veterinary & breeding facilities.

e. Objectives

The major objective of the zoo is *ex-situ* Conservation of wildlife especially the endangered and indigenous species of fauna of Himalayan region. The other objectives of the zoo are as below:

- Create awareness about our rich Himalayan fauna amongst general public.

- Education and extension of knowledge for management of animals in captivity.
- Facilitate research and coordinate breeding of endemic and endangered Himalayan fauna
- Rescue and rehabilitation of injured and endangered species
- Prevention and cure of major and minor diseases among animals

f. Physical features like the topography of the area

The most part of the zoo is situated in-between the geographical coordinate's 29.38°N & 79.46°E at the elevation ranging from 2,100 to 2,150 meters (6,890 to 7,050 ft) above sea level. The major part of the zoo is located in southern aspect and rest part of the zoo is in northern aspect between Shivalik and middle Himalayan mountain range. The zoo has a forest cover of evergreen Oak and Cupressus forest cover, three species of oak are found in the zoo.

g. Geology

Geologically, the Nainital hill represents the southern part of enechelon basins of the Krol belt, which stretches southward (SE) from Solan (Himachal) to Nainital (Uttarakhand). Krol belt visualize the ~6 km thick pile of Chandpur - Nagthat - Blaini - Krol - Tal succession of the lesser Himalayas. Younger Blaini - Krol - Tal successions are exposed in Nainital Syncline have been grouped in Mussoorie Group (http://www.sattamchakraborty.com). Geologically Nainital is very fragile, that can be easily destroyed or spoilt, as it is bounded by two thrusts. Theu are formed owing to folding of rocks due to upward force. A landslide was occurred in Nainital in August 1867, when part of the hill side, above the west end of the main bazaar in Mallital comes down. The Nainital Lake is flanked by two hills Ayarpatta and Sher-Ka-Danda (http://www. ekdagariya.com). The zoo is located in hill of the Sher Ka Danda (http://www.nainitalzoo.org.in). The continuous subsidence from the ravine west of pines on the Bhawali road to the saddle between Sher-Ka-Danda and Lariya Kanta. There are no natural water holes in zoo except one man made pond near the entrance and another one near leopard's enclosure.

h. Rock and Soil

Apart from rocks of Krol formation in Nainital, there are other types of rocks also. In Sher-Ka-Danda, there is mostly slate and marls, i.e. clay and lime.

The soil of the zoo area for the most part is clayey loam. The depth of soil is quite sufficient i.e. of 1 meter.

i. Flora & Fauna in Zoo premises

The zoo lies at the elevation ranges around 2100 m (a temperate zone), is rich in flora (typical temperate climate plants) and fauna. The zoo has a good natural evergreen vegetation primarily of oak and cypresses forest. The floral diversity of zoo other than oak is mainly consists of its associate species like Rhododendron, Acer, Ilex, Cornus, Lyonia, Crataegus, Berberis etc. Ornamental plants such as Rose, Salvia, Thuja, Gulbahar, Acacia, Spartium, Hibiscus, Jasmine, Horse chestnut etc. have also been planted to beautify the Zoo. Different species of plants and shrubs are also occurring in the zoo.

The Himalayan Langur and common monkey are seen as primarily free ranging wild animal species other then the numerous species of free ranging birds. There are more than 50 free ranging bird species such as Babblers, Tits, Magpies, Jays, Barbets, Woodpeckers, Thrushes, Kalij pheasant, Hill partridge, Himalayan griffon, Lammergeyer vulture etc, found in the Zoo which provide good opportunity and joy to bird watchers visiting the Zoo. Indian Porcupine is also visible in the evening and night hours.

A project has already been granted with the Department of Forestry, D. S. B. Campus, Kumaun University, Nainital to document the flora of the zoo and Botanical Garden Narayan Nagar from the year 2018-2019 for next five (5) years. Similarly, there are plan to document the free ranging fauna of the Zoo in near future.

J. Climate

The climate is temperate. The temperature varies from mild hot to cold with some areas under snowing winters. When compared with winter, the summers have much more rainfall. The climate here is classified as CWB by the Köppen-Geiger system. In Nainital, the average annual temperature is 13.0 °C. The average annual rainfall is 1636 mm (https://en.climate-data.org). The climate can be said to be pleasant during summer to autumn and cold in winter season. The city is a bit dry during winter and very wet during summer due to South Asian monsoon system. Like most places in temperate region, Nainital has relative cool summer. The hottest month is July with temperature ranging from 16.4 °C (61.5 °F) to 23.5 °C (74.3 °F), while the coldest month is January

with temperature ranging from 1.7 °C (35.1 °F) to 10.7 °C (51.3 °F) (**Figure 1 & 2**).

k. Rainfall

The rainfall in Nainital is quite good with the annual minimum being 2000 mm going up to annual maximum of 3000 mm. Precipitation occurs both in the form of snow and rains. Maximum rainfall occurs in the months of June to September, followed by October and May whereas least rainfall occurs in the month of November, followed by December and April (**Figure 2**). The lowest precipitation total occurs in November with total 7.9 mm (0.31 in), while the highest precipitation total occurs in July with total 725 mm (28.5 in) **(Figure 2)**.

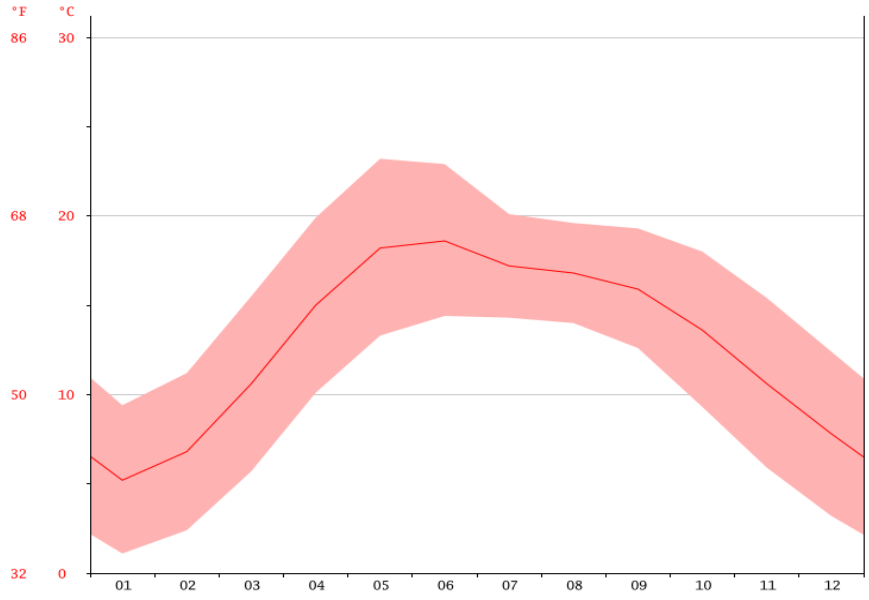


Figure 1: Temperature graph of the Nainital, Uttrakhand.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	10.7 (51.3)	12.3 (54.1)	16.3 (61.3)	20.8 (69.4)	23.5 (74.3)	23.5 (74.3)	21.6 (70.9)	21.0 (69.8)	20.7 (69.3)	18.7 (65.7)	15.4 (59.7)	12.9 (55.2)	18.1 (64.6)
Average low °C (°F)	1.7 (35.1)	3.5 (38.3)	7.5 (45.5)	11.9 (53.4)	14.6 (58.3)	16.4 (61.5)	16.5 (61.7)	16.0 (60.8)	14.1 (57.4)	9.7 (49.5)	5.7 (42.3)	3.1 (37.6)	10.1 (50.2)
Average p	80.3	60.4	55.7	33.7	73.8	327.5	725.0	553.4	385.0	135.	7.9	27.6	2,465.

reci-pitation mm (inches)	(3.16)	(2.37)	(2.19)	(1.32)	(2.90)	(12.89)	(28.54)	(21.78)	(15.15)	4 (5.33)	(0.31)	(1.08)	7 (97.07)

Source: India Meteorological Department

Figure 2: Average Climate data for Nainital, Uttarakhand (1953-1979).

l. Season

Climatically, the area is divided into three distinct seasons viz. rainy season (June-September), winter (October-February) and summer (March-May). Variation in altitude, topography, precipitation, vegetation cover resulted into climatic variations.

m. Approach

The Nainital is well connected by motor road approximately 300 km from the National Capital, Delhi. The zoo is about 2km far from Tallital bus station, Nainital. Private vehicle are prohibited in Naintal Zoo and one can reach at the zoo by Sharing Jeep available from Mall Road. A small trek to the zoo is also a best option. The Kathgodam railway station, about 23 km away from Nainital, is the nearest railhead serving this gorgeous hill station. The nearest Domestic Airport from Nainital is Pantnagar Airport, Pantnagar, roughly one hour drive from the city. It is well connected to New Delhi and Mumbai via Jet Airways, Air India and Spice Jet. The nearest International Airport is Indira Gandhi International Airport, Delhi, roughly five hour drive from Nainital via small vehicle.

n. Demography

According to Census of India 2011, human population in Nainital district is 954,605, out of which, 4,93,666 were males and 4,60,939, were females. The district has 3,71,734 urban and 5,82,871 rural populations The sex ratio of district is 934 female/ male. The human population density is 225 persons/ km². The Literacy rate of the district is 83.88% with male and female literacy 90.07% and 77.29% respectively. If we talk about the human population nearby the zoo, the Nainital town had a population of 41,377. Males constitute 52.3% of the population and females 47.7%. In 2011, Nainital had an average literacy rate of 92.93%, higher than the Uttarakhand state average of 78.82%. In Nainital, 9.54% of the population is under 6 years of age (http://www.census2011.co.in; http://districts.nic.in & https://en.wikipedia.org/wiki/Nainital).

o. Legal Status of the Land

The Uttarakhand Forest Department is the owner of the zoo land. The land 6.60 Acre (2.673 Hact.) was transferred from Mr. Anup Shah S/O Chandra Lal Shah and remaining land transferred from Lariyakanta (Compartment No - 1) Forest Division Nainital to the Divisional Forest Officer, Nainital on 6th June, 1983.

Purchase land = 6.60 Acre (2.673 Hact.)

Reserved forest land = 5.0 Acre (2.02 Hact.)

Total land = 11.60 Acre (4.693 Hact.)

A copy of the notification is annexed at **annexure I**.

p. Sources of Pollution

The zoo has lush green landscape. The zoo has very good vegetation covers mainly dominated by the oak forest and other high altitude species. The solid waste of the animals is managed manually on daily basis along with the liquid effluents. Hence, as such there is no direct or indirect source of pollution recorded in this area.

Chapter - 2

Appraisal of the present arrangement and constraints

The name of the zoo i.e. G. B. Pant High Altitude Zoo, Nainital indicates that zoo have primary aim of conserving fauna and flora of the high altitude Himalayan region. The zoo has been identified as coordinating zoo for the Conservation Breeding Programme of the endangered Musk deer (*Moschus leucogaster*) and participating zoo for Red panda (*Ailurus fulgens*), Snow leopard (*Panthera uncia*) and Tibetan wolf (*Canis lupus chanco*). The chapter deals with the appraisal of present arrangements and required strategy, improvements and interventions. The layout plan illustrates the location of enclosures **(Annexure II)**. The most of the existing and proposed enclosures are constructed in the southern aspect of the zoo and the area in the Northern aspect is strategically planned for usages in future expansion. **The map of the water supply outlay, drainage and electricity plan is also annexed herewith at annexure III, IV and V.**

A. Animal Section

The animal section is the main section of any zoo. The animal section is responsible for the looking after and upkeep of the zoo inmates in a naturalistic environment and fulfills their daily needs like feeding, drinking water supply, cleaning and maintaining hygiene in the enclosure and keep observing the animal behavior etc.

a) Animal Section:-

The animal section has the enclosure for carnivores, herbivores, omnivores, pheasants, raptors, nocturnal, primates and reptiles species. Following is the description of the various enclosures:

I. **Carnivores:** Following enclosures for carnivores exists in zoo at present:-

- Tiger - 1
- Leopard - 3 (Including 1 for snow leopard)
- Tibetan wolf – 1

II. **Herbivores:** Existing enclosures for herbivores are:-

- Barking deer – 1

- Goral – 1
- Bharal – 1
- Sambar – 2
- Spotted Deer – 1
- Markhor – 1

III. **Omnivores:** Existing enclosures for Omnivores are:-

- Himalayan Black bear – 2
- Red Panda – 2
- Common Civet – 1
- Himalayan Palm civet – 2
- Himalayan Martin – 1

IV. **Pheasants:-** The G. B. Pant High Altitude Zoo, Nainital is located at an elevation of 2100m above mean sea level, which is very suitable to rear and breed many species of Asiatic pheasants. At present there are five Indigenous pheasants species belongs to the Schedule – I of Wildlife (Protection) Act, 1972 in the zoo includes Indian peafowl, Kalij pheasant, Cheer pheasant, Monal pheasant and Red jungle fowl. Some more schedule species of pheasants like Tragopan and Koklas can also be include in the pheasant's collection in near future. Six species of exotic pheasants are also housed in the zoo. Breeding programme of different pheasant species is being successfully going on in the zoo from last three years. Nainital zoo is planning for long term pheasant breeding program. There are 75 enclosure units for pheasants in the zoo. The zoo has the plan to introduce new species of pheasants in the zoo for breeding and display purpose.

V. **Nocturnal:** The zoo has enclosure for nocturnal animals. The animal species like Red Fox, Porcupine, Slow Loris etc. are proposed in animal collection plan for hosing and display.

VI. **Primates:** There are 4 existing enclosures for Primates in the zoo.

VII. **Raptors:** At present 2 enclosures exists for steppe eagle and Owl respectively.

Constraints:

Although the health and well being of the Zoo animals have been appreciated by senior officers of the Forest Department and the Central Zoo

Authority, New Delhi, however, there is need to modify the enclosures and placing the appropriate species specific enrichment in each enclosure. Wherever, felt the enclosure needs to be restructured as per the norms and guidelines of the Central Zoo Authority. New enclosures for endemic and exotic fauna, as per the proposed collection plan needs to be constructed in a phase wise manner.

b) Veterinary Section:

The veterinary section has one veterinary hospital, animal ward, and quarantine and post-mortem house. One veterinary doctor is posted on deputation basis from the State Animal Husbandry Department, Govt. of Uttarakhand. There are 1 Pharmacist and 1 Lab Assistant and other zoo staff to assist the veterinary doctor in veterinary health care of zoo inmates. Following is the description of the units of the veterinary section:

I. **Veterinary Hospital:**

The zoo has an adequate Veterinary Hospital building. The Hospital has adequate space for examination and treatment of sick animals. It has basic equipment and instruments for examination, treatment and rescue of different wild animals. There is an X-ray unit and an Operation theater attached with the hospital. The facility of Incubator/ Brooding room is also available for the purpose of incubation / brooding of different pheasant and birds during their breeding season. However, there are plans to update the veterinary equipment inventory as recommended by the Central Zoo Authority as per the category of zoo.

II. **Animal ward:**

The zoo has 2 cells each for carnivores and herbivores. There are few cages also for treatment of sick and injured animals of other species.

III. **Quarantine:**

The Quarantine ward has also been constructed for rescued and injured animals.

IV. **Post Mortem House:**

A post mortem house also exists for conducting the post-mortem of the animals die in the zoo.

Constraints:

The Animal health administration has to be strengthened by organizing modern and latest veterinary and laboratory equipments. If needed, the new post of the veterinarian staff has to be created and the existing hospital unit shall be upgraded. A veterinary reference laboratory shall also be developed for testing basic veterinary tests related to basic disease diagnostic.

c) Store and Feed Supply section:

The Zoo presently equipped with a feed store which has five rooms in total. One room is equipped with weighing machine and used for receiving and distributing feed after weighing the feed. Two rooms are used for storing the dry and wet feed items respectively. One room is used as meat processing unit. The other room is used as Kitchen building and equipped with L.P.G. stoves & required kitchen utensils. The units have platforms & sufficient containers to store the food items properly. As the zoo falls under temperate region, the electric heater and blowers are used to keep the feed moisture free. All the facility has tiled flooring, inset proof screen windows and has fly trapper. Efforts have also made to keep the facility rodent proof and insect proof by enveloping the facility in a wire mesh.

Constraints:

The Animal health administration has to be strengthened by organizing modern and latest veterinary and laboratory equipments. If needed, the new post of the veterinarian staff has to be created and the existing hospital unit shall be upgraded. A veterinary reference laboratory shall also be developed for testing basic veterinary tests related to basic disease diagnostic.

d) Sanitation section:

The zoo considers sanitation section as an important section of the zoo. The zoo has evolved certain mechanism and facilities to clean animal enclosures, night shelters, toilets, roads and whole premises on daily basis. Road, foot path, public toilets etc. are cleaned twice daily. The zoo has prepared periodical schedule for cleaning and sanitation of species specific enclosures and perch of the birds etc. Suitable disinfectants are used to clean the enclosures and utensils meant for preparation, mixing, distribution and feeding of animals daily to prevent insect, flies, ticks, ants, cockroaches etc., from riddle the enclosures. In order to prevents bacteria, fungi and other pathogens from proliferation in the night house and ensures good hygienic conditions the floors are also scrubbed and cleaned thoroughly with fresh water in periodic manner.

The whole zoo is divided in six beats each with 1 cleaner in the place (including animal house and enclosure). All though edibles and polythene bags are prohibited to carry inside the zoo premises, dustbins have been kept at several convenient places. One burning sheds (Incinerator) have created for burning of daily wastes. There is also constructed a bone house for disposal of left ever bones from the carnivores enclosures which is cleared at regular cuter walls. Three public toilets have been constructed, in which one toilet is near the main entrance and two toilets inside zoo.

Constraints:

The solid waste like dung of the animal shall needs to be converted into manure by creating and developing manure pits. The manure may be used by the zoo for planting plants and flowers or growing feed of animals in fodder plots or the manure may be sale by the zoo to the local people or visitors with educational message promoting organic food farming. The liquid waste from the night houses and enclosure needs to have covered sewage system. However, being hilly zoo there is natural drainage system and presently led into the common open sewage system. There is a need to collect all the above sewage from the various night houses, disinfect the same through appropriate chemical processes and drain them away into a common pool. There is scope for using the treated sewage as nutrition supplement.

e) Maintenance section:

Maintenance of enclosure becomes very urgent and important when the zoo is housing and displaying large carnivore and herbivore species. Considering the importance, the zoo has appointed a Range officer as In-charge of Maintenance section; three foresters are also deputed to assist him. Daily checking of animal enclosures, nigh shelters, boundary wall, and drainage system is being done. If need arises repair/ construction works are done immediately.

