DEVELOPMENT OF ROADS IN BHARUCH

Present scenario/ Facilities and needs

Due to The Industrial growth in Bharuch District , Bharuch emerged as a preferred town for residence by the employees of industrial units spread across Bharuch Dist. led to the development of New residential colonies on north and West side of Bharuch town.

Shifting of all government offices like Court Collactorate, PWD office, etc. from old town towards north side of town.

The town witnessed these developments in last decade and town area increased from 6 sq.km before two decade now is 19 sq.Km. Since the typical topography of the town it has only Three sides for expansion due to the River Narmada on south side.

The two basic connectivity of town 1. Railway and 2. Highway are on the eastern side of town. Fortunately the northern and north east periphery of town has been covered by By-pass road.

Need for road Infrastructure:-

(a) Traffic Increased multifold due to the Industrial development of Bharuch Dist.

(b) Lack of Public transport system led to increased use of private vehicles.

(c) Restriction on town expansion due to River Narmada on South and GNVFC and Vidiocon Factories on North led to town expansion on East and West only.

(d) Since only Main station road is running across the town led to heavy traffic and congestion.

(e) Non feasibility of widening the main Station road particularly Between Station and Panch batti.

In view of the above, the following proposals are evaluated to cater the increasing needs of the town.

I. Develop multiple Entry to the Town to enable quick entry and exit at various locations of town from highway and vice versa

II. To develop parallel roads to the main Station Road which will facilitate reduction of traffic load on main station road and also reduce the traveling time to rly. station from various town locations

III. To develop Parking plots on cross roads and side roads to main station road to make main roads Parking free which will lead to easy and fast traffic movements

Proposals

ROADS:

The road development is not lacking behind the requirements as the other factors mainly due to the simpler layout and more stress on roads in towns planning.

The present problem on roads side is inadequate road connections, improper road drainage, unorganized traffic and shortage of parking. The town is not so big that the traffic is not segregated, varied (mixed), areas are mixed commercial, residential etc.

Thus, the vehicle traffic need to channelised, segregated and surface drainage is to be developed to keep the roads clear. The roads are dusty / muddy due to lack of pathways and drains.

In order to boast up the existing town planning roads it is proposed to strengthen the main roads structurally, maneuvering and user friendly and aesthetically with road surface, drains, dividers, circles, arboriculture, parking, lighting, signage, signals etc. The major considerations and points are;

A ROAD sections, surface, drainage etc.

B TRAFFICE CIRCLES/ cut outs.

C PARKING LOTS.

A – Roads:

The main roads proposed to be developed are –

Road R1- Main road from railway station to Mohmedpura up to Dahej bye pass road at Abuser crossing is 4.34 km. The road has the bus station (depot), Panchbatti (Centre of the town), Bombay Hospital, Marketing yard, branches of majority of banks, all cinema theatres, major commercial complexes, petrol pumps, mills, schools, municipal and Jilla panchayat head quarters and private hospitals, hotels etc.

Road R2- Road from Panchbatti towards north Dahej bye pass road and is known as Link road. The third main entry to town is through this road and is 1.70 km. The major features are famous sevashram hospital, schools, commercial complexes, and road is connecting to all the government offices, shaktinath and residential colonies, Matariya Lake etc.

Road R3- Road from Mohmedpura junction to civil lines via Vejalpur where there is police lines, government officers bungalows, old RTO office, schools, ice factory, residencial area f old town. Length proposed is 1.20 km.

Road R4- Panchbatti – the center of town is a congested junction. The traffic of old town, traffic crossing the town, traffic connecting the new areas, traffic to railway station and bus depot passes this junction. In order to channelise the traffic from old town and get a parking place about 100 m road is proposed up to millennium market.

Road R5- New road on west side of bus depot connecting the TP road at north about 300m length is proposed in the ash in filled developed ravine to close the entry/exit of buses on the main road (R1) and provide entry on west face on new road which will connect to the main road at a circle. This road connected to TP road will lead directly to the road (R2) to government offices, Shaktinath and link road.

Thus, the loading on main road will be cut at bus depot and the buses will divert to new road instead of disturbing the main road traffic at two points at present.

B – TRAFFIC CIRCLES:

The following traffic circles are proposed or to be developed;

As such the main road should have minimum obstructions so as to streamline the traffic and to achieve these traffic circles at cross-junctions or proper signals at important T-junctions are required.

