

**ACTION PLAN FOR CONTROL OF AIR POLLUTION WITH
RESPECT TO PM₁₀ IN NON-ATTAINMENT CITY- TRICHY IN
TAMIL NADU (REVISED)**



By



**Tamil Nadu Pollution Control Board,
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1. Profile of the City – Trichy U.A.

Trichy is the fourth largest municipal corporation and the fourth largest urban agglomeration in the state of Tamil Nadu. The city is located at latitude 10°48'18"N and longitude 78°41'08"E and situated in the Cauvery river basin. The topography of the city is flat except for the river Cauvery running WNW-SSE through the city. Fig 1 shows the study area map of Trichy city. The administration of the city Municipal Corporation is carried out according to the Tiruchirappalli city Municipal Corporation Act 1994. The city (metro) covers an area of 167.23sq.m and is subdivided into 4 Administrative Zones (Ariyamangalam, K.Abishekapuram, Ponmalai and Srirangam) and 65 Wards for effective administration. Trichy is city is proposed to expand an area of 211 sq.m as Trichy metropolitan area (State planning authority). It lies at an altitude of 78 m above mean sea level (MSL). The city is traversed by the river Cauvery and the river Coleroon, the latter forms the northern boundary of the city. There are few hillocks located within the city; the prominent among them are Golden Rock, Rock Fort, and the one in Thiruverumbur. There are reserve forests along the river Cauvery, located to the west/north-west of the city. Because of the river Cauvery/Coleroon flowing through the city, the northern part of the city is greener than other areas of the city. As per 2011 census, the population of city was 847,387 and it is classified as a large city (source: URDPFI Guidelines, 2014. Ministry of Urban Development). The projected estimate indicates that the population of City Corporation is expected to increase from 847,987 in 2011 to 928,772 in 2021 and 1,015, 212 in 2031.

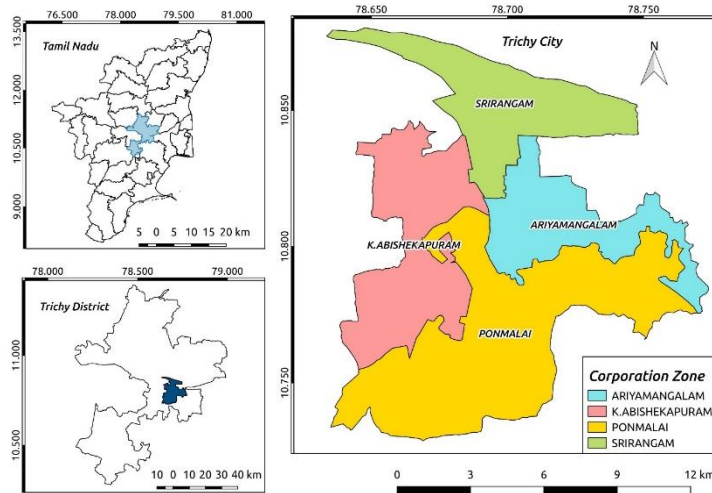


Figure 1 Study Area - Trichy city

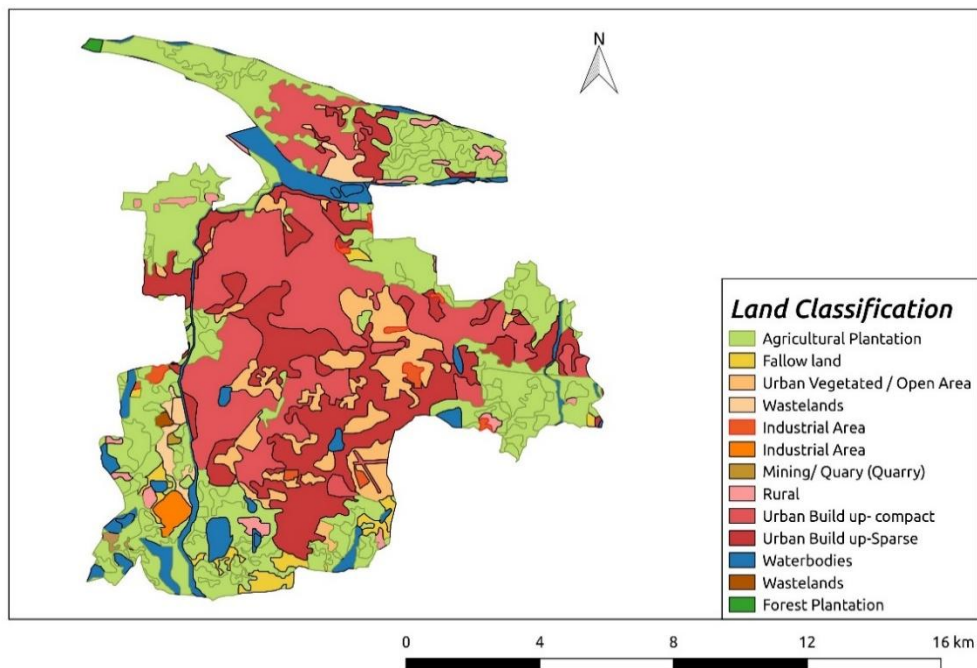


Figure 2 Land Use Land Cover Classification of the city

Source: Tamil Nadu Geographical Information System - TNGIS

Tiruchirappalli district is the centre of Tamil Nadu state. The city is connecting various southern cities. Tiruchirappalli is an important Junction on the Southern Railway and it is also the divisional headquarters of the Southern Railway. It is connected to all the important towns in South India.

Tiruchirappalli has an airport (7km). 94.61 km of Broad-gauge rail transport is available with 18 railway stations in the district for both passenger and goods transportation. As far as road transports nearly, 1400 km of various kinds of roads are laid in the district. Trichy division is proposed to spend Rs 22.87cr and 12.42 lakhs respectively for construction and annual maintenance under Comprehensive Road Infrastructure Development Project (CRIDP). Table 1 lists the Road length details with classification and Comprehensive Road Infrastructure Development Project (CRIDP 2018-2021) proposed for the Trichy city.

Table 1 Road Length Details with Classification for Trichy city

Sl. No	Classification	No	Length in km	CRIDP Proposed Budgetary expenditure in core rupees
1	State Highway	17	15.653	15.6985
2	Major District Road	42	57.77	6.225
3	Other District Road	133	202.24	0.95
4	National Highway	5	44.45	--
	Total	192	320.113	22.87 (except NHAI)

The airport has been modernized to international standards. Indian Airlines connects Tiruchirappalli with Srilanka, UAE, Chennai, Madurai, Singapore, Sharjah, Coimbatore, Bangalore and Thiruvananthapuram. The district has one post office, 481 branch post offices besides 135625 telephone connections. The major source of air pollution in Trichy is road dust, vehicular emission, domestic fuel burning, open waste burning, construction activities, Industrial emissions etc. Fig. 3 shows the road and rail connectivity from Trichy to other area and Fig. 4 shows the ward boundary and zone map of Trichy corporation.

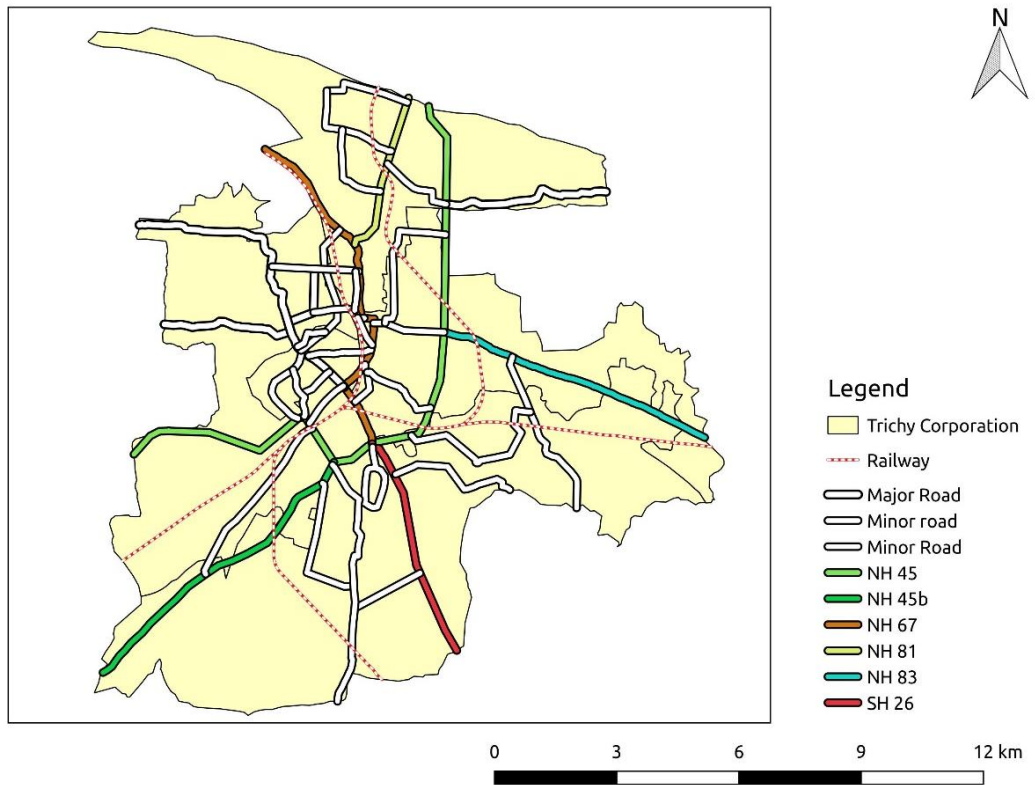


Figure 3 Road and Rail Map of the Trichy city

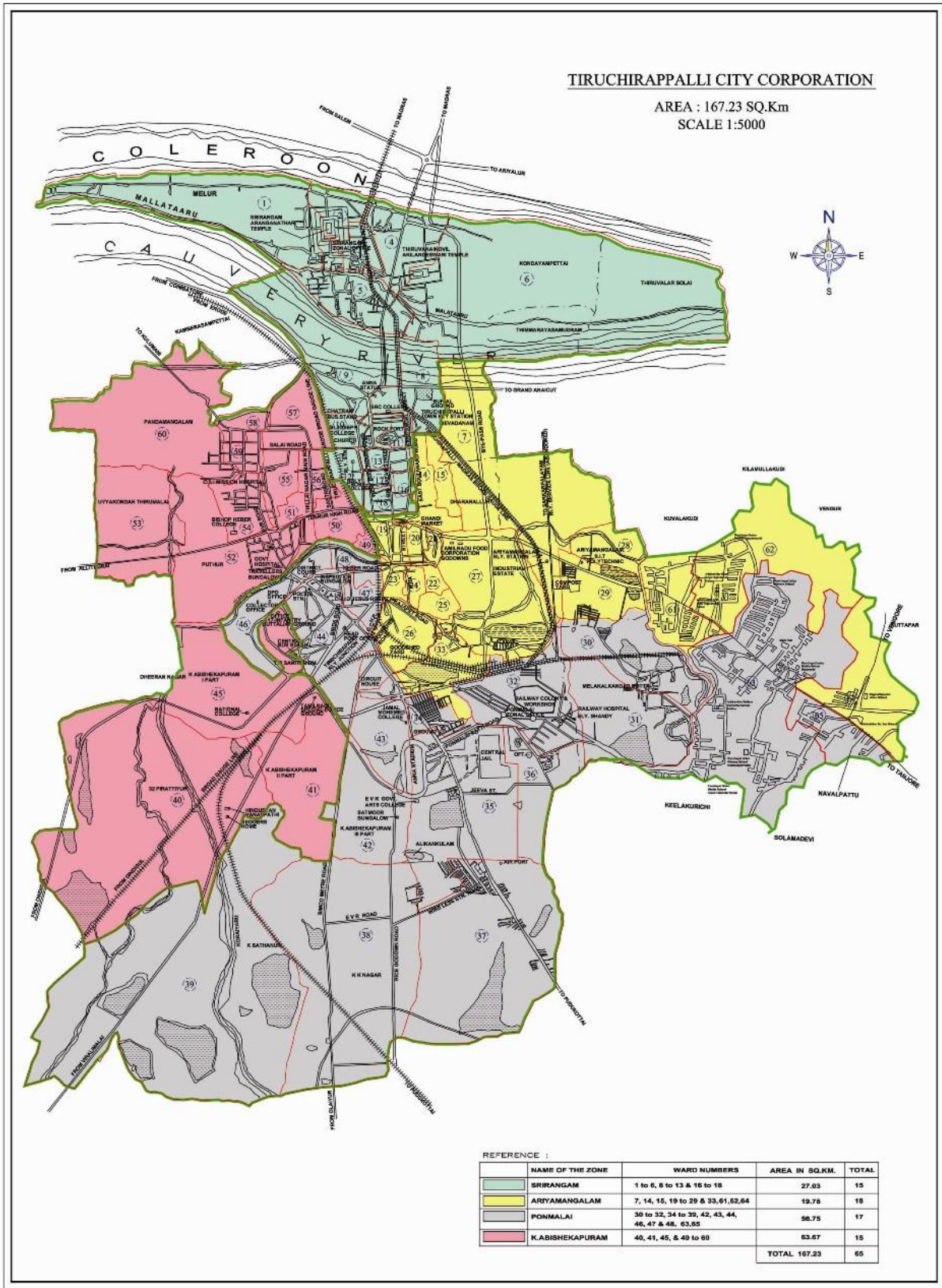


Figure 4 Trichy Corporation - Ward Map

2. Background

Ambient air pollution became one of the major health threats for the Indian population during recent decades. An effective clean air action plan is a powerful tool for achieving clean air for cities, comprising a list of mitigation measures for every air pollution source. Clean air plan is a collection of regulations, policies, and pro-programmes, which aims to improve air quality and public health by identifying cost-effective measures to reduce emissions from all the known sources. Government of India launched National Clean Air Programme (NCAP), in 2019, India's flagship program for better air quality in 124 cities to tackle air pollution problems of cities and states with a long-term, time-bound strategy to achieve a 20-30% reduction in the Particulate Matter (PM₁₀) ambient concentrations by 2024 considering the base year 2017.

Central Pollution Control Board (CPCB) vide its letter dated 1.7.2016, identified Thoothukudi as “Non-Attainment City” and issued directions u/s 18(1)(b) of the Air (prevention and Control of Pollution) Act, 1981 to ensure the time bound action on various action points so as to improve the air quality of Thoothukudi to conform to the prescribed standards.

2.1 Orders of the Hon’ble National Green Tribunal (PB) vide O.A. No 681 of 2018.

The Hon’ble National Green Tribunal (NGT), Principal Bench, New Delhi, in the matter of original application no.681/2018 (News Item Published in the “Times of India” authored by Shri Vishwamohan Titled August – 15” passed an order on 08.10.2018 that in paragraph 08 of the above order, it is mentioned that CPCB gave presentation before Hon’ble Green Tribunal on 08.10.2018 and the data of air quality from 2011-2015 were considered in the above presentation and thus on the basis of air quality data of CPCB.

