Dated: 09.05.2022

To,
The Member Secretary (Infra- 2)
Ministry of Environment, Forests and Climate Change, Govt. of India
Indira Paryavaran Bhavan,
Jor Bagh Road, New Delhi-110003

Reference:

1. **Proposal No. IA/MP/MIS/260915/2022; File No.- F. No. 21-40/2022-IA-III**
2. **Minutes of 85th EAC (Infa-2) Meeting dated 30th March,2022; Agenda No. 85.4.3**

Subject: Submission of Reply to additional details sought for Project- "Expansion of Civil Enclave at Gwalior Airport, Maharajpur, Gwalior, Madhya Pradesh-474020 by Airports Authority Of India (AAI).

Respected Sir,

In reference to above-mentioned subject, please find below the point-wise reply/justifications of queries raised in 85th Meeting of EAC (Infra-2) Meeting dated 30th March,2022.

S.No.	ADS Query	Reply/Justifications
1.	Public hearing should be conducted and the proceedings to be incorporated in the EIA Report.	Public Hearing for the proposed project has been scheduled at 25.05.2022 at 12: 00 PM. Copy of Advertisement of conduction of Public Hearing has been attached as ***Annexure-1.***
2.	The EAC noted that the superimposed map shows the project boundary crossing over an adjacent water body, which the consultant mentioned as an error. Accordingly, the same should be verified and explanation to be submitted confirming whether the boundary line passes over the water body or not?	The project boundary does not cross over the adjacent water body. The nearest water body i.e., Sukh River is located 0.05 km W and is not a part of project. Revised project boundary along has been provided in ***Annexure-2.***

3.	Flora and Fauna details to be verified and revised accordingly.	Flora and fauna details have been provided in ***Annexure-3.***
4.	Details of proposed green area and plantation to be provided.	Revised green area and plantation details have been provided in ***Annexure-4.***
5.	The EMP budget allocated for the solar power installation was found to be grossly inadequate. The same should be recalculated and revised suitably.	Revised EMP Budget has been provided in ***Annexure-5.***

We hope that the replies are in line of satisfaction with Hon'ble EAC (Infra-2) Committee.

Thanking You

Yours faithfully

(Authorized Signatory)

विमानपत्तन निदेशक
भा.वि.प्रा., आर.वी.एस.टी. ग्वालियर
Airport Director
A.A.I., R.V.S.T., Gwalior

Airport Authority of India (AAI)

ANNEXURE 1: COPY OF ADVERTISMENT OF PUBLIC HEARING SCHEDULED ON 25.04.2022

क्षेत्रीय कार्यालय म.प्र. प्रदूषण नियंत्रण बोर्ड

दीनदयाल नगर, हाउसिंग बोर्ड कालोनी,ग्वालियर

ई-मेल - npsingh-pcb@mp.gov.in, romppcb_gwalior@rediffmail.com

आज़ादी का अमृत महोत्सव

क्रमांक 1196/क्षेकाप्रनिबो/ग्वा/2022 ग्वालियर, दिनांक 19.03.2022

पर्यावरण लोक सुनवाई हेतु सूचना

भारत सरकार पर्यावरण एवं वन मंत्रालय की पर्यावरण प्रभाव अध्ययन अधिसूचना क्रमांक एस.ओ. 1535 दिनांक 14.9.06 के प्रावधानों के अंतर्गत सर्वसंबंधितों को सूचित किया जाता है कि एयरपोर्ट अथॉरिटी आफ इण्डिया की सिविल इन्क्लेव एट ग्वालियर एयरपोर्ट महाराजपुरा जिला-ग्वालियर से प्रस्तावित विस्तार योजना हेतु पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा गठित राज्य स्तरीय पर्यावरण प्रभाव अध्ययन प्राधिकरण, भोपाल के समक्ष पर्यावरण स्वीकृति हेतु आवेदन प्रस्तुत किया गया है।

उक्त प्रस्तावित प्रोजेक्ट का स्थल संबंधी कार्यपालक सार एवं पर्यावरण प्रभाव अध्ययन रिपोर्ट सर्वसंबंधितों के अवलोकनार्थ कार्यालय कलेक्टर जिला-ग्वालियर, जिला व्यापार एवं उद्योग केन्द्र ग्वालियर, मुख्य कार्यपालक अधिकारी, जिला पंचायत ग्वालियर, नगर पालिका निगम ग्वालियर, क्षेत्रीय कार्यालय, म.प्र. प्रदूषण नियंत्रण बोर्ड, ग्वालियर एवं क्षेत्रीय कार्यालय, पर्यावरण एवं वन मंत्रालय, लिंक रोड नं. 3 रविशंकर नगर भोपाल के समक्ष उपलब्ध रहेगा। कार्यपालक सार बोर्ड की बेवसाईट www.mppcb.nic.in पर भी देखा जा सकता है।

क्षेत्र के व्यक्ति, स्वयंसेवी संस्थायें पर्यावरण प्रदूषण एवं नियंत्रण संबंधी सुझाव विचार, टीका-टिप्पणी एवं आक्षेप प्रस्तुत करना चाहते हों, तो इस सूचना के प्रकाशन की तिथि से 30 दिवस के अंदर कार्यालय में लिखित रूप से आवेदन कर प्रस्तुत कर सकते हैं।

