

A Study for Audit and Assessment of Public Toilets in Central Zone of Surat City

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Abstract

The urban sanitation is actively being addressed by the Central Government of India. The action is taking place through various provisions of Swachh Bharat Mission launched in the nation. The paper discusses about a study undertaken for auditing and assessing pay and use public toilet and urinal blocks located within the central zone of Surat Municipal Corporation administrative limits. All the pay and use toilet blocks and urinals were visited for a study that was focusing on assessment for criteria concerning – Cleanliness, housekeeping, safety and maintenance. Inventories were prepared, and quality assessment was performed. All the locations were geotagged by obtaining coordinates. Based on the study, the facilities were assessed for its components and provided with ranking through analysis of four factors and 74 sub-parameters. The qualitative issues were identified for the service delivery. Suggestions and recommendations are discussed to improve the service delivery.

Keyword- Community Facilities, Public Toilet, Sanitation, Social Infrastructure, Urbanization

I. INTRODUCTION AND BACKGROUND

Under the provisions of The 74th Constitutional Amendment Act, 1992 the Surat Municipal Corporation has been performing various tasks for sanitation services for the citizens of Surat, includes cleanliness on roads, removal of debris from places, reduce the pollution, maintain the urban environment, solid waste management, bio-hazardous waste management, wastewater collection and treatment with safe disposal, health and hygiene concerns, public toilets, urinals and so on. The Question " Why is the toilet dirty" leads to origin of the problems interrelated issues like Design, Public behaviour, Health, Social civility, Sanitation methods and skills, developed technologies, Accessibility, Public Education and Environmental issues. Important is not only to provide the facility but also to maintain it clean and hygienic so that citizens using these facilities are not ill-affected. Parallel to the general cleanliness, the safe disposal or recycling of solid waste brings a behavioural change in people regarding healthy sanitary practices and public consciousness regarding health and hygiene, the crucial and important components of Swachh Bharat Mission is the construction of public toilets with proper sanitary systems and frequent maintenance.

II. AIM, OBJECTIVES AND METHODOLOGY OF THE STUDY

The aim of the study was to have information on the facilities in question, in terms of numbers as well as the quality of urban service delivery. Following were the objectives for the study as to visit each block site put to public use in the Central Zone of SMC; to perform assessment, collect and compile data; and, to analyze and rank the facilities and provide recommendations for future action by SMC.

Based on the deliberations among team members at IE(I) SGLC and SMC officers, a suggestive scope of work for the current study was identified as, to survey Site facility of each of the public toilet blocks in the Central Zone of SMC; to Prepare an inventory for each P&U Toilet block; Assessment of Condition of each facility in for each P&U Toilet block; to Earmark location for each P&U Toilet block using GPS coordinates; Taking photographs for each P&U Toilet block and Performance analysis of the collected survey ranking for each P&U Toilet block. To perform the task, a methodology was adopted, that describes a step-by-step process carried out from the beginning till end. The methodology for the present assignment is illustrated by the diagram below:

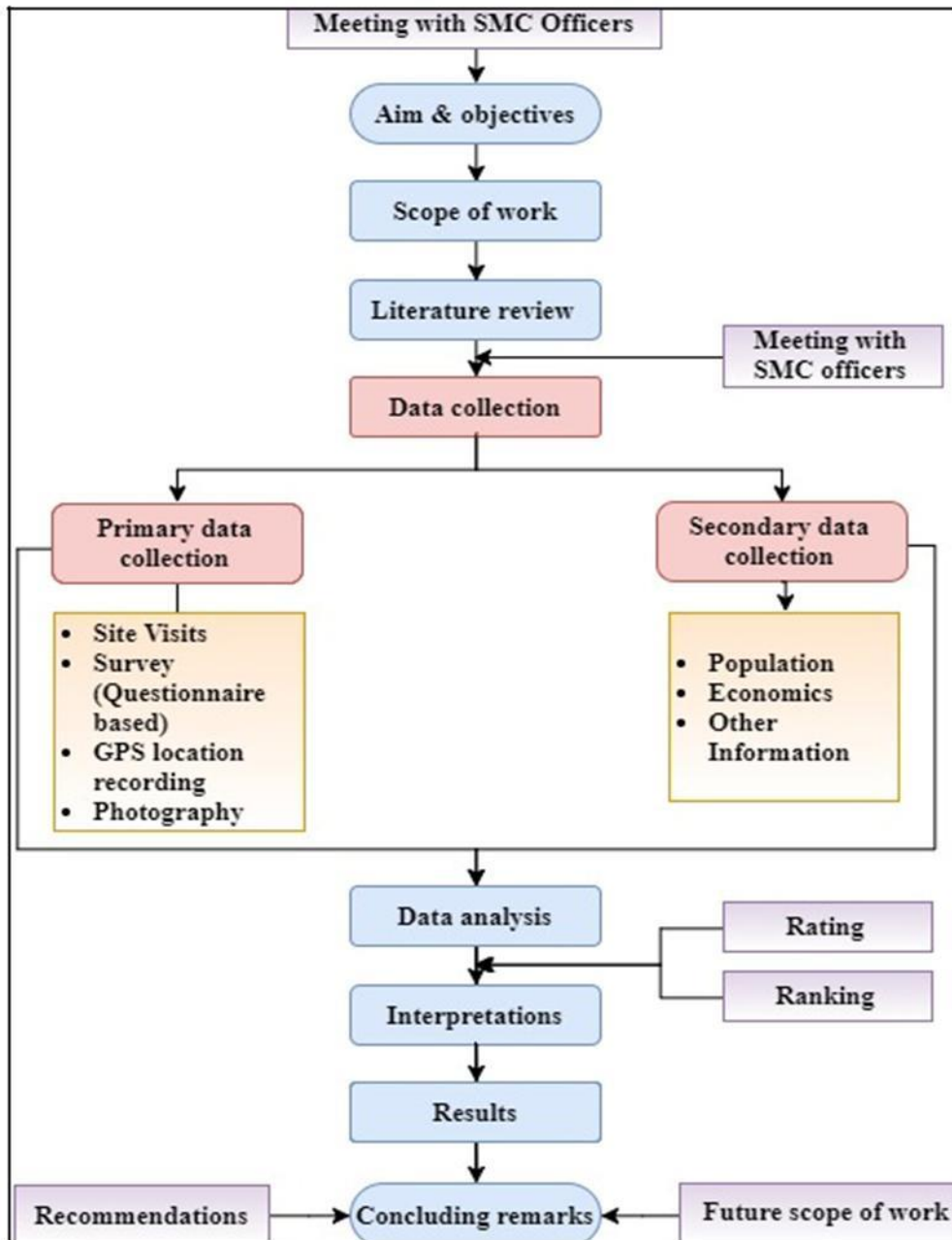


Fig. 1: Study methodology

The scores were assigned for various components on four basic criteria. These criteria comprised of various questions pertaining to component presence and condition thereof. The presence of a particular component fetches a score of 5 (five) and absence as 0 (zero). The condition of present component will fetch a score ranging from 1 (one) to 5 (five) depending on its rating as Very bad to Very Good respectively. An individual check list was also prepared for each of the toilet unit and bath unit in male and female utilities. These check lists are tabled following the inventory of each block in the later sub-sections.

III. STUDY AREA AND DATA COLLECTION

Surat - situated on the bank of river Tapti and is a top-ranking industrial city of the country having a network of flyovers and wide roads. It is well known worldwide for textiles, zari and diamond industries. Several large-scale industries and establishments are located in the city. The city is situated between Ahmedabad and Mumbai.