In paragraph 15 (i, ii, iii, iv &v) Hon’ble National Green Tribunal has issued following directions: -

i All the States and Union Territories with non-attainment cities must prepare appropriate action plans within two months aimed at bringing the standards of air quality within the prescribed norms within six months from date of finalization of the action plans.

ii. The Action Plans may be prepared by six-member committee comprising of Directors of Environment, Transport, Industries, Urban Development, Agriculture and Member Secretary, State Pollution Control Board or Committee of the concerned State. The Committee may be called Air Quality Monitoring Committee (AQMC). The AQMC will function under the overall supervision and coordination of Principal Secretary, Environment of the concerned State/Union Territory. This may be further supervised by the Chief Secretaries concerned or their counterparts in Union Territories by ensuring intra-sectoral coordination.

iii. The Action Plans may take into account the GRAP, the CAP and the action plan prepared by CPCB as well as all other relevant factors. The Action Plans may be forwarded to the CPCB by 31.12.2018. The same may be placed before the Committee as directed in direction no. vi. The Action Plan will include components like identification of source and its apportionment considering sectors like vehicular pollution, industrial pollution, dust pollution, construction activities, garbage burning, agricultural pollution including pollution caused by burning of crop residue, residential and indoor pollution etc. The action plan shall also consider measures for strengthening of Ambient Air Quality (AAQ) monitoring and steps for public awareness including issuing of advisory to public for prevention and control of air pollution and involvement of schools, colleges and other academic institutions and awareness programmes.

iv. The Action Plan will indicate steps to be taken to check different sources of pollution having speedy, definite and specific timelines for execution.

v. The Action Plan should be consistent with the carrying capacity assessment of the non-attainment cities in terms of vehicular pollution, industrial emissions and population density, extent of construction and

construction activities etc. The carrying capacity assessment shall also lay emphasis on agricultural and indoor pollution in rural areas. Depending upon assessed carrying capacity and source apportionment, the authorities may consider the need for regulating number of vehicles and their parking and plying, population density, extent of construction and construction activities etc. Guidelines may accordingly be framed to regulate vehicles and industries in non-attainment cities in terms of carrying capacity assessment and source apportionment.

Accordingly TNPCB has submitted the action plan of the Thoothukudi city for air quality improvement and the same was approved by CPCB during May 2019 and is under implementation.

The Hon'ble National Green Tribunal (NGT), Principal Bench, New Delhi, in the matter of original application no.681/2018 (News Item Published in the "Times of India" authored by Shri Vishwamohan Titled August – 15" passed an order on 06.08.2019 and in its directions for Additional NACs (Non-Attainment Cities) in the paragraph 14 that CPCB has identified Trichy city as non-attainment city for pollutant PM₁₀ parameter exceeding the prescribed annual norms.

The Union government has disbursed Rs 4,400 crore as grant in aid for million-plus cities/agglomerations in its Union Budget for 2020-21 for formulating and implementing plans for ensuring cleaner air including capacity-building of the local bodies. The Union Ministry of Finance has released Rs 21 Cr to Trichy U A for clean air action in million-plus cities on the basis of recommendations of the 15th Finance Commission for the improvement of air quality for 2020-2025, based on the annual average concentration of PM₁₀ and PM_{2.5}.

3. Present status of Ambient Environment

The major source of air pollution at Trichy city is road dust, vehicular emission, construction activities, industrial emission, etc. TNPCB is regularly monitoring the Ambient Air Quality at Trichy through five manual

NAMP stations installed in and around the city as well as one Continuous Ambient Air Quality Monitoring Station (CAAQM).

TNPCB is regularly monitoring the air quality of the city through five manually operated Ambient air quality monitoring stations functioning under National Ambient Air Quality Monitoring (NAAQM) Project funded by CPCB under the Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India. The Ambient Air Quality of Trichy city is being monitored at the following 5 stations (Table 4).

Table 2 indicates the vehicle population details of Trichy city.

Table 2 Vehicular details of Trichy city

Details of vehicles	Total number	Registration Rate per year (approx.)
Number of Private Vehicles (Car/SUV/MUV)	43875	2000-3000
Number of Private Vehicles (Two wheelers)	342815	15000-18000
Number of Contract Carriages (Commercial Vehicles)	16547	300-400
Buses, School/College Bus/ Ambulance/Fire Fighters	491	25-30
Goods Carriages (HMV)	6425	120-140
Total Number of Vehicle Registered	4,41,281	

* Source: Regional Transport Office, Trichy 2019-2020

There are 8 major industries functioning in and around Trichy U A (Table 3).

Table 3 List of industries within Trichy Corporation

S.No	Industries Name	Category	Classification
1	Bunge India Pvt Limited	Red	Large
2	Trichy Steel Rolling Mill	Red	Large
3	Diesel Loco Shed Southern Railway	Red	Large
4	Airports Authority of India	Red	Large
5	Central Workshop Southern Railway	Red	Large
6	Trichy dt Co.op Milk Prod Union ltd	Red	Large
7	Femina hotels Pvt Ltd	Red	Medium
8	Bharat Petroelum Corp Ltd	Red	Large

* Source: TNPCB

The spatial distribution of the NAMP stations is given in Fig 5. Monthly average of PM₁₀, PM_{2.5}, SO₂ and NO₂ levels are regularly analysed under the National Ambient Air Quality Monitoring project funded by Central Pollution Control Board. The monitoring locations and its surrounding are shows in Fig 5.

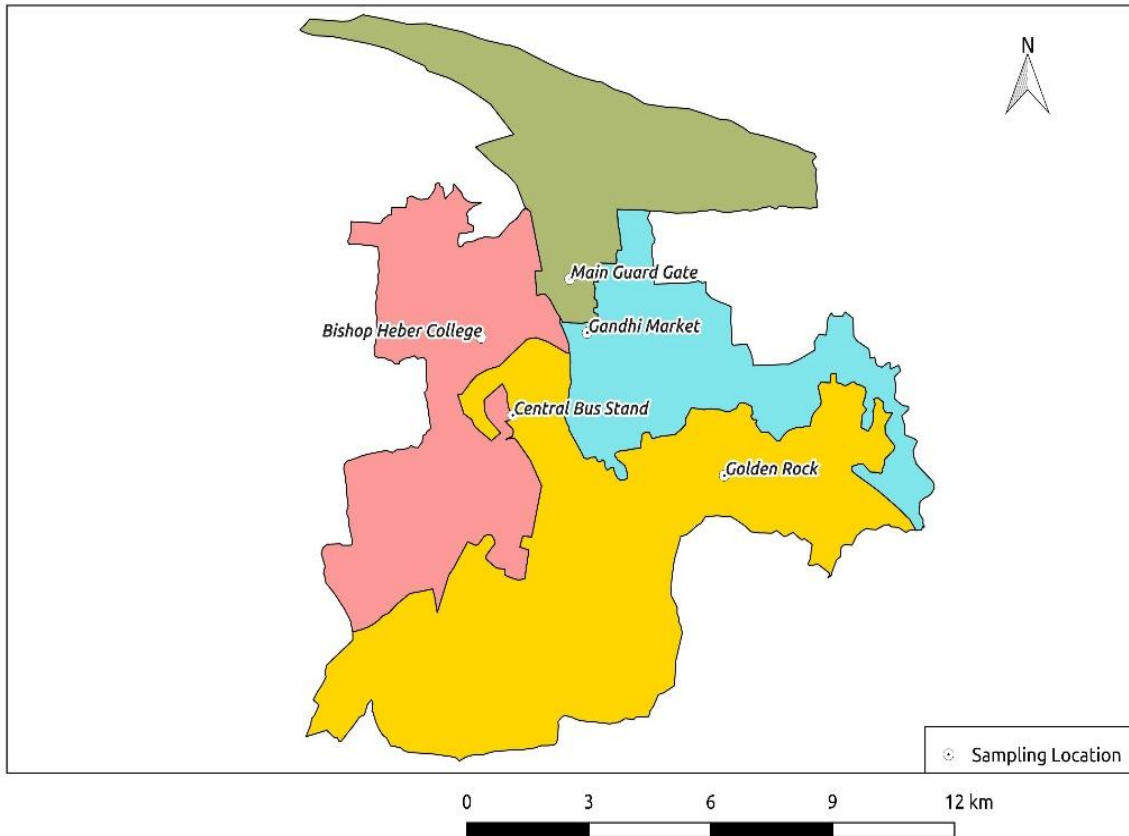


Figure 5 Air Quality monitoring locations in the Trichy city

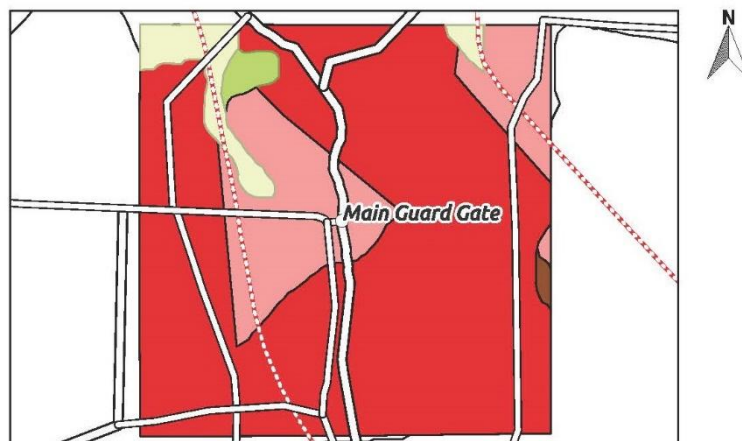
Table 4 National Ambient Air Quality Monitoring Station in the city

S.No	Station/Location	Land Use Zone/Area
1	Gandhi Market	Commercial zone
2	Main Guard Gate	Traffic intersection
3	Bishop Heber College	Commercial zone
4	Golden rock	Residential zone
5	Central bus stand	Traffic intersection

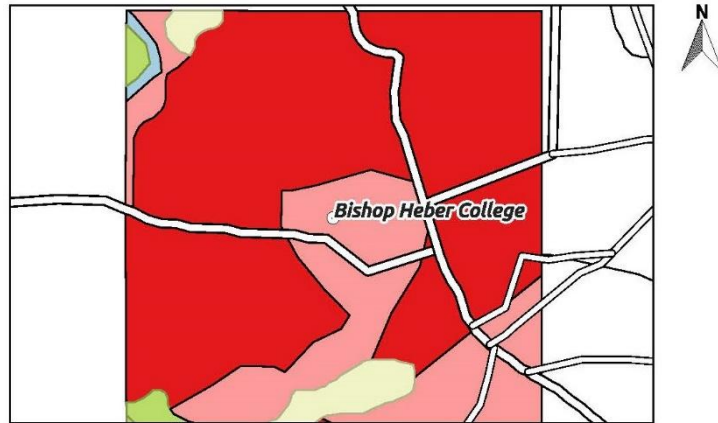
A. **Gandhi Market**, this monitoring station covers air pollution from commercial activities located in and around several commercial complexes includes world war memorial, cinema theatres, religious hotspot etc. This monitoring station is being operated in two days in a week.



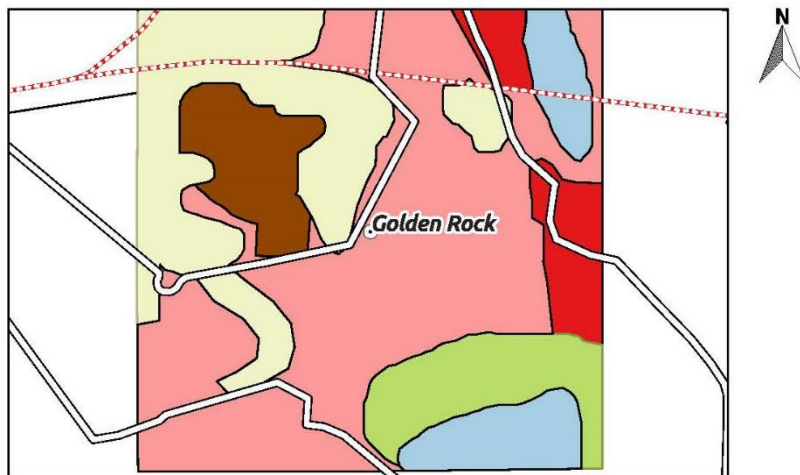
B. **Main Gate Guard** station is located in High Traffic Area Junctions of Madurai road, Salairoad, College road, West Boulevard Road. This area is generally high traffic congestion due to its commercial activities. This monitoring station is functioning two days in a week.



C. **Bishop Heber College** is located in Mixed type of land use which having educational zone, residential zone and moderate commercial activities. This monitoring station is functioning two days in a week



D. **Golden Rock** is located around residential zone in which there is less traffic and economic activities. This monitoring station is functioning two days in a week



E. **Central Bus Stand** is core area of the city and this location is having heavy movement of Buses and high congestion with significant commercial activities. This monitoring station is functioning two days in a week.

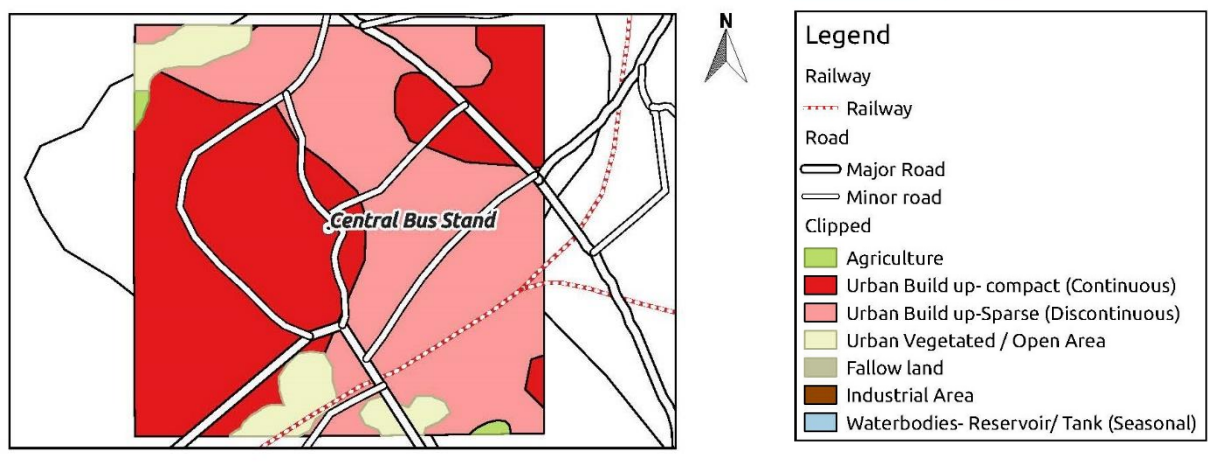




Figure 6 Monitoring locations and surroundings

The results of the monitoring stations indicated that PM_{2.5}, SO₂ and NO₂ are within the prescribed limit but the particulate matter of 10-micron size (PM₁₀) as major air pollutant which is higher than the prescribed limit (60 µg/m³ for annual average) (Fig 7). Hence it is identified as one of the Non-attainment cities of PM₁₀. In this regard, the Hon'ble NGT has directed the State Pollution Control Board to chart out the Action plan for controlling Particulate matter (PM₁₀).

In general, air pollution due to particulate matter is caused due to the re-suspension of road dust, emission from vehicles, D.G. sets, construction activities, burning of domestic fossil fuels, open burning of solid wastes, transportation of construction materials such as sand, soil etc., without cover and emissions from brick kilns. In Trichy U. A , the potential sources of PM₁₀ are road dust, vehicular emission, industries, open biomass burning especially in road side shops, bakeries etc.

The observed yearly average of PM₁₀ value for three monitoring station under NAMP at Trichy city for the period 2011-2021 (upto March 2021) is given in Table 5. and in Fig 7. The annual average limit for PM₁₀ is 60 µg/m³.

