Chapter 10. Summary & Conclusion

10.1. Project Background

Tata Consultancy Services (TCS) proposes to establish an IT SEZ Campus at Plot no. 01, Sector 157 of Noida, Uttar Pradesh. 29.266 ha (2,92,660 Sq m) of land has been allotted by New Okhla Industrial Development Authority (NOIDA) for development of IT/ITSES project out of which 20.3724 ha (2,03,724 Sq m) is allowed for development. Project will be developed in different phases. At present, Phase I will be developed on area of 13.086 ha (1,30,860 Sq m) and remaining will be developed in future. This application is prepared for the development to be undertaken in Phase I only. The total Built-up area of the proposed project (Phase I) will be 1,48,088 sq m.

Since the built-up area of project is 1,48,088 Sq m, thus as per schedule 1 of EIA notification 2006 as amended, the project fall under activity 8 (a) and category B2, therefore it is required to obtain environmental clearance from SEIAA, Uttar Pradesh and without preparation of EIA report.

However, in compliance of **clause B (i) of MoEF&CC Order Q-16017/38/2018-CPA dated 24.10.2019**, EIA report is required to be prepared as project falls under the 5 km radius of severally polluted area, and it will be treated as category B1 at state level

10.2. Project Description

Proposed project will comprise of One Transit Hub, two SDB towers with podium, one arrival block, one utility block, one Initial Development Centre (IDC), one main guard block and food court at podium level-2 with other allied services like water supply network, storm water network, green area and waste management system. Silent features are given in **Table 10.1**

Table 10.1 : Project Details

S. No	Description	Area-Sq m
1	Plot Area	2,92,660
2	Net Area available for Development	2,03,724
	Area under Phase I	1,30,860
	Area under Future Development	72,864
3	Permissible Ground Coverage (30% of net area)	61,117.20
4	Proposed Ground Coverage (@11.63% of plot Area)	23,699
5	Ground Coverage with Podium	28,413
6	Permissible FAR (2.5 of Net Area)	5,09,310
7	Proposed FAR (@0.51 of Plot Area)	1,03,389
8	Podium	33,419
9	Service Area	11,280
10	Built-up Area (5+6+7)	1,48,088

11	Green Area (31.13@ of area under Phase I	40747
12	Max height of building-m	64.6 m
13	Maximum number of floor- no.	2 Podium + Ground + 12 F
Other Details		
14	Power Requirement	6.417 MVA
15	Power Backup (DG sets)	2 no DG sets of 140 KVA
		6 no DG set of 2000 KVA
16	Total Water Requirement	763 KLD
17	Fresh water Requirement	317 KLD
18	Waste Water	496 KLD
19	STP	600 KLD
20	Municipal Solid waste Generation	2957 kg/day
21	Rainwater Harvesting Pit	32

10.3. Baseline Data

Baseline environment of the site has been studied through site visits, environmental monitoring and through literature review.

Climate

The climate of Gautam Budh Nagar district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. The study area receives high rains. Annual total rainfall is 674.6 mm. Over 89% of the total annual rainfall is received between the months of May to October. The temperature remains similar in all the months with daily mean minimum temperature around 3.6°C and daily mean maximum temperature around 45°C. May-June is the hottest month. The annual mean wind speed is 6 km/hr in Noida district. High wind speeds were observed during pre-monsoon season. Pre-dominant wind direction in the area is W, SW.

Topography & Land Use

The Topography of the project site is flat with no undulations. Project site lies in the urban area of Gautam Budh District of Noida. Land use of the project site is IT-SEZ. Surroundings of the project site are majorly residential and commercial.

Seismicity

As per the 2014 Bureau of Indian Standards (BIS) map, Gautam Budh Nagar falls in Zones IV. The project site lies in seismic zone III which is high damage risk zone.

Soil Quality

Soil quality study has been undertaken at site and nearby 5 locations and it was found that soil has sandy clay texture and is yellowish grey in color and has moderate fertility.