Constraints:

The Maintenance works in Zoo needs to be attended on priority basis. There should be very specialized maintenance staff available in zoo round the clock either deputed on regular basis or specialized hire through outsources basis. Under the existing dispensation, the specialist services relating to Maintenance works have to be outsourced which process time is consuming, if not tedious. The Management of the zoo has to ensure availability of regular specialist services for all varieties of maintenance works.

f) Security section:

The zoo is covered with the security wall of 2 m height as per the guidelines of the Central Zoo Authority. The zoo has surrounding forest and has to be protect from entrance of the wild animals especially Leopard infested in the surrounding forest area and also from the intruders/ thief as the area is also surrounded by human habitation. Security is main part of any zoo. At present the zoo has deputed seven security guards for security purpose on outsourced services from private agency. The security system is so managed that at least three security guards remains present for vigil round the clock.

Constraints:

There is an urgent need to increase the number of the security personnel and deputing a well qualified and experienced Security Officer who can manage the security staff either on regular or outsourced basis. There is a need to keep a good vigil on the security of zoo animals and property. The security staff should also be trained time to time for incorporating latest technology in their day to day vigil to yield expected outcomes.

g) Water Supply section:

The Zoo is equipped with a Centralized Water system. The water supply to the zoo is provided by Uttarakhand Jal Sansthan. In order to meet the drinking water needs of animals as well as visitors three water reservoirs of 50,000 liters capacity has been constructed at higher point than all enclosures in the zoo. Further, nine syntax tanks with 2000 liters water holding capacity are also installed to fulfill the daily need of drinking, cleaning and irrigation of flower beds. The water is drawn through underground pipelines by gravity to all existing enclosures and to drinking water points develop for the visitors. The map depicting the water supply outlay of the zoo is annexed at **Annexure III**.

Constraints:

In view of the increased water needs of the Zoo in future, the existing sources and associated infrastructure needs to be augmented.

h) Disposal of Solid-Waste & liquid waste-sewerage:

The solid wastes from the enclosure, night houses and other places of the zoo are collected on a daily basis and are disposed in a pit constructed away from the animal enclosures near post–mortem house. For liquid waste proper drainage system has been constructed in the zoo by which all the daily waste-sewerage of zoo animal drains out. The liquid waste from the night houses is

presently led into the common sewage system. There is an Incinerator is also installed near by the Veterinary section of the zoo to dispose of medical waste. The daily waste by tourists is cleaned by the sanitary persons on daily basis. The map depicting the drainage system of the zoo is annexed at **Annexure IV**.

Constraints:

There is a need to collect all the above sewage from the various night houses, disinfect the same through appropriate chemical processes and drain them away into a common pool. There is scope for using the treated sewage as nutrition supplement in the fodder plot.

i) Visitors amenities:

The zoo has 4 drinking water points installed with R.O. System for the visitors at convenient places, 3 nos. of the toilets, 15 nos. of shelters and rain sheds are provided for resting purpose for visitors. The facility of the canteen is available to facilitate the visitors at entry gate. A clock room is also available for the visitors at the entrance gate. The ramps have also been constructed for facilitation of the Divyangjan at many enclosures. 2 nos. of Wheel chairs are made available to facilitate the Divyangjan. First Aid Kit along with the snake anti-venom and life saving drugs, readily available in the zoo premises for the visitors and staff of the zoo. The guide map and information brochures are also available for the visitors.

The facility of the Education Interpretation for the visitors provides lot of information to the visitors about the nature, environment, wildlife etc., in addition to the small library equipped with interesting wildlife editions and souvenir shop is available for the visitors.

Constraints: The terrain of the zoo is quite sloppy. The visitor vehicle facility is not yet available at zoo. This is the area where zoo needs to work out. Further, Public Announcement systems, fire alarm needs to fix which could help managing visitors during emergency situation. There is need to construct ramps in all the enclosure to facilitate Divyangjan visit.

j) Lawn and Gardens – Landscape section:

The landscape of the zoo is hilly and the zoo is immersed in natural vegetation. However, to augment the existing natural treasure of the zoo 1 no. of garden and lawns has been created in the zoological park over an extent of 0.30 ha area. Three gardeners are deputed to maintain lawns and gardens on outsourced services from private agency. Their work is supervised by the Forest Range Officer and his support staff. All around the outer sides of animal

enclosures evergreen hedges have been planted to provided greenery and for camouflaging cement structures. Many exotic plants have been planted in the zoo premises.

Constraints:

The zoo could plan for identify the more ordinary land areas that have the potential to converting to landscape gardens. There is need for planting indigenous species in the garden and lawns. A small grass house poly house is required to germinate flowering plants and hedges etc.

B. Collection Plan

The present Animal Collection Plan of the Pt. G. B. Pant High Altitude Zoo, Nainital logical and adequate. The due preference has given to the housing and maintenance of endemic/ endangered species preferably of Western Himalayan region. The Himalayan region species of mammals like Tibetan wolf, Himalayan black bear, Red panda, Leopard, Yellow throated Marten, Goral etc. and of Avian species Himalayan Monal, Satyr Tragopan, Cheer Pheasant and Koklas Pheasant have been displayed in the Zoo. For the purpose of creating awareness amongst the local folks and to expose them to exotic species especially Avians, there is a need to house some animal species. Exotic species of birds like Macaw Parrot have also being displayed and a species like Japanese Macaque is proposed to be housed and displayed.

The details of animal species performing part of collection plan along with the population size presently and those proposed for collection are furnished below:

Sl.	**Species**	**Existing stock**				**Proposed collection**				**Animals to be acquired/Disposed**			
A.	**Mammals**	M	F	U	Total	M	F	U	Total	M	F	U	Total
1.	Bengal Tiger *(Panthera tigris tigris)*	1	1	0	2	2	2	0	4	1	1	0	2
2.	Common Leopard (*Panthera pardus)*	4	3	0	7	2	2	0	4	2	1	0	3
3.	Tibetan Wolf (*Canis lupus chanco)*	1	1	0	2	2	2	0	4	1	1	0	2
4.	Himalayan	1	3	0	4	2	2	0	4	1	1	0	2

	Black Bear (*Ursus thibetanus)*												
5.	Japanese Macaque (*Macaca fuscata)*	0	0	0	0	2	3	0	5	2	3	0	5
6.	Red Panda (*Ailurus fulgens)*	2	3	0	5	4	6	0	10	2	3	0	5
7.	Himalayan Palm Civet (*Paguma larvata)*	3	1	0	4	2	2	0	4	1	1	0	2
8.	Common Civet (*Paradoxurus hermaphrodites)*	1	1	0	2	2	2	0	4	1	1	0	2
9.	Yellow throated Marten (*Martes flavigula)*	0	1	0	1	2	2	0	4	2	1	0	3
10.	Sambar Deer (*Cervus unicolor)*	2	3	0	5	4	6	0	10	2	3	0	5
11.	Barking Deer (*Muntiacus muntjak)*	3	3	0	6	4	6	0	10	1	3	0	4
12.	Spotted Deer (*Axis axis)*	1	1	0	2	4	6	0	10	3	5	0	8
13.	Himalayan Goral (*Nemorhedus goral)*	3	2	0	5	4	6	0	10	1	4	0	5
14.	Blue Sheep (*Pseudois nayaur)*	1	1	0	2	3	3	0	6	2	2	0	4
15.	Markhor (*Capra falconeri)*	1	0	0	1	3	3	0	6	2	3	0	5
16.	Rhesus Macaque (*Macaca*	0	0	0	0	2	2	0	4	2	2	0	4

	mulatta)												
17.	Snow Leopard (*Panthera uncia*)	0	0	0	0	1	1	0	2	1	1	0	2
18.	Himalayan Tahr (*Hemitragus jemlahicus)*	0	0	0	0	1	1	0	2	1	1	0	2
19.	Serow (*Capricornis sumatraensis*)	0	0	0	0	1	1	0	2	1	1	0	2
20.	Musk deer (*Moschus leucogaster*)	0	0	0	0	2	2	0	4	2	2	0	4
21.	Red Fox (*Vulpes vulpes)*	0	0	0	0	2	2	0	4	2	2	0	4
22.	Porcupine (*Hystrix indica*)	0	0	0	0	2	2	0	4	2	2	0	4
23.	Slow Loris (*Nycticebus bengalensis*)	0	0	0	0	1	1	0	2	1	1	0	2
	Total Mammals	**24**	**24**	**0**	**48**	**54**	**65**	**0**	**119**	**36**	**45**	**0**	**81**
B.	**Pheasants/ Birds**												
24.	Kalij Pheasant (*Lophura leucomelana)*	8	4	0	12	5	5	0	10	3	1	0	4
25.	Cheer Pheasant (*Catreus wallichii)*	5	5	0	10	5	5	0	10	0	0	0	0
26.	White Peafowl (*Pavo cristatus)*	1	0	0	1	1	1	0	2	0	1	0	1
27.	Peafowl (*Pavo cristatus)*	2	2	0	4	2	2	0	4	0	0	0	0
28.	Himalayan Monal (*Lophophorus impejanus)*	0	1	0	1	5	5	0	10	5	4	0	9
29.	Red Jungle fowl (*Gallus gallus)*	8	5	0	13	5	5	0	10	3	0	0	3

30.	Silver Pheasant (*Lophura nycthemera)*	4	4	0	8	5	5	0	10	1	1	0	2
31.	Golden Pheasant (*Chrysolophus pictus)*	7	3	0	10	5	5	0	10	2	2	0	4
32.	Edward Pheasant (*Lophura edwardsi)*	1	0	0	1	3	3	0	6	2	3	0	5
33.	Lady Amherst Pheasant (*Chrysolophus amherstiae)*	6	8	0	14	5	5	0	10	1	3	0	4
34.	Hill Partridge (*Arborophila torquela)*	0	0	2	2	5	5	0	10	5	3	0	8
35.	Rose ringed Parakeet (*Psittacula krameraі)*	13	9	0	22	5	5	0	10	8	4	0	12
36.	Cockatiel (*Nymphicus hollandicus)*	17	15	0	32	3	3	0	6	14	12	0	26
37.	Sun Conure (*Aratinga solstitialis)*	3	1	0	4	3	3	0	6	0	2	0	2
38.	Love Birds (*Agapornis Spp.)*	19	19	2	40	6	6	0	12	14	14	0	28
39.	Macaw Parrot (*Ara ararauna)*	0	1	0	1	3	3	0	6	3	2	0	5
40.	Black Kite (*Milvus migrans)*	0	0	1	1	2	2	0	4	2	2	0	4
41.	Egyptian vulture (*Neophron percnopterus)*	0	0	1	1	2	2	0	4	2	2	0	4
42.	Brown Wood Owl (*Strix*	0	0	0	0	2	2	0	4	2	2	0	4

	leptogrammica)												
43.	Budgerigar (*Melopsittacus undulates)*	0	0	6	6	5	5	0	10	5	5	0	10
	Total Birds	**94**	**77**	**12**	**183**	**77**	**77**	**0**	**154**	**72**	**63**	**0**	**135**
	Grand Total	**118**	**101**	**12**	**231**	**131**	**142**	**0**	**273**	**108**	**108**	**0**	**216**

C) General Zoo Administration Section

I. **G. B. Pant High Altitude Zoo society & Governing Body:-** The G. B. Pant High Altitude Zoo was established in 1995 under administrative control of forest department. The Park was converted into a registered society on 1st March 2002 under society registration Act, 1860 and U.P. society registration Act, 1975. The Nainital society was formed vide G.O. No. – 3500/1. व.ग्रा.वि./2001–8 (75)/ 2001 dated 04-12-2001. The Members of governing body of zoo society are as following:-

Sl.	Particulars	Designation
1.	Forest Secretary, Govt. of Uttarakhand	Chairman
2.	The Chief Conservator of forest, Kumaon	Vice Chairman
3.	The Chief Wildlife Warden, Govt. of Uttarakhand	Member
4.	Managing Director, Uttarakhand, Van vikas Nigam	Member
5.	District Magistrate, Nainital	Member
6.	Senior Superintendent of Police, Nainital	Member
7.	Additional Director, Animal Husbandry, Nainital.	Member
8.	President, Hotel Association, Nainital	Member
9.	Manager, Bank of Baroda, Lead Bank, Distt. Nainital.	Member
10.	Chairman Nagar Palika Parishad, Nainital	Member
11.	Conservator of Forest, South Kumaon, Nainital	Member
12.	Divisional Forest Officer, Nainital	Treasurer
13.	Director, G. B. Pant High Altitude Zoo, Nainital	Secretary

II. **Establishment of Nainital Zoo:-**

The Zoo operation presently carried out by is total sanctioned posts of Thirty Four (34) which are not sufficient. Keeping in view 51 more posts were proposed in the Master Plan for smooth functioning of the zoo and providing employment opportunity to public.

The detail of the categories of staff is as given below:

Sl.	Designation	Existing Strength	Proposed posts	Remark
1.	Director	01	-	-
2.	Dy. Director	01	-	-
3.	Veterinary Officer	01	-	-
4.	Range Officer	01	02	-
5.	Forester	03	01	-
6.	Forest guard	03	07	-
7.	Administrative Officer	-	01	-
8.	Accountant	-	01	-
9.	Upper Divisional Clerk	-	02	-
10.	Assistant Clerk	-	02	-
11.	System Analyst	01	-	Contract Basis
12.	Biologist/ Scientific Officer	01	-	Contract Basis
13.	Education Officer	-	01	Contract Basis
14.	Research Fellow	-	01	Contract Basis
15.	Zoo Keepers	12	5	Contract Basis
16.	Mali	-	04	Contract Basis
17.	Computer Operator	01	-	Contract Basis
18.	Cook	01	-	Contract Basis
19.	Pharmacist	01	-	Contract Basis
20.	Lab Assistant	01	-	Contract Basis
21.	Carpenter	-	01	Contract Basis
22.	Electrician	-	01	Contract Basis
23.	Plumber	-	01	Contract Basis
24.	Office peon	01	01	Contract Basis
25.	Dak Runner	01	01	Contract Basis
26.	Security Guard	-	12	Contract Basis
27.	Sweeper	01	07	Contract Basis
28.	Driver	03	-	Contract Basis

	Total	**34**	**51**	

III. **Staff Amenities:-** The total establishment of the zoological park has been divided into essential and non-essential categories. All the officials section in charges etc. have been provided space in the main campus and provided chambers, rooms, sufficient furniture, Almirah's etc. for smooth functioning of the sections.

IV. **Training of staff:-** The zoo keepers and other staff got training time to time as sponsored and organized by the Central Zoo Authority and the Wildlife Institute of India, Dehradun and shall be deputed in future also to upgrade and enhance their skills.

D) Research

The zoo is a place which provides plenty of scope for undertaking research on various aspects of captive animal management and welfare. The zoo shall prefer the need solution based research. At present the zoo facilitating the research activities in different streams. This research report and publication provides a repository of readily available materials for future reference use. A few institutions like Indian Veterinary Research Institute, Bareilly and National Centre of Biological Science, Bengaluru has undertaken research work at zoo in the past. The research aspect may not be the main thrust of the zoo because of many limiting factors in past and systematic research has not been undertaken by the zoo directly at its own so far. However, the zoo is planning need based research work in near future. The zoo shall also plans to establish a small research lab with some equipment and a small reference library for taking up the research activity in the zoo. The following are the details regarding the research work has been carried out in the zoo.

Sl.	**Researcher**	**Research Topic**	**Affiliation**
1	Dr. Sanjay Pradhan	Evaluation of the pre-biotic effect of selected substrate in captive Indian Leopard.	Indian Veterinary Research Institute, Izzatnagar, Bareilly, Uttar Pradesh
2	Dr. S. S. Kullu	Effect of feeding supplementary carotenoides & DL Methionine on nutrient utilization & feather colouration of golden pheasant.	Indian Veterinary Research Institute, Izzatnagar, Bareilly, Uttar

			Pradesh
3	Dr. R. K. Yogi	Nutritional interventions to improve feather colouration & nutrient utilization on pheasants.	Indian Veterinary Research Institute, Izzatnagar, Bareilly, Uttar Pradesh
4	Dr. Tannu Shree	Hormonal – Metabolic concentration base line for zoo animals.	National Centre of Biological Science, GKVK, Bellary Road, Bangaluru
5	Miss Lauren Hennley, P.G. (Wildlife) USA	'Howls in the Himalayas' assessing endangered wolf population through howl survey	W.I.I. Dehradun (Uttrakhand)
6	Dr. S. K. Bajpai, M.V. Sc. (Nutrition)	Protein utilization & plumage colouration in Lady Amherst pheasant.	Indian Veterinary Research Institute, Izzatnagar, Bareilly, Uttar Pradesh
7	Dr. Roshan, M. V. Sc. (Nutrition)		Indian Veterinary Research Institute, Izzatnagar, Bareilly, Uttar Pradesh.

E) Conservation Breeding

The zoos at present playing an important role in breeding of endemic and endangered species and also exotic species and immerging as Breeding Centre for such species alongwith other species also. Similarly, the G. B. Pant High Altitude Zoo, Nainital is actively carrying out conservation and breeding activities of various animals and specifically pheasants. The zoo has developed its Veterinary & Breeding Facilities for this one of the major objectives of the zoo.

The Central Zoo Authority has identified the G. B. Pant High Altitude Zoo, Nainital has been identified as Coordinating zoo for the conservation breeding of Musk deer and participating zoo for conservation breeding of Snow leopard, Tibetan wolf and Red Panda. The zoo has achieved success in breeding

some high altitude endangered animal species like Tibetan Wolf, Red Panda, Leopard and Cheer, Kalij pheasants and few exotic Pheasants also. It is also planned to have breeding program for other indigenous pheasants at the zoo. The zoo is specifically equipped for breeding birds, pheasants. The following are the facilities available at the Zoo are for the purpose of breeding of animals:

- Off display breeding facility which is away from the display enclosure for providing isolation & peaceful atmosphere.
- In order to avoid inbreeding, the zoo maintains pedigree records of the animals and accordingly undertakes exchange programme to infuse new blood.
- Proper healthcare including, periodical deworming & diet supplementation with vitamins & minerals are provided during breeding season.
- In pheasants, brooding is done by natural means by brooders. The zoo in future also planning to use artificial Incubator also.
- A technical Health Advisory Committee has been constituted which includes experts from Indian Veterinary Research Institute, Bareilly & College of Veterinary Medicine & Animal Sciences, Pantnagar. This committee visits the zoo regularly for providing necessary inputs on the health and welfare of these animals.