Table 5 Annual average of PM₁₀ values in Trichy city (NAMP)

Year (April to March)	Gandhi Market	Main Guard Gate	Bishop Heber College	Golden Rock	Central Bus Stand
2010-21	100	69	36	35	92
2011-12	92	68	40	42	113
2012-13	151	94	14	44	106
2013-14	105	118	43	51	127
2014-15	94	101	47	42	117
2015-16	126	125	40	49	124
2016-17	130	130	35	39	140
2017-18	101	120	38	59	113
2018-19	110	122	93	94	119
2019-20	65	66	50	50	64
2020-21	36	54	33	32	48

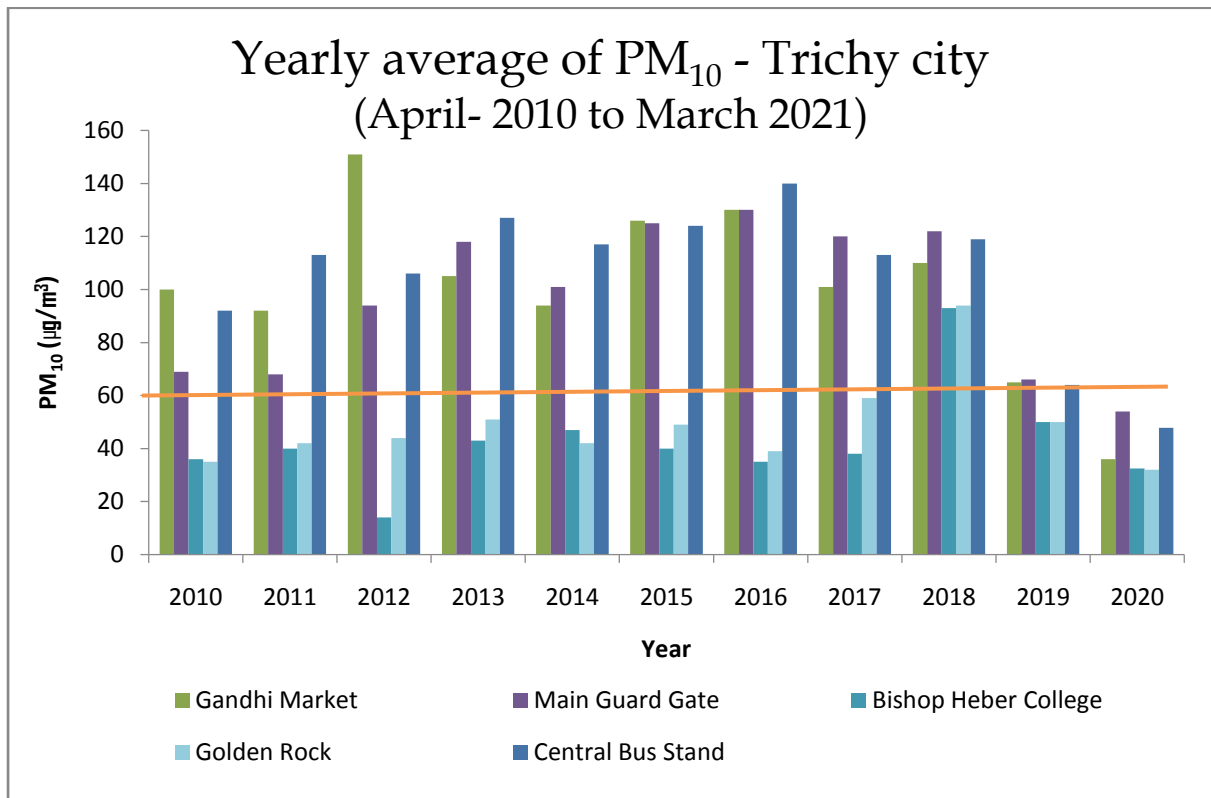


Figure:7 Observed yearly average of PM₁₀ values in Trichy NAMP stations

The observed monthly average of PM₁₀ value for three monitoring station under NAMP at Trichy U.A. for the period Apr 2017-Mar 2021 is given in the Table 6 and in Fig 8.

Monthly average of PM₁₀ Concentration in Trichy City

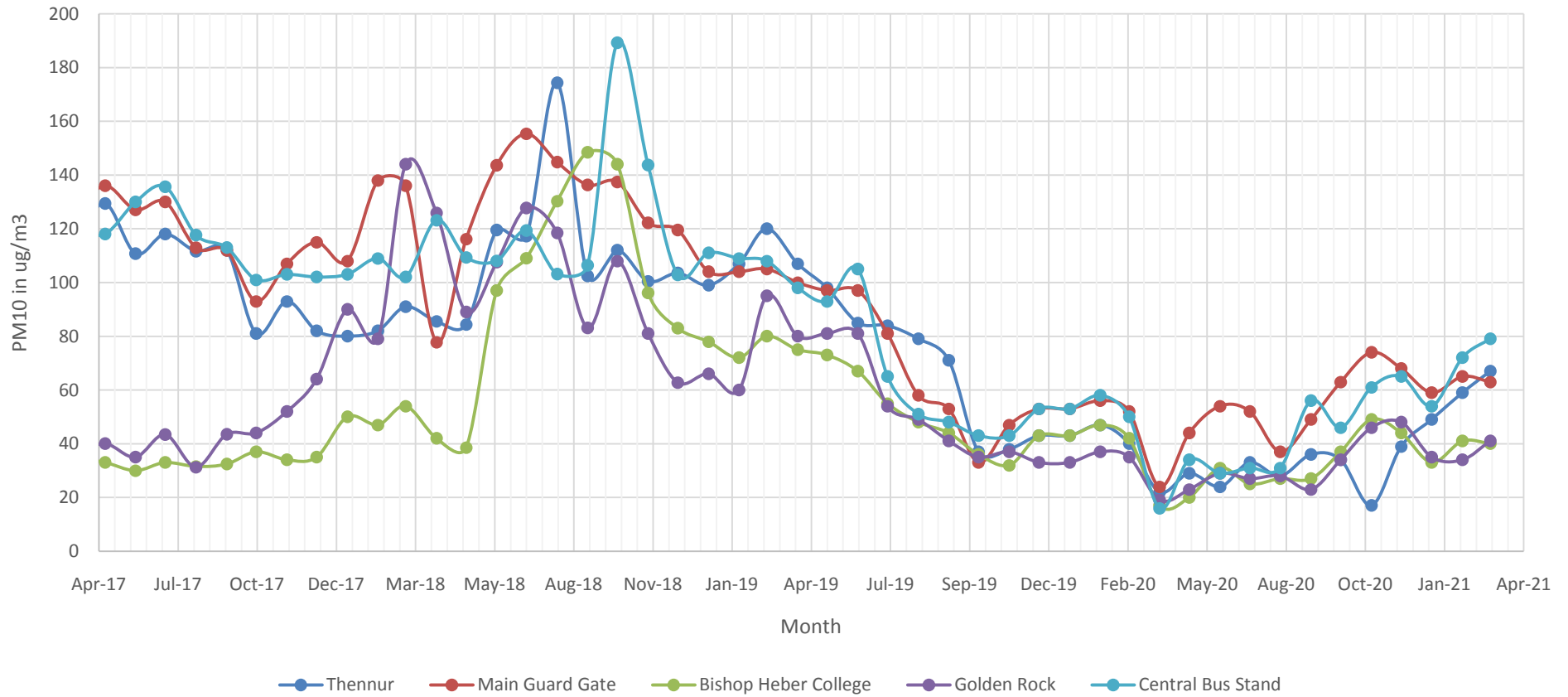


Figure 8 Monthly observed average PM₁₀ Concentration in Trichy NAMP stations

Table 6 Monthly average- (April 2017-March 2021) of PM₁₀ values in Trichy city

Month	Gandhi Market			Main Guard Gate			Bishop Heber College			Golden Rock			Central Bus Stand		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
Apr-17	137	99	115	143	109	126	43	29	35	46	32	36	133	101	120
May-17	163	98	129	152	119	136	41	24	33	50	30	40	167	96	118
Jun-17	138	93	111	147	112	127	38	21	30	46	28	35	145	112	130
Jul-17	139	94	118	146	96	130	40	25	33	53	36	43	154	115	136
Aug-17	123	86	112	127	100	113	42	22	32	45	24	31	137	90	118
Sep-17	129	98	112	136	94	112	40	27	32	55	32	43	132	95	113
Oct-17	89	68	81	119	79	93	48	27	37	66	31	44	116	87	101
Nov-17	125	81	93	119	91	107	44	28	34	75	37	52	127	92	103
Dec-17	94	66	82	132	101	115	49	11	35	120	42	64	139	80	102
Jan-18	99	60	80	128	96	108	54	47	50	122	53	90	121	84	103
Feb-18	97	71	82	164	120	138	63	24	47	93	71	79	145	73	109
Mar-18	101	80	91	194	77	136	80	31	54	185	115	144	234	101	102
Apr-18	133	69	86	98	66	78	52	37	42	182	80	126	235	78	123
May-18	130	56	84	149	78	116	50	29	39	112	68	89	135	71	109
Jun-18	140	104	119	165	117	144	126	80	97	122	92	107	127	95	108
Jul-18	131	97	117	179	111	155	129	71	109	153	103	128	137	95	119
Aug-18	215	132	174	158	132	145	151	97	130	155	74	118	143	68	103
Sep-18	119	85	102	159	101	136	208	46	148	91	63	83	138	83	106
Oct-18	176	75	112	205	66	137	203	58	144	133	77	108	253	89	189
Nov-18	129	55	100	141	103	122	111	84	96	98	77	81	215	84	144
Dec-18	118	65	103	139	102	119	108	60	83	76	45	63	120	81	103
Jan-19	107	91	99	122	90	104	101	53	78	75	46	66	123	87	111
Feb-19	122	97	107	119	95	104	82	60	72	80	45	60	119	94	109
Mar-19	148	93	120	140	76	105	94	63	80	120	75	95	140	88	108
Apr-19	131	90	107	114	83	100	87	66	75	102	55	80	114	75	98
May-19	127	77	98	103	90	97	96	54	73	105	51	81	114	65	93
Jun-19	101	66	85	114	82	97	92	43	67	101	60	81	120	84	105
Jul-19	105	60	84	93	57	81	71	41	55	67	33	54	78	50	65
Aug-19	91	58	79	75	41	58	62	40	48	56	42	49	65	34	51
Sep-19	83	57	71	72	41	53	54	29	44	54	26	41	66	33	48

Month	Gandhi Market			Main Guard Gate			Bishop Heber College			Golden Rock			Central Bus Stand		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
Oct-19	53	21	37	61	18	33	46	22	36	50	21	35	66	24	43
Nov-19	50	19	38	62	31	47	40	27	32	46	23	37	59	18	43
Dec-19	55	25	43	65	34	53	51	30	43	45	23	33	61	46	53
Jan-20	55	25	43	65	34	53	51	30	43	45	23	33	61	46	53
Feb-20	57	33	47	65	43	56	57	37	47	46	27	37	64	53	58
Mar-20	51	42	40	66	52	52	54	42	42	50	32	35	70	35	50
Apr-20	26	14	22	26	22	24	21	11	17	22	13	19	28	10	16
May-20	33	24	29	57	26	44	23	17	20	26	16	23	48	22	34
Jun-20	31	20	24	63	42	54	45	22	31	47	20	29	46	15	29
Jul-20	47	24	33	58	42	52	38	16	25	34	20	27	42	20	31
Aug-20	45	19	28	47	27	37	36	19	27	37	18	28	38	23	31
Sep-20	53	2	36	61	40	49	48	16	27	42	14	23	68	34	56
Oct-20	50	15	34	73	47	63	48	19	37	47	17	34	66	29	46
Nov-20	54	34	17	86	53	74	71	30	49	63	30	46	74	44	61
Dec-20	54	29	39	81	57	68	61	17	44	65	36	48	78	53	65
Jan-21	59	24	49	69	35	59	44	26	33	40	31	35	71	9	54
Feb-21	71	49	59	84	44	65	54	26	41	45	27	34	77	66	72
Mar-21	76	56	67	79	40	63	53	27	40	47	37	41	88	71	79
Avg	113	72	92	123	82	102	77	42	60	87	50	67	127	75	99

Values exceeding annual average limit of 60 µg/m³ for PM₁₀

The categorisation of PM₁₀ based on its value is furnished in Table 7.

Table 7 Categories of PM₁₀ Concentration

Category	PM ₁₀ µg/m ³
Severe + or Emergency	Ambient PM ₁₀ concentration values of 500 µg/m ³ persist for 48 hours or more
Severe	Ambient PM ₁₀ concentration value is between 430 µg/m ³
Very Poor	Ambient PM ₁₀ concentration value is between 351- 430 µg/m ³
Poor	Ambient PM ₁₀ concentration value is between 251- 350 µg/m ³
Moderate to Poor	Ambient PM ₁₀ concentration value is between 101- 250 µg/m ³
Satisfactory	Ambient PM ₁₀ concentration value is between 51- 100 µg/m ³
Good	Ambient PM ₁₀ concentration value is between 0- 50µg/m ³

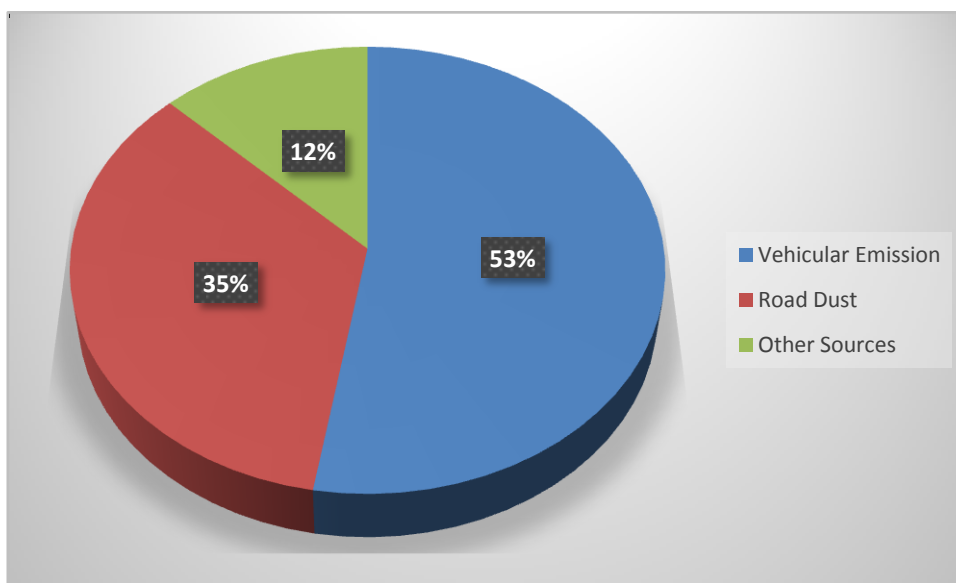
Based on the observed PM₁₀ concentration (Fig 8), the concentration of the PM₁₀ pertains to monthly average for the period April-17 to march 2021 at Gandhi Market, Main Guard Gate, Bishop Heber College, Golden Rock, Central Bus Stand are varied from 36-174, 53-155, 31-148, 31-144 and 48-189µg/m³ respectively. The Trichy city falls under moderate to poor (all five stations).