Surface Water Quality

As per the baseline monitoring conducted in Hindon and Yamuna river, it was found that the quality of surface water does-not meet any of the classification listed in CPCB, also it does-not fall in any BDU of CPCB. Hence, the water is not fit for any of the purpose.

Hydro-Geology & Ground water Quality

The thick unconsolidated sediments occur up to the explored depth of 352.0 m in the area. The alluvial deposits occur in Ganga - Yamuna Doab area comprises an aquifer system form good repository of ground water that occur in granular zones constituted of fine to coarse sand and occasional gravel. Most of the area in district shows rise in water levels during post-monsoon season ranging between 0.12-3.69 m. Project alignment lies in Dadri & Bisrakh block of the Gatamn Budh Nagar District and the stage of ground water development are 25.98% & 74.64% respectively and the area are also classified by CGWB in safe category. Soil investigation study has been carried out along the alignment and during the study period, it was found that ground water is encountered at the depth varying from 3.4 to 14.5 m below ground water level. The ground water level may rise up after the monsoon period.

As per ground water quality analysis study all the parameters tested are within the permissible limits as prescribed in IS:10500:2012.

Air Quality

Level of PM10 and PM2.5 was found more than the prescribed limits of NAAQS, 2009 during the baseline study period. The reason attributed for this higher PM10 andPM2.5 level can be various factors including vehicular movement especially due to movement of vehicle and commercialization in Gautam Budh Nagar District.

Level of SO2, NOx and CO is found within the prescribed limits of NAAQS, 2009 during both monitoring period.

Noise Levels

On comparing with the noise limits specified by The Noise Pollution (Regulation & Control) Rules, 2000, the noise levels at all the monitoring locations were found within the permissible limits.

Biological Environment

5 no. of trees are present in Phase I development area, out of which 2 trees will be transplant and 3 will be retained. Permission will be taken from Forest Department prior to transplant. Proposed development area is urban area and there is no wild fauna in the project alignment. Animals observed during the survey are dog, cat, buffalo, cow and donkey. No other fauna was observed during site visit.

Socio-Economic Environment

As per the Census records 2011, Study area faals under 2 district which are Gautam Budh nagar and Faridabad. Gautam Budh Nagar district had population of 1,648,115 according to the 2011 census of India. The district has a population density of 2,442 inhabitants per square kilometer (6,320/sq mi). [3] Its population growth rate over the decade 2001–2011 was 31.75%. Faridabad has a sex ratio of 873 females for every 1000 males, and a literacy rate of 83%. Faridabad district has a population of 1,809,733 according to the 2011 census of India.

Project site and buffer areas has urban setting with developed facilities like electrification, educational institutes, medical facilities etc are available.

10.4. Anticipated Impacts

Impacts which may result due to development of project are analyzed and studied. It is found that project will have significant impact on socio-economic environment, noise level and air quality; moderate impact on water quality, soil quality; and insignificant impact on land-use, ecology, hydrology & traffic during construction phase. However these impacts are temporary and manageable. Measures are proposed which should be taken during construction phase. This can help in management of the impacts and minimize the impact to insignificant.

Similarly impact assessment has been undertaken for operation phase. It is found that project may have significant impact on ground water resources, aesthetics of the area, ecology and socio-economic environment. Impacts on the air quality & traffic density will be moderate and impact on hydrology, surface water quality and noise level will be insignificant during operation phase. Mitigation measures are proposed for management of the anticipated impact for their mitigation and reduction.

10.5. Alternative Analysis

No alternative site has been analyzed for project development as the land is allotted by Noida Authority. Analysis in terms of building material, electrical equipment, wastewater treatment methodology etc., has been done. Options having minimal environmental and financial cost are tried to be selected for development of project.