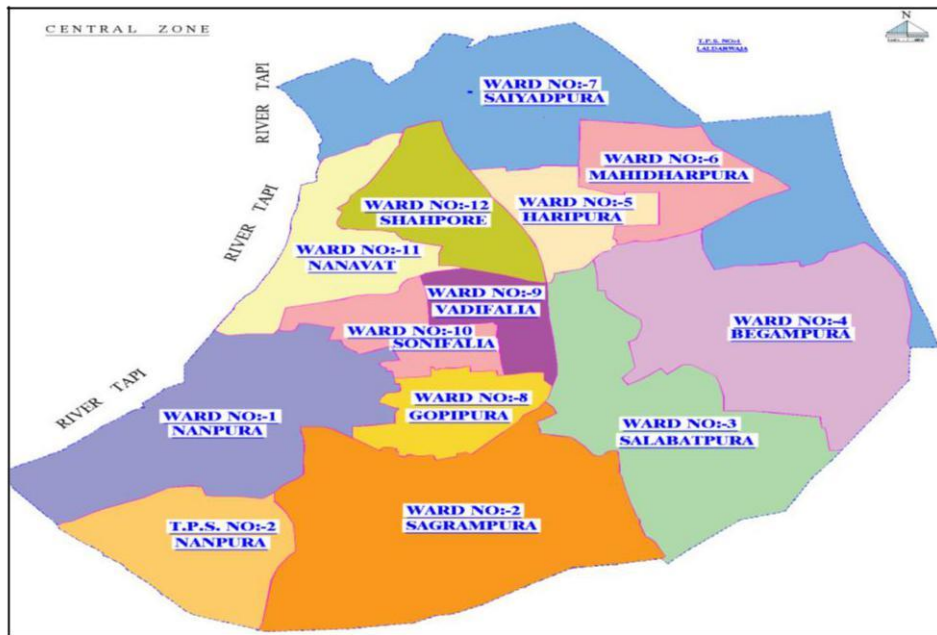


Fig. 2: Central Zone of SMC, Surat

Study area location is within the old walled Surat. The walled city of Surat is having a geographical spread over 8.18 km² i.e. about 7.28% of present city area under SMC administration. The walled Surat has development with a mixture of residential, commercial and industrial uses. The fixed route (of 2.4 km length) having start and end nodes that further allowed for indirect assessment of traffic congestion. Business activities have developed along the East-West corridor from Chowk Bazaar to Railway station (Chowk – Bhagatalao – Chautapul – Lal Gate – Bhagal – Delhi gate). The land price of this area is very high. The Central zone is the CBD of Surat city. The city originated as the expansion of the core-walled city part took place over a period.

According to demographic scenario mixed (considering increase and decrease) trend in the population profile is observed in different parts of the Central zone. As per the various reports of census of India, the total population of Central Zone, Surat was 4,32,539; 4,13,641; and 4,08,760 in the decade 1981-91, 1991-2001 and 2001-11 respectively. It can be said that the growth rates were -3.6%, -4.4% and -1.2% for the same decades respectively.

IV. PAY & USE PUBLIC TOILET BLOCKS LOCATION DATA

Using the GPS tagging while visiting the Pay and use public toilet blocks, the information of latitude and longitude for each of the block was obtained. In addition, P&UT blocks at Nr. Dookal pole, Bhagal (not located by enumerator team); Sindhiwad, Chawk Bazar; and Dhastipura are under construction. The information was verified on the Google Earth™ by inserting the data as place marks, and it was found to be precise for further use.

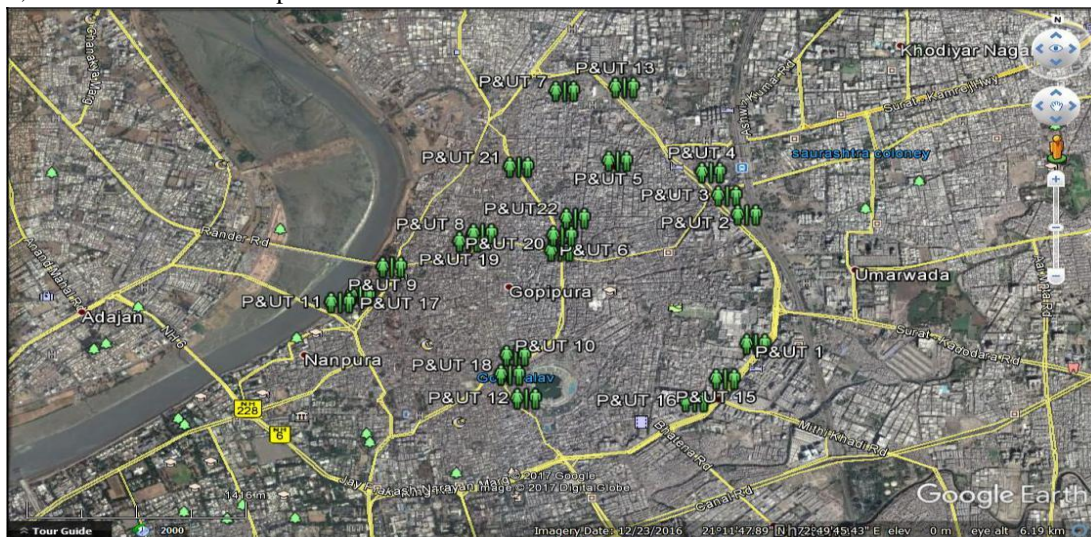


Fig. 3: Locations of Pay & Use Public Toilet Blocks in CZ, SMC

V. PUBLIC URINALS LOCATION DATA

Using the GPS tagging while visiting the Public urinal blocks, the information of latitude and longitude for each of the block was obtained.