4.Short- term Source apportionment Study

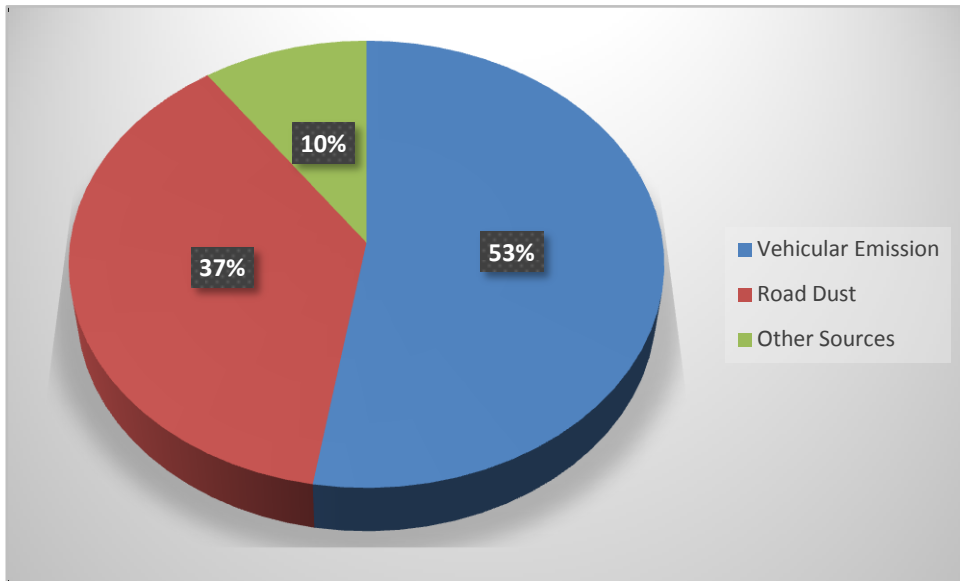
Particulate matter (PM₁₀) pollutant for Trichy, one of the non-attainment cities in Tamil Nadu was studied during the winter season. The study comprises of collection and compilation of secondary and primary data on PM₁₀, vehicle emission inventory and short source apportionment study related to Trichy city. The assessment of PM₁₀ was carried out at the existing five ambient air quality monitoring stations and at one more new location for 72h (3days). The dust samples collected from commercial, industrial and

highway were examined using XRF (X-Ray fluorescence), Total Organic Carbon analyzer, Thermal Optical Transmittance, and Ion Chromatography to know the chemical characteristics of the particulate matter. The results revealed that the level of PM₁₀ concentration during study in the month of January-February 2020 at Trichy city is within the standard limit. The major findings of the study are

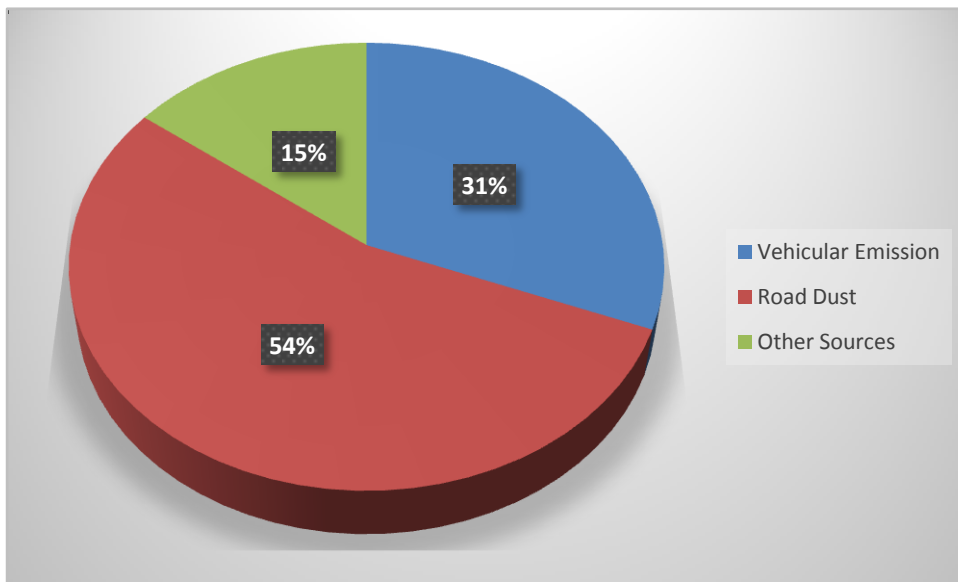
- Source apportionment study reveals that the main contribution of PM₁₀ is from the mineral dust containing silica due to re-suspension of road dust
- The water-soluble organic matter and elemental carbon is present in all the stations indicate the other main source is combustion of fuel emissions from vehicles fuel and biomass
- The following are the outcome of the source contribution derived from receptor modelling for each station.
 - Factor 1: Vehicular Emission/Biomass Combustion,
 - Factor 2: Soil dust/Road Paved Dust
 - Factor 3: Industries/other source



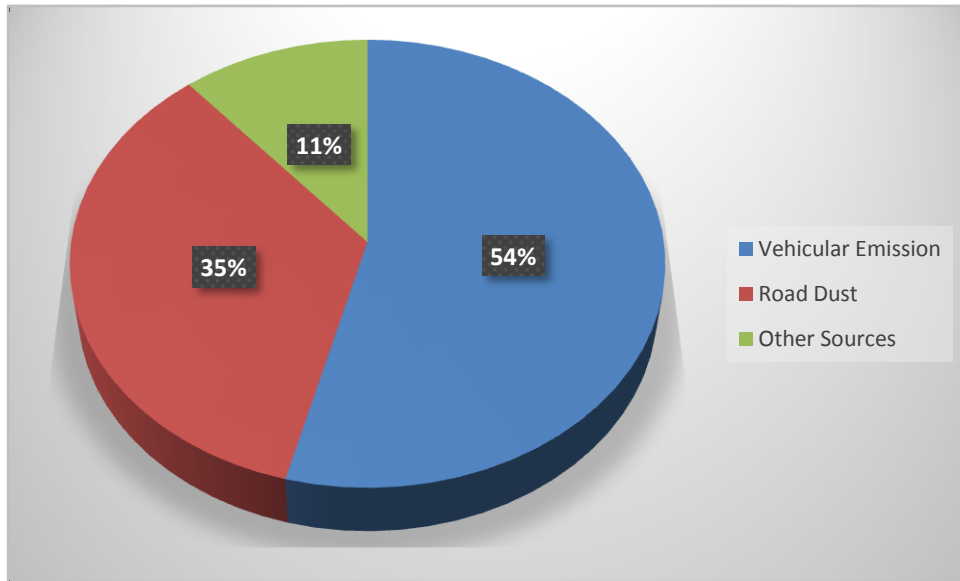
a) Main Guard Station



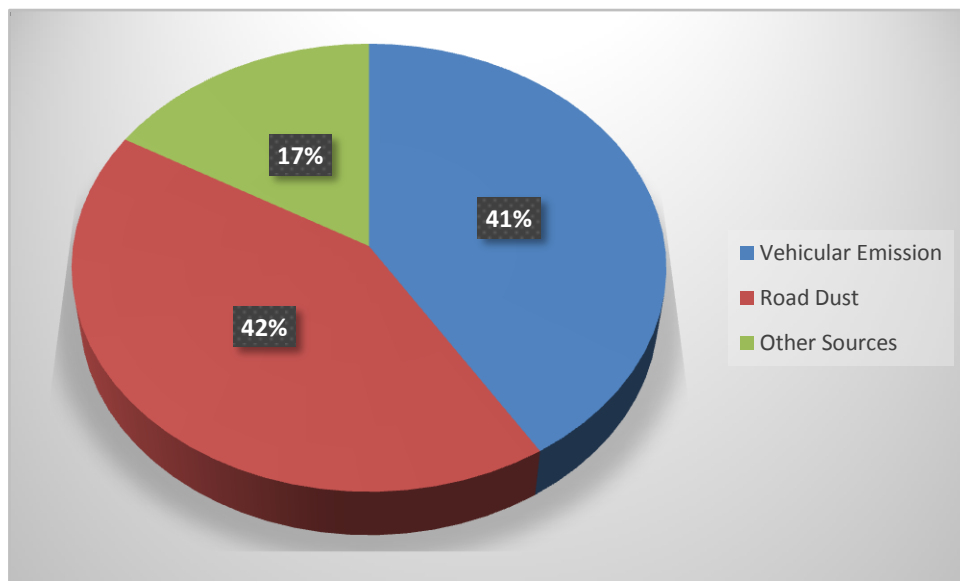
b) Thennur



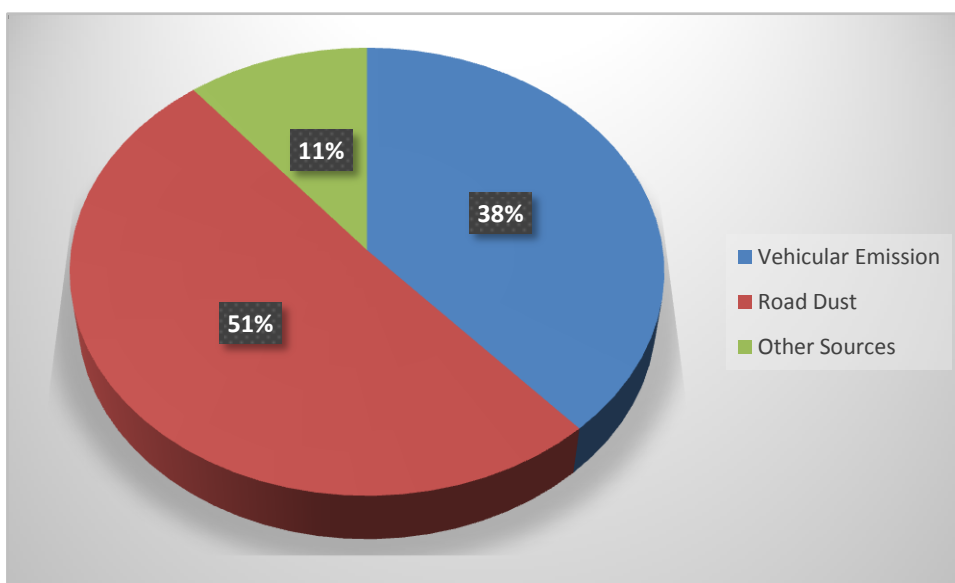
c) Bishop Heber College



d) Central Bus Stand



e) Golden Rock



f) Thoovakudi

Figure 9 Source contribution using factor analysis

5. Proposed detailed Source Apportionment Study and Emission Inventory

5.1 Approaches to the Study

A Common methodology for the study has been designed by the CPCB. Accordingly, the study has to focus on air quality monitoring, development of emission inventory, dispersion and receptor modelling, collection of primary data and Secondary data and finally the development of an air quality management plan. A schematic for the overall approach for the source apportionment study is show in the figure 10.

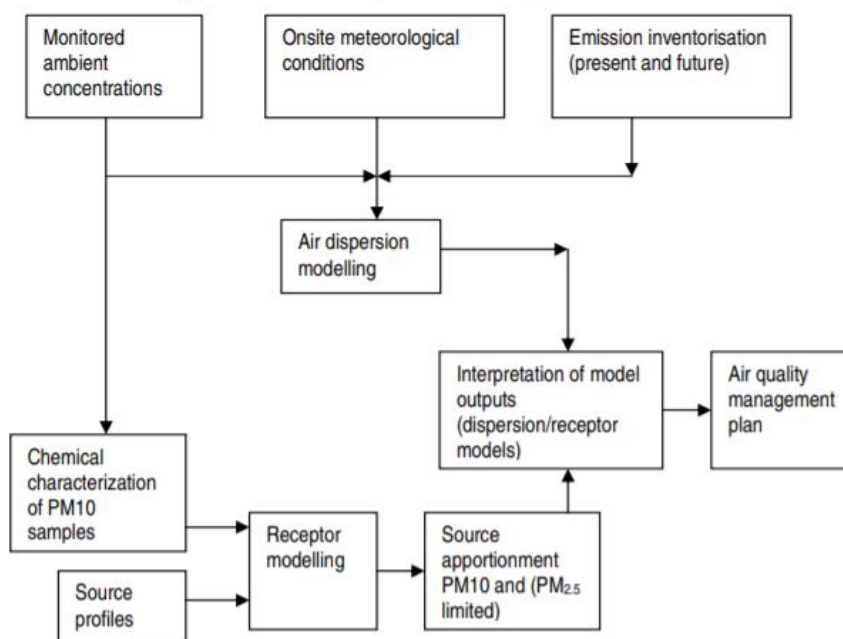


Figure 10. overall approach for the Source Apportionment

The samples of PM₁₀ will be collected from existing and any new locations. The PM₁₀ and PM_{2.5} sampling will be collected using respirable dust sampler through glass fibre filter and Teflon filter paper, respectively. The 24h sampling of PM₁₀ and PM_{2.5} will be carried out. The concentration of the PM₁₀ and PM_{2.5} will be calculated based on the gravimetric analysis. The chemical analysis will be carried out in the collected samples for Elements through XRF (X-Ray fluorescence), Scanning Electron Microscopy-Energy-Dispersive X-Ray (SEM/EDX), Total Organic Carbon analyzer, Thermal Optical Transmittance, and Ion Chromatography.

The receptor modelling based on the chemical speciation results and major sources of PM₁₀ will be identified by Chemical Mass Balance and Factor analysis (R Programming) for quality and quantification of major sources respectively. Factor Analysis is a statistical approach which allows determining the important factors which can explain the variations in the experimental data set. Thus, the variations in a large set of data are explained using a small set of factors. The factors are allowed to qualitatively determine the sources contributing to a particular site. Based on the

analysis, a detailed Control Strategy for the reduction of PM₁₀ will be recommended in the Trichy city.

6. Emission Inventory

Emission inventory is an important tool for identifying the source of pollutants and quantitative expression of pollution load in a defined area at a particular time. Emissions inventories are an essential input to mathematical models that estimate air quality. The effect on air quality of potential regulatory actions can be predicted by applying estimated emissions reductions to emissions inventory data in air quality models.

Emission trends over time can be established with periodic updates of the emissions inventory. Inventories also can be used to raise public awareness regarding sources of pollution. An emissions inventory includes estimates of the emissions from various pollution sources in a geographical area. It should include all pollutants associated with the air quality problems in the area.

An emissions factor is a representative value that attempts to relate the quantity of a pollutant emitted with an activity level associated with the emission of that pollutant.

These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (e.g., kilograms of particulate emitted per mega gram of coal burned). Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages of all available data of acceptable quality and are generally assumed to be representative of long-term averages for all facilities in the source category (i.e., a population average). Emission factors have long been the fundamental key to developing emissions inventories for air quality NAAQS implementation.

The general equation for emissions estimation is:

$$E = A \times EF \times (1 - ER/100)$$

Where: E = emissions, A = activity total

EF = Emission factor

ER = Overall reduction efficiency

EF = emission factor, and ER = overall emission reduction efficiency percent. The ER term is the combination of the relevant percentages related to emissions controls and rules that reduce emissions, as listed in Section 2.5.18 EPA. Emission factors are not limited to factors that are only representing broad national industry averages published by the EPA. Emission factors can also be stack-, process-, unit-, or facility specific, depending on the basis of the source test information. Whether for a single facility or a group of facilities of the same type, it is still considered an emission factor for the purposes of this guidance.

