Preparation of the Database for the DSS Modules:

A. Population Estimation Module (1981 – 2011):

SN	Data	Unit	Used for	Source	Remark
1.	Crude Birth Rate	State Natural Divisions	Demographic Method, Scenario-based method	SRS, Census of India	Done
2.	Crude Death Rate	State Natural Divisions	Demographic Method, Scenario-based method	SRS, Census of India	Done
3.	Annual Emigration	Village (Optional) District (Compulsory)	Demographic Method, Scenario-based method		
4.	Annual Immigration	Village (Optional) District (Compulsory)	Demographic Method, Scenario-based method		
5.	Total Population	Village	Time Series Method	SRS, Census of India	Done
6.	Age-Specific Fertility Rates/ Mortality Rates/ Migration Rates	State	Cohort Component Method	SRS, Census of India	
7.	Sex Ratio in %	State	Cohort Component Method	SRS, Census of India	

DRAFT

B. Water Demand Module:

SN	Data	Unit	Used for	Source	Remark
1.	Total Population	Village	Domestic Water Demand	Census of India	Done
2.	Floating Population	District: Rural / Urban	Floating Population Water Demand	Census of India	Done
3.	Population of the Region at Intermediate Stage (15 Years from now)	Village / Town	Fire Fighting Water Demand	Census of India	Done

C. Sewage Load Estimation Module:

SN	Data	Unit	Used for	Source	Remark
1.	Total Water Supply in MLD	Village/Town	Water Balance based Sewage Estimation	District Development Authority	

D. STP Site Priority and Suitability Module:

D1. STP Site Priority Sub-module:

SN	Data	Unit	Used for	Source	Remark
1.	Sewage Gap	District	Sewage load analysis	JJM, UP Government	Done
2.	Water quality index	VRB	Current status of water quality	CGWB / Manual Testing	Done
3.	Mean Temperature	District	Enhance the efficiency of microbial activity	NASA	Done
4.	Mean Rainfall	District	Identify more flood prone regions, and suitable water flow	IMD	Done
5.	GDDP at Current Price	District	Economic Significance	Directorate of Economics and Statistics, UP	Done

DRAFT

6.	Number of Tourists	Village (Optional) Ward /District (Compulsory)	Cultural Significance		
7.	Number of ASI Sites	Village (Optional) Ward /District (Compulsory)		ASI Website	Done

D2. STP Site Suitability Sub-module:

SN	Data	Source	Used for	Remark
Required Conditioning Factors				
1.	Lithology	Bhookosh	For securing the feasibility and sustainability of STP construction and operation.	Done
2.	Geomorphology	Bhookosh	For the effective planning and sustainable operation of STP.	Done
3.	Soil Texture	Soil Grids	For stability of STP structures and preventing contamination of groundwater sources.	Done
4.	Soil Type	FAO / NBSS	For support the loads imposed by an STP.	Done
5.	Distance from built-up land	LULC	For reducing the odors, noise from machinery, and emissions, which can affect the quality of life for nearby resident	Done
6.	Distance from road	Road Layer	To facilitate construction, operation, and maintenance	Done
7.	LULC	ESRI Sentinel	It impacts the feasibility, accessibility, and environmental compliance of the STP differently with each LULC classes.	Done
8.	Elevation	SRTM DEM	It directly influences operational efficiency, flood risk, and environmental impact.	Done
9.	Slope	Elevation Layer		Done
10.	Population Density	Census Data (Village Level)	To minimize environmental and public health impacts.	Done
11.	Literacy	Census Data (Village Level)	Public understanding and acceptance of Sewage Treatment Plants (STPs)	Done
12.	Drains	Manual Digitization	To identify the pollution load injection in the river.	Done
Required Natural Constraints Factors				

DRAFT

1.	Water Body	From LULC	Existing water bodies should be kept away from such treatment plants.	Done
2.	Slope	From Elevation Layer	Higher slopes are risky for the development of such infrastructure.	Done
3.	Soil Texture	Soil Grids	Treatment plant couldn't be developed on weak soil texture.	Done
4.	Flood Prone Area	India WRIS Data	According to the CPHEEO manual, such plants must be above the flood level.	
5.	Groundwater Depth	India WRIS Data	Reduce the risk of treated or untreated effluent percolating into the water table.	Done
6.	Wetland	Manual Digitized Data	These are ecologically sensitive areas, providing habitat for diverse flora and fauna, including endangered species.	Done
7.	Forest	Manual Digitization / LULC	Prevents deforestation and minimizes the ecological footprint of the STP project. Protects ecosystems, wildlife habitats, and natural corridors.	
Required Anthropogenic Constraints Factors				
1.	Road	Diva GIS / GitHub	Ensures that construction materials and machinery can be transported efficiently to the site.	Done
2.	Railway	Diva GIS / GitHub	Ensures the operational stability of the STP without interference from rail activity. Complies with regulatory buffer zones to avoid construction in restricted areas.	Done
3.	Airport	Manual Digitization	Prevents violations of aviation safety regulations and building height restrictions.	Done
4.	Built-up area	LULC	To ensure that STP is not situated in densely populated area ,avoid complaints due to odour and operational noise , minimize the risk of untreated wastewater in populated area.	Done
5.	ASI Sites	Report / Manual Digitization	Complies with ASI regulations that prohibit construction and development	Done

DRAFT

			within specific buffer zones around protected sites.	
6.	Defense Area	Report / Manual Digitization	Avoids potential risks to national security due to proximity to critical defense infrastructure.	Done
7.	Existing STPs	Report / Manual Digitization	Enables better planning of wastewate collection networks by aligning with existing infrastructure.	Done
8.	Proposed STPs	Report / Manual Digitization	Avoids redundancy by ensuring the new STP is not located too close to planned facilities.	Done

DRAFT