10.6. Environment Management Plan

Environment management plan has been prepared for the construction and operation phase of the project. Management plan comprises of proposed pollution control measures and best practices proposed to be adopted to minimize the pollution. Management plans are proposed to prevent the negative impacts anticipated due to project development during construction and operation phase.

10.7. Environment Monitoring Plan

A monitoring plan is prepped for post-clearance phase and is given in **Table 10.2** below

Table 10.2 : Environmental Monitoring Plan

S. No.	Type	Locations	Parameters	Period and Frequency
During Construction Phase				
1.	Ambient Air Quality	Four location in and around the project site	SO_2, NO_2, $PM_{2.5}$ & PM_{10}	Half yearly (24 hr average samples)
2.	Stack Monitoring	DG set to be used during construction Phase	SO_2, NO_2, $PM_{2.5}$ & PM_{10}	Half yearly (24 hr average samples)
3.	Portable Water	Drinking water supply	Drinking water parameters as per IS 10500.	Half Yearly
4.	Water Quality Monitoring of construction water	Water being used for construction work	Water parameter as per IS 456	Half Yearly
5.	Groundwater (Portability testing)	Project site	Drinking water parameters as per IS 10500.	Half Yearly
6.	Ambient Noise	Two location in and around the project site	dB (A) levels	Half Yearly (Hourly day and night time L_{eq} levels).
7.	Soil quality	Project site	Organic matter, C.H., N, Alkalinity, Acidity, heavy metals and trace metal, Alkalinity, Acidity.	Half Yearly
During Operation Phase				
10.	Ambient Air	Four location in	SO_2, NO_2, $PM_{2.5}$	Half yearly (24 hr

	Quality	and around the project site	& PM_{10}	average samples)
11.	Stack Monitoring	DG set to be used during Operation Phase	SO_2, NO_2, $PM_{2.5}$ & PM_{10}	Half yearly (24 hr average samples)
12.	Portable Water	Drinking water supply	Drinking water parameters as per IS 10500.	Half Yearly
13.	Sewage	Inlet of STP	BOD, COD, TSS, pH, Oil & Grease, MPN, coliform count, etc.	Monthly
14.	Treated water	Outlet of STP	BOD, COD, TSS, pH, Oil & Grease, MPN, coliform count, etc.	Monthly
15.	Ambient Noise	Two location in and around the project site	dB (A) levels	Half Yearly (Hourly day and night time L_{eq} levels).
16.	DG set monitoring	Inside and outside of DG set Enclosure	dB (A) levels	Half Yearly (Hourly day and night time L_{eq} levels).
17.	Soil quality	Project site	Organic matter, C.H., N, Alkalinity, Acidity, heavy metals and trace metal, Alkalinity, Acidity.	Half Yearly
18.	Waste Characterization	Commercial	Physical and Chemical composition	Daily

10.8. Environment Management Budget

Environment management has been taken as major component while project planning. Budget has been allocated for environment management activities to be undertaken during construction and operation phase of project and is given in **Table 10.3 & 10.4**.

Table 10.3 : EMP Budget for Construction Phase

S. No.	Activity	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)

1.	Health & safety of Workers (PPE, safety officers etc)	30.0	10.0
2.	Environmental Monitoring	3.0	6.0
3.	Toilets	20.0	2.0
4.	Sedimentation tanks, silt trap, storm water collection	15.0	3.0
5.	Covered sheds for storage of material and silos	10.0	2.0
Total		**78.0**	**23.0**

Table 10.4 : EMP Budget for Operation Phase

S. No.	Activity	Capacity/ Area/Nos./parameters	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)
1.	STP and sewerage network	600 KLD	90.0	5.0
2.	Landscaping & planting trees	40,747 sq m and 1650 trees	3300.0	20.0
3.	Solid waste Management	2957 kg-MSW	35.0	6.0
4.	RWH System	32 no. of RWH pits	132.0	10
5.	Environmental Monitoring	Twice in year	0	3
	Total Cost		**3357**	**44**