F) Education and awareness

The zoos are places visited by large number of public worldwide of varied age group. This provides ample opportunity to spread the message of nature conservation especially wildlife conservation and awareness among public. Education and awareness is one of the foremost mandates of the zoo. The most of the visitors come to zoo to see the animals as an attraction, not as much for an educational experience. However, zoo shall make this opportunity as educational and awareness by explaining and displaying the information on biology and behavior of the collection of living animal acts as exhibit for educating all sections of the society. The range and spectrum of vegetation occurring/ raised in the zoo shall also be discussed among the visitors with their importance and value which is of a great education value. There is a need for developing customized package for all categories of students and visiting public. The zoo runs the following programmes which can be improved gradually. The G. B. Pant High Altitude Zoo, Nainital is working on and has formulated innovative conservation education and awareness programmes. Zoo has become a conservation centre providing facilities for learning about nature and its complex processes. The Education section has developed special customized

programmes for students and public for nature education and interpretations. The zoo has also developed one Interpretation Centre-cum-Museum for taking up various educational activities. The Interpretation center is mainly used for explaining and displaying the Himalayan ecological informations to the visitors. Efforts are also being made for proper display of different Himalayan Habitats and needs of conservation. A light and sound show with running commentary on wildlife conservation is planned for 10 minutes duration. The zoo under its educational and outreach programme is targeting its focus on school and college children's and lectures explaining different aspects of zoo management is delivered in the nearby schools. Some of these trained students could be selected as volunteers of the zoo to carry forward the programme.

The zoo visitors were not only exposed to information about the animals but also make understand the impact of human activities to the environment. The various type of sign board are used further strengthened the education and awareness activities. Accordingly the Various animal signages with their fast facts have been installed not only at the respective enclosures of the animals in the zoo but also installed at public places which includes railway stations, bus stations, taxi stands and busy locations on the way to Nainital like Tallital Lake Bridge, Sukhatal, Mallital Flats, Bara Patthar, Sukhatal for advertising and attracting visitors to the zoo. The directional sinages are also well placed on the roads with yellow color arrow for guiding the visitors to and inside the zoo. Sign boards with pictures of free ranging birds are also installed at different places. The visitors are also educated to interaction between the fauna and flora and the Prey and the predator relationships. These display and exhibits shall register in the mind of a visitor the need for saving not only the fauna but also the flora.

Further, the zoo organizes various outreach programs involving children, students, local peoples and visitors to educate and create awareness towards wildlife conservation on different forest and wildlife occasions. The programs organized on these occasions are as follows:-

- International Bio-Diversity Day on 22nd May
- world environment day on 5th June
- Ozone layer conservation day on 16th September
- Wild life week during 1st to 7th October

Various activities like zoo visit, quizzing, Painting and debate competition etc. are organized for the students. The winners are honored and given prizes by a dignitary. These outreach programs help in sensitizing the

students as well as the visitors towards environment, forest and wildlife conservation issues.

In future zoo is proposing and planning to hold surveys of zoo visitors before and after their visits in attempts to gauze the degree of "education" received by the visitors during their zoo visit for visitors of varied age group with varied educational qualification etc. This shall provide the access on data and results can be manipulated of the activity in spreading nature conservation message which otherwise is very difficult to access.

Further the zoo has opened a website http://www.nainitalzoo.org.in which gives information on all the salient features of the zoo may also be used by the public for getting educational information also. The website is uploaded with ample information on all aspects of zoo management. The zoo has also prepared a guide map for guiding visitors to the animal enclosure, through a network of roads. About captive animal's information, Nainital Zoo also provides Brochure, Pamphlets, Zoo booklet etc

G) Any other activity peculiar/ Unique to the zoo

The zoo is performing well in breeding critically endangered Red panda and other Himalayan pheasants. The zoo is also serving as Rescue and Rehabilitation centre for local wild animal species.

PART – 2

Chapter - 3

Future objective including mission statement/ Theme

The G. B. Pant High Altitude zoo, Nainital is situated at high altitude of 2084 m above sea level and zoo primarily focuses on housing and conservation of high altitude wild animal species. The zoo was establish with main objective to conserve the high altitude fauna and flora and spreading the awareness of importance of conserving the high altitude fauna and flora through education and display the high altitude fauna and flora among the public. It not only provides opportunity to local people to taste the beauty of high altitude wild animal species but being a hill station and tourist destination also provides opportunity to many tourists along with aesthetic environment of beautiful natural forest. Further, few species of exotic animals mainly of birds provides a glimpse locally for the local visitors and tourist visiting Nainital. Accordingly, the future objectives of the zoo are Conservation Breeding, Education, Research and Recreation. In consonance with the National Zoo Policy, 1998, the future long term and short term objectives of the zoo are framed as under:

Long term objectives:

i. Conservation of wildlife, especially the endangered and indigenous species both fauna and flora.
ii. Conservation breeding programme of the species identified by the Central Zoo Authority and as per the requirement of the State Government.
iii. To educate the visitors and students about wildlife conservation, both fauna and flora.
iv. Research pertaining to wild animals and plants to the extent possible.

Short term objectives:

i. Modernization of the zoo enclosures in a thematic manner as per the approved Master (Layout) Plan.
ii. Wildlife conservation awareness programs through education and interpretation
    - For target groups of students of different age class and influential members in different program.

- Up gradation of signages for all the animal enclosures by displaying behavioral and biological information's about the species housed.

- Through publication of pamphlet, brochure, news-letter and posters etc.

iii. To further improve veterinary facilities and animal health care by upgrade the infrastructural and support facilities.
iv. Set up improved signage for the tree and other plants in the zoo and to provide education inputs pertaining to the flora.

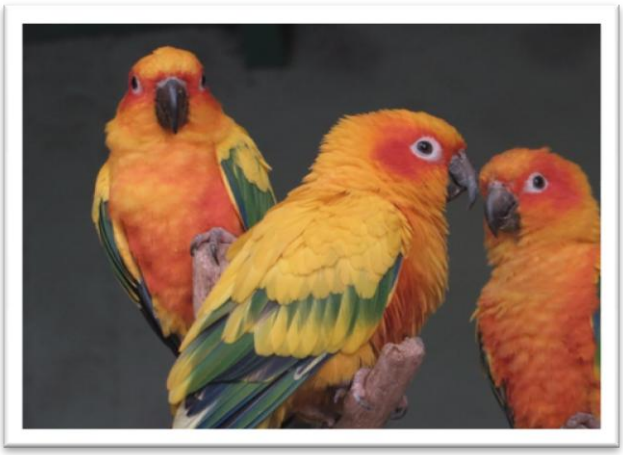
Theme:

To create awareness about conservation of wildlife and to make the visit by different class of people meaningful and educational, it is necessary to present the animals in a thematic manner. At present the animals are housed haphazardly as per old existing pattern. It seems that the visitors may not get message of wildlife importance and conservation systematically. Hence, the zoo has prepared thematic Master (Layout) Plan and got it approved by the Central Zoo Authority. Earlier, aim of the zoo was primarily recreation of the visitors and accordingly, animals were housed for entertainment of visitors as per the then objectives of setting up the zoo. Now the role of zoos has changed from recreation to education and the zoo have been evolved and emerges as centre for education and wildlife conservation. The zoos are spreading awareness of wildlife conservation through education and interpretation amongst the visitors and at the same time saving and conserving the endangered animal species through conservation breeding and linking *ex-situ* conservation with *in-situ* conservation.

In view of above and the objectives stated above, it is necessary to keep the animals according the theme. The simplest and educational theme for visitors would be keeping animals according to their scientific affinities to make the visitors aware of the ecological values of wildlife, exhibits will illustrate habitats and ecological conditional in the wild, like Indian ungulates together, or a predator-prey exhibit to illustrate why it is important to conserve large carnivores like Tiger, Leopards and Snow Leopards etc. and there associated

predators. In all enclosures the ecological importance of the habitat of the animal housed there in would be highlighted.

In future the zoo should work and develop the enclosures as per the approved Master (Layout) Plan and so as to achieve generation of above thematic view in order to spread the message of wildlife conservation clearly in more strong way. However, due to restrictions imposed by small area available, the need to incorporate and retain some of the existing zoo structures, rest of enclosures to be reconstructed at proposed extension area of the zoo.



Chapter – 4

Future action Plan

a) Proposed Animal Collection Plan

The proposed Animal Collection Plan of the G. B. Pant High Altitude zoo, Nainital is as per the approved Master (Layout) Plan and the animal species primarily targeted for housing and display in the zoo are preferably of western Himalayan region. Further, the Central Zoo Authority has identified the G. B. Pant High Altitude zoo, Nainital as "Coordinating Zoo" for the Conservation Breeding Programme of Musk deer and as "Participatory Zoo" for Snow leopard, Tibetan wolf and Red Panda and accordingly these species has been included in the proposed Animal Collection Plan. Other than this, it is also important and required to display and breed some beautiful indigenous and endangered species for future stock. Accordingly, Himalayan pheasants like Himalayan Monal, Satyr Tragopan, Cheer Pheasant and Koklas Pheasant are also proposed to house in Animal Collection Plan. A few species of the exotic animals has also been proposed for hosing and display and for educating visitors and provide them opportunity to view the animals locally. In total, 37 animal species with 255 nos. of animals have been identified and proposed for housing, display, research and breeding purpose in the zoo. A few other species not endangered or not in need of immediate *ex-situ* efforts but have been included just for display and educational purpose. The list of species performing part of Animal Collection Plan along with existing stock, the population size and acquisition and disposal is given below:

Sl.	**Species**	**Existing stock**				**Proposed collection**				**Animals to be acquired/Disposed**			
A.	**Mammals**	M	F	U	Total	M	F	U	Total	M	F	U	Total
44.	Bengal Tiger (*Panthera tigris tigris)*	1	1	0	2	2	2	0	4	1	1	0	2
45.	Common Leopard (*Panthera pardus)*	4	3	0	7	2	2	0	4	2	1	0	3
46.	Tibetan Wolf (*Canis lupus chanco)*	1	1	0	2	2	2	0	4	1	1	0	2

47.	Himalayan Black Bear (*Ursus thibetanus)*	1	3	0	4	2	2	0	4	1	1	0	2
48.	Japanese Macaque (*Macaca fuscata)*	0	0	0	0	2	3	0	5	2	3	0	5
49.	Red Panda (*Ailurus fulgens)*	2	3	0	5	4	6	0	10	2	3	0	5
50.	Himalayan Palm Civet (*Paguma larvata)*	3	1	0	4	2	2	0	4	1	1	0	2
51.	Common Civet (*Paradoxurus hermaphrodites)*	1	1	0	2	2	2	0	4	1	1	0	2
52.	Yellow throated Marten (*Martes flavigula)*	0	1	0	1	2	2	0	4	2	1	0	3
53.	Sambar Deer (*Cervus unicolor)*	2	3	0	5	4	6	0	10	2	3	0	5
54.	Barking Deer (*Muntiacus muntjak)*	3	3	0	6	4	6	0	10	1	3	0	4
55.	Spotted Deer (*Axis axis)*	1	1	0	2	4	6	0	10	3	5	0	8
56.	Himalayan Goral (*Nemorhedus goral)*	3	2	0	5	4	6	0	10	1	4	0	5
57.	Blue Sheep (*Pseudois nayaur)*	1	1	0	2	3	3	0	6	2	2	0	4
58.	Markhor (*Capra falconeri)*	1	0	0	1	3	3	0	6	2	3	0	5
59.	Rhesus Macaque	0	0	0	0	2	2	0	4	2	2	0	4

	(*Macaca mulatta)*												
60.	Snow Leopard (*Panthera uncia*)	0	0	0	0	1	1	0	2	1	1	0	2
61.	Himalayan Tahr (*Hemitragus jemlahicus)*	0	0	0	0	1	1	0	2	1	1	0	2
62.	Serow (*Capricornis sumatraensis*)	0	0	0	0	1	1	0	2	1	1	0	2
63.	Musk deer (*Moschus leucogaster*)	0	0	0	0	2	2	0	4	2	2	0	4
64.	Red Fox (*Vulpes vulpes)*	0	0	0	0	2	2	0	4	2	2	0	4
65.	Porcupine (*Hystrix indica*)	0	0	0	0	2	2	0	4	2	2	0	4
66.	Slow Loris (*Nycticebus bengalensis*)	0	0	0	0	1	1	0	2	1	1	0	2
	Total Mammals	**24**	**24**	**0**	**48**	**54**	**65**	**0**	**119**	**36**	**45**	**0**	**81**
B.	**Pheasants/ Birds**												
67.	Kalij Pheasant (*Lophura leucomelana)*	8	4	0	12	5	5	0	10	3	1	0	4
68.	Cheer Pheasant (*Catreus wallichii)*	5	5	0	10	5	5	0	10	0	0	0	0
69.	White Peafowl (*Pavo cristatus)*	1	0	0	1	1	1	0	2	0	1	0	1
70.	Peafowl (*Pavo cristatus)*	2	2	0	4	2	2	0	4	0	0	0	0
71.	Himalayan Monal (*Lophophorus impejanus)*	0	1	0	1	5	5	0	10	5	4	0	9
72.	Red Jungle fowl (*Gallus gallus)*	8	5	0	13	5	5	0	10	3	0	0	3
73.	Silver Pheasant	4	4	0	8	5	5	0	10	1	1	0	2

	(*Lophura nycthemera)*												
74.	Golden Pheasant (*Chrysolophus pictus)*	7	3	0	10	5	5	0	10	2	2	0	4
75.	Edward Pheasant (*Lophura edwardsi)*	1	0	0	1	3	3	0	6	2	3	0	5
76.	Lady Amherst Pheasant (*Chrysolophus amherstiae)*	6	8	0	14	5	5	0	10	1	3	0	4
77.	Hill Partridge (*Arborophila torquela)*	0	0	2	2	5	5	0	10	5	3	0	8
78.	Rose ringed Parakeet (*Psittacula krameraі)*	13	9	0	22	5	5	0	10	8	4	0	12
79.	Cockatiel (*Nymphicus hollandicus)*	17	15	0	32	3	3	0	6	14	12	0	26
80.	Sun Conure (*Aratinga solstitialis)*	3	1	0	4	3	3	0	6	0	2	0	2
81.	Love Birds (*Agapornis Spp.)*	19	19	2	40	6	6	0	12	14	14	0	28
82.	Macaw Parrot (*Ara ararauna)*	0	1	0	1	3	3	0	6	3	2	0	5
83.	Black Kite (*Milvus migrans)*	0	0	1	1	2	2	0	4	2	2	0	4
84.	Egyptian vulture (*Neophron percnopterus)*	0	0	1	1	2	2	0	4	2	2	0	4
85.	Brown Wood Owl (*Strix leptogrammica)*	0	0	0	0	2	2	0	4	2	2	0	4

86.	Budgerigar (*Melopsittacus undulates)*	0	0	6	6	5	5	0	10	5	5	0	10
	Total Birds	**94**	**77**	**12**	**183**	**77**	**77**	**0**	**154**	**72**	**63**	**0**	**135**
	Grand Total	**118**	**101**	**12**	**231**	**131**	**142**	**0**	**273**	**108**	**108**	**0**	**216**

b) Description of approved layout plan on the zoo

The approved Master (Layout) Plan of the zoo is drawn on a scale (1: 1000) with with contour interval depending on the topography features. The existing features like water bodies, precipices, forest patches, natural drainage etc. has been depicted. The approach road to the zoo, north south direction, visitor circulation pathway/ plan and visitors amenities are well marked in the plan. The site for disposal of solid and liquid waste and carcass are well marked in the layout plan. The layout plan also consists of and parking arrangement, gates and barriers, administrative buildings, veterinary facilities, housing colony and paths. The water and electricity supply lines are also included in the approved Master (Layout) Plan. The Master (Layout) Plan is prepared following the colour code as per the Central Zoo Authority format recommended format for the preparation of the Master Plan for an existing zoo, which shows for existing animal enclosures (black colour), enclosures to be modified (green colour) and the enclosures that need to be redone after demolishing the old structure (red colour). Proposed new enclosures may be in blue colour.

The copy approved Master (Layout) Plan by the Central Zoo Authority is annexed as **annexure II**. The separate map for the water supply lines, drainage and electricity lines has also been prepared and annexed as **annexure III, IV and V respectively.**

c) Proposal to address the inadequacies and short coming identified in the appraisal report:-

The various inadequacies and short coming/ problems have been identified in the appraisal report Part I 2a. The section wise proposal to address these inadequacies and short coming/ problems has been discussed in detail below. This will also help provide direction for the development of the zoo in future:

Animal Section:-

The G. B. Pant High Altitude Zoo, Nainital is nearby located to many wildlife areas which include protected and non protected forest. Jim Corbett National Park, Uttarakhand is quite near to the zoo. The many rescued wild animals are brought to the zoo for their treatment. The zoo has limited space and it is problematic to keep and treat these animals for long time. It was very necessary to construct a rescue center. Accordingly, a rescue center at Ranibag was proposed and was approved in the Master (Layout) Plan. The same has been developed to keep all kinds of rescued animals.

Veterinary Section:-

The zoo has existing veterinary section and continuously being upgraded. One veterinary officer is also deputed in the zoo fulltime to take health care of the zoo inmates. The zoo hospital is also well equipped with veterinary equipments. However, to overcome the problem of conducting basic laboratory tests for zoo inmates, zoo is planning to procure such equipments required for the basic laboratory tests in near future. Further, as stated above, the zoo staff has also involved in rescue operation of different wild animals and there is urgent need to procure and maintain medical equipments to capture and restrain the animals both physically and chemically. A specialized rescue vehicle is also urgently needed with these equipments. The zoo has also proposed one lab assistant post needed for taking up laboratory related works which shall deployed soon. The zoo is also maintaining its data record keeping to international level and is linked up and following the Species 360 software called Zoological Information Management System (ZIMS). The zoo presently does not have upgraded information technology system. This inadequacy has to be resolved in near future on priority basis. The zoo is in process of setup of an advance computer system with proper net connection availability which will be upgraded from time to time.

Store and Feed Supply Section

As discussed in the disaster plan and contingency plan the zoo should always maintain a feed stock for at least one week for the zoo inmates in case of natural calamity or emergency there is an urgent need of upgrade the existing facilities of feed store and feed supply section. The Zoo has sufficient feed store facility with food storage utensils and platforms. Further, the zoo had one small

fridge available to keep the perishable food items, however, one deep fridge is needed to store animal feed like greens, Milk, Meat (in case of strike) for long term storage. The zoo shall upgrade its storage facility accordingly by procuring such kind of food utensils.

