FORM - I

Sr. No.	Item		Description
1.	Name of the Project/s	:	Development of Maryadha Purushottam Shriram Airport (Ayodhya Airport), Uttar Pradesh
2.	S. No. in the schedule	:	7(a)
3.	Proposed capacity / area/length/ tonnage to be handled / command area / lease area/ number of wells to be drilled.	:	Extension of existing runway to make total length of 2200m x 45m with 7.5m shoulder on both sides and strengthening of existing runway. Link Taxi Track – 310m x 23m with shoulders of 5.5m on both sides Apron – 140m x 110m having 5.5m wide shoulders for 3 nos. ATR 72/Q400 type Aircraft. Isolation Bay – 93m x 96m with Link Taxi Track 265m long and 23m wide having 3.5 m shoulders. RESA – 240m x 90m, beyond 60m after runway Construction of Pre-Engineered/ Prefabricated Terminal Building with 6000 Sq. m. area for 300 peak hour passengers (150 Arr. + 150 Dep.) Miscellaneous and ancillary works.
4.	New/ Expansion/ Modernization	:	Expansion
5.	Existing Capacity/ Area etc.	:	Runway – 1500 x 30m (Currently used for Civil Aviation)
6.	Category of Project i.e. 'A' or 'B'.	:	A
7.	Does it attract the general condition? If yes, please specify.	:	No
8.	Does it attract the specific condition? If yes, please specify.	:	No
9.	Location	:	Faizabad
	Plot/ Survey/ Khasra No.	:	1, 2, 36, 37, 38… etc,.
	Village	:	Dhrampur Sahadat, Firozpur, Ganja, Janaura, Kushmaha, Nandapur, Poora Husain Kha, Sarethi
	Tehsil	:	Faizabad
	District	:	Faizabad
	State	:	Uttar Pradesh
10	Nearest railway station/ airport along with distance in kms.	:	Faizabad Junction RS – 1.5 Km, NW Chaudhary Charan Singh International Airport, 125 Km, W Raebarelli Airport – 95 Km, SW

11.	Nearest town, city, district Headquarters along with distance in kms.	:	Faizabad – Within
12.	Village Panchayat, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given).	:	Faizabad Municipal Corporation, Lajpat Nagar, Faizabad, Uttar Pradesh – 224 001.
13.	Name of the Applicant	:	Airport Authority of India
14.	Registered address	:	Airport Authority of India, Rajeev Gandhi Bhavan, New Delhi – 110 003.
15.	Address for Correspondence:		
	Name	:	Lal Jeet Ram
	Designation (Owner/ Partner/ CEO)	:	Airport Director
	Address	:	AAI, Sultanpur Naaka, Ayodhya, Uttar Pradesh
	Pin Code	:	224133
	E-mail	:	apdayodhya@AAI.AERO
	Telephone No.	:	7571874410
	Fax No.	:	---
16.	Details of alternate sites examined, if any. Location of these sites should be shown on a topo sheet.	:	No alternative sites considered as the current site is located in the existing government airstrip.
17.	Interlinked Projects.	:	No
18.	Whether separate application of interlinked project has been submitted?	:	No
19.	If yes, date of submission.	:	NA
20.	If no, reason	:	NA
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest Conservation Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z. Notification, 1991?	:	 No No No
22.	Whether there is any Government order/policy relevant/relating to the site?	:	No
23.	Forest land involved (hectares)	:	Nil
24.	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up?	:	No

	(a) Name of the court. (b) Case No. (c) Orders/directions of the court, if any and its relevance with the proposed project.		

- *Capacity corresponding to sectoral activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.,)*

(II) Activity

1. Construction, operation or decommissioning of the project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S. No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	Existing runway is located in 177.62 Acres land. For proposed construction of Maryadha Purushottam Shriram Airport, additional land been handed over by District Administration to Airports Authority of India. Change in land use pattern of additional 170 Acres is anticipated due to proposed development.
1.2	Clearance of existing land, vegetation and buildings?	Yes	A total of 2800 trees will be cut for the proposed construction of Maryada Purushottam Shriram Airport. Permission from local body will be obtained for cutting trees in the proposed land area.
1.3	Creation of new land uses?	Yes	Existing runway is located in 177.62 Acres land. For proposed construction of Maryadha Purushottam Shriram airport additional 170 Acres land has been handed over by District Administration to Airports Authority of India. Change in land use pattern of additional 170 Acres is anticipated due to proposed project.

S. No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
1.4	Pre-construction investigations e.g. bore house, soil testing?	Yes	Pre-construction investigations *e.g.* bore hole, soil testing will be carried out before construction.
1.5	Construction works?	Yes	Construction work for proposed development at Maryadha Purushottam Shriram Airport will be done after obtaining Environmental Clearance.
1.6	Demolition Works?	No	No major structure will be demolished.
1.7	Temporary sites used for construction works or housing of Construction workers?	Yes	Temporary site for labour, project site office will be required during construction by the contractors and same will be located within the site.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Under proposed development work, new integrated terminal building, etc. will be constructed. Excavated materials will be used for filling at the site.
1.9	Underground works including mining or tunneling	No	No underground works including mining or tunneling will be required for the proposed development work.
1.10	Reclamation Works?	No	No reclamation work will be required for the proposed development work.
1.11	Dredging?	No	No dredging will be required at the proposed development work.
1.12	Offshore structures?	No	Not applicable
1.13	Production and manufacturing processes?	No	Not applicable
1.14	Facilities for Storages of goods or materials?	Yes	Storage facilities will be provided for aggregate, sand, cement, steel, paints, and other construction materials as per requirement during construction phase.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	During construction phase of proposed development work, sewage treatment facilities of adequate capacity will be provided for disposal of sewage at construction labour camp. Construction debris will be disposed suitably in the environmental sound manner.

S. No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
			During operation phase, STP will be installed for treatment of sewage generated from the proposed facilities for Airport.
1.16	Facilities for long term housing of operational workers?	No	No residential colony is envisaged.
1.17	New road, rail or sea traffic during construction or operation?	No	During construction phase, very minimal increase in road and rail traffic is anticipated due to transportation of construction materials to the site.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	Yes	A new approach road will be established to connect proposed terminal building with Highway. Existing transport facilities will be used to transport the construction materials to the site.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Only existing transport facilities will be used to transport the construction materials to the site.
1.20	New or diverted transmission lines or pipelines?	Yes	A total of 4 Transmission lines and 7 Cell towers will be relocated for the proposed project.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	No such changes are anticipated due to proposed construction work at the existing government airstrip.
1.22	Stream crossings?	No	No stream is crossing at the site.
1.23	Abstraction or transfers of water form ground or surface waters?	Yes	On an average 25 KLD of water will be required for construction, which will be met from ground water resource through bore well at the project site. During operation phase, approximately 15 KLD of fresh water will be required which will be met from Ayodhya Municipal Corporation.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	There are no possibilities for change in drainage pattern as there is no stream crossing in airport site. In the proposed site, storm water

S. No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
			management have been adopted to avoid any impact on natural drainage pattern.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	For construction of the project about 100 – 200 persons will be deployed depending upon quantum of work at one point of time. Transport of personnel or materials for construction will be from local area.
1.26	Long-term dismantling or decommissioning or restoration works?	No	No such activity is required at the proposed site as the proposed development work will take place in vacant land located adjacent to existing airport.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	No decommissioning activity is going on the proposed development work for the Airport.
1.28	Influx of people to an area in either temporarily or permanently?	Yes	About 100 – 200 construction workers will be deployed during the construction phase temporarily.
1.29	Introduction of alien species?	No	No such possibility is envisaged.
1.30	Loss of native species or genetic diversity?	No	No such possibility is envisaged
1.31	Any other actions?	No	--

2. Use of Natural resources for Construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S. No.	Information / Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	The current government airstrip is located in an area of 177.62 Acres of land. For the proposed development activities an additional area of 170 acres of land free from all encumbrances has been handed over by District Administration to AAI. Change in land use pattern of additional land is anticipated due to proposed development.
2.2	Water (expected source & competing users) unit: KLD	Yes	Total water requirement is 35 KLD. Out of which 15 KLD will be used for Domestic purpose sourced from Ayodhya Municipal Corporation. 20 KLD will be used for Toilet flushing and Greenbelt development which will be sourced from treated water from STP.
2.3	Minerals (MT)	Yes	Aggregate and sand will be required for construction of the proposed development works for the Airport.
2.4	Construction material- stone, aggregates, and /soil (expected source- MT)	Yes	Construction materials such as stone, aggregates, sand, and soil are locally available in plenty for the project.
2.5	Forests and Timber (source- MT)	No	For the proposed development of Airport, no forest and timber will be required except minimal quantity for construction works.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	The estimated power requirement for Maryada Purushottam Shriram Airport after completion of the development works is about 500 KVA, which will be sourced from UPPCL. During operation phase, 3 No of DG sets having capacity of 250 kVA capacity each fitted with acoustic enclosure will be installed for emergency power generation during grid power failure.

S. No.	Information / Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates wherever possible) with source of information data
			Quantity of HSD will depend on the operation of DG Sets and construction equipment. At any point of time, only 990L of HSD will be stored in underground tank of 3 nos.
2.7	Any other natural resources (Use appropriate standard units)	Nil	---

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	Yes	No hazardous substances or material (as per MSIHC rules) will be used at the proposed development work at the proposed Airport during construction and operation phase except small quantity of paints and HSD for DG sets operation. However, quantity of these materials will be much less than the threshold quantity mentioned in MSIHC Rule.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	No such possibility is anticipated during construction and operation phase of proposed development work at Maryada Purushottam Shriram Airport.
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	The proposed development work for the Airport will provide improved facilities to the tourist and visitors. The proposed development work for the Airport will create direct and indirect employment opportunities significantly during construction and operation phases.

3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.	No	No vulnerable group of people will get affected due to the proposed development of Airport since the project activity will be implemented in the existing government airstrip.
3.5	Any other cause	No	--

4. Production of solid wastes during construction or operation or decommissioning (MT/ month)

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	No such waste will be generated from the construction of the proposed development work for Airport.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	During construction phase, about 25 – 50 kg/day of waste like metal scrap and empty metal drums of non-hazardous materials and paper & packing wood scrap will generate which will be handed over to local vendors by contractors. During operation phase, 100 kg/day of municipal solid waste will generate which will be disposed as per Solid Waste Management Rule 2016.
4.3	Hazardous waste (as per Hazardous Waste Management Rules)	Yes	Containers containing paint residue mainly during construction phase and waste oil generated from DG sets, twice in year, which is collected in drum and handed over to State Pollution Control Board approved waste oil recyclers.
4.4	Other industrial process wastes	No	No industrial process wastes will be generated from construction activities of the site.
4.5	Surplus product	No	No surplus product will be generated from construction of the proposed development for Airport.
4.6	Sewage sludge or other sludge from effluent treatment	Yes	During operation phase, about 10 kg/day sludge will be generated from the proposed STP which will be used as manure in landscaping.