एयरपोर्ट विस्तार योजना के संबंध में लोक सुनवाई, कलेक्टर ग्वालियर द्वारा गठित पैनल के समक्ष दिनांक 25.05.2022 को दोपहर 12.00 बजे एयरपोर्ट स्थल का महाराजपुरा का बाहरी परिसर ग्वालियर में निर्धारित की गई है। इच्छुक नागरिक प्रस्तावित दिनांक को लोक सुनवाई में सम्मिलित होकर अपने मत लिखित/मौखिक रूप से व्यक्त कर सकते हैं।

एन.पी.सिंह
क्षेत्रीय अधिकारी

ANNEXURE 2: REVISED PLANT BOUNDARY MAP ON GOOGLE EARTH

Source:Google Earth

N

W E

S

Road Connectivity Map

Project:Expansion of civil enclave at Gwalior airport
Project proponent:Airports authority of india (aai) Rajmata vijay raje scindia air terminal, maharajpur, Gwalior-474020, Madhya pradesh

Legend

Road

Project_Site

0 0.05 0.1 0.2 0.3 0.4

Kilometers

ANNEXURE 3: FLORA AND FAUNA DETAILS OF STUDY AREA OF PROJECT

1.1. Ecological Environment

The Botanical and wildlife species in an area depend on the availability of suitable habitat for survival. Habitat loss and increasing habitat fragmentation are the primary causes of species decline in these environments. This section provides an overview of flora and fauna observed in study area during site visit.

1.1.1. Flora

The study area is located in Gwalior district of Madhya Pradesh. Madhya Pradesh is the second largest state of the country with an area of 3,08,245 km^2 consisting 9.38% of the geographical area of the country. Gwalior district lies in north and northwest part of the state. The forest cover of the state is 76013 km^2, which is 24.66% of the geographic area. Very dense forest is 4,239 km^2, moderately dense forest 36,843 km2, open forest 34931 km^2 and scrub forest is 2172 km^2. Forest type Map of Madhya Pradesh is provided in **Figure 3.8.**

1.1.1.1 *Forest and Forest Types in Study Area*

Gwalior Airport is located at Maharaj Pur, Gwalior, Madhya Pradesh-474020. As per Champion & Seth's Classification-1968 following types of forest are present in the study area.

Table 1.1 : Forest Types in the Forest Division

Group	Forest type	Dominant Species
1	Anogeissus pendula Scrub (5/E1/DS1)	*Anogeissus pendula*, *Grewia tenaz, Rhus mysorensis* and *Dichrostachys cinerea.*
2	Anogeissus pendula Forest (5/E1)	(Acacia catechu), Gurjan (*Lannea coromandelica*) and Ber (*Zizyphus mauritiana*).
3	Khair sissoo Forest (5/1S2	*Dalbergia sissoo*, *Acacia catechu* and *Salmalia malabarica*

1. *Anogeissus pendula* Scrub (5/E1/DS1)

Most of the *Anogeissus pendula* forest has degraded due to continued maltreatment met during the past. Most of the area is close to settlement, town and villages of Gwalior district. These have been recklessly cut and subjected to unrestricted grazing and browsing during the past. The growing stock of *Anogeissus pendula* with its associated like *Grewia tenaz, Rhus mysorensis* and *Dichrostachy* scinerea. regeneration of the *Anogeissus pendula* the main dominant species is generally not noticeable as the top soil cover has been washed away due to continued exposure to rains.

2. Anogeissus pendula Forest (5/E1)

This corresponds to an edaphic climax in tropical dry deciduous forest according to Champion & Seth's (1968). The Dhok (*Anogeissus pendula*) is a gregarious tree species and is often found in pure stand in the middle slope of the hill where it may form 80% of the crop. The common associate of the Dhok are Khair (Acacia catechu), Gurjan (*Lannea coromandelica*) and Ber (*Zizyphus mauritiana*).

3. Khair sissoo Forest (5/1S2)

This type is found in the river rain sites mainly in Guna, Gwalior, Neemach and Shivpuri district of Madhya Pradesh. The main species are *Dalbergia sissoo, Acacia catechu and Salmalia malabarica.* The underground species comprises *Canabis sativa, Erianthus manuja, Zyzypus nummularia, Acacia farnesiana, Adhatoda vasica* and *Saccharum spontaneum* etc.