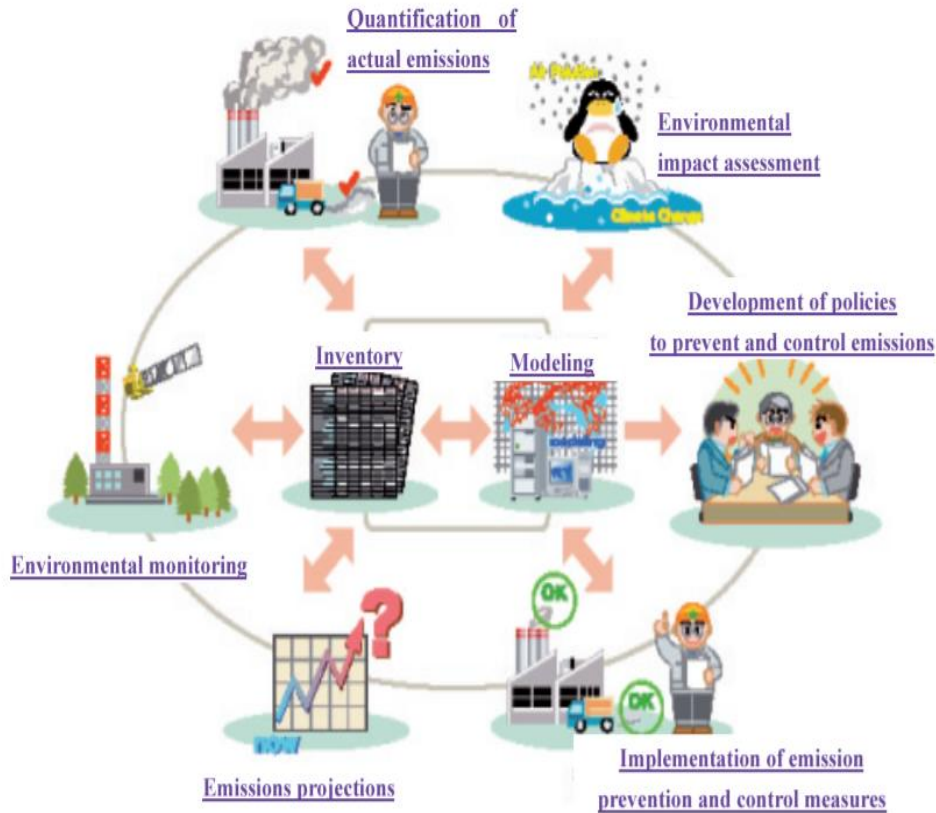


Figure 11. Role of the emission inventory for air quality management

(Source <https://www.acap.asia/wp-content/uploads/emissioneng.pdf>)

The quantitative emissions estimates provided by an inventory promote a better understanding of the actual emissions and help to raise the awareness of both policy makers and the general public. Through this process, the major emission sources can be identified, priorities for emission reduction defined and any data gaps requiring further work are revealed.

Emission inventory will be carried out based on the secondary data collection with the PM₁₀. An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere from the community for a given time period. For listing the sources of air pollution, sources classified as

- Area Sources: Domestic cooking, Bakeries, Crematoria, Hotels and Restuarants, open eat pouts, Open burning (refuse/biomass/tyre etc.burning, paved and unpaved roads,

construction/Demolition/Alteration activities for building, roads, flyovers, Waste incineration and DG sets.

- Point Source: Large scale Industries and power plants, Medium scale industries and small scale industries.
- Line Sources: 2Wheelers (Scooters, Motor Cycles, Mopeds), 3 wheeler (CNG), 4 wheelers, (Gasoline, Diesel, CNG), LCVs (Light Commercial Vehicle), Trucks (Trucks, mini-trucks, multi-axle trucks) and buses (Diesel, CNG).

The major air pollutant sources identified in the city are road dust, vehicular emission, construction activities and Industrial emission.

There are 8 major industries functioning in and around Trichy U A and the based on the type of industries, the emission load to environment will be estimated per year.

7. Atmospheric Assimilative Capacity of pollutant

Assimilative capacity or carrying capacity is the maximum amount of pollutant load an area can take without exceeding the specified standards (Goyal et. al., 2003)¹. Assimilative capacity of the atmosphere can be determined using two different approaches (Goyal 2006)².

First approach is based on ventilation coefficient, which is directly proportional to the assimilative capacity of the atmosphere and computed through micro-meteorological parameters.

Second approach is based on pollution potential, which is inversely proportional to the assimilative capacity of the atmosphere and estimated through dispersion models in terms of concentration of pollutants.

The proposed study on carrying capacity will be using Box model approach concept that assumes air pollutants are uniformly dispersed in the atmosphere by active advection.

¹ Goyal, P., T.V.B.P.S.R. Krishna, and S. Anand. 2003. Assimilative capacity and dispersion of pollutants in Delhi. Proc. Indian Natl. Sci. Acad. Part A 69:775–84

² Goyal, P., S. Anand, and B.S. Gera. 2006. Assimilative capacity and pollutant dispersion studies for Gangtok city. Atmos. Environ. 40:1671–82. doi: 10.1016/j.atmosenv.2005.10.057.

Estimation of Annual inflow and out flow of PM₁₀ including the dry deposition and chemical conversion.

$$V \frac{dc}{dt} = qC_{in} - qC_{out} + S - K_{dd} \cdot CLW - K_{cr} CV$$

where, q = volumetric flow rate(m³/sec)

C_{in} = influent air concentration of a pollutant (m³/sec)

C_{out} = effluent air concentration of a pollutant (m³/sec)

K_{dd} = dry deposition velocity (g/sec)

K_{cr} = First order chemical reaction constant (1/sec)

qC_{in} = influent mass flow rate of pollutants (g/sec)

qC_{out} = effluent mass flow rate of pollutants (g/sec)

S = source emission rate (g/sec)

$K_{dd}CLW$ = the amount of pollutants removed by dry deposition (g/sec)

$K_{cr} CV$ = the amount of pollutants converted by chemical reaction (g/sec)

W = wind speed (m/sec)

In equation, V - equal to volume of city ($L \times W \times H$)

H (m) – mixing height

The model is further simplified with following assumptions

Assuming steady state($V \frac{dc}{dt}$)=0,

Pollutant does not undergo any chemical transformation $K_{cr}=0$

Pollutant does not give any deposition in the box $K_{dd}=0$

Carrying capacity can be estimated as follows

$$Q_{cc}=(C - C_0 \times u \cdot W \cdot H)$$

In this calculation, Area (A) of the system boundary, Width (W) of the system boundary, mixing height (H) (average for winter and summer) within the system boundary, Wind Speed(s) within the system boundary is required. Background concentration C_B into the system boundary is also required.

8. Establishment of Compressed Natural Gas (CNG) filling stations and expansion plan

Indian Oil and Oil Marketing Companies are moving forward with several efforts for availability of CNG and CBG and other green energy fuels for domestic, automotive and industrial uses. Government of Tamil Nadu has commissioned 25 CNG (Compressed Natural Gas) stations in Chennai and Tiruvallur in collaboration with Torrent gas for setting up the gas distribution infrastructure and other items. Torrent gas company also aim to commission 50 CNG station by this September 2021 and 100 by June 2022. Torrent gas proposed to provide 70,000-80,000 domestic CNG connection across the state (Source: *Times of India* 27.07.2021).

9. Expansion plan for E-vehicle

Clean transport system has become necessary due to the rapid depletion of fossil fuel, increase in fuel cost, vehicle population and environmental pollution. Adoption of electric vehicle (EVs) for transport promises a potential air pollutant and green house gas emission reduction co-benefits, reduced noise pollution and enhanced energy security. Considering the current chaotic scenario in India, Government of Tamil Nadu has initiated a Rs ₹50,000 Crore of investment in EV manufacturing and creates a comprehensive EV transport system in the state. Incentives and Concessions are proposed by Government of Tamil Nadu.

- E-vehicle Manufacturing
- E Battery Manufacturing or Assembly
- EV charging infrastructure manufacturing
- Equipment Manufacturing Enterprise

State has proposed each class of vehicle as follows

- a. Electric Cars and Two wheelers

Nearly 25 lakh personal cars have been registered in the state so far and 85% of the vehicle population is two wheeler.

- By providing fast charging solutions through standard charging infrastructure
- Encouragement of conversion of current vehicle to EV through fiscal concessions and development of charging net work.

b. Electric vehicle in shared mobility

- By promoting conversion of all auto rickshaws in the major cities- Chennai, Coimbatore, Trichy, Madurai, Salem and Tirunelveli.
- State also proposed to support conversion of all taxis and app-based transport operators and aggregators in the above major cities to EVs within a span of ten years.

c. Electric Vehicle in Public Transport

State Transport Corporation operate around 21,000 public transport buses

- State Transport Undertakings in the state proposed to replace around 5% of the buses as EV every year and around 1000 EV buses may be introduced every year
- Private operators of the buses will be encouraged to transition to EV buses at their choices
- Promoting the conversion of the buses operated to pilgrimage centres, tourist places, national parks, etc into EVs

d. Electric Vehicle in Educational Institution

- There are 32,000 buses; mini buses and vans runs by Educational institutions such as schools and colleges in the state Transition of such vehicle to EVs will be encouraged.

Electric Vehicle in Educational Institution

e. Electric Vehicle in Goods Carrier

- Small Commercial vehicles used for delivering light loads such as mini goods vehicle and E-commerce and delivery companies in Tamil Nadu will be encouraged to transisiton their vehicle to mini goods EVs.

Government has proposed demand side incentives as follows

- A. Incentives or purchase of Elecric Two wheelers
- B. Incentives for Three –Seater Auto Rickshwas

- C. Incentives for transport Vehicles such as Taxi, Tourist Cars, etc
- D. Incentives for light goods Carriers (including the Three Wheelers)
- E. Incentives for private cars
- F. Incentives and Support for Charging Stations

Government of Tamil nadu has initiated supply side incentive to promote the EV manufacturing within TamilNadu. Govt of Tamil Nadu has proposed special package of incentives to the manufacturer of electric vehicle, their auto components, particularly EV batteries and manufacture of charging infrastructure.

10. Traffic congestion points and decongestion plan in the city of Trichy (Source: Master plan Trichy -2011)

Rapid urbanization in the cities of India has caused large-scale proliferation in motor vehicle use which impacts in congestion, accidents, community severance and pollution. The city has radial and orbital road network development. The road network primarily has arterial roads and internal roads. National highway 38 and 83 connects the southern district of Tamil Nadu with capital of Chennai. National highway 81 passing through

Tricky connects the eastern part of Tamil Nadu with western parts. National highway 336 originates from the city and connects the pilgrimage centre Ramaswaram. Several other State highway (SH24 & SH25) originate from city and connects the major towns like ariyalurm Cuddlore, Chidambaram, Namakkal and salem.

The major transportation corridors which guide the traffic in the region are listed below

- Corridor 1: Trichy – Dindigul (NH38) corridor has induced rapid development in the southern region. Educational institution and Automobile industries are being established along this corridor
- Corridor 2 Trichy – Madurai (NH38 old NH 45B) corridor is characterized by development of residential colonies in the southern periphery and commercial activities in the central area

- Corridor 3:Trichy- Pudukottai NH336 corridor has a concentration of IT enabled industries and International Airport.
- Corridor 4:by-pass road has several residential and commercial establishments
- Corridor 5: Trichy – Nagapattinam (NH81) corridor is characterised by industrial development and industrial estates
- Corridor 6: Vayallur road has triggered the development of residential colonies in the western fringe and central areas.
- Corridor 7: Trichy- Chennai (NH38) corridor has lead to the development of residential and commercial activities around Srirangam temple

Although the roads in Trichy city was widened long back to allow vehicles to ply freely, the encroachments by road vendors and parking vehicle causes traffic congestion even in non- peak hours. Traffic jams are frequent on roads near Melachinthamani at Chathiram bus stand, Salai Road and West Boulevard Road near Ibrahim Park. Due to the lack of parking space, majority of the commercial complexes parks their vehicle in the space between storm water drains and roads. Increasing the width of the plat form and the vehicles parked on the roads causes frequent snarls-up on the arterial roads.

Considering the current scenario, the Trichy city traffic police department has identified the traffic congestion points and proposed the decongestion plan by coordinating with National highway/ State Highway department and Trichy Municipal Corporation.

In order to relieve the existing traffic congestion within the city, following proposals have been formulated in the Master Plan.

- Provision of Inner link road
- Improvements to the Junctions
- Road over bridges and underpasses
- Over bridges at Level crossings (4 lane traffic with both sides having foot path for pedestrians)

- New bus stand to avoid the congestion caused by the existing Bus stand
- Truck Terminal
- Pedestrian pathways

S No	Traffic Police Station limits	Traffic Congestion Points	Roads belongs to	Plan for decongestion
1	Cantonment Traffic Police Station	MGR Statue Roundana	Corporation	Roundana width should be reduced To widen the road on corner of the city
2	Central Bus Stand		Corporation	A new integrated bus stand should be formed out of the city
3		Rly. Over bridge to Mannarpuram	NH	Railway flyover works should be completed as early
4		TVS Tollgate Junction	NHAI	Modification of the road structure. Avoor – Thuvakkudi ring Road works have to be completed very soon
5	Ariyamangalam Traffic Police Station	“G” Corner Service	NHAI	Subway at “G” corner towards Goldenroack shall be provided
6		Plapannai Junction	NHAI	To modify the road structure To provide Service Road from Palpannai to Thuvakudi

				Providing a service road at Palpannai will improve the free flow of vehicle at Thanjavur- Trichy route
7		SIT College junction in Thanjavur Road	NHAI	To provide subway or fly over at SIT college junction
8	Palakkarai Traffic Police Station	Gandhi Market area	Corporation	Shifting of Gandhi Market to Kallikudi or any other outskirts of the city will reduce the traffic congestion
9	Fort Traffic Police Station	Sanjeevinagar Junction	NHAI	Subway or Fly over should be provided
10		Oyamari Road NH	NHAI	Subway or Fly over should be provided
11		Teppakulam	HW	Removal of road of side vendors for smooth traffic flow
12		Karur Bye Pass Road	SHW	To provide fly over from Chatram Bus stand to Check Post
13		Madurai Road	HW	Removal of all road side parking and vendors
14	Woraiyur Traffic Police Station	South Arch and South Arch to Puthur 4 Road	HW	Enlarge the road width and modify the road structure
	Srirangam Traffic Police Station	Kumbakonathan Salai to Thiruvalarsolai Road	SHW	To provide a sub way
16		Srirangam		Prepare permanent

		Temple Areas		parking place and avoid unwanted parking place
17		Pulimandapam Bus Stop		Speed break should be provided

(Source: Police Department (Traffic) - Trichy)