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
4.7	Construction or demolition wastes	No	Not much demolition wastes will be generated from the proposed development work for Airport. Construction wastes generated time to time during construction activity will be used in filling at the site.
4.8	Redundant machinery or equipment	No	No redundant machinery or equipment will be left at the proposed airport.
4.9	Contaminated soils or other materials	No	No contaminated soil or material is anticipated to be generated at the proposed development work for Airport.
4.10	Agricultural wastes	No	No agricultural waste is anticipated at the proposed development work for Airport.
4.11	Other solid wastes	Yes	Only 10 – 20 kg/day of municipal waste will be generated from the construction labour camps, which will be disposed suitably after segregation.

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S. No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationery or mobile sources	Yes	Vehicles transporting construction materials, construction equipment and machinery will be another source of emissions. Stack emissions are anticipated from the operation of DG sets, which will be operated only to meet the power requirement during grid power failure. Vehicles approaching to the airport will also be another source of emissions.
5.2	Emissions from production processes	No	Not applicable as no production process will be carried out.
5.3	Emissions from materials handling including storage or transport	No	Not applicable as no material handling will be carried out.

S. No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
5.4	Emissions from construction activities including plant and equipment	Yes	Small quantity of dust emissions may be observed during excavation and construction activities.
5.5	Dust or odours from handling or materials including construction materials, sewage and waste	Yes	During excavation and earth work dust emissions are anticipated, however, this dust comprising coarse particles will be settled at short distance. No odour problem is anticipated from construction materials, sewage, and waste as same will be handled as per standard practice.
5.6	Emissions form incineration of waste	No	No incineration of waste envisaged.
5.7	Emission from burning of waste in open air (e.g. slash materials, construction debris)	No	No burning of waste envisaged.
5.8	Emissions from any other sources	Yes	Air emissions due to aircraft take off, landing, taxiing and from apron parking are other existing sources of air emissions. Emissions from vehicular movement during construction and operation phases.

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
6.1	From operation of equipment *e.g.* engines, ventilation plant, crushes	Yes	From construction equipment and DG set, 70 to 80 dB(A) noise levels may be generated. However, acoustic enclosures will be fitted with DG sets to control the noise levels.
6.2	From industrial or similar processes	No	No industrial process will be involved during construction/ operation phase.
6.3	From construction or demolition	Yes	Noise will be generated from construction machinery during construction process. During construction activities, approx. 70

			to 80 dB(A) noise may be generated temporarily.
6.4	From blasting or piling	No	No blasting will be carried out.
6.5	From construction or operational traffic	Yes	Approximately, 65 to 70 dB(A) noise may be generated from the vehicles approaching the site.
6.6	From lighting or cooling systems	No	Not applicable
6.7	From any other sources	No	Noise will be generated during take-off, landing and taxing of aircraft.

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, ground water, coastal waters, or the sea.

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials.	Yes	About 990 L of HSD will be stored at the airport premises for operation of DG sets.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	During operation phases of the airport, sewage generated will be treated in Sewage Treatment Plant (STP) of 25 KLD. Treated sewage will be utilized for flushing and horticulture purposes.
7.3	By deposition of pollutants emitted to air into the land or into water	Yes	The dust generation may take place due to material handling and earth works at construction site. These emissions are neutral in nature and will be settled in the immediate vicinity hence no impact is anticipated. During operation, DG set emissions stack will be provided as per CPCB guideline. Sewage will be treated in Sewage Treatment Plant (STP).
7.4	From any other sources	No	---
7.5	Is there a risk of long-term build-up of pollutants in the environment from these sources?	No	No such impact is anticipated.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment.

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
8.1	From explosions, spillages, fires, etc from storage, handling, use or production of hazardous substances.	Yes	In the airport premises, HSD will be handled through 990 L underground storage tank, which is flammable and hazardous if getting ignited. Necessary safety measures will be taken during the handling and storage of HSD.
8.2	From any other causes?	Yes	Emergency during Aircraft landing and takeoff, traffic movement inside Airport and short circuit at terminal building.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquake, landslides, cloudburst etc)?	No	There is no possibility of affecting the project by natural disaster, e.g. floods, earthquakes, cloudburst etc.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality.

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
9.1	Lead to development of supporting, utilities, ancillary development or development stimulated by the project, which could have impact on the environment e.g. • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc) • Housing development • Extractive industries • Supply industries • Other	 Yes No No No No	 The proposed development of airport is aimed to provide better facilities for tourist, business and local passengers. Any development activity around the airport will be discouraged or it will be as per applicable siting criterion.
9.2	Lead to after – use of the site, which could have an impact on the environment.	No	---

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
9.3	Set a precedent for later developments.	No	---
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects.	No	No cumulative effect is anticipated due to proposed project.

(III) Environmental Sensitivity

S. No.	Areas	Name/ Identity	Aerial distance (within 15 Km.) proposed project location Boundary
1.	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	No	---
2.	Areas which are important or sensitive for ecological reasons- Wetlands, watercourse or other water bodies, coastal zone, biosphere, mountains, forests.	Yes	Gaddour Pur Pond – 3.2 Km, NW Tajpur Kodara Lake – 4.7 Km, SW Dharamdaspur Lake – 5.2 Km, SSW Ghaghra River – 5.5 Km, NW
3.	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration.	No	---
4.	Inland, coastal, marine or underground waters	Yes	Gaddour Pur Pond – 3.2 Km, NW Tajpur Kodara Lake – 4.7 Km, SW Dharamdaspur Lake – 5.2 Km, SSW Ghaghra River – 5.5 Km, NW
5.	State, National boundaries	No	---
6.	Routes or facilities used by the public for access to recreation or other tourist, pilgrim area	Yes	NH 27, Basti to Lucknow Highway – Adjacent – NW
7.	Defence Installations	No	---
8.	Densely populated or built-up area	Yes	Faizabad City – 1.5 Km, NNW
9.	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Yes	Tursampur – 0.6 Km, NW I.E.T Campus – 0.6 Km, N Avadh University Campus – 0.2 Km, SW Faizabad City – 1.5 Km, NNW

S. No.	Areas	Name/ Identity	Aerial distance (within 15 Km.) proposed project location Boundary
			Ram mandir, Shri ram temple – 12 Km, N
10.	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	No	---
11.	Areas already subjected to pollution or environmental damage (those where existing legal environmental standards are exceeded)	No	Nil within 10 Km radius
12.	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquake, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	No	Faziabad is located in Seismic Zone III.

1.0 EXECUTIVE SUMMARY

The government airstrip proposed to be developed as Maryada Purushottam Shriram Airport (Ayodhya Airport) in Faizabad city, Uttar Pradesh, India will be serving the districts of Bahraich, Gonda, Sultanpur, Amethi and Basti in Eastern Uttar Pradesh. It is located in the Faizabad Taluk on Basti – Lucknow NH – 27. It is an upcoming International airport in Faizabad city that will be upgraded from the existing government airstrip. The proposed site is located at Dhrampur Sahadat, Firozpur, Ganja, Janaura, Kushmaha, Nandapur, Poora Husain Kha, Sarethi villages of Faizabad Taluk and Faziabad District. Geographically, the airstrip is located at Latitude 26°44'55.58"N to 26°45'22.25"N, Longitude 82° 8'35.94"E to 82° 9'39.62"E and altitude of 99 – 106m above MSL.

The proposed project involves extension of Runway, Taxiway, Apron, Isolation Bay, RESA, Domestic Terminal Building & Miscellaneous Works, as detailed below.

Widening and Re-carpeting / Strengthening of existing Runway of 1500m x 30m to 2200m x 45m and extension of existing Runway by 700m x 45m making a total Runway of 2200m X 45m in Phase-I, with provision of shoulders 7.5m on both sides and Runway edge lights. The strengthening of Runway/ Apron/ Taxi Track is to be done for A321 type of Aircraft. The Runway strip of 280m i.e., 140m on either side of Runway Centre line with required strength as per DGCA CAR /ICAO standards recommendations.

Provision of 23m wide Link Taxi Track of length 310 m with 5.5 m shoulder at both sides connecting Runway and Apron. Provision of Apron of size 140m X 110m for operation of 3 nos. of ATR 72 I Q400 type aircraft. Provision of RESA on both ends measuring 240 m x 90 m, beyond 60 m over run after Runway Threshold and strength to be maintained as per DGCA CAR.

Isolation Bay of 93 m X 96 m and provision of 23 m wide Link Taxi Track of length 265 m with 7.5m shoulder on both sides as well as required fillets to cater for Code - C aircraft (A- 321). Construction of Security hut / Watch Tower-along the perimeter Boundary Wall at newly acquired land. Other allied Works including Electrical Work, CNS Works, IT & Airports Systems Works, etc.

Construction of centrally air-conditioned Domestic Terminal Building having an area of 6,000 sq. m. capable of handling 300 PAX (150 ARR PAX +150 DEP PAX) peak hour passengers with all modern facilities and amenities (with provision of three number aerobridges). The building provided with aesthetically appealing and soothing interior decoration matching the modern structure. Adoption of GRIHA measures in the design and consideration of the project to achieve the 4-star rating under GRIHA V-2015.

Current government airstrip is spread over an area of 177.62 acres (71.88 ha). About 170 acres (68.79 ha) of additional land will be utilized for the expansion of the project. The MOU for the development of Maryada Purushottam Shriram Airport is signed between the Government of Uttar Pradesh and Airport Authority of India.

Total freshwater requirement for domestic use and landscaping will be about 25 KLD. Out of it 15 KLD will be fresh water which will be met through Ayodhya Municipal Corporation water supply. Treated wastewater from STP will also be utilized for toilet flushing and landscaping.

No water body will be affected by the proposed development activities and allied works within the airport premises. No forest land is involved in the proposed project. There is no eco-sensitive area, biosphere and critically polluted area, state, and national boundary within 10 km distance from the site.

Solid waste generated at the proposed Airport will be about 100 kg/day which will be disposed as per Solid Waste Management Rule 2016.

The estimated cost of the proposed development of Maryada Purushottam Shriram Airport is estimated as about Rs. 242.14 Crores.