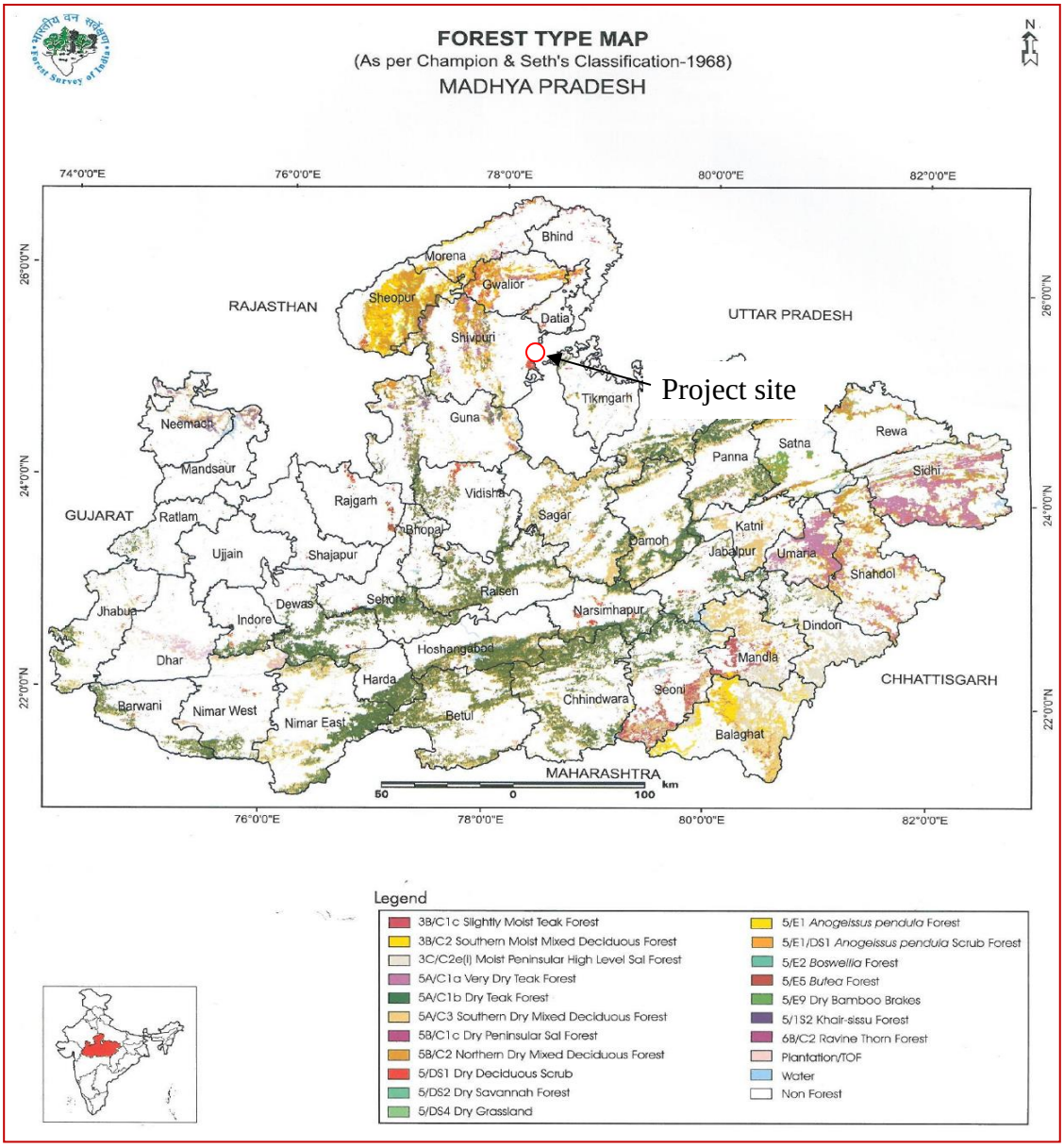

Figure 1.7 : Forest Type Map of Madhya Pradesh (As per Champion & Seth's Classification-1968)

(Source State Forest Report -2005)

1.1.1.2 *Flora in Study area*

Methodology: The information on flora was collected by visual observations, random survey at different

locations and discussion with the villagers. The secondary data from different Govt. Sources and available literature was also referred.

The flora of the study area is studied and described in core zone i.e. Project area and buffer zone i.e. 10 km area around the project site which is describes in following sections.

A. Flora (Core Zone):

The airport is already operational and expansion is proposed at same location. The area of existing as well as proposed expansion is presented in figure below:

At present there are no. of trees exist at proposed land. Out of the total tree present about 616 trees are required to be cut and rest shall be kept as a greenbelt. The dominant tree species is neem & ashok.

Flora in Buffer Zone (10 Km study Area):): Buffer zone in study area comprises of scrub vegetation (open mixed jungle mainly Khair) with most of the land covered under cultivation, settlement and open mixed forest of *Anogeissus pendula*. Only two reserved forests exist in the study area namely Mawai and Baragaon RF. Baragaon RF is located about 9.5 km away from the site in southeast direction and Mawai RF is located about 3.2 km north of the proposed site. Scattered vegetation have been noted in these reserve forest. The dominant species in this forest patch is Dhok associated by other species. Forests of the study area are degraded. Trees in this forest are in regeneration stage. Growth of trees is stunted. This is mainly due to over grazing pressure and collection of wood for fuel.

The common associate of the Dhok are Khair (Acacia catechu), Gurjan *(Lannea coromandelica*) and Ber (*Zizyphus mauritiana*). Ground vegetation covered by dominant shrubs and herbs is *Adhatoda vasica, Argemone mexicana, Solanum surattense, Xanthium strumarium, Ipomeacornia, Ipomea fistulosa, Dhatura metal, Calotropis procera, Sidacordifolia, Polygonum glabrum, Cassia tora, Canabis sativa, Chenopodium album, Cyanodon dactylon, Parthenium hysterophorus, Saccharum spontaneum and Dendrocalamus strictus.* The comprehensive list of the plant species (tree, shrubs, herbs, climbers and grasses) observed in the study area is given **Table 1.2**.