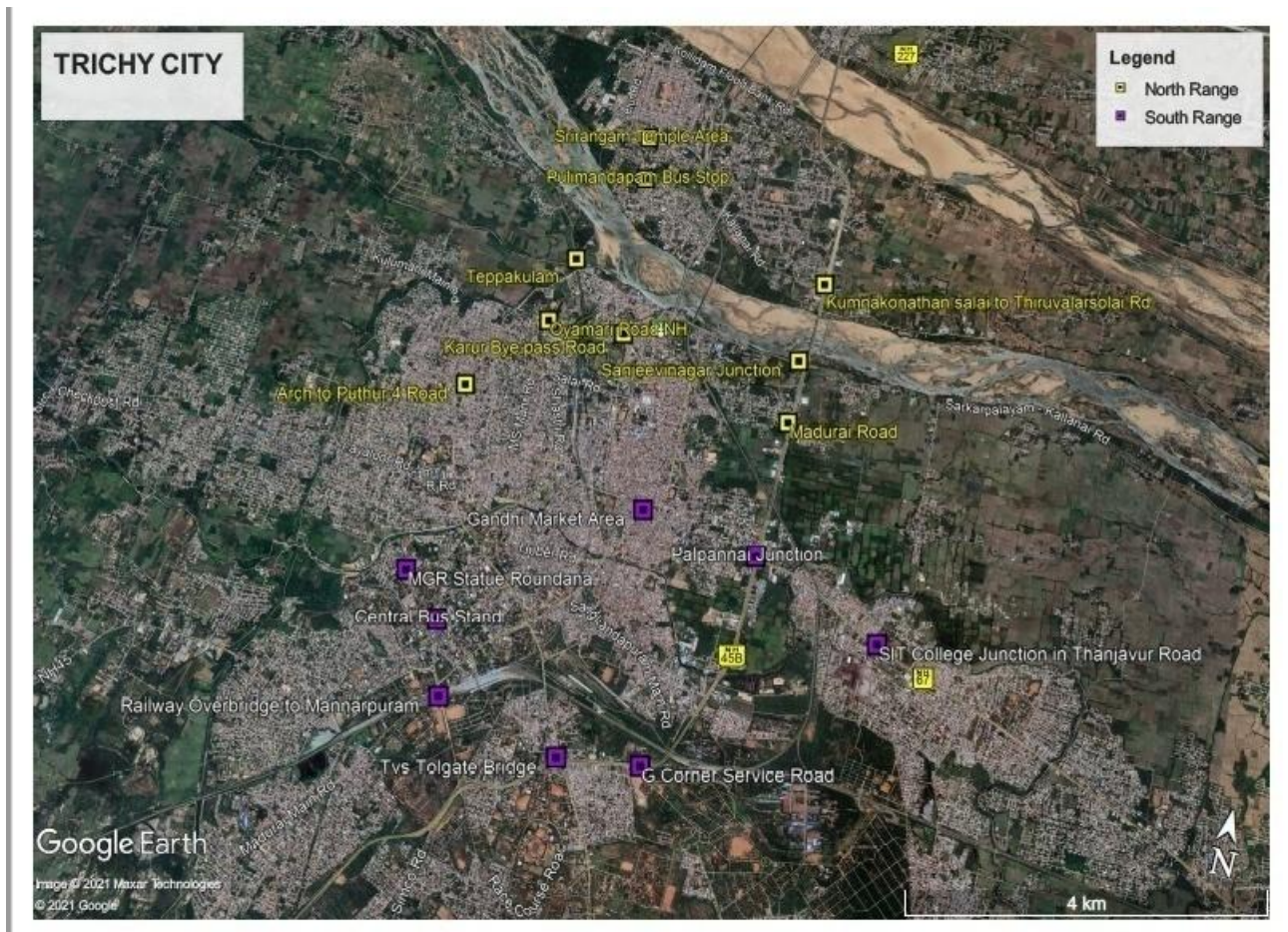


Figure 12 Locations of Identified Traffic congestion points in Trichy U A

10.1 Controlling Vehicular Pollution

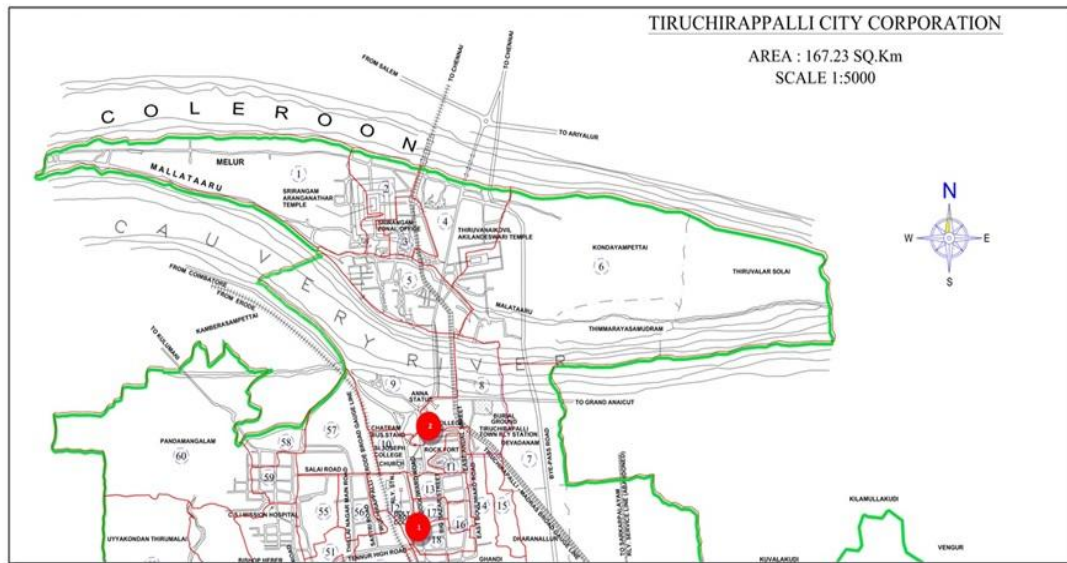
The Ministry of Road Transport and Highways (MoRTH), which is formulating the scrapping policy, will issue the criteria for vehicle scrapping centres, revised vehicle re-registration and fitness test charges and fitness rules, which will form the eligibility criteria for a vehicle to be scrapped.

Though Transport department, Tamil Nadu has taken action on banning of new Petrol and diesel autorickshwas in Chennai (Source: <https://tnsta.gov.in/pollution.jsp>), the measures are to be still

implemented in Trichy U A. The Oil companies of Tamil Nadu supplies BS-VI grade fuel. Linking of PUC to vahan portal is already done and the vehicle which does not possess valid PUC are levied a fine of Rs1000/. A draft notification on scrapping of 15 years vehicle has to be issued by Govt of Tamil Nadu after the notification issued by Government of India.

11. Location and Expansion of Multi Layer Car Park (MLCP)

A MLCP at an extent of 41845.64 Sq.ft (or) 3889.00 Sq.m under Smart City Mission 2018 Fund at W.B.Road. (G+5 Floors) with 536 Nos. of 2 wheelers & 138 Nos. of 4 wheelers parking facility and another MLCP under Smart City Mission 2018 Fund at Kaliasman koil street (G+2 Floors) at an extent of 1285.79 Sqm (or) 13840.24 Sq.ft with 18 Nos. 4 wheelers parking facility (Near Chathiram Bus stand) are under construction. Expansion of multilayer Car parking will be considered on the future requirement. Figure13 shows the location of Multilayer Park in the Trichy city.

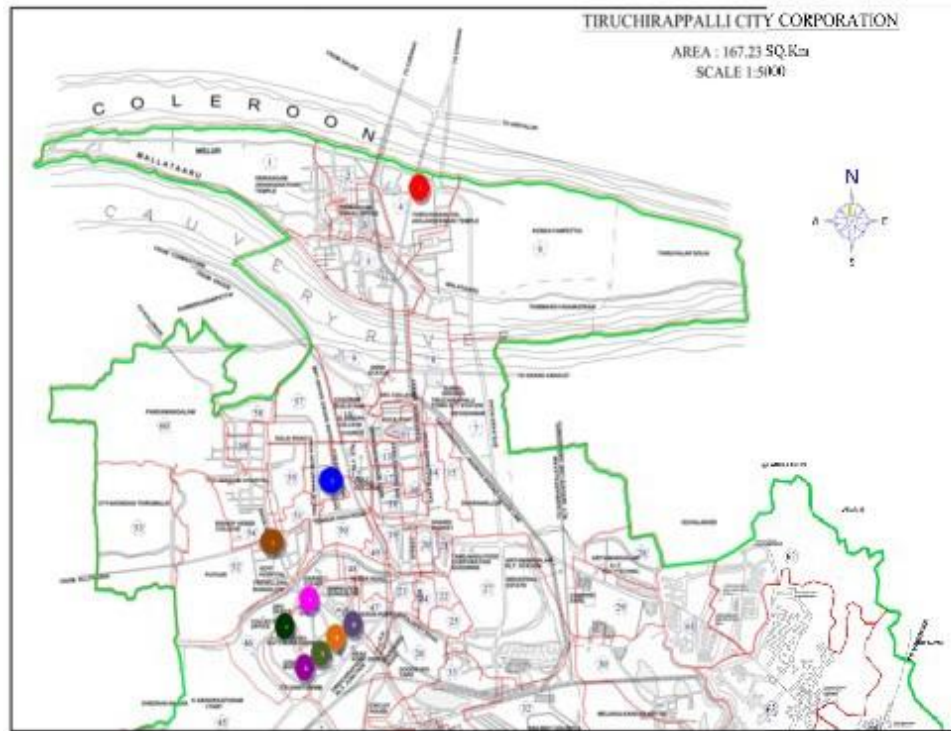


- 1 W.B.Road – Main Guard gate - MLCP
- 2 Kaliasman koil Street – Chathiram - Parking lot

Figure 13 The locations of Multilayer Park at Trichy U A

12 . Location of existing and proposed Water fountain.

Trichy Corporation has provided 5 Nos. Water fountains at major intersection/ circle under Smart City Mission 2018. Trichy Corporation has proposed another 2 more at Mannar puram. Figure 14 shows the location of water fountains in the Trichy U A.



LOCATIONS OF WATER FOUNTAIN IN IMPORTANT ROAD JUNCTIONC

1	T.V.Koil Trunk Road– Srirangam RTO office (opp)	1
2	Kamaraj Statue – Chathiram Bus-Stand	2
3	Puthur Four Road Jn.	3
4	MGR Statue – Lawson’s Road	4
5	Major Saravanan Round about (Vestry school Near)	5
6	Kamaraj Statue – Central Bus-Stand(Sangeetha Hotel)	6
7	Williams Road (Sona Mena Theatre opp)	7
8	Williams Road (Seva sangam School opp)	8
9	Williams Road Othakadai Jn	9

Figure 14 Locations of Water fountain in Trichy UA

13. Brick kilns

There are no brick kilns within 50 km of Trichy city limit

14. Planning for expressway/bypass/underpass and flyovers in the city

The State highway department has put ward proposal on construction of Link road and elevated corridors in the city of Trichy. Details of the proposed work are given in the table 8.

Table 8 Details of the proposed work on construction of link road and elevated corridors

S. No	Scheme & Year	Sub Division	Constituency	Category of Road	Name of work	Length in Km	Remarks
1	Hon'ble CM Announcement Proposal 2021-22	Trichy	Trichy West & Srirangam	MD 12	Formation of Link road from Trichy Court Roundana to connect Outer Ring road at Sunnambukkaranpatt y Km 0/0-8/4	8.400	Announcement proposal for DPR sent to Government
2	-- do --	Trichy	Trichy West	SHU 132	Formation of Road from New Integrated Bus stand at Panjappur to Kudamurutti (Via) Uyyakondanthirumalai Km 0/0-11/4	11.400	Announcement proposal for DPR sent to Government

3	-- do --	Trichy	Trichy West & Srirangam	MD 461A	Formation of Road from Woraiyur Police Station to Perur (Via) Vayalur Km 0/0-7/4.	7.400	Announcement proposal for DPR sent to Government
4	-- do --	Trichy	Trichy West	SH-26	Construction of Elevated Corridor from Km 0/2 of Tiruchirappalli - Pudukottai - Aranthangi - Memisal Bypass Road (SH 26) through Gandhi Statue and Mutharaiyar Statue to MGR Statue (at Km 1/4 of Bharathidasan Salai) in Trichy City.	1.600	Announcement proposal for DPR sent to Government
5	Hon'ble CM Announcement Proposal 2021-22	Trichy	Trichy West	SHU-132	Construction of Elevated Corridor from Aristo over bridge	4.400	Announcement proposal for DPR sent to Government

					near Railway Junction to New Integrated Bus stand at Panjappu r Km 0/0- 4/4 of Tiruchira ppalli - Urban road NH 45 (SHU- 132)		
6	-- do --	Trichy	Trichy West	SHU-9	Construct ion of Elevated Corridor from Anna Statue to Railway Junction in Km 316/6- 322/0 of Chennai - Trichy- Dindigul Road	5.400	A.S. obtained for DPR Rs. 278.00 Lakhs
						38.600	

14. Time frame

Considering 2020-21 as base year, the action plan of Trichy is prepared for next 3 years to begin, which is further extendable up to 2025 after mid-term review of the outcomes

15. Action Plan

Action Plan for Trichy city has been prepared based on different source contribution as below with the time scale for implementing/initiation.

- Short-term (within 6 months)
- Mid- term (6 – 12months)
- Long term (12 months and 36 months)

Action plan for control of air pollution in non-attainment/Million Plus city- Trichy U.A in Tamil Nadu

1	Name of the city	:	Trichy
2	Air Pollution issue	:	PM ₁₀
3	Air pollution levels (provide range of 24-hourly average concentration values; annual average for past five years)	:	Figure-7
4	Months with higher air pollution levels	:	March, April, May June, and July(Figure 8)

Action Plan

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
Vehicles	Restriction on plying and phasing out of 15 years old commercial diesel drive vehicles	Long term	August 23 and above	Transport Department	Not Applicable	As per the Central Motor Vehicle Act, 1988, Sec 59” Power to fix the age limit of motor vehicle” tested with Central Govt. Under this section Central Government is empowered to fix the age limit of motor vehicles. A draft policy has been formulated by Central Government to phase out 15 year old vehicle. Once implemented the same will be acted up on by the State Government.
	Strengthen and encourage public transport services to reduce the vehicular congestion	Long- term	August 23	State Transport Corporations	Not Applicable	To reduce the number of Private cars/two wheelers on road, the government/private buses may be increased by about 5% every year

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Construction of flyovers and bypass road to ease the transportation and reduce the dust	Long term	August 23	State Highway, NHAI	Not Applicable	Already one number of flyovers is under construction. Depending on the need, this will be increased.
	Action against visibly polluting vehicles and Parking prevention in non-designated areas	Short term and Regular activity	January 22	Transport Department, Traffic Police	Not Applicable	Regularly monitored
	Strict vigilance and no tolerance for visible emissions – stop plying of visibly polluting vehicles by impounding or fine	Short term and Regular activity	January 22	Transport Department, Traffic Police	Not Applicable	Regularly monitored
	Strict vigilance and enforcement of (vehicular testing centre) for pollution under control certificates and regular inspection & monitoring	Short term and Regular activity	January 22	Transport Department, Traffic Police, TNPCB	Not Applicable	Regularly monitored

