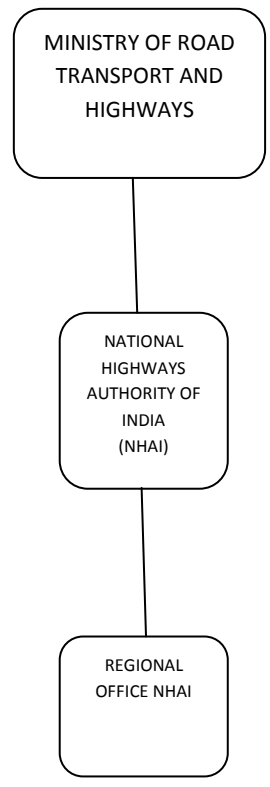
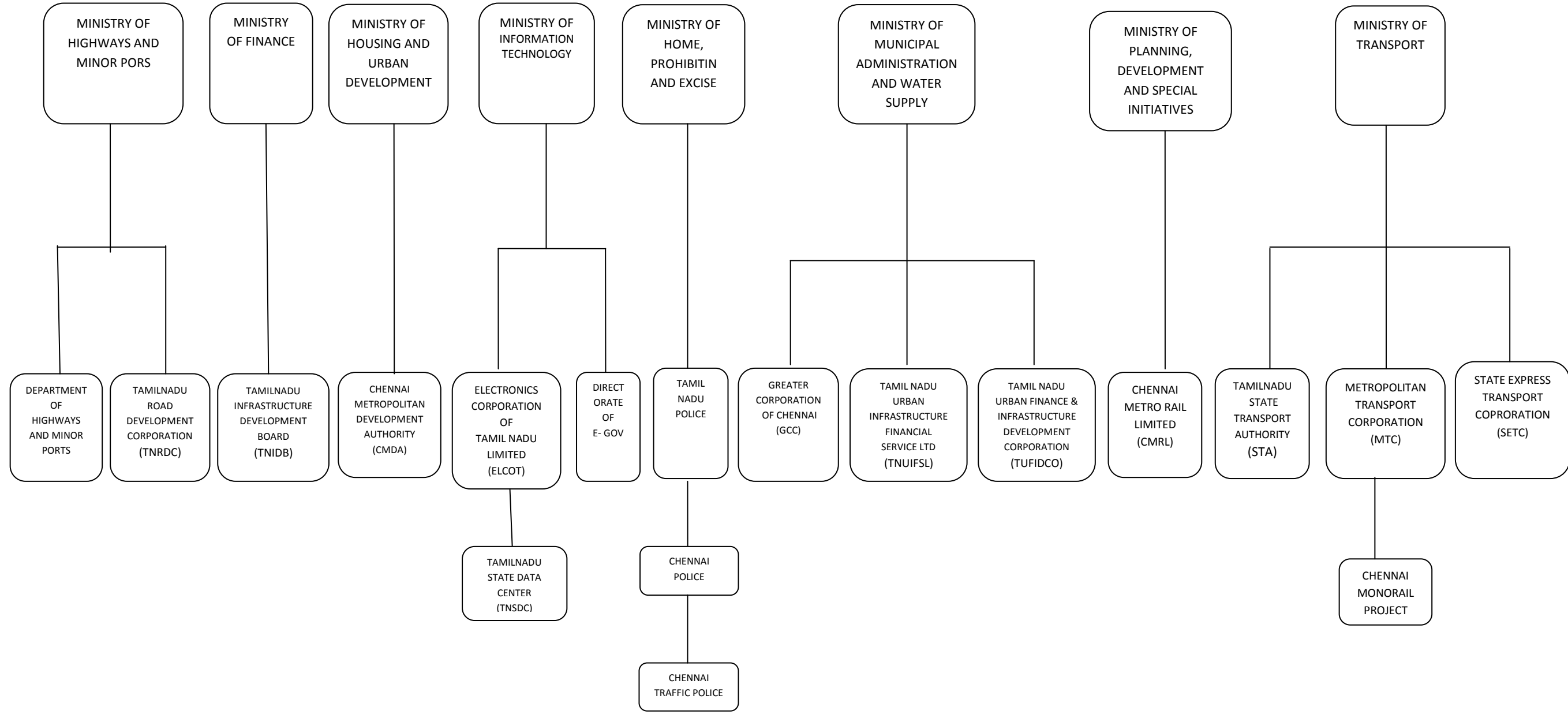


ANNEXURE – 1 EXISTING ORGANIZATIONS UNDER MINISTRIES

CENTRAL GOVERNMENT



STATE GOVERNMENT



ANNEXURE – 2: Basic Requirement of ITS Component

1. Traffic Information Centre (C-TIC)

Item	System/Equipment	Purpose/Function	Basic Requirement
C-TIC	Automatic Traffic Counters cum Classifier (ATCC)	<p>Image Processing Type</p> <ul style="list-style-type: none"> -Traffic Volume monitoring by vehicle type, -Vehicle speed, -Occupancy 	<p>Camera</p> <ul style="list-style-type: none"> - Imaging Device : CCD or MOS or CMOS - Effective Pixels : 659 (H) x 494 (V) or more - Scanning area : 4.80 mm (H) x 3.60 mm (V) or larger - Minimum illuminance : 0.5 lx (colour), 0.1 lx (white/black mode) or lower - Video S/N ratio : 50 dB or more - Compression system : JPEG(M-JPEG), MPEG-4/H.264 - Protocol : TCP/IP, UDP/IP, HTTP, RTP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP - LAN interface : 10BASE-T/100BASE-TX(RJ-45) - Water and Dust Resistance : IP66 (including camera housing) <p>Image processing</p> <ul style="list-style-type: none"> - Detecting vehicle running in any direction and recognize the shape or edge of the vehicle. - Counting the number of vehicles that passes the sensing area during the unit measurement time. - Classifying the vehicle into large and small size. The definition of the large and small size shall be made according to the vehicle length and the classification parameter shall be adjustable.

			<ul style="list-style-type: none"> - Calculating the time occupancy rate per unit measurement time. - Calculating an average speed per unit time which is a geometric mean of the speed of vehicles passed in the past unit measurement time.
Flood Monitoring System	<p>CCTV</p> <ul style="list-style-type: none"> -Real Time Monitor of all locations of expressway -PTZ (Pan, tilt, and zoom) control of camera -Video Recording 		<ul style="list-style-type: none"> - 1/3"CCD - Effective Pixels; 659 (H) x 494 (V) - Horizontal Resolution; 540 TV lines (Color) - Minimum illuminance 0.3 lx (colour), 0.1 lx (white/black mode) - Compression system; JPEG, MPEG-4, H.264 - Panning/ Tilting /Zoom
	<p>Sensor</p> <p>Processing Unit</p> <ul style="list-style-type: none"> -Processing Unit 		<p>Sensor</p> <ul style="list-style-type: none"> -Detection method ; Surface of the water touch-style capacitance method -Water surface detection points; 3 points -Sensor; PBT resin <p>Processing Unit</p> <ul style="list-style-type: none"> -Cabinet size; 400mm(W)×500mm(H)×250mm(D) or less -Material; Stainless 2.0t - LAN interface; 10BASE-T
	<p>VMS</p> <ul style="list-style-type: none"> - Cantilever Type VMS -VMS Controller 		<p>VMS</p> <ul style="list-style-type: none"> -Board Size; 2500mm×700mm -Display device; Light emitting device LED -Luminescent color; blue , red , green <p>Controller</p> <ul style="list-style-type: none"> -Communication control

			<ul style="list-style-type: none"> -Display control -Monitoring -Local operation -Cabinet size; 400mm(W)×500mm(H)×250mm(D) or less -Material; Stainless 2.0t
	Internet	<ul style="list-style-type: none"> - Information supply to users by internet - traffic information -Construction schedule -Event information 	<p>Web Server</p> <ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1TB(SATA) x 2HD or better - Redundancy system by server duplication
	Probe Data System	Traffic Probe data analytics system	<p>Probe Data System Server</p> <ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication - Main function <ul style="list-style-type: none"> • Collection and handling of probe data (3,800 device) • Information registration such as a bus route, the bus stop • Map matching • Calculation of the vehicle speed

			<ul style="list-style-type: none"> • Traffic condition data generation in the link / section • Figure of indication site data making • Indication data making every VMS
	<p>Traffic Information Center devices</p> <ul style="list-style-type: none"> -Large Display, -Monitor/Control Terminal -Advanced data processing server with integrated ATMS software - Firewall, network -Call center 	<ul style="list-style-type: none"> -Integration of information collected from devices and information dissemination to the device -Advanced and integrated data processing 	<p>ATCC Server</p> <ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Main function <ul style="list-style-type: none"> • Collection and count of ATCC data (230 device) <p>Large Display (Video wall)</p> <ul style="list-style-type: none"> -Display Type; color TFT LCD -Display size; 55inch or better (2×3) - Native Resolution; Full HD (1920x 1080) <p>Video Switch</p> <ul style="list-style-type: none"> - Video input; RGB Analogue, DVI-D, HDMI PC video output interface and compatibility -Video output; RGB Analogue, DVI-D, HDMI Operator console monitor and interface compatibility. - Control interface; RJ-45(10/100BATE-T) <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better

			<ul style="list-style-type: none"> - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	Network system	<ul style="list-style-type: none"> - Installed at each device location 	<ul style="list-style-type: none"> -Device Type; 10/100/1000 M bps -Consisting of layer 3 switch, layer 2 switch and media converter

2. ITS for Public Bus Transportation for Metropolitan Transport Corporation (MTC)

Item	System/Equipment	Purpose/Function	Basic Requirement
Public Bus Transportation	City Bus Monitoring System -GPS device	-Bus Monitoring and Management	<p>GPS device</p> <ul style="list-style-type: none"> -Vehicle mounted type -Network; GSM, GPRS, GPS -12V ±10%DC -Real Time tracking; time, angle, ignition and event based, SOS <p>Bus Monitoring System Server</p> <ul style="list-style-type: none"> - Housing; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication <p>Large Display (Video wall)</p> <ul style="list-style-type: none"> -Display Type; color TFT LCD -Display size; 55inch or better (2×3) - Native Resolution; Full HD (1920x 1080) <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better

			<ul style="list-style-type: none"> - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	<p>Passenger Information System</p> <p>-Various display</p>	<ul style="list-style-type: none"> - Bus arrival time display - Timetable Display 	<p>LED Display Boards inside the Bus</p> <ul style="list-style-type: none"> -Board Size; 600mm×100mm -Display device; Light emitting device LED -Luminescent color; blue , red , green <p>LED Display Boards at Bus stops</p> <ul style="list-style-type: none"> -Board Size; 1000mm×300mm -Display device; Light emitting device LED -Luminescent color; blue , red , green <p>Large Size Screen Display at Bus Terminals</p> <ul style="list-style-type: none"> -Display Type; color TFT LCD -Display size; 55inch or better (2×2) - Native Resolution; Full HD (1920x 1080) <p>Server at the Bus Terminals</p> <ul style="list-style-type: none"> - Housing; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication <p>Passenger Information Server</p> <ul style="list-style-type: none"> - Housing; 2U Rack Mountable

			<ul style="list-style-type: none"> - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication <p>Workstation</p> <ul style="list-style-type: none"> - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	<p>Electric Ticketing Management System</p> <ul style="list-style-type: none"> - Electric Ticketing Devide 		<p>Electric Ticketing Device</p> <ul style="list-style-type: none"> -Handy Terminal Type -NFC contactless smart card leader writer --Network; GSM, GPRS, GPS - Receipt Printer <p>Ticketing Server</p> <ul style="list-style-type: none"> - Housing; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better

			<ul style="list-style-type: none"> - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
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3. Traffic Management System for Chennai Traffic Police Equipment (CTP)

Item	System/Equipment	Purpose/Function	Basic Requirement
Traffic Management System	Closed Circuit Television Camera System (CCTV)	<ul style="list-style-type: none"> -Real Time Monitor of all locations of expressway -PTZ (Pan, tilt, and zoom) control of camera -Video Recording 	<p>Camera</p> <ul style="list-style-type: none"> - 1/3"CCD - Effective Pixels; 659 (H) x 494 (V) - Horizontal Resolution; 540 TV lines (Color) - Minimum illuminance 0.3 lx (colour), 0.1 lx (white/black mode) - Panning/ Tilting /Zoom <p>CCTV Server</p> <ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication
	Variable Message Sign (VMS)	<ul style="list-style-type: none"> - Visual information display to provide real-time information to the driver -Dissemination of Traffic status of through line forwarded by Gantry type VMS 	<p>VMS</p> <ul style="list-style-type: none"> - Board Size; 5000mm×3000mm or - Display device; Light emitting device LED - Luminescent color; blue , red , green - Controller Implementation - Communication control - Display control - Monitoring

			<p>- Local operation</p> <p>VMS Server</p> <p>- Chassis; 2U Rack Mountable</p> <p>- CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better</p> <p>- OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux</p> <p>- Memory; 64GB (8GB DDR4) or better</p> <p>- HDD; 1.2TB(SATA) x 8 HDD or better</p> <p>- Redundancy system by server duplication</p> <p>Operator Console</p> <p>- Chassis; Desktop</p> <p>- CPU; Intel i7 cash 30MB or better</p> <p>- OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux</p> <p>- Memory; 4GB ECC DDR2 or better</p> <p>- HDD; 250GB(SATA) x 8 HDD or better</p>
	Advanced Signal System	<p>-Signal control database</p> <p>-Signal controller</p> <p>-Lantern</p>	<p>Signal</p> <p>-Luminous requirements and dominant wavelength</p> <ul style="list-style-type: none"> • Red; 165 cd (I), 365 cd (I), 625 (D) • Yellow; 410 cd (I), 910 cd (I), 590 (D) • Green; 215 cd (I), 475 cd (I), 500 (D) <p>Signal controller</p> <p>- Mode of operation</p> <ul style="list-style-type: none"> • Central control in accordance with the parameters sent from the Control Centre • Local coordinated control

			<ul style="list-style-type: none"> • Local isolated control with actuation control and time-of-day control • Manual control • Flashing operation • Lamp off <p>Senser</p> <ul style="list-style-type: none"> - Image Processing Vehicle Detector <ul style="list-style-type: none"> • Type; Image processing type with video camera • Detection mode; Presence • No. of lanes; Maximum 2 lanes • Type of vehicle detected; 4-wheel vehicles, 2-wheel vehicles <p>Advanced Signal System Server</p> <ul style="list-style-type: none"> - System capacity <ul style="list-style-type: none"> • Local controller; 400 or more • Vehicle detector; 2,000 or more • Split and offset subarea; 400 or more - Redundancy system by server duplication - System Functions <ul style="list-style-type: none"> • Area wide signal control • Data gathering and processing • Queue length information • Equipment monitoring • Human-machine interface • Data recording and reporting <p>Operator Console</p>
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			<ul style="list-style-type: none">- Chassis; Desktop- CPU; Intel i7 cash 30MB or better- OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux- Memory; 4GB ECC DDR2 or better- HDD; 250GB(SATA) x 8 HDD or better

ITS for Chennai Peripheral Road

1. Toll Management System (TMS)

Items	Equipment	Purpose / Function	Basic Requirement
Toll Lane			
Manual Toll Collection	Lane Controller with Industrial PC	Control and Monitor all the sub systems	<ul style="list-style-type: none"> - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	Automatic Ticket Issuing Machine	Automatic ticket issuing station at the entry lane to issue tickets. The ticket will be presented at the out/exit lane and distance based toll fare will be charged at the out lane	<ul style="list-style-type: none"> -Maximum up to 145mm (W) x 195mm (D) x 148 (H) -Print Speed: 47 LPS or more -Print font: 9x17/12x24 -Print column capacity: 56/42 columns
	Receipt Printer, Industrial Keyboard, Touch Panel TFT	Toll Collector Terminal for processing transaction and printing receipt	<ul style="list-style-type: none"> -Maximum up to 145mm (W) x 195mm (D) x 148 (H) -Print Speed: 47 LPS or more -Print font: 9x17/12x24 -Print column capacity: 56/42 columns
	Independent AVC Controller and Lane AVC system including sensors and loop	Sensors, controller and other peripherals for Automatic Vehicle classification	<ul style="list-style-type: none"> -Detection Area; Not more than 2 meter in length and for the width of the lane -Detectable vehicle speed; Up to 90 km/h -Tolerable pressure; 8 kg/cm² Loop coil -Copper wire : Silicon Insulated copper stranded 1.5mm² wire

			<ul style="list-style-type: none"> -Loop inductance range : 25 μ H to 1200 μ H -Recommended loop inductance : 80 μ H to 300 μ H -Loop operational frequency : 30kHz to 130kHz -Inductive loop resistance : Max . 25 Ω
Booth monitoring camera, Intercom slave unit	Camera for monitoring TC activities inside the booth, intercom unit for 2-way communication with control room		<ul style="list-style-type: none"> -1/4-type interline transfer CCD -Effective Pixels; 752 (H) x 582 (V) -Maximum Illumination; 1.0 lux at F1.3 (WIDE)
Manual booth controller	To manually control (open/close) boom barrier, traffic light & OHLS		<ul style="list-style-type: none"> -It can be controlled toll collection personnel manually
Siren and Blinking light and panic alarm switch	Panic alarm switch to secretly inform control room about any danger from the booth. Siren & blinker is to alert the security staff about any violation in the lane		<ul style="list-style-type: none"> -Siren; Motor Driven or better, 112 dB at 1 meter
Smart Card Reader	Touch-and-go card reader		<ul style="list-style-type: none"> -ISO/IEC 14443 NFC-A, B and ISO/IEC 18092 NFC-F Reading/Writing -Read/write distance; 20 mm or less -Authentication Security; DES or 3DES or AES
Automatic Barrier Gate, loop and vehicle separator	Barrier gate to stop vehicle to pay. Loop & separator to detect vehicle presence and		<ul style="list-style-type: none"> -Magnetic MIB 10 for ETC Lanes and MIB 20 for Manual & Touch&GO lanes or equivalent -Boom Length; 3000mm for standard lanes

		separate 2 vehicles.	-Open and Close Time; Manual & T&G lane = 0.9 Sec ETC Lane = 0.6 Sec -Boom: Red and white
	Overhead Lane Status light (OHLS)	Lane open/close LED sign mounted on the canopy to inform commuter about lane open/close status	-Approx 200 mm diameter with sun visor -Aspect Color; Green and red -Intensity; 70 CD At Least
	Integrated User Fare Display With Traffic Light System & Siren	46" LED backlid Panel to display user information/fare details and traffic light	-2 lines with 10 Characters each -Character height; 120 mm at least -Ultra bright AllnGaP LEDs, 8000mcd at 20mA -300 viewing angle -Suitable for outdoor condition under bright sunlight
	Incident Capture Camera with mounting pole	Capture vehicle image with every transaction	-1/3" CCD with Night Vision -Horizontal Resolution; 525 Lines -Sensitivity; 0.8 Lux -Shutter Speed; 1/100 ~ 1/10,000 sec
	License Plate Image Capture Camera with mounting poles	capture and optical character recognition of vehicle number plate	Still Camera (Number plate of the overloaded vehicles) - 1/3" CCD Progressive scan - Resolution; 1280 x 720 (HD) - Max Frame Rate (at all resolution); 30frames/sec - Output Format; JPEG, MJPEG stream, H.264 - Day/Night Mode; Configurable day / night mode switching - Image Processing • Number plate of the overloaded vehicles - Communication Interface; 10BASE-T/100BASE-TX (RJ45)

	Manual entry barrier integrated to OHLS, Load gauge detector for booth & equipment protection from over size vehicle entering normal lane	Barrier gate to close lane at entry, OHLS turns red when it is closed. Load gauge detector for booth & equipment protection from over size vehicle entering normal lane. Detects and Raises alarm when any oversized vehicle enters normal lane	<ul style="list-style-type: none"> -Approx 200 mm diameter with sun visor -Aspect Color; Green and red -Intensity; 70 CD At Least <p>The Manual Lane Barrier shall comprise a pedestal unit mounted on the raised island between the toll lanes, a horizontally swinging arm painted in the specified colours carrying and a 450mm diameter reflective “no entry” sign.</p>
ETC	RFID ETC transceiver	ETC tag reader at the entry zone to validate the ETC tag	<ul style="list-style-type: none"> -Air Interface Protocols: ISO 18000-6C (EPC Class 1 Gen 2), ISO 18000-6B -Frequency; 865 MHz - 867 MHz -Power Output; +10 to +30 dBm
	Lane Controller with Industrial PC	Control and Monitor all the sub systems	<ul style="list-style-type: none"> - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	AVC including sensors, loop and detector	Sensors, controller and other peripherals for Automatic Vehicle classification	<ul style="list-style-type: none"> -Detection Area; Not more than 2 meter in length and for the width of the lane -Detectable vehicle speed; Up to 90 km/h -Tolerable pressure; 8 kg/cm2
	Integrated User Fare Display With Traffic Light System & Siren	Display user information/fare details and traffic light	<ul style="list-style-type: none"> -46" LED backlid Panel -2 lines with 10 Characters each -Character height; 120 mm at least -Ultra bright AllnGaP LEDs, 8000mcd at 20mA -300 viewing angle

			-Suitable for outdoor condition under bright sunlight
Automatic Barrier Gate	Barrier gate to stop vehicle from entering exit zone in case of invalid ETC tag or vehicle without Tag		- Make/Model; Magnetic MIB 10 and 20 as per the lane type or equivalent - Dimension; 350mm (L) x 350mm (W) x 1010mm (H) - Weight; 50 kg (without boom)
Overhead Lane Status light (OHLS)	Lane open/close LED sign mounted on the canopy to inform commuter about lane open/close status		- Minimum Luminous; Red at least 350 cd, Green at least 450 cd - Dimension; Approx 740mm x 540mm x370mm - Weight; Shall be less than 20 kg
Vehicle Guidance Signal – Traffic light with mounting pole	Green and Amber arrow to guide vehicles with valid tags to exit zone and invalid/without tag vehicles to ejection zone		-Size; Approx 200 mm diameter with sun visor - Aspect Color; Green and Amber arrow
Light Curtain	for vehicle separation		
Incident Capture Camera with mounting pole	Capture vehicle image with every transaction		-1/3” CCD with Night Vision -Horizontal Resolution; 525 Lines -Sensitivity; 0.8 Lux -Shutter Speed; 1/100 ~ 1/10,000 sec
License Plate Image Capture Camera with mounting poles	capture vehicle registration number plate		Still Camera (Number plate of the overloaded vehicles) - 1/3”CCD Progressive scan - Resolution; 1280 x 720 (HD) - Max Frame Rate (at all resolution); 30frames/sec - Output Format; JPEG, MJPEG stream, H.264