Circle – J1 The main junction is at the railway station from the start of the road. This needs to be developed. The estimated expenditure is Rs. 2.00 lac.

Circle – J2 The junction of new road (R5) on west of bus depot and Rotary Club is proposed to be made. This will cut the load to further on road R1 and regulate the traffic near bus depot. The estimated expenditure is Rs. 10.00 lac.

Junction – J3 The junction of TP road to civil hospital, municipal offices at Shalimar complex need be provided with proper traffic management devices like road markings, signage, signals and if required bumps. The estimated expenditure is Rs. 5.00 lac.

Circle – J4 The circle at Panchbatti need be developed as stated above. The estimated expenditure is Rs. 5.00 lac.

Junction – J5 The junction at Fata tale need be developed as stated above. The estimated expenditure is Rs. 2.00 lac.

Circle – J6 The circle at Mohmedpura can be developed as stated above with estimated expenditure is Rs. 2.00 lac.

Circle – J7 The circle at Shaktinath on road R2 can be developed as stated above with estimated expenditure is Rs. 2.00 lac.

C – PARKING LOTS:

The public parking facilities reduce the traffic problems of main roads very effectively. With the growth of vehicular traffic the parking systems ha become mandatory in urban planning. The town has no town buses and taxis. Public transport is by 3wheeler auto rickshaws. The majority of private traffic is 2wheeler and some 4wheeler light. The heavy traffic is ST buses only.

The following places are identified and require parking to facilitate the public for commercialization / visits, shopping, autos for passengers etc for a time of 15 minutes to a day.

Parking – P1

At the railway station near musafir khana on the east of water tank and east of Dadabhai gardens for about 10 4wheelers, 30 3 -wheelers and 200 2-wheelers. The estimated expenditure is Rs. 4.00 lac.

Parking – P2

At the west sides of bus stand on new road R5 at circle J2 for about 20 4wheelers, 20 3wheelers and 50 2wheelers. The estimated expenditure is Rs. 3.00 lac. This will cater the Rotary and Lions clubs and hospitals in the vicinity.

Parking – P3

At the Patel Super Market and Ghee Kudiya for about 30 four wheelers, 2 three wheelers and 50 two wheelers. The estimated expenditure is Rs. 3.50 lac.

Parking – P4

At the Ambadker shopping near Panam Plaza for about 5 4wheelers, 2 3wheelers and 50 2wheelers. The estimated expenditure is Rs. 1.00 lac.

Parking – P5

At the Jawahar Shopping near BMC for about 20 4wheelers, 20 3wheelers and 100 2wheelers. The estimated expenditure is Rs. 3.60 lac.

Parking – P6

At the Panchbatti for about 5 4wheelers, 50 3wheelers and 20 2wheelers. The estimated expenditure is Rs. 1.70 lac.

Parking – P7.

Near the Sevashram Hospital opposite Mayuri for about 10 4wheelers, 10 3wheelers and 50 2wheelers. The estimated expenditure is Rs. 1.80 lac.

Parking – P8.

At the Neelkanth market opposite BMC Primary School for about 5 4wheelers, 5 3wheelers and 30 2wheelers. The estimated expenditure is Rs. 0.95 lac.

Parking – P9

At the Narmada Channel market for about 5 4wheelers, 5 3wheelers and 20 2wheelers. The estimated expenditure is Rs. 0.85 lac.

Parking – P10

Shaktinath circles J7 for about 20 4wheelers, 50 3wheelers and 50 2wheelers. The estimated expenditure is Rs. 4.00 lac.

Parking – P11

At approach to Mataria Lake on road R2, for about 5 4wheelers, 5 3wheelers and 20 2wheelers. The estimated expenditure is Rs. 0.85 lac.

Parking – P12

At HDFC bank on road R2 for about 5 4wheelers, 5 3wheelers and 20 2wheelers. The estimated expenditure is Rs. 0.85 lac.

Parking – P13

At Shravan school near Dahej road for about 2 4wheelers, 10 3wheelers and 20 2wheelers. The estimated expenditure is Rs. 0.80 lac.

Parking – P14

At Hotel Madina on road R1 for about 10 three wheelers. The estimated expenditure is Rs. 0.30 lac.

Parking – P15

At Mohmedpura circle for about 5 4wheelers, 50 3