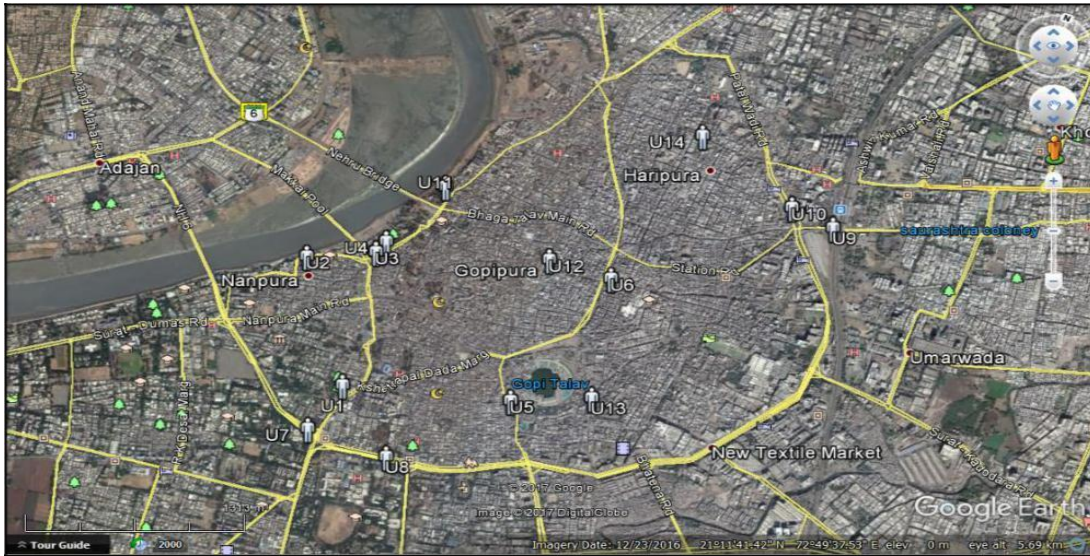


Fig. 4: Locations of Public Urinal Blocks in CZ, SMC

A few locations of Kaakram mahollo, Rampura; Vegetable Market, Danapith, Begampura and Nr. Rokadiya hanuman, Saiyadpura also on the list of public urinals however, either of these were located. The information of the location of urinals was verified on the Google Earth™ by inserting the data as placemarks, and it was found to be precise for further use.

VI. ASSESSMENT AND AUDIT OF TOILET BLOCKS

As per the ranking and scoring method, the highest points fetched by a block is ranked as #1 and the remaining as in a lowering order then after are ranked. The ranking obtained by each of the block is mentioned in the later section of the report, after the discussion on each of the block. These criteria were - 1. Cleanliness; 2. Housekeeping; 3. Safety, and 4. Maintenance

Under the criteria Cleanliness the assessment of overall cleanliness and dryness in the block as well as surroundings, walls, ceilings, floors and presence of any bed/obnoxious smell/odor resulting from the absence of regular and periodical cleaning have been observed. The Presence or absence of each aspect was identified and ranked in general as well as male and female blocks individually.

The criteria of housekeeping were aiming to assess the relevant facility components as well as awareness campaign related displays. The housekeeping criteria considered aspects of signages outside the block building, suggestion box, education materials in place, Asli Tarakki related poster, hoardings, banners, painting and writing on walls as well as standee messages spreading awareness among the users.

Safety is of utmost concern in a public place, that too, for female users it is of prime importance. The assessment on the safety criteria included availability and inspections on locking system and its functioning, gender friendliness, children and differently abled users, and privacy in blocks.

Keeping the P&UT block well-functioning and allowing users of all economic class needs an upkeep of each constructed and installed component. The assessment of Maintenance criteria included illumination, air ventilation, flushing, electricity, disposal system, ceiling-floors and wall damages for colour and plasters, unclogging of flush lines and urinal unit conditions.