Table 1.2 : Sampling Location of Floristic Survey

S.No.	Botanical name	Family	Local name	Uses
	Trees			
1	*Acacia catechu*	Mimosaceae	Khair	Timber
2	*Acacia leucophloea*	Mimosaceae	Rehunja	Fuel
3	*Acacia nilotica*	Mimosaceae	Babool	Timber
4	*Ailanthus excels*	Simaroubaceae	Maharuk	Fuel
5	*Albizia lebbek*	Mimosaceae	Sirish	Ornamental
6	*Annona squamosa*	Annonaceae	Sitaphal	Fruit yielding
7	*Anogeissus pendula*	Combretaceae	Kardai/Dhok	Timber
8	*Artocarpus integrifolia*	Moraceae	Kathal	Fruit yielding
9	*Azadirachta indica*	Meliaceae	Neem	Medicinal
10	*Bauhinia racemosa*	Caesalpiniaceae	Astha	Fibre yielding
11	*Bauhinia variegate*	Caesalpiniaceae	Kachnar	Ornamental
12	*Bombax ceiba*	Bombacaceae	Semal	Medicinal
13	*Butea monosperma*	Fabaceae	Chola/Palash	Medicinal
14	*Callistemon lanceolatus*	Myrtaceae	Bottle brush	Ornamental
15	*Cassia fistula*	Caesalpiniaceae	Amaltas	Medicinal
16	*Cassia siamea*	Caesalpiniaceae	Kasood	Ornamental
17	*Citrus aurantifolia*	Rutaceae	Nimbu	Fruit yielding
18	*Dalbergiasisoo*	Fabaceae	Sisam	Timber
19	*Delonix regia*	Caesalpiniaceae	Gulmohar	Ornamental
20	*Eucalyptus umbellate*	Myrtaceae	Nilgiri	Oil yielding
21	*Fefonia limonia*	Rutaceae	Kaitha	Fruit yielding
22	*Ficus benghalensis*	Moraceae	Bargad	Religious
23	*Ficus racemosa*	Moraceae	Gular	Religious
24	*Ficus religiosa*	Moraceae	Peepal	Religious
25	*Flacourtia indica*	Flacourtiaceae	Kakher	Fuel
26	*Gmelina arborea*	Verbenaceae	Gambhari,Khamer	Ornamental
27	*Holoptelea integrifolia*	Ulmaceae	Chirol	Fruit yielding

28	*Jacaranda mimosaefolia*	Bignoniaceae	Nilagulmohar	Ornamental
29	*Leucaena leucocephala*	Mimosaceae	Subabool	Fuel
30	*Mangifera indica*	Anacardiaceae	Aam	Fruit yielding
31	*Millingtonia hortensis*	Bignoniaceae	Akash neem	Ornamental
33	*Mimus opselengi*	Sapotaceae	Molshri	Ornamental
34	*Mitragyna parvifolia*	Rubiaceae	Kem	Ornamental
35	*Moringa oleifera*	Moringaceae	Shejan	Fruit yielding
36	*Morus alba*	Moraceae	Sehtut	Fruit yielding
37	*Murraya paniculata*	Rutaceae	Kamini	Medicinal
38	*Nerium indicum*	Apocynaceae	Kaner	Ornamental
39	*Nyctanthes arbor-tristis*	Oleaceae	Siyari	Dye
40	*Parkinsonia aculeate*	Caesalpiniaceae	Bilayatibabool	Ornamental
41	*Peltophorum pterocarpum*	Caesalpiniaceae	Copper pod	Ornamental
42	*Pheonix sylvetris*	Arecaceae	Khajuri	Fruit
42	*Phyllanthus emblica*	Euphorbiaceae	Avla	Fruit
43	*Pithecelobium dulce*	Caesalpiniaceae	Jungle jalebi	Fruit
44	*Polyalthia longifolia*	Annonaceae	Ashok	Ornamental
45	*Pongamia pinnata*	Fabaceae	Karanj	Oil yielding
46	*Prosopis juliflora*	Mimosaceae	Vilayatibabool	Fuel
47	*Psidium guajava*	Myrtaceae	Amrud	Fruit
48	*Syzygium cumini*	Myrtaceae	Jamun	Fruit
49	*Ziziphus mauritiana*	Rhamnaceae	Ber	Fruit
B. Shrubs				
1	*Abutilon indicum*	Malvaceae	Kanghi	Medicinal
2	*Bougainvellea glabra*	Nyctaginaceae	Boganvelia	Ornamental
3	*Calotropis procera*	Asclepiadaceae	Akauwa	Medicinal
4	*Capparis sepiaria*	Capparaceae	Hins	-
7	*Carissa spinarum*	Apocynaceae	Karondi	Wild Fruit
8	*Clerodendrum multiflorum*	Verbenaceae	Inni	-
9	*Hibiscus rosa-sinensis*	Malvaceae	Gudhal	Ornamental
10	*Jasminum sambac*	Oleaceae	Mogra	Ornamental
11	*Lantana camara*	Verbenaceae	Raimuniya	Ornamental
12	*Maerua arenaria*	Capparaceae	-	-
13	*Ricinus communis*	Asteraceae	Andi, Erandi	Oil yielding
14	Narium indicum	Apocynaceae	Kaner	Ornamental
15	*Thevetia peruviana*	Apocynaceae	Bitti	Ornamental
16	*Adhatoda vasica*	Acanthaceae	Vasaka	Medicinal
17	*Ziziphus nummularia*	Rhamnaceae	Jherberi	Wild Fruit