			<ul style="list-style-type: none"> - Day/Night Mode; Configurable day / night mode switching - Image Processing <ul style="list-style-type: none"> • Number plate of the overloaded vehicles - Communication Interface; 10BASE-T/100BASE-TX (RJ45)
	Overhead ETC Lane Signals (4 boards of 1.2 m X 1.2 m dimensions)	Lane signals to guide ETC tag users	<ul style="list-style-type: none"> - Minimum Luminous; Red at least 350 cd, Green at least 450 cd - Dimension; Approx 740mm x 540mm x370mm - Weight; Shall be less than 20 kg
	Loop Detector	To detect presence of vehicles	<p>Loop coil</p> <ul style="list-style-type: none"> -Copper wire : Silicon Insulated copper stranded 1.5mm² wire -Loop inductance range : 25 μ H to 1200 μ H -Recommended loop inductance : 80 μ H to 300 μ H -Loop operational frequency : 30kHz to 130kHz -Inductive loop resistance : Max . 25 Ω
Weigh Monitoring System	-Weigh in motion system at entrance -Server System at Toll Plaza	<ul style="list-style-type: none"> -Detection of Heavy vehicle -Capture the image -Number plate recognition -Enforcement method; <p>Penalty fare is collected from overloaded vehicle at booth</p>	<p>High Speed WIM with Piezo sensor at Entrance</p> <p>Weight Sensor</p> <ul style="list-style-type: none"> -Measuring range wheel load : 0 to 150kN, -At a reference tire contact are (tread length \times tread width : 200\times320mm -Max. load-bearing capacity of the sensor surface : 4. 6 N/mm² -Sensitivity, nominal : 1.76 +/-5% pC/N <p>Loop coil</p> <ul style="list-style-type: none"> -Copper wire : Silicon Insulated copper stranded 1.5mm² wire -Loop inductance range : 25 μ H to 1200 μ H

			<ul style="list-style-type: none"> -Recommended loop inductance : 80 μ H to 300 μ H -Loop operational frequency : 30kHz to 130kHz -Inductive loop resistance : Max . 25 Ω Still Camera (Number plate of the overloaded vehicles) - 1/3"CCD Progressive scan - Resolution; 1280 x 720 (HD) - Max Frame Rate (at all resolution); 30frames/sec - Output Format; JPEG, MJPEG stream, H.264 - Day/Night Mode; Configurable day / night mode switching - Image Processing <ul style="list-style-type: none"> • Number plate of the overloaded vehicles - Communication Interface; 10BASE-T/100BASE-TX (RJ45) CCTV camera - 1/3"CCD - Effective Pixels; 659 (H) x 494 (V) - Horizontal Resolution; 540 TV lines (Color) - Minimum illuminance 0.3 lx (colour), 0.1 lx (white/black mode) - Compression system; JPEG, MPEG-4, H.264 - Panning/ Tilting /Zoom
Manual Toll Collection	Local Plaza Server	TMS server with TMS application and database at every toll plaza control room	<ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better

			<ul style="list-style-type: none"> - Redundancy system by server duplication - Redundancy system by server duplication
Incident Management Workstation	To control and monitor the incidents and audit transactions		<ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication - Redundancy system by server duplication
Monitoring PC	PCs in control room for management, MIS and audit purpose		<ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or bette
Intercom Master station	Master intercom unit in control room to communicate with TC in lanes		-Voice communication installed in the toll booths shall provide hands free two-way verbal communication between the supervision staff in the toll control room and the toll collectors. The toll collector shall be able to attract the attention of the auditor in the control room by pressing a single button on the intercom slave unit in the toll booth.
Camera monitoring display for Control room	for monitoring camera footage		-Display size; 50 Inch
Monitoring camera (PTZ) for Traffic monitoring both	CCTV surveillance of Toll lane area		<ul style="list-style-type: none"> -1/4"CCD -Horizontal Resolution; 480 TV lines minimum (color NORMAL mode) -Effective Pixels; 752 (H) x 582 (V)

	direction, Toll gate		-Minimum Illumination; 1.0 lux (colour mode) -Panning/ Tilting /Zoom
	Monitoring cameras (bullet/dome) for important rooms in plaza building and tunnel	CCTV surveillance of activities in plaza building & tunnel	-1/3"CCD -Effective Pixels; 752 (H) x 582 (V) pixels -Horizontal Resolution; 540 TV lines (Colour) -Minimum Illumination; 1.0 lux (Colour) at F1.4 -Panning/ Tilting /Zoom
	POS System and Receipt Printer	Issue and recharge the Card	-ISO/IEC 14443 NFC-A, B and ISO/IEC 18092 NFC-F Reading/Writing -Read/write distance; 30 mm or less -Authentication Security; DES or 3DES or AES
ETC	Local ETC Plaza Server	Dedicated server for ETC lanes at each toll plaza	- Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication - Redundancy system by server duplication
	Incident Management Workstation	To control and monitor the incidents and audit ETC transactions	- Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication - Redundancy system by server duplication

	Hand-held RFID Reader	Processing ETC transactions manually in case lane reader not working or ETC lane offline	<ul style="list-style-type: none"> -Air Interface Protocols: ISO 18000-6C (EPC Class 1 Gen 2), ISO 18000-6B -Frequency; 865 MHz - 867 MHz -Power Output; +10 to +30 dBm
	RFID Registration PC and Receipt printer	Issuing RFID ETC tags	<ul style="list-style-type: none"> -ISO 18000-6C (EPC G1 G2) -Maximum Dimentions; 40 Sq. cm -Tag Memory; Unique Tag ID – 64 bits, EPC memory 96 – 480 bits -UV and IR protection on Chip / semiconductor area
	RFID Registration PC and Receipt printer	Issuing RFID ETC tags	<ul style="list-style-type: none"> -ISO 18000-6C (EPC G1 G2) -Maximum Dimentions; 40 Sq. cm -Tag Memory; Unique Tag ID – 64 bits, EPC memory 96 – 480 bits -UV and IR protection on Chip / semiconductor area
Toll Management Centre			
Manual Toll Collection	Manual Centre Server	TMS central server with central TMS application and database at central control room to connect every toll plaza local server	<ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication - Redundancy system by server duplication
ETC	ETC Centre Server	ETC central server with central ETC application and database at central control room to connect every toll	<ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better

		plaza local ETC server	<ul style="list-style-type: none"> - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication
	Internet router for connection to the Central Clearing House (CCH)	Dedicated internet router to connect Plaza ETC server with CCH	<ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication

2. Highway Traffic Management System (HTMS)

Item	System/Equipment	Purpose/Function	Basic Requirement
	Closed Circuit Television Camera System (CCTV)	<ul style="list-style-type: none"> -Real Time Monitor of all locations of expressway -PTZ (Pan, tilt, and zoom) control of camera -Video Recording 	<p>Camera</p> <ul style="list-style-type: none"> - 1/3"CCD - Effective Pixels; 659 (H) x 494 (V) - Horizontal Resolution; 540 TV lines (Color) - Minimum illuminance 0.3 lx (colour), 0.1 lx (white/black mode) - Panning/ Tilting /Zoom <p>CCTV Server</p> <ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	Video Incident Detection System	<ul style="list-style-type: none"> -Real Time Monitor of all locations of 	<p>Camera</p> <ul style="list-style-type: none"> - Imaging Device : CCD or MOS or CMOS

	(VIDS)	<p>expressway</p> <p>- The incident detection function that automatically detects standing object</p>	<ul style="list-style-type: none"> - Effective Pixels : 659 (H) x 494 (V) or more - Scanning area : 4.80 mm (H) x 3.60 mm (V) or larger - Minimum illuminance : 0.5 lx (colour), 0.1 lx (white/black mode) or lower - Video S/N ratio : 50 dB or more - Compression system : JPEG(M-JPEG), MPEG-4/H.264 - Protocol : TCP/IP, UDP/IP, HTTP, RTP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP - LAN interface : 10BASE-T/100BASE-TX(RJ-45) - Water and Dust Resistance : IP66 (including camera housing) <p>Image processing</p> <ul style="list-style-type: none"> - Detecting vehicle running in any direction and recognize the shape or edge of the vehicle. - Counting the number of vehicles that passes the sensing area during the unit measurement time. - Classifying the vehicle into large and small size. The definition of the large and small size shall be made according to the vehicle length and the classification parameter shall be adjustable. - Calculating the time occupancy rate per unit measurement time. - Calculating an average speed per unit time which is a geometric mean of the speed of vehicles passed in the past unit measurement time. <p>Server & Console</p> <ul style="list-style-type: none"> -Server and the operator console is also used as the CCTV system
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	<p>Variable Message Sign (VMS)</p>	<p>- Visual information display to provide real-time information to the driver</p> <p>-Dissemination of Traffic status of through line forwarded by Gantry type VMS</p>	<p>VMS</p> <ul style="list-style-type: none"> - Board Size; 5000mm (H) × 3000mm (W) - Board Size; 3000mm (H) × 5000mm (W) - Display device; Light emitting device LED - Luminescent color; blue , red , green - Controller Implementation - Communication control - Display control - Monitoring - Local operation <p>VMS Server</p> <ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	<p>Automatic Traffic</p>	<p>Image Processing Type</p>	<p>Camera</p>

	<p>Counters cum Classifier (ATCC)</p>	<p>-Traffic Volume monitoring by vehicle type, -Vehicle speed, -Occupancy</p>	<p>- Imaging Device : CCD or MOS or CMOS - Effective Pixels : 659 (H) x 494 (V) or more - Scanning area : 4.80 mm (H) x 3.60 mm (V) or larger - Minimum illuminance : 0.5 lx (colour), 0.1 lx (white/black mode) or lower - Video S/N ratio : 50 dB or more - Compression system : JPEG(M-JPEG), MPEG-4/H.264 - Protocol : TCP/IP, UDP/IP, HTTP, RTP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP - LAN interface : 10BASE-T/100BASE-TX(RJ-45) - Water and Dust Resistance : IP66 (including camera housing)</p> <p>Image processing</p> <p>- Detecting vehicle running in any direction and recognize the shape or edge of the vehicle. - Counting the number of vehicles that passes the sensing area during the unit measurement time. - Classifying the vehicle into large and small size. The definition of the large and small size shall be made according to the vehicle length and the classification parameter shall be adjustable. - Calculating the time occupancy rate per unit measurement time. - Calculating an average speed per unit time which is a geometric mean of the speed of vehicles passed in the past unit measurement time.</p> <p>ATCC Server</p> <p>- Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better</p>
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			<ul style="list-style-type: none"> - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Main function <ul style="list-style-type: none"> • Collection and count of ATCC data (230 device) <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better
	<p>Meteorological Observation System</p>	<ul style="list-style-type: none"> -Rain gage; -Rainfall detector ; -Visibility sensor; 	<p>Rain gage</p> <ul style="list-style-type: none"> - Detection method; Tipping bucket type - Diameter of water inlet; 200 mm - Tipping bucket rain gauge; 0.5 mm or 1.0mm <p>Rainfall detector</p> <ul style="list-style-type: none"> - Detection method; Print electrode plate type - Detected rain drop diameter; More than 0.5 mm diameter <p>Visibility sensor</p> <ul style="list-style-type: none"> - Method; Forward scattering method - Measurement range; 10 m to 1000 m - Accuracy; ± 5% - Wavelength; 875nm <p>MET Server</p>

			<ul style="list-style-type: none"> - Chassis; 2U Rack Mountable - CPU; Intel Xeon processor Quad Core 3.5GHz cash15MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 64GB (8GB DDR4) or better - HDD; 1.2TB(SATA) x 8 HDD or better - Redundancy system by server duplication <p>Operator Console</p> <ul style="list-style-type: none"> - Chassis; Desktop - CPU; Intel i7 cash 30MB or better - OS; Latest Microsoft windows/ IBM AIX/ Sun Solaris/ HP-UX/ Linux - Memory; 4GB ECC DDR2 or better - HDD; 250GB(SATA) x 8 HDD or better <p>Large Display (Video wall)</p> <ul style="list-style-type: none"> -Display Type; color TFT LCD -Display size; 55inch or better (2×3) - Native Resolution; Full HD (1920x 1080) <p>Video Switch</p> <ul style="list-style-type: none"> - Video input; RGB Analogue, DVI-D, HDMI PC video output interface and compatibility -Video output; RGB Analogue, DVI-D, HDMI Operator console monitor and interface compatibility. - Control interface; RJ-45(10/100BATE-T)
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Annexure-3: Progress of Major Planning Made by Comprehensive Traffic and Transportation Study

No	Major Projects	Estimated Cost in Crores	Implementation Agency	Status of the Project
Phase – 1 (2010-2015)				
1	Mass Rail Transit System			
1.1	From Velachery to St Thomas Mount	496	Southern Railways	80 % of the work completed. Remaining 20% was suspended due to land acquisition but it was already sorted out. The work is expected to commence soon and the project is panned to be completed by 2017.
2	Proposed Suburban Rail Lines			
2.1	4th line from Beach to Athipattu	449	Southern Railways	Under Planning
2.2	5th & 6th line from Central to Avadi	420	Southern Railways	Under Planning
2.3	Tiruvanmiyur-Perungudi-Mamallapuram	840	Southern Railways	Under Planning
3	Major New Roads			
3.1	Link between Vandalur - Wallajabad Road & Sriperumbudur- Kodambakkam Road	90	Highways and Minor Ports	Work in progress
3.2	Link between NH Bypass & ORR & NH4 (Sunguvarchatram)	207	Highways and Minor Ports	Work in progress
3.3	Southern Segment ORR (Near – Tambaram Air force Station)	90	Highways and Minor Ports	Under Planning
3.4	Jawaharlal Nehru Road (IRR) Southern Segment	45	Highways and Minor Ports	Work in progress
3.5	Thorapakkam – ECR line	18	Highways and Minor Ports	Under Planning
3.6	Velachery – Karapakkam	36	Highways and	Under Planning

			Minor Ports	
3.7	NH Bypass from NH 4 to NH 5	480	NHAI	Completed
3.8	Ennore Port Connectivity Road	207	NHAI	Work in progress
3.9	NH Bypass (MEPZ) to ORR	27	NHAI	Under Planning
3.10	ORR from NH45 to TPP road	1600	TNRDC	Work in Progress (Major works completed)
4	Elevated Roads			
4.1	Along Adyar River	880	Highways and Minor Ports	Under planning
4.2	Along Medavakkam High Road	450	Highways and Minor Ports	Under planning
4.3	Pallavaram – Thirusoolam along NH45	150	Highways and Minor Ports	Under planning
4.4	Nandambakkam-NH Bypass (along Mt. Poonamalle rd)	250	Highways and Minor Ports	Under planning
4.5	NH Bypass – Poonamalle Bypass along NH4	300	Highways and Minor Ports	Under planning
4.6	Manali Oil Refinery Rd – Central-Light House Along Buckingham canal	800	Highways and Minor Ports	Under planning
4.7	Light House – Adyar Estuary and on to Kottivakkam (Santhome Bypass El Corridor)	630	Highways and Minor Ports	Under planning
5	Freight Corridor			
5.1	Elevated corridor along the banks of Cooum river from Chennai port to Maduravoyal	1468	NHAI	The project was initiated (but the project has now been cancelled.)
5.2	Road connecting Ennore Port (northern gate) and TPP Road in Vallur	143	NHAI	90 % of the work has been completed. The land acquisition for the remaining section is in progress
6	Mono Rail/LRT			
6.1	Pallavaram - Kundrathur-Poonamallee - Ambattur - Koyambedu	4050	Monorail - SPV	It is under tender process for the first phase.
6.2	Ambattur - Ambattur I.E - Padi - Anna Nagar -	3600	Monorail - SPV	Route not yet finalized. Project under Planning

	Kilpauk			
Phase II (2016-2021)				
1	METRO			
1.1	Madhavaram-Perambur – Chetpet – Dr. Radhakrishna salai - Lighthouse	8550	CMRL	Phase 2 of Metro under planning. DPR is under preparation
2	Mono Rail/LRT			
2.1	Sriperumbudur on NH4 - Poonamallee - Porur - Arcot Road – T Nagar - Teynampet-Luz	6300	Monorail - SPV	Under Planning
Phase III (2022-26)				
1	Mono Rail/LRT			
1.2	NH Bypass from Porur- Madhavaram	2700	Monorail - SPV	Under Planning

Annexure-4 Traffic Survey Report

Report on Traffic Survey for Data Collection Survey for Chennai Metropolitan Region ITS

April 2016

Survey Consultant

Expert Technologies

Chennai – 600 083

Traffic Survey Report

JICA Study Team has awarded the Data Collection Survey for Chennai Metropolitan Region ITS (Travel Speed Survey & Traffic Volume Count Survey) consultancy work to *M/s. Expert Technologies*, Chennai on 14.03.2016.

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Traffic Survey Report Summary

JICA Study Team has awarded the Data Collection Survey for Chennai Metropolitan Region ITS (Travel Speed Survey & Traffic Volume Count Survey) consultancy work to *M/s. Expert Technologies*, Chennai on 14.03.2016.

The work has been executed as per the schedule given below.

Schedule of Traffic Volume Count & Travel Speed Survey

<i>Date</i>	<i>Day</i>	<i>Weather</i>	<i>Work Type</i>	<i>Route / Location</i>
17.03.2015	Thursday	Sunny Day	Travel Speed Survey	Chennai Port to Sriperumpudur in NH4
22.03.2016	Tuesday			Chennai Port to Singaperumalkoil in NH45
23.03.2016	Wednesday			Chennai Port to Tiruvallur in NH205
24.03.2016	Thursday			IRR NH45 (Alandur R.S) to TPP High Road near Manali
06.04.2016	Wednesday			Chennai Port to Thatchur in NH5
29.03.2016	Tuesday	Sunny Day	Traffic Volume Count	Point 3: Tirumangalam on IRR
				Point 4: CMRL office on NH4
				Point 5: GST Road near Alandur
30.03.2016	Wednesday	Sunny Day	Traffic Volume Count	Point 2: Padi on NH205 near Lucas TVS
				Point 11: NH45 near Mahindra World City
31.03.2016	Thursday	Sunny Day	Traffic Volume Count	Point 9: NH4 near Nokkia, Sriperumpudur
				Point 1: Madavaram on NH5
05.04.2016	Tuesday	Sunny Day	Traffic Volume Count	Point 10: Oragadam near Nisson Factory on S.P.Koil Road
				Point 8: NH205 near Chevvet
				Point 7: ORR near Tirumazhisai
06.04.2016	Wednesday	Sunny Day	Traffic Volume Count	Point 6: Thachur on NH5

All the Surveys were conducted under the leadership of Mr. M.S.Madanagopal , the retired Traffic Engineer from Highways Research Station, Govt. of Tamilnadu.

Mr. B. Sivakumar, Mr. G. Paramasivam & Mr. S. Mani are the supervisors for the entire survey.

Mr. R. Senthilkumar, Mr. M. Ashok, Mr. E. Mahendran, Mr. P. Mohamed Rabik, Mr. P. Manikandan and Mr. P. Harun Raseeth are all the work supervisors for the TVC survey.

Traffic Volume Count Survey Point & location

<i>TVC Point</i>	<i>Location</i>	<i>Features</i>
Point 1	Madavaram on NH5	This point lies in NH5 which connect Chennai Port to Kolkatta adjacent to the intersection of IRR in the NH5 earlier it is called GNT Road (Grand North Trunk Road). Large number of warehouses are around the point. The road leads to two major ports in the east and leads to Andhrapradesh in the west.
Point 2	Padi on NH205 near Lucas TVS	This point is adjacent to Padi flyover which is in IRR & in NH205. This road leads to industrial hub in Perambur (ICF) and Ambattur. Earlier this road is named as Madras-Tiruvallur Trunk Road.
Point 3	Tirumangalam on IRR	This point is before the Tirumangalam flyover on IRR. This road connects NH4 and NH5. The south direction leads to Chennai Metropolitan Bus Terminus and Airport. North direction leads to Annanagar and Mogapair which is the residential areas.
Point 4	CMRL office on NH4	This point is in NH4 near CMRL office. Western direction leads to Bengaluru and eastern direction leads to Koyambedu Market and CMBT, Port, Airport, Annanagar.
Point 5	GST Road near Alandur	This point is near OTA(Officer's Training Academy) near Airport on GST Road(Grand South Trunk Road) and is now NH45. This is the exit point to sub urban of Chennai in the south. North direction leads to Chennai city. Airport and residential zones are nearby.
Point 6	Thachur on NH5	This point is on NH5 which is 32kms from Chennai.
Point 7	ORR near Tirumazhisai	This point is on the ORR(Outer Ring Road) from Vandalur to Minjur which connects 2 ports and connects NH45, NH4 & NH205 on its way.
Point 8	NH205 near Chevvapet	This point is 45kms from Chennai on NH205 near Chevvapet Railway Station. Western direction leads to Tiruvallur and the east to Chennai city.
Point 9	NH4 near Nokkia, Sriperumpudur	This point is 55kms from Chennai on NH4 near Nokkia factory on Chennai Bengaluru Highway.
Point 10	PRR in Oragadam near Nisson Factory on S.P.Koil Road	This point is lying in Singaperumal Koil-Oragadam state highway near Rennault Nissan Factory. This road is part of PRR(proposed Ring Road)
Point 11	NH45 near Mahindra World City	This point is lying near MWC(Mahindra World City) an Industrial hub near Chengalpat in NH45. This is the exit to south Tamilnadu and entry to Chennai from rest of the southern districts of Tamilnadu.