Sanitation Section

At present the zoo is doing all the sanitation work belonging to animal enclosure, office building, road and path, parking, boundary fences etc. manually on day to day basis. However, the zoo phase wise upgrade its existing facilities and procure the advanced equipments for all these purposes. Primarily the zoo shall procure High Pressure Water Pumps required for cleaning not only night shelters but also to control the animal fights. Further, the zoo has also proposed to incorporate the 12 nos. of post of the sweepers in establishment of the zoo.

Maintenance Section

The zoo is carrying out its day to day maintenance regularly. However, it is felt that the zoo should depute one welder/ plumber required for repair of enclosures, lift doors and pipe lines etc. in the zoo and also in case of emergency and accordingly zoo has proposed one post of the carpenter in its Master Plan.

Security Section

The zoo is very peculiar to its security. Presently two numbers of the security guards are deputed in the zoo for the purpose. However, keeping in view the future security requirements, the zoo has proposed deputation of the 12 nos. of the security guards in near future. One female ticket checker is also required for checking female visitors. This shall be done on urgent basis in near future.

Water supply section

The zoo presently has good water supply distribution to all the animal enclosures. However, keeping in view the future needs, requirements and arrangements one extra pipe line of 25 mm. dia and one water reservoir (4.00X4.00X2.00M) is proposed to keep as stand by in case of power cut and or in emergency.

Visitors' amenities

The zoo has presently all the basic amenities for the visitors. The zoo has sufficient number of rain shelter, drinking water points and toilets etc. However, the zoo has proposed to increase such kind of infrastructure for the better facilitation of the visitors. The zoo is also working on development of more numbers of ramps and procurement of wheel chairs for the facilitation of the *Divyangjan*. The development of a Interpretation Center is required immediately for the purpose to educate the visitors is also underway.

d) Peculiar problem of the zoo

The zoo is situated on a high altitude hill. There is always a problem of the approaching road and Parking of vehicles at such places. Similar is the problem at the zoo, even the staff of the zoo parked their vehicles outside the zoo. The parking of the vehicles of staff and visitors is a big issue here in the zoo. The zoo is working towards solving the problem and proposed to develop one parking space after laying R.C.C. slab over main drain. Similarly, traffic Jam occurred in the approach road of the especially in peak tourist season. The main approach road is full of vehicles and statement vehicles could not move for 1 to 2 hours due to traffic jam. There is one remedy that one link road to be constructed from kailakhan. The zoo shall with the help of the concern Govt. department work towards solving this problem and propose to develop a link road to zoo directly from kailakhan.

Chapter - 5

Personnel Planning

The Zoo operation presently is being carried out by meager staff as the total sanctioned posts of Thirty Four (34) which are not sufficient. Keeping in view 51 more posts are proposed in the Master Plan for smooth functioning of the zoo and providing employment opportunity to public. The nature of work in zoo should be categorized as essential services and all vacancies should be filled promptly as animal husbandry, nutrition, enrichment and cleanliness and sanitation etc. in the zoo cannot be neglected or compromised. This may negatively impact the zoo management and may result in eventual decline overall health care and welfare of the captive animals. In view, the zoo has proposed 36 additional posts under personnel planning to achieve the aim of better management of the zoo inmates providing them such environment as similar to their natural environment. The execution of some of the works in the zoo can be undertaken by outsourcing it to any repudiated NGO/ Private agencies/ Service provider who have sufficient expertise, skill and trained manpower for executing the works. The services like sanitation in public utility area of the zoo, Zoo security, Maintenance of lawn, gardens, hedges, rest sheds and toilets, Refreshment stalls and souvenir shop etc. may be outsource in order to get better result. The other works like maintenance of water supply and electrical system could also be done through outsource as and when required. A few staff could not updated them as per the present demands may also be get redistributed work as a management strategy.

The detail of the categories of staff required for the better zoo management keeping in view of the future needs is given below:

Sl.	Designation	Existing Strength	Proposed posts	Remark
29.	Director	01	-	-
30.	Dy. Director	01	-	-
31.	Veterinary Officer	01	-	-
32.	Range Officer	01	02	-
33.	Forester	03	01	-
34.	Forest guard	03	07	-
35.	Administrative Officer	-	01	-
36.	Accountant	-	01	-
37.	Upper Divisional Clerk	-	02	-

38.	Assistant Clerk	-	02	-
39.	System Analyst	01	-	Contract Basis
40.	Biologist/ Scientific Officer	01	-	Contract Basis
41.	Education Officer	-	01	Contract Basis
42.	Research Fellow	-	01	Contract Basis
43.	Zoo Keepers	12	5	Contract Basis
44.	Mali	-	04	Contract Basis
45.	Computer Operator	01	-	Contract Basis
46.	Cook	01	-	Contract Basis
47.	Pharmacist	01	-	Contract Basis
48.	Lab Assistant	01	-	Contract Basis
49.	Carpenter	-	01	Contract Basis
50.	Electrician	-	01	Contract Basis
51.	Plumber	-	01	Contract Basis
52.	Office peon	01	01	Contract Basis
53.	Dak Runner	01	01	Contract Basis
54.	Security Guard	-	12	Contract Basis
55.	Sweeper	01	07	Contract Basis
56.	Driver	03	-	Contract Basis
	Total	**34**	**51**	

The efforts may not enhanced the zoo management but also achieve a milestone in the field of captive management of the zoo.

Chapter – 6

Disaster Management

Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all aspects of humanitarian emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters (https://www. ifrc.org/en/what-we-do/disaster-management/about-disaster-management/).

The zoos in country are susceptible to a number of hazards. Hazard is a rare or extreme natural or human made event that threatens to adversely affect human life, property or activity to the extent of causing disaster. Hazards may be like in form of floods, cyclones, earthquakes, landslides, heavy snow and extreme weather conditions etc. of natural origin. The other manmade origin hazards include fire, epidemics, animal escapes, civil disturbances etc. These hazards are bound to take place and every zoo is vulnerable for these hazards (http://www. kanpurzoo.org/image/ disaster.pdf). The institution should have the capacity to deal with these hazards.

Many threatening conditions like fire, flood, drought, cold and many other seasonal variations, outbreak of epidemic diseases, entry of stray animals inside the zoo or escapes of zoo animals etc. may require a rapid and organized response to minimize injury to people and animals or damage to facilities (http://www. kanpurzoo.org/image/ disaster.pdf). Resources and equipment to clean up after catastrophic incidences will be directed to the community as a whole, and the zoo will be a low priority unless it presence the threat to the community. Portable generators, chain saws, gasoline, fresh water and an adequate supply of food stuffs should be maintained by zoo at all times. The zoo staff may be needed around the clock to deal with problems occurring during severe weather. Normal access to the zoo may be limited or cut off due to flooding, downed trees or damaged roadways. The animals should be provided heating and blankets in case of extreme cold in the area. It's always good to know that all zoos accredited by the Association of Zoos & Aquariums (AZA) must have a risk management plan in place for the animals (https://www.care2.com/causes/what-happens-to-zoo-animals-when-a-natural-disaster-approaches.html). Every year these zoos must also perform at least four preparedness drills for emergencies like weather events, fires and other disasters. Zoos and aquariums must maintain functional fire protection and life

support system equipment for animals. This should also be opted in the entire zoo.

A brief overview of disasters expected and zoo administration plans to handle with such disasters are indicated below:

6.1 Fire Control

The G. B. Pant High Altitude Zoo, Nainital is surrounded by a boundary wall and 1.20 meter wide pucca path is construction throughout the boundary wall. Sufficient no. of water tanks are placed in all suitable places. The alarms and fire extinguishers are installed in good nos. at each animal enclosure and other building as a security measure from fire.

In the situation of fire in an animal facility requires quick thinking and discretionary judgment on the part of the employee discovering the problem. The discoverer soon should inform the higher authorities and the person trained shall use fire extinguishers and other measures to control the fire. At the same time the nearest fire department should be called immediately and directed to zoo entrance nearest the fire that allows the passage of its vehicle. The electric staff of the zoo should also call immediately who with other appropriate zoo staff/ personnel should reach and assist at the scene. The public should be evacuated from the area and if, the fire is within an animal facility, attempts should be made to remove the animals immediately to safer place with due precautions of animal escape. The electric circuit breakers to affected area should be turned off.

The Zoo roads and other smaller loops are also being so design that these should also act as fire control lines. Further, placing of hydrant points all over the fire prone area is needed. During the summer season the zoo should also have the arrangements of fire watchers to monitor the occurrence of fire in the Zoo area specially green forested area. Modern firefighting equipment should be installed in the Zoo premises. Adequate training needs to be imparted to the Zoo staff to combat fire including mock drills. Although the chances of fire are very less but fire may occur inside from the short circuit, cigarette or match sticks etc. The leaf litter will be removed to stop any chance of fire.

6.2 Floods

The zoo is located at hill of Nainital, so flood situation could not be occurred as the rain water immediately flows down wards through natural existing drains and slopes. The enclosures are also so constructed and located on relatively higher ground provide no space to water to drape. In case of extreme floods, the animals would be shifted to safer areas in cages and fed till the flood waters recede. Further, water drainage has also been constructed as per the need and well channelized.

6.3 Cyclone situation

The zoo site has no history of any strong cyclonic storm in the past. However, these types of calamities strike at once without any forewarning. In view it is always better the advance preparation should be made to minimize damages. Ravages of Mother Nature can be minimized by undertaking suitable precautionary measures. There is forewarning time remains in case of cyclone and storm and action shall be taken to save animals by taking as many animals as possible from their paddock area to inside the feeding cells. The night house of the animals should be constructed with high quality material and are safe distance of the trees. The present enclosures are sturdy and protective enough to provide safety to the inhabitants during duress of Nature. Further, the electric supply should be immediately switched off at once from a master control system. The power supply will be through shielded underground cable system that is well mapped so that repair and maintenance are done conveniently.

In order to prepare the staff for proper response in such situation capacity building programmes should be organized and their readiness tested through regular mock drills.

6.4 Law and order breakdown

In the event of a major law and order collapse, it is imperative that the Zoo be evacuated of all visitors immediately. The main gate of the zoo will be closed and help of the concerned Administrative authorities, police etc. shall be taken to bring the situation normal. The Zoo should be closed down till conditions are restored to normalcy. The Zoo staff and Security should be employed round the clock, during such crisis, to guard the precious life forms in the Zoo.

6.5 Feed Supply

There is a store room in the kitchen to store adequate storable food ingredients. Furthermore, the food items will be stored above ground and the storage will have sufficient ventilation and sunlight. A deep fridge shall be procured to store perishable items. The zoo will have contingency plan for dealing with exigency associated with feed supply and discussed in the chapter of contingency plan. The contingency plan also envisages the cleaning and sanitizing the food items to eliminate the pathogens. Similarly, preventive images will be taken to cope up with contamination of the drinking water supply by identifying alternative sources of water and mobilizing water tankers.

6.6 Other situations

6.6.1 Earthquake

The hill area generally considered earthquake prone area. In case of the earthquake in zoo the physical barriers keeping the wild animals under captive conditions may dash to the ground. The boundary wall, enclosure wall or even the interlink chain fence with the uprooting of the trees or the other structures will be affected. This may cause heavy damage to inmates though it cannot be avoided. The animals may be buried under debris or may escape.

All the construction undertaken in the zoo should earthquake resistant. The staff should be trained to deal with such situations. The staff should rush out of the buildings as soon tremors are felt and should be instructed to protect the animals safely and immediately. To ensure safety of animals keepers should know that animals roaming free in their large enclosures area will suffer minimal impact in case of an earth quake. Therefore for most of the time excepting feeding or some other unavoidable reasons, the animals will be kept in large enclosures rather than keeping them confined in cages. The physical barriers will have to be designed by keeping in mind such natural calamity. The rescue squad is to be trained to deal with situations and mock trainings be carried out. The announcement speakers are to be placed at suitable places for declaring emergencies and guiding the visitors to a safer place.

6.6.2 Civil disturbances

The civil disturbances could happen at any given time in a zoo. It is very important that arrangements may be made to send the zoo visitors and the staff

safely to safer areas during such disturbances. The zoo is visited largely by women and children. It is very important to evacuate them to safe areas on priority basis. To stop such panic in organized way becomes more imminent as such panic may result in further injuries if people attempt to evacuate in a disorganized manner.

6.6.3 Bomb threat

There is no history of bomb threat in past in the zoo as the nearby and people of State and visitors are very peaceful and cooperative. However, bomb threats could not be sidelined when it comes to zoo management. Such threats should be immediately referred to the law enforcement agency having jurisdiction of the area. In such cases, generally the zoo staff should be trained to follow the evacuation procedure as for a fire, flood, cyclone etc. except all radio communications in the area should cease immediately. Visitors overhearing conversation concerning a bomb threat could panic, creating yet another problem, this should be addressed immediately. It should be ensures that there shall be no damage should be happened to zoo inmates, visitors and staff.

6.7 Strategies to deal with such situations and required equipment

All the zoos should have meticulous prior planning and preparedness to face such exigencies in the interest of zoo animals as well as public safety. The zoo should also have financial planning with adequate budget to deal with such natural calamities.

Following is the list of minimum equipments (including present status at zoo) needs to deal with such situations:

Sl.	Equipments	Essentially required	Present at Zoo	To be procured
1.	Tranquilizing gun with drugs	Yes	Yes	Nil
2.	Alarm systems	Yes	Nil	Yes
3.	Public address system	Yes	Nil	Yes
4.	Ropes and nets	Yes	Yes	Yes
5.	Gas cutters	Yes	Nil	Yes
6.	Earth moving equipment	Yes	Nil	Yes
7.	Fire proof dress	Yes	Nil	Yes

8.	Rubber boots	Yes	Yes	Yes
9.	Protective gloves	Yes	Yes	Yes
10.	Helmet	Yes	Yes	Yes
11.	Radio communications like walkie talkie, mobile etc.	Yes	Yes	Nil
12.	Pick axe	Yes	Yes	Nil
13.	Measuring tape	Yes	Yes	Nil
14.	Shovels	Yes	Yes	Yes
15.	Welding machine with sufficient welding rods	Yes	Nil	Yes
16.	Cages	Yes	Yes	Yes
17.	Construction and repair material (Cement, iron rods, sand etc.)	Yes	Yes	Yes
18.	Goggles	Yes	Nil	Yes

6.7.1 Local Response Capabilities

The zoo has the contact numbers of the nearest police station, fire and rescue service station and the nearest Government hospital to deal with any emergencies. They should be contacted immediately during such situation to carry out the operation. Periodic meetings should also be convened to discuss the preparedness of such situations.

Chapter - 7

Contingency Plan

A contingency plan is a plan devised for an outcome other than in the usual expected plan (https://en.wikipedia.org/wiki/Contingency_plan) or activity undertaken to ensure that proper and immediate follow-up steps will be taken by a management and employees in an emergency (http://www.businessdictionary.com/definition/contingency-planning.html). The major objectives of a contingency plan are to ensure containment of damage or injury to, or loss of, personnel and property, and continuity of the key operations of the organization etc. The zoos are the organization housing large number of animals out of which few belongs to endangered species and sufficient number of staff is working to take care and fulfill day to day needs of these animals. The zoo animals are susceptible to diseases, so as the zoo employees working with these animals. Hence, it is very much needed by the zoos that they should have a well-documented technical contingency plans for specific and high priority animal diseases. Problems are manifold and may be arise due to one reason or other so it is mandatory to have contingency plan to cater to such situation including resource and financial plans. The possible problems and remedial measures in case of the G. B. Pant High Altitude Zoo, Nainital are listed below:

7.1 Emergency Unit

The first step to deal away with the various consequences arise out from any natural or manmade emergency, the zoo should have a well trained Emergency Unit (EU) formed for each animal holding and visitor facility. The team shall be so trained that each member should clearly know exactly what his/ her role is during any emergency situation in zoo. A well executive plan with written instructions should be prepared and should be applicable to each employee for proper functioning of team. The plan shall include whom to report and extraordinary duties in emergency work with in the Emergency Unit (EU). The possibility of emergency (an escape of animal, a bomb threat, mob fury, flooding, severe storm, earthquake etc.) should cause the team to come into operation in planned manner.

7.2 Escape of animal from enclosure

The enclosures of various animals housed at Zoo are safe for animals and visitors. The dimensions of the enclosures are based on prescribed norms and guidelines of the Central Zoo Authority in this regard. Further, entire zoo have been protected by a chain link fence of 2 meter height all-around. However, there may be a little chance of animals escaping from enclosures. Animals can escape due to carelessness of the staff or due to some other causes. The zoo staffs have been instructed to conduct thorough checking of animal enclosure to avoid any such escape. The keepers of each and every enclosure thoroughly check the fence of enclosure, moat of the enclosure, public exhibit areas, night shelter rooms, doors and service areas before releasing the animals in the day exhibit and after bringing them back to the night shelter. The zoo always keeps public safety its utmost priority. The escaped animal may cause heavy damage in terms of the injuries/ fatalities to zoo visitor/ employee or and even loss of the wild animal. The following precaution and action that may bring relief in such case is being followed at zoo:

i. The zoo should sensitized all its animal keepers and staff about the seriousness of issue of animal escape. This shall be done by educating such issues during animal keeper training programmes or often during interactions with the technical staffs of the zoo in regular intervals.
ii. The trees in and around the animal enclosures are trimmed to keep them in such shape that is should not provide any support/ base for escape of animal. Similar practice of trimming big trees and clearing shrubs/ bushes should also be taking up on either side of the boundary wall to avoid the escape/ entry of any wild animal.
iii. Water in the wet moated enclosures is maintained to a level so that the animals housed in these wet moats can't cross the barrier.
iv. The gates, doors and windows of the night house should maintain in such a way to contain animals within enclosures. These should also be repaired when required and periodically painted to avoid rusting which could otherwise make them week as barriers. Gates and doors to enclosures are strong, and effective in containing the animals, as the rest of the enclosure barriers.

When it is determined that an animal is not in its enclosure, time is the most influential factor affecting its recapture and possible survival. Attempts to contact supervisory personnel, all the keeper staff and veterinarian should also be made immediately, but voice messages are acceptable. If necessary, contact of district administration/ police will be made by the supervisory personnel. If

any other animal/ animals is/are still in the enclosure, immediate effort by the keeper will be made to determine if the escape was by means that could afford escape for other animals. If possible to do so, the escape route should be closed off with whatever means is available until assistance arrives.