A. Inventory for each P&U Toilet Block

For an example, the inventory of P&UT block at Chowk, Opp. State Bank of India is assessed. The basic facilities like Washbasin, Indian type W/C, Western type W/C, Toilet seat cover and lid, Urinals, Flush cocks, Bib taps, Pillar taps, Tube lights, bulb etc is observed. The following tables shows Inventory for P&UT at Chowk, Opp. SBI.

Particulars	Male Block (Nos.)	Female Block (Nos.)	General/Common area
Washbasin	2	1	0
Indian type W/C	3	2	-
Western type W/C	0	1	-
Toilet seat cover and lid	0	0	-
Urinals	9	0	-
Flush cocks	0	0	-
Bib taps	3	3	1

Pillar taps	0	0	0
Grab bars	0	0	0
Mirrors	2	1	0
Soap dish	0	0	-
Soap dispenser	1	0	0
Ramp access	0	0	0
Room for the diff.-abled	0	0	0
Tube lights	2	1	1
Bulbs	0	0	4
Ceiling fans	0	0	1
Sanitary bins	0	0	3
Waste bins	0	0	2

Table 1: Assessment of installations at P&UT - Chowk

№	Particulars	M	M	M	F	F	F
	Toilet Block W/C No.	1	2	3	4	5	6
1	Indian / Western type	I	I	I	I	I	W
2	Flooring tiles OK?	✓	✓	✓	✓	✓	✓
3	W/C Pan working?	x	x	x	x	x	x
4	Walls dado intact?	✓	✓	✓	✓	✓	✓
5	Water tap working?	✓	✓	✓	✓	✓	✓
6	Water tap leakage?	x	x	x	x	x	x
7	Flush cock working?	x	x	x	x	x	x
8	Flush cock leakage?	x	x	x	x	x	x
9	Water clogging in W/C?	x	x	x	x	x	x
10	Lighting well?	✓	✓	✓	✓	✓	✓
11	Ventilation good?	x	x	x	x	x	x
12	Water mug available?	✓	✓	✓	x	x	x
13	Electricity available?	✓	✓	✓	✓	✓	✓
№	Particulars	M	M	F			
	Bathroom No.	1	2	3			
1	Flooring tiles in good condition?	✓	✓	✓			
2	Wall/dado tiles in good condition?	✓	✓	✓			
3	Water tap working?	✓	✓	✓			
4	Water tap leakage?	x	x	x			
5	Water clogging in Bathroom NT?	x	x	x			
6	Lighting well?	✓	✓	✓			
7	Ventilation good?	x	x	x			
8	Water mug available?	✓	✓	✓			
9	Electricity available?	✓	✓	✓			

Table 2: Inventory for P&UT at Chowk, Opp. SBI

VII. RESULT AND ANALYSIS

Minimum score to pass is kept @40%. The results show that all the P&UT Block have score more than 40% however, on an average, the overall score is 68% and there is a significant scope for improvement in the service delivery. Based on the scores obtained at the end of the assessment analysis, each of the pay & use toilet block is ranked as to the achiever of maximum score and percentage. Table below show the ranking of the P&UT blocks under assessment and audit.

P&UT Block	Score (Max. 235)	Score (Max. 155)	Total (Max. 390)	Percentage (Max. 100)	Rank
Nr. Petrol Pump, Una-Pani Road	200	122	322	83%	1
Suraj talkies, Chidiyakui, Begampura	195	100	295	76%	2
Opp. Lords Plaza, Nr. Linier Bus Stand, Delhi Gate	195	95	290	74%	3
Kamela Darwaja, Opp. Millennium Market, Ring Road	195	89	284	73%	4
Opp. Belgium Square, Nr. Linier Bus Stand, Delhi Gate	200	82	282	72%	5
Kaskiwad Depot, Haripura.	210	70	280	72%	5
Opp. JJ market, Ring road	190	85	275	71%	6
Mutton Market, Saiyadpura	200	74	274	70%	7

Nr. Kamela Katalkhana	175	86	261	67%	8
Gandhi Bag Garden	175	80	255	65%	9
Lal Darwaja, Patel wadi, Gotala Wadi Road	185	60	245	63%	10
Nr. Swami Vivekanand Bridge, Makkaipool	180	60	240	62%	11
Navsari Bazar	160	82	242	62%	11
Hira Bazar Main Road	165	64	229	59%	12
Nr. Salabatpura Pumping Station, Nr. Vaaghriwad	170	59	229	59%	12
Kotsafil Road	165	57	222	57%	13
Chowk, Opp. SBI	165	49	214	55%	14
Chautapool, Bh. Chetna Restaurant	155	58	213	55%	14
Rampura, Nr. Lalmiya Masjid	135	61	196	50%	15
Below Chautapool	135	48	183	47%	16
Nr. Mobin Hospital, Navsari Bazar	135	45	180	46%	17
Dukaal Pole, Bhagal	120	43	163	42%	18
Average	172.95	72.9	245.33	63%	