2.0 INTRODUCTION

The government airstrip proposed to be developed as Maryada Purushottam Shriram Airport (Ayodhya Airport) in Faizabad city, Uttar Pradesh, India will be serving the districts of Bahraich, Gonda, Sultanpur, Amethi and Basti in Eastern Uttar Pradesh. It is located in the Faizabad Taluk on Basti – Lucknow NH – 27. It is an upcoming International airport in Faizabad city that will be upgraded from the existing government airstrip. The proposed site is located at Dhrampur Sahadat, Firozpur, Ganja, Janaura, Kushmaha, Nandapur, Poora Husain Kha, Sarethi villages of Faizabad Taluk and Faziabad District. Geographically, the airstrip is located at Latitude 26°44'55.58"N to 26°45'22.25"N, Longitude 82° 8'35.94"E to 82° 9'39.62"E and altitude of 99 – 106m above MSL.

The current government airstrip is being operated in an extent of 177.62 acres (71.88 ha). The existing runway is of length of 1500 M x 30 M.

As part of the airport development process, AAI proposed to carry out certain development activities including extension of Runway, Taxiway, Apron, Isolation Bay, RESA, Domestic Terminal Building & Miscellenious works.

2.1 Identification of project and project proponent

2.1.2 Project

- Widening and Re-carpeting / strengthening of existing Runway (12/30) of 1500m x 30m to 1500m x 45m and extension of existing Runway by 700m x 45m making a total Runway of 2200m X 45m in Phase-I, with provision of shoulders 7.5m on both sides and Runway edge lights. Note: The strengthening of Runway/ Apron/ Taxi Track is to be done for A321 type of Aircraft. The Runway strip of 280m i.e., 140m on either side of Runway Centre line with required strength as per DGCA CAR /ICAO standards / recommendations.
- Provision of 310m long and 23 m wide Link Taxi Track with 5.5m wide shoulders on both sides connecting Runway and apron.
- Construction of Apron measuring 140m x 110m having 5.5m wide shoulders on all sides for operation of 03 nos. ATR 72 I Q400 type of Aircraft.
- Provision of Isolation Bay measuring 93m x 96m with a Link Taxi Track 265m long and 23m wide having 7.5m wide shoulders, for the operation of Code 'E' type of Aircraft.
- Provision of RESA on both ends measuring 240 m x 90 m, beyond 60 m over run after Runway Threshold and strength to be maintained as per DGCA CAR.
- Provision of Runway Turn pad as per Standard guidelines.
- Development of Taxiway strip with suitable grading as per DGCA CAR / ICAO Standards.

- The slopes on Apron, Taxiway, strip etc. should be as prescribed in DGCA CAR, under various paragraphs.
- Storm water drains to be provided beyond 140 m from Runway Centerline, wherever required.
- Grading / Levelling and strengthening of surface up to 75 m on each side of Runway center line as per DGCA CAR specification for preparation of runway Strip.
  * The transverse slopes of any portion of a strip beyond that to be graded shall not exceed an upward slope of 2.5 per cent as measured in the direction away from the runway.
- Construction of Pre-Engineered I Prefabricated Terminal Building with an area of 6000 Sq. m. for 300 peak hour Pax. (150 Arr. + 150 Dep.)
- Construction of Aerodrome Control Tower as per standard drawing.
- Construction of Fire Station and Fire watch tower as per standard drawing.
- Provision of Mandatory and Information Signage I Markings in the movement area.
- Provision of Anti- Hijack control room in operational area as per BCAS guidelines.
- Provision of Cooling pit and Fire pit as per approved standard drawings.
- Establishment of ARP as per DGCA CAR.
- Provision of Crash Gate.
- Provision of emergency access road from crash gate to Runway.

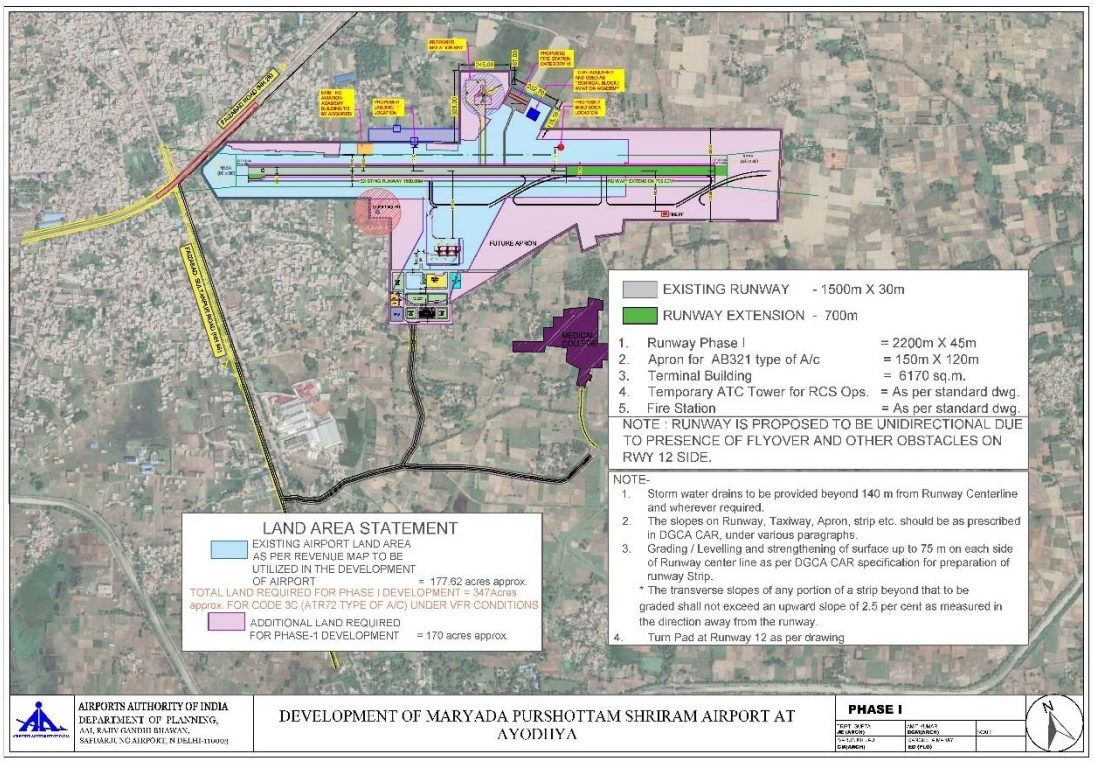

FIGURE – 1: PROPOSED ACTIVITY – MARYADA PURUSHOTTAM SHRIRAM AIRPORT

About 170 acres (68.79 ha) of additional land has already been hand over by state Govt. for the proposed development activities. The MOU for the development of Maryada Purushottam Shriram Airport is signed between the Government of Uttar Pradesh and Airport Authority of India.

2.1.2 Project proponent

Airports Authority of India (AAI) was constituted by an Act of Parliament and came into being on 1st April 1995 by merging erstwhile National Airports Authority and International Airports Authority of India. The merger brought into existence a single Organization entrusted with the responsibility of creating, upgrading, maintaining, and managing civil aviation infrastructure both on the ground and air space in the country.

AAI manages 137 airports, which include 23 International Airports (including 3 International Civil Enclaves), 10 Customs Airports (including 4 Customs Civil Enclaves), 81 Domestic Airports and 23 Domestic Civil Enclaves at Defense airfields. The functions of AAI are as follows:

- Design, Development, Operation and Maintenance of international and domestic airports and civil enclaves.
- Control and Management of the Indian airspace extending beyond the territorial limits of the country, as accepted by ICAO.
- Construction, Modification and Management of passenger terminals.
- Development and Management of cargo terminals at international and domestic airports.
- Provision of passenger facilities and information system at the passenger terminals at airports.
- Expansion and strengthening of operation area, viz. Runways, Aprons, Taxiway etc.
- Provision of visual aids.
- Provision of Communication and Navigation aids, viz. ILS, DVOR, DME, Radar etc.

2.2 Brief Description of Nature of project

The proposed project involves extension of existing runway from 1500 m x 30 m to 2200 m x 45 m, Taxiway, Apron, Isolation Bay and construction of Terminal building & Miscellenious works, which requires land acquisition of about 170 acres. The project is an infrastructure project and earth work are the major activity to be performed as part of the project. The required earth shall be sourced from outside the project boundary and transported through trucks to the project locations. Cutting of earth shall be done from various approved quarries located outside the airport boundary at a distance of 10 -15 km radius from the airport premises.

2.3 Need for the project & its importance

Air routes are the highways of the global economy, transporting people and goods over the vast distance at great speed. Aviation as massively multiplied and facilitated business and leisure opportunities, cultural exchanges, and the development of international institutional and political relationships. Airports are a major part of a country's infrastructure and foster economic activities by encouraging international commerce and tourism and generating employment.

With surging demand for large number of domestic and international companies into the sector, India's aviation industry ensures to witness a phenomenal growth in the near future. A large number of industries and infrastructure development in the southern region of the state will avail the facilities of the proposed Airport. Besides, passenger traffic growth, a large mix of industries in this region offers a great potential of the enhanced cargo activities. The region offers unlimited scope for the growth of tourism, trade and commercial activities.

In view of the future traffic growth, there is an urgent requirement of extension of runway and construction of Terminal Building with allied works at the government airstrip premises by getting additional land from state govt. adjacent to the existing airstrip.

Also, Ram mandir, is an under-construction Hindu temple which is located 12 Km to North East direction in Ayodhya, Uttar Pradesh, India, at the site of Ram Janmabhoomi, believed to be the birthplace of the Hindu god Rama. Ayodhya has been regarded as one of the seven most important pilgrimage sites for Hindus. Thus, tourism activity in the place will encourage the need for International and domestic transport facility in Ayodhya.

The direct and indirect benefits of the development activities at Maryada Purushottam Shriram Airport are as follows:

- Better infrastructure facilities for air passengers
- Promotion of tourism, trade, commerce, etc
- Increase in regional economy as it will boost tourism and commercial activities in the region.
- Generation of more revenue to the state, hence more development of the region.
- More employment opportunity to people.
- More business and industrial opportunities

2.4 Demand Supply Gap

The government airstrip was handed over by the government of Uttar Pradesh to Airports Authority of India (AAI) to develop a full-fledged airport with the approval of Uttar Pradesh cabinet. The government of Uttar Pradesh is providing extra land free of cost for the further expansion and for the construction of a terminal. About 2 aircrafts will be operated per day in the proposed Maryada Purushottam Shriram Airport.

2.5 Imports vs. Indigenous production

As the airport is going to serve as international airport, there are possibilites for direct import and certain items required for other major industries is also possible through this Airport.