The location Drawings were enclosed in the report.

The Travel Speed Survey results were summarised in Table for the 6 runs with the abstract.

Also the Traffic Volume Count were also summarised in a Table format for the both sides of the survey point.

Travel Speed Survey Result

Travel Speed Study (Abstract)

Route: a to b (Chennai Port Trust to Sriperumpudur)

Date: 17.03.2016

Route: b to a (Sriperumpudur to Chennai Port Trust)

Day: Thursday

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Test Vehicle No: TN09BE1260

Test Vehicle No: TN09BE1260

<i>Run No.</i>	<i>Route Section</i>		<i>Distance (Km)</i>	<i>Journey Time (Sec)</i>	<i>Travel Speed (Km/hr)</i>
	<i>From</i>	<i>To</i>			
1	Port Trust	Sriperumpudur	46.4	4757	35.11
2	Sriperumpudur	Port Trust	46.3	4448	37.47
3	Port Trust	Sriperumpudur	46.2	4896	33.97
4	Sriperumpudur	Port Trust	46.3	4402	37.86
5	Port Trust	Sriperumpudur	46.4	5187	32.20
6	Sriperumpudur	Port Trust	46.3	5669	29.40

Average Distance	Average Journey Time (H:M:S)	Average Speed
46.32	1:21:33	34.34

Travel Speed Study

Route: a to b (Chennai Port Trust to Sriperumpudur)

Run: 1

Time: Morning Peak 08.20am - 09.38am

Date: 17.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Thursday

Test Vehicle No: TN22CR7630

Driver Name: Mr. Anbu

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.50	4	36	0	0	276	32.61	422941.18	1446490.67	422084.47	1446292.30
2	Km 0/0	Central Station	1.00	2	3	0	0	123	29.27	422084.47	1446292.30	421423.03	1446269.30
3	Central Station	Dasaprakash Jn	2.30	6	18	1	15	303	27.33	421423.03	1446269.30	419207.63	1445981.60
4	Dasaprakash Jn	Aminjikai	5.00	10	2	1	48	494	36.44	419207.63	1445981.60	416256.93	1445447.33
5	Aminjikai	Koyambedu Jn	2.70	8	51	1	32	439	22.14	416256.93	1445447.33	413173.54	1445686.31
6	Koyambedu Jn	Velappan Chavadi	7.40	16	49	1	26	923	28.86	413173.54	1445686.31	406612.92	1444069.57
7	Velappan Chavadi	Pattabiram Road Jn (Bye Pass)	4.80	5	22	0	0	322	53.66	406612.92	1444069.57	402163.10	1443557.19
8	Pattabiram Road Jn (Bye Pass)	Motel Highway	3.50	10	47	0	0	647	19.47	402163.10	1443557.19	399182.80	1442351.26
9	Motel Highway	Empee Distilleries	7.30	7	55	0	5	470	55.91	399182.80	1442351.26	392708.61	1439363.79
10	Empee Distilleries	Irungattukottai (Hyundai)	2.50	2	5	0	0	125	72.00	392708.61	1439363.79	390527.33	1437282.06
11	Irungattukottai (Hyundai)	Tollgate	3.70	4	10	0	25	225	59.20	390527.33	1437282.06	388216.77	1435368.12
12	Tollgate	Sriperumpudur	3.70	6	50	0	0	410	32.49	388216.77	1435368.12	385590.31	1433198.59

Total Distance Travelled	46.4	Km	Total Time Taken	4757	35.11	72.00	19.47
				1:19:17	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: b to a (Sriperumpudur to Chennai Port Trust)

Run: 2

Time: Morning Peak 08.30pm - 09.45pm

Date: 17.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Thursday

Test Vehicle No.: TN09BE1260

Driver Name: Mr. Anbu

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Sriperumpudur	Tollgate	3.70	4	30	0	0	270	49.33	385590.31	1433198.59	388216.77	1435368.12
2	Tollgate	Irungattukottai (Hyundai)	3.80	7	45	0	58	407	33.61	388216.77	1435368.12	390527.33	1437282.06
3	Irungattukottai (Hyundai)	Empee Distilleries	2.50	4	40	0	0	280	32.14	390527.33	1437282.06	392708.61	1439363.79
4	Empee Distilleries	Motel Highway	7.10	11	20	0	0	680	37.59	392708.61	1439363.79	399182.80	1442351.26
5	Motel Highway	Pattabiram Road Jn (Bye Pass)	3.40	6	27	0	26	361	33.91	399182.80	1442351.26	402163.10	1443557.19
6	Pattabiram Road Jn (Bye Pass)	Velappan Chavadi	4.70	8	31	0	47	464	36.47	402163.10	1443557.19	406612.92	1444069.57
7	Velappan Chavadi	Koyambedu Jn	7.10	12	25	0	27	718	35.60	406612.92	1444069.57	413173.54	1445686.31
8	Koyambedu Jn	Aminjikai	3.50	9	49	1	11	518	24.32	413173.54	1445686.31	416256.93	1445447.33
9	Aminjikai	Dasaprakash Jn	4.70	7	6	1	30	336	50.36	416256.93	1445447.33	419207.63	1445981.60
10	Dasaprakash Jn	Central Station	2.20	3	13	0	45	148	53.51	419207.63	1445981.60	421423.03	1446269.30
11	Central Station	Km0/0	1.20	1	57	0	27	90	48.00	421423.03	1446269.30	422084.47	1446292.30
12	Km0/0	Port Trust	2.40	3	19	0	23	176	49.09	422084.47	1446292.30	422941.18	1446490.67

Total Distance Travelled	46.3	Km	Total Time Taken	4448	37.47	53.51	24.32
				1:14:08	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: a to b (Chennai Port Trust to Sriperumpudur)

Run: 3

Time: Day Time 01.27pm - 02.53pm

Date: 17.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Thursday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Anbu

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.50	3	12	0	0	192	46.92	422941.18	1446490.67	422084.47	1446292.30
2	Km 0/0	Central Station	0.70	1	42	0	24	78	32.31	422084.47	1446292.30	421423.03	1446269.30
3	Central Station	Dasaprakash Jn	2.10	5	52	1	59	233	32.45	421423.03	1446269.30	419207.63	1445981.60
4	Dasaprakash Jn	Aminjikai	5.10	12	15	0	50	685	26.80	419207.63	1445981.60	416256.93	1445447.33
5	Aminjikai	Koyambedu Jn	3.50	10	5	0	59	546	23.08	416256.93	1445447.33	413173.54	1445686.31
6	Koyambedu Jn	Velappan Chavadi	5.90	11	51	0	24	687	30.92	413173.54	1445686.31	406612.92	1444069.57
7	Velappan Chavadi	Pattabiram Road Jn (Bye Pass)	3.80	5	9	0	0	309	44.27	406612.92	1444069.57	402163.10	1443557.19
8	Pattabiram Road Jn (Bye Pass)	Motel Highway	3.50	13	41	0	0	821	15.35	402163.10	1443557.19	399182.80	1442351.26
9	Motel Highway	Empee Distilleries	9.10	8	10	0	13	477	68.68	399182.80	1442351.26	392708.61	1439363.79
10	Empee Distilleries	Irungattukottai (Hyundai)	2.50	6	9	0	0	369	24.39	392708.61	1439363.79	390527.33	1437282.06
11	Irungattukottai (Hyundai)	Tollgate	3.70	4	5	0	41	204	65.29	390527.33	1437282.06	388216.77	1435368.12
12	Tollgate	Sriperumpudur	3.80	9	50	4	55	295	46.37	388216.77	1435368.12	385590.31	1433198.59

Total Distance Travelled	46.2	Km	Total Time Taken	4896	33.97	68.68	15.35
				1:18:37	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: b to a (Sriperumpudur to Chennai Port Trust)

Run: 4

Time: Day Time 01.15pm - 02.39pm

Date: 17.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Thursday

Test Vehicle No: TN22CR7630

Driver Name: Mr. Anbu

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Sriperumpudur	Tollgate	3.50	13	0	1	18	702	17.95	385590.31	1433198.59	388216.77	1435368.12
2	Tollgate	Irungattukottai (Hyundai)	3.80	3	0	0	0	180	76.00	388216.77	1435368.12	390527.33	1437282.06
3	Irungattukottai (Hyundai)	Empee Distilleries	2.70	3	0	0	0	180	54.00	390527.33	1437282.06	392708.61	1439363.79
4	Empee Distilleries	Motel Highway	7.10	8	0	0	0	480	53.25	392708.61	1439363.79	399182.80	1442351.26
5	Motel Highway	Pattabiram Road Jn (Bye Pass)	3.50	6	0	1	22	278	45.32	399182.80	1442351.26	402163.10	1443557.19
6	Pattabiram Road Jn (Bye Pass)	Velappan Chavadi	4.70	6	0	0	0	360	47.00	402163.10	1443557.19	406612.92	1444069.57
7	Velappan Chavadi	Koyambedu Jn	6.80	12	0	0	10	710	34.48	406612.92	1444069.57	413173.54	1445686.31
8	Koyambedu Jn	Aminjikai	3.30	10	0	2	14	466	25.49	413173.54	1445686.31	416256.93	1445447.33
9	Aminjikai	Dasaprakash Jn	4.90	9	0	3	9	351	50.26	416256.93	1445447.33	419207.63	1445981.60
10	Dasaprakash Jn	Central Station	2.30	5	0	0	30	270	30.67	419207.63	1445981.60	421423.03	1446269.30
11	Central Station	Km0/0	1.10	4	0	1	1	179	22.12	421423.03	1446269.30	422084.47	1446292.30
12	Km0/0	Port Trust	2.60	5	0	0	54	246	38.05	422084.47	1446292.30	422941.18	1446490.67

Total Distance Travelled	46.3	Km	Total Time Taken	4402	37.86	76.00	17.95
				1:13:22	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: a to b (Chennai Port Trust to Sriperumpudur)

Run: 5

Time: Evening Peak 05.15pm - 06.52pm

Date: 17.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Thursday

Test Vehicle No: TN22CR7630

Driver Name: Mr. Anbu

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.40	7	0	0	54	366	23.61	422941.18	1446490.67	422084.47	1446292.30
2	Km 0/0	Central Station	1.10	4	0	0	41	199	19.90	422084.47	1446292.30	421423.03	1446269.30
3	Central Station	Dasaprakash Jn	2.30	10	0	3	45	375	22.08	421423.03	1446269.30	419207.63	1445981.60
4	Dasaprakash Jn	Aminjikai	5.00	15	0	1	3	837	21.51	419207.63	1445981.60	416256.93	1445447.33
5	Aminjikai	Koyambedu Jn	2.70	8	0	3	52	248	39.19	416256.93	1445447.33	413173.54	1445686.31
6	Koyambedu Jn	Velappan Chavadi	7.40	16	0	0	6	954	27.92	413173.54	1445686.31	406612.92	1444069.57
7	Velappan Chavadi	Pattabiram Road Jn (Bye Pass)	4.80	6	0	0	0	360	48.00	406612.92	1444069.57	402163.10	1443557.19
8	Pattabiram Road Jn (Bye Pass)	Motel Highway	3.50	6	0	0	0	360	35.00	402163.10	1443557.19	399182.80	1442351.26
9	Motel Highway	Empee Distilleries	7.30	8	0	0	0	480	54.75	399182.80	1442351.26	392708.61	1439363.79
10	Empee Distilleries	Irungattukottai (Hyundai)	2.50	3	0	0	8	172	52.33	392708.61	1439363.79	390527.33	1437282.06
11	Irungattukottai (Hyundai)	Tollgate	3.70	5	0	0	0	300	44.40	390527.33	1437282.06	388216.77	1435368.12
12	Tollgate	Sriperumpudur	3.70	9	0	0	4	536	24.85	388216.77	1435368.12	385590.31	1433198.59

Total Distance Travelled	46.4	Km	Total Time Taken	5187	32.20	54.75	19.90
				1:26:27	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: b to a (Sriperumpudur to Chennai Port Trust)

Run: 6

Time: Evening Peak 05.30pm - 07.13pm

Date: 17.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Thursday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Anbu

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Sriperumpudur	Tollgate	3.5	6	35	0	25	370	34.05	385590.31	1433198.59	388216.77	1435368.12
2	Tollgate	Irungattukottai (Hyundai)	3.8	7	40	3	20	260	52.62	388216.77	1435368.12	390527.33	1437282.06
3	Irungattukottai (Hyundai)	Empee Distilleries	2.7	3	10	0	0	190	51.16	390527.33	1437282.06	392708.61	1439363.79
4	Empee Distilleries	Motel Highway	7.1	6	40	0	0	400	63.90	392708.61	1439363.79	399182.80	1442351.26
5	Motel Highway	Pattabiram Road Jn (Bye Pass)	3.6	24	50	0	10	1480	8.76	399182.80	1442351.26	402163.10	1443557.19
6	Pattabiram Road Jn (Bye Pass)	Velappan Chavadi	4.6	4	56			296	55.95	402163.10	1443557.19	406612.92	1444069.57
7	Velappan Chavadi	Koyambedu Jn	7	17	44	2	47	897	28.09	406612.92	1444069.57	413173.54	1445686.31
8	Koyambedu Jn	Aminjikarai	3.2	9	18	1	55	443	26.00	413173.54	1445686.31	416256.93	1445447.33
9	Aminjikarai	Dasaprakash Jn	4.8	6	20	1	51	269	64.24	416256.93	1445447.33	419207.63	1445981.60
10	Dasaprakash Jn	Central Station	2.3	10		0	30	570	14.53	419207.63	1445981.60	421423.03	1446269.30
11	Central Station	Km0/0	1.3	3	55	0	22	213	21.97	421423.03	1446269.30	422084.47	1446292.30
12	Km0/0	Port Trust	2.4	4	41	0	0	281	30.75	422084.47	1446292.30	422941.18	1446490.67

Total Distance Travelled	46.3	Km	Total Time Taken	5669	29.40	64.24	8.76
				1:34:29	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study (Abstract)

Route: c to d (Chennai Port Trust to Mahindra World City)

Date: 22.03.2016

Route: d to c (Mahindra World City to Chennai Port Trust)

Day: Tuesday

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Test Vehicle No: TN09BE1260

Test Vehicle No: TN22CR7765

Run No.	Route Section		Distance (Km)	Journey Time (Sec)	Travel Speed (Km/hr)
	From	To			
1	Port Trust	Mahindra World City	56.50	4756	42.763
2	Mahindra World City	Port Trust	55.40	5977	33.368
3	Port Trust	Mahindra World City	55.60	5434	36.835
4	Mahindra World City	Port Trust	55.50	4740	42.152
5	Port Trust	Mahindra World City	57.00	5186	39.568
6	Mahindra World City	Port Trust	55.30	5071	39.259

MWC = Mahindra World City

Average Distance	Average Journey Time (H:M:S)	Average Speed
55.88	1:26:34	38.99

Travel Speed Study

Route: c to d (Chennai Port Trust to Mahindra World City)

Run: 1

Time: Morning Peak 08.02am - 09.48am

Date: 22.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Tuesday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.40	5	0	0	21	279	30.97	422956	1446568	422167	1445975
2	Km 0/0	Anna Statue	2.10	4	0	0	37	203	37.24	422167	1445975	421059	1444820
3	Anna Statue	GP Road Diversion	0.70	2	0	0	42	78	32.31	421059	1444820	420604	1444503
4	GP Road Diversion	Diversion end	1.90	4	0	0	32	208	32.88	420604	1444503	419413	1443494
5	Diversion end	DMS Fire Station	1.40	2	0	0		120	42.00	419413	1443494	418652	1442614
6	DMS Fire Station	Eldams Road	1.00	2	0	0		120	30.00	418652	1442614	418348	1441581
7	Eldams Road	Little Mount Jn	4.00	8	0	1	55	365	39.45	418348	1441581	416023	1439021
8	Little Mount Jn	Halda Jn	1.60	3	0			180	32.00	416023	1439021	415561	1438613
9	Halda Jn	Airport	7.20	12	0	1	40	620	41.81	415561	1438613	410634	1435854
10	Airport	Chromepet Rly Stn	4.20	8	0	1	8	412	36.70	410634	1435854	406720	1431876
11	Chromepet Rly Stn	Tamparam	4.10	6	0	1	5	295	50.03	406720	1431876	404246	1429113
12	Tamparam	Perungalathur	3.80	8	0	2	58	302	45.30	404246	1429113	401908	1426878
13	Perungalathur	Vandalur	3.50	7	0	3	56	184	68.48	401908	1426878	400201	1423952
14	Vandalur	Guduvanchery	4.30	16	0	10	1	358.4	43.19	400201	1423952	398145	1420219
15	Guduvanchery	S.P.Koil	12.00	16	0	1	3	897	48.16	398145	1420219	391819	1410836
16	S.P.Koil	Mahindra World City	2.30	3	0	0	45	135	61.33	391819	1410836	390589	1408912

Total Distance Travelled	56.5	Km	Total Time Taken	4756	42.76	68.48	30.00
				1:19:16	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: d to c (Mahindra World City to Chennai Port Trust)

Run: 2

Time: Morning Peak 08.00am - 09.57am

Date: 22.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Tuesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Mahindra World City	S.P.Koil	2.30	2	9			129	64.19	390589	1408912	391819	1410836
2	S.P.Koil	Guduvanchery	11.50	11	53		40	673	61.52	391819	1410836	398145	1420219
3	Guduvanchery	Vandalur	4.60	7	35			455	36.40	398145	1420219	400201	1423952
4	Vandalur	Perungalathur	3.40	4	8		36	212	57.74	400201	1423952	401908	1426878
5	Perungalathur	Tambaram	3.60	6	40	1	18	322	40.25	401908	1426878	404246	1429113
6	Tambaram	Chromepet Rly Stn	4.00	7	51	2	11	340	42.35	404246	1429113	406720	1431876
7	Chromepet Rly Stn	Airport	4.30	8	32		38	474	32.66	406720	1431876	410634	1435854
8	Airport	Little Mount Jn	8.70	23	39	3	59	1180	26.54	410634	1435854	416023	1439021
9	Little Mount Jn	Eldams Road	3.90	16	29	3	54	755	18.60	416023	1439021	418348	1441581
10	Eldams Road	DMS Fire Station	1.10	4	27		57	210	18.86	418348	1441581	418652	1442614
11	DMS Fire Station	Anna Statue	3.70	9	34			574	23.21	418652	1442614	421059	1444820
12	Anna Statue	Km 0/0	2.20	6	24	1	10	314	25.22	421059	1444820	422167	1445975
13	Km 0/0	Port Trust	2.10	7	46	2	7	339	22.30	422167	1445975	422956	1446568

Total Distance Travelled	55.40	Km	Total Time Taken	5977	33.37	64.19	18.60
				1:39:37	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: c to d (Chennai Port Trust to MWC)

Run: 3

Time: Day Time 01.20pm - 02.58pm

Date: 22.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Tuesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.10	5	25		22	303	24.95	422956	1446568	422167	1445975
2	Km 0/0	Anna Statue	2.10	4	38		55	223	33.90	422167	1445975	421059	1444820
3	Anna Statue	GP Road Diversion	0.70	2	59	1	19	100	25.20	421059	1444820	420604	1444503
4	GP Road Diversion	Diversion end	1.90	6	8	1	35	273	25.05	420604	1444503	419413	1443494
5	Diversion end	DMS Fire Station	1.50	3	23		12	191	28.27	419413	1443494	418652	1442614
6	DMS Fire Station	Eldams Road	0.90	1	45			105	30.86	418652	1442614	418348	1441581
7	Eldams Road	Little Mount Jn	3.90	10	15		24	591	23.76	418348	1441581	416023	1439021
8	Little Mount Jn	Halda Jn	1.60	2	19			139	41.44	416023	1439021	415561	1438613
9	Halda Jn	Airport	7.30	12	16			736	35.71	415561	1438613	410634	1435854
10	Airport	Chromepet Rly Stn	4.50	5	27			327	49.54	410634	1435854	406720	1431876
11	Chromepet Rly Stn	Tambaram	3.70	7	36		48	408	32.65	406720	1431876	404246	1429113
12	Tambaram	Perungalathur	3.40	5	42		19	323	37.89	404246	1429113	401908	1426878
13	Perungalathur	Vandalur	3.40	4	42			282	43.40	401908	1426878	400201	1423952
14	Vandalur	Guduvanchery	4.50	7	11			431	37.59	400201	1423952	398145	1420219
15	Guduvanchery	S.P.Koil	11.70	14	36		21	855	49.26	398145	1420219	391819	1410836
16	S.P.Koil	Mahindra World City	2.40	2	47		20	147	58.78	391819	1410836	390589	1408912
Total Distance Travelled			55.6	Km	Total Time Taken			5434	36.83	58.78	23.76		
								1:30:34	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study

Route: d to c (MWC to Chennai Port Trust)

Run: 4

Time: Day Time 01.30pm - 02.59pm

Date: 22.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Tuesday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Mahindra World City	S.P.Koil	2.30	3	0			180	46.00	390589	1408912	391819	1410836
2	S.P.Koil	Guduvanchery	11.40	12	0			720	57.00	391819	1410836	398145	1420219
3	Guduvanchery	Vandalur	4.90	8	0	1	26	394	44.77	398145	1420219	400201	1423952
4	Vandalur	Perungalathur	3.40	3	0		5	175	69.94	400201	1423952	401908	1426878
5	Perungalathur	Tambaram	3.60	5	0		20	280	46.29	401908	1426878	404246	1429113
6	Tambaram	Chromepet Rly Stn	4.00	8	0	1	23	397	36.27	404246	1429113	406720	1431876
7	Chromepet Rly Stn	Airport	4.10	8	0	1	46	374	39.47	406720	1431876	410634	1435854
8	Airport	Little Mount Jn	8.90	12	0		27	693	46.23	410634	1435854	416023	1439021
9	Little Mount Jn	Eldams Road	3.90	8	0	1	55	365	38.47	416023	1439021	418348	1441581
10	Eldams Road	DMS Fire Station	0.80	4	0			240	12.00	418348	1441581	418652	1442614
11	DMS Fire Station	Anna Statue	3.70	8	0	1	35	385	34.60	418652	1442614	421059	1444820
12	Anna Statue	Km 0/0	2.30	5	0	1	3	237	34.94	421059	1444820	422167	1445975
13	Km 0/0	Port Trust	2.20	5	0			300	26.40	422167	1445975	422956	1446568