The escaped animal may still be within the perimeter fence or nearby outside, so disturbance in the area should be minimized. Capture of the escaped animal will be by field team personnel using the most appropriate means at their discretion. It has been also recognized that escaped animals often try to return to their habitats, fearing the unknown environment they suddenly find themselves in. So, using fruit/ eatable things or through other measures, zoo keepers should try to lure the animal back to their enclosure. If, the plan to lure animal quietly back to its enclosure fails, finally, the rescue squad should swing into action with tranquilizing equipment, drugs, pole syringes, projectile guns and darts, blow dart equipment, nets, snare, crates, capture and squeeze cages, forks, bags, plastic tubes, snake tongs etc. The zoo's Animal Care team/ Rescue team should meet monthly to discuss animal emergencies. At the Zoo, plans should be updated as needed and should be revisited after each incident. In addition, the zoo should conduct annual emergency exercises relative to the needs of the facility and its physical location. The zoo should also install access control and alarm systems throughout the various buildings and animal enclosures. There should be more expected security-driven issues, like placement and feasibility of CCTV cameras, emergency ring-down phones, intercom or digital displays, etc.

7.3 Monkey and dog menace

The Monkey & dog menace is a big problem for the zoo management. Especially the zoos which are situated near by the forest area or in high monkey populated area. So to overcome with this problem various solution & suggestions may be practiced

Both dogs and monkeys in zoo pose a great threat not only to the visitors but also to the animal collections of the zoo. The dogs that enter the zoo can cause havoc among the visitor, free ranging animals of the zoo and if they happen to enter the enclosures of deer/ antelope it will result in heavy losses of zoo animals. At the same time monkeys may also feed on the food being served to zoo animals. Both these animals may also transmit the diseases to zoo animals.

The zoo is protected by compound boundary wall or by chain link fence. The compound wall along the boundary will prevent the entry of domestic and pet animals. Looping and trimming of the branches on either side of zoo boundary prove helpful in checking jumping of monkeys inside enclosures from the trees. The visitor entry gate should also be designed in such a way that it should not provide sufficient space in-between to enter by such animals inside the gate to zoo premises. However, it may not restrict the entry of wild animals like monkey which may easily overpass the chain link fence barrier. The zoo should adopt various physical and scientific methods for controlling the monkey menace and dog entry which may include the following:

- The boundary wall is checked periodically
- The watchmen keep a look out for the stray dogs
- The dogs enter the Zoo should be captured and released or handed over to animal welfare organizations for rehabilitation.
- The main gates are always guarded by staffs of Zoo Visitors are not allowed to feed the monkeys
- The herbivores/ birds are fed in the covered feeding cells in order to avoid entry of monkeys to share the animal feed.
- In long term measures such monkey & stray dogs can be castrated through surgery.
- The monkeys are captured and vasectomy/ tubectomy are performed and then released back to check their increase in population or use of latest laser techniques will be more economics & convenient.
- Spreading education and awareness to the people not to throw eatables outside the houses, hostels, restaurants and hotels etc. shall also be helpful in overcome the problem because eatables materials attract the monkeys and dogs both and it affects directly to change their food habits and habitat.

7.4 Arrangement of food in case of non availability

The supply of feed items for the captive animals of the zoo may be affected by natural calamities, public strikes, non-supply of the contractor, road network problem due to construction work or heavy snow fall or vehicle breakdown etc. In these circumstances, it is essential to get the required feed items to feed the zoo animals. So it is always necessary to maintain sufficient feeding stock for at least a weak. Both the perishable and non perishable food items should be stored in the zoo. The non perishable items may provide stock for long time while the perishable items may be helpful to meet the requirement

for short term basis. The zoo should made appropriate arrangement to store both perishable and non-perishable food items. The non-perishable food should be store in sufficient size store and it should be moisture free, have platforms, pest and rodent free, while perishable food items should be stored in deep fridge.

The strategy of the zoo in such circumstances is to maintain and store items of food grains etc. in stock for at least 15 days and efforts should be done to stock greens vegetables and meat for at least 7 days by providing deep fridge during strike. If food materials not supplied by contractors, food materials should be purchased from local market directly by the management. Similarly, there are arrangements for storage of water for at least for 7 days on the overhead installed water tanks. The zoo should in future make effort to increase the water storage capacity to fifteen days.

7.5 First Aid

Although there are not many chances of injury to the visitor in the zoo, however, the visitor may injured either by falling in hard ground surface while walking, or any small accident or overlooking the forbidding instructions or due to other problem etc. In such cases, if any visitor gets injured, it should be given first-aid at zoo and staff will be trained first aid treatment. If the injury is of grievous nature, the injured visitor should be advised and facilitated to go hospital.

The G. B. Pant High Altitude Zoo, Nainital is having hilly terrain and the animal enclosures are constructed by using mostly chain link wire mesh, however, few enclosures is moated also. The enclosures are provided with the stands off barrier and hedge in between railing and boundary wall of enclosure. The enclosures are safe for visitors and for zoo staff. However, there is chance of falling a visitor in the animal enclosure accidently or during vandalism etc. If any person/ visitors fall inside the enclosure, efforts should be done to keep away the animal/ animals from the fallen visitors with the help of water shower, fire cracks/ making noise etc. and fallen visitor should be lifted by using ladder and rope immediately. The immobilization of animal could be done if necessary.

Further, vandalism is of great concern in any zoo. To help strengthen protocol and procedures, the zoo should begin to work closely with the neighborhood police station, which will increase the number of patrols both inside and outside the zoo's perimeter. Security should also operate a CCTV system with cameras throughout the zoo officers monitor activities to prevent undesirable behavior, such as visitors throwing objects into animal exhibits and

children climbing on fences to get a better view of the animals. The zoo has a children's education program through which it is able to instruct its younger visitors about how to behave around the animals.

7.6 Snake Bite

The zoo is situated at about 2100 meters above sea level being colder side there are very less possibilities of snakes. However, to avoid such eventuality the zoo is making scientific efforts. To deal with such situations the zoo has strategically divided the subject into 2 parts as follow:

a) **Preventive measures:-** For prevention it is suggested to provide gum boots to the care taker's especially who are working in the enclosures and visitors are make aware by interpretation and warning sign boards.
b) **Therapeutic measures:**- Enough Polyvalent - anti venom serum should be stocked and make available at the zoo. Further, there should be availability of doctor also just to treat the snake bite patient in an emergency round the clock. Vehicles are readily available to transport the victim to the nearest hospital for proper treatment and care.

7.7 Breakdown of power supply

The continuous power supply is very necessary in the zoo especially in winter season. The zoo is situated at high altitude and the various electricity based equipments were used to keep the animals warm during the harsh snowy winters. The electricity Invertors should be provided to operate small instruments during the break of power supply in eco-friendly/ noiseless manner. The automatic generator sets should be installed for the substitute to operate, other ones like incinerator, auto clove and other veterinary equipment. The Zoo also have plans in near future to install the solar panels for green source of energy and for self sustainability.

7.8 Epidemics

There are several diseases which are prevalent in zoo animals. It is very important to understand and study the animals regarding the symptom of their disease especially the infectious disease. It is very important that disease including infectious disease should be diagnosed in early stage & treated well in time and other preventive measures are applied to other animals. But the more important is prevention then cure.

The G. B. Pant High Altitude Zoo, Nainital has a detailed healthcare protocol for the common diseases affecting wild animals. The zoo follows regular vaccination and deworming and disinfection as prophylactic measures. There is need to do coprological examination as per the schedule developed by the veterinarian. The visitors are allowed in to the zoo through a foot bath developed at the entry gate. The entry of the domestic livestock and pet animals is prohibited in the zoo premises. The vaccination of domestic livestock and pet animals in the surrounding villages against common contagious diseases with the help of Sate Animal Husbandry Department could be taken up as long term measure for any epidemics. The animal keepers are instructed to follow the precautions to avoid any outbreak of disease to susceptible animals. The health checkup of the animal keeper is also being done once annually.

Further, following suggestions can be implant in zoo to overcome the epidemics:

a) The regular vaccination against the infectious disease like Rabies, B.Q., F.M.D., Anthrax, Trypanosomiasis, I.B.D., R.D. and H.S. is advisable.
b) Regular maintenance of hygiene & sanitation through using various disinfectants in the animal cage & sheds is necessary.
c) During the vaccination or in the phase of onset of any infectious disease the movement of staff & visitors should be controlled as per technical guide line.
d) There should be a special dress of the workers/ handlers inside the zoo which should be properly sterilized & should keep in a particular place to avoid contamination & transmission of disease.
e) For different cages and sections the staff should not be common. Because they do work as a carrier & helps to spread the disease organism from one shed to another.
f) The utensils/ equipment required during vaccination & sanitation process should be available. The unavailability of required utensils/ equipment can cause big loss in preventive processes.
g) Disinfection process should be used in individual enclosure also to reduce the load of disease causing agent, which are carrying by the visitors.
h) Foot dip/ Motor dip/ Foot dust should be used in various junctions of zoo routes & at entrance of the each section of the animal cage or shelter.
i) Regular fumigation and disinfectant's spray in the night shelter & surrounding may be the best process to reduce the pathogenic load.
j) Weeds should be removed from each animal's enclosure before onset of rainy season to reduce vector load. Weedicide spray can be used for DE growth of the grass/ weeds.

7.9 In-fighting among animals

The in-fighting for territory or during breeding season is common in wild animals. However, such situation should be avoided in the captive animals housed in zoos. In case of the zoo, whenever animal fights take place, efforts should be made to separate the fighting animals without causing serious injuries. It should be done immediately by using water showers, fire crackers and shouting etc. The fighting animals will be driven back to the night shelter (primates and carnivores) and kraals (herbivores) to avoid further fighting. In Felids only those animals that are compatible will be released in the public exhibit. If needed, the animals will be chemically immobilized and to bring them back to the night shelter. In case of herbivores during the breeding seasons animals are watched carefully and precaution should be taken by segregating the male animals. If any animals found injured necessary treatment should be given immediately.

7.10 Animals rescued from wild

In case of the rescued animals or animals brought through animal exchange programme the zoo should equipped with quarantine. Such animals should be examined thoroughly and necessary treatment should be given immediately. Blood samples should be tested for further examination and treatment should be provided to animals accordingly. If the animal is not seriously injured and sick, primary treatment should be provided and it is best possible option is that the rescued animal should be released/ relocated in its habitat. On the other hand if animal is injured seriously or sick regular treatment should be given and the animal should be kept in quarantine for a period of minimum one month and accordingly should be released in the wild, while the exchanged animals shall be shifted release to animal enclosure. The animals not suitable to release into the wild habitat should be kept at the rescue centre.

Chapter - 8

Capacity Building

The Capacity building or capacity development is the process by which individuals and organizations obtain, improve, and retain the skills, knowledge, tools, equipment and other resources needed to do their jobs competently or to a greater capacity (larger scale, larger audience, larger impact, etc). Capacity building and capacity development are often used interchangeably (https://en.wikipedia.org/wiki/Capacity_building).

It is important to assess the mental and physical capacity of the staff working in zoo. Their optimum efficiency in work shall be utilized to assign them duties in order to carry out day to day work to achieve the objective of zoo management. In a zoo, a few staff is older and few are new. Both categories of the staff shall require exposing to the activities of zoo management as per their needs along with every level of the zoo staff. This shall help in smooth functioning of carrying their assigned tasks/ duties by staff and ultimately better the zoo management.

This objective can be achieved by the up-gradation of knowledge and skill of the zoo staff from time to time in periodical manner by organizing training/ workshop/ seminar programme for various levels of staff or by deputing the staff in various related capacity building programmes organized by other professional organizations/ agencies. The staff shall get opportunity to know and understand the new methods, technologies and findings regarding the management of zoo inmates, health and upkeep of animals, nutritional enrichment, species specific animal enrichment, animal behavior, animal capture and handling, record keeping, interpretation techniques and awareness skills, maintenance of hygiene etc. Protocols of animals received or sent and CZA instructions etc. The training regarding up-gradation of international and National Policies, rules and regulations pertaining to animals in captivity and the Wildlife Protection Act and guidelines shall also be useful at managerial/ administration level. The Central Zoo Authority is funding training of the Animal keepers of the zoo. Similar in house training must be organized regularly in the zoo.

The capacity building needs of the different category of staff should be assessed and accordingly the education and skill development module should be

designed. The expert agency/ organization should be identified for up gradation of their skill and knowledge as per the requirement of the different category/ level of staff. These programmes should be organized at zoo level, state level, national or international level. The various level zoo staff should also be encouraged to undertake exchange programme between zoos to provide give them opportunity of exposure about the new techniques and management skills in vogue in various zoos nationally or internationally. For the purpose, the staff shall be periodically sent to Zoological/ National Parks in neighboring States/ Countries to have an in-depth exposure to the best practices in captive animal management issues. The zoo shall also organize study tour to the staff to facilitate smooth administration of the Zoo in a manner that study tour shall not impinge on the daily activities of the Zoo. The staff connected with security shall be adequately trained to the disaster management like combat fire, earthquake and accidental animal escape etc. for which mock drills shall also be organized by the Zoo management.

Chapter – 9

E-Governance

E-Governance is generally understood as the use of Information and Communication Technology (ICT) at all the level of the Government (https://www.nceg.gov.in/). The E-governance expands with the aim of enhancing government ability to address the needs of the general public. The basic purpose of e-governance is to simplify processes and provide convenience, efficiency, transparency & reliability for all, i.e. government, citizens, interaction with business enterprises and communication and exchange of information between different agencies of the Government at National, State and local levels (https://businessjargons.com/e-governance.html).

The concept of e-governance is now a reality. The G. B. Pant High Altitude Zoo, Nainital has already launched its website (**www.nainitalzoo.org.in)** which is frequently updated. The important are being uploaded day to day for the public convenience and to create awareness. All the computers in the zoo will be networked to form LAN and internet connection will be given so that the documents can be accessed from any computer. Visitors of the zoo now have important zoo information like animals housed at zoo and their behaviour, ticket price, day to day programmes of the zoo for visitors, direction map to reach zoo etc. from their home using the website.

The Closed Circuit Television Vision (CCTV) sets will be installed in strategic locations like entrance, parking, stores, hospital and few animal enclosures to monitor the visiting public and the activity of animals. The zoo staff is presently equipped with computers and tickets are being booked using computers.

The Zoo has been going to develop a comprehensive information system for database management covering all aspects of administration of the Zoo with focus on online reporting and updating needs.

Chapter - 10

Broad budget analysis for implementing the Master plan

a) Construction and development

The Master (Layout) Plan of the G.B. Pant High Altitude Zoo, Nainital has been approved by the Central Zoo Authority and the zoo shall implement it accordingly in phase wise manner. The chapter deals with the proposed development and construction activities being taken up by the zoo as per approved Master (Layout) Plan and the required financial resources to these hosts of animal and visitor centric developmental activities. The proposed broad budget of expenditure is focus on consolidating the assets created by the zoo so far and construction of new enclosure/s, modification of existing enclosures and designing and landscaping the new and existing enclosures based on an analytical and pragmatic animal collection plan. The Construction of new enclosures, modification of existing enclosures, conversion of existing enclosure into moated enclosures, construction of new laboratory and upgradation of zoo hospital, Installation of incinerators, Creation of interpretation centre & Museum, Development of water bird aviary, construction and upgradation of visitors amenities in tandem with the collection plan and recreation of lawns, construction of new road and repair of existing road, construction of new staff quarters and repair of old residences and construction of boundary wall are included in the proposed plan. The proposed source of the funds includes the Uttarakhand State Government, the Central Zoo Authority and the Corporate Social Responsibility (CSR) Schemes. After examination of the priorities formulated above, tentative work schedules for the next ten years and the budgetary requirement is briefly indicated as under:

Works proposed during the year 2019 – 20

The emphasis for proposed work during the financial year 2019-20 have been laid for Demolition, reconstruction and modification of old leopard night shelter, Installation of incinerator, Creation of Museum interpretation centre, Installation of CCTV system with camera, Developing and Installation of interpretative signage and Construction of Sewer as per the approved Master (Layout) Plan. In addition to the above small maintenance/repair works in animal enclosures and aviaries are will be carried out. The proposed financial

outlay for the financial year is total of Rs. 1,71,00,000/- (Rupees One crore seventy one lakhs only).

Works proposed during the year 2020 – 21

This year the completion of Dismantling of monkey enclosure and new construction for canids enclosure is proposed along with the construction/ modification of the Pheasantry. Besides this creation/ modification of existing veterinary hospital with pathological lab, modification and improvement of primate enclosures, Improvement of small cats/ nocturnal animals house and construction of water reservoir and pipeline is also scheduled. In total, Rs. 1,65,00,000/- (Rupees One crore sixty Five lakhs only) is proposed in this financial year, the detail break-up of which is depicted in the Management plan.

Works proposed during the year 2021 – 22

Construction of boundary wall for extension of the zoo, Repairing and maintenance of leopard night shelter, construction of deer/goat antelope enclosure, repairing and maintenance of drainage system, up gradation of electrical services are proposed for a financial outlay of Rs.1,05,00,000/- (Rupees One crore Five lakhs only). The activity wise financial are indicated in the Management plan.

Works proposed during the year 2022 – 23

As per the requirement of visitor amenities for future years, the focus during this year is kept on up gradation of the visitors amenities which includes development of road including retaining walls, development of lawns and other public amenities (Toilets, Resting Shades, Drinking Water, ramps for specially Abled person) and improvement of existing roads. Further, construction/ modification of (pheasantry) Aviary enclosures with a financial outlay of Rs. 1,00,00,000/- (Rupees One crore only) is proposed during this financial year. The details are depicted in the management plan.

Works proposed during the year 2023 – 24

Improvement of the animal facilities and infrastructure is a step towards attaining the animal welfare. The Construction of leopard enclosure, developing and installation of interpretative signage and applied field research activities in protected areas and repairing and modification of old Bear night shelter and enclosure are proposed during the financial year. The proposed outlay of Rs.81,00,000/- (Rupees Eighty one lakhs only) is during the financial year is indicated in the management plan.

Works proposed during the year 2024 – 25

It is very difficult to provide barrier free viewing of the captive animals in a hilly terrain, however, the zoo shall made efforts to develop moat in all the herbivore enclosure to provide barrier free viewing to the visitors so that they may feel seeing animals in the wild habitat. Accordingly, the zoo has proposed to convert all the herbivore enclosures into moated enclosure during this financial year. Improvement and modification of herbivore species enclosure and night shelter, applied fields research activation and Improvement of Pheasantry (Aviary) enclosures are proposed during the financial year with financial outlay of Rs. 73,00,000/- (Rupees Seventy three lakhs only). The details of the financial outlay are depicted in Management Plan.

Works proposed during the year 2025 – 26

At present it is felt that the Tiger enclosure may be further improved. Accordingly, improvement in the tiger enclosure in terms of extension of area and redesigning is proposed during this financial year. The other works proposed are Renovation of quarantine ward construction and improvement of drainage system. The proposed outlay to carry out these activities is projected of Rs.75,00,000/- (Rupees Seventy five lakhs only) the details of which is depicted in management plan.