2.6 Export Possibility

As the airport is going to serve as International airport, there are possibilites for direct export. The export of certain items is also possible through Chaudhary Charan Singh International Airport, Lucknow.

2.7 Domestic / export markets

With the development of Maryada Purushottam Shriram Airport, there is a huge growth of air traffic from the Eastern part of Uttar Pradesh. The airport will offer unlimited scope of growth of tourism, trade, and commercial activities due to its natural resources, skilled manpower, scenic beauty, rich heritage, special art, culture, and religions. The eastern part of Uttar Pradesh has a high potential for tourism development. The proposed project will also enhance tourism potential of nearby tourism destinations located within 50 – 100 km from the airport site. From the above, it is clear that there is a high potential for traffic growth in Faizabad with the Airport.

2.8 Employment Generation (Direct and Indirect) due to the project.

The proposed project will provide direct employment during construction & operation phases. During the project operation stage for the purposes of day-to-day professional and maintenance works, additional staff will be required along with workers for commercial establishments provided in the proposed terminal building.

It is expected about 250 direct employments during construction phase and 25-30 direct and 100-150 indirect employment during operational phase of the proposed project. Local workers will be hired from the nearby areas by the contractors.

3.0 PROJECT DESCRIPTION

3.1 Type of project

Ministry of Environment, Forest, and Climate Change (MoEF&CC) has made prior environmental clearance (EC) for Airport projects mandatory through EIA Notification dated 14th September 2006 and its subsequent amendments under Category 'A', item 7(a) of the schedule. Since the project activity involves development of existing airport, it requires Environmental Clearance from Central level in MoEFCC, New Delhi.

3.2 Location Details

The government airstrip is located at Dhrampur Sahadat, Firozpur, Ganja, Janaura, Kushmaha, Nandapur, Poora Husain Kha, Sarethi villages of Faizabad Taluk and Faziabad District. Geographically, the airstrip is located at Latitude 26°44'55.58"N to 26°45'22.25"N, Longitude 82° 8'35.94"E to 82° 9'39.62"E and altitude of 99 – 106m above MSL. The airstrip is located in the city center on Basti – Lucknow NH – 27. Environmental setting of the study area of 10 km radius around the Airport is tabulated in **Table – 1**.

The index map showing the general location of the project site is presented in **Figure - 1**. The google image showing the project site is given in **Figure - 2.** Site photographs for the proposed airport is given in **Figure – 4.**

Table – 1: Environmental Setting

S. No.	Particulars	Details
1	Latitude	26°44'55.58"N to 26°45'22.25"N
2	Longitude	82° 8'35.94"E to 82° 9'39.62"E
3	Elevation above MSL	99 – 106m
4	Topography	Plain Terrain
5	Nearest Highway	NH – 27, Basti to Lucknow - Adjacent, NW
6	Nearest Railway station	Faizabad Junction – 1.5 Km, NW
7	Nearest Airport	Chaudhary Charan Singh International Airport, 125 Km, W Raebarelli Airport – 95 Km, SW
8	Nearest Habitation	Faizabad – Within
9	Nearest Town	Faizabad – Within
10	Reserve Forests	Nil in 10 km radius
11	Nearest Waterbody	Gaddour Pur Pond – 3.2 Km, NW Tajpur Kodara Lake – 4.7 Km, SW Dharamdaspur Lake – 5.2 Km, SSW Ghaghra River – 5.5 Km, NW
12	Ecologically sensitive sites	Nil in 10 km radius

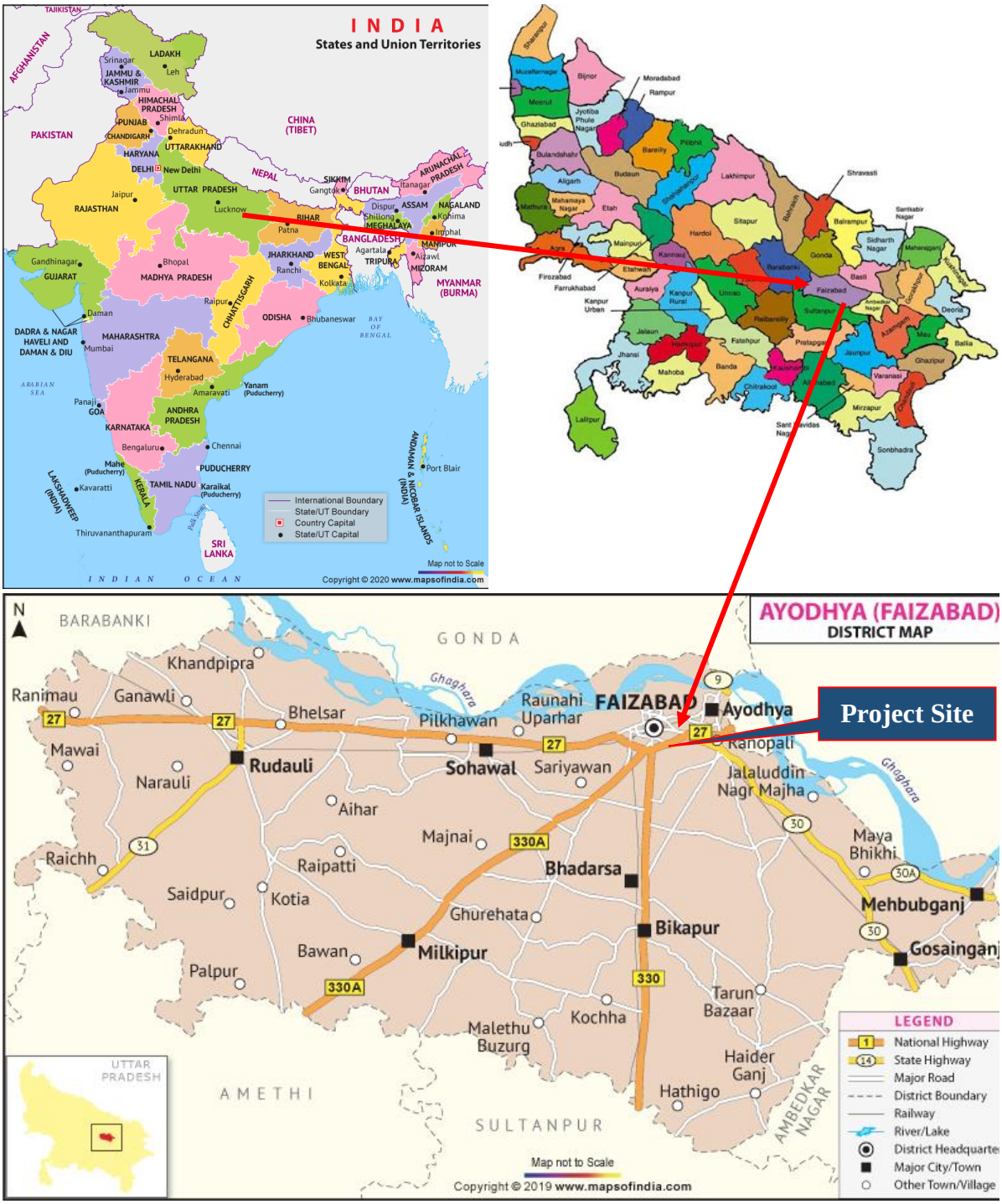

FIGURE – 2: INDEX MAP FOR THE LOCATION OF PROPOSED MARYADA PURUSHOTTAM SHRIRAM AIRPORT

FIGURE - 3: GOOGLE IMAGE SHOWING THE PROPOSED SITE FOR MARYADA PURUSHOTTAM SHRIRAM AIRPORT

FIGURE – 4: SITE VISIT PHOTOGRAPHS

3.3 Alternate Sites

The proposed project involves the work will be done in the land abutting the existing airport. Hence, no alternative sites have been considered.

3.4 Size or Magnitude of Operation

The current government airstrip is spread over an area of 177.62 acres (71.88 ha). About 170 acres (68.79 ha) of additional land will be utilized for the expansion of the project. The proposed expansion project involves Extension of Runway, RESA, Taxiway, Apron, GSE Area, Isolation Bay, Domestic Terminal Building & Miscellenious Works as per the conceptual layout plan enclosed.

Widening and Re-carpeting / Strengthening of existing Runway (12/30) of 1500m x 30m to 1500m x 45m and extension of existing Runway by 700m x 45m making a total Runway of 2200m X 45m in Phase-I, with provision of shoulders 7.5m on both sides and Runway edge lights. The strengthening of Runway/ Apron/ Taxi Track is to be done for A321 type of Aircraft. The Runway strip of 280m i.e., 140m on either side of Runway Centre line with required strength as per DGCA CAR /ICAO standards recommendations.

Construction of centrally air-conditioned Domestic Terminal Building having an area of 6,000 sq. m. capable of handling 300 PAX (150 ARR PAX +150 DEP PAX) peak hour passengers with all modern facilities and amenities (with provision of three number aerobridges). The building provided with aesthetically appealing and soothing interior decoration matching the modern structure. Adoption of GRIHA measures in the design and consideration of the project to achieve the 4-star rating under GRIHA V-2015.

Provision of 23m wide Link Taxi Track of length 310 m with 5.5 m shoulder at both sides connecting Runway and Apron. Provision of Apron of size 140m X 110m for operation of 3 nos. of ATR 72 I Q400 type aircraft. Provision of RESA on both ends measuring 240 m x 90 m, beyond 60 m over run after Runway Threshold and strength to be maintained as per DGCA CAR. Isolation Bay of 93 m X 96 m and provision of 23 m wide Link Taxi Track of length 265 m with 7.5m shoulder on both sides as well as required fillets to cater for Code - C aircraft (A- 321). Construction of Security hut / Watch Tower-along the perimeter Boundary Wall at newly acquired land. Other allied Works including Electrical Work, CNS Works, IT & Airports Systems Works, etc.

3.5 Project Description with process details

3.5.1 Project Description

The proposed expansion project involves Extension of Runway, RESA, Taxiway, Apron, GSE Area, Isolation Bay, Domestic Terminal Building & Miscellenious Works, as detailed below.