Total Distance Travelled	55.5	Km	Total Time Taken	4740	42.15	69.94	12.00
				1:19:00	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: c to d (Chennai Port Trust to Mahindra World City)

Run: 5

Time: Evening Peak 05.02pm - 06.49pm

Date: 22.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Tuesday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.50	7			43	377	23.87	422956	1446568	422167	1445975
2	Km 0/0	Anna Statue	2.10	4		2	20	100	75.60	422167	1445975	421059	1444820
3	Anna Statue	GP Road Diversion	0.60	3				180	12.00	421059	1444820	420604	1444503
4	GP Road Diversion	Diversion end	2.00	5			10	290	24.83	420604	1444503	419413	1443494
5	Diversion end	DMS Fire Station	1.40	3			44	136	37.06	419413	1443494	418652	1442614
6	DMS Fire Station	Eldams Road	0.90	2				120	27.00	418652	1442614	418348	1441581
7	Eldams Road	Little Mount Jn	4.10	16		7	35	505	29.23	418348	1441581	416023	1439021
8	Little Mount Jn	Halda Jn	1.50	4			53	187	28.88	416023	1439021	415561	1438613
9	Halda Jn	Airport	6.60	11		1	28	572	41.54	415561	1438613	410634	1435854
10	Airport	Chromepet Rly Stn	5.30	9			54	486	39.26	410634	1435854	406720	1431876
11	Chromepet Rly Stn	Tambaram	3.90	6		1	14	286	49.09	406720	1431876	404246	1429113
12	Tambaram	Perungalathur	3.80	5			15	285	48.00	404246	1429113	401908	1426878
13	Perungalathur	Vandalur	3.60	5		2	19	161	80.50	401908	1426878	400201	1423952
14	Vandalur	Guduvanchery	4.20	7			58	362	41.77	400201	1423952	398145	1420219
15	Guduvanchery	S.P.Koil	11.30	14			13	827	49.19	398145	1420219	391819	1410836
16	S.P.Koil	Mahindra World City	3.20	6			48	312	36.92	391819	1410836	390589	1408912

Total Distance Travelled	57	Km	Total Time Taken	5186	39.57	80.50	12.00
				1:26:26	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: d to c (MWC to Chennai Port Trust)

Run: 6

Time: Evening Peak 05.30pm - 07.06pm

Date: 22.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Tuesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Mahindra World City	S.P.Koil	2.20	2	46			166	47.71	390589	1408912	391819	1410836
2	S.P.Koil	Guduvanchery	11.30	12	29			749	54.31	391819	1410836	398145	1420219
3	Guduvanchery	Vandalur	4.80	6	55	0	38	377	45.84	398145	1420219	400201	1423952
4	Vandalur	Perungalathur	3.40	5	2		41	261	46.90	400201	1423952	401908	1426878
5	Perungalathur	Tambaram	3.60	6	23		35	348	37.24	401908	1426878	404246	1429113
6	Tambaram	Chromepet Rly Stn	4.00	7	37		27	430	33.49	404246	1429113	406720	1431876
7	Chromepet Rly Stn	Airport	4.10	8	6		47	439	33.62	406720	1431876	410634	1435854
8	Airport	Little Mount Jn	8.90	12	21		35	706	45.38	410634	1435854	416023	1439021
9	Little Mount Jn	Eldams Road	3.90	12	0	1	52	608	23.09	416023	1439021	418348	1441581
10	Eldams Road	DMS Fire Station	1.10	2	9			129	30.70	418348	1441581	418652	1442614
11	DMS Fire Station	Anna Statue	3.70	8	54	1	34	440	30.27	418652	1442614	421059	1444820
12	Anna Statue	Km 0/0	2.20	2	49		10	159	49.81	421059	1444820	422167	1445975
13	Km 0/0	Port Trust	2.10	4	26		7	259	29.19	422167	1445975	422956	1446568

Total Distance Travelled	55.3	Km	Total Time Taken	5071	39.26	54.31	23.09
				1:24:31	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study (Abstract)

Route: i to j (Chennai Port Trust to Tiruvallur)

Date: 23.03.2016

Route: j to i (Tiruvallur to Chennai Port Trust)

Day: Wednesday

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Test Vehicle No: TN09BE1260

Test Vehicle No: TN22CR7765

Run No.	Route Section		Distance (Km)	Journey Time (Sec)	Travel Speed (Km/hr)
	From	To			
1	Port Trust	Tiruvallur	49.30	5095	34.834
2	Tiruvallur	Port Trust	48.80	5876	29.898
3	Port Trust	Tiruvallur	51.40	5293	34.959
4	Tiruvallur	Port Trust	48.70	4192	41.823
5	Port Trust	Tiruvallur	49.60	5086	35.108
6	Tiruvallur	Port Trust	49.30	5223	33.980

Average Distance	Average Journey Time (H:M:S)	Average Speed
49.52	1:25:28	35.10

Travel Speed Study

Route: i to j (Chennai Port Trust to Tiruvallur)

Run: 1

Time: Morning Peak 08.15am - 09.52am

Date: 23.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Wednesday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.40	5	0			300	28.80	422956	1446568	422167	1445975
2	Km 0/0	Gandhi Irvin Road Jn	1.90	5	0	1	37	203	33.69	422167	1445975	420334	1446175
3	Gandhi Irvin Road Jn	Ega (Diversion End)	4.40	9	0		15	525	30.17	420334	1446175	417677	1445799
4	Ega (Diversion End)	Pachayapas Collge Jn	0.70	1	0			60	42.00	417677	1445799	416952	1445636
5	Pachayapas College Jn	Kilpauk Garden Road Jn	0.70	3	0		44	136	18.53	416952	1445636	416554	1446444
6	Kilpauk Garden Road Jn	Annanagar Jn	1.20	2	0			120	36.00	416554	1446444	415985	1447612
7	Annanagar Jn	Koratur	5.20	11	0		16	644	29.07	415985	1447612	411835	1448307
8	Koratur	Ambattur	2.40	11	0	5	58	302	28.61	411835	1448307	407852	1450518
9	Ambattur	Ayyanambakkam Jn	2.40	8	0	2	55	305	28.33	407852	1450518	409311	1449271
10	Ayyanambakkam Jn	Annanur Road Jn	1.50	3	0		15	165	32.73	409311	1449271	407375	1451744
11	Annanur Road Jn	Tirumullaivayal	2.60	4	0		10	230	40.70	407375	1451744	405851	1451744
12	Tirumullaivayal	Pattabiram	8.10	12	0		55	665	43.85	405851	1451744	398680	1450691
13	Pattabiram	Tirunindravur	3.60	5	0			300	43.20	398680	1450691	395043	1451101
14	Tirunindravur	Veppampattu	3.20	6	0			360	32.00	395043	1451101	392215	1451136
15	Veppampattu	TATA Steel	6.80	9	0			540	45.33	392215	1451136	393058	1451354
16	TATA Steel	Putlur Road Jn	1.20	3	0			180	24.00	393058	1451354	386204	1452621
17	Putlur Road Jn	Tiruvallur	1.00	1	0			60	60.00	386204	1452621	381567	1452819
Total Distance Travelled			49.3	Km	Total Time Taken			5095	34.83	60.00	18.53		
								1:24:55	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study

Route: j to i (Tiruvallur to Chennai Port Trust)

Run: 2

Time: Morning Peak 08.50am - 10.34am

Date: 23.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G.

Paramasivam

Day: Wednesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Tiruvallur	49/0	1.50	2	50			170	31.76	381567	1452819	383760	1452345
2	49/0	52/0	3.50	5	36			336	37.50	383760	1452345	386862	1452133
3	52/0	54/0	1.80	2	44			164	39.51	386862	1452133	388933	1451608
4	54/0	57/0	3.00	4	10			250	43.20	388933	1451608	391264	1451166
5	57/0	Tirunindravur ROB	4.40	8	36			516	30.70	391264	1451166	395034	1451099
6	Tirunindravur ROB	ORR	2.20	3	37			217	36.50	395034	1451099	397284	1451068
7	ORR	Hindu College R.S	2.80	8	24			504	20.00	397284	1451068	399713	1450495
8	Hindu College R.S	Avadi Poonamallee Jn	2.10	3	15			195	38.77	399713	1450495	401905	1450514
9	Avadi Poonamallee Jn	Avadi B.S	0.90	2	35	1	12	83	39.04	401905	1450514	402638	1450551
10	Avadi B.S	Murugappa Polytechnic	2.00	2	11			131	54.96	402638	1450551	404497	1451209
11	Murugappa Polytechnic	Red Hills Ambattur Jn	3.80	6	37			397	34.46	404497	1451209	407852	1450518
12	Red Hills Ambattur Jn	Ambattur O.T	0.50	1	15			75	24.00	407852	1450518	407852	1450518
13	Ambattur O.T	Canara Bank Stop	1.30	2	52		29	143	32.73	407852	1450518	408094	1449490
14	Canara Bank Stop	Chennai Bye Pass	1.70	2	45		5	160	38.25	408094	1449490	409167	1448499
15	Chennai Bye Pass	Ambattur I.E B.S	1.00	2	36		19	137	26.28	409167	1448499	410038	1448310

16	Ambattur I.E B.S	Britannia	1.20	2	51			171	25.26	410038	1448310	411102	1448114
17	Britannia	Korattur	0.60	1	42			102	21.18	411102	1448114	411835	1448307
18	Korattur	Villivakkam	1.00	2	21		45	96	37.50	411835	1448307	413632	1448730
19	Villivakkam	ICF	2.30	5	33			333	24.86	413632	1448730	415589	1447847
20	ICF	Kilpauk Water Works	2.20	4	56		17	279	28.39	415589	1447847	417020	1446964
21	Kilpauk Water Works	Pachayappas College	1.80	5	51			351	18.46	417020	1446964	416952	1445636
22	Pachayappas College	Tylors Road	0.40		36			36	40.00	416952	1445636	417394	1445739
23	Tylors Road	KMC	0.80	2	28		37	111	25.95	417394	1445739	417935	1445863
24	KMC	Sangam Cinemas	0.50	1	50	1	6	44	40.91	417935	1445863	418638	1445957
25	Sangam Cinemas	Egmore R.S	1.00	5	1	1	4	237	15.19	418638	1445957	419936	1446084
26	Egmore R.S	Ribbon Building	1.00	2	39	1	4	95	37.89	419936	1446084	420967	1446216
27	Ribbon Building	Central R.S	0.50	2	25		11	134	13.43	420967	1446216	421425	1446272
28	Central R.S	MMC	0.40	3	4	1	14	110	13.09	421425	1446272	422167	1445975
29	MMC	Km 0/0	0.40	1	49	1		49	29.39	422167	1445975	422167	1445975
30	Km 0/0	Secretariat	1.80	2	43			163	39.75	422167	1445975	422827	1446022
31	Secretariat	Port Trust	0.40	1	32		5	87	16.55	422827	1446022	422956	1446568

Total Distance Travelled	48.8	Km	Total Time Taken	5876	29.90	54.96	13.09
				1:37:56	Average Speed	Maxim um Speed	Minimum Speed

Travel Speed Study

Route: i to j (Chennai Port Trust to Tiruvallur)

Run: 3

Time: Day Time 01.20pm - 02.58pm

Date: 23.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Wednesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.50	4	14			254	35.43	422956	1446568	422167	1445975
2	Km 0/0	Central R.S	0.70	4	8		37	211	11.94	422167	1445975	421425	1446272
3	Central R.S	Egmore R.S	1.40	3	8		39	149	33.83	421425	1446272	419936	1446084
4	Egmore R.S	Nair Bridge	0.70	1	32			92	27.39	419936	1446084	419411	1445995
5	Nair Bridge	Mayor Ramanathan Salai	0.50	2	26			146	12.33	419411	1445995	418878	1445973
6	Mayor Ramanathan Salai	Ega	2.80	6	19		48	331	30.45	418878	1445973	417677	1445799
7	Ega	Pachayappas College	0.80	1	18			78	36.92	417677	1445799	416952	1445636
8	Pachayappas College	Kilpauk Water Works	1.90	5	21		17	304	22.50	416952	1445636	417020	1446964
9	Kilpauk Water Works	ICF	2.60	4	21			261	35.86	417020	1446964	415589	1447847
10	ICF	Villivakkam	1.30	2	51			171	27.37	415589	1447847	413632	1448730
11	Villivakkam	Korattur	1.90	3	53			233	29.36	413632	1448730	411835	1448307
12	Korattur	Ambattur I.E B.S	1.90	4	3			243	28.15	411835	1448307	410038	1448310
13	Ambattur I.E B.S	Chennai Bye Pass	0.90	2	1			121	26.78	410038	1448310	409167	1448499
14	Chennai Bye Pass	Canara Bank Stop	1.80	5	7	2	41	146	44.38	409167	1448499	408094	1449490
15	Canara Bank Stop	Ambattur O.T	1.40	2	41			161	31.30	408094	1449490	407852	1450518

16	Ambattur O.T	Murugappa Polytechnic	4.40	5	39			339	46.73	407852	1450518	404497	1451209
17	Murugappa Polytechnic	Avadi B.S	1.60	1	55			115	50.09	404497	1451209	402638	1450551
18	Avadi B.S	Avadi Poonamallee Jn	1.10	1	19			79	50.13	402638	1450551	401905	1450514
19	Avadi Poonamallee Jn	Hindu College R.S	1.90	2	17			137	49.93	401905	1450514	399713	1450495
20	Hindu College R.S	ORR	2.70	3	9			189	51.43	399713	1450495	397284	1451068
21	ORR	Tirunindravur ROB	2.30	3	11			191	43.35	397284	1451068	395034	1451099
22	Tirunindravur ROB	Tirunindravur	0.30	1				60	18.00	395034	1451099	394625	1451105
23	Tirunindravur	TATA Steel	1.80	2	39		29	130	49.85	394625	1451105	393058	1451354
24	TATA Steel	57/0	2.30	3	50			230	36.00	393058	1451354	391264	1451166
25	57/0	54/0	3.10	4	7			247	45.18	391264	1451166	388933	1451608
26	54/0	52/0	3.00	5	13			313	34.50	388933	1451608	386862	1452133
27	52/0	49/0	2.00	3	36			216	33.33	386862	1452133	383760	1452345
28	49/0	Tiruvallur	1.80	2	26			146	44.38	383760	1452345	381567	1452819

Total Distance Travelled	51.4	Km	Total Time Taken	5293	34.96	51.43	11.94
				1:28:13	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: i to j (Chennai Port Trust to Tiruvallur)

Run: 4

Time: Day Time 01.30pm - 02.47pm

Date: 23.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Wednesday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Tiruvallur	Putlur Jn								381567	1452819	386204	1452621
2	Putlur Jn	Tata Steel	10.10	13				780	46.62	386204	1452621	393058	1451354
3	Tata Steel	Veppampattu	2.30	4				240	34.50	393058	1451354	392215	1451136
4	Veppampattu	Pattabiram	5.60	5			25	275	73.31	392215	1451136	398680	1450691
5	Pattabiram	Tirumullaivoyal	8.90	13			55	725	44.19	398680	1450691	405851	1451744
6	Tirumullaivoyal	Annanur	2.50	4			16	224	40.18	405851	1451744	407375	1451744
7	Annanur	Ayyanampakkam	1.30	3			10	170	27.53	407375	1451744	409311	1449271
8	Ayyanampakkam	Ambattur	4.50	9			32	508	31.89	409311	1449271	407852	1450518
9	Ambattur	Padi	1.40	2				120	42.00	407852	1450518	411835	1448307
10	Padi	Annanagar Jn	4.20	9			43	497	30.42	411835	1448307	415985	1447612
11	Annanagar Jn	New Avadi Road	1.40	4			1	7	173	29.13	415985	1447612	416952
12	New Avadi Road	Km 0/0	4.10	6			1	50	250	59.04	416952	1445636	422167
13	Km 0/0	Port Trust	2.40	5			1	10	230	37.57	422167	1445975	422956

Total Distance Travelled	48.7	Km	Total Time Taken	4192	41.82	73.31	27.53
				1:09:52	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: j to i (Chennai Port Trust to Tiruvallur)

Run: 5

Time: Evening Peak 05.20pm - 07.04pm

Date: 23.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Wednesday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.50	5		1	20	220	40.91	422956	1446568	422167	1445975
2	Km 0/0	Gandhi Irvin Road Jn	1.90	3			48	132	51.82	422167	1445975	420334	1446175
3	Gandhi Irvin Road Jn	Ega (Diversion End)	4.00	6		1	20	280	51.43	420334	1446175	417677	1445799
4	Ega (Diversion End)	Pachayappas College Jn	0.70	5		1	58	182	13.85	417677	1445799	416952	1445636
5	Pachayappas College Jn	Kilpauk Garden Road Jn	3.00	10		2	40	440	24.55	416952	1445636	416554	1446444
6	Kilpauk Garden Road Jn	Annanagar Jn	4.30	6			50	310	49.94	416554	1446444	415985	1447612
7	Annanagar Jn	Korattur						0		415985	1447612	411835	1448307
8	Korattur	Ambattur	2.20	6		1	12	288	27.50	411835	1448307	407852	1450518
9	Ambattur	Ayyanambakkam						0		407852	1450518	409311	1449271
10	Ayyanambakkam	Annanur Road Jn	3.90	9			54	486	28.89	409311	1449271	407375	1451744
11	Annanur Road Jn	Tirumullaivayal	2.90	6			48	312	33.46	407375	1451744	405851	1451744
12	Tirumullaivayal	Pattabiram	8.10	16		2	26	814	35.82	405851	1451744	398680	1450691
13	Pattabiram	Tirunindravur	3.50	12		4	38	442	28.51	398680	1450691	395043	1451101
14	Tirunindravur	Veppampattu	3.00	6			10	350	30.86	395043	1451101	392215	1451136
15	Veppampattu	Pakkam Road	7.00	10				600	42.00	392215	1451136	393058	1451354
16	Pakkam Road	Putlur Road Jn	2.20	3			10	170	46.59	393058	1451354	386204	1452621
17	Putlur Road Jn	Tiruvallur	0.40	1				60	24.00	386204	1452621	381567	1452819
Total Distance Travelled			49.6	Km	Total Time Taken			5086	35.11	51.82	13.85		
								1:24:46	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study

Route: j to i (Chennai Port Trust to Tiruvallur)

Run: 6

Time: Evening Peak 05.30pm - 07.06pm

Date: 23.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Wednesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Tiruvallur	49/0	1.80	3	21			201	32.24	381567	1452819	383760	1452345
2	49/0	51/0	1.90	2	56			176	38.86	383760	1452345	386862	1452133
3	51/0	54/0	3.00	3	1			181	59.67	386862	1452133	388933	1451608
4	54/0	57/0	3.10	5	22			322	34.66	388933	1451608	391264	1451166
5	57/0	TATA steel	2.70	3	35			215	45.21	391264	1451166	393058	1451354
6	TATA steel	Tirunindravur	1.50	3	6			186	29.03	393058	1451354	395043	1451101
7	57/0	Tirunindravur ROB	0.30		27			27	40.00	395043	1451101	395034	1451099
8	Tirunindravur ROB	ORR	2.20	3	2			182	43.52	395034	1451099	397284	1451068
9	ORR	Hindu College R.S	2.60	5	50		36	314	29.81	397284	1451068	399713	1450495
10	Hindu College R.S	Avadi Poonamallee Jn	2.20	2	34			154	51.43	399713	1450495	401905	1450514
11	Avadi Poonamallee Jn	Avadi B.S	0.80	1	44		10	94	30.64	401905	1450514	402638	1450551
12	Avadi B.S	Murugappa Polytechnic	1.90	2	23			143	47.83	402638	1450551	404497	1451209
13	Murugappa Polytechnic	Ambattur O.T	3.80	6	59			419	32.65	404497	1451209	407852	1450518
14	Ambattur O.T	Canara Bank Stop	2.00	4	44		24	260	27.69	407852	1450518	408094	1449490

15	Canara Bank Stop	Chennai Bye Pass	1.70	3	17			197	31.07	408094	1449490	409167	1448499
16	Chennai Bye Pass	Ambattur I.E B.S	0.90	2	24		58	86	37.67	409167	1448499	410038	1448310
17	Ambattur I.E B.S	Britannia	1.40	4	45	1	34	191	26.39	410038	1448310	411102	1448114
18	Britannia	Korattur	0.40	1	18			78	18.46	411102	1448114	411835	1448307
19	Korattur	Villivakkam	2.20	3	52		38	194	40.82	411835	1448307	413632	1448730
20	Villivakkam	ICF	0.80	2	27		28	119	24.20	413632	1448730	415589	1447847
21	ICF	Kilpauk Water Works	3.00	5	36		45	291	37.11	415589	1447847	417020	1446964
22	Kilpauk Water Works	Pachayappas College	1.30	3	19			199	23.52	417020	1446964	416952	1445636
23	Pachayappas College	Tylors Road	0.50		59			59	30.51	416952	1445636	417394	1445739
24	Tylors Road	KMC	0.80	1	57		24	93	30.97	417394	1445739	417935	1445863
25	KMC	Egmore R.S	2.00	4	48	1	16	212	33.96	417935	1445863	419936	1446084
26	Egmore R.S	Gandhi Irvin Bridge	0.20		27			27	26.67	419936	1446084	420334	1446175
27	Gandhi Irvin Bridge	Ribbon Building	0.70	1	41			101	24.95	420334	1446175	420967	1446216
28	Gandhi Irvin Bridge	Central R.S	0.50	2	43	1	13	90	20.00	420967	1446216	421425	1446272
29	Central R.S	Km 0/0	0.70	3	36			216	11.67	421425	1446272	422167	1445975
30	Km 0/0	Secretariat	1.90	2	46		32	134	51.04	422167	1445975	422827	1446022
31	Secretariat	Port Trust	0.50	1	21		19	62	29.03	422827	1446022	422956	1446568