Works proposed during the year 2026 – 27

The new enclosures as per the approved Master (Layout) Plan for herbivore and pheasants are proposed during this financial year. The other activities proposed during this financial year are applied field research activation. The proposed outlay to carry out these activities is assumed at Rs.96,00,000/- (Rupees Ninety six lakhs only). The detail of financial requirement is depicted in management plan.

Works proposed during the year 2027 – 28

The focus of the proposed work is the improvement of roads/ footpath and modification / renovation of veterinary hospital is proposed to be undertaken during this financial year. The research work is proposed to be continued. The details of proposed financial outlay to carry out these proposed

activities is amounting Rs. 76,00,000/- (Rupees Seventy six lakhs only) and is depicted in management plan.

Works proposed during the year 2028 – 29

The ten year of the proposed work of activities is a long time. The focus of the proposed work during a gap period of the ten years mainly kept on the improvement/ repair of all the enclosure which includes Improvement/ repair of animal enclosure, Improvement of Signage's, and Improvement/ repair of animal health care facilities. The details of proposed financial outlay to carry out these activities is amounting Rs. 80,00,000/- (Rupees Eighty lakhs only) is depicted in management plan.

b) Day-to-day maintenance

There are many activities in the zoo needs to be taken up on daily basis for the better management of the zoo**.** A few of such activities includes supply of feed to the animals, availability of water to the animals, removal of solid and liquid waste from the animal enclosures, maintenance of cleaning and hygiene in animal enclosure and other zoo area, feeding of medicines to sick/ injured animals, repair/ maintenance of enclosures / buildings, maintenance of electricity line, water pipelines, sewerage, management of security services, entry tickets, souvenir shop and other Small purchasing and misc. works. These works are being carried out by the different levels of the concern zoo staff. One such of the staff is zoo or animal keeper which plays important role in upkeep, care and management of the captive animals housed in the zoo. Similarly, other technical staff care of uninterrupted water and power supply etc. The animal upkeep is a specialized profession meticulous, strenuous and requires considerable skill, patience and high degree of commitment to ensure the welfare of animals. The tabular detail of the day to day activities and the financial requirement from the financial year from 2019-20 to 2028-29 is depicted in the management plan.

Management plan of the G.B. Pant High Altitude Zoo, Nainital

(2019 – 20 to 2028 – 29)

As recommended by the Central Zoo Authority, the management plan of the G.B. Pant High Altitude Zoo, Nainital is prepared detailing out the activities to be taken up in the line indicated in the Master Plan of the zoo for next ten years (2019 – 20 to 2028 – 29). The different activities of the works proposed to be undertaken has been prioritized in phases annually and financial year wise and provide realistic estimates of the proposed works indicating the sources of funding. The proposed source of the funds includes the Uttarakhand State Government, the Central Zoo Authority and the Corporate Social Responsibility (CSR) Schemes. The revenue of the Zoo is not deposited into the state government treasury. This revenue is directly used as a fund to carry out various activities of the Zoo. The management plan is prepared so include strategy to be adopted for achieving the goals defined in the Master Plan (Part-II). It is so planned that the work required immediate attention has been proposed to be taken on priority in early phase and the construction of new enclosures are scheduled to be initiated in the later phases and are suitably strengthened and supplemented the zoo management. The Creation/ improvement and strengthening of infrastructure in veterinary unit, store and feed, security and extension / education sections have also been accorded due priority and components have been suitably factored in. The management plan should also contain the procedure to be adopted and person responsible for carrying out different items of works with their financial and administrative powers. In other words, this document will serve as a working document that will guide the managers of the zoo for the management plan period and facilitate the budgeting and focused development. This will help any new incumbent to carryout development without dislocation. The following is given the detail of financial year activities proposed to be undertaken includes (construction and development and day to day activities) with their financial outlay and source of funding which shall be very helpful to the zoo for its planned development.

a) Construction and development:

1. Works proposed during the year 2019-2020:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Demolition, reconstruction and modification of old leopard night shelter.	One	35.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Installation of incinerators	One	10.00	
3.	Creation of Museum interpretation centre	One	80.00	
4.	Installation of CCTV system with camera	As per plan	6.00	
5.	Developing and Installation of interpretative signage	As per guidelines	10.00	
6.	Construction of Sewer Line	As per need	30.00	
		Total	**171.00**	

2. Works proposed during the year 2020-2021:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Dismantling of monkey enclosure and new construction for canids enclosure.	One	50.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Modification of Pheasantry	Sixteen	50.00	
3.	Creation of pathological lab at veterinary hospital.	One unit	15.00	
4.	Construction of water reservoir and pipeline	One	20.00	
5.	Improvement of small cats/ nocturnal animals house	4 nos.	30.00	
		Total	**165.00**	

3. Works proposed during the year 2021-2022:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Construction of Boundary wall for extension of the zoo.	0.500km.	30.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Repairing and maintenance of Leopard night shelter.	One	10.00	
3.	Construction of deer/ Goat-Antelope enclosure.	One	40.00	
4.	Repairing and Maintenance of drainage system.	As per approved plan	15.00	
5.	Up gradation of electrical services	As per approved plan	10.00	
		Total	**105.00**	

4. Works proposed during the year 2022-2023:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Construction & Development of road including retaining walls	0.800km.	40.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Development of lawns and other public amenities (Toilets, Resting Shades, Drinking Water, ramps for specially Abled person)	10	10.00	
3.	Improvement of existing roads	1.00 Km.	20.00	
4.	Construction/ modification of (pheasantry) Aviary enclosures	20 nos.	30.00	
		Total	**100.00**	

5. Works proposed during the year 2023-2024:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Construction of leopard enclosure.	One	30.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Developing and Installation of interpretative signage	As per guidelines	15.00	
3.	Applied field research activities in protected areas.	One project	6.00	
4.	Repairing and Modification of old Bear night shelter & enclosure.	Two	30.00	
		Total	**81.00**	

6. Works proposed during the year 2024-2025:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Improvement and modification of herbivore species enclosure and night shelter.	7 nos.	40.00	Zoo Revenue, CZA, State Government CSR scheme
3.	Applied fields research activity.	2	8.00	
4.	Improvement of Pheasantry (Aviary) enclosures	12 nos.	25.00	
		Total	**73.00**	

7. Works proposed during the year 2025-2026:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Improvement of Tiger enclosure	Two	40.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Renovation of quarantine ward	One	10.00	
3.	Improvement of drainage system	As per approved plan	25.00	
		Total	**75.00**	

8. Works proposed during the year 2026-2027:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Construction of herbivores enclosure	One	40.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Construction of Pheasantry enclosures	5	50.00	
3.	Applied fields research activity	As per plan	6.00	
		Total	**96.00**	

9. Works proposed during the year 2027-2028:-

S. N.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Improvement of roads/ footpath	As per need	30.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Applied field research activation.	As per zoo need	6.00	
3.	Modification and renovation of veterinary hospital.	As per need	40.00	
		Total	**76.00**	

10. Works proposed during the year 2028-2029:-

Sl.	Item of work	Quantity	Total cost (Lakh Rs.)	Source of Funds
1.	Improvement/ repair of animal enclosure	As per need	40.00	Zoo Revenue, CZA, State Government CSR scheme
2.	Improvement of Signage's	As per requirement	15.00	
3.	Improvement of animal health care facilities	As per requirement	25.00	
		Total	**80.00**	

b) Day to Day maintenance:-

1. Year 2019-2020:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	40,00,000
2.	Zoo cleaning (Contract)	20,00,000
3.	Animal feeding	50,00,000
4.	Medicines	3,50,000
5.	Payment of electricity, water and telephone bill, House tax, sewer tax, etc.	7,00,000
6.	Repair/ maintenance of enclosures /buildings	10,00,000
7.	Small purchasing/ misc. expenditure	5,00,000
8.	Awareness programmes/ signages	20,00,000
9.	Security out source	15,00,000
	Total	**1,70,50,000**

2. Year 2020-2021:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	40,00,000
2.	Zoo cleaning (Contract)	22,00,000
3.	Animal feeding	55,00,000
4.	Medicines	3,85,000
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	7,70,000
6.	Repair/maintenance of enclosures /buildings	11,00,000
7.	Small purchasing/ misc. expenditure	5,50,000
8.	Awareness programmes/ signages	20,00,000
9.	Security out source	16,50,000
	Total	**1,81,55,000**

3. Year 2021-2022:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	44,00,000
2.	Zoo cleaning (Contract)	24,20,000
3.	Animal feeding	60,50,000
4.	Medicines	4,23,500
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	8,47,000
6.	Repair/maintenance of enclosures /buildings	12,10,000
7.	Small purchasing/misc. expenditure	6,05,000
8.	Awareness programmes/ signages	21,00,000
9.	Security out source	18,15,000
	Total	**1,98,70,500**

4. Year 2022-2023:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	44,00,000
2.	zoo cleaning (Contract)	26,62,000
3.	Animal feeding	66,55,000
4.	medicines	4,65,300
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	9,31,700
6.	Repair/maintenance of enclosures /buildings	13,31,110
7.	Small purchasing/ misc. expenditure	6,65,500
8.	Awareness programmes	23,10,000
9.	Security out source	19,96,500
	Total	**2,14,17,110**

5. Year 2023-2024:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	44,00,000
2.	zoo cleaning (Contract)	29,28,200
3.	Animal feeding	73,20,500
4.	medicines	5,11,830
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	10,24,870
6.	Repair/ maintenance of enclosures/ buildings	14,64,221
7.	Small purchasing/ misc. expenditure	7,32,050
8.	Awareness programmes	25,41,000
9.	Security out source	21,96,150
	Total	**2,31,18,821**

6. Year 2024-2025:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	44,00,000
2.	Zoo cleaning (Contract)	32,21,020
3.	Animal feeding	80,52,550
4.	Medicines	5,63,013
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	11,27,357
6.	Repair/maintenance of enclosures /buildings	16,10,643
7.	Small purchasing/misc expenditure	8,05,255
8.	Awareness programmes/ signages	27,95,100
9.	Security out source	24,15,765
	Total	**2,49,90,703**

7. Year 2025-2026:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	48,40,000
2.	Zoo cleaning (Contract)	35,43,122
3.	Animal feeding	88,57,805
4.	Medicines	6,19,314.3
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	12,40,092.7
6.	Repair/maintenance of enclosures /buildings	17,71,707.3
7.	Small purchasing/ misc. expenditure	8,85,780.5
8.	Awareness programmes/ signages	30,74,610
9.	Security out source	26,57,341.5
	Total	**2,74,89,773.3**

8. Year 2026-2027:-

Sl.	Items	amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	48,40,000
2.	Zoo cleaning (Contract)	38,97,434.2
3.	Animal feeding	97,43,585.5
4.	Medicines	6,81,245.43
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	13,64,101.97
6.	Repair/maintenance of enclosures /buildings	19,48,878.03
7.	Small purchasing/misc expenditure	9,74,358.55
8.	Awareness programmes/signages	33,82,071
9.	Security out source	29,23,075.65
	Total	**2,97,54,750.33**

9. Year 2027-2028:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	48,40,000
2.	Zoo cleaning (Contract)	42,87,177.62
3.	Animal feeding	1,07,17,944.05
4.	Medicines	7,49,369.97
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	15,00,512.17
6.	Repair/ maintenance of enclosures/ buildings	21,43,765.83
7.	Small purchasing/ misc. expenditure	10,71,794.405
8.	Awareness programmes/ signages	37,20,278.1
9.	Security out source	32,15,383.215
Total		**3,22,46,225.36**

10. Year 2028-2029:-

Sl.	Items	Amount in Rs.
1.	Wages of zoo keepers, chaukidars, Ardali, Biologist, System Analyst, Education Officer, Computer operator, etc.	53,24,000
2.	Zoo cleaning (Contract)	47,15,895.382
3.	Animal feeding	1,17,89,738.455
4.	Medicines	8,24,306.967
5.	Payment of electricity, water and telephone bill, House tax, sewer tax etc.	16,50,563.387
6.	Repair/ maintenance of enclosures/ buildings	23,58,142.413
7.	Small purchasing/misc expenditure	11,78,973.84
8.	Awareness programmes/ signages	40,92,305.91
9.	Security out source	35,36,921.54
	Total	**3,54,70,847.89**

The Management plan for G.B. Pant High Altitude Zoo, Nainital for the time frame of ten years from 2019-20 to 2028-29 is an ambitious document, aimed at achieving highest level of animal welfare with improved infrastructure, upgradation of feed, hygiene, cleanliness, animal health care, rescue and rehabilitation, strengthening of visitors amenities, education and awareness and facilities for zoo staff shall be proved effective for modern elements of Zoo management. Many components and activities proposed in the Zoo master plan would necessarily spill over beyond the time frame of the Management plan. The development activities outlined have been strategically placed flexible to accommodate shifting priorities in the near future.

Annexure I

कब्जा प्रमाणपत्र

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भूमि अध्याप्त अधिनियम 1894 की धारा 6 की विज्ञप्ति सं० 8809/14-2-605-80 दिनांक 22-5-81 को राजकीय गजट दिनांक 22-5-81 में प्रकाशित हुई है, अन्तर्गत हाई एल्टीट्यूड "जू" की स्थापना हेतु ग्राम अपर डाडा हाउस परगना नैनीताल तहसील नैनीताल जिला नैनीताल की निम्नलिखित भूमि का अधिकार धारा 16 भूमि अध्याप्त अधिनियम के अन्तर्गत आज दिनांक 6, 1983 को प्राप्त करके प्रभागीय वनाधिकारी, नैनीताल वनप्रभाग नैनीताल के प्रतिनिधि श्री एस० एस० रावत रेंज ऑफिसर को दिया गया।

भूस्थल का नाम	क्षेत्रफल	भूमि पर पाई गई वस्तुओं का विवरण
अपर डाडा हाउस नैनीताल	6-60 एकड़	19 पेड़ बांज खरास्

उपरोक्तानुसार कब्जा प्राप्त किया।

प्रतिनिधि 6/6/83

प्रभागीय वनाधिकारी, (K. S. Rawat)
वन प्रभाग, नैनीताल।

उपरोक्तानुसार कब्जा दिया।

प्रतिनिधि 6/6/83

कलक्टर (भूमि अध्याप्ति)
नैनीताल

न्यायालय जिला भूमि अध्यर्जन अधिकारी, नैनीताल

वाद सं. 49/9 सन् 1978-79

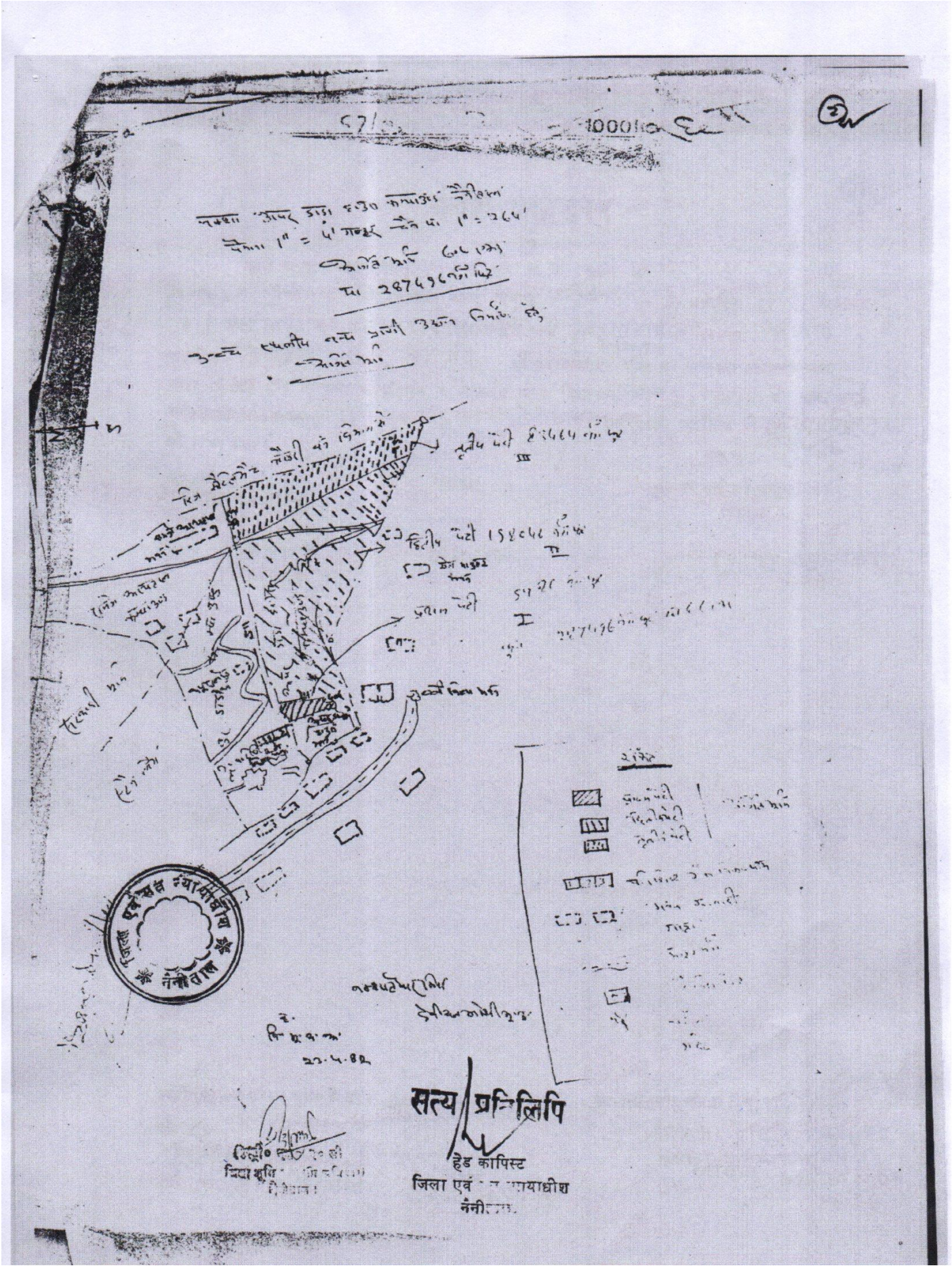
सरकार

बनाम

कास्तकारान मौजा

—

नक्शा मौका तैयार है



सत्य प्रतिलिपि

हेड कापिस्ट

जिला एवं सत्र न्यायाधीश

नैनीताल

उच्च स्थलीय प्राणी उद्यान नैनीताल हेतु सप्तम पंचवर्षीय योजना की शेष अवधि तथा अष्टम पंचवर्षीय योजना के दो वर्षों की शेष अवधि के कार्यों एवं कर्मचारियो आदि की नियुक्ति के प्रस्ताव का विवरण-