CIVIL WORKS

i. Widening and Re-carpeting / strengthening of existing Runway (12/30) of 1500m x 30m to 1500m x 45m and extension of existing Runway by 700m x 45m making a total Runway of 2200m X 45m in Phase-I, with provision of shoulders 7.5m on both sides and Runway edge lights. Note: The strengthening of Runway/ Apron/ Taxi Track is to be done for A321 type of Aircraft. The Runway strip of 280m i.e., 140m on either side of Runway Centre line with required strength as per DGCA CAR /ICAO standards / recommendations.
ii. Provision of 310m long and 23 m wide Link Taxi Track with 5.5m wide shoulders on both sides connecting Runway and apron.
iii. Construction of Apron measuring 140m x 110m having 5.5m wide shoulders on all sides for operation of 03 nos. ATR 72 I Q400 type of Aircraft.
iv. Provision of Isolation Bay measuring 93m x 96m with a Link Taxi Track 265m long and 23m wide having 7.5m wide shoulders, for the operation of Code 'E' type of Aircraft.
v. Provision of RESA on both ends measuring 240 m x 90 m, beyond 60 m over run after Runway Threshold and strength to be maintained as per DGCA CAR.
vi. Provision of Runway Turn pad as per Standard guidelines.
vii. Development of Taxiway strip with suitable grading as per DGCA CAR I ICAO Standards.
viii. The slopes on Apron, Taxiway, strip etc. should be as prescribed in DGCA CAR, under various paragraphs.
ix. Storm water drains to be provided beyond 140 m from Runway Centerline, wherever required.
x. Grading / Levelling and strengthening of surface up to 75 m on each side of Runway center line as per DGCA CAR specification for preparation of runway Strip. * The transverse slopes of any portion of a strip beyond that to be graded shall not exceed an upward slope of 2.5 per cent as measured in the direction away from the runway.
xi. Construction of Pre-Engineered / Prefabricated Terminal Building with an area of 6000 Sq. m. for 300 peak hour Pax. (150 Arr. + 150 Dep.)
xii. Construction of Aerodrome Control Tower as per standard drawing.
xiii. Construction of Fire Station and Fire watch tower as per standard drawing.
xiv. Provision of Mandatory and Information Signage I Markings in the movement area.
xv. Provision of Anti- Hijack control room in operational area as per BCAS guidelines.
xvi. Provision of Cooling pit and Fire pit as per approved standard drawings.
xvii. Establishment of ARP as per DGCA CAR. xviii. Provision of Crash Gate.
xviii. Provision of emergency access road from crash gate to Runway.

NOTE:

- Development of Taxiway strip with suitable grading.
- The slopes on Apron, Taxiway, strip etc. should be as prescribed in DGCA CAR, under various paragraphs.

- Storm water drains to be provided wherever required.
- ACN / PCN Evaluation of Runway, Taxiway, Apron, and Isolation Bay to be done.

TERMINAL BUILDING

6000 Sq. m. Terminal Building. Preferably Pre-engineered / Prefab structure.

(a) COMMON CONCOURSE:

Common concourse area should have provision for snack bar, toilets, AHU switch room, drinking water, first aid room, supporting office for AAI and airlines.

(b) CHECK-IN AREA:

1. The check-in area should have 08 nos. Check-in counters and adequate queuing space.
2. 01 no. baggage conveyor belt for registered baggage.
3. Provision of 01 no. X-BIS.
4. Adequate number of toilets (ladies, gents and physically challenged persons) back up offices for airlines, drinking water facilities, storing space for 50 baggage trolleys etc.
5. Seating arrangements for passengers after check-in and before security check.

(c) SECURITY HOLD AREA:

1. The security hold should accommodate at least 150 pax. at a time with adequate number of toilets (ladies, gents and physically challenged persons), frisking booth 05 nos. (03 for Males and 02 for Females), space for X-Ray machine for hand baggage, AHU, Switch room, drinking water, snack bar facility and childcare room.
2. The passenger frisking area in security hold area with adequate space for locating required number of DFMDs, frisking platforms, inspection table for manual checking of hand baggage and adequate space/rooms for security staff. Isolated smoking area with proper ventilation inside the security hold area.

d) BAGGAGE COLLECTION / ARRIVAL LOUNGE:

1. The baggage collection and arrival lounge should have 02 no. conveyor belts of adequate length.
2. Adequate space for storing baggage trolleys, space for storing of mishandled I unclaimed baggage.
3. Adequate number of toilets (ladies, gents and physically challenged persons) AHU, switch room, drinking water, prepaid taxi counter.
4. Provision of Information counter and Pre-Paid Taxi counter.
5. Provision of Baggage Reconciliation System,
6. Canopies of appropriate size to be built to cover Baggage make-up and Break-up area.

(A) ELECTRICAL WORKS

1. Internal and external electrification of Terminal Building Complex (with LED), associated buildings, Car Park, approach roads etc.
2. Provision of main power supply and Substation equipment's and DG sets for secondary power supply.
3. Provision of fire detection & alarm system. Provision of fighting system as per standard along with fire extinguishers.
4. Provision of illuminated Mandatory and Information Signage's inside and outside Terminal Building, Kerb area, Car Park area, city side approach road and Apron air side area.
5. Provision of lighting on Car Park, around Terminal Building, Taxiway & Apron edge lighting as per standard requirements.
6. To optimize the use of electricity in toilets and other passenger amenities, appropriate arrangements may be provided.
7. Provision of Public Address System.
8. Provision of water coolers with RO, hand driers and Air curtains.
9. Provision of apron with flood lights.
10. Provision of sliding doors at entry / exit gate of Terminal Building.
11. Provision of perimeter road lighting as required.
12. Provision of arrival and departure baggage handling system.
13. Provision of Switch room, fire control room, and electrical maintenance room in terminal building.
14. Provision of VRF/ VRV / split / window type Air Conditioning, as per site requirements.

(B) AIRPORT SYSTEMS / CNS SYSTEMS

1. Provision of car calling system.
2. Surveillance Close circuit TV System (SCCTC) and provision of adequate number of close circuit TV monitors, in the security control room, Terminal manager room, APD Office etc.
3. Provision of Flight Information Display System (FIDS) with adequate number of Display Devices in departure, arrival, and security hold area for passenger facilitation.
4. Provision of adequate number of X-Ray machines for scanning Registered Baggage (RB) I Hand Baggage (HB), including provision of required number of ETDs, DFMDs and HHMDs as per BCAS norms.
5. Provision of adequate no. of VHF I Recorder sets (Walkie-Talkie, Base Stations, and mobile stations).
6. Provision of Telephone Exchange I digital EPABX I IP EPABX system for Terminal Building including telephone I intercom instruments, wiring etc.

(C) IT SYSTEMS

1. Passive and Active networking components such as OFC, UTP cabling, Routers, Core and Access switches and accessories. Provision of Raceways, cable trays and conducting and cabling.
2. Server room and adequate space for keeping network switches along with electrical power points and UPS.
3. Access Control System as per BCAS requirement.
4. Provision of Internet, VPN bandwidth, Wi-Fi System.
5. Provision of IT I AV works for Training cum conference room.

(D) MISCELLANEOUS

1. Development of site.
2. Hydro pneumatic water supply system as per requirements.
3. Grading and leveling of surrounding areas of Interim Terminal Building.
4. Construction Roads on City side and air side.
5. Provision of water supply system, storm water drainage system, rainwater harvesting system and External Sewage System i/c provision of Septic Tank. & Soak Pits.
6. City side security cabins / morchas including stainless steel bollards in front of terminal building city side.
7. Tactile Path (as per ADA) from the designated place in city side of terminal building up to nearest check-in counter. (For visually handicapped persons) The Terminal Building and other associated office / Administrative Buildings should be made totally accessible as per Ministry of Civil Aviation Accessibility Standards I guidelines.
8. Provision of Furnishing in Reserved Lounge.
9. Provision of lost & found item / Housekeeping store near Terminal Manager's office in Terminal Building.
10. Provision of car parking for Physically Handicapped persons near the Terminal Building.
11. Provision of Footpath 1.8m wide along the city side road for pedestrian movement as per drawing.
12. Provision of Walkway I pathway from car parking to Terminal Building 2.5m wide as per drawing.
13. Construction of vehicle parking, ticket counter, driver rest room and toilets on city side of Terminal building.
14. Construction of perimeter road of 3.75m width all along the boundary wall inside operation area.
15. Construction of 04 lane approach road from nearest main road to terminal building via shortest distance.

16. Horticulture and gardening works on City and Air side.
17. Provision of vehicle parking for 75 cars and 02 buses.
18. Construction of property Boundary wall and Operational Boundary wall of 2.45m + 0.45m with concertina coiled barbed wire. (Location as per drawing)
19. Provision of Signaling area with unidirectional Landing 'T" and wind direction indicator. (Refer enclosed drawing for location)
20. Provision of PAPI for Runway 30 side only.
21. Removal of obstacles if any in the approach of Runway 30 for Aircraft operations.
22. Relocation of services, demolition of structures, if any falling in the proposal.
23. Provision of culvert wherever required.

3.6 Raw Material requirement

Airport being a service industry does not process any raw material or deal in production of products. The proposed project is development of Maryada Purushottam Shriram Airport at the government airstrip which requires general construction materials viz. steel, cement, RMC, sand, aggregates, bricks, etc. will be used for infrastructure development like building construction, road lying, service area development, etc. These materials will be procured from nearby markets as per requirements and transportation facilities will be provided by construction contractor.

3.7 Resource optimization / recycling and reuse

The resource optimization is always pre-requisite for any development project. In quest towards resource optimization in proposed project, the tradition practices are substituted by modern practices involving water reduction, rainwater harvesting, energy conservation, etc.

As per the NBC, 2016, the per capita water requirement varies with building type. Measures have been proposed to reduce the consumption of fresh water through efficient practices and devices. Some of these practices include:

- Regulating flow rate of fixtures used in toilets
- Dual plumbing system
- By installations of sensor-based urinals such as magic eye sensor, the water use is reduced to 0.4 litres per flush
- A normal tap works at a flow rate as high as 20 lpm. Use of low flow faucets along with other water saving devices such as auto control valves, pressure reducing devices, aerators and pressure inhibitors for constant flow, magic eye solenoid valve and self-operating valves can result in 25 – 50% of water savings.
- Rainwater harvesting for ground water recharge.

AAI is following GRIHA (Green Rating for Integrated Habitat Assessment) system for sustainable and environment friendly design. All the new buildings will be constructed as per the ECBC (Energy Conservation Building Code) norms and obtain 4-star GRIHA rating.