Table 3: Evaluation and Ranking of Public toilets in Central Zone of SMC

VIII. CONCLUDING REMARKS AND DISCUSSION

Based on the study, it was identified that some of the P&UT blocks are maintained fantastically and have very good quality of construction. All the toilet blocks have obtained a score of higher than 40% during the assessment considering all the criteria and aspects. None of the bathroom in any of the P&UT blocks was installed with a towel rail. No sanitizers were observed in any of the P&UT blocks. Mirrors were located in P&UT blocks however, these are not cleaned regularly. It was observed that some of the P&UT blocks were unattended while visit. Informal activity was observed at the entrance of few of the P&UT blocks. Visibility of the P&UT block needs a sincere attention towards improvement. Ramp accessibility in most of the P&UT blocks were absence however, the facility for differently-abled citizens also was found to be absent. Exhaust fans were not installed in any of the P&UT blocks. No recording mechanism for number of users except that may be reported by the operator on site. Some of the P&UT blocks found to have development of vegetation in some parts – need removal. Some of the P&UT blocks had Cleaning Inspection Card however not maintained regularly – need to be maintained at each of the P&UT blocks regularly. Do’s and Don’ts signs were missing in every P&UT block except for some individual signs. All the P&UT blocks have good water supply and connections with drainage network. Components of soap dispensers were completely absence is all the toilet blocks.

Based on the study, recommendations were drawn to have improved service delivery. It includes for placing the slogans to maintain cleanliness (seeking their belongingness) need to be in place; SMC may opt for renting out spaces for advertisements (inside and outside of P&UT blocks) so as to generate revenue; Child urinal need to be in place where it is not installed; Flush in male and female toilet unit needs to be maintained/improved; All doors should have a sign on it showing type of unit; A mechanism of footfall counter be placed to measure the level of usage; The general standard/guidelines for public toilets in public area and modified norms for public toilets in public places and roads recommended in the draft CPHEEO manual are given below and SMC shall be adhered to.

Type	Norms for toilets
Public Toilet	On roads and for open areas: @ every 1 Km, including in parks, plaza, open air theatre, swimming area, car parks, and fuel stations. Toilets shall be disabled-friendly and in 50-50 ratio (M/F). Provision may be made as for Public Rooms (night shelters).
Signage	Signboards on main streets shall give directions and mention the distance to reach the nearest public convenience of visitors. Helpline number shall be pasted on all toilets for complaints/queries.
Modes	Pay and use or free. In pay and use toilets entry is allowed on payment to the attendant or by inserting coin/cards and user gets 15-20 minutes.
Maintenance/ Cleaning	The toilet should have both men and women attendants. Alternatively, automatic cleaning cycle covering flush, toilet bowl, seat, hand wash basin, disinfecting of floor and complete drying after each use can be adopted, which takes 40 seconds. Public toilets shall be open 24 hours.

Source: Draft Manual on Sewerage and Sewage Treatment Systems, CPHEEO 2013.

Table 4: Public toilet norms based on CPHEEO Manual (2013)

In addition, the SMC shall perform a proximity analysis using GIS for the distances and population/ density based interventions related to location of each block; Improve the quality of P&UT Blocks for the lacking components as appropriate; SMC may include the locations of the Public and Pay & Use facilities on the web-based/Mobile application; SMC may initiate a

helpline number to obtain complaints and suggestions from the users; SMC may conduct a similar assessment for facilities in other zones.

LIST OF ABBREVIATIONS AND ACRONYMS

CBD	Central Business District
CPHEEO	Central Public Health and Environmental Engineering Organization
CZ	Central Zone of Surat Municipal Corporation
GPS	Global Positioning System
Km	Kilometer
Nr.	Near
Opp.	Opposite to
P&UT	Pay and Use Toilet
SBI	State Bank of India
SMC	Surat Municipal Corporation
TM	Trademark

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