1-योजना का नाम — नैनीताल में एक उच्च स्थलीय प्राणी उद्यान की स्थापना।

2-निर्माण की स्थिति — अयारपाटा हाउस, नैनीताल एवं लड़ियाकाटा क्षेत्र नं0-1

3-क्षेत्रफल
(1) अध्यापित भूमि 6.60 एकड़ (2.673 हे0)
(2) आरक्षित वन भूमि 5.0 एकड़ (2.02 हे0)
योग- 11.60 एकड़ (4.693 हे0)

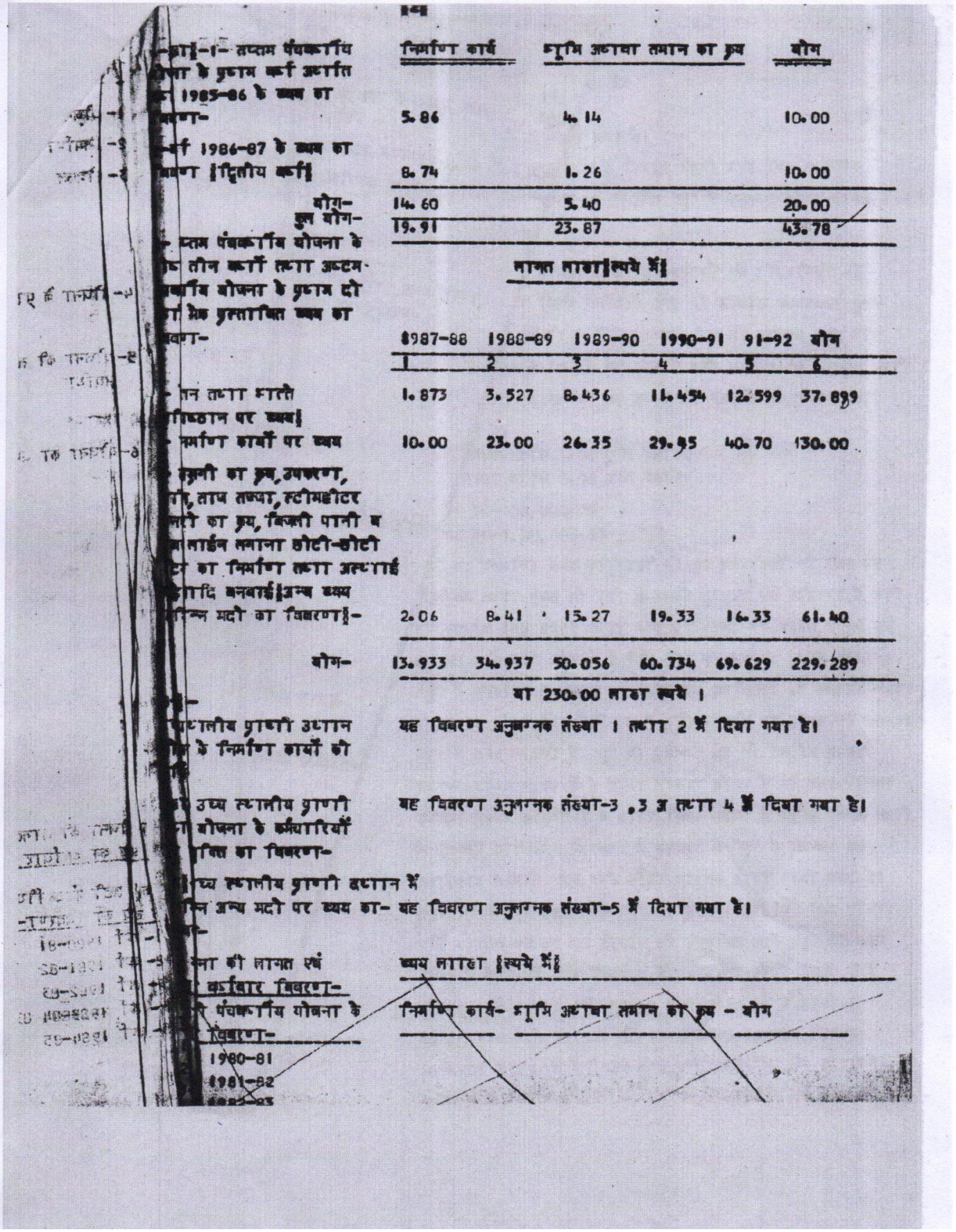
4-योजना के प्रारम्भ की तिथि- 1-4-1980 परन्तु वास्तविक निर्माण कार्य मार्च 1984 से प्रा हुआ।

5-योजना की समाप्ति अवधि — 31-3-1992, यदि योजनानुसार इस प्रोजेक्ट के लिये निर्माण पूर्व लूका स्टाफ की नियुक्ति समय पर नही की जाती है तो इ समय पर पूर्ण होने पर शंकित होना स्वाभाविक है।

6-योजना का वर्णन — नैनीताल एक मुख्य पर्यटन स्थल है। यह उ0प्र0 में ही नही अपि भारत के भी प्रमुख पर्यटन नगरों में एक है। यहाँ पर प्रति ग्रीष्म एवं शरदकालीन मौसम में हजारो शैलानी आते है। वि बाह्य मनोरंजन की आवश्यकता होती है। "जू" का निर्माण सरल एवं महत्वपूर्ण मनोरंजन ही नही है बल्कि शिक्षा एवं जानवरो की जानकारी एंव ज्ञान प्राप्ति का भी एक साधन इसके अतिरिक्त "जू" का निर्माण उन विद्यार्थियों के लिये सहायक सिद्ध होगा जो उच्च स्थलीय जंगली प्राणीयों के अ रिसर्च कार्य करना चाहते हैं। इसके अतिरिक्त अ प्राणियों एंव बचाव में भी "जू" सहायक सिद्ध होगा जो प्राणी पहाड़ में कम है अथवा जो प्रायः लुप्त होते जा रहे हैं और जो जा मैदानी क्षेत्रों के गर्म भाग में नही बढ़ सकते हैं।

7-योजना की लागत एवं व्यय का वर्षवार विवरण — व्यय लाखों (रुपये में)

8वीं पंचवर्षीय योजना व्यय का विवरण-	निर्माण कार्य	भूमि अथवा समान का क्रय	योग
वर्ष 1980-81	रिक्त	रिक्त	रिक्त
वर्ष 1981-82	-"-	7.99	7.99
वर्ष 1982-83	0.31	4.69	5.00
वर्ष ~~1983-84~~ 83-84	2.39	2.40	4.79
वर्ष 1984-85	2.61	3.39	6.00
योग-	5.31	18.47	23.78



	निर्माण कार्य	भूमि अथवा समान का क्रय	योग
-1- तप्तम पंचवर्षीय योजना के प्रथम वर्ष अर्थात वर्ष 1985-86 के व्यय का विवरण-	5.86	4.14	10.00
वर्ष 1986-87 के व्यय का विवरण (द्वितीय वर्ष)	8.74	1.26	10.00
योग-	14.60	5.40	20.00
कुल योग-	19.91	23.87	43.78

तप्तम पंचवर्षीय योजना के तीन वर्षों तथा अष्टम पंचवर्षीय योजना के प्रथम दो वर्षों हेतु प्रस्तावित व्यय का विवरण-

लागत लाख (रुपये में)

	1987-88	1988-89	1989-90	1990-91	91-92	योग
	1	2	3	4	5	6
भवन तथा स्टाफ (प्रशिक्षण संस्थान पर व्यय)	1.873	3.527	8.436	11.454	12.599	37.889
निर्माण कार्यों पर व्यय	10.00	23.00	26.35	29.95	40.70	130.00
मशीनरी का क्रय, उपकरण, पाइप, ताप तख्ता, स्टीमबॉयलर आदि का क्रय, बिजली पानी व सीवर लाईन बनाना छोटी-छोटी सड़कों का निर्माण तथा अन्य खाई खुदाई आदि बनवाई (अन्य व्यय के विभिन्न मदों का विवरण)-	2.06	8.41	15.27	19.33	16.33	61.40
योग-	13.933	34.937	50.056	60.734	69.629	229.289

या 230.00 लाख रुपये ।

-2- स्थानीय प्राणी उद्यान के निर्माण कार्यों का विवरण- यह विवरण अनुलग्नक संख्या 1 तथा 2 में दिया गया है।

-3- उच्च स्थानीय प्राणी योजना के कर्मचारियों का विवरण- यह विवरण अनुलग्नक संख्या-3 ,3 अ तथा 4 में दिया गया है।

-4- उच्च स्थानीय प्राणी उद्यान में विभिन्न अन्य मदों पर व्यय का- यह विवरण अनुलग्नक संख्या-5 में दिया गया है।

-5- योजना की लागत एवं व्यय का कार्यवार विवरण-

तप्तम पंचवर्षीय योजना के विवरण-

व्यय लाख (रुपये में)

	निर्माण कार्य-	भूमि अथवा समान का क्रय -	योग
1980-81			
1981-82			
1982-83			

[3]

- योजना के समस्त व्यय — अनुलग्नक -6 में दिया गया है।

रांश -

मास्टर प्लान (Layout Plan) — अनुलग्नक -7 में दर्शाया गया है।

विधिक वर्णन- — "जू" का निर्माण भारत में स्थित किसी भी उच्च स्तरीय प्राणी उद्यान के स्तर पर निर्मित "जू" के अनुसार किया जायेगा।

ौचित्य

अधिक लाभ, अन्य लाभ, गत का अनुमान- — "जू" नैनीताल में अधिक से अधिक पर्यटकों एवं शैलानियों को आकर्षित करेगा जिससे नैनीताल नगर की अर्थिक व्यवस्था सुदृढ होगी । इसके अतिरिक्त निम्न धनराशि की राजस्व आय भी वर्ष 1990-91 से "जू" के गेट फीस से भी होगी। यह राशि अभी लगभग [गोल] है। गेट की दर अभी तय नही है जो निम्न प्रकार प्रस्तावित है।

[1]- वयस्क दर्शक 1.00 प्रति व्यक्ति
[2]- बच्चा दर्शक 0.50 प्रति व्यक्ति

आय की धनराशि- — 90-91 रू0- 50,000.00
91-92 रू0-1,00,000.00

"जू" का निर्माण वन्य प्राणियों की कुछ प्रजातियों जो दिन पर दिन कम तथा लुप्त हो रही है उनकी सुरक्षा एवं संरक्षण में भी लाभदायक सिद्ध होगा तथा वन्य प्राणियों पर शोध, रिसर्च एवं अध्ययन करने वाले लोगो के लिये "जू" एक सुअवसर प्रदान करेगा । "जू" के निर्माण से पर्यटकों एवं स्थानीय व्यक्तियों को स्वस्थ मनोरंजन प्रदान होगा और नैनीताल के प्रति पर्यटकों का आकर्षण बढेगा।

क लाभ-

देश के अनेक भागो में "जू" का प्रबंन्ध या तो केन्द्रीय सरकार अथवा राज्य सरकारों के द्वारा सीधा होता है या महापालिका अथवा प्रबंध समितियों के द्वारा किया जाता है परन्तु जिन स्थानों से दिल्ली, दार्जिलिंग, शिमला व कानपुर के "जू" के प्रबन्ध एक सलाहकार समिति गठन करके सीधे शासन द्वारा किया गया है। नैनीताल में भी इसी तरह "जू" का प्रबन्ध प्रभावी सिद्ध होगा। यदि शासन एक उप वन संरक्षक, को नियुक्ति करके "जू" का कार्य हाथ में लेगी तो इसके निर्माण में शीघ्रता रहेगी जिसके लिये आवश्यक कर्मचारियों की नियुक्ति भी तुरन्त करनी होगी । वन अनुभाग-3 के शासनादेश सं0-1412/14-3-102/84, दिनांक-10-4-86 के अनुसार नैनीताल हाई एल्टीट्यूड "जू" की स्थापना के संबंधित निर्माण कार्यों के नियोजन, डिजाइनिंग एवं अनुश्रवण हेतु निम्नलिखित सदस्यों की एक स्थानीय समिति का गठन किया है।

ार समिति-

1- अपर मुख्य वन संरक्षक(कुमाऊँ) उ0प्र0 नैनीताल, सदस्य ।

2- अपर मुख्य वन संरक्षक, वन्य जीव प्रतिपालक या उनके नामित प्रतिनिधि जो प्र0अ0 से कम न हो। सदस्य ।

3- प्रभारक नगरपालिका नैनीताल अध्यक्ष उनके नामित प्रतिनिधि के रूप में अधिकारी अधिकारी । सदस्य ।

4- श्री डी0पी0जोशी, ते0नि0 मुख्य वन संरक्षक, कुमाऊँ चिड़िया, तल्लीताल, नैनीताल सदस्य ।

5- प्र0अ0, नैनीताल वन प्रभाग नैनीताल सदस्य संयोजक शा0उ0सं0- 6134 6134/14-3-192/74 टी0सी0 दिनांक 25-5-87 द्वारा निम्न सदस्यों को समिति का सदस्य पुनः नामित किया गया है।

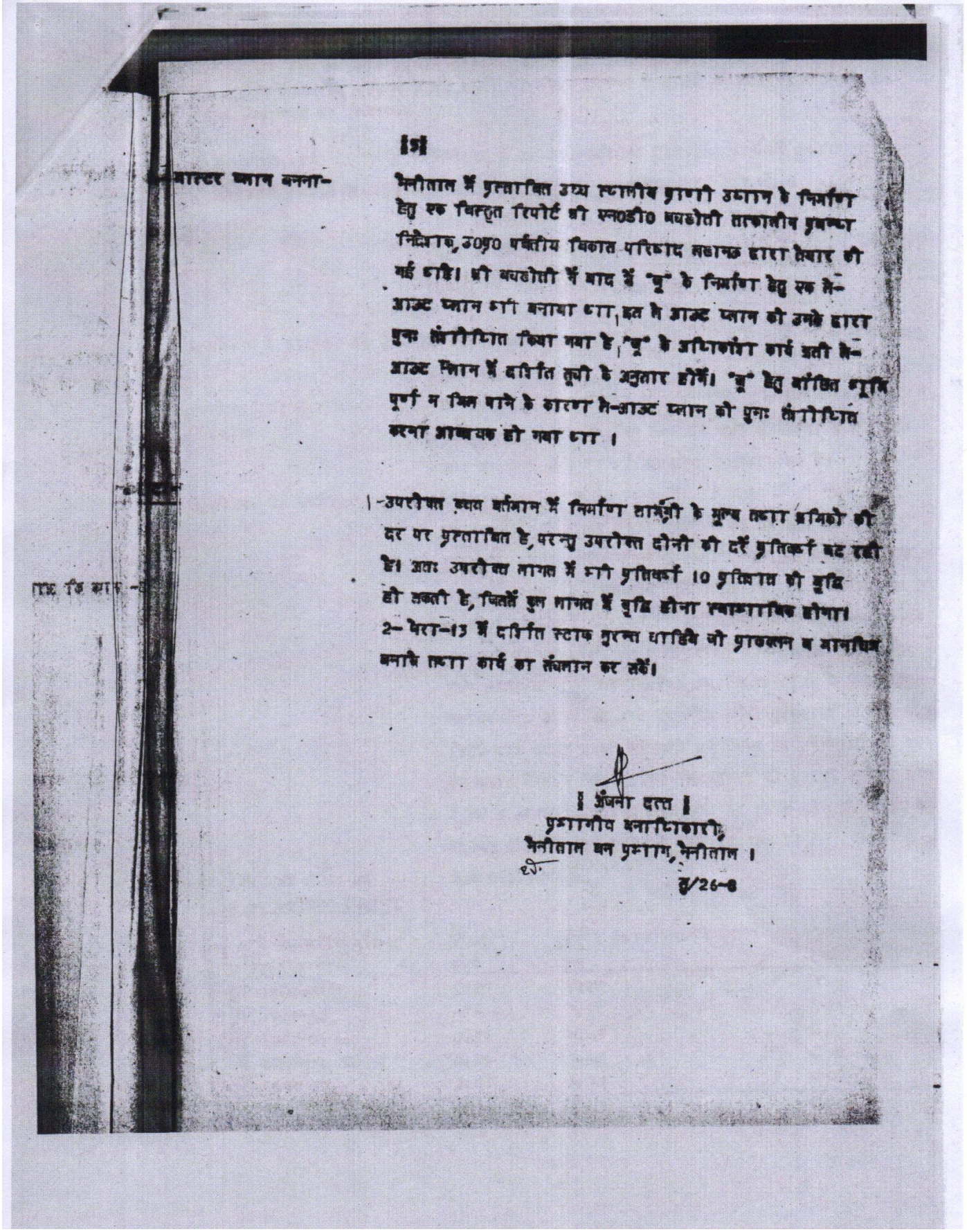
6- श्री एन0डी0 बडथ्वाल, तेवा निवृत्त वन महानिरीक्षक 85-आंध्र विहार ।। देहरादून ।

7- वन संरक्षक, प्रकाष्ठ तस्करण खुल, उ0प्र0 नैनीताल ।

टाफ की आवश्यकता- अनेक लोगों के मत विचार से कि जानवरों को "चू" में पालकर भोजन देना व बाड़ी में बन्द रखना आसान काम है, के विपरित जंगली जानवरों को एक विशेष योग्यता के बिना कठिन, कष्टदायक व मन्दा कार्य है जो अनेक कर्मी के उपरान्त भी आसान व कष्टदायक काम नहीं माना जा सकता है। इसमें धैर्य का सावधानी से सोचना, धैर्य का सचेत रहना व अनुकूल का होना आवश्यक है। इसमें बाड़ी को साफ सुथरा रखने से अधिक महत्वपूर्ण बात होती है कि विवेकशील व लगनशील प्राविधिक व्यक्तियों की नियुक्ति। अतः निदेशक से लेकर कीपर तथा स्वीपर तक की नियुक्ती को महत्वपूर्ण माना जाना चाहिये जिनका स्वभाव व ध्यान "चू" के निर्माण की ओर सही दिशा में हो। निम्न स्टाफ की नियुक्ति तुरन्त वर्ष 1987-88 में ही की जानी चाहिये। शेष स्टाफ अनुलग्नक 2 में दर्शाया गया है।

1-	निदेशक	1
2-	वन रेन्जर	1
3-	मानचित्रकार	1
4-	वर्क सुपरवाईजर	2
5-	अर्दली	2
6-	चौकीदार	2
7-	ड्राईवर	1
	योग-	10

यदि उपरोक्त स्टाफ की नियुक्ति तुरन्त नहीं की जाती है तो "चू" का निर्माण कार्य समयबद्ध कार्य क्रमानुसार समय पर पूर्ण होना शंकित रहेगा ।