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Vehicles should be frequently monitored to avoid over loading.	Short term and Regular activity	January 22	Transport Department, Traffic Police	Not Applicable	Regularly monitored
	Deploy traffic police for smooth traffic flow at identified vulnerable areas	Short term and Regular activity	January 22	Traffic Police,	Not Applicable	Regularly monitored
	Introduction of cleaner fuels (CNG/LPG) for vehicles	Long- term	August 23	Oil companies	Not Applicable	Indian Oil Corporation has commissioned 2 CNG stations in Chennai and in Tiruvallur. The Torrent gas Pvt .Ltd has proposed for installing 100 CNG station in Tamil Nadu by July 2022.
	Installation of CNG Stations within city	Long term	August 23	Petroleum Companies	Not Applicable	Installation of CNG stations are proposed.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks																								
	Regular checking of vehicular emission and issue of Pollution under Control Certificate (PUC)	Short-term and (Periodical checking are being carried out to check vehicular emission	January 22 continuous afterwards	Transport Department and Police Department and Traffic Police	Not Applicable	<p>At present 17 PUC centres are available and PUC centres numbers will be increased to meet the demand for the issue of PUC certificates. Periodical checking are being carried out to check vehicle.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>No of check report</th> <th>PUC issued :</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>20439</td> <td>9628</td> </tr> <tr> <td>2016</td> <td>14549</td> <td>7219</td> </tr> <tr> <td>2017</td> <td>19453</td> <td>9776</td> </tr> <tr> <td>2018</td> <td>15296</td> <td>8019</td> </tr> <tr> <td>2019</td> <td>17518</td> <td>7215</td> </tr> <tr> <td>2020</td> <td>5835</td> <td>4835</td> </tr> <tr> <td>Total</td> <td>93090</td> <td>46692</td> </tr> </tbody> </table>	Year	No of check report	PUC issued :	2015	20439	9628	2016	14549	7219	2017	19453	9776	2018	15296	8019	2019	17518	7215	2020	5835	4835	Total	93090	46692
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2020	5835	4835																												
Total	93090	46692																												
	Auditing and re-form of Pollution Under Control (PUC) certification	Short-term (Monthly checking are being done to reform PUC Certification	January 22 continuous afterwards	Transport Department	Not Applicable	<table border="1"> <thead> <tr> <th>Year</th> <th>CF collected for w/o PUC :</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>113000</td> </tr> <tr> <td>2016</td> <td>28000</td> </tr> <tr> <td>2017</td> <td>26000</td> </tr> <tr> <td>2018</td> <td>31000</td> </tr> <tr> <td>2019</td> <td>33000</td> </tr> <tr> <td>2020</td> <td>37000</td> </tr> <tr> <td>Total</td> <td>268000</td> </tr> </tbody> </table>	Year	CF collected for w/o PUC :	2015	113000	2016	28000	2017	26000	2018	31000	2019	33000	2020	37000	Total	268000								
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2020	37000																													
Total	268000																													

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks											
	Linking of PUC centres with remote server and eliminate manual intervention in PUC testing.	Short-term	Implemented (Ongoing process)	Transport Department	Not Applicable	<p>All the PUC centres in Tamil Nadu were linked with Vahan portal. No. of Emission Testing Centres linked with vahan data base:Completed</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Total No. of Emission Testing Centres :</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td rowspan="6">17</td> </tr> <tr> <td>2016</td> </tr> <tr> <td>2017</td> </tr> <tr> <td>2018</td> </tr> <tr> <td>2019</td> </tr> <tr> <td>2020</td> </tr> <tr> <td>Total</td> <td>17</td> </tr> </tbody> </table>	Year	Total No. of Emission Testing Centres :	2015	17	2016	2017	2018	2019	2020	Total	17
Year	Total No. of Emission Testing Centres :																
2015	17																
2016																	
2017																	
2018																	
2019																	
2020																	
Total	17																
	Good traffic management restriction/ redirection of heavy vehicles entering inside the city	Short term and Regular activity	Implemented	Traffic Police	Not Applicable	Already implemented and on further need will be assessed and implemented.											
	Promotion and operationalization of E-Rickshaw.	Long-term	August 23	Transport department	220.00	<p>No of E vehicle/ Battery operated vehicle registered august upto 2021 - 442 Three wheeler goods- 3 Nos Motor cycle and others-439 Nos</p>											
	Create More Parking facilities in and around the city	Long-term	August - 23	Municipal Corporations of Trichy city, Highway Department.	Not Applicable	On-street parking at Thillai Nagar under PPP Mode is under progress.											

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Development of multilayer car parking (MLCP) in congested areas	Long- term	August-23	Trichy Corporation, Housing and urban development	2120.00 Lakhs 619.00 Lakhs	1. MLCP at an extent of 41845.64 Sq.ft (or) 3889.00 Sq.m under Smart City Mission 2018 Fund at W.B.Road. (G+5 Floors) with 536 Nos. of 2 wheelers & 138 Nos. of 4 wheelers parking facility 2. MLCP under Smart City Mission 2018 Fund at Kalamman koil street (G+2 Floors) at an extent of 1285.79 Sqm (or) 13840.24 Sq.ft with 18 Nos. 4 wheelers parking facility (Near Chathiram Bus stand)
	Retrofitting of particulate filter in diesel driven vehicle and ban on registration of Diesel driven auto rickshaws	Long- term	August 23	Transport Department/ District Collector	Not Applicable	Guidelines has to be formulated for Retrofitting of particulate filter in diesel driven vehicle. and Guidelines on ban on registration of new Petrol/Diesel driven auto rickshaws has to be formulated and G O has to be issued
	Checking of fuel adulteration	Short-term and regular activity	January 22	District administration , Oil companies, Food and Civil Supplies department.		Regularly monitored by Oil companies, food and civil suppliers and taking actions against those who violates.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Monitoring of vehicle fitness.	Short-term and regular activity	January 22	Transport department	Not Applicable	Monitored regularly
	Periodic calibration test of vehicular emission	Short-term and regular activity	January 22	Transport department and TNPCB	Not Applicable	Periodic calibration of vehicular emission equipment are done by Emission Testing Centres and are monitored by Transport Department and TNPCB. Periodic calibration of vehicular emission is done by PUC centres and are monitored by RTO and TNPCB.
Vehicles	Introduction of new electric buses (with proper infrastructure facilities such as charging stations) and CNG buses for public transport	Long Term	In Progress	Transport Corporation		Government of Tamil Nadu has issued order on E-vehicle policy in 2019 G.O. (MS) No. 176, dated 9.10.2019 https://cms.tn.gov.in/sites/default/files/go/ind_e_176_2019.pdf No of LPG vehicle registered till august 2021-1354

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
Road dust	Identify road stretches with high dust generation and Increase frequency of mechanized clearing of road and sprinkling of water on paved and unpaved roads	Short-term and regular activity	January 22	Municipal Corporations, PWD, State Highway and National Highway Authority of India (NHAI).	173.00 Lakhs 180.00 Lakhs	At present manual cleaning is done regularly. Corporation has proposed to procure 2 Nos of mechanized sweepers under Smart City Mission 2018 Fund and the same is under process. Further 2 nos of 6 cum capacity mechanized road sweeping vehicles with water sprinklers are required.
	Create Proper Pedestrian Infrastructure	Mid term	August 22	PWD, Municipal Corporation and State Highway	6771.00 Lakhs 800.00 Lakhs	1. Under Smart City Mission , Corporation is executing the construction of Smart water Drain with Pedestrian Pavement at 72 locations. 2. Under Smart City Mission , Corporation is executing the Non Motorised Transport at karur By-pass Road.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Maintenance and repair of roads on priority.	Short-term and regular activity	January 22	PWD, Municipal Corporation State Highway and NHAI.	149.23 Lakhs	Construction and Maintenance division of Highway budget has proposed under Comprehensive Road Infrastructure Development Project 11 identified areas has been taken up for road maintenance in the corporation area.
	Strengthening the roads in the Trichy city	Long-term	August 23	State Highway	40 Lakhs	In progress
	Widening of roads at highways with service roads and parking facilities for the heavy vehicles	Long term	August 23	State Highway and NHAI.	375.25 Lakhs	In progress
	End to end carpeting of road with black topping to avoid road dust	Mid-term	August 22	Municipal Corporations, State Highway and NHAI.	1028.02 Lakhs 3000.00 lakhs	Steps taken Corporation: 156 Nos of Important roads to a length of 50.623 km, 3.341 km length of storm water drain & 34 Nos. of cross culverts works are sanctioned under TNUDF – SRP Fund

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Undertake greening of open areas, gardens, schools, housing societies and community places	Mid- term	August 22	Municipal Corporation	Rs. 1422.00 lakhs	Under Smart City Mission, Corporation executing the Development of Green Spaces at 16 locations.
	Formulate action plan Road Side& Traffic Corridor Tree Plantation with Indigenous species for creating carbon sink, abating the air pollution and Implementation	Mid term	August 22	Department of Forest, Municipal Corporation, State Highway and NHAI.	20.00 Lakhs	Corporation: Urban Forest (Miyawaki) created by ULB with 10000 Nos. of moderately grown country wood tree saplings at an extent of 5027 Sq.m.(54000.00 Sq.ft) land belongs to H.R & C.E Dept on 20.12.2019. As on date all the trees are well grown within a period of 12 months. The manure utilized for this project is all compost produced from door to door collected wet waste and garden waste.
	Introduction of water fountains at major intersection/ circle	Mid- Term	August 22	Municipal Corporation, industries.	147.00 lakhs	Water fountains 5 Nos provided at major intersection/ circle under Smart City Mission 2018 Fund

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
Construction Activities	Stringently enforce rules for dust control in construction activities and close non – compliant sites	Short-term and regular activity	January 22	Municipal Corporation	200.00 lakhs	Gazette notification published in the year 2016 for the enforcement of C&D waste management in Construction Activities. C&D plant Installation project under progress.
	Control dust pollution at construction sites through appropriate cover	Short-term and regular activity	January 22	Municipal Corporation	Not Applicable	Continuous and regular activity
	Transportation of construction materials like sand, soil, stone chips etc in covered conditions.	Short-term and regular activity	January 22	Transport Department, Traffic Police	Not Applicable	Regularly monitored
	Restriction on storage of construction materials along the road.	Short-term and regular activity	January 22	Municipal Corporation	Not Applicable	Continuous and regular activity. Corporation has 4 Nos. of collection points for construction materials.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
Biomass and garbage burning	Restriction on open burning of municipal solid waste, Crop residue, Biomass, plastic and horticulture waste etc	Short-term and regular activity	January 22	Municipal Corporation, Agriculture Department	Not Applicable	Continuous and regular activity as and when required Corporation: Bio mass fuels in Restaurants / Roadside eateries are not in Practices. Notice on restriction of single use plastic materials is already issued to all Restaurants / Roadside eateries.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Disposal of Garbage should be monitored periodically and to avoid open garbage firing.	Short-term and regular activity	January 22	Municipal Corporation	70.00 Lakhs 84.30 Lakhs , 5000.00 Lakhs & 4000.00 Lakhs	<ul style="list-style-type: none"> • Strict Monitoring is being ensured by “Providing wireless handset to 65 Nos of Sanitary Supervisor & Sanitary Inspectors”. At present the door to door collected segregated garbage is transferred to 31 Nos. of Micro Composting Centres for process. The wet waste is disposed properly with local vendors and Refuse Derive Fuel with cement Factories. • 4 Nos of Resource Recovery Centre (RRC) was approved under SBM 2018-19 fund and 3 Nos. of RRC completed & in use. Remaining 1 No construction work is in progress. • Reclamation of 7.60 Lakhs Cu.m of legacy waste through Bio-Mining Process (Qty as on 31.08.18) under process • Fund required for the Reclamation of Additional 5.00 Lakhs Cu.m of legacy waste dumped after 31.08.2018 through Bio-Mining Process.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Immediate lifting of solid waste generated from desilting and cleaning of municipal drains for its disposal	Short-term and regular activity	January 22	Municipal Corporation	168.00 Lakhs	The desilted solid waste in wet condition and it is allowed to dry for 24 Hrs. Then Immediate lifting of solid waste desilted from Corporation drains for its disposal are Strictly Monitored. For de-silting of roadside storm water drain and Immediate lifting of solid waste generated from desilting through mechanized truck-mounted De-silt vehicle 4 Nos required.
	Transportation of municipal solid wastes, construction materials and debris in covered system	Short-term and regular activity	January 22	Municipal Corporation, Traffic Police	12.00 Lakhs	Strict Monitoring is being ensured. The solid waste transportation vehicle has been covered with proper Nylon net.
	Stop use of coal/firewood in hotels and open eateries	Short-term and regular activity	January 22	Municipal Corporation/ Oil Companies	Not Applicable	Corporation: Use of coal/firewood in hotels and open eateries are not in practice.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Restriction of usage of Single use Plastics	Short-term and regular activity	Implemented	Municipal Corporation	Not Applicable	Government of Tamil Nadu has issued notification on ban on single use plastics effective from January 2019. Strict enforcement has been carried out by corporation and fine imposed against the violators
	Phasing out of Bio mass fuel and replacing with LPG in the Restaurants, Dhabas/Road side eateries	Mid	August 22	Municipal Corporation and Hotel Owner associations	3030.00 Lakhs 6640.00 Lakhs &	Proposed to Establish 100 M.T. Capacity Bio methanation Bottling Plant to process wet waste under waste to energy solution at an estimate cost of Rs.3030.00 Lakhs under XV th Finance Commission. This project consists of Raw material feeding tank, Digester tank, and Slurry tank, with necessary equipments /machineries Decomposition of mixed Solid Waste by unique Patterned Technology
	Strict action against industries having non-compliance to the norms	Short-term and regular activity	January 22	TNPCB	Not Applicable	TNPCB is regularly monitoring the industries and taking action against the Industries violating the norms.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
Industries	Ensuring emission standards in industries	Short-term and regular activity	January' 22	TNPCB	Not Applicable	TNPCB is regularly monitoring the emission standards in industries.
	Adoption of cleaner technology in brick kilns.	Mid-term	August 22	TNPCB	Not Applicable	There is no active brick kilns within the city limit
	Shifting of polluting industries	Long-term	August 23	TNPCB and Industry dept.	Not Applicable	After conducting the source apportionment, Emission Inventory Studies and Carrying Capacity in the city, Adopting better technology to reduce the pollution in the industries or shifting of industries will be considered
	Ban on polluting industries	Mid-term	August 22	TNPCB and Govt of Tamil Nadu.	Not Applicable	After conducting the source apportionment, Emission Inventory Studies and Carrying Capacity in the city, Adopting better technology to reduce the pollution in the industries or ban on polluting industries will be considered

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Air Quality Monitoring may be strengthened by increasing the no of monitoring site location covering all regions especially industries, and road transportation areas/ educational institution areas by the Installation of Additional CAAQMS at Trichy city. (Commercial/ Residential)	Mid-term	August 22	ULBs/ TNPCB: CPCB	150 lakhs 1050.00 Lakhs	<p>In Trichy 5 NAMP stations are under operation and 2 CAAQMS are.</p> <p>CPCB has sanctioned Rs 1 Crore for the installation of 1 No CAAQM at Trichy Under Environmental Compensation fund.</p> <p>3 Nos. of CAAQM Station integrated with corporation, TNPCB and CPCB websites is proposed under 15th FC Fund. After due approval of Technical clearance, the project will be implemented as per the guidelines of CPCB.</p>
Strengthening of AAQ Monitoring	Emission Source Apportionment Study for Trichy	Mid-term	August 22	TNPCB, CPCB	90 lakhs	<p>Short period SA study during winter season is studied during January 2020.</p> <p>The detailed Emission inventory, SA, carrying capacity study will be conducted for 18 months under grants received from XV-FC.</p>

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
Public Awareness	Create awareness about polluting vehicles, open burning and its health impacts	Mid-term	August 22	Corporation/ Department of Education. Department of Health, District administration	30 lakhs	Display boards at traffic junction to display real time noise level carbon monoxide level at that point with audio messages to switch of the vehicles when the signal is red and commuters can see the increase and decrease in noise level and Carbon monoxide levels due to their actions. Similar type of display with awareness message on health issues due to burning of waste.
	Educate the advantage of using cleaner fuel such as LPG	Short-term and regular activity	January'22	Corporation and Department of Environment, NGOs	5 lakhs	Public awareness on advantage of using cleaner fuel such as LPG shall be conducted by Department of Environment and NGOs at the earliest
	Involvement of school and other academic institution in awareness program.	Mid-term	August 22	Corporation, Department of Environment NGO's	5 lakhs	Public awareness will be conducted by Department of Environment and NGOs at the earliest by incorporating the school and other academic institution.