3.8 Availability of Water with Source, Energy / Power requirement with source

3.8.1 Water Requirement details

Water requirement of the airport after development will be met from Ayodhya Municipal Corporation. Water requirement and water balance chart details of the proposed development of existing airport is tabulated in the **Table – 2 & 3.**

Table - 2: Water Balance Chart for Maryadha Purushottam Shriram Airport

A	**Total Water Demand**	**Qty (m^3/day)**
1)	**DOMESTIC WATER DEMAND**	**25**
(i)	Total Potable Water Demand	15
(ii)	Total Flushing Water Demand	10
	Total Domestic Water Demand	**25**
2)	Total Horticulture Water Demand	**10**
	Grand Total of Water Demands for all Purposes	**35**
B	**Total Available Treated Sewage for Recycling**	**Qty (m^3/day)**
1)	Total Sewerage Generated	**21**
2)	Treated sewage available from STP for Recycling	**20**
	Total of Available Water for Re-use	**20**
C	**Total Utilized Treated Effluent**	**(In m^3/Day)**
1)	Total Amount Re-used for Flushing Water Purposes	**10**
2)	Balance Amount Reused for Horticulture Purposes	**10**
	Excess treated effluent disposed outside the site in m^3/day	**0**

Table – 3: Water Requirement calculations

S. No.	Description	Total Population at Peak hour	LPCD for Potable water	LPCD for Flushing water	Potable Water Demand (lpd)	Flushing Water Demand (lpd)	Total Water Demand (lpd)
1	Terminal Building (Passenger Load)	**300**	**30**	**15**	**9000**	**4500**	**13500**
2	Permanent Terminal Building Population (AAI, Airlines & O&M)	**75**	**30**	**15**	**2250**	**1125**	**3375**
3	Kitchens, Restaurants	**75**	**30**	**45**	**2250**	**3375**	**5625**
4	Visitors, drivers, etc.	**100**	**5**	**10**	**500**	**1000**	**1500**
	TOTAL				**14000**	**10000**	**24000**
	TOTAL (m^3/day)				**14 KLD**	**10 KLD**	**24 ~25 KLD**
5	Horticultural Water Demand						**10 KLD**
Total Water Demand for All Purposes In m^3/day							**35 KLD**

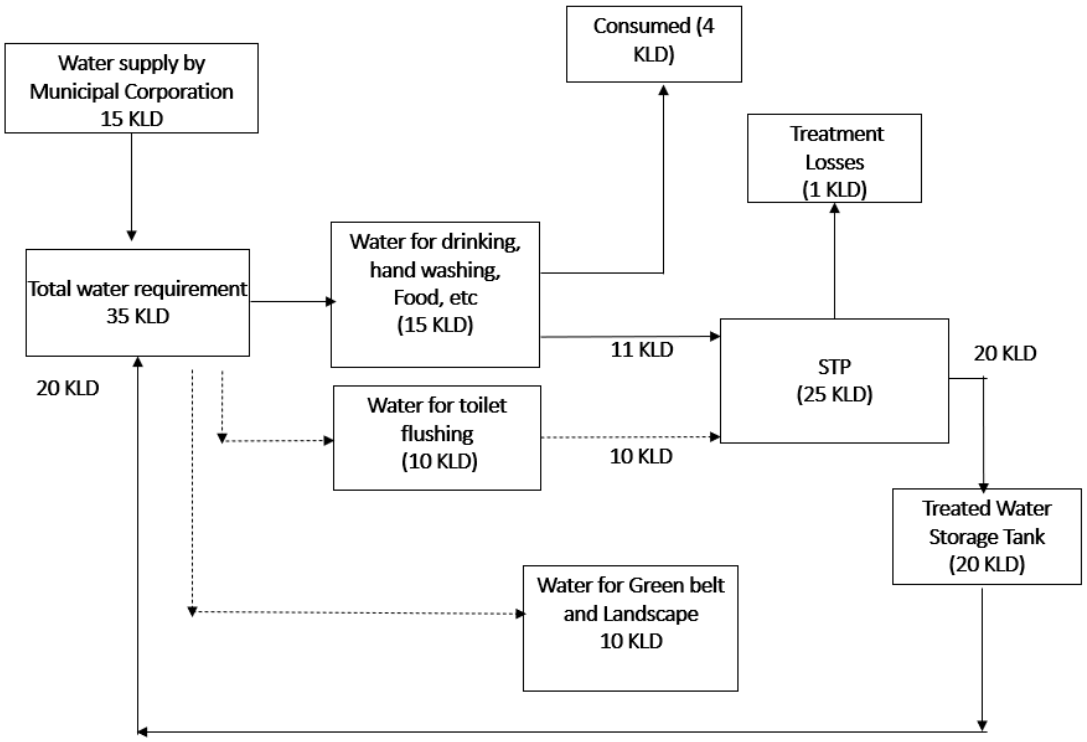

Figure – 3: Water Balance Diagram

3.8.2 Power Requirement details

Total connected load of the power for the proposed airport operations will be 500 KVA after the development activities. The power supply shall be drawn from UPPCL Power supply.

There will be power backup through 3 No of DG sets of capacity of 250 KVA used in case of power cut or failure. DG sets will be provided with inbuilt acoustic enclosures and effective safe stack height for proper dispersion of pollutants that will keep the emissions within the permissible limit. The fuel required will be HSD and its quantity depend on as and when used.

3.9 Quantity of waste generation (Liquid and Solid) & its management

3.9.1 Sewage generation and Management

As per water balance diagram, 21 KLD of sewage will be generated after the development of the Airport which will be treated in STP of capacity 25 KLD.

Sewage Treatment Plant

Sewage generated from the airport will be treated in a well-designed Sewage Treatment Plant (STP). It is proposed to be installed Moving Bed Biofilm Reactor (MBBR) type sewage treatment plant of 25 KLD capacity. After meeting stipulated standards, treated sewage will be utilized for flushing and irrigation of greenery and landscaping.

Details of Sewage Treatment Plant

The sewage from the proposed airport shall be collected by gravity into the collection tank / equalization tank of Sewage Treatment Plant (STP) via perforated screens to prevent the large particles into system. In equalization tank, pH and temperature of incoming sewage will be equalized. The sewage from equalization tank will be pumped to Moving Bed Biofilm Reactor (MBBR) reactor for biological treatment, where required quantity of air in presence of MBBR system will be supplied to meet the oxygen requirements by mean of blower and fine bubbles air diffusers.

After MBBR reactor, sewage will flow by gravity to settler (tube type) where sludge will be settled at the bottom due to gravity. This settled sludge will be recycled through sludge pump to MBBR reactor to meet the mixed liquor suspended solids (MLSS) requirement, excess sludge will be discharged through filter press for final disposal. Final discharge of wastewater from settler will be collected in chlorine contact tank, where some chlorine will be dosed for disinfections of treated wastewater. Then, treated sewage will be pumped for tertiary treatment through Pressure Sand Filter followed by Activated Carbon Filter and it will be passed through Ultraviolet (UV) disinfection system.

Treated sewage will meet the norms prescribed by MoEFCC / CPCB / SPCB and will be utilized for flushing and for irrigation of greenery & landscaping purpose. Treated wastewater will not be discharged outside the boundary of the airport.

Design Parameters

Design parameters for proposed STP are given below:

Sl.	Parameters	Inlet	Outlet
1.	pH	6.5-8.5	6.5 - 8.5
2.	TSS	250 mg/l	< 30 mg/l
3.	BOD	300 mg/l	< 20 mg/l
4.	COD	500 mg/l	< 100 mg/l
5.	Oil & Grease	50 mg/l	< 10 mg/l

No treated wastewater will be discharged outside the airport. Unit wise description of the proposed STP is given below and shown in **Figure – 4.**

Screen Chamber

Prior to the actual treatment of the wastewater, a screen chamber will be provided. In this chamber removable type mechanical bar screens will be provided for removal of various large size elements, such as paper, cloth, plastic, which may hamper the satisfactory functioning of subsequent units of the STP, if not removed at early stages.

Oil & Grease Trap

The oil & grease trap will be provided to collect oil and grease trace coming with sewage. Collected oil & grease will be stored in a drum and disposed of in environmental sound manner.

Equalization Tank

As the quantity of the flow is non-uniform in nature, an equalization tank will have to be provided. By the provision of an equalization tank, wastewater characteristics will become homogeneous in nature and, therefore, better treatment can be achieved in the subsequent units of the STP. Diffused aeration will be provided in this tank to stir the contents of the tank completely.

MBBR Reactor (Biological Treatment)

Moving Bed Biofilm Reactor (MBBR) technology employs thousands of polyethylene biofilm carriers operating in mixed motion within an aerated wastewater treatment basin. Each individual bio carrier increases productivity through providing protected surface area to support the growth of heterotrophic and autotrophic bacteria within its cells. It is this high-density population of bacteria that achieves high-rate biodegradation within the system, while also offering process reliability and ease of operation.

This technology provides cost-effective treatment with minimal maintenance since MBBR processes self-maintain an optimum level of productive biofilm. Additionally, the biofilm attached to the mobile bio-carriers within the system automatically responds to load fluctuations.

The bacteria/activated sludge grow on the internal surface of the carriers. The bacteria break down the organic matter from the wastewater. The aeration system keeps the carriers with activated sludge in motion. Only the extra amount of bacteria growth, the excess sludge will come separate from the carriers and will flow with the treated water towards the final separator. The system can consist of a one stage or more stage system

(see underneath schedule), depending on the specific demands. The specific bacteria remain in their own duty tank because of the fact that the carriers remain in only 1 tank, protected by screens.

A biofilm develops on the media, which move along the effluent sewage in the reactors. The movement within the reactors is generated by providing aeration with the help of diffusers placed at the bottom of reactors. This thin film on the media enables bacteria to act up on the bio-degradable matter in the effluent sewage and thus reduce the BOD/COD content in presence of oxygen from the air used for fluidization. Aeration will be done with the help of twin lobe blowers. The MBBR reactors will increase the oxygen content of the sewage and thus, will help in the growth of the micro-organisms required to reduce the BOD. These micro-organisms will consume the organic matter and will convert it into active biomass, better known as sludge. The wastewater, laden with sludge, will be transferred to tube settler for sludge separation.

Secondary Settling Tank

The sludge formed will settle in the secondary settling tank followed by pre filtration tank. The settled sludge will be discharged in the Sludge Collection Tank and would be dewatered using sludge filter press. The clear supernatant from the outlet of the tube settler will be discharged as treated wastewater and will be passed on to further treatment for final polishing. HDPE/PVC low maintenance tubes will be provided for trouble free operation of the tube settler.

Sludge Filter Press

Filter process will be having 24 plates, sludge press completes with its pump and accessories. In filter press, the sludge in the form of liquid slurry is fed into the press and dry solid cake of sludge is taken out from it. These dry cakes are used as manure for green belt and landscaping.

Pressure Sand Filter

For final polishing of the treated wastewater, a Pressure Sand Filter (PSF) will be provided. The PSF comprises of a MS / FRP Vessel having filtering media sand topping for filtration of supernatant treated sewage water and thus ensuring clarity of water.