Total Distance Travelled	49.3	Km	Total Time Taken	5223	33.98	59.67	11.67
				1:27:03	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study (Abstract)

Route: e to f (Alandur R.S to TPP Road, Manali)

Date: 24.03.2016

Route: f to e (TPP Road, Manali to Alandur R.S)

Day: Thursday

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Test Vehicle No: TN09BE1260

Test Vehicle No: TN22CR7765

Run No.	Route Section		Distance (Km)	Journey Time (Sec)	Travel Speed (Km/hr)
	From	To			
1	Alandur R.S	TPP Road near Manali	25.90	3097	30.107
2	TPP Road near Manali	Alandur R.S	25.80	2597	35.764
3	Alandur R.S	TPP Road near Manali	26.00	2573	36.378
4	TPP Road near Manali	Alandur R.S	25.90	2594	35.944
5	Alandur R.S	TPP Road near Manali	26.00	2861	32.716
6	TPP Road near Manali	Alandur R.S	25.80	3397	27.342

TPP Road = Tiruvetriyur Ponneri Panchetti Road

Average Distance	Average Journey Time (H:M:S)	Average Speed
25.90	0:47:33	33.04

Travel Speed Study

Route: e to f (Alandur R.S to TPP Road, Manali)

Run: 1

Time: Morning Peak 09.50am - 10.57am

Date: 24.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Thursday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Eastin g (m)	Northin g (m)
1	Alandur R.S	CIPET	1.00	2				120	30.00	413394	1437834	413705	1438790
2	CIPET	Ambal Nagar	0.50	1			5	55	32.73	413705	1438790	413897	1439324
3	Ambal Nagar	Kasi Theatre	1.60	3			35	145	39.72	413897	1439324	414225	1440606
4	Kasi Theatre	Ashok Pillar	0.70	3			54	126	20.00	414225	1440606	414566	1441117
5	Ashok Pillar	Lakshman Shruthi Signal	1.00	3			10	170	21.18	414566	1441117	414588	1442166
6	Lakshman Shruthi Signal	Vadapalani	0.70	4		2	45	75	33.60	414588	1442166	414552	1442779
7	Vadapalani	MMDA Jn	1.50	3			22	158	34.18	414552	1442779	414521	1444315
8	MMDA Jn	Sports Village	0.60	2			28	92	23.48	414521	1444315	414198	1444725
9	Sports Village	Koyambedu Jn	0.50	1			30	30	60.00	414198	1444725	413816	1444990
10	Koyambedu Jn	Flyover	1.00	3			56	124	29.03	413816	1444990	413168	1445668
11	Flyover	Tirumangalam	2.10	2				120	63.00	413168	1445668	413116	1446910
12	Tirumangalam	Padi Flyover	1.00	3			12	168	21.43	413116	1446910	412661	1448539
13	Padi Flyover	Kolathur Jn	4.20	11		4	57	363	41.65	412661	1448539	414783	1451663
14	Kolathur Jn	Madavaram Rountana	3.50	6			50	310	40.65	414783	1451663	415431	1453278
15	Madavaram Rountana	Truck Parking Yard	0.70	1			10	50	50.40	415431	1453278	415781	1454007
16	Truck Parking Yard	Toll Plaza	2.50	7		1	39	321	28.04	415781	1454007	418160	1456787
17	Toll Plaza	TPP Road Xn	2.80	16		4	50	670	15.04	418160	1456787	420884	1457344
Total Distance Travelled			25.9	Km	Total Time Taken			3097	30.11	63.00	15.04		
								0:48:37	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study

Time: Morning Peak 08.00am - 09.10am

Date: 24.03.2016

Route: f to e (TPP Road, Manali to Alandur R.S)

Run: 2

Day: Thursday

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	TPP Road Xn	Toll Plaza	2.70	3				180	54.00	420884	1457344	418160	1456787
2	Toll Plaza	Truck Parking Yard	0.80	1				60	48.00	418160	1456787	415781	1454007
3	Truck Parking Yard	Madavaram Rountana	2.20	3			5	175	45.26	415781	1454007	415431	1453278
4	Madavaram Rountana	Kolathur Jn	2.80	4				240	42.00	415431	1453278	414783	1451663
5	Kolathur Jn	Padi Flyover	4.80	10			3	417	41.44	414783	1451663	412661	1448539
6	Padi Flyover	Tirumangalam	2.70	5			28	272	35.74	412661	1448539	413116	1446910
7	Tirumangalam	Flyover	1.10	2				120	33.00	413116	1446910	413168	1445668
8	Flyover	Koyambedu Jn	0.30	1				25	43.20	413168	1445668	413816	1444990
9	Koyambedu Jn	Sports Village	0.50	1				60	30.00	413816	1444990	414198	1444725
10	Sports Village	MMDA Jn	0.60	2			10	110	19.64	414198	1444725	414521	1444315
11	MMDA Jn	Vadapalani	1.50	5			39	261	20.69	414521	1444315	414552	1442779
12	Vadapalani	Lakshman Shruthi Signal	0.70	7			5	85	29.65	414552	1442779	414588	1442166
13	Lakshman Shruthi Signal	Ashok Pillar	1.20	3				180	24.00	414588	1442166	414566	1441117
14	Ashok Pillar	Kasi Theatre	1.00	2				92	39.13	414566	1441117	414225	1440606
15	Kasi Theatre	Ambal Nagar	1.30	3			11	169	27.69	414225	1440606	413897	1439324
16	Ambal Nagar	CIPET	0.40	2			1	46	31.30	413897	1439324	413705	1438790
17	CIPET	Alandur R.S	1.20	2				105	41.14	413705	1438790	413394	1437834
Total Distance Travelled			25.8	Km	Total Time Taken			2597	35.76	54.00	19.64		
								0:43:17	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study

Route: e to f (Alandur R.S to TPP Road, Manali)

Run: 3

Time: Day Time 02.25pm - 03.28pm

Date: 24.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Thursday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Alandur R.S	CIPET	1.10	1	31			91	43.52	413394	1437834	413705	1438790
2	CIPET	Ambal Nagar	0.40		45			45	32.00	413705	1438790	413897	1439324
3	Ambal Nagar	Kasi Theatre	1.50	2	43		21	142	38.03	413897	1439324	414225	1440606
4	Kasi Theatre	Ashok Pillar	0.80	2	38		26	132	21.82	414225	1440606	414566	1441117
5	Ashok Pillar	Lakshman Shruthi Signal	1.00	2	0			120	30.00	414566	1441117	414588	1442166
6	Lakshman Shruthi Signal	Vadapalani	0.70	2	3		22	101	24.95	414588	1442166	414552	1442779
7	Vadapalani	MMDA Jn	1.50	2	58			178	30.34	414552	1442779	414521	1444315
8	MMDA Jn	Sports Village	0.70		57			57	44.21	414521	1444315	414198	1444725
9	Sports Village	Koyambedu Jn	0.40		45			45	32.00	414198	1444725	413816	1444990
10	Koyambedu Jn	Flyover	1.00	2	58		30	148	24.32	413816	1444990	413168	1445668
11	Flyover	Tirumangalam	1.00	1	47			107	33.64	413168	1445668	413116	1446910
12	Tirumangalam	Padi Flyover	2.20	2	45			165	48.00	413116	1446910	412661	1448539
13	Padi Flyover	Kolathur Jn	3.90	7				420	33.43	412661	1448539	414783	1451663
14	Kolathur Jn	Madavaram Rountana	3.70	5	15		1	230	57.91	414783	1451663	415431	1453278
15	Madavaram Rountana	Truck Parking Yard	0.70	1	5			65	38.77	415431	1453278	415781	1454007
16	Truck Parking Yard	Toll Plaza	2.50	27	40		22	330	27.27	415781	1454007	418160	1456787
17	Toll Plaza	TPP Road Xn	2.90	3	17			197	52.99	418160	1456787	420884	1457344

Total Distance Travelled	26	Km	Total Time Taken	2573	36.38	57.91	21.82
				0:42:53	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: f to e (TPP Road, Manali to Alandur R.S)

Run: 4

Time: Day Time 02.40pm - 03.34pm

Date: 24.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Thursday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	TPP Road Xn	Toll Plaza	2.70	4	20			260	37.38	420884	1457344	418160	1456787
2	Toll Plaza	Truck Parking Yard	0.80	1				60	48.00	418160	1456787	415781	1454007
3	Truck Parking Yard	Madavaram Rountana	2.20	4	5			245	32.33	415781	1454007	415431	1453278
4	Madavaram Rountana	Kolathur Jn	2.80	5	38		30	308	32.73	415431	1453278	414783	1451663
5	Kolathur Jn	Padi Flyover	4.80	8	38	2	9	389	44.42	414783	1451663	412661	1448539
6	Padi Flyover	Tirumangalam	2.70	3	14			194	50.10	412661	1448539	413116	1446910
7	Tirumangalam	Flyover	1.20	1	29			89	48.54	413116	1446910	413168	1445668
8	Flyover	Koyambedu Jn	0.30	1	39			99	10.91	413168	1445668	413816	1444990
9	Koyambedu Jn	Sports Village	0.50	1	51		45	66	27.27	413816	1444990	414198	1444725
10	Sports Village	MMDA Jn	0.60	1	18		31	47	45.96	414198	1444725	414521	1444315
11	MMDA Jn	Vadapalani	1.50	4	38	1	31	187	28.88	414521	1444315	414552	1442779
12	Vadapalani	Lakshman Shruthi Signal	0.70	1	50			110	22.91	414552	1442779	414588	1442166
13	Lakshman Shruthi Signal	Ashok Pillar	1.20	4		1	28	152	28.42	414588	1442166	414566	1441117
14	Ashok Pillar	Kasi Theatre	1.00	2			25	95	37.89	414566	1441117	414225	1440606
15	Kasi Theatre	Ambal Nagar	1.30	2	35		6	149	31.41	414225	1440606	413897	1439324
16	Ambal Nagar	CIPET	0.40	1	24		30	54	26.67	413897	1439324	413705	1438790
17	CIPET	Alandur R.S	1.20	3	12	1	42	90	48.00	413705	1438790	413394	1437834
Total Distance Travelled			25.9	Km	Total Time Taken			2594	35.94	50.10	10.91		
								0:43:14	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study

Route: e to f (Alandur R.S to TPP Road, Manali)

Run: 5

Time: Evening Peak 05.00pm - 07.05pm

Date: 24.03.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Thursday

Test Vehicle No: TN22CR7765

Driver Name: Mr. Vinod

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Alandur R.S	CIPET	1.00	1	23			83	43.37	413394	1437834	413705	1438790
2	CIPET	Ambal Nagar	0.50	1	7		22	45	40.00	413705	1438790	413897	1439324
3	Ambal Nagar	Kasi Theatre	1.60	3	3		14	169	34.08	413897	1439324	414225	1440606
4	Kasi Theatre	Ashok Pillar	0.70	1	39			99	25.45	414225	1440606	414566	1441117
5	Ashok Pillar	Lakshman Shruthi Signal	1.00	2	35		30	125	28.80	414566	1441117	414588	1442166
6	Lakshman Shruthi Signal	Vadapalani	0.70	11	31	8	55	156	16.15	414588	1442166	414552	1442779
7	Vadapalani	MMDA Jn	1.50	3	42		47	175	30.86	414552	1442779	414521	1444315
8	MMDA Jn	Sports Village	0.60	1	29		30	59	36.61	414521	1444315	414198	1444725
9	Sports Village	Koyambedu Jn	0.50	1	25		38	47	38.30	414198	1444725	413816	1444990
10	Koyambedu Jn	Flyover	1.00	1	20			80	45.00	413816	1444990	413168	1445668
11	Flyover	Tirumangalam	1.00	1	49			109	33.03	413168	1445668	413116	1446910
12	Tirumangalam	Padi Flyover	2.20	3	46			226	35.04	413116	1446910	412661	1448539
13	Padi Flyover	Kolathur Jn	4.10	14	32	8	23	369	40.00	412661	1448539	414783	1451663
14	Kolathur Jn	Madavaram Rountana	3.50	4	15			255	49.41	414783	1451663	415431	1453278
15	Madavaram Rountana	Truck Parking Yard	0.70	1	49			109	23.12	415431	1453278	415781	1454007
16	Madavaram Rountana	Toll Plaza	2.50	30	17	25	17	300	30.00	415781	1454007	418160	1456787
17	Toll Plaza	TPP Road Xn	2.90	41	16	33	41	455	22.95	418160	1456787	420884	1457344
Total Distance Travelled			26	Km	Total Time Taken			2861	32.72	49.41	16.15		
								0:47:41	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study

Route: f to e (TPP Road, Manali to Alandur R.S)

Run: 6

Time: Evening Peak 06.00pm - 07.37pm

Date: 24.03.2016

Surveyor: Mr. B. Sivakumar & Mr. G. Paramasivam

Day: Thursday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	TPP Road Xn	Toll Plaza	2.70	12	34	6	25	369	26.34	420884	1457344	418160	1456787
2	Toll Plaza	Truck Parking Yard	0.80	5	11	2	27	164	17.56	418160	1456787	415781	1454007
3	Truck Parking Yard	Madavaram Rountana	2.20	15	47	12	11	216	36.67	415781	1454007	415431	1453278
4	Madavaram Rountana	Kolathur Jn	2.80	15	2	10	27	275	36.65	415431	1453278	414783	1451663
5	Kolathur Jn	Padi Flyover	4.80	6	46		37	369	46.83	414783	1451663	412661	1448539
6	Padi Flyover	Tirumangalam	2.70	4	7		40	207	46.96	412661	1448539	413116	1446910
7	Tirumangalam	Flyover	1.10	1	45			105	37.71	413116	1446910	413168	1445668
8	Flyover	Koyambedu Jn	0.30	3	35	1	20	135	8.00	413168	1445668	413816	1444990
9	Koyambedu Jn	Sports Village	0.50	1				60	30.00	413816	1444990	414198	1444725
10	Sports Village	MMDA Jn	0.60	5	32		55	277	7.80	414198	1444725	414521	1444315
11	MMDA Jn	Vadapalani	1.50	5	28	1	51	217	24.88	414521	1444315	414552	1442779
12	Vadapalani	Lakshman Shruthi Signal	0.70	2	15			135	18.67	414552	1442779	414588	1442166
13	Lakshman Shruthi Signal	Ashok Pillar	1.20	5	1	2	5	176	24.55	414588	1442166	414566	1441117
14	Ashok Pillar	Kasi Theatre	1.00	2	6			126	28.57	414566	1441117	414225	1440606
15	Kasi Theatre	Ambal Nagar	1.30	7	3			423	11.06	414225	1440606	413897	1439324
16	Ambal Nagar	CIPET	0.40		45			45	32.00	413897	1439324	413705	1438790
17	CIPET	Alandur R.S	1.20	2	19		41	98	44.08	413705	1438790	413394	1437834
Total Distance Travelled			25.8	Km	Total Time Taken			3397	27.34	46.96	7.80		
								0:54:37	Average Speed	Maximum Speed	Minimum Speed		

Travel Speed Study (Abstract)

Route: g to h (Chennai Port Trust to Thatchur)

Date: 06.04.2016

Route: h to g (Thatchur to Chennai Port Trust)

Day: Wednesday

Surveyor: Mr. B. Sivakumar & Mr. R. Senthil

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Test Vehicle No: TN09BE1260

Test Vehicle No: TN22CA8523

<i>Run No.</i>	<i>Route Section</i>		<i>Distance (Km)</i>	<i>Journey Time (Sec)</i>	<i>Travel Speed (Km/hr)</i>
	<i>From</i>	<i>To</i>			
1	Port Trust	Thatchur	36.30	3831	34.111
2	Thatchur	Port Trust	36.00	4904	26.427
3	Port Trust	Thatchur	37.30	4206	31.926
4	Thatchur	Port Trust	35.90	3309	39.057
5	Port Trust	Thatchur	36.40	4539	28.870
6	Thatchur	Port Trust	36.80	3483	38.036

Average Distance	Average Journey Time (H:M:S)	Average Speed
36.45	1:07:25	33.07

Travel Speed Study

Route: g to h (Chennai Port Trust to Thatchur)

Run: 1

Time: Morning Peak 08.05am - 09.25am

Date: 06.04.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Wednesday

Test Vehicle No: TN22CA8523

Driver Name: Mr. Arul

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.20	5	0			300	26.40	422956	1446568	422167	1445975
2	Km 0/0	Central Station	0.80	2	0			120	24.00	422167	1445975	421425	1446272
3	Central Station	Elephant Gate	1.30	3	0		35	145	32.28	421425	1446272	421438	1447453
4	Elephant Gate	Basin Bridge B.S	1.30	3	0		51	129	36.28	421438	1447453	421247	1448739
5	Basin Bridge B.S	T.H.Road Jn	3.50	9	0		10	530	23.77	421247	1448739	420404	1449498
6	T.H.Road Jn	Madavaram	4.80	10	0		35	565	30.58	420404	1449498	417301	1451877
7	Madavaram	NH5 IRR Jn	2.20	4	0			240	33.00	417301	1451877	415424	1453283
8	NH5 IRR Jn	Ambattur Jn	2.50	4	0		25	215	41.86	415424	1453283	413851	1454526
9	Ambattur Jn	Red Hills Jn	3.20	5	0		58	242	47.60	413851	1454526	412454	1457638
10	Red Hills Jn	Tiruvallur Jn	2.10	4	0		15	225	33.60	412454	1457638	411278	1459043
11	Tiruvallur Jn	Toll Plaza	2.60	7	0		25	395	23.70	411278	1459043	409963	1461325
12	Toll Plaza	Periyapalayam Road Jn	5.60	10	0	4	50	310	65.03	409963	1461325	408450	1466294
13	Periyapalayam Road Jn	NADI Hitech	1.80	4	0		5	235	27.57	408450	1466294	407962	1467903
14	NADI Hitech	Thatchur Koot Road	2.40	3	0			180	48.00	407962	1467903	407707	1470122

Total Distance Travelled	36.3	Km	Total Time Taken	3831	34.11	65.03	23.70
				1:03:51	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: h to g (Thatchur to Chennai Port Trust)

Run: 2

Time: Morning Peak 08.35am - 10.09am

Date: 06.04.2016

Surveyor: Mr. B. Sivakumar & Mr. R. Senthil Kumar

Day: Wednesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Thatchur Koot Road	NADI Hitech	3.10	4	5			245	45.55	407707	1470122	407962	1467903
2	NADI Hitech	Periyapalayam Road Jn	1.70	2	19		10	129	47.44	407962	1467903	408450	1466294
3	Periyapalayam Road Jn	Toll Plaza	5.50	6	17			377	52.52	408450	1466294	409963	1461325
4	Toll Plaza	Tiruvallur Jn	2.80	14	24	1	43	761	13.25	409963	1461325	411278	1459043
5	Tiruvallur Jn	Red Hills Jn	2.10	5	45	1	25	260	29.08	411278	1459043	412454	1457638
6	Red Hills Jn	NH5 IRR Jn	5.30	10	13	1	40	513	37.19	413851	1454526	415424	1453283
7	NH5 IRR Jn	Madavaram	2.20	3	2			182	43.52	415424	1453283	417301	1451877
8	Madavaram	Basin Bridge B.S	8.00	12	15			735	39.18	420404	1449498	421247	1448739
9	Basin Bridge B.S	Elephant Gate	1.50	12	3	4	38	445	12.13	421247	1448739	421438	1447453
10	Elephant Gate	Central Station	1.20	4	7			247	17.49	421438	1447453	421425	1446272
11	Central Station	Port Trust	2.60	18	55	2	5	1010	9.27	421425	1446272	422956	1446568

Total Distance Travelled	36	Km	Total Time Taken	4904	26.43	52.52	9.27
				1:21:44	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: g to h (Chennai Port Trust to Thatchur)

Run: 3

Time: Day Time 01.30pm - 02.40pm

Date: 06.04.2016

Surveyor: Mr. B. Sivakumar & Mr. R. Senthil Kumar

Day: Wednesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.50	6	4		20	344	26.16	422956	1446568	422167	1445975
2	Km 0/0	Central Station	0.60	4	12		30	222	9.73	422167	1445975	421425	1446272
3	Central Station	Elephant Gate	1.40	4				240	21.00	421425	1446272	421438	1447453
4	Elephant Gate	Basin Bridge B.S	1.30	4	3			243	19.26	421438	1447453	421247	1448739
5	Basin Bridge B.S	Madavaram	5.60	13				780	25.85	421247	1448739	417301	1451877
6	Madavaram	NH5 IRR Jn	6.40	11	26		20	666	34.59	417301	1451877	415424	1453283
7	NH5 IRR Jn	Ambattur Jn	1.00	1			10	50	72.00	415424	1453283	413851	1454526
8	Ambattur Jn	Red Hills Jn	3.20	5	37			337	34.18	413851	1454526	412454	1457638
9	Red Hills Jn	Tiruvallur Jn	2.00	3			10	170	42.35	412454	1457638	411278	1459043
10	Tiruvallur Jn	Toll Plaza	2.70	4				240	40.50	411278	1459043	409963	1461325
12	Toll Plaza	Periyapalayam Road Jn	5.80	10	11			611	34.17	409963	1461325	408450	1466294
14	Periyapalayam Road Jn	Thatchur Koot Road	4.80	5	3			303	57.03	408450	1466294	407707	1470122

Total Distance Travelled	37.3	Km	Total Time Taken	4206	31.93	72.00	9.73
				1:10:06	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: h to g (Thatchur to Chennai Port Trust)