[3]

मास्टर प्लान बनना-

नैनीताल में प्रस्तावित उच्च स्तरीय पेयजल उद्यान के निर्माण हेतु एक विस्तृत रिपोर्ट श्री एन0डी0 बघवोली तत्कालीन प्रबन्ध निदेशक, उ0प्र0 पर्वतीय विकास परिषद लखनऊ द्वारा तैयार की गई थी। श्री बघवोली के बाद में "चू" के निर्माण हेतु एक मे-आउट प्लान भी बनाया गया, इस मे आउट प्लान को उनके द्वारा पुनः संशोधित किया गया है, "चू" के अधिकांश कार्य इसी मे-आउट प्लान में दर्शित तुषी के अनुसार होंगे। "चू" हेतु वांछित स्थलि पूर्ण न मिल पाने के कारण मे-आउट प्लान को पुनः संशोधित करना आवश्यक हो गया था।

1-उपरोक्त व्यय वर्तमान में निर्माण सामग्री के मूल्य तथा श्रमिकों की दर पर प्रस्तावित है, परन्तु उपरोक्त दोनों की दरें प्रतिवर्ष बढ़ रही है। अतः उपरोक्त लागत में भी प्रतिवर्ष 10 प्रतिशत की वृद्धि हो सकती है, जिससे कुल लागत में वृद्धि होना स्वाभाविक होगा।
2- पैरा-13 में दर्शित स्टाफ तुरन्त चाहिये जो प्राक्कलन व मानचित्र बनाने तथा कार्य का संचालन कर सकें।

[illegible]

[illegible] अंजना दत्त [illegible]
प्रभागीय वनाधिकारी,
नैनीताल वन प्रभाग, नैनीताल।

दि. 8/26-8

Annexure II


MASTER PLAN LAYOUT OF BHARAT RATNA PT. G.B. PANT HIGH ALTITUDE ZOO, NAINITAL, UTTARAKHAND, INDIA
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7 SEWERAGE LINE
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9 DENSE FOREST
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21 DRINKING WATER
22 TOILETS
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25 ZOO ENTRY GATE
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ZOO RESIDENTIAL COMPLEX
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DENSE FOREST
DENSE FOREST
CANTONMENT AREA
CANTONMENT AREA
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14 LEOPARD
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16 CANIDS
17 TIBETAN WOLF
18 PHEASANT INCUBATION UNIT
19 VETERINARY HOSPITAL
20 QUARANTINE WARD
21 KITCHEN
22 GRASS / MEAT STORE & WORKSHOP
23 BIRDS OF PREY (23A, 23B & 23C)
24 EXOTIC BIRDS
25 TOILETS
26 SAMBHAR
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28 GORAL
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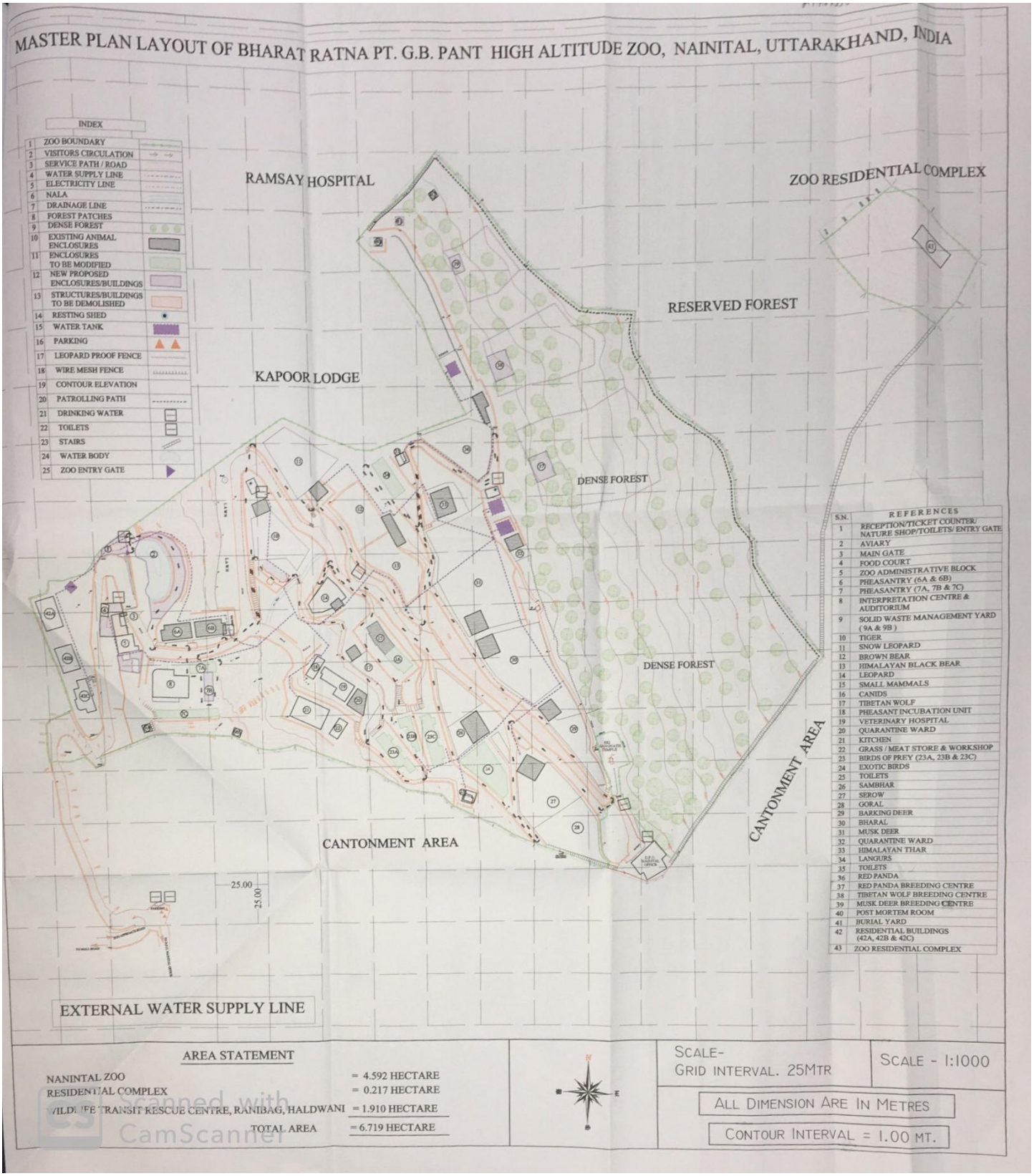
30 BHARAL
31 MUSK DEER
32 QUARANTINE WARD
33 HIMALAYAN THAR
34 LANGURS
35 TOILETS
36 RED PANDA
37 RED PANDA BREEDING CENTRE
38 TIBETAN WOLF BREEDING CENTRE
39 MUSK DEER BREEDING CENTRE
40 POST MORTEM ROOM
41 BURIAL YARD
42 RESIDENTIAL BUILDINGS (42A, 42B & 42C)
43 ZOO RESIDENTIAL COMPLEX
25.00
25.00
Approved
23/10/17
(40th meeting of Expert Group on Zoo Designing)
DR. PARAG DHARATE
Director, Nainital Zoo.
DIRECTOR
Bharat Ratna Pt.G.B.Pant
High Altitude Zoo
NAINITAL
B.S. BONAL
Member Secretary
Central Zoo Authority
(Ministry of Environment & Forests)
Govt. of India, New Delhi
AREA STATEMENT
NAINITAL ZOO = 4.592 HECTARE
RESIDENTIAL COMPLEX = 0.217 HECTARE
WILDLIFE TRANSIT RESCUE CENTRE, RANIBAG, HALDWANI = 1.910 HECTARE
TOTAL AREA = 6.719 HECTARE
N
E
SCALE- GRID INTERVAL. 25MTR
SCALE - 1:1000
ALL DIMENSION ARE IN METRES
CONTOUR INTERVAL = 1.00 MT.

Annexure III

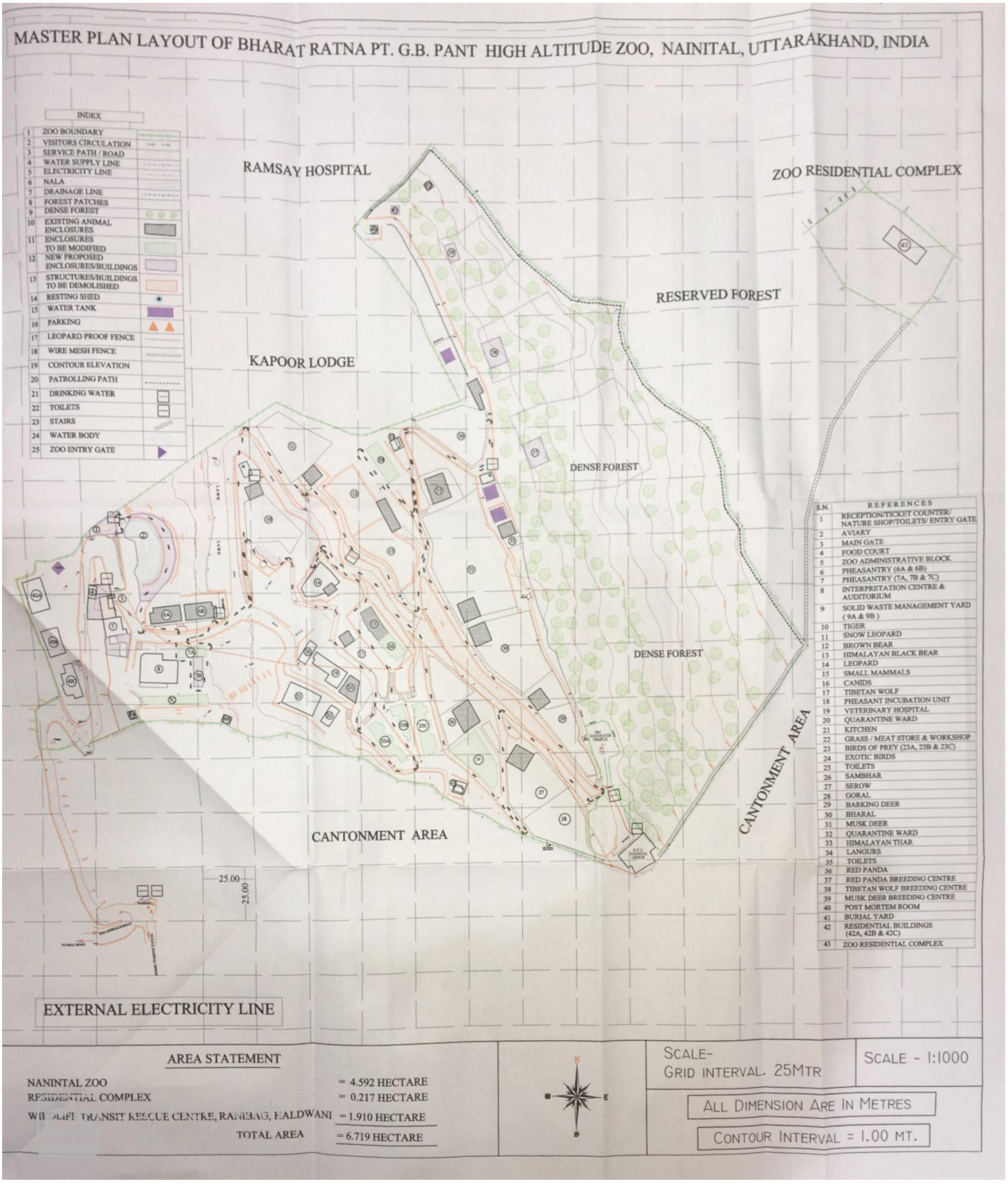


Annexure IV

Annexure – IV

MASTER PLAN LAYOUT OF BHARAT RATNA PT. G.B. PANT HIGH ALTITUDE ZOO, NAINITAL, UTTARAKHAND, INDIA

Annexure V


MASTER PLAN LAYOUT OF BHARAT RATNA PT. G.B. PANT HIGH ALTITUDE ZOO, NAINITAL, UTTARAKHAND, INDIA
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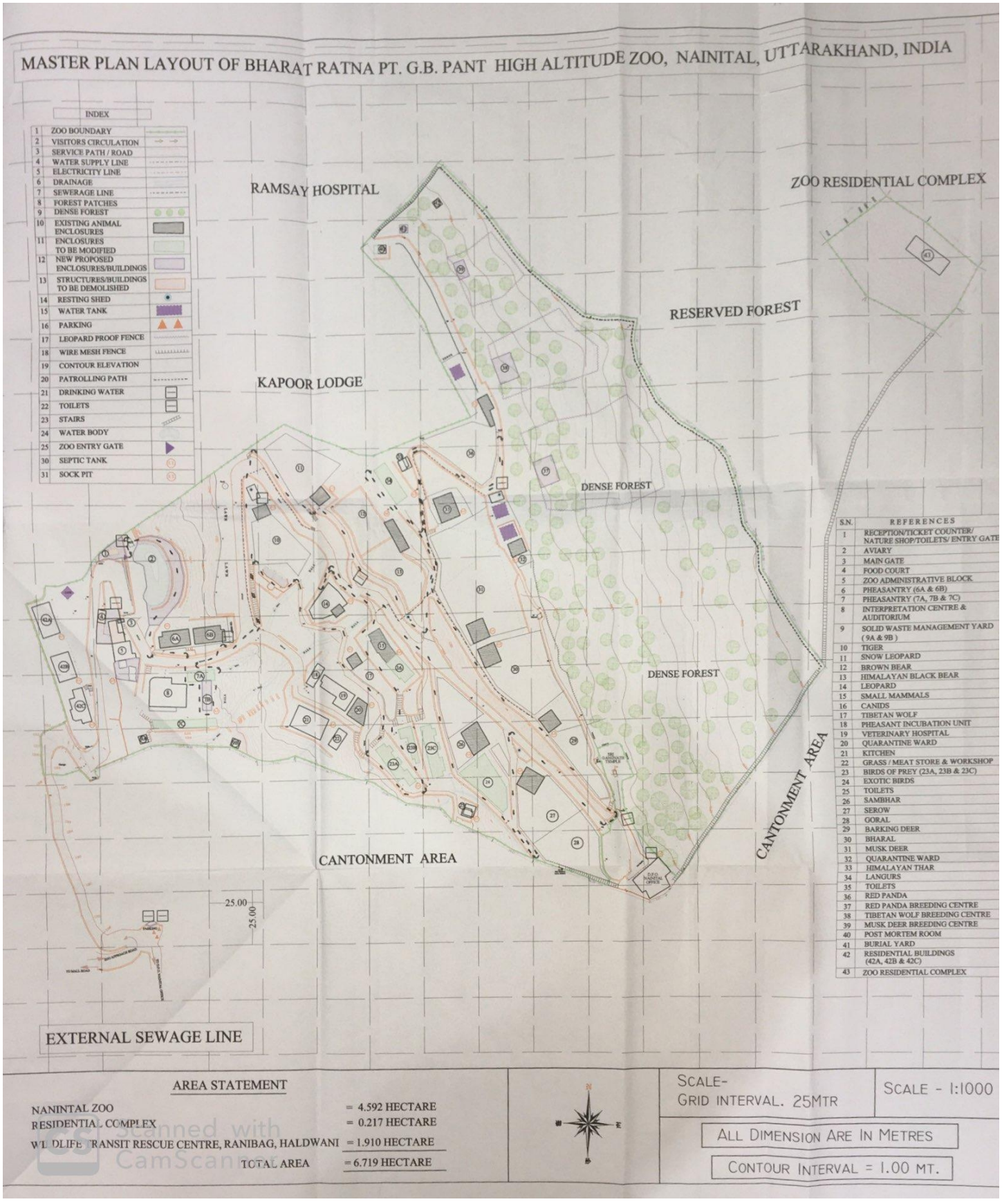
Annexure VI



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Abbreviation used

m = meter

mm = millimeter

in = inch

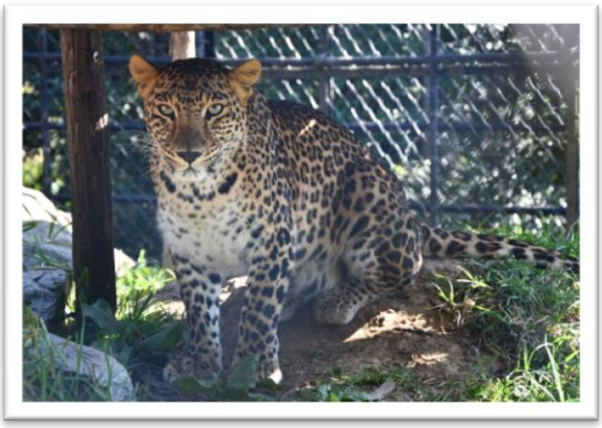
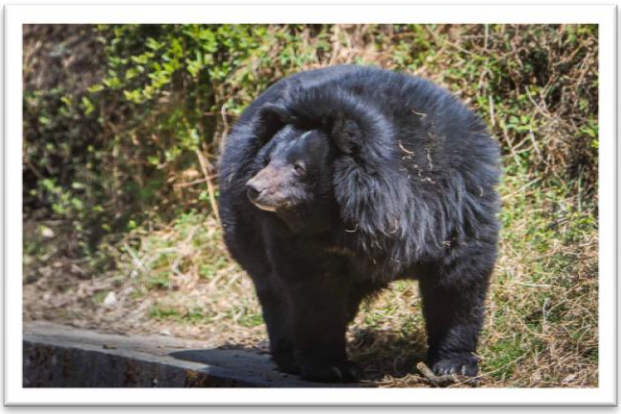
°C = degree Celsius

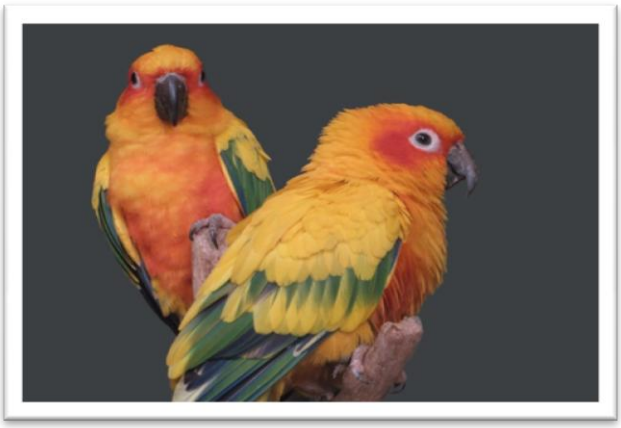
°F = degree Fahrenheit

km = kilometer

List of the Figures





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