PROJECT PREFEASIBILITY

SIPCOT AEROSPACE PARK

(Exclusively for accommodating Aerospace, allied industries & other engineering industries which does not fall under A or B category)

Vallam 'A' Village
Sriperumbudur Taluk
Kancheepuram District

State Industries Promotion Corporation of Tamilnadu Limited
19/A, Rukmani Lakshmipathy Road,
Egmore, Chennai – 600 008.

PROJECT PRE FEASIBILITY

SIPCOT AEROSPACE PARK

STATE INDUSTRIES PROMOTION CORPORATION OF TAMILNADU LIMITED

CHENNAI

EIA CONSULTANTS

CENTRE FOR ENVIRONMENT, HEALTH & SAFETY
ANNAMALAI UNIVERSITY

ITCOT CONSULTANCY AND SERVICES LIMITED
CHENNAI-600 006

I. EXECUTIVE SUMMARY

State Industries Promotion Corporation of Tamilnadu Limited (SIPCOT) was established in the year 1971 specifically for the growth of industries in Tamilnadu. The objective of SIPCOT is to establish, develop, maintain and manage industrial complexes, parks and growth centres at various places across the State of Tamil Nadu.

SIPCOT has so far developed 20 Industrial Complexes in 12 districts and Seven Sector Specific Special Economic Zones (SEZs) across Tamil Nadu. SIPCOT is also a Nodal Agency for Government of Tamil Nadu to sanction / disbursement of Structured Package of Financial Assistance to large industrial units.

SIPCOT's role in assisting the industrialization in the State is not only quantitative but also qualitative. Instead of just accelerating the pace of industrial growth in already developed and densely populated areas, SIPCOT strives to ensure that disbursal of financial incentives result in growth of industries in backward and hitherto under developed areas.

Aerospace and Avionics is a fast growing industrial sector to meet the growing demand for domestic airlines, space crafts and defense sector in India. Global situation is much more demanding to support OEMs of the International players for spare parts manufacturing, avionics repair workshops, logistic centres for training besides alliances for components and sub assemblies. Considering the demand for industrial land to promote this specified class of high tech industrial sector in the vicinity of Chennai, SIPCOT proposes to develop an industrial park in the revenue limits of Vallam 'A' village in Sriperumpudur Taluk, Kancheepuram district. This SIPCOT Aerospace Park is proposed with a view to develop Engineering & allied industries towards manufacturing, repair and maintenance of Aerospace components. The Park will also house R&D centres for testing and certification for materials and instruments for aerospace engineering.

This proposal of exclusive Park for Aerospace Industries will ensure a strong value chain for aerospace components and enhance it as a hub for aerospace sector with the advantage R&D Centres and MRO facilities and more specifically, Chennai by 40 Km.

The poor soil characteristics and water scarcity coupled with non availability of labour, have slowly but steadily discouraged agriculture in the proposed project area. Further,

the peoples of this area have largely turned out to be industrial work force with three more IPs in the same district.

The proposed park is envisaged to accommodate Aerospace, allied industries & other engineering industries which does not fall under A or B category as categorized by EIA notification, 2006 and amendments thereof.

The location of the park is falling under the revenue limits of Vallam 'A' village, which is in the Sriperumpudur Taluk, Kancheepuram district. The park will be established without causing any environmental impact and with the active support and involvement of local population. The proposed park would therefore result in better utilization of land resources and manpower.

The park will be developed with road, water, and ancillary infrastructure as per international standards to enable the member industries to score with the International Standards required for Aerospace Components. SIPCOT will provide new link roads, in addition to existing ones. The new roads will be made as 4/ 2 lane with or without central divider depending on the need. SIPCOT will get internal roads to cover the spreading of member industries in 244.53 acres (99 Ha) of the proposed location. Service lanes will be provided in parallel to main roads to enable quick and careful traffic.

The lands will be allotted to potential industries based on the comprehensive assessment of their application in terms of investment, technology, employment, etc.

The water to the tune of 0.25 MGD will be made available through Chennai Metro Water supply systems (Chembarambakkam Lake)/ TTRO water. Industries will be mandated to have "Zero Discharge" for establishing the respective industries.

The member industries will be mandated to have Emission cleaning systems in all their Stacks. Necessary Effluent Treatment Plants will e provided to ensure safe disposal of their hazardous and non-hazardous solid wastes.

SIPCOT will have green curtain in the peripheral areas and along the roadside. SIPCOT will immediately adhere to the standards for developing green belt.

II. INTRODUCTION

The proposed Aerospace Park is developed with a view to accommodate Aerospace, allied industries & other engineering industries. The Park will house Industries with activities such as Maintenance, Repair & Overhaul (MRO), Testing and R&D activities related to Aerospace manufacturing and other engineering industries. These activities do not require EC, however would be requiring Consent from Tamilnadu Pollution Control Board (TNPCB) under categories viz. red, ultra red, orange or green.

2.1 PROJECT

The proposed Park is named as SIPCOT AEROSPACE PARK, in the name of the principle classification of member industries.

The total land area of the Park would be 244.53 acres (99 Ha) of lands falling in the revenue limits of Vallam 'A' village in Sriperumpudur Taluk, Kancheepuram District.

SIPCOT has already obtained administrative approval from Government of Tamilnadu to an extent of 720.71 hectares to set up Industrial Park. A copy of the Administration sanction is attached as Annexure-I. An extent of 244.53 acres is carved out from the lands for which administrative approval is obtained, to setup the Aerospace Park.

SIPCOT will develop the physical infrastructure such as road, water, and other amenities and allot the developed plots to the potential aerospace industries based on the comprehensive assessment of Investment, technology, employment, expert, compliance to environmental regulations, etc.,

The allotters will be allowed to establish and operate the industries only after compliance of mandatory regulations. The member Industries will have activities which are unclassified and which does not require EC such as Maintenance, Repair & Overhaul (MRO) and Testing/ R&D activities related to Aerospace manufacturing and other engineering industries.

SIPCOT seeks for EC for screening the project under 8(b)-B1 category as classified in EIA Notification, 2006 and amendments thereof.

2.2 SIPCOT AEROSPACE PARK– THE PROPOSED PROJECT

SIPCOT will ensure the incorporation of "Zero Level Liquid Discharge" concept and deploy the best practices for resource management and pollution control.

2.3 NEED FOR THE PROJECT

The domestic aviation and defense aerospace vehicles have grown unprecedented in India in the last few years. The rapid growth of this industrial sector has attracted global players to India.