Run: 4

Time: Day Time 01.30pm - 02.30pm

Date: 06.04.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Wednesday

Test Vehicle No: TN22CA8523

Driver Name: Mr. Arul

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Thatchur Koot Road	NADI Hitech	2.30	3				180	46.00	407707	1470122	407962	1467903
2	NADI Hitech	Periyapalayam Road Jn	1.70	2				120	51.00	407962	1467903	408450	1466294
3	Periyapalayam Road Jn	Toll Plaza	5.60	4				240	84.00	408450	1466294	409963	1461325
4	Toll Plaza	Tiruvallur Jn	2.60	5				300	31.20	409963	1461325	411278	1459043
5	Tiruvallur Jn	Red Hills Jn	2.20	3			31	149	53.15	411278	1459043	412454	1457638
6	Red Hills Jn	NH5 IRR Jn	5.40	8		1	18	402	48.36	413851	1454526	415424	1453283
7	NH5 IRR Jn	Madavaram	2.20	3				180	44.00	415424	1453283	417301	1451877
8	Madavaram	T.H.Road Jn	5.30	10				600	31.80	417301	1451877	420404	1449498
9	T.H.Road Jn	Basin Bridge B.S	3.20	5				300	38.40	420404	1449498	421247	1448739
10	Basin Bridge B.S	Elephant Gate	1.50	5			52	248	21.77	421247	1448739	421438	1447453
11	Elephant Gate	Central Station	1.20	4			10	230	18.78	421438	1447453	421425	1446272
12	Central Station	Km 0/0	0.60	1				60	36.00	421425	1446272	422167	1445975
13	Km 0/0	Port Trust	2.10	5				300	25.20	422167	1445975	422956	1446568

Total Distance Travelled	35.9	Km	Total Time Taken	3309	39.06	84.00	18.78
				0:56:08	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: g to h (Chennai Port Trust to Thatchur)

Run: 5

Time: Evening Peak 05.30pm - 06.52pm

Date: 06.04.2016

Surveyor: Mr. M.S. Madanagopal & Mr. M. Ashok

Day: Wednesday

Test Vehicle No: TN22CA8523

Driver Name: Mr. Arul

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Port Trust	Km 0/0	2.30	8			46	434	19.08	422956	1446568	422167	1445975
2	Km 0/0	Central Station	0.70	4			25	215	11.72	422167	1445975	421425	1446272
3	Central Station	Elephant Gate	1.30	8			52	428	10.93	421425	1446272	421438	1447453
4	Elephant Gate	Basin Bridge B.S	1.40	6		1	10	290	17.38	421438	1447453	421247	1448739
5	Basin Bridge B.S	T.H.Road Jn	3.40	11		1	28	572	21.40	421247	1448739	420404	1449498
6	T.H.Road Jn	Madavaram	5.40	12			35	685	28.38	420404	1449498	417301	1451877
7	Madavaram	NH5 IRR Jn	1.80	3				180	36.00	417301	1451877	415424	1453283
8	NH5 IRR Jn	Ambattur Jn	2.50	4				240	37.50	415424	1453283	413851	1454526
9	Ambattur Jn	Red Hills Jn	3.10	7			45	375	29.76	413851	1454526	412454	1457638
10	Red Hills Jn	Tiruvallur Jn	2.10	3			10	170	44.47	412454	1457638	411278	1459043
11	Tiruvallur Jn	Toll Plaza	2.70	4				240	40.50	411278	1459043	409963	1461325
12	Toll Plaza	Periyapalayam Road Jn	5.50	7			10	410	48.29	409963	1461325	408450	1466294
13	Periyapalayam Road Jn	NADI Hitech	1.60	2				120	48.00	408450	1466294	407962	1467903
14	NADI Hitech	Thatchur Koot Road	2.60	3				180	52.00	407962	1467903	407707	1470122

Total Distance Travelled	36.4	Km	Total Time Taken	4539	28.87	52.00	10.93
				1:15:39	Average Speed	Maximum Speed	Minimum Speed

Travel Speed Study

Route: h to g (Thatchur to Chennai Port Trust)

Run: 6

Time: Evening Peak 05.30pm - 06.36pm

Date: 06.04.2016

Surveyor: Mr. B. Sivakumar & Mr. R. Senthil Kumar

Day: Wednesday

Test Vehicle No: TN09BE1260

Driver Name: Mr. Sheikali

Sl. No	Route Section		Travel Distance (Km)	Running Time		Delay		Journey Time (Sec)	Travel Speed (Km/hr)	GPS Coordinates (from - to)			
	From	To		Min	Sec	Min	Sec			Easting (m)	Northing (m)	Easting (m)	Northing (m)
1	Thatchur Koot Road	NADI Hitech	2.30	3				180	46.00	407707	1470122	407962	1467903
2	NADI Hitech	Periyapalayam Road Jn	1.50	2				120	45.00	407962	1467903	408450	1466294
3	Periyapalayam Road Jn	Toll Plaza	5.80	7			5	415	50.31	408450	1466294	409963	1461325
4	Toll Plaza	Tiruvallur Jn	3.30	3				180	66.00	409963	1461325	411278	1459043
5	Tiruvallur Jn	Red Hills Jn	2.00	5		1	16	224	32.14	411278	1459043	412454	1457638
6	Red Hills Jn	Ambattur Jn	3.30	4			8	232	51.21	412454	1457638	413851	1454526
7	Ambattur Jn	NH5 IRR Jn	2.40	3				180	48.00	413851	1454526	415424	1453283
8	NH5 IRR Jn	Madavaram	2.20	4			32	208	38.08	415424	1453283	417301	1451877
9	Madavaram	T.H.Road Jn	5.20	9			28	512	36.56	417301	1451877	420404	1449498
10	T.H.Road Jn	Basin Bridge B.S	1.70	4			40	200	30.60	420404	1449498	421247	1448739
11	Basin Bridge B.S	Elephant Gate	3.70	8		3	15	285	46.74	421247	1448739	421438	1447453
12	Elephant Gate	Central Station	0.70	3			20	160	15.75	421438	1447453	421425	1446272
13	Central Station	Km 0/0	1.00	6			38	322	11.18	421425	1446272	422167	1445975
14	Km 0/0	Port Trust	1.70	5			35	265	23.09	422167	1445975	422956	1446568

Total Distance Travelled	36.8	Km	Total Time Taken	3483	38.04	66.00	11.18
				0:58:19	Average Speed	Maximum Speed	Minimum Speed

Traffic Volume Survey Result

Station: 01 - NH5 on Madavaram Puzhal Road														Location: Near Ashok Leyland						
Road: NH5																				
Direction: from Madavaram to Puzhal										Date: 31.03.2016					Day: Thursday					
Time		Motorised Vehicles													Non Motorised Vehicles					Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trp van/Maxi Cab/ Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer	Total Fast Moving	Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	46	1	202	9	44	7	11	2	18	106	20			466	2	1		3	
7.00	8.00	170	2	607	52	287	17	21	9	156	79	50			1450	5	3		8	
8.00	9.00	82	2	804	115	407	63	111	15	177	76	52		1	1905	11	21		32	
9.00	10.00	71	16	899	134	411	82	42	153	171	70	73		1	2123	8			8	
10.00	11.00	72		717	112	375	74	201	35	148	92	68		1	1895	13	3		16	
11.00	12.00	74		1432	127	366	70	221	12	147	118	89	2	2	2660	6			6	
12.00	13.00	90	2	1255	132	359	31	274	22	279	114	111			2669	2	3		5	
13.00	14.00	57	2	1230	108	350	30	285	18	262	134	87	1		2564	9	2		11	
14.00	15.00	52	15	1140	103	262	26	188	22	122	131	123		1	2185	7	4		11	
15.00	16.00	55	2	1601	198	417	61	303	18	227	189	90	1	1	3163	2	3		5	
16.00	17.00	62	2	1752	140	394	132	239	12	277	136	64	1	1	3212	6			6	
17.00	18.00	43		824	38	197	66	144	6	101	81	44			1544				0	
18.00	19.00	48	1	835	47	212	52	125	10	126	73	32			1561				0	
19.00	20.00	56	4	866	96	266	35	159	26	156	65	27			1756	1	2		3	
20.00	21.00	62	3	1375	148	464	31	139	6	180	79	102	1	2	2592	6	2		8	
21.00	22.00	63		2060	130	393	43	142	7	109	95	72			3114	3			3	
22.00	23.00	49	1	694	125	294	13	107	1	114	79	97		1	1575	3			3	
23.00	0.00	37		355	30	192	6	85	1	103	85	121			1015				0	
0.00	1.00	6		12	3	87				87	55	135			385				0	
1.00	2.00	8				51				93	33	163			348				0	
2.00	3.00	6				30				109	15	75			235				0	
3.00	4.00	12				12		4		27	9	43			107				0	
4.00	5.00	35		12	2	48	1	7	1	21	3	27			157				0	
5.00	6.00	29	2	23	7	96	5	19	4	17	28	7			237	3	2		5	
Total		1285	55	18695	1856	6014	845	2827	380	3227	1945	1772	6	11	38918	87	46	0	133	

Done on 06.04.2016

Station: 01 - NH5 on Puzhal to Madavaram Road															Location: Opp. To Ashok Leyland					
Road: NH 5																				
Direction: from Puzhal to Madavaram										Date: 31.03.2016					Day: Thursday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/ Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	14	1	195	17	76	1	11	3	27	8	6			359				0	
7.00	8.00	17	2	286	29	113		9	11	35	27	36			565				0	
8.00	9.00	29	9	1822	63	184	23	56	8	90	55	101			2440	29	3		32	
9.00	10.00	61	1	4246	165	426	27	177	17	203	93	77		1	5494	13			13	
10.00	11.00	47	5	3156	325	589	12	212	20	312	250	103	2	1	5034	8	4		12	
11.00	12.00	51	3	3793	248	569	18	245	20	350	202	61	2		5562	13	6		19	
12.00	13.00	52	2	2937	100	385	28	160	13	337	279	83	1		4377	9	3		12	
13.00	14.00	47	7	1275	94	479	20	250	11	270	203	142		1	2799	8	4		12	
14.00	15.00	67	5	2518	60	589	35	272	6	316	263	104	1		4236	7			7	
15.00	16.00	72	5	2474	58	786	27	330	5	346	236	88	5		4432	3	3		6	
16.00	17.00	125	5	2261	74	908	90	265	11	329	202	89			4359	13	4		17	
17.00	18.00	96	3	1256	61	420	20	147	7	235	153	27			2425	4			4	
18.00	19.00	82	2	1162	76	641	32	120	6	126	117	34			2398	1			1	
19.00	20.00	109	1	1434	92	942	47	201	10	132	87	125			3180	2	2		4	
20.00	21.00	129	18	1284	115	1165	19	266	19	186	119	101	1		3422	1	2		3	
21.00	22.00	68	10	867	60	623	23	144	10	102	94	69			2070	2	2		4	
22.00	23.00	62		291	59	340	17	99	1	144	141	91			1245	1	1		2	
23.00	0.00	10		213	14	166	8	32		62	60	65			630				0	
0.00	1.00	15		5		55				41	48	13			177				0	
1.00	2.00	8				17				37	25	8			95				0	
2.00	3.00	7				23				12	9	16			67				0	
3.00	4.00	23		5		49		3		6	1	9			96				0	
4.00	5.00	35	1	19	1	32		7		5	8	3			111				0	
5.00	6.00	43	1	127	19	77		12		29	6	2			316				0	
Total		1269	81	31626	1730	9654	447	3018	178	3732	2686	1453	12	3	55889	114	34	0	148	

Done on 06.04.2016

Station: 02 - Padi															Location: Near Saravana Stores Bus Stop					
Road: MTH Road																				
Direction: from Villivakkam to Ambattur												Date: 30.03.2016			Day: Wednesday					
Time		Motorised Vehciles													Total Fast Moving	Non Motorised Vehciles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/ Share Auto	LCV	3	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailar		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehciles	
6.00	7.00	84	4	743	42	130	34	18	3	23	6	9	1		1097	22	2		24	
7.00	8.00	216	22	2043	72	842	68	44	15	61	11		1	1	3396	78	3	1	82	
8.00	9.00	84	15	3293	89	876	40	60	17	38	5				4517	59		2	61	
9.00	10.00	85	12	4731	63	799	29	113	31	31	4				5898	63	4	3	70	
10.00	11.00	89	7	3813	126	615	25	74	48	48	9				4854	37	4		41	
11.00	12.00	57		3086	127	582	5	189	21	55	18	1			4141	24	4	1	29	
12.00	13.00	75	2	2627	107	704	6	130	46	84	31	1			3813	20	9		29	
13.00	14.00	121		2171	74	656	30	152	48	41	8	1			3302	14			14	
14.00	15.00	96		2589	120	628		109	14	68	13				3637	19	4	1	24	
15.00	16.00	63	3	2629	99	693	3	149	40	102	20			1	3802	71	5		76	
16.00	17.00	111	4	3426	114	787	29	183	76	80	20				4830	50	5	2	57	
17.00	18.00	126	13	3828	138	957	10	163	77	53	22			1	5388	48		2	50	
18.00	19.00	65	21	5238	233	1071	56	306	190	35	39	4	1	3	7262	28			28	
19.00	20.00	77	14	8504	399	1514	65	341	115	33	99	6	1	6	11174	16	3		19	
20.00	21.00	124	14	6719	387	1027	98	150	73	10	104	25		24	8755	44	9	30	83	
21.00	22.00	70	9	3368	292	699	52	95	37	64	102	48	3	32	4871	14	1	3	18	
22.00	23.00	60		2422	183	305	28	52	37	34	79	193	1	126	3520	4	1	1	6	
23.00	0.00	19	1	1899	20	402	4	77	5	3	46	222	1	212	2911	18	3		21	
0.00	1.00	12	2	1334	9	346	6	42	3	1	59	103		103	2020	14			14	
1.00	2.00	6		242	10	114	15	21	1	1	37	107		131	685	2			2	
2.00	3.00	3		67	9	94	13	22	1	50		235		235	729				0	
3.00	4.00	2		100	11	112	19	19		35		119	5	119	541	3			3	
4.00	5.00	9		227	16	119	20	13		44		94	2	94	638	14		1	15	
5.00	6.00	48		342	46	382	27	63	15	25		47	2	51	1048	9	1		10	
Total		1702	143	65441	2786	14454	682	2585	913	1019	732	1215	18	1139	92829	671	58	47	776	

Station: 02 - Padi																Location: Near Sundaram Fasteners				
Road: MTH Road																				
Direction: from Ambattur to Padi											Date: 30.03.2016				Day: Wednesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/ Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	43	5	1234	61	95	57	19	7	15	1				1537	27	2	1	30	
7.00	8.00	100	28	2163	103	347	124	66	10	27		1			2969	81	4		85	
8.00	9.00	103	23	5949	227	819	137	110	14	112	6		2		7502	71	1		72	
9.00	10.00	98	8	3261	362	760	163	109	9	133	5		6	12	4926	45	5		50	
10.00	11.00	74	9	2725	190	652	228	165	23	134	19	2	3	20	4244	30	6		36	
11.00	12.00	68	3	2929	93	555	297	190	14	267	61	2	1	29	4509	23	2		25	
12.00	13.00	80	9	3385	213	478	138	195	18	277	100	3	1	13	4910	8	5	1	14	
13.00	14.00	54	7	2974	223	492	222	180	23	225	72	2	4	7	4485	32	12		44	
14.00	15.00	53	7	2924	219	707	97	190	21	243	46		2	1	4510	59	3		62	
15.00	16.00	59	10	2314	209	767	143	295	22	176	23	4			4022	19	3		22	
16.00	17.00	73	11	3517	208	1289	90	412	14	273	112		10	1	6010	53	6		59	
17.00	18.00	92	12	4045	264	1420	191	543	16	271	71		6	23	6954	27	7		34	
18.00	19.00	52	8	4242	230	804	186	304	18	63	6	2	1		5916	84	8		92	
19.00	20.00	64	3	4435	213	789	175	207	11	60	6	11			5974	93	6		99	
20.00	21.00	73		2342	157	667	68	138	12	73	14	15			3559	56	2		58	
21.00	22.00	44	6	1518	127	514	32	80	7	83	32	41		1	2485	38	1		39	
22.00	23.00	35	1	860	45	238	17	44	4	43	59	86			1432	32	1		33	
23.00	0.00	7		335	19	221	14	26	5	57	50	123			857	9			9	
0.00	1.00	11		133	14	152	16	28		53	40	93	1		541	17	1		18	
1.00	2.00	10	1	109	9	95	9	20		36	39	84			412	2			2	
2.00	3.00	4		97	6	68	11	28	1	48	37	70			370	2			2	
3.00	4.00	4	1	114	11	157	17	23	2	61	44	53		1	488	2			2	
4.00	5.00	2		160	17	119	37	31	3	43	59	81	1	1	554	3		1	4	
5.00	6.00	42		290	30	140	17	36	2	52	24	42	1	1	677	16	1		17	
Total		1245	152	52055	3250	12345	2486	3439	256	2825	926	715	39	110	79843	829	76	3	908	

Station: 03 - Tirumangalam															Location: CPWD Quarters					
Road: Inner Ring Road																				
Direction: from Koyambedu to Tirumangalam										Date: 29.03.2016					Day: Tuesday					
Time		Motorised Vechicles													Total Fast Moving	Non Motorised Vechicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vechicles	
6.00	7.00	155	3	794	147	321	17	102	35	10		3			1587	6	2		8	
7.00	8.00	181	42	2225	157	579	135	176	56	102	6	4	2		3665	46	17	9	72	
8.00	9.00	142	16	4055	150	871	259	198	43	78	2	9	1		5824	175	24	3	202	
9.00	10.00	89	11	7648	230	1126	250	182	61	71	2	9			9679	113	49	5	167	
10.00	11.00	109	13	6379	188	930	184	151	38	61	4	6			8063	70	27	2	99	
11.00	12.00	125	17	5916	245	786	178	146	40	101	7	8			7569	65	16	4	85	
12.00	13.00	96	27	5385	188	1070	193	237	26	74	3	1			7300	27	23		50	
13.00	14.00	108	19	7344	233	974	159	175	13	70	5	7			9107	22	17	2	41	
14.00	15.00	105	15	9779	175	778	171	194	20	78	13	3			11331	28	18	3	49	
15.00	16.00	135	24	5720	160	815	196	152	15	75	9	8			7309	25	32		57	
16.00	17.00	161	24	6213	128	692	156	180	21	55	5	7			7642	22	8	2	32	
17.00	18.00	156	32	8519	140	830	140	175	13	37	6	1			10049	23	18	2	43	
18.00	19.00	72	35	1462	111	900	156	141	10	3	2	2			2894	17	2	1	20	
19.00	20.00	153	22	2515	189	1056	138	88	2	15	1	1			4180	15	1		16	
20.00	21.00	149		3309	203	890	78	77	3	38		3			4750	5		1	6	
21.00	22.00	114		2972	150	682	56	41	2	49	7	6			4079	13			13	
22.00	23.00	113	1	2657	111	970	75	33	8	48	19	10			4045	12			12	
23.00	0.00	89		1242	35	295	59	19	1	57	34	16			1847	4			4	
0.00	1.00	34		282	27	247	13	9		40	21	29			702	6			6	
1.00	2.00	39		127	11	124	18	9		61	25	38			452	6			6	
2.00	3.00	47		81	10	150	6	11		55	19	53			432	6			6	
3.00	4.00	104		82	21	121	42	11		50	26	114			571	5			5	
4.00	5.00	73		257	33	132	49	24	2	79	21	75	1	1	747	13	13	2	28	
5.00	6.00	103		523	87	189	54	55	9	70	25	103		2	1220	12	8		20	
Total		2652	301	85486	3129	15528	2782	2586	418	1377	262	516	4	3	115044	736	275	36	1047	

Station: 03 - Tirumangalam															Location: Opp. CPWD Quarters					
Road: Inner Ring Road																				
Direction: from Tirumangalam to Koyambedu										Date: 29.03.2016					Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	231	42	210	76	294	15	69	13	8					958	3	2		5	
7.00	8.00	160	11	2003	103	587	95	87	41	16	1	3			3107	11	7		18	
8.00	9.00	81	12	4169	112	645	114	80	54	19	2	3			5291	20	6		26	
9.00	10.00	93	6	5449	92	852	96	96	58	11		1			6754	19	6	1	26	
10.00	11.00	64	6	4133	86	992	41	106	14	4	1	7		1	5455	3	2	1	6	
11.00	12.00	43	1	4901	69	983	50	133	15	9		1			6205	3		2	5	
12.00	13.00	55	6	3413	83	1186	47	159	61	2	1	2			5015	5	11	5	21	
13.00	14.00	58	9	7827	51	848	85	153	58	4		5			9098	5	9	5	19	
14.00	15.00	64	5	3847	56	753	68	171	62	14	1	4			5045	8	3	1	12	
15.00	16.00	107	10	4476	70	1182	108	238	87	13		5			6296	11	10	6	27	
16.00	17.00	155	20	5847	85	718	150	233	92	9		2			7311	11	11	4	26	
17.00	18.00	176	47	7808	93	858	155	185	53	16		4			9395	14	15	3	32	
18.00	19.00	231	42	1327	270	944	118	290	7	37	3				3269	4		2	6	
19.00	20.00	232	29	1564	283	880	373	320	4	59	7	1	2		3754	22	4		26	
20.00	21.00	239	41	1760	251	936	375	375	14	85	9	9			4094	51			51	
21.00	22.00	122	3	1839	217	657	136	150	9	76	19	6	3		3237	16			16	
22.00	23.00	95	1	969	167	519	87	103	2	13	91	37	1	34	2119	5	4		9	
23.00	0.00	52	1	463	71	486	78	41	1	62	91	45		48	1439	11	1		12	
0.00	1.00	24	1	208	52	230	65	30	1	4	88	35	1	35	774	6	1		7	
1.00	2.00	21		144	15	237	23	21		22	56	26		26	591		1		1	
2.00	3.00	23	1	154	22	172	10	38	2	2	58	47		47	576	2	3		5	
3.00	4.00	22	11	244	41	240	44	81	1		70	43		50	847	2	6		8	
4.00	5.00	56	2	487	96	271	59	124	10		77	31		31	1244	13	5		18	
5.00	6.00	110	12	469	107	226	44	68	13		35	12		15	1111	13	3	1	17	
Total		2514	319	63711	2568	15696	2436	3351	672	485	610	329	7	287	92985	258	110	31	399	