C. Herbs				
1	*Argemone Mexicana*	Papaveraceae	Pilikateri	Medicinal
2	*Cassia tora*	Caesalpiniaceae	Puar	Vegetable
3	*Datura stramonium*	Solanaceae	Datura	Medicinal
4	*Euphorbia hirta*	Euphorbiaceae	Dudhi	Medicinal
5	*Indigoferacaerulea*	Fabaceae		-
6	*Parthenium hysterophorus*	Asteraceae	Gajarghas	-
7	*Sida acuta*	Malvaceae	Mahabala	Medicinal
8	*Sida cordifolia*	Malvaceae	Bala	Medicinal
9	*Solanum virginianum*	Solanaceae	Bhatkataiya	Medicinal
10	*Tridax procumbens*	Asteraceae	Ghamra	Medicinal
11	*Triumfetta pentandra*	Tiliaceae		-
12	*Vernonia cinerea*	Asteraceae	Sahdevi	Medicinal
13	*Xanthium indicum*	Solanaceae	Gokharu	Medicinal
D. Climbers & Grasses				
1	*Cocculus hirsutus*	Menispermaceae	Chirenta	Medicinal
2	*Dioscorea oppositifolia*	Dioscoriaceae		
3	*Epipremnum pinnatum*	Araceae		
4	*Ipomoea carica*	Convolvulaceae	Railway creeper	Ornamental
5	*Jasminum auriculatum*	Oleaceae	Chameli	Ornamental
6	*Pergularia daemia*	Asclepiadaceae	Sadowani	Medicinal
7	*Quisqualis indica*	Combretaceae	-	Ornamental
8	*Tinospora cordifolia*	Menispermaceae	Giloy	Medicinal
9	*Wattakaka volubilis*	Asclepiadaceae	Nakchikni	Medicinal
1	*Aristida adscensionis*	Poaceae	-	-
2	*Aristida funiculata*	Poaceae	Lapusari	Fodder
3	*Bothriochloa intermedia*	Poaceae	-	-
4	*Chloris barbata*	Poaceae	Jarghas	Fodder
5	*Cynodon dactylon*	Poaceae	Dub	Medicinal
6	*Dactyloctenium aegyptium*	Poaceae	Makra	Fodder
7	*Heteropogon contortus*	Poaceae	Kusal,Lampa	Fodder
8	*Oplismenus burmannii*	Poaceae	-	-

1.1.1.3 *Economically Important Flora*

The maximum area in study area is under urban environment. The agriculture is practiced in outskirts of the town. Main agricultural crop grown in study area is wheat. Other crops grown in the area are maize, Jowar, bajara, gram, arhar, urad, moong, different types of

vegetables and fruits. Different type of crops grown in the study area is provided in **Table 1.3**.

Table 1.3 : List of Cultivated Plant

Cereals			
S.No.	**Local Name**	**English Name**	***Botanical Name***
1.	Jowar	Sorghum	*Sorghum vulgare*
2.	Makka	Maize	*Zea mays*
3.	Gehu	Wheat	*Triticum sp.*
4.	Bajara	Millet	*Panicum miliaceum*
Pulses and Oil			
1.	Arhar	Pigein Pea	*Canjanus Cajan*
2.	Til	Sesamum	*Sesamum inicum*
3.	Urd	Black gram	*Phaeolus mungo*
4.	Mung	Mung gram	*Phaseolus radiates*
5.	Surajmukhi	Sunflower	*Helianthus annus*
6.	Sarson	Mustard	*Brassica campestris*
7.	Matar	Pea	*Pisum sativum*
8.	Mungphali	Ground Nut	*Arachis hypogeal*
Fruit crops			
1.	Kela	Banana	*Musa Paradisiaca*
2.	Aam	Mango	*Mangifera indica*
3.	Nibbu	Lime	*Citrus aurantifolia*
4.	Amrud	Guava	*Psidium guajava*
5.	Papita	Papaya	*Carica papaya*
6.	Kathal	Jack-fruit	*Artocarpus heterophyllus*
7.	Ber	Jujube	*Ziziphus mauritiana*
Vegetables			
1.	Tamatar	Tomato	*Lycopersicum esculantum*
2.	Baigan	Brinjal	*Solanum melongena*
3.	Pattagovi	Cabbage	*Brassica oleracea*
4.	Phulgovi	Cauliflower	*Brassica oleracea*
5.	Bhindi	Lady's Finger	*Abelmoschus esculentus*
6.	Aloo	Potato	*Solanum tuberosum*
7.	Muli	Radish	*Raphanus sativas*
8.	Karela	Bitter gourd	*Momordica charantia*
9.	Torai	Ridge gourd	*Luffa acutangula*
10.	Kaddu	Pumpkin	*Cucurbita moschata*
11.	Palak	Beet	*Beta vulgaris*
12.	Lalbhaji	Amaranth	*Amaranthus spp.*
13.	Khira	Cucumber	*Cucumis sativus*
14.	Lauki	Bottle gourd	*Lagenaria siceraria*
15.	Chichinda	Snake gourd	*Trichosanthes anguina*
16.	Lahsun	Garlic	*Allium sativum*
17.	Dhaniya	Coriander	*Coriander sativum*
18.	Mircha	Chilli	*Capcicum anum*