Activated Carbon Filter

For tertiary treatment, an Activated Carbon Filter (ACF) will be provided. This will be MS / FRP constructed tank in which activated charcoal / carbon will be filled as adsorbing media. This will not only adsorb impurities but will also act as the polishing tank for the

final treated wastewater. The resultant water shall be clear, odourless and will be reused for horticulture purpose.

Ultraviolet (UV) Disinfection System

Ultraviolet (UV) disinfection will use a UV light source. UV-rays are energy-rich electromagnetic rays that are found in the natural spectrum of the sunlight. They are in the range of the invisible short-wave light having a wavelength ranging from 100 to 400 nm.

UV light source is mounted so that water can pass through a flow chamber, and UV rays are admitted and absorbed into the stream. When ultraviolet energy is absorbed by the reproductive mechanisms of bacteria and viruses, the genetic material is rearranged, and they can no longer reproduce. They are therefore considered dead, and the risk of disease has been eliminated.

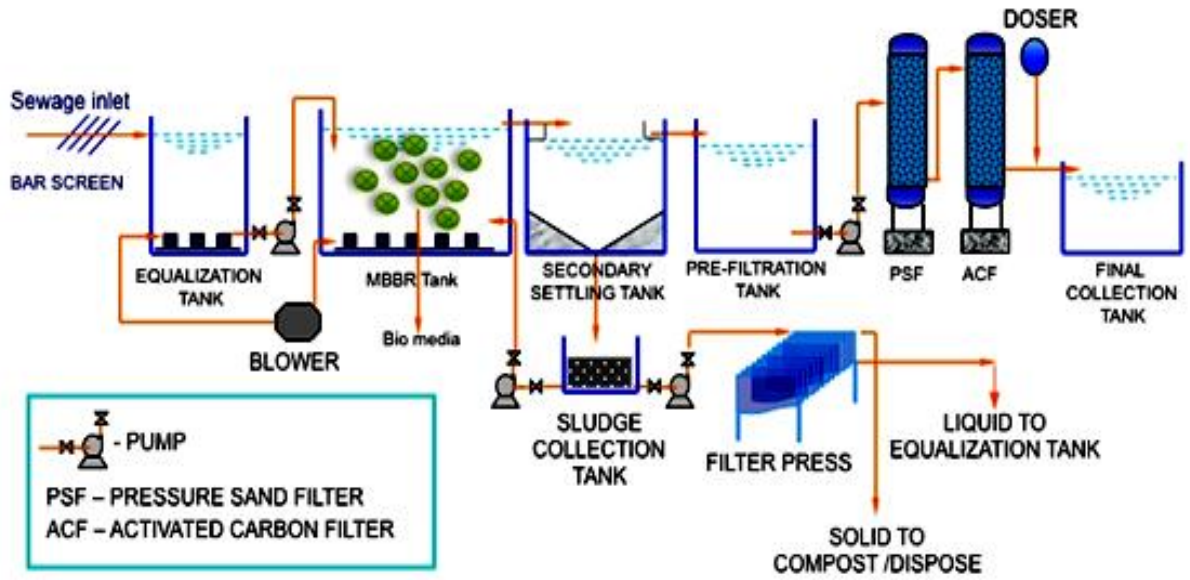

FIGURE – 4: SCHEMATIC DIAGRAM OF STP

3.9.2 Solid Waste Generation and Disposal

About 100 kg per day solid waste will be generated during operation after the proposed development activities at Maryada Purushottam Shriram Airport, which will be collected, segregated and managed by external agency for disposal as per Solid Waste Management Rules, 2016. Hence, the impact on the soil will be insignificant as an organized solid waste collection and disposal practices exist at the Airport premises. Some of the mitigation measures adopted are as follows.

- Municipal solid waste collection bins will be placed at strategic locations in the terminal building
- Approx. 100 kg per day municipal wastes, like, plastic, paper, packing waste, bottles, oil contaminated cottons and clothes, food waste from labour camp, etc will also be generated from Airport premises and Aircraft. It may contaminate soil of the site, if not disposed properly. These wastes will be segregated and disposed as per Solid Waste Management Rules, 2016.
- Agency has been hired for disposal of solid wastes as per the provisions of the Solid Waste Management Rule, 2016
- Solid waste generated from the airport is transported in close containers
- Used lubricating waste oil and oil contaminated clothes etc is collected separately in containers and is sold to authorized recyclers as per CPCB/State Pollution Control Board guidelines

3.10 Schematic representations of the Feasibility drawing

Feasibility Master plan diagram of the proposed development of Maryada Purushottam Shriram Airport is enclosed as **Annexure – 1**.

4.0 SITE ANALYSIS

Site analysis is a pre-design research activity which focuses on existing and potential conditions on and around the project site. It is an inventory of the site factors and forces, and how they coexist and interact. The purpose of the analysis is to provide through information about the site assets and liabilities prior to starting the design process. The typical site analysis includes the site location and size, neighbourhood context, zoning, legal aspects, geology, physiographic (natural and man-made features), hydrology, soils, vegetation, wildlife, climate, culture, pedestrian and vehicular circulation, access, utilities, historic factors, density, sensory stimuli, and any other factor deemed appropriate for the particular site.

4.1 Connectivity

The government airstrip is located at Dhrampur Sahadat, Firozpur, Ganja, Janaura, Kushmaha, Nandapur, Poora Husain Kha, Sarethi villages of Faizabad Taluk and Faziabad District. and it's located within Faizabad city, Uttar Pradesh, India serving the districts of Bahraich, Gonda, Sultanpur, Amethi and Basti in Eastern Uttar Pradesh. It is located in the city center on Basti – Lucknow NH – 27. It is an upcoming international airport in Faizabad city that will be upgraded from the existing government airstrip. NH 27 is presently 4-lane highway. The nearest railway station is Faziabad Junction which is located about 1.5 km in NW direction by road. The nearest international airport is Chaudhary Charan Singh International Airport, Lucknow which is located about 125 km

by road and connected to national destinations like Mumbai, Delhi, Bangalore, Chennai, Hyderabad and international destinations like Colombo, Singapore, Dubai.

4.2 Landform, Land use and Land ownership

Presently, the government airstrip is spread over an area of 177.62 acres (71.88 ha). About 170 acres (68.79 ha) of additional land will be utilized for the expansion of the project. The additional land is covered with trees in partial area. A total of 2800 trees and 298 obstacles including 7 Cell towers, 4 Electric poles, 4 Sign Boards will be removed for the proposed development of Airport. Approval for the removal of encumbrances will be obtained from local body.

4.3 Topography

The topography of the most of study area is plain topography. The elevation of the site varies from 99 to 106 m above MSL. The study area is plain. Map showing the topographical features around the project site covering 10 km radius are given in **Figure – 5.**

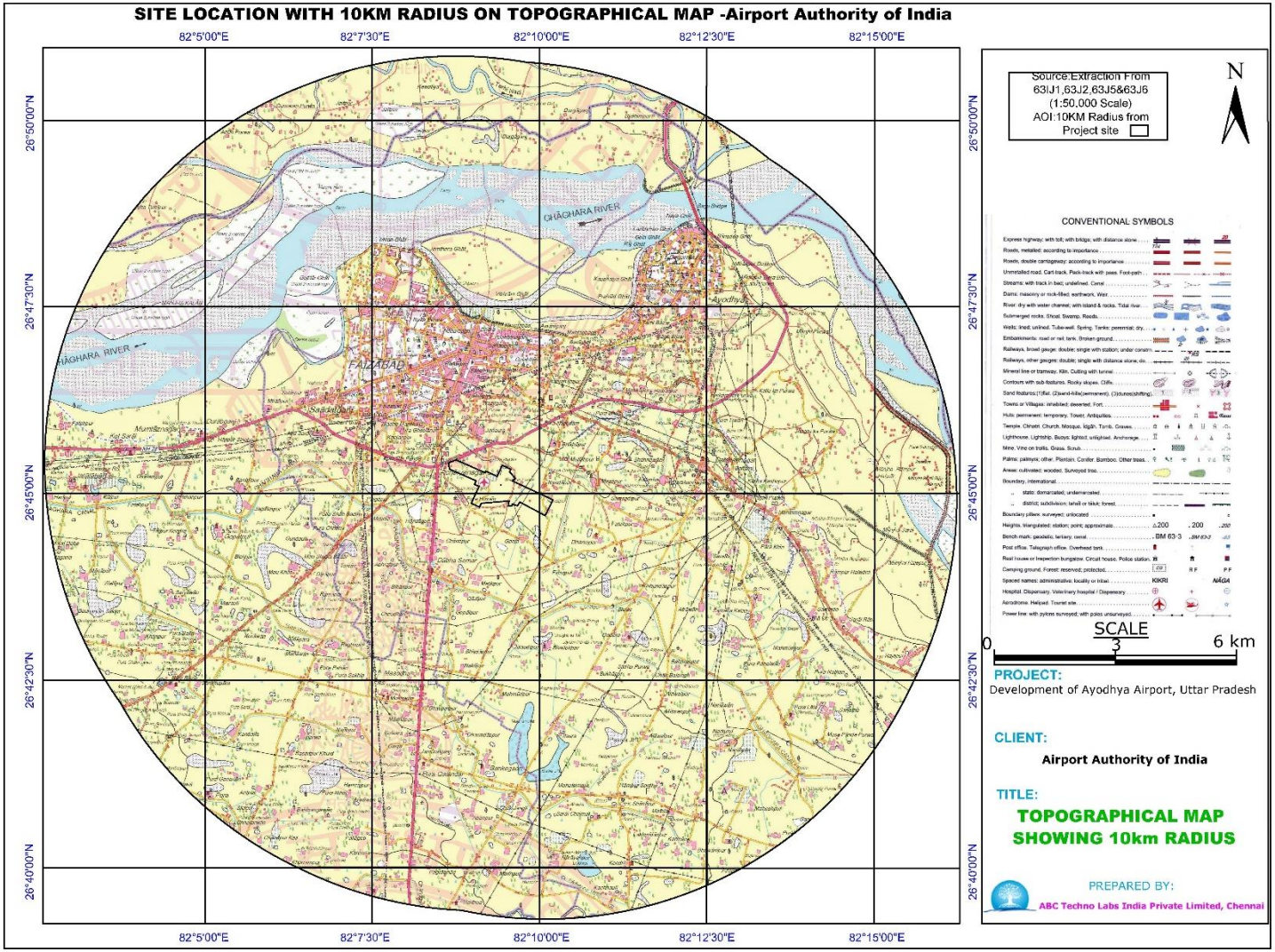

FIGURE – 5: TOPO MAP COVERING 10 KM RADIUS AROUND PROJECT SITE

4.4 Proposed Land Use Pattern

The land use classification of the land area belonging to AAI is categorized as Public and Semi-public use. The land use break-up for the area acquired for Airport construction is tabulated below.