Station: 04 - PH Road															Location: Opposite to CMRL					
Road: NH4																				
Direction: from Nerkundram to Koyambedu												Date: 29.03.2016			Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	118	9	970	109	413	89	220	43	94	37	1	1		2104	50	22	7	79	
7.00	8.00	280	20	2059	245	676	131	237	50	45	9	1			3753	34	8	1	43	
8.00	9.00	217	30	5122	373	1328	114	224	55	27	6	1			7497	71	12	2	85	
9.00	10.00	185	6	5755	352	1194	125	190	51	10	5	1			7874	43	28	5	76	
10.00	11.00	146	4	3981	192	1028	76	130	50	14	8	1	1	1	5632	35	8		43	
11.00	12.00	119	3	2526	117	876	53	157	38	60	36	6			3991	18	11	1	30	
12.00	13.00	147	5	1889	148	996	74	178	18	53	7	5			3520	27	7	1	35	
13.00	14.00	139	10	3242	154	949	44	197	19	38	5	1			4798	11	2	1	14	
14.00	15.00	134	11	2629	188	1111	54	201	30	57	10	3			4428	13	7		20	
15.00	16.00	178	12	3256	189	1073	34	215	18	35	15	1			5026	16	6		22	
16.00	17.00	199	15	5545	170	979	68	189	21	28	5				7219	22	10	2	34	
17.00	18.00	242	6	3769	313	736	58	193	22	35	6	1			5381	32	6		38	
18.00	19.00	199	17	6017	267	992	145	201	17	62	2	1			7920	54	10		64	
19.00	20.00	223	9	5750	260	1293	83	185	11	37	9	1			7861	56			56	
20.00	21.00	196	4	3291	287	1394	78	105	48	59	4				5466	55	2		57	
21.00	22.00	170	6	1085	173	734	114	140	38	142	46				2648	19	1	1	21	
22.00	23.00	105		686	100	342	54	69	11	141	58	1	1		1568		5		5	
23.00	0.00	34		283	60	225	33	43	6	115	87	12			898		7	1	8	
0.00	1.00	27		122	50	120	20	52		173	139	8			711		2		2	
1.00	2.00	20		120	18	91	10	35	1	128	100	6			529		7		7	
2.00	3.00	23		107	23	43	9	27	3	119	103	1			458	3	12		15	
3.00	4.00	43		236	30	90	12	68	5	125	110				719	1	14		15	
4.00	5.00	64		343	72	118	16	74	11	128	87	1			914		32	1	33	
5.00	6.00	63		403	103	153	26	129	11	109	72	2			1071	14	23		37	
Total		3271	167	59186	3993	16954	1520	3459	577	1834	966	55	3	1	91986	574	242	23	839	

Station: 04- PH Road															Location: near CMRL					
Road: NH4																				
Direction: from Koyambedu to Nerkundram										Date: 29.03.2016					Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	136	9	663	161	581	83	364	16	84	26	6			2129	39	7	3	49	
7.00	8.00	185	3	1125	151	638	88	208	80	89	5	8			2580	16	2	2	20	
8.00	9.00	246	7	2057	202	955	48	256	108	71	4	1			3955	38	17		55	
9.00	10.00	386	17	4376	244	1184	103	188	122	87	4				6711	57	24		81	
10.00	11.00	304	40	2860	192	930	26	223	109	82	3				4769	31	11		42	
11.00	12.00	315	11	2341	199	731	37	153	88	91	12				3978	26	9		35	
12.00	13.00	292	4	2258	163	703	39	210	30	72	10				3781	23	11		34	
13.00	14.00	158	4	2180	179	805	33	192	29	70	20	2			3672	20	10		30	
14.00	15.00	168	2	2890	160	797	60	342	50	71	21	1			4562	17	9		26	
15.00	16.00	228	1	2580	180	771	37	285	13	67	19	2			4183	15	8		23	
16.00	17.00	209	2	2744	193	696	49	262	20	70	11				4256	22	4		26	
17.00	18.00	196	4	3888	198	714	53	254	21	58	2				5388	16	5		21	
18.00	19.00	265	7	4540	212	1256	63	478	96	57	2	2			6978	54	2		56	
19.00	20.00	224	19	3861	240	1115	83	112	31	64	8	1			5758	44	3		47	
20.00	21.00	151	16	2956	196	857	69	66	48	45	8	3			4415	20	2		22	
21.00	22.00	246	5	2549	257	549	61	30	8	27	13	6			3751	12	1		13	
22.00	23.00	218	4	1549	124	328	34	26	3	51	36	4			2377	5			5	
23.00	0.00	112		518	57	175	17	8		73	44	5			1009	4			4	
0.00	1.00	24		133	16	107	5	8		82	55	8			438	6	1		7	
1.00	2.00	13		80	7	74	8	12	1	95	94	11			395	4	1		5	
2.00	3.00	7		40	8	75	3	30	5	71	136	5			380	5			5	
3.00	4.00	5		99	23	174	12	42	12	85	89	8			549	6	1		7	
4.00	5.00	13		168	41	184	9	60	47	80	64	6			672	9	1		10	
5.00	6.00	45	6	208	62	189	23	124	80	75	42	8			862	10			10	
Total		4146	161	46663	3465	14588	1043	3933	1017	1717	728	87	0	0	77548	499	129	5	633	

Station: 05 - Alandur																Location: Near OTA				
Road: NH45 GST Road																				
Direction: from GST Road to Alandur											Date: 29.03.2016				Day: Tuesday					
Time		Motorised Vehicles													Non Motorised Vehicles				Remarks	
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer	Total Fast Moving	Cycle	Cycle Rickshaw	Animal Driven		Total Slow Moving Vehicles
6.00	7.00	286	40	954	75	185	7	45	31	4					1627	5			5	
7.00	8.00	167	47	1883	108	818	42	47	57	50	1				3220	5			5	
8.00	9.00	94	18	4208	156	2114	40	34	100	19	1				6784	6			6	
9.00	10.00	146	25	4673	206	2400	28	39	88	21					7626	3			3	
10.00	11.00	232	34	4142	241	2477	5	29	75	38					7273	2		1	3	
11.00	12.00	140	27	4025	248	2435	10	45	73	40					7043	3			3	
12.00	13.00	94	12	2788	230	2250	19	31	73	42	2				5541	1			1	
13.00	14.00	139	17	2169	197	1811	4	17	65	27	3				4449	6			6	
14.00	15.00	205	16	2532	169	1546	5	27	75	40	10				4625	1			1	
15.00	16.00	211	27	2174	162	1770	7	21	79	35	3				4489				0	
16.00	17.00	244	62	2224	209	2156	8	27	69	42	1				5042	3			3	
17.00	18.00	288	31	2592	189	2415	10	27	84	51	1				5688	1			1	
18.00	19.00	121	22	3523	148	2340	28	45	99	29	7				6362	25			25	
19.00	20.00	147	32	6064	148	2002	52	19	144	41	2				8651	11			11	
20.00	21.00	125	11	4157	130	1609	53	21	145	36	1				6288	14	2		16	
21.00	22.00	95	12	3503	95	1244	21	14	61	58	12				5115	5	1		6	
22.00	23.00	68	7	1809	48	1285	33	11	47	83	18		1		3410	1			1	
23.00	0.00	51		756	13	958	22	8	25	83	15		1		1932	2			2	Traffic as one way
0.00	1.00	38	1	146	9	834	20	39	30	92	14	1		1	1225	1			1	
1.00	2.00	90		128	10	674	14	12	21	148	10			1	1108				0	
2.00	3.00	62		64	2	219	12	19	34	29	31				472				0	
3.00	4.00	73	5	89	4	421	13	18	28	40	9		1		701				0	
4.00	5.00	83	13	13	19	416	10	14	28	38	21				655				0	
5.00	6.00	93	3	47	32	567	23	27	17	12	5				826	2			2	
Total		3292	462	54663	2848	34946	486	636	1548	1098	167	1	3	2	100152	97	3	1	101	

Station: 05 - Alandur																Location: Near OTA				
Road: NH45 GST Road																				
Direction: from Alandur to GST Road												Date: 29.03.2016			Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles			Remarks	
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	257	26	547	43	1845	12	28	74	13					2845	1			1	
7.00	8.00	315	81	845	70	1738	53	20	159	28					3309	11	1	1	13	
8.00	9.00	151	82	1741	140	2008	65	29	142	35	2				4395	11			11	
9.00	10.00	103	42	1937	181	1522	109	45	107	29					4075	8			8	
10.00	11.00	125	34	1723	174	1520	113	48	138	22	5				3902	3			3	
11.00	12.00	86	13	1906	195	1853	57	52	229	38	13		1		4443	4			4	
12.00	13.00	94	20	2425	194	1935	90	74	308	59	12				5211				0	
13.00	14.00	140	33	1795	169	1357	107	37	236	45	13				3932	2			2	
14.00	15.00	140	34	1277	164	1340	75	27	209	33	4				3303				0	
15.00	16.00	117	36	472	138	1469	65	68	254	21	6				2646	8			8	
16.00	17.00	122	37	1563	158	1771	75	45	281	32	14				4098	5			5	
17.00	18.00	125	55	2262	150	1995	75	36	291	27	13				5029				0	
18.00	19.00	84	1	4039	193	3552	81	33	174	44	7		2		8210	5			5	
19.00	20.00	97	2	9401	223	4062	152	41	159	51	6				14194				0	
20.00	21.00	114	1	8720	199	3323	120	24	107	40	6				12654	4			4	
21.00	22.00	169	5	6158	115	2419	80	25	99	38	1		1		9110		2		2	
22.00	23.00	151	6	2451	73	1763	79	21	79	58	8				4689	2			2	
23.00	0.00	68	3	498	23	881	94	19	46	56	27		1		1716	2			2	Traffic diverted
0.00	1.00	46		197	43	1285	22	52	40	49	23	19	1		1777	1			1	
1.00	2.00	44	2	231	16	830	45	30	38	103	4		5		1348	2			2	
2.00	3.00	32		80	8	681	27	14	30	85	44	12			1013				0	
3.00	4.00	21		108	14	510	33	9	17	106	34	5			857	1			1	
4.00	5.00	41	2	111	12	764	18	19	31	74	38				1110	3			3	
5.00	6.00	83	5	136	29	1025	7	23	12	48	2				1370	1			1	
Total		2725	520	50623	2724	41448	1654	819	3260	1134	282	36	11	0	105236	74	3	1	78	

Station: 06 - Thachur Koot Road															Location: KM32/0					
Road: NH5																				
Direction: from Gummidipoondi to Chennai										Date:06.04.2016					Day: Wednesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailar		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	33		165	7	48	18	13	1	119	86	57	1	3	551	6			6	
7.00	8.00	57	2	352	10	132	44	31	1	139	88	40	2	1	899	10	1		11	
8.00	9.00	32	5	694	4	195	151	27	3	185	56	309	3	2	1666	15	1		16	
9.00	10.00	28	3	528	8	186	41	42	4	57	42	241	2	3	1185	2	1		3	
10.00	11.00	25	1	385	9	181	33	47	2	73	52	81		2	891	2	1		3	
11.00	12.00	14	1	335	5	140	19	43	1	95	48	75		5	781	2	1		3	
12.00	13.00	16	2	221	5	149	14	41	1	101	62	62	2	2	678	7			7	
13.00	14.00	35	1	246	10	167	40	66	3	111	47	62		1	789	7	2		9	
14.00	15.00	20	3	260	5	261	9	58	5	80	43	52		3	799	2			2	
15.00	16.00	55	1	292	3	328	29	96	8	96	69	37		3	1017	2			2	
16.00	17.00	145	3	314	3	323	35	93	22	99	74	43	1	2	1157	2			2	
17.00	18.00	95		449	15	487	102	136	9	115	91	44	1	5	1549	3			3	
18.00	19.00	30		428	6	294	51	77	5	102	64	14		1	1072	7	2		9	
19.00	20.00	21		379	9	215	31	63	2	146	102	43	1	2	1014	3			3	
20.00	21.00	23		288	4	159	18	35	1	108	95	41		2	774	12			12	
21.00	22.00	21		143	5	95	5	29		98	73	58		2	529	2			2	
22.00	23.00	9		64	7	64	2	32	1	62	61	69			371	2			2	
23.00	0.00	3		31		38	2	13	2	44	76	72			281				0	
0.00	1.00	7		12	1	24	1	9	1	30	43	37			165				0	
1.00	2.00	5		17		31	5	14		46	59	52			229				0	
2.00	3.00	6		15		27	2	14	1	29	43	44			181				0	
3.00	4.00	6		19		29	3	17		37	68	57		1	237				0	
4.00	5.00	10	1	18	4	19	4	17		64	69	61			267				0	
5.00	6.00	26		63	1	40	3	18	1	65	55	63			335	1			1	
Total		722	23	5718	121	3632	662	1031	74	2101	1566	1714	13	40	17417	87	9	0	96	

Station: 06 - Thachur Koot Road															Location: KM32/0					
Road: NH5																				
Direction: from Chennai to Gummidipoondi										Date:06.04.2016					Day: Wednesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	20		149	2	60	23	15	4	67	56	86	1	1	484	2			2	
7.00	8.00	75		211	1	135	42	29	9	50	66	47	1	1	667	6	1		7	
8.00	9.00	150	14	474	1	175	21	41	2	74	55	35			1042	3			3	
9.00	10.00	32	1	293	2	269	34	62	9	83	53	33			871	1	2		3	
10.00	11.00	29	3	326	4	249	32	62	1	108	108	30		2	954		2		2	
11.00	12.00	15	1	421	6	204	40	51	4	119	129	44	1	6	1041	5			5	
12.00	13.00	19	1	332	5	172	21	82	4	159	142	55	2	3	997	3			3	
13.00	14.00	14	4	294	6	188	29	60	2	136	91	44	1	2	871		1		1	
14.00	15.00	20		270	6	188	13	62	4	172	106	74	1	6	922				0	
15.00	16.00	41	2	285	16	229	17	60	4	121	84	60		3	922	1			1	
16.00	17.00	42	3	400	5	187	27	66	6	109	99	67	2	1	1014	2	2		4	
17.00	18.00	30	7	548	15	197	73	69	5	129	74	47		7	1201	1	1		2	
18.00	19.00	68		426	19	186	41	49	1	79	43	54	1	2	969	14			14	
19.00	20.00	61		451	7	152	31	60		90	72	109		5	1038	7			7	
20.00	21.00	55		331	3	122	20	60	5	101	106	114			917				0	
21.00	22.00	34		219	4	145	11	34		68	93	80			688	2	1		3	
22.00	23.00	18		125	3	123	8	27		90	90	109	1		594	1			1	
23.00	0.00	21		56		89	7	22		93	74	91			453				0	
0.00	1.00	7		21		86	4	13		55	70	86			342				0	
1.00	2.00	2		10		53	4	11		49	58	93			280				0	
2.00	3.00			2	4	6	3	5		19	36	45			120				0	
3.00	4.00			10		18	3	9		48	62	70			220				0	
4.00	5.00	5		9	2	24	1	6		46	48	53			194				0	
5.00	6.00	16		64		83	8	27	2	55	59	57			371				0	
Total		774	36	5727	111	3340	513	982	62	2120	1874	1583	11	39	17172	48	10	0	58	

Station:07 - Thirumalizai															Location: Behind Panimalar College					
Road: ORR Road																				
Direction: from Vandalur to Minjur												Date: 05.04.2016			Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	2		98		26	8	10		28	12	2							0	
7.00	8.00	1	4	168	2	57	10	13		38	18	4			1				1	
8.00	9.00	7	1	288		164	7	22		61	12	8			2	1			3	
9.00	10.00	5	4	387	3	159	9	15		56	26	3			3	1			4	
10.00	11.00	5	2	227	13	121	4	10		84	38				1				1	
11.00	12.00	4		161	5	113	9	19		62	39	13			1				1	
12.00	13.00	3	1	136	2	106	4	28		78	22	13			2				2	
13.00	14.00	3		206	3	123	5	38	1	57	34	6		1					0	
14.00	15.00	1	1	191	5	105	2	28		72	29	11		1	3				3	
15.00	16.00	13	3	156	5	125	8	20	1	41	27	8			1				1	
16.00	17.00	10		179	1	88	6	19		60	35	8	1		1				1	
17.00	18.00	15	7	265	4	181	6	18		45	22	4		2					0	
18.00	19.00	16	2	390	1	201	10	39	1	36	19	2							0	
19.00	20.00	5	3	607	4	208	16	24	1	45	26	8			2				2	
20.00	21.00	4	3	467	5	160	5	22		34	28	8				1			1	
21.00	22.00			255	3	138	7	13		28	20	6							0	
22.00	23.00	1		156	2	137	5	9		24	28	15							0	
23.00	0.00			57	2	76	1	4		23	24	8							0	
0.00	1.00			27	1	27	2	4		20	16	5							0	
1.00	2.00	2		16		28	2	1		21	15	9							0	
2.00	3.00	1		13	1	20		7		22	5	6							0	
3.00	4.00			28		37	2	3		32	5	5							0	
4.00	5.00			34	1	47	3	2		44	14	8							0	
5.00	6.00			54		83	22	22		49	44	23							0	
Total		98	31	4566	63	2530	153	390	4	1060	558	183	1	4	9641	17	3	0	20	

Station: 07- Thirumalizai															Location: Behind Panimalar College					
Road: ORR Road																				
Direction: from Minjur to Vandalur												Date: 05.04.2016			Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	15		153	1	127	12	2		24	2	2			338				0	
7.00	8.00	18	1	297	3	170	14	4		38	6	1			552	2			2	
8.00	9.00	9		638	1	266	45	10		72	28	3	1		1073	1			1	
9.00	10.00	3		865	11	253	17	24		53	31	2			1259	1	1		2	
10.00	11.00	1		584		214	21	12		65	55	8		1	961				0	
11.00	12.00			470		178	4	11		71	40	3			777				0	
12.00	13.00	3	1	534		132	2	17		71	55	8	1	1	825				0	
13.00	14.00		1	466	1	149	3	35		74	55	7			791	1			1	
14.00	15.00	4		528		134	4	18		84	48	10			830			1	1	
15.00	16.00	1	1	354		114	1	26	1	51	26	8			583				0	
16.00	17.00	14	3	171		116	11	49		32	21	9			426				0	
17.00	18.00	7	4	237	2	122	7	24		36	21	1			461				0	
18.00	19.00	11	4	388	3	210	16	36	1	65	19	10			763	1			1	
19.00	20.00	6	1	279	3	211	7	25	7	36	18	5			598	1			1	
20.00	21.00	1		216	6	164	9	29	2	39	18	7			491				0	
21.00	22.00	2		188	2	117	6	11		42	26	5	1		400	2			2	
22.00	23.00			73	1	91		9		18	19	5			216	1			1	
23.00	0.00	1		27	3	89	4	9		26	16	16			191				0	
0.00	1.00			14	1	49	6	4		12	23	9			118				0	
1.00	2.00	1		18		16	11	5		20	19	7			97				0	
2.00	3.00			22		38	8	7		27	24	15			141				0	
3.00	4.00			37	2	52	3	9		16	19	12			150				0	
4.00	5.00			42	3	104	1	11		13	14	17			205	1			1	
5.00	6.00	1	1	87	2	98	8	20		23	37	8			285	2			2	
Total		98	17	6688	45	3214	220	407	11	1008	640	178	3	2	12531	13	1	1	15	

Station: 08 - Sevapet															Location: Near Sevapet Bus Stop					
Road: NH205																				
Direction: from Thiruvallur to Chennai										Date: 05.04.2016					Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/ Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	18		130	7	25	4	11		14	9	5		1	224	9	1		10	
7.00	8.00	20	6	218	29	42	12	10		21	8	4			370	12	4		16	
8.00	9.00	16	2	432	57	56	9	14		11	3	4	1	3	608	10	1		11	
9.00	10.00	13	1	538	54	62	4	11	2	22	6	4		2	719	13			13	
10.00	11.00	8	3	406	41	67	5	22	1	25	10	2	1	1	592	4	5	3	12	
11.00	12.00	5	3	413	40	57		38	2	18	9	3	1	1	590	3	3		6	
12.00	13.00	6	3	381	35	64	1	28	3	16	6	7	1	1	552	12	1		13	
13.00	14.00	7	3	302	28	71	3	25		17	2	5	1		464	3	2	1	6	
14.00	15.00	11	3	393	29	71		22	1	16	7	3	1		557	2			2	
15.00	16.00	10	2	437	34	79	19	30	3	13	5	4	1		637	8	4	1	13	
16.00	17.00	33	5	674	43	71	7	32	5	18	6	3	1	2	900	12	1	1	14	
17.00	18.00	20	5	428	42	70	3	20	1	18	4	3	1		615	14	7	1	22	
18.00	19.00	13	4	604	30	59	8	26	2	30	7	2		1	786	6			6	
19.00	20.00	40	3	559	18	82		16	1	33	14	19	1	1	787	1			1	
20.00	21.00	8		321	10	52	5	17	3	12	10	8			446	3			3	
21.00	22.00	6		123	3	30	2	12	1	17	9	3			206	4			4	
22.00	23.00	3		40		26	1	9	2	9	7	3			100				0	
23.00	0.00	2		18	1	10	2	3		4	4	7			51				0	
0.00	1.00	2		7	2	4		2		5	4	5			31			2	2	
1.00	2.00	4	1	5	3	4	3	3		11	2	6			42				0	
2.00	3.00	2		2	2	7	4	2		15	3	15			52				0	
3.00	4.00	1	1	8	2	17		4		9	4	8			54				0	
4.00	5.00	2		33	6	13	10	9		10	4	9	1		97	4			4	
5.00	6.00	3		52	9	13	6	13		10	11	2			119	8		1	9	
Total		253	45	6524	525	1052	108	379	27	374	154	134	11	13	9599	128	29	10	167	