Government of India has introduced several incentives to support the national capability in Aerospace and Avionics manufacturing. R&D towards Defense aerospace sector with Design & Testing facilities is another major support sector in the aerospace industry. The demand for industrial space in the vicinity of Chennai is growing steadily due to healthy industrial climate of Tamilnadu. The industrial estates developed by SIPCOT in the vicinity of Chennai Viz. Irungattukottai, Sriperumbudur, Oragadam, Pillaipakkam and Gummidipoondi have been fully allotted and there is a need for augmenting industrial space for attracting new industries as well as expansion of existing industries.

2.4 DEMAND – SUPPLY

The special alloy made aerospace components are in huge demand in India. The commercial aviation has grown tremendously and hence there is big gap between what is available here with the requirement.

MRO sector requires expansion with expanding commercial and industrial aerospace industry. The potential for MRO sector is growing also address the need for defense systems.

These industries which are having varied operations from alloy making through component manufacturing, Maintenance, Repair & Overhaul(MRO) for air craft /Space Craft/Missile, electronic hardware, etc,. Presently, no specific aerospace industries are in the State and such demands are being met from industries across the state border , from distant places like Bombay, Pune, Ahmadabad etc., Such IP/SEZ are under proposal in Bangalore and Hyderabad.

Such requirements if could be sourced locally, the growing air line industries will operate with much better output and product quality. The establishment of such industries in the proposed Park will also bring more employment opportunities.

There is a dire need for Aerospace Component manufacturing and hence SIPCOT is proposing an exclusive amalgamation of Aerospace units in this proposed Park.

2.5 IMPORTS VS INDIGENOUS PRODUCTION

The international aerospace corporate like Boeing, GE Aviation, Eurocopter, Hero Motors, L&T, etc, are importing their minor and major components and instruments for their production. India's major industrial houses like Tata, Mahindra & Mahindra, BEL, etc,. are also in the process of signing MoUs to have units for Aerospace and Avionic Components.

The proposed Park is specifically envisaged for promoting such engineering industries that could possibly produce or fabricate the components and instruments to the specifics and design of varied aerospace components in this zone. The indigenous production of such components will reduce the requirement for import and will bring more employment opportunities.

The special allotment and promotion of Aerospace component manufacturing units in this Park will ensure indigenous production in this key and the growing Industrial sector.

2.6 EXPORT POSSIBILITY

The indigenous production of components and instrument will boost the opportunity to export to all south Asian countries. The proposed Park with engineering units will have all characteristics to become a hub for aerospace component production and MRO business in India to cater the export possibilities in this high-technology sector.

The Aerospace Component manufacturing units will have Export potential in this newly growing field of Aircraft /Spacecraft manufacturing.

Government of India, on the recommendation of Kelkar Committee, opened up the aerospace industry to private sector, with special packages of financial incentives.

Global Aerospace sales are expected to reach USD 2 trillion over the next 20 years. The Asia-Pacific region is deemed to be the fast growing Aerospace regions with fleet size will three times more by 2025. This provides export potential for Aerospace industrial sector of India for Aerospace and Avionic.

2.7 DOMESTIC / EXPORT MARKETS

The proposed Park will enable the member industries to acquire the quality Standards as per the requirement of International Standards. This will ensure them to become alliance partners to major domestic and international OEMs of Aerospace and Avionic sector.

The infrastructure from SIPCOT will enable the member industries for getting quality product with trained manpower, available readily in the project location. The Advantage Chennai is a key factor that will help the member industries in both Domestic and Export market for their products.

Tata, Mahindra&Mahindra, BEL,L&T, etc., are expected to have direct units or will have alliance partners in the proposed Park.

The proximity to other Industrial Estates and better connectivity by air/road/sea/rail will make this possibility as more viable and workable.

2.8 EMPLOYMENT GENERATION

SIPCOT will ensure to keep the point of employment opportunities as prime criteria to allocate developed plots to industrial applicants.

244.53 acres of land could possibly house more member industries that should make huge potential of employment for skilled and unskilled workers.

In the absence of details on member industries, it is difficult to assess the employment generation. However, SIPCOT envision of creating employment opportunities for not less than 5000 peoples of varied qualified and competence, directly in the proposed park Nevertheless, the proposed park will enable atleast 10000 peoples to have some means of employment in directly to support the activities of the member industries.

III. PROJECT DESCRIPTION

The proposed project is an park to promote industries in cluster of varied nature, type and size to cater the requirements of manufacturing, MRO, R&D, Training, Innovation, Design & Testing, etc., of Aerospace and Avionic industrial sector of our country.

Member Industries will have activities which are unclassified and which does not require EC such as Maintenance, Repair & Overhaul (MRO) and Testing/ R&D activities related to Aerospace manufacturing and other engineering industries.

3.1 PROJECT SIZE AND TYPE

The project is a Park with all required infrastructures as developed industrial plots, to house Industries with activities such as Maintenance, Repair & Overhaul (MRO), Testing and R&D activities related to Aerospace manufacturing and other engineering industries. These activities do not require EC, however would be requiring Consent from Tamilnadu Pollution Control Board (TNPCB) under categories viz. red, ultra red, orange or green as long as they are not under their purview of EIA Notification 2006 and amendments thereof, will also be given allotment by SIPCOT.

The development area of the Park is envisaged for more than 50 hectare (99 hectare) and it does not house any industry of Category A or B. Hence, the proposed Park will be requiring Environmental Clearance under 8(b)-B1 Category.

SIPCOT has already obtained administrative approval from Government of Tamilnadu to an extent of 720.71 hectares to set up Industrial Park. A copy of the Administration sanction is attached as Annexure-I. An extent of 244.53 acres is carved out from the lands for which administrative approval is obtained, to setup the Aerospace Park. A Schematic of the Conceptual plan for the proposed Aerospace park is presented in Fig3.1.

SIPCOT will mandate all member industries, before its legitimate land lease agreement, with the following.

→ The industry should provide the Detailed Project Report (DPR) delineating the raw materials, manufacturing/production process, utilities and other infrastructures. The report should commit for pollution control measures in respect of

water/wastewater, air/emission, solid waste and noise in line with respective MoEF Standards and TNPCB Guidelines.

→ The industries should provide details on energy conservation measures, adhering to ECBC 2005.

→ The industries should provide Risk analysis and RMP as per Chemical Accident Rules.

→ The industries should commit for minimum guarantee for providing employment for the peoples in the project impact area.

→ The industries will develop green belt for atleast 33% of the acquired plot area.

→ The industries should provide measures for rain water harvesting structures.

→ The industry should provide the frame work on its Corporate Environmental and Social Responsibilities for resources management and pollution control.

→ The industry should project its independent organizational settings for Environmental Up gradation and monitoring with exclusive annual budgetary allocation.

SIPCOT is reserving its right to cancel the allocation, if the members Industry fail to take Consent to Establishment (CTE) from TNPCB for the specified Industrial Activity within a stipulated time.

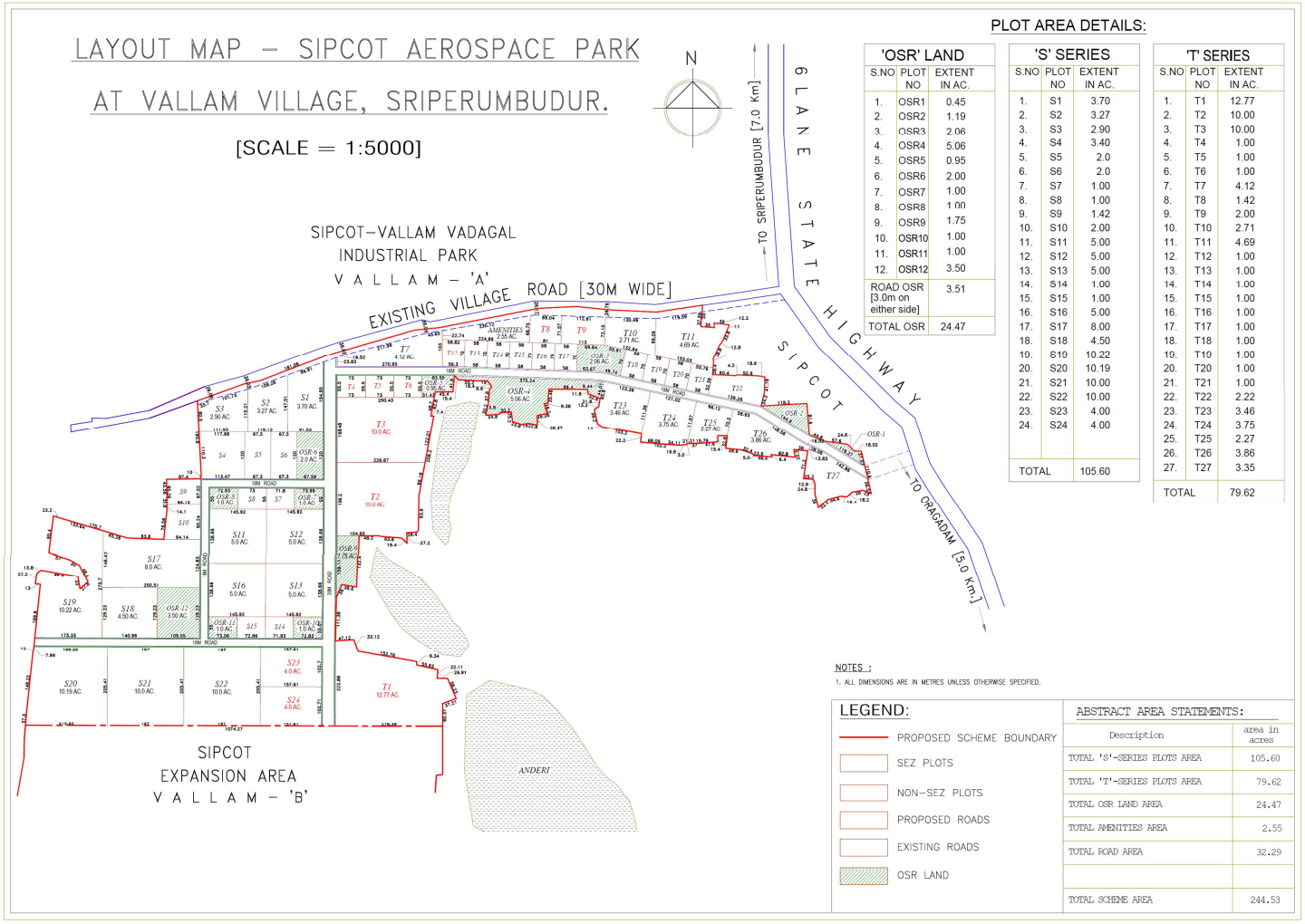

FIG 3.1: CONCEPTUAL LAYOUT OF AEROSPACE PARK

3.2 LOCATION OF THE PROJECT

The project location is in the revenue limit of Vallam 'A' village in the Sriperumpudur Taluk, Kancheepuram District, Tamilnadu.

The location Map of the proposed project is presented in Fig.3.2.

The project location is satellite imagery for 10km radius (Fig.3.3) and 5km radius (Fig.3.4)

The geographical location is Latitude 12^0 55' 2" N to 12^0 52' 23" N and Longitude 79^0 55' 3" E to 79^0 53' 54" E.

The location is largely a plain terrain in its topographical characteristics.

The location is barren land without any notified water courses, river or lake. The lack of dependable water courses, naturally, keeps the area away from intensive agricultural activities.

The location is essentially get surrounded by many industries in the recent part. The Oragadam industrial estate is just 5 km in the East and the Sriperumbudur industrial estate in the adjoining border on the South West of the project location. The cross boundary is another upcoming new Industrial Park called, Vallam-Vadagal Industrial Park, meant for only non-polluting, Engineering industries.

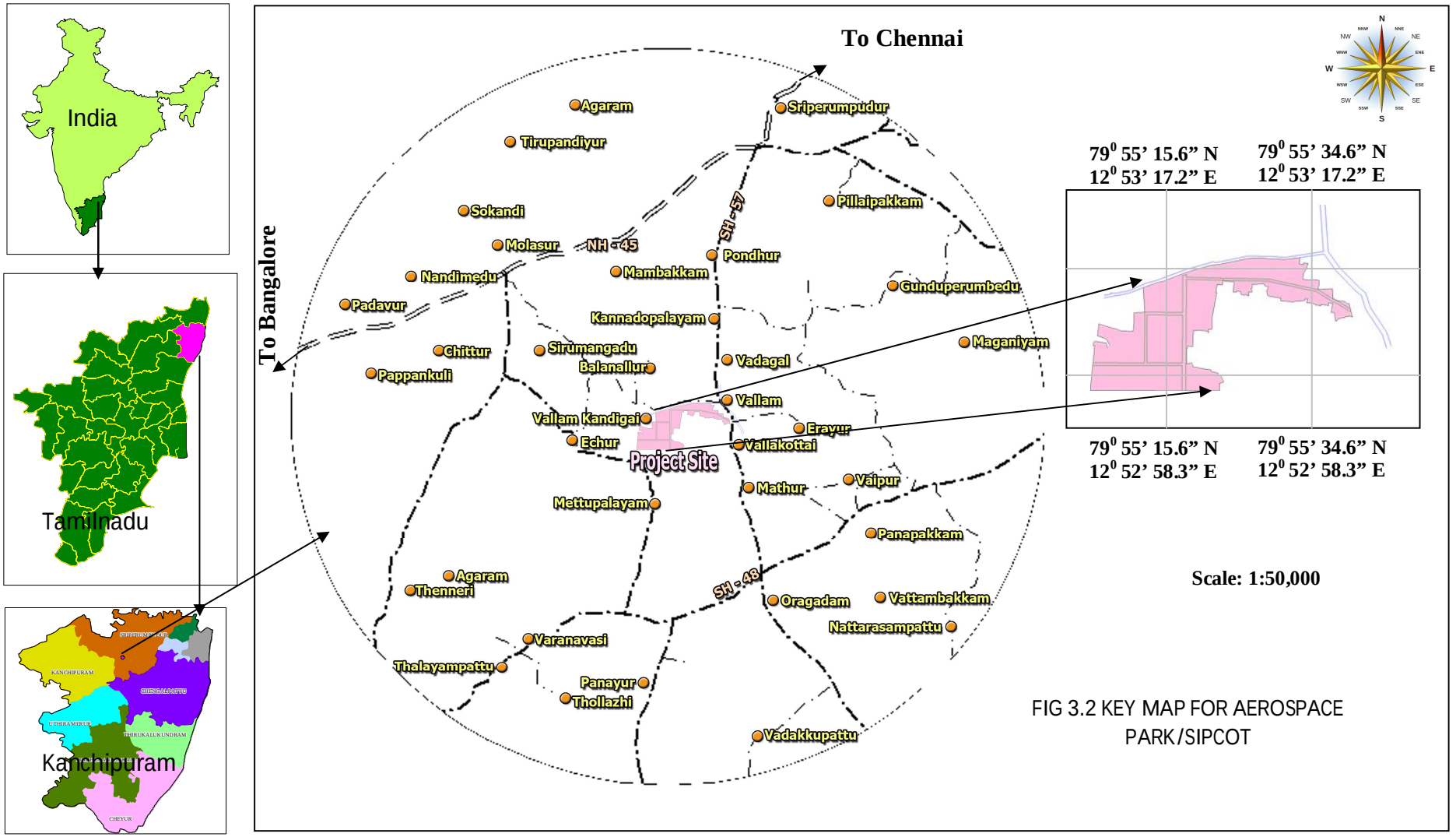

FIG 3.2 KEY MAP FOR AEROSPACE PARK/SIPCOT

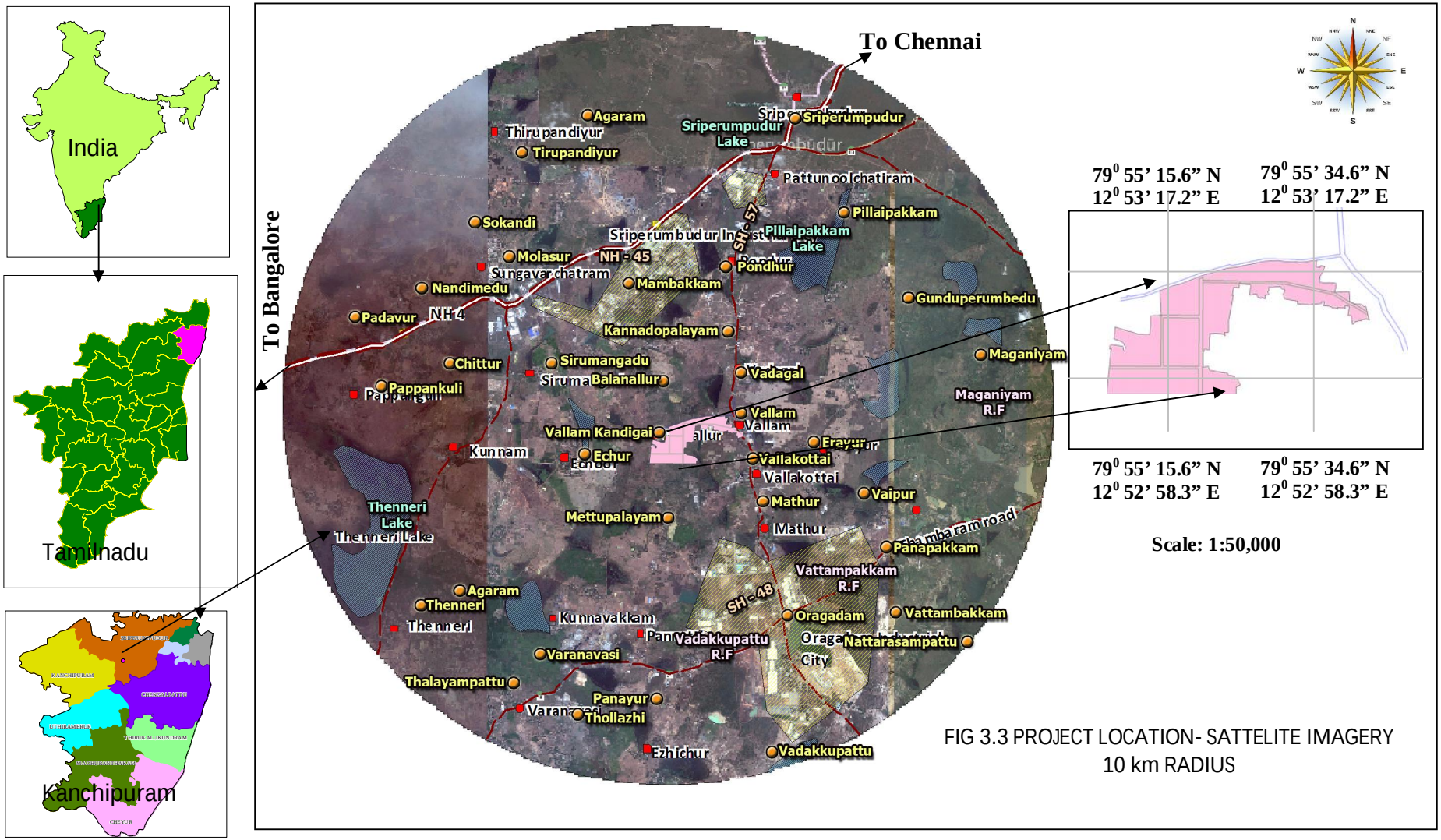

FIG 3.3 PROJECT LOCATION- SATTELITE IMAGERY
10 km RADIUS

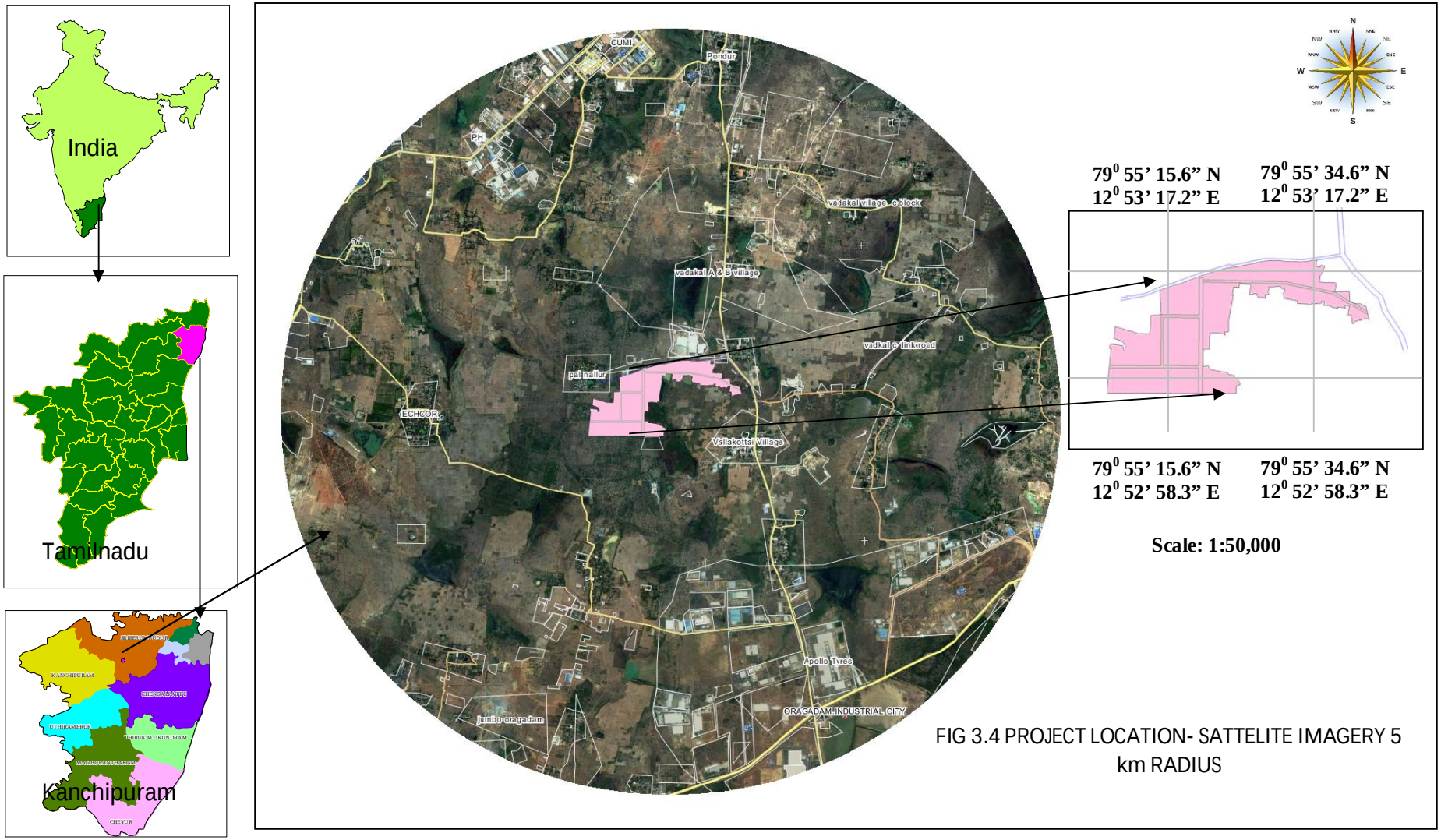

FIG 3.4 PROJECT LOCATION- SATTELITE IMAGERY 5 km RADIUS

3.3 ALTERATIVE SITES

SIPCOT considered alternative sites based on the need for promoting further development of the existing industrial estates viz, Irungattukottai, Pillaipakkam, Oragadam and Sriperumbudur. However, the sites in the eastern side are growing as human settlement and there cannot be any new industrial development in this side.

Industrial growth, preciously, require good connectivity to the urban areas and other facilities like port, airports etc.

The alternative sites considered further west and south of Chennai have favored the selection of the present location.

1. Further North/North East will essentially go into the borders of adjoining IEs.
2. The East is thickly populated and will have problem in establishing further industries.
3. The sites which were considered by SIPCOT are falling under the following districts.
    1. Kancheepuram
    2. Thiruvallur
4. A new SIPCOT Industrial Park in Thiruvallur district over an extent of 1127 acres in Thervoykandigai village has already been developed.
5. The proposed location is in the Sriperumbudur Taluk, Kancheepuram district. The present location is already under development as industrial area and the only location available with advantage of having Chennai at 40 km.
6. This site is adjascent to SIPCOT Vallam-Vadagal Industrial Park, which is coming up with industries that are non-polluting and have only engineering fabrication/manufacturing.

3.4 EXTENT OF THE PARK

The proposed IE is delineated for development in 244.53 acres (99 Ha) of vacant and un habituated area in the Sriperumbudur Taluk. The list of S.F Numbers and extent of each are listed in Annexure-II.

3.5 PROJECT COMPONENTS

The proposed project is Industrial infrastructure to promote industries in cluster, of specified categories of manufacturing/RMO for Aerospace and Avionic, with all basic requirements of notified land, water, power, roads and the like. SIPCOT is committed to ensure sustainable development of specified industries.

Primarily, engineering industries of following categories are proposed for promotion.

- Aerospace Component Manufacturing/Production
- RMO facilities for Avionics
- R&D Laboratory
- Design & Testing Facilities
- All General Engineering

The categories of such industries are proposed as they are not requiring more water for manufacturing and or production processes. The requirement of water is only 0.25MGD which will be made available through a centralized common water supply facility, operated and maintained by SIPCOT.

SIPCOT will mandate all member industries to treat their wastewater and reuse it by recycling in the avenues of utilities like boiler, domestic conveniences and green belt development.

SIPCOT will develop industrial plots for the required size to suit the industrial activities and will facilitate power supply from TNEB grid.

SIPCOT will provide main roads with 6.5m x 2 width with a central meridian to have greenery.

The allotters' will be advised to have service roads along the main roads to have their independent traffic management and for temporal stop over arrangements for their vehicles.

The industries will be mandated to have 33% of their allotted land area to have green belt and shall be promoted along the four borders of the plot area.

The allotment will be made to any industry after securitizing the respective process flow diagram, material balance, Environmental Management Plan and action plan for establishing the industrial unit in a time bound manner.

The member industries will be advised to take No objection Certificate (NoC) from Tamilnadu Pollution Central Board as pre requisite, if needed. The Consent to Establish from TNPCB will be mandatory to extend permanent service lines for water, power, etc,.

3.6 MATERIAL BALANCE

SIPCOT will remain only as infrastructure provider and the member industries will have the material balance in order.

These Aerospace and Avionic industries are high tech and with more precious engineering and materials involved and hence Material Balance of each operation will be data logged in process specific software on inventory. The ecologically sound management of resources and environmentally intelligent products will be advised for all proposed industries.

Annual review on their Environmental Compliance and Corporate Responsibility will be carried out, in consultation with Tamilnadu Pollution Control Board.

3.7 RESOURCE OPTIMIZATION

The materials are most precious and component-specific in Avionics and in defense requirements/applications and hence the resource application is very stringent. The components for space research are still more specific and they will be optimized by internal software on resource optimization to ensure the wastage is nil or the least. The raw material for any industrial requirement shall be mandated with the respective member industry for proper utilization.

The locally resourced raw materials which are environmentally sustainable will be given priority among the available options. The CAD based operations will ensure resource optimization in manufacturing and as well in RMO facilities. The continuous

R&D and training to Engineers and workers will provide the protocols for optimization of materials.

Reduce, Reuse and Recycle (3R) principle will be advised for adherence by the member industries. The Concept of Zero Waste will be advised for adoption by member industries.

Resource Conservation and Recycle will be made as basis for Environmental Policy for all member industries and asked to submit annual plan for Environmental Management by the respective Industries.

3.8 (A) WATER

Water will be supplied by SIPCOT to all member industries.

It is assessed that 0.25 MGD will be the requirement and it will be made available from the approved withdrawal for SIPCOT from Chembarambakkam Lake/TTRO water. No member industry will be allowed to have any bore well on their own in the allotted promises for their process and industrial needs.

(B) POWER

Power requirement is assessed for around 10 MW and SIPCOT will facilitate power supply from TNEB grid.

3.9 WASTE TREATMENT & DISPOSAL

Zero Waste initiatives will be mandated for all member industries in their Corporate Responsibility of Environmental Protection (CREP).

Any residual liquid waste shall be treated to have zero disposals. The entire treated effluent shall be reused in their utilities and green belt development.

The solid waste stream will be sent to CPCB approved recyclers or to MoEF approved TSDF for proper and ultimate disposal.

3.10 PROJECT FEASIBILITY

The domestic-commercial Aviation has grown in our country and will likely to grow multi-fold in the next few years which require the domestic capability for aerospace components and avionic RMO facilities.

The international Aerospace and Avionic corporate like Boeing, GE Aviation, Eurocopter, Hero Motors, L&T, etc, and India's major industrial houses like Tata, Mahindra & Mahindra, BEL, etc,. are also in the process of establishing Aerospace industries in India with the recommendations of Kelker Committee which recommended to Government of India to allow Private investments in defense Sector of India.

The Park is proposed on this demand for component manufacturing for Aerospace and Avionic industries.

The Environmental Cost Benefit will be elaborately assessed on assessing the activities of the applicant industries before respective allotment of land by SIPCOT.

IV. SITE ANALYSIS

4.1 CONNECTIVITY

The Proposed site is well connected by roads. The site is located on the Sriperumbudur-Oragadam State Highways Road. It is lying on the right side towards Oragadam adjacent to Vallakottai Murugan temple. The site is about 40 Km from Chennai.

- Nearest Airport: Chennai - 40 Kms
- Nearest Railway Station: Chennai Central - 60 Kms
- Nearest Seaport: Chennai – 65 Kms

The connectivity of the sites with all required facilities is the major advantage for the present site for the proposed Park.

4.2 LAND SURVEY

The proposed land of 244.53 acres(99 Ha) is plain terrain with no notified forest or water courses.

The land is predominantly barren with industrial development. The use of land under agriculture is fast becoming lesser and the absence of irrigation systems is making any sustained agriculture as not feasible.

The proposed land is approved by government of Tamilnadu for the development of the proposed industrial estate.

The Contour and Topo Map is under preparation and will be evaluated in the Environmental Impact Assessment studies.

4.3 TOPOGRAPHY

The topography of the project site is presented in Fig 4.1, using Map info with the Maps of Survey of India.

4.4 LAND USE PATTERN

The land is not under the purview of CRZ notification as coastal line is 40 km east from the project site.

There is no notified forest in the project location and as well in the impact area of 5 km radius from the project location.

Anna National park and Zoo is available 20 km from the project site and far away from any probable impact from the industrial activities in the proposed Park.

No notified river or water body is available in the project impact area. However, there are 4 numbers of small ponds /lakes that are largely dry in most of the years as there is no dedicated Catchment area and feed channels. All existing water courses as lake and Ponds are directly rain-fed without any feed and exit channels.

The Hydro geological Map of the Project location is under preparation and will be evaluated in the Environmental Impact Assessment studies.

The proposed Aerospace Park is approved by government of Tamilnadu and a copy of the Notification is presented as Annexure-I.

4.5 EXISTING INFRASTRUCTURES

The proposed location is already having three notified industrial Estates in the project impact area.

The Sriperumbudur industrial park, which having more than 30 major industries is just on the south west boundary.

The Oragadam industrial park, which having more than 25 number of industries, is available at 5 km from the project location.

The adjoin Vallam Vadagal IP is new and just have started with non-polluting, engineering industries is cross border with the proposed Aerospace Park.

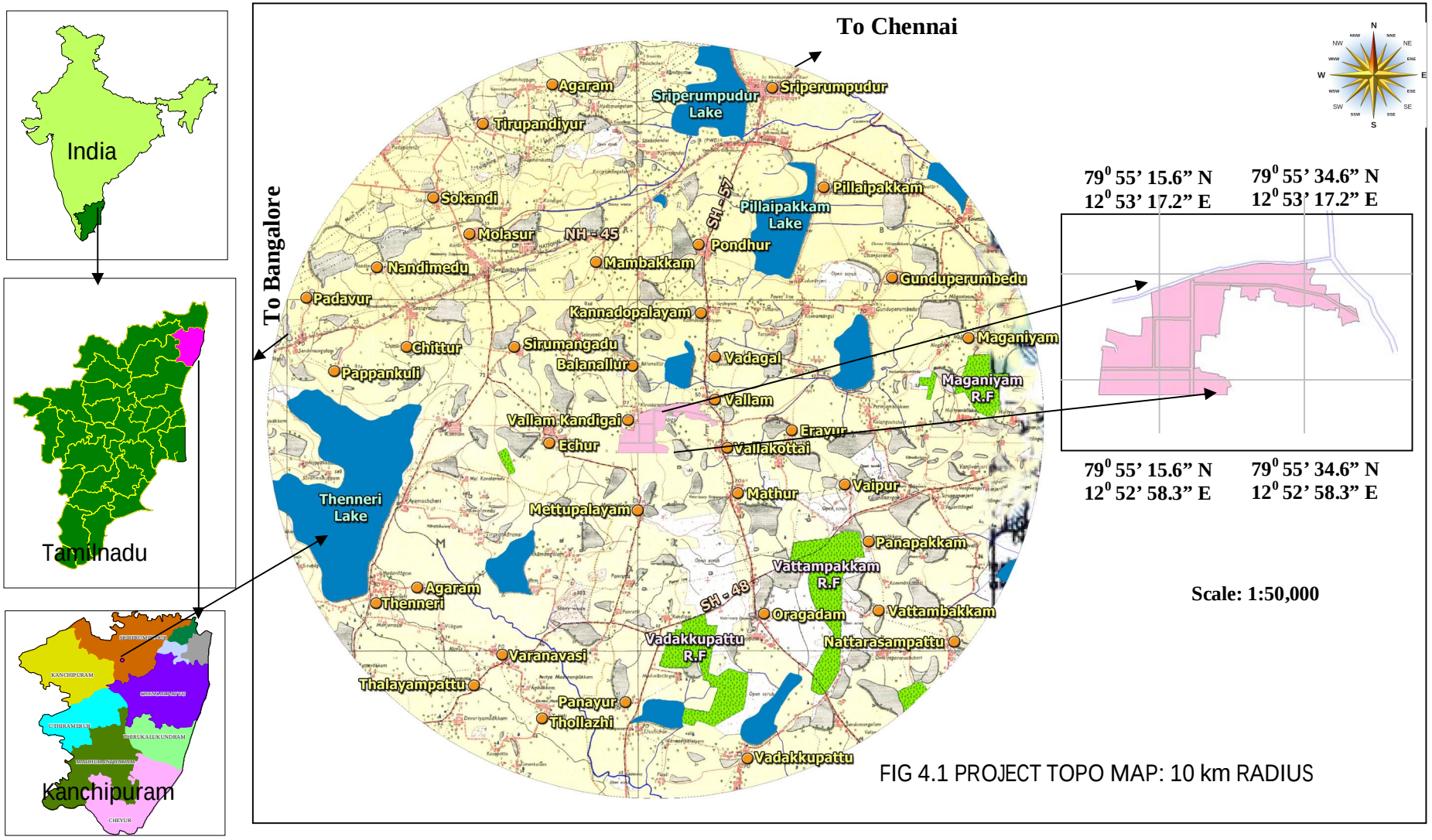

FIG 4.1 PROJECT TOPO MAP: 10 km RADIUS

4.6 SOIL CLASSIFICATION

The soil is investigated, on a preliminary site assessment study, as clayey. The general proximate details of the soil are listed hereunder:

Characteristics	*Parameters*
Type of soil (Texture)	Sandy clay loam
Colour	*Dark brown*
pH	6-7.20
Conductivity(micronhos/cm)	210-240
Magnesium (%)	120-145
Nitrogen (%)	1450-1750
Phosphorous (%)	850-950
Potassium, as K++ mg/kg	125-150
Calcium, as Ca++ mg/kg	450-500
Sodium, as Na++ mg/kg	250-450
Sand (%)	65-72
Gravel (%)	7-9
Silt and Clay (%)	12-15
Infiltration (cm/hr)	3.5-4.0
Bulk Density (g/cc)	1.45-1.65

The soil is un- fertile and has low bearing capacity.

4.7 CLIMATE – METEOROLOGY

The project location is arid in its general characteristics.

The predominant wind direction is SE and SW. The average Wind speed is 6.25 m/sec.

The relative fervidity is learnt to vary for 70-78%.

The average actual rainfall reported in the project site is 1210 mm.

4.8 SOCIAL INFRASTRUCTURES

The inhabitant villages 7 numbers that are falling under the project impact area are fairly having the Social Infrastructures, Temples, Markets, Hospitals, etc.,

The Social Frame work of these Villages will be taken for a detailed study in the EIA survey.

V. PLANNING BRIEF

The proposed Aerospace Park by SIPCOT is a well thought out and planned proposal to support the growing Aerospace and Avionic sector of our country. This will also support the requirements of Defense requirements and space research of our country.

5.1 CONCEPTUAL PLANNING

The proposed Aerospace Park is developed with a view to accommodate Aerospace, allied industries & other engineering industries. The Park will house Industries with activities such as Maintenance, Repair & Overhaul (MRO), Testing and R&D activities related to Aerospace manufacturing and other engineering industries, which do not require Environmental Clearance.

SIPCOT is intended to allot lands to other Industries that fall under any category as defined by Tamilnadu Pollution Control Board viz., Ultra Red, Red, Orange and Green.

SIPCOT has already got the proposed land of 244.53 acres (99 Ha), for the specific purpose of promoting the proposed Aerospace Park by Government of Tamilnadu.

The member industries will be mandated to all required statutory approvals like CTE from TNPCB, building approval by local body and if needed, from Country Planning & Development Authority.

SIPCOT will ensure that the member industries will start any activity in the respective allotted lands only after CTE from TNPCB.

5.2 POPULATION PROJECTION

The proposed Park at 244.53 acres will likely to have more than 10 large industries and 20 MSMEs.

The first level assessment is that the alliance industries of Mahindra & Mahindra, Tata, BEL, L&T,etc., it is expected that the industrial workers will be around 5000 in the proposed Aerospace Park.

SIPCOT will ensure the hygiene and occupational safety of the workers, in coordination with independent industries and also with association of member industries.

Occupational Health & Safety will be monitored with a common monitoring Health Surveillance System and it will be established with the involvement and support of all member industries.

Special incentive coverage for health and life like ESI, insurance, etc., will be mandated for all member industries so that the workers population in the proposed EI will be safe and risk-free in their work environment.

5.3 LAND USE PLANNING

The entire plot of 244.53 acres will be divided into Plots of desired numbers based on the final list of member units and their requirement and also on the basis of required area for common facilities provided by SIPCOT.

185.22 acres will be allotted for member industries. The number of industries will be decided on a later date after the due approvals were obtained.

The proposed land utilization pattern is given below:

Description	%	acres
Industrial Plots	76	185.22
Roads	13	32.29
Amenities Area	1	2.55
OSR	10	24.47
	100	244.53

5.4 INFRASTRUCTURE DEMAND

The demand of infrastructure is assumed for the responsibility SIPCOT, in the following requirements.

- Industrial plots (desired but varied sizes)
- Roads/Service roads
- Electrical Grid
- Telecommunication
- Water source, storage & supply
- Drainage & Sewage treatment plant

SIPCOT is also committed to provide certain other social infrastructure for generate goodwill among the workers and the population in the project impact area of 5 km radius, around the project site.

5.5 AMENITIES / FACILITIES

SIPCOT will provide the following common facilities for the sustainable operation of all member units.

- Water storage & supply
- Roads
- EB grid
- Sewage treatment plant
- Rain Water Harvesting Structures

- Green Belt in the Peripheral areas and o the road side and Central meridian
- Fire Station
- Common Medical Dispensary

The following Organizational Set Ups will also be established by SIPCOT and continuously be run and monitored with the Association of Member Industries:

- ✓ Environmental Cell
- ✓ Emergency Management Cell
- ✓ Common Health Surveillance System

SIPCOT will also continue to commit to continue its coordination with TamilNadu Pollution Control Board, District Health Department and District Administration for issues pertaining to overall Environmental Management and Sustainable Development of the Project location.

VI. INFRASTRUCTURE

6.1 INDUSTRIAL AREA

The entire 244.53 acres of land will be divided suitably, according to the final assessment on the need of the applicant industries, as industrial plots.

The industrial plots may vary in size. The conceptual Layout is presented in Annexure-III. They will be provided with direct access from the main road. On the basis of the need, in the case of large industries, service roads for suitable size and length adjoining the border of the respective industrial plot will be developed and maintained by SIPCOT.

6.2 RESIDENTIAL AREA

The proposed IE will not have any exclusive residential area.

6.3 GREEN BELT DEVELOPMENT

The entire periphery of the park will be provided with green belt for 20m width, all along.

SIPCOT will provide greenery with suitable tree and plantation along the sides of the roads and in the meridian of the roads.

SIPCOT will mandate all member industries to allocate 33% as open area and develop green cover in it.

6.4 SOCIAL INFRASTRUCTURE

Temple, Recreation club and play yard will be developed by SIPCOT for the use of workers.

Association of Member Industries will be encouraged by SIPCOT for continual upkeep of such facilities for the benefit of workforce and their dependents.

6.5 CONNECTIVITY

The proposed Park will be connected by main roads with state and National Highways.

A railway station that can help the member industries for goods transport is available at Chennai, at 45 km from the project location.

An elaborate Traffic and road plan will be developed for the use of member Industries and implemented by SIPCOT.

6.6 WATER MANAGEMENT

The water requirement for the entire activities of the member industries in the proposed Park is assessed for 0.25 MGD. Rather, the member industries will be chosen on the basis of water requirement and allotment will be made, with the limitation of water supply.

DRINKING WATER

Water will be purified to adhere BIS 10500 and separate supply lines will be made available from the common system of SIPCOT.

The systems towards source development, treatment, storage and distribution network of water supply for all member industries, for both industrial and drinking requirements, shall be operated and maintained by SIPCOT.

Member industries shall pay, separately on annual basis and on the basis of consumption rate, to SIPCOT for proper operation & maintenance.

Member industries will also pay TNPCB, the chess fee under different categories of water use, as per Water Act 1974.

6.7 SEWERAGE SYSTEM

SIPCOT will lay storm water drainage as open concrete channels, all along the roads for ensuring proper collection of storm water and the same be used for charging the rain water harvesting structures.

Managing the sewage from conveniences of workers shall be independent responsibility of the respective industries.

However, SIPCOT will operate a septic tank with soak pit for managing sewage from conveniences of office premises and security establishments.

6.8 INDUSTRIAL WASTE MANAGEMENT

"Zero Waste Objectives" will be mandated to all member industries as precondition for land allotment.

The liquid waste must be fully managed for no disposal condition and the solid waste be managed as resource recovery and any residues shall be sent to MoEF/TNPCB approved TSDF.

Effluent Management

Member industries will be mandated to submit a "Zero Disposal" Scheme on a detailed effluent management plan.

The effluent must be collected, treated, and reused by recycling. Any residues out off solids-separation (sludge) will be disposed off through approved TSDF.

The member industries shall submit a appraisal report on effluent management by any MoEF approved Environmental organization. This will remain a pre-requite document for applying for land allotment by SIPCOT.

SIPCOT will initiate a joint monitoring preparation of "Zero Waste" from all member industries through a Joint Action Committee of SIPCOT and member industries.

6.9 SOLID WASTE

The hazardous solid waste stream shall not be given treatment by member industries.

The member industries will be instructed to take authorization for storage of hazardous solid waste, if any, from TNPCB. The storage shall be as per the respective guidelines by TNPCB.

All member industries, with due approved from TNPCB, shall transport their solid waste to TSDF for ultimate treatment and disposal.

6.10 POWER

Power requirement is assessed for around 10 MW and SIPCOT will facilitate power supply from TNEB grid.

VII. REHABILITATION AND RESETTLEMENT (R & R) PLAN

The proposed location does not require any evacuation.

Hence, there is no requirement for any exclusive RR plan. During EIA studies and Socio Economic survey, the need for RR Plan will be ascertained. If required, SIPCOT will draw a detailed R&R Plan.

VIII. PROJECT SCHEDULE & COST ESTIMATES

The time schedule of project execution, of land development and getting the IE commissioned, is proposed for 2 years.

The budgetary estimate of the project is assessed for Rs.100 Crores.

IX. ANALYSIS OF PROPOSAL

A conceptual SWAT analysis was made on the proposed IE project. A detailed SWAT analysis will be made as part of EIA and SIA studies.

A detailed Environmental Cost Benefit Analysis will be carried out during EIA studies and documentation.

X. CORPORATE RESPONSIBILITY PLAN

Social Responsibility of member industries will be stressed among them and in line with guidelines of MoEF and CPCB exclusive Plans will be drawn from each one of the Industry and its implementation with Annual Budgetary provision will be monitored. SIPCOT will

coordinate with District Administration for necessary coordination for implementation of National and State programs for Social development.

SIPCOT with the help of Association of member industries will run a periodical Health Camps in the surrounding areas, in coordination with the Collectorate of the District.

SIPCOT will develop an exclusive plan to ensure proper environmental management of the Park with monitoring programs for the listed pollutant concentrations in air, water, soil and noise, in the ambient environment of the assessed project impact area of 10Km radius of the location.

Special Programs and Implementation systems will be stressed with each member industry for Occupational Health and Safety.

Common Initiatives like Off - Site and On-site Emergency Management Plans will be in place with the support of Local Bodies and Community groups of the surrounding areas for 10Km radius. The stockholders of Park will be involved in the program of management and monitoring based on their activities.

Disaster Management Bodies and Crisis Groups at District and State level will be connected for plans and actions with the administration of SIPCOT.

The common facilities like Water, Power, Roads, Storm water lines and the like will be fully managed by SIPCOT.

The environmental monitoring of the member industries will be jointly carried out with respective industries, PCB and a coordinator from SIPCOT.

A detailed, Comprehensive Plan of Social and Environmental Responsibility will be framed while EIA studies and documentation.