Source group	Action	Implementation period (Short/Mid/Long term)	Time limit for implementation	Responsible Agency(ies)	Budget (Lakhs)	Remarks
	Compliance of guidelines on D.G.sets and action against violation	Mid-term	August 22	TNPCB and District administration	Not Applicable	TNPCB has issued notice on Retrofitting of Emission Control Devices/ Equipment in DG sets with Capacity of 125 KVA and above in the state of Tamil Nadu.
Others	Stop use of diesel generator sets	Mid -term	August 22	TNPCB Corporation and District administration	Not Applicable	District Administration will issue directions for the stoppage of operation of DG sets when the PM ₁₀ level exceeds the standards
	Helpline to oversee non compliances on aforesaid issues	Short-term and regular activity	January 22	District administration and TNPCB.	Not Applicable	Public helpline is already existing and operational

Annexure I

Graded Response Action Plan for Trichy city

In pursuant to the direction of the Central Pollution Control Board, Delhi a Graded Response Action plan has been prepared for implementation in Trichy city under different Air Quality Index (AQI) categories namely, Moderate & Poor, Very Poor as per National Air Quality Index.

Severe (ambient PM_{2.5} or PM₁₀ concentration value is more than 250 µg/m³ or 430 µg/m³ respectively)	Agency responsible / Implementing Agency
Strengthen and encourage public transport services to reduce the vehicular congestion	State Transport Corporation and District Administration
Identify road stretches with high dust generation and increase frequency of mechanized clearing of road and sprinkling of water on paved and unpaved roads	Municipal Corporation, State Highway and National Highway Authority of India
Very poor (ambient PM_{2.5} or PM₁₀ concentration value is more than 121-250 µg/m³ or 351-430 µg/m³ respectively)	Agency responsible / Implementing Agency
Stop use of Diesel generators sets	TNPCB and District Administration
Compliance to norms by the industries	TNPCB

<p>Very poor (ambient PM_{2.5} or PM₁₀ concentration value is more than 121-250 µg/m³ or 351-430 µg/m³ respectively)</p>	<p>Agency responsible / Implementing Agency</p>
<p>Stop use of coal/firewood in hotels and open eateries</p>	<p>Municipal corporation</p>
<p>Alert in newspapers /TV/Radio to advise people to avoid polluted areas and restrict outdoor</p>	<p>District Administration and Police</p>
<p>Moderate to poor (Ambient PM_{2.5} or PM₁₀ concentration value is between 61-120 µg/m³ or 101- 350 µg/m³ respectively)</p>	<p>Agency responsible / Implementing Agency</p>
<p>Stringently enforce/stop garbage burning in landfills and other places and impose heavy fines on person responsible.</p>	<p>Municipal corporation of Trichy</p>
<p>Do periodic mechanized sweeping on the roads with heavy traffic and water sprinkling also on unpaved roads every two days</p>	<p>Municipal corporation of Trichy, Traffic Police Department. State highway and National</p>
<p>Strict vigilance and no tolerance for visible emissions- stop plying of visibly polluting vehicles by impounding or heavy fine.</p>	<p>Transport department and Traffic Police Department</p>
<p>Strict Vigilance and enforcement of PUC norms</p>	

<p>Moderate to poor (Ambient PM_{2.5} or PM₁₀ concentration value is between 61-120 µg/m³ or 101- 350 µg/m³ respectively)</p>	<p>Agency responsible / Implementing Agency</p>
<p>Stringently enforce rules for dust control in construction activities and close non-compliant sites.</p>	<p>Police Department</p>
<p>Deploy traffic police for smooth traffic flow at identified vulnerable areas</p>	<p>Traffic Police</p>
<p>Strictly enforce Supreme Court ban on firecrackers</p>	<p>Traffic Police, Chief Controller of Explosives Petroleum and Explosive Safety Organizations (PESO)</p>
<p>Information dissemination Social media, mobile Apps should be used to inform people about the pollution levels, contact details of control room, enable them to report polluting activities / sources to the concerned authorities, and that will be taken by government based on the level of pollution.</p>	<p>TNPCB, District Administration.</p>

Annexure-II

Potential sources of PM₁₀ at Trichy city



Figure 15 Central bus stand – Movement of vehicles





Figure 16 Traffic and road dust emission



Figure 17 Road side dust emission



Figure 18 Construction debris and road side dust emission



Figure 19 Road side dust emission

Status of Public Grievance Response Portal and Emergency Response System including details of app/ portal/ plan of Non- attainment City/ Million plus city – Madurai

S No	Directions of Non attainment city as per NGT order 681/2018	Details of status of PGRP/ERS
1	<p><u>Direction –V</u> <u>Development of Public Grievance Redressal Portal (PGRP)</u></p> <p>PGRPs may be developed for the remaining NACs and report furnished by the SPCBs/PCCs to CPCB within two months. In default, SPCBs/PCCs concerned will be liable to pay compensation @ Rs. 2 lakhs per month from 01.02.2020. CPCB may file a compliance report. Failure may also be reflected in the ACRs of the Member Secretaries of SPCBs/PCCs</p>	<p>1. Chief Minister Cell- Tamil Nadu App –Nil Portal -http://cmcell.tn.gov.in/ Phone Number : 044 - 2567 1764 E-Mail : cmcell@tn.gov.in</p> <p>2. Amma Cell App-<u>Amma Call Centre</u> mobile app Portal- http://www.ammacallcentre.tn.gov.in/ Toll free number - 1100. The complaints received through the above media are immediately attended and replies were furnished to the complainant.</p> <p>3. TNPCB – Online Grievance Petition Redressal System Portal http://pcbolgprs.in/</p> <p>Email: tnpcbgrivance@gmail.com Ph.No 044 - 2235 3134</p> <p>TNPCB has Toll-free number for lodging public grievances on issues related to pollution.</p> <p>Toll free No: 1800 - 425-6750</p>
2	<p><u>Direction –XV</u> <u>Finalization of Emergency Response System</u></p> <p>With regard to finalization of Emergency Response System (ERS), we are of view that the State Disaster Management Authorities in coordination with the SPCBs/PCCs and</p>	<p>State Disaster Management authority of Tamil Nadu has policy and plan for the Emergency Response system for the natural disasters such as cyclones, floods, drought, landslides, earth quake, tsunami, heat wave and for manmade disasters such as chemical, biological and nuclear.</p> <p>App-TN SMART mobile app</p>

<p>State Units of Meteorological Departments may include emergency as a part of disaster management and develop ERS accordingly which may be placed in public domain.</p>	<p><u>Disaster management section -</u> Collectorate - Trichy</p> <p>Tahasildar (Disaster management)- 9384056213 What's App- 94458 69848 Toll free No -1077</p>
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Monitoring mechanism for implementation.

District level Committee constituted under the chairmanship of District collector and monthly meeting of the District level Committee will be conducted to discuss/monitor the progress of the activities to be performed under the Action Plan. The committee shall involve various stakeholders and their participation will be ensured for achieving various targets mentioned in the Action plan. Tamil Nadu Pollution Control Board shall regularly review the implementation of aforesaid action plan. The status reports on action taken are to be submitted to Central Pollution Control Board on regular basis to furnish the same to Hon'ble National Green Tribunal (NGT).

The details of the various committee members involved in the overall guidance, monitoring and implementation of the city action plan are given below

a) The district level committee shall be constituted as follows

1	District Collector Trichy	Chairman
2	Superintendent of Police Trichy	Member
3	Joint chief Environmental Engineer (Monitoring) Tamil Nadu Pollution Control Board	Member &Convener
4	District Environmental Engineer, Trichy	Member
5	Regional Transport Officer Trichy	Member
6	Superintendent Engineer State highways Department Trichy	Member
7	Municipal Corporation Commissioner Trichy	Member
8	Oil Companies representative from HPCL, BPCL and IOC	Member
9	National Highway Authority of India	Member
11	Executive Engineer, Agriculture Department, Trichy	Member
12	Hotel Owners Association	Member
13	Local Planning Authority	Member
14	Nodal officer - NCAP	Member
15	Deputy Director (Labs)/ Chief Scientific Officer,	Member

b) Steering Committee members

The Steering committee members to provide overall guidance for the National Clean Air Programme in respect of Trichy U A will be constituted as follows



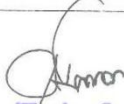
1	Chief Secretary to Government of Tamil Nadu	Chairman
2	Additional Chief Secretary Government, Finance Department	Member
3	The Principal Secretary to Government, Environment and Forest Department	Member
4	The Principal Secretary to Government, Municipal Administration and Water Supply Department	Member
5	The Principal Secretary to Government, Industries Department	Member
6	The Principal Secretary to Government, Home(Transport) Department	Member
7	The Principal Secretary to Government, Agriculture Department	Member
8	The Principal Secretary to Government Highways & Minor Ports Department	Member
9	The Member Secretary, Tamil Nadu Pollution Control Board	Member & Convener

c) Air Quality Monitoring Committee (AQMC) at State Level

The Government of Tamil Nadu has constituted the Air Quality Monitoring Committee (AQMC) at state level with following members for the non attainment cities/ million plus cities Chennai, Madurai and Trichy Vide GO (D) no.96 dated 14.06.2021

1	The Principal Secretary to Government, Environment Climate Change and Forest Department.	Chairman
2	Commissioner/ Director Industries and Commerce	Member
3	Commissioner, Municipal Administration Department	Member
4	Commissioner, Transport Department	Member
5	Director, Agriculture Department	Member
6	The Director of Environment	Member
7	The Member Secretary, Tamil Nadu Pollution Control Board	Member & Convener

The above action plan is placed before the Air Pollution Monitoring Committee on 2.12. 2021 and approved for forwarding the same to Central Pollution Control Board, Delhi.

S.No	Department		Signature
1	The Director of Environment, Panagal Building, Saidapet, Chennai-15.	Member	 DIRECTOR DEPARTMENT OF ENVIRONMENT CHENNAI - 600 075.
2	The Transport Commissioner Transport department, Chepauk, Chennai-5	Member	 Transport Commissioner, Chepauk, Chennai - 5.
3	The Commissioner/Director of Industries and Commerce, Guindy, Chennai-32	Member	 Industries Commissioner and Director of Industries and Commerce Guindy, Chennai - 600 032
4	The Commissioner, Municipal Administration and Water Supplies department, MRC Nagar, Chennai-28.	Member	 DIRECTOR OF MUNICIPAL ADMINISTRATION M.R.C. NAGAR, CHENNAI - 28
5	The Director, Agricultural department, Chepauk, Chennai-5	Member	 Director of Agriculture, Chepauk, Chennai-600 005.
6	Member Secretary, Tamil Nadu Pollution Control Board, Chennai-32	Member and Convener	 Member Secretary, Tamil Nadu Pollution Control Board, CHENNAI-600 032,
7	The Principal Secretary to the Government Environment and Forests Department, Government of Tamil Nadu, Chennai-9	Chairman	 Principal Secretary to Government Environment, Climate Change and Forest Department Secretariat, Chennai-9.



ABSTRACT

Environment – Air Quality Monitoring Committee (AQMC) constituted for preparation and implementation of action plan for improving the ambient air quality in non-attained city (Thoothukudi) as per the orders of Hon'ble National Green Tribunal in O.A.No.681/2018, dated 08.10.2018 – Extending the scope of the Air Quality Monitoring Committee to the newly included non-attainment cities and Million Plus Cities – Orders – Issued.

Environment, Climate Change and Forest (EC.2) Department

G.O.(D)No.96

Dated: 14.06.2021

பிலவ, வைகாசி-31,

திருவள்ளூர் ஆண்டு-2052

Read :

1. G.O.(D).No.20, Environment and Forests (EC.2) Department, Dated:10.01.2019.
2. From the Member Secretary, Tamil Nadu Pollution Control Board, Guindy, Chennai-32. Letter No.TNPCB/DD(L)/3064/2013, Dated:30.03.2021.

ORDER

In the Government order first read above, an Air Quality Monitoring Committee has been constituted based on the directions of the Hon'ble National Green Tribunal, Principal Bench in O.A.No.681 of 2018, dated 08.10.2018 for preparation and implementation of action plan for improving the air quality in non-attainment city Thoothukudi with the following members :-

1.	Principal Secretary to Government, Environment and Forests Department	Chairman
2.	The Director of Environment, Department of Environment	Member
3.	Commissioner, Transport Department	Member
4.	Commissioner / Director Industries and Commerce	Member
5.	Commissioner Municipal Administration Department	Member
6.	Director, Agriculture Department	Member
7.	The Member Secretary Tamil Nadu Pollution Control Board	Member/Convener

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2. The Member Secretary, Tamil Nadu Pollution Control Board in his letter second read above has stated that the Hon'ble National Green Tribunal, New Delhi in its further order in O.A.No.681 of 2018, dated 06.08.2019 has identified the Trichy in Tamil Nadu also as non-attainment city based on the air quality data for the period from 2014-2018 and further in the month of November 2020, Central Pollution Control Board has included Madurai as non-attainment city based on the data for the period from 2015-2019.

3. The Member Secretary, Tamil Nadu Pollution Control Board has also stated that Chennai city have been included as Million Plus Cities for control of abatement of air pollution and the Central Pollution Control Board has requested the Tamil Nadu Pollution Control Board to prepare action plan for the Non-attainment Cities and Million plus cities (i.e., Trichy, Madurai and Chennai). The said Action plan for the non-attainment cities and the Million Plus Cities have to be approved by the Air Quality Monitoring Committee.

4. The Member Secretary, Tamil Nadu Pollution Control Board has therefore requested to extend the scope of Air Quality Monitoring Committee constituted vide G.O.Ms.No.20, Environment and Forests(EC.2) Department, dated 10.01.2019 to the other non attainment cities and Million Plus cities (i.e.,Trichy, Madurai and Chennai) for approval of the action plans.

5. The Government after careful examination have decided to accept the proposal of the Member Secretary, Tamil Nadu Pollution Control Board and to extend the scope of Air Quality Monitoring Committee constituted in G.O.Ms.No.20, Environment and Forests(EC.2) Department, dated 10.01.2019, to the other newly included non attainment cities and Million Plus cities of Trichy, Madurai and Chennai for approval of the action plans.

(BY ORDER OF THE GOVERNOR)

SUPRIYA SAHU
PRINCIPAL SECRETARY TO GOVERNMENT

To
The Chairman,
Tamil Nadu Pollution Control Board,
Guindy, Chennai-32.
The Commissioner, Transport Department,
Chepauk, Chennai-5.
The Commissioner of Municipal Administration,
Raja Annamalaipuram, Chennai-28.
The Commissioner / Director,
Department of Industries and Commerce,
Guindy, Chennai – 32.

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The Director, Agriculture Department,
Chepauk, Chennai -5.
The Director of Environment,
Department of Environment, Saidapet, Chennai -15.
The Member Secretary,
Tamil Nadu Pollution Control Board,
Guindy, Chennai 32.

Copy to:

The Additional Chief Secretary to Government,
Municipal Administration and Water Supply Department,
Secretariat, Chennai-9.
The Additional Chief Secretary to Government,
Transport Department, Secretariat, Chennai-9
The Principal Secretary to Government,
Industries Department, Secretariat, Chennai-9.
The Principal Secretary to Government,
Agriculture Department, Secretariat, Chennai - 9.
The District Collectors concerned.
The Special Personal Assistant to Hon'ble Minister
(Environment-Climate Change and Youth Welfare and Sports Development),
Secretariat, Chennai-9.
The Private Secretary to Principal Secretary to Government,
Environment and Forests Department, Secretariat, Chennai-9.
Stock File/Spare Copy.

// FORWARDED : BY ORDER //

n-B
18.6.2024
Section Officer
15/6/2024