Station: 08 - Sevapet															Location: Near Sevapet Bus Stop					
Road: NH 205																				
Direction: from Chennai to Thiruvallur										Date: 05.04.2016					Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	34	3	132	2	44	16	9	1	16	5	4			266	7			7	
7.00	8.00	40	4	230	14	51	10	11	4	20	3	6	1		394	7	1		8	
8.00	9.00	12		244	28	54	9	20	1	23	1	4	1		397	6	2		8	
9.00	10.00	17	5	453	64	89	13	12	2	23		3	2	1	684	3	1		4	
10.00	11.00	5		428	31	87	3	16	3	13	1				587	6	5		11	
11.00	12.00	5	2	332	43	94	4	27	6	18	4	1		2	538	2	1		3	
12.00	13.00	7	1	294	31	82	7	38		23	8	4			495	7	2		9	
13.00	14.00	5		293	21	51	4	28		18	4	3			427	2			2	
14.00	15.00	7		174	33	44	2	23	1	36	5	3			328	1	3		4	
15.00	16.00	14		245	41	52	3	31		23	5	1			415	5	3		8	
16.00	17.00	14		438	29	53	10	35	2	30	4	4			619	9			9	
17.00	18.00	18		387	32	57	2	25		17	7	7			552	9	3		12	
18.00	19.00	8		388	25	42	3	23		17	4	1			511	12	3		15	
19.00	20.00	4	1	358	28	34	2	26	4	15	4	2			478	7	3		10	
20.00	21.00	8		330	13	40	10	8	2	5	2	7			425	4			4	
21.00	22.00	5		164	12	23	3	7		4	4	4			226	1			1	
22.00	23.00	1		80	3	25		11		6	3	7	1	1	138				0	
23.00	0.00	5		33	3	17		5		14	3	5			85				0	
0.00	1.00	5		6	1	9	4	5	3	9	2	7			51				0	
1.00	2.00	3		6	4	3	1	5		8		5			35				0	
2.00	3.00	1		9	4	8	3	3		3		6	1		38				0	
3.00	4.00			6	3	8	6	4		15		5			47	1			1	
4.00	5.00	2	7	6	2	11		7	4	16					55				0	
5.00	6.00	6	1	27	6	20		7	6	7	2	5	1		88				0	
Total		226	24	5063	473	998	115	386	39	379	71	94	7	4	7879	89	27	0	116	

Station: 09 - Sriperumputhur															Location: Opp. to Nokia					
Road: NH4																				
Direction: from Kancheepuram to Chennai										Date: 31.03.2016					Day: Thursday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	141	18	300		159	105	5	11	74	53	84			950				0	
7.00	8.00	151	15	291		180	86		6	217	92	75			1113	4			4	
8.00	9.00	129	11	313	4	195	106	3	18	262	88	74			1203	4			4	
9.00	10.00	111	10	301	1	291	88	6	51	254	111	75			1299	3			3	
10.00	11.00	98	5	266	6	189	74	4	37	272	87	65			1103				0	
11.00	12.00	118	13	203	3	198	42	1	45	216	76	79			994	2			2	
12.00	13.00	83	10	185	2	200	41	4	35	161	59	63			843	6			6	
13.00	14.00	86	6	242	1	160	46	7	32	143	38	128			889	9			9	
14.00	15.00	85	3	151	1	212	30	5	22	109	32	133			783				0	
15.00	16.00	140	17	210		228	49	7	44	168	57	48			968				0	
16.00	17.00	110	6	276	4	271	68	9	43	199	73	52			1111				0	
17.00	18.00	105	7	296	2	166	94	11	24	192	80	103			1080	3			3	
18.00	19.00	60	2	163	7	281	23	14	46	108	70	20	3		797				0	
19.00	20.00	65	1	150	3	308	24	6	38	89	75	17			776				0	
20.00	21.00	76	2	86		233	10	10	34	152	93	32			728				0	
21.00	22.00	73	2	81		119	19	10	28	151	89	30			602				0	
22.00	23.00	44	2	69		191	17	15	36	172	119	53			718				0	
23.00	0.00	41	1	46		116	9	11	34	176	155	41			630				0	
0.00	1.00	29	2	14		134		16	16	224	106	31			572				0	
1.00	2.00	24		11		144		12	21	197	113	8			530				0	
2.00	3.00	4				88		6	6	146	120	23			393				0	
3.00	4.00	4		10		67		10	12	84	69	38			294				0	
4.00	5.00	22		19		52		10		76	66	23			268				0	
5.00	6.00	86	4	32		132		16	39	136	66	15			526				0	
Total		1885	137	3715	34	4314	931	198	678	3978	1987	1310	3	0	19170	31	0	0	31	

Station: 09 - Sriperumpthur														Location: Near Nokia						
Road: NH4																				
Direction: from Chennai to Kancheepuram										Date: 31.03.2016				Day: Thursday						
Time		Motorised Vehicles												Total Fast Moving	Non Motorised Vehicles				Remarks	
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts		Tractor with Trailer	Cycle	Cycle Rickshaw	Animal Driven		Total Slow Moving Vehicles
6.00	7.00	110	37	110	6	156	68	21	45	111	105	76			845	2			2	
7.00	8.00	141	3	240	3	305	146	35	48	265	138	177			1501	3			3	
8.00	9.00	145	2	334		306	137	30	79	152	80	198			1463	11		1	12	
9.00	10.00	113	11	267		294	92	39	100	122	123	153			1314	6	1		7	
10.00	11.00	117	3	237		265	88	21	42	53	31	212		1	1070	6			6	
11.00	12.00	170	10	172		219	89	13	34	186	70	204			1167				0	
12.00	13.00	140	7	171		260	64	24	42	203	112	216			1239	5			5	
13.00	14.00	89	10	207	1	266	71	25	40	176	97	203			1185	8			8	
14.00	15.00	78	6	201	1	305	64	32	42	152	89	222	2		1194	8			8	
15.00	16.00	88	12	281	3	267	68	23	56	200	115	220	1		1334	1			1	
16.00	17.00	107	9	252	1	428	76	47	99	250	127	254			1650	2			2	
17.00	18.00	73	8	318	6	367	114	47	74	258	118	214			1597	3			3	
18.00	19.00	48	10	169	14	197	47	12	66	96	72	39		3	773				0	
19.00	20.00	61	2	163	3	134	17	15	35	117	90	66		3	706				0	
20.00	21.00	69	9	85	2	236	11	16	23	108	51	62			672				0	
21.00	22.00	40	13	47	1	265	9	13	29	122	61	63			663				0	
22.00	23.00	39	10	73		207	19	19	13	175	121	57	4	5	742				0	
23.00	0.00	37	1	38		205		12	45	258	148	43			787				0	
0.00	1.00	56	1	25		232		11	33	201	125	57			741				0	
1.00	2.00	33	11	2		118	13	10	11	292	154	83			727				0	
2.00	3.00	51	12			159	6	12	30	175	137	84			666				0	
3.00	4.00	70	6			116		14	14	123	65	82			490				0	
4.00	5.00	115	9	11		61		12	9	120	107	69			513				0	
5.00	6.00	120	10	20		10		69	138	72	56	70			565				0	
Total		2110	212	3423	41	5378	1199	572	1147	3987	2392	3124	7	12	23604	55	1	1	57	

Station:10 - Oragadam															Location: opp. To Renault Nission					
Road: PR Road																				
Direction: from Oragadam to Singaperumal Kovil										Date: 05.04.2016					Day: Tuesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	36	3	146	3	57	53	2	14	32	18	13	3	1	381				0	
7.00	8.00	159	63	511	2	117	74	5	26	39	22	20	6		1044	1			1	
8.00	9.00	35	46	469	1	174	61	4	21	47	41	9	3		911	1			1	
9.00	10.00	27	28	422	4	96	62	15	38	58	36	13			799				0	
10.00	11.00	36	46	227		60	41	8	22	54	27	14			535				0	
11.00	12.00	30	31	158		80	28	8	29	33	26	9			432				0	
12.00	13.00	26	58	133		97	12	7	23	20	19	20			415	2			2	
13.00	14.00	30	35	148		70	12	10	23	55	18	15			416	1			1	
14.00	15.00	51	55	157		86	14	7	37	46	24	17			494	1			1	
15.00	16.00	84	99	206		87	31	8	22	54	20	31			642	1			1	
16.00	17.00	117	134	247		125	41	15	27	59	29	34			828	1	1		2	
17.00	18.00	75	87	309		98	68	14	24	62	21	29			787	2			2	
18.00	19.00	19	2	133		161	15	20	40	36	7	38		1	472	2			2	
19.00	20.00	9	1	92		200	13	17	32	42	22	37		1	466				0	
20.00	21.00	4		74		73	11	4	13	46	15	33	1	4	278				0	
21.00	22.00	2	1	7	4	36	21		2	65	40	34	2		214				0	
22.00	23.00		1	16		30			5	20	15	20		1	108				0	
23.00	0.00		2	11		24	8			42	18	21		1	127				0	
0.00	1.00	10	4	5		29			3	39	21	20		3	134				0	
1.00	2.00	7		3	4	18	8			37	19	19			115				0	
2.00	3.00	6	1		2					56	19	13	1	2	100				0	
3.00	4.00	6	1		5					44	26	21		2	105				0	
4.00	5.00	22	16	7	10	8				49	25	32		4	173				0	
5.00	6.00	35	14	30	4	28	16			47	25	7		1	207				0	
Total		826	728	3511	39	1754	589	144	401	1082	553	519	16	21	10183	12	0	1	13	

Station: 10- Oragadam															Location: Near Renault Nissan					
Road: PR Road																				
Direction: from Singaperumal Koil to Oragadam										Date: 05.04.2016					Day: Tuesday					
Time		Motorised Vechicles													Total Fast Mooving	Non Motorised Vechicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailar		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vechicles	
6.00	7.00	22	17	134		50	56	22	11	15	15	2	2	1	347	1			1	
7.00	8.00	51	15	229	2	81	47	18	15	36	18	27	3	2	544	6			6	
8.00	9.00	64	18	290	1	145	26	22	16	71	32	20	5	2	712	1			1	
9.00	10.00	32	12	303	1	124	37	11	53	87	24	18	2		704				0	
10.00	11.00	23	4	213		132	27	8	38	99	36	12	3	3	598				0	
11.00	12.00	11	3	204	4	136	19	16	68	150	35	14	1		661	1			1	
12.00	13.00	12		213	3	175	15	9	60	134	41	15		2	679	2			2	
13.00	14.00	15	3	160	2	182	23	11	77	124	36	14	1	1	649				0	
14.00	15.00	19	16	212	2	196	33	9	86	95	28	18		1	715				0	
15.00	16.00	29	12	216	1	212	43	15	81	123	44	24	1	2	803	1			1	
16.00	17.00	45	23	278	3	246	49	12	69	134	42	20		3	924	1			1	
17.00	18.00	158	48	388	5	276	66	20	71	116	34	33		10	1225				0	
18.00	19.00	19	3	276	7	180	23		46	68	42	13	3		680				0	
19.00	20.00	12	3	251	4	177	20	3	47	29	33	11	2		592				0	
20.00	21.00	12		235	1	199	31	1	41	50	33	8		1	612				0	
21.00	22.00	19	1	172		148	24	2	25	60	46	19			516				0	
22.00	23.00	32		61		86	7		16	66	46	23			337				0	
23.00	0.00	39		34		30	3	2	5	58	23	25			219				0	
0.00	1.00	65				21		1	3	34	8	20			152				0	
1.00	2.00	41				2				34	10	16			103				0	
2.00	3.00	21				1			1	34	14	11			82				0	
3.00	4.00	14		7			2	1		49	18	7			98				0	
4.00	5.00	47		6		32	5			70	24	10			194				0	
5.00	6.00	49	3	49		49	22		14	64	32	4			286				0	
Total		851	181	3931	36	2880	578	183	843	1800	714	384	23	28	12432	13	0	0	13	

Station: 11 - Singaperumal Koil															Location: MWC bus stop					
Road: NH45																				
Direction: from S.P.Koil to MWC										Date: 30.03.2016					Day: Wednesday					
Time		Motorised Vehicles													Total Fast Moving	Non Motorised Vehicles				Remarks
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer		Cycle	Cycle Rickshaw	Animal Driven	Total Slow Moving Vehicles	
6.00	7.00	102	36	257	9	142	71	9	27	60	36	48			797	5			5	
7.00	8.00	234	64	475	7	358	170	19	65	102	49	77	1		1621	8			8	
8.00	9.00	209	52	828	3	536	186	15	50	114	38	60			2091	6			6	
9.00	10.00	162	33	821	6	710	138	20	77	90	40	71			2168	7			7	
10.00	11.00	124	40	508	3	540	90	20	66	88	35	72		1	1587	7			7	
11.00	12.00	107	16	444	12	535	93	13	110	73	20	68			1491	4	2		6	
12.00	13.00	102	36	424	5	475	64	23	151	67	29	61	1		1438	1	1		2	
13.00	14.00	116	11	476	19	436	33	33	74	75	48	43			1364	2			2	
14.00	15.00	106	4	432	3	519	54	32	117	54	50	64			1435	4			4	
15.00	16.00	164	28	642	7	576	123	31	134	108	64	80	1		1958	6			6	
16.00	17.00	173	24	451	15	656	105	18	153	123	56	71			1845	6	1		7	
17.00	18.00	136	27	587	7	609	118	21	204	108	58	80			1955	1	1		2	
18.00	19.00	185	12	435	18	814	82	25	103	48	24	55			1801				0	
19.00	20.00	130	3	660	20	618	98	28	43	109	26	26	1		1762				0	
20.00	21.00	117		595	13	621	68	60	69	138	64	33			1778				0	
21.00	22.00	164		376	8	858	32	31	26	61	73	23			1652				0	
22.00	23.00	213		316	3	723	20	36	10	57	73	22			1473				0	
23.00	0.00	162		220	6	700	15	46		187	91	17	4	4	1452				0	
0.00	1.00	171		100	1	609	23	35	33	178	67	26			1243				0	
1.00	2.00	112		62		434		13	11	82	31	58			803				0	
2.00	3.00	59		24		283		5	5	97	43	54			570				0	
3.00	4.00	29		3		199		33	18	134	64	6			486				0	
4.00	5.00	32		30	2	99	10	54	19	66	29	3			344				0	
5.00	6.00	33	2	46	3	248	12	108	21	84	32	13			602				0	
Total		3142	388	9212	170	12298	1605	728	1586	2303	1140	1131	8	5	33716	57	5	0	62	

Station: 11 - Singaperumal Koil														Location: MWC Bus Stop						
Road: NH45																				
Direction: from MWC to S.P.Koil											Date: 30.03.2016			Day: Wednesday						
Time		Motorised Vehicles													Non Motorised Vehicles				Remarks	
from	to	Bus	Mini Bus	Two Wheeler	Auto Rickshaw	Car/Jeep	Trip van/Maxi Cab/Share Auto	LCV	Goods Auto	2 axle	3 axle	MAV	Tractor / Motorised Carts	Tractor with Trailer	Total Fast Moving	Cycle	Cycle Rickshaw	Animal Driven		Total Slow Moving Vehicles
6.00	7.00	201	4	213	14	184	54	17	30	129	66	49			961				0	
7.00	8.00	225	11	433	7	283	94	4	42	134	54	55	1		1343	2			2	
8.00	9.00	169	13	363	7	313	58	6	49	148	44	43			1213				0	
9.00	10.00	170	10	355	16	456	63	10	71	139	44	37		1	1372	1			1	
10.00	11.00	124	7	634	17	388	44	6	66	128	58	39			1511	1			1	
11.00	12.00	67	3	537	13	426	37	8	48	164	54	89	1		1447	2			2	
12.00	13.00	82	5	528	12	339	31	12	23	115	57	60			1264	1	2		3	
13.00	14.00	134	2	410	17	379	37	4	50	142	54	60			1289				0	
14.00	15.00	140	8	402	14	291	29	1	28	140	50	57			1160	1		1	2	
15.00	16.00	211	16	381	22	382	52	1	22	137	50	76			1350	2			2	
16.00	17.00	191	14	480	22	440	60	2	39	149	59	62			1518	1			1	
17.00	18.00	286	22	650	28	631	76	9	64	129	60	57			2012	1			1	
18.00	19.00	153	5	815	4	937	95	13	45	55	54	43			2219				0	
19.00	20.00	120	8	538	1	1376	81	32	20	128	97	22			2423	3			3	
20.00	21.00	130	5	371		993	40	18	19	123	94	23			1816	1	2		3	
21.00	22.00	91	7	203		479	32	26	19	148	105	20			1130	1			1	
22.00	23.00	76		133	3	347	38	21	12	165	116	31			942				0	
23.00	0.00	52	2	122	1	145	26	14		146	66	23		4	601	1			1	
0.00	1.00	53		22	1	103	6	4		40	37	30	2		298				0	
1.00	2.00	40		10		97		13	9	28	19	60			276				0	
2.00	3.00	24		3		90		21	11	71	46	51			317				0	
3.00	4.00	115		7		88	3	15	16	75	49	18			386	2			2	
4.00	5.00	148	6	13		97	3	13	6	39	21	41			387	1			1	
5.00	6.00	339	10	46	3	77	37	20	2	103	71	30	1		739	4			4	
Total		3341	158	7669	202	9341	996	290	691	2775	1425	1076	5	5	27974	25	4	1	30	

Traffic Survey Photo



Point No: 1near Madavaram on NH5



Point No: 1near Madavaram on NH5



Point No: 1 near Madavaram on NH5



Point No: 1 near Madavaram on NH5



Point No: 2 near Padi on NH205



Point No: 2 near Padi on NH205



Point No: 2 near Padi on NH205



Point No: 2 near Padi on NH205



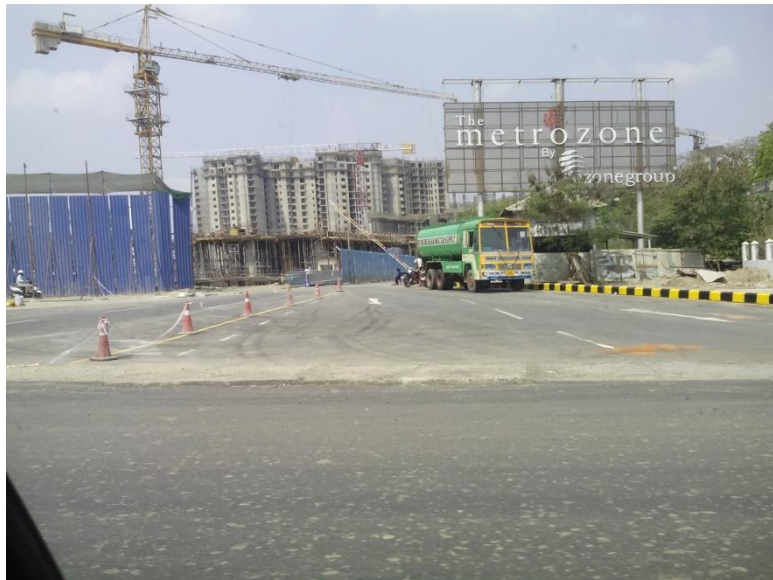
Point No: 3 near Tirumangalam on IRR



Point No: 3 near Tirumangalam on IRR



Point No: 3 near Tirumangalam on IRR



Point No: 3 near Tirumangalam on IRR



Point No: 3 near Tirumangalam on IRR



Point No: 3 near Tirumangalam on IRR



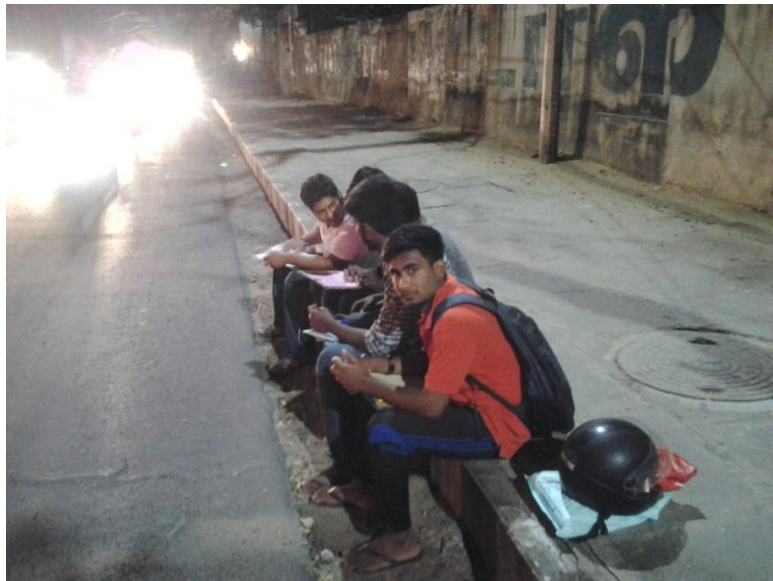
Point No: 4 near CMRL on NH4



Point No: 4 near CMRL on NH4



Point No: 5 near OTA on NH45



Point No: 5 near OTA on NH45



Point No: 5 near OTA on NH45



Point No: 5 near OTA on NH45



Point No: 6 near Thatchur Koot Road on NH5



Point No: 6 near Thatchur Koot Road on NH5



Point No: 6 near Thatchur Koot Road on NH5



Point No: 6 near Thatchur Koot Road on NH5



Point No: 7 on ORR



Point No: 7 on ORR



Point No: 7 on ORR



Point No: 7 on ORR



Point No: 8 on NH205 Chevvapet



Point No: 8 on NH205 Chevvapet



Point No: 8 on NH205 Chevvapet



Point No: 8 on NH205 Chevvapet



Point No: 9 on NH4 near Nokia Factory



Point No: 9 on NH4 near Nokia Factory



Point No: 10 on PRR near Oragadam



Point No: 10 on PRR near Oragadam



Point No: 11 on NH45 near Mahindra World City



Point No: 11 on NH45 near Mahindra World City



Point No: 11 on NH45 near Mahindra World City



Point No: 11 on NH45 near Mahindra World City