TABLE – 13: LAND USE BREAK-UP FOR THE LAND ACQUIRED FOR AIRPORT

Category	Area (Acres)	Percentage (%)
Buildings	10.23	2.9
Runway	11.12	3.2
Internal Roads	1.6	0.5
Gardening / Green belt	43.32	12.5
Remaining Open area	281.35	80.9
Total	**347.62**	**100**

4.5 Existing infrastructure

The current government airstrip has a runway length of 1500m x 30m. The water requirement is being met through existing bore wells and AAI is in the process of obtaining water from Ayodhya Municipal Corporation. Adequate power is being sourced from UPPCL and additional power is also available in the region to manage the expansion proposal. As the site is located on a Highway connecting Lucknow and Basti (NH 27), all sort of constriction and other materials can be easily transported for the development works. All sort of supply as well as supporting industries are also available in the region to support the growth of this project.

Availability of amenities like education, medical, water supply, communication, road network, electricity, etc. significantly reflects the level of development of an area.

4.6 Soil Classification

The physiographic of the district is mostly plain. The district is devoid of any important mineral resource. The district has got domination of three types of soil viz., Loam, sandy Loam & Clay. The northern blocks are dominated by clay soil while the southern blocks have domination of sandy soil. Soil reaction varies around neutral from mildly acid to mildly alkaline, and crops give good response to fertilizers. Soil of the district is suitable for raising horticultural crops.

4.7 Climate data

Ayodhya lies on 99m – 103m above mean sea level and the climatic condition of this area is classified as subtropical climate with summers much rainy than the winters. Summer extends between March and June when the climate is very humid. Ayodhya registers the maximum temperature of 32°C and the minimum temperature of 17°C. Average rainfall throughout the year on Faizabad is 1135mm.

4.8 Social Infrastructure Available

The existing social infrastructure already available in and around the airport is located are listed below.

- Hospital with ambulance;
- Banks;
- Post office;
- Bus station;
- Railway station;
- Fire station;
- Secondary school;
- Police station;
- Shopping complex;
- Sports infrastructure (Stadium & Camps);
- Community halls;
- Cinema halls; and
- Primary health care centres

5.0 PLANNING BRIEF

5.1 Planning concept

This is a planned airport development project to cater aviation demand as per Master Plan. The development proposal of Maryada Purushottam Shriram Airport including Extension of Runway, Taxiway, Apron, Isolation Bay, RESA, Domestic Terminal Building & Miscellenious Works. Other facilities such as power, transportation and communication, social infrastructure facilities are already available at project site.

5.2 Population Projection

The expected population at the Airport is given below:

Arriving and Departing Passengers	- 300
Airport staff / contract employees / commercial area staffs	- 150
Drivers/Visitors	- 100

5.3 Land use planning

Land use has been categorized based on the following functional groups:

Airfield Dependent: Land uses with the highest location and area priority include those that are fully within the airfield or overlapping the airside-landside boundary.

Airport Supporting: Land uses with functional priority include those that are required for the airport to function. Their location may be on the airside or landside but preferably within the airport boundary.

Commercial: Land uses that are fully provide non-aviation revenues. These uses have flexibility of location but should not interfere with the functional operation of Airfield Dependent or Airport Supporting Land Uses.

Infrastructure & Open Space: These land use areas are determined by the needs of all the land uses above. Since supporting infrastructure must be within the development areas the first three groups determine the area required for this group. Open space includes those areas remaining which cannot be developed.

The proposed Airport requires about 170 acres of additional land which is already handed over by District Administration For designing of the proposed development activities AAI Circulars, National Building Code and ICAO guidelines have been followed.

5.4 Assessment of Infrastructure Demand

Social Demand

The assessment will be identified in the socio-economic survey, after the grant of TOR and will be submitted at the time of final presentation regarding Environmental Clearance.

Physical infrastructure

Physical infrastructure is an important aspect of the site. It determines the quality of life to a large extent. Physical infrastructure deals with:

- Water supply
- Electricity
- Waste management & treatment

Water supply

The daily consumption of water in the airport during operation phase for domestic use will be about 25 KLD out of which 15 KLD will be fresh water and 10 KLD will be recycled / treated wastewater. The water requirement for Landscaping will be about 10 KLD (treated wastewater). The water will be met through Ayodhya Municipal Corporation water supply.

Electricity

Total connected load of the power is about 500 KVA for the proposed airport. The power supply shall be drawn from UPPCL Power supply.

There will be power backup through 3 No of DG sets of capacity of 250 KVA used in case of power cut or failure. DG sets will be provided with inbuilt acoustic enclosures and effective safe stack height for proper dispersion of pollutants that will keep the emissions within the permissible limit. The fuel required will be HSD and its quantity depend on as and when used.

Solid Waste management:

Solid waste generated from the airport mainly comprises of food waste and garbage waste. Further, small quantities of sludge from STP and other waste are being generated. Collection and handling of domestic solid waste is being done in line with the provisions of the Solid Waste Management Rules 2016.

Wastewater treatment & management:

During operation phase, wastewater generated from the Airport will be treated in Sewage Treatment Plant (STP) comprising primary, secondary and tertiary treatment facilities.

5.5 Amenities/Facilities

The following facilities will be available in the airport premises

- Baggage handling system
- Passenger boarding bridges
- Flight information and displays
- Sewage treatment facility
- Fire-fighting system
- Security equipment
- Restaurant

All infrastructure facilities such as Educational Facilities, Post and Telegraph, Power supply, Medical Facilities, Drinking Water Facility, Well-Connected to internal roads and internal electrical lines which makes site the region adequate in amenities.

6.0 PROPOSED INFRASTRUCTURE

6.1 Industrial Area – Processing Area

About 170 acres of land has been handed over to AAI by District Administration for the development of Maryada Purushottam Shriram airport including runway extension, terminal building construction and other associated services. Total land available with AAI for Airport development is about 347.62 Acres. The proposed activities will be carried out within the above area itself which is sufficient for the planned activities.

6.2 Residential area - non-processing area

Not Applicable as the project is development of Airport including Extension of runway, apron and construction of Parallel / link Taxiway, construction of Terminal Building and associated services. No residential colony or township is planned under this project.

6.3 Green Belt

About 33% of the total project area will be under green belt and plantation. Entire landscaping is irrigated with treated wastewater having automatic water efficient water dispensing system.

6.4 Social Infrastructure

The proposed infrastructure will be identified in the socio-economic survey, after the grant of ToR and will be submitted at the time of final presentation of Environmental Clearance. Adequate capacity of social infrastructure like road, water supply, etc. is available in the region to manage the current expansion proposal.

6.5 Connectivity

The proposed airport will be located in the city center on Basti – Lucknow NH – 27. It is an upcoming airport in Faizabad city that will be upgraded from the existing government airstrip. NH 27 is presently 4 lane highway. The nearest railway station is Faziabad Junction which is located about 1.5 km in NW direction by road. The nearest international airport is Chaudhary Charan Singh International Airport, Lucknow which is located about 125 km by road and connected to national destinations like Mumbai, Delhi, Bangalore, Chennai, Hyderabad and international destinations like Colombo, Singapore, Dubai.

6.6 Drinking Water Management (Source & Supply of Water)

The daily consumption of water for the proposed Airport during operation phase for domestic use will be about 25 KLD out of which 15 KLD will be fresh water and 10 KLD will be recycled/treated wastewater. Fresh water of domestic requirement includes drinking water which will be met through Ayodhya Municipal Corporation water supply.

6.7 Sewerage System

As per water balance diagram, 21 KLD sewage will be generated after the proposed development at the Airport which will be treated in STP of 25 KLD capacity.

6.8 Industrial Waste Management

No Industrial waste will be generated from the project.

6.9 Solid waste Management

Solid waste generated from the airport mainly comprises of food waste and garbage waste. Further, small quantities of sludge from STP and other waste are being generated. Collection and handling of domestic solid waste is being done in line with the provisions of the Solid Waste Management Rules 2016.

6.10 Wastewater treatment & management

During operation phase, wastewater generated from Airport will be treated in Sewage Treatment Plant (STP) comprising primary, secondary and tertiary treatment facilities. The treated wastewater from the STP will be used for flushing and landscaping.

6.11 Power Requirement & Supply/ Source

Total connected load of the power is about 500 KVA for the proposed airport. The power supply shall be drawn from UPPCL Power supply.

There will be power backup through 3 No of DG sets of capacity of 250 KVA used in case of power cut or failure. DG sets will be provided with inbuilt acoustic enclosures and effective safe stack height for proper dispersion of pollutants that will keep the emissions within the permissible limit. The fuel required will be HSD and its quantity depend on as and when used.

7.0 REHABILITATION AND RESETTLEMENT (R & R) PLAN

The entire additional land required for the proposed development activities of 170 acres (68.79 ha) has already been hand over by state Govt. free from all encumbrances. So, there shall be no Rehabilitation & Resettlement (R&R) in the proposed expansion project.

8.0 PROJECT SCHEDULE & COST ESTIMATES

The proposed expansion project will be implemented immediately after obtaining EC from MoEFCC and CTE from UPPCB.

The implementation period of the development of Maryada Purushottam Shriram Airport is about two years from date of implementation to complete the entire project and commission the proposed building, runway, etc.

The total cost estimate for the proposed expansion project (development of existing airport) is about Rs. 242.14 Crores as detailed below. The funding for the project will be allocated by Ministry of Civil Aviation.

9.0 ANALYSIS OF PROPOSAL – FINAL RECOMMENDATIONS

The present proposal of development of Maryada Purushottam Shriram Airport includes Extension of Runway, Taxiway, Apron, Isolation Bay, RESA, Domestic Terminal Building & Miscellenious Works. Improvements in connectivity will effectively contribute to the economic performance of the wider economy through enhancing its overall level of productivity.

The project will boast economic growth benefitting the whole region through the generation of both direct and indirect economic value. Airport operations will have a considerable economic and social impact in surrounding regions. These benefits extend far beyond the direct effect of an airport's operation on its community development to the wider benefits that air service accessibility brings to business interests and to consumers. The construction and operation of airport will generate direct employment opportunity, indirectly contributed jobs through supply chain, enhance induced impact through tourism. Thus, the project will prove beneficial to the area.