1.1.1.4 *Threatened Plant Species*

Threatened taxa are those species which are vulnerable to endangerment in the near future. Threatened status of any taxa is not a single category but is a group of three categories, critically endangered, endangered and vulnerable. On the application of different criteria of IUCN for the assessment of conservation status of taxa, no taxa were found threatened in the study area. The reported taxa have also not been enlisted in the Red Data Book of Indian plants (Nayar and Shastry, 1988).
Rare and Endangered Plant Species in the Study Area: No rare and endangered plant species was observed in the study area (Source: Red Data Book of Indian Plants, N.P Nayar and A. P. K. Sastry, B.S.I. 1988)

1.1.2. Faunal Diversity

Most of the land around the study area (10 km radius around the airport site) is under agriculture and residential uses. No national parks, wild life sanctuary, biosphere reserve is present within 10 km area of the project site. Few patches of Reserve Forest and open mixed jungle are present in north and southeast direction of the airport site. There is no forest in core zone area. The land around the site is either under settlement, agriculture, or barren land. Fauna is restricted to commonly found mammals, reptiles and amphibians. Forest area is located more than 3 km away from the airport site.

Forests of the study area are degraded. Trees in this forest are in regeneration stage. Growth of trees is stunted. This is mainly due to over grazing pressure and collection of wood for fuel.

The information on fauna was collected by visual observations, random survey at different locations and discussion with the local people. The secondary data from different Govt. Sources and available literature was also referred in this study. The fauna study is carried for core zone ie. project area as well as for buffer zone i.e. 10 km area around the proposed site, which is describes in following sections.

A. Fauna in Core zone: Due to lake of natural vegetation and continuous urban activities no faunal species is observed in core zone. However, the presence of reptiles and amphibian species has been noticed in project area by the local people. Common avifaunal species has also been observed in the core zone.

B. Fauna in Buffer Zone: List of fauna found in buffer zone (10 km study area) is provided in Table 3.31. The listed fauna found in study area has been cross-checked with Red Data Book of Indian Animals (Zoological Survey of India). There is no endangered or critical faunal species in the study area.

1.1.2.1 *Mammals:*

No significant carnivorous and herbivorous wild animals are found in the area. Langurs (*Semnopithecus entellus*), *Blue bull* (*Boselaphus tragocamelus*), *Mongoose* (*Herpestes edwards*) *and Jungle Cat* (*Felis chaus*) are the common mammals observed in the area. However, the presence of wild boar, fox and hare has also been reported in the area by the villager during public consultation. List of mammals observed in the study area is provided in **Table 1.4**.

1.1.2.2 *Amphibian & Reptiles (Herpetofauna)*

Frog, Indian bull *frog*, snake like Indian cobra (*Naja naja*); Dhaman (*Lycodon aulicus*), and \lizard is encountered at various places in study area.

Table 1.4 : Mammalian Fauna Sighted during the primary survey

S.No	Family	Zoological name	Local Name	English Name	Schedule
Class-Mammalia (Order: Primates)					
1	Colobidae	*Presbytia entellus*	Langur	Common langur	II
2	Circophtecidae	*Macaca mulatta*	Bandar	Rhesus macaque	II
3	Tupaiidae	*Suncus murinus*	Chuchundar	Musk-shrew	V
4	Pteropodidae	*Cynopterus sphinx*	Chamgader	Short nosed fruit bat	V
5	Pteropodidae	*Manis crassicandata*	Shehi	Indian pangolin	IV
6	Felidae	*Felis chaus*	Jangli Billi	Wild cat	II
7	Herpestidae	*Herpestes edwardsii*	Newala	Mangoose	II
8	Canidae	*Canis aureus*	Geedar, siyar	Jackal	II
9	Canidae	*Vulpes benglensis*	Lomadi	Indian fox	II
10	Sciuridae	*Funambulus pennanti*	Gilhaari	Common squirrel	IV
11	Muridae	*Bandicota bengalensis*	Chuha	Field rat	V
12	Muridae	*Rattus rattus-refescena*	Chuha	Common house rat	V
13	Hystricidae	*Hystrix Indica*	Shahi	Common Porcupine	IV
14	Leporidae	*Lepus nigricollis*	Khargosh	Common Indian hare	IV
15	Antilopinae	*Boselaphus tragocamelus*	Neelgaye	Blue bull	III
16	Suidae	*Sus scrofa*	Wild boar	Wild boar	III

*Conservation status is LC (Least Concerned species)

Table 1.5 : Reptiles and Amphibian observed in Study Area

S. N.	Common Name	Scientific Name	Vernacular Name	Family	Feeding Status	Schedule
Amphibians						
1	Frog	*Rana tigrina*	-	-	C	IV
2	Indian bull frog	*Hoplobatrachus tigerinus*	-	-	C	IV
Reptiles						
3	Binocellate cobra	*Naja naja*	Nag	Elapidae	C	II
4	Indian Krait	*Bungarus coeruleus*	-	Elapidae	C	IV
5	Russell's Viper	*Vipera russellis*	-	Crotalidae	C	II
6	Rat snake	*Ptyas mucosus*	Dhaman	Colubridae	C	II
7	Forest Lizard	*Calotes versicolor*	-	Agamidae	C	II
8	House geeko	*Hemidactylis brukaii*	-	Gekkonidae	C	II
9	Monitor lizard	*Varanus monitor*	Goh	Varanidae	C	II

