SURAT SMART CITY PROJECTS

PAN-1c- : Integrated Traffic Control System (ITCS)

1. **Name of the Project:** Integrated Traffic Control System (ITCS)
2. **Background:**

   Surat is among the fastest developing city in the world. It has ranked 4th developing city of the world. Surat city is well-known for its diamond polishing business, textile market business, Real estate business. As a city develops it attracts many people around the city as well as far away from the city. Due to this population increases; and one can say that increase in population is directly proportional to the increase in traffic density resulted in several traffic problems in and around the city, such as traffic jams, increase in number of road accidents etc. There are around 72 exiting traffic signals implemented in Surat to help commuters navigate traffic with ease. Further, surveillance cameras have been established under the Surat Safe City projects which are being used to identify the traffic violators and issue Challans. Surat police department has also implemented a centralized command center at Police Commissioner's office to which the various surveillance and other cameras are connected. A need was felt to develop an Integrated Traffic Control System (ITCS), which would aim at improving the efficiency and effectiveness of the traffic system on Surat roads. Implementation of ITCS is an initiative taken by SSCDL to provide a secure and pleasant road experience to citizens of Surat.

3. **Vision:**

   - The primary goal of this project is to utilize information technology to modernize key functions of traffic management, Traffic control, Traffic Law enforcement and traffic information dissemination in the city to build a safer city with smooth traffic flow and informed road users. The project is intended to increase the awareness regarding disciplined traffic among the citizen of Surat City.
   - **Improve Journey Time Reliability:** Improve reliability in journey times between various locations, so that citizens can experience an enhanced quality of road based transportation,

     through improving sustainability and efficiency in operation of the road network.

- **Increased Traffic Signal Efficiency:** Reduction in traffic delays, optimized cycle times at intersection to regulate and maintain normal flow of traffic to enhance the efficiency of the transport infrastructure.
- **Increase Operational Efficiency:** The system is intended to offer operational efficiency to traffic management agency by way of extending IT based compliance process on ground and enable the agency to deliver better traffic conditions and safe operating conditions.
- **Improve Customer Services:** The traffic services to the public can be improved through the user-friendly presentation of the various traffic information in real time through sharing of all relevant data feeds for public consumption. These functions will lead to informed travel conditions within the technology influence area.
- **Improve Safety:** The real-time traffic monitoring and intelligent traffic systems can prevent accidents by recognizing and thus responding to the potentially dangerous situation in advance.
- **Increased Productivity:** Achieving improvement in the productivity, logistics and other economic activities by obtaining the precise-real time information on transport due to the availability of data on traffic flow in key areas of the city. The transport data can also be used to take policy decisions to ensure sustained productive environment.
- **Real Time Information, Event Tracking & Response, and Fast Access to Information:** The real-time information at the TCC shall enable the operator to take necessary actions based on the type of information. Sending an emergency vehicle to the spot, arranging alternate route to VIP convoys, diverting the traffic to different routes are some of the actions that can be taken based on the Real Time Information. It shall be possible to track a particular event using the cameras installed at the traffic junction. A vehicle, violating the traffic could be tracked and penalized at the next traffic junction based on the vehicle registration number.
- **Creating awareness for public:** Through electronic sign boards, mobile applications, awareness on road traffic rules and safe driving precautions shall be imparted to road users.

- **Enforcement:** Effective enforcement of traffic violation, checking and monitoring shall reduce the traffic related offences of Red Light violations and over speeding violations.

4. **Sector:** Intelligent Traffic Management
5. **Cost and financing:**

SCP Cost	: Rs. 45.00 Cr
DPR Cost	: Rs. 132.15 Cr
Tender Estimated Cost	: Rs. 132.15 Cr
Tender Sanctioned Cost	: Rs. 103.45 Cr
Convergence Scheme/PPP/SMC (Write Scheme)	: ---
Convergence/PPP/SMC Costing	: Rs. 00.00 Cr

6. **Brief Description (Technical Details):**

Integrated Traffic Control System comprises of implementation of Adaptive Traffic Control System and utilizing multiple Traffic enforcement & surveillance components including Emergency calling facility & Variable messaging board for displaying customised messages.