1.1.2.3 *Avifauna*

Avifauna is an important part of the ecosystem playing the various roles as scavengers, pollinators, predators of insect, pest, etc. They are also one of the bio indicators of different status of environment and affected by urbanization, industrialization and human interference. They can be used as sensitive indicators of pollution and malfunction of ecosystem. The study area is inhabited by sixty-one species of birds. Among the birds recorded in this study, were insectivores and other dominating types included omnivores, predators, granivores and frugivores. The list of avifauna observed in the study area is given in **Table 1.6.**

Table 1.6 : Avifauna Sighted during the primary survey

S No	Hindi name	English name	Zoological name	Schedule
1	Kilchiya	Little egret	*Egretta garzetta*	IV
2	Pancaua	Little cormorant	*Phalacrocorax niger*	IV
3	Anjan	Gray heron	*Ardea cinerea*	IV
4	Andha, bagla	Pond heron	*Ardeola grayii*	IV
5	Gaybagla	Cattle egret	*Bubulcus ibis*	IV
6	Badabagla	Large egret	*Egretta chhaba*	IV
7	Galgal	White stork	*Ciconia ciconia*	IV
8	Surkhab	Braminy duck	*Tadorna ferruginea*	IV
9	Kera	Common teal	*Anas crecea*	IV
10	Losir	Red crested pochard	*Netta rufina*	IV
11	Cheel	Common pariah kite	*Milvus migrans*	IV
12	Shikra	Shikra	*Accipiter badius*	IV

13	Kala teetar	Black partridge	*Francolinus francolinus*	IV
14	Bater	Common or gray quail	*Coturnix coturnix*	IV
15	Lava	Jungle bush quail	*Perdicula asiastica*	IV
16	Jangali murgi	Red jungle fowl	*Gallus gallus*	IV
17	Bagla, saras	Common crane	*Lirus grus*	IV
18	Saras, crane	Sarus crane	*Antigone Antigone*	IV
19	Jal murgi	Purpule moorhen	*Gallinula chloropus*	IV
20	Tituri	Red wattled lapwing	*Lobivanellus indicus*	IV
21	Tirdi	Yellow wattled lapwing	*Lobp lube amalabarica*	IV
22	Chaha	Fantail snipe	*Capella gallianago*	IV
23	Hariyal	Common green pigeon	*Treron crocupus phoenicoptera*	IV
24	Kabutar	Blue rock pigeon	*Columba livia*	IV
25	Gharfakhta	Indian ring dove	*Streptopelia decaocto*	IV
26	Chittafakhta	Spotted dove	*Streptopelia chinensis*	IV
27	Totta	Rose ringed parakeet	*Psittacula krameri*	IV
28	Papeha	Cuckoo	*Cuculus varius*	IV
29	Koel	Koel	*Endynamis scolopaceus*	IV
30	Mokha	Coucal	*Centropus sinensis*	IV
31	Ullu	Owl	*Bubo bubo*	IV
32	Babeelobatasi	House swift	*Apus affinis*	IV
33	Kilkila	Piedking fisher	*Ceryle rudis*	IV
34	Chotakilkila	Common king fisher	*Alcedo atthis*	IV
35	Korila	Blackcapped king fisher	*Haleyan pileata*	IV
36	Patringa	Green bee eater	*Merops orientalis*	IV
37	Neelkantha	Indian roller Blue jay	*Coracias benghalensis*	IV
38	Hudhud	Indian hoopoe	*Upupa epops*	IV
39	Chalotara	Common hornbill	*Tokus birostris*	IV
40	ChotaBasatha	Barbet	*Negalaima haemacephla*	IV
41	Kathfora	Woodpeacker	*Dinopim benghalense*	IV
42	KaglaLatora	Rufaus backed Shrike	*Lanius schach*	IV
43	Bhujang	Black Drongo	*Dicrurus adsimilis*	IV
44	Pawai	Grayheaded myna	*Sturnus malabaricus*	IV
45	BramhaniMaina	Black headed myna	*Pogodarum sturnus*	IV
46	Myna	Common myna	*Aerodotheres tristis*	IV
47	Kauaa	House crow	*Corvus splendens*	IV
48	JungliKauaa	Jungli crow	*Corvus macrorhynchos*	IV
49	Malahot	Malahot	*Dendrocitta vagabunda*	IV
50	Bulbul	Small minivet	*Pericrocotus cinnamomaus*	IV
51	Pahari Bulbul	Scarlet minivet	*Pericrocotus flammeus*	IV
52	Saat Bhai	Jungle babbler	*Turdoides striatus*	IV

53	Doodh Raj	Paradise flycatcher	*Terpsiphone paradise*	IV
54	Sun Bulbul	Flycatcher	*Monarcha azurea*	IV
55	Kharpinda	Collared Bushchat	*Saxicola tarqnata*	IV
56	Daiyaa	Magpie Robin	*Copsychus saularis*	IV
57	Kalchoori	Indian Robin	*Saxicolides falicata*	IV
58	Pilkiya	Grey wagtail	*Motacilla caspica*	IV
59	Dhoban	Pied or White Wagtall	*Motacilla alba*	IV
60	Goraiya	House Sparrow	*Passer domesticus*	IV
61	Baya	Weaver bird	*Ploceus philippinus*	IV

1.1.2.4 *Threatened and Endangered Mammals*

The listed fauna found in study area has been cross-checked with Red Data Book of Indian Animals (Zoological Survey of India). There is no endangered or critical faunal species in the study area.

ANNEXURE 4: REVISED GREEN AREA AND PLANTATION DETAILS

1.1. Green Belt Area

Landscaping will be developed along the airside, landside, roads, and parking area. Unpaved areas will be developed as Lawn area for beautification of surrounding areas and to check soil erosion. Thick greenbelt will be provided all around the perimeter of the parking lot, along with arrival/departure roads.

Approx. 32010 m^2 of green area will be developed under proposed airport development. Landscaping has been planned to be developed along the airside, landside, roads and parking area as per Guidelines on Landscaping and Tree Plantation (IRC: SP-21-2009). The main goals of landscaping tree plantation within Gwalior Airport tree are to reduce its perceived attractiveness to support conservation of indigenous flora & fauna and to eliminate the vertical intrusion of vegetation into aircraft operating airspace while retaining an aesthetically pleasing landscape. Hence, the plantation species are carefully chosen to avoid bird nesting and to improve pollution and noise control measures.

Approx. 1050 no. of trees and 12350 no. of shrubs have been planned for plantation for the proposed expansion. List of the species to be planted are given below in **Table 1.1** and tentative landscape plan is given in **Figure 1.1**

The following points were scrutinized during the design and implementation of landscaping of airport and related project:

- ✓ Not to use trees and other landscaping plants for the street side of airport that produce fruits or seeds attractive to birds.
- ✓ Avoid creation of areas of dense cover for roosting, especially by starlings (Myna) and blackbirds.
- ✓ Thinning the canopy of trees, or selectively removing trees to increase their spacing, to help eliminate bird roosts that form in trees on airports and
- ✓ To deploy trees of low vertical growth rate
- ✓ Preference to dwarf varieties

Table 1.1 : Indicative list of Species to be planted

Sr. No.	Botanical Name	Common Name	Quantity
TREES			
1.	*Azadirachta indica*	Limdo, Nim	450
2.	*Alstonia schloris*	Devil's Tree	150
3.	*Chorsia speciosa*	Mexican Silk Cotton	100
4.	*Ficus retusa*	Philkhan	50
5.	*Jacaranda Mimosifolia*	Neeli Gulmohar	50
6.	*Plumeria alba*	Safed Champa	100
7.	*Oreodex regio*	Bottle Palm	50
8.	*Terminalia mentally*	Madagascar Almond	100
SHRUBS			
9.	*Bougainvillea*	*Bougainvillea*	2300
10.	*Cycus revolta*	Sago Palm	175

Sr. No.	Botanical Name	Common Name	Quantity
11.	*Ficus panda*	Ficus Panda	2250
12.	*Furcaria*	Green Aloe	475
13.	*Hibiscus rosa sinensis*	China Rose	1100
14.	*Hamelia patens*	Fire Bush	775
15.	*Murraya exotica*	Mock Orange	2700
16.	*Nerium oleander*	Oleander	2400
17.	*Pheonix roebelinii*	Miniature Date Palm	175

Figure 1.1 : Landscape Plan

As per the survey carried out, it is required to cut 616 no. of existing trees. Compensatory plantation shall also be carried out for each tree cut in ratio of 1:10 or as per the NOC issued by the Forest Department.

ANNEXURE 5: REVISED EMP BUDGET

ENVIRONMENT MANAGEMENT COST

Table 1.1 : Environment Management Cost

S. No.	Item No.	Capital Cost (INR Lacs)	Recurring Cost/Yr. (INR Lacs)
Construction phase			
1.	Toilets & Mobile STP	15	1
2.	Site barricading with LED lights on top (MS barricades)	18	-
3.	Topsoil Preservation	78	1
4.	Waste Collection, Segregation, Disposal & Management (provision of covered areas for waste storage, provision of dustbins, collection of waste through local body, and labour for waste management)	5	2
5.	Temporary sheds and containers for material storage, paved areas and rest areas for workers	5	0.5
6.	Labour accommodation and the basic facilities	25	1.8
7.	Temporary storm water drainage (construction site, construction yards, labour camp sites), oil interceptors, silt fencing near Rana Minor, and sedimentation tanks	10	1
8.	PPE Cost, maintenance and repair for 1000 labour	18	2
9.	Environmental Monitoring	-	1.6
10.	Provision of stacks with DG sets	Part of Project Cost	
11.	Provision of safety signage's	0.5	0.1
Total- Construction Phase		**174.5**	**11.0**
Operation Stage			
1.	STP	38	2
2.	Landscaping & planting tree	450	10
3.	Rainwater Harvesting System	50	10
4.	Waste Collection, Segregation, Disposal & Management	50	5
5.	Environmental Monitoring	10	1.6

S. No.	Item No.	Capital Cost (INR Lacs)	Recurring Cost/Yr. (INR Lacs)
6.	PPE Provision maintenance and repair	18	2
7.	Solar Energy	1365	5
Total-Operation Phase		**1981**	**35.6**