It will help Surat become a traffic disciplined city and also reduce pollution of both air and noise, reduce fuel consumption at junctions, ensure smooth traffic and provide traffic analytics while reducing transit time.

It consists of sensors installed at signals on junctions which are carefully selected after survey of the entire city roads. The signals are configured to process traffic density and send the data to command and control centre which in turn utilizes software to analyse data and send its judgement to the signal back.

Traffic Enforcement system consists of RLVD, ANPR, Speed Violation Detection etc. It will detect the traffic violation and send the challan with evidence of violation to the owner of the concerned vehicle which is violating the traffic rule.

Traffic surveillance camera is used to monitor the day to day activities & improve the civic services.

#	System Description	Locations
1.	New Adaptive Traffic Control Systems	146 Locations
2.	up gradation of Existing Traffic Signalling Systems	27 Locations
3.	Integration from VAC to ATCS	94 Locations
4.	Speed Control Sign Boards	15 Locations
5.	Variable Message Sign Boards	20 Locations
6.	Red Light Violation Detection System at Intersection	25 Locations
7.	Speed Violation Detection Systems	15 Locations
8.	Traffic Violation Cameras	31 Locations
9.	Traffic Surveillance Cameras	55 Locations
10.	ANPR Cameras	17 Locations
11.	Emergency Call Box (ECB) System	20 Locations
12.	Traffic Command Center (TCC)	01 Location
13.	Pedestrian lamp heads	134 Location

7. Speciality:

ITCS project includes one of the specialized traffic system utilized for advanced traffic management and enforcement practice. The key speciality is mentioned below

- Automatic adjustment of the traffic signal timing based on real time traffic density.
- Automatic E-Challan Generation for violating traffic rules
- Automatic Detection of the missing vehicle as per centralized database

- **Adaptive Traffic Control System (ATCS)** – Vehicle detectors, Signal controller, Traffic light aspects, poles, power supply provisioning and related accessories and associated civil work including cabling for successful operation of the system.
- **Traffic Enforcement systems** such as ANPR, **Red Light Violation Detection (RLVD)** System, Traffic Violation cameras, Speed Detection System along with related accessories and required mounting infrastructure including civil work for successful operation of the system.
- **Traffic Surveillance Cameras and Smart City Components** like Variable Massage Signage Board and ECB along with related accessories and required mounting infrastructure including civil work for successful operation of the system.
- **MPLS network services** to transfer the data from field devices to the **Traffic Command Center (TCC)** for a period of one year, following which SMC's captive hardware will be used.
- **Set up Traffic Command Center and Data Center (DC)** with required software platform capability to aggregate incoming data streams onto a single platform, provide traffic flow estimates for near term future (Near term forecast over 5, 10, 15… 30mins... 1 hour interval) on a real-time basis and assist in analyzing impact of alternate traffic management strategies. IT infrastructure including hardware and software at TCC and DC for the management of the edge devices signal, command center and the traffic management software platform.

8. Benefits:

The key impact of the project is mentioned below

- Ensure traffic safety and smooth traffic flow
- Alleviate traffic congestion
- Reduce travel time
- Minimize traffic pollution
- Reduction in fuel consumption.
- Traffic enforcement & Surveillance
- Increased Public Awareness for traffic rules
- Road accident Reduction
- Improved safety of Commuters

- Access to real time traffic information & data gathering to make faster decisions for future uses.

9. Implementation Plan:

- **Current Status:**
  - Project sanctioned in PMC, Work order is under approval
- **Completion Date:**

#	Months	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
			T+ 1 Month	T+ 2 Month	T+ 3 Month	T+ 4 Month	T+ 5 Month	T+ 6 Month	T+ 7 Month	T+ 8 Month	T+ 9 Month	T+ 10 Month	T+ 11 Month
1	Project Execution Time line	LoI/ WO	Feasibility Report Request Order 1			Request Order 2	Go Live : RO 1		Go Live: RO 2	Request Order 3			Go Live: RO 3

*Note: T=15 days

10. Photos:

Google Map: NA

Site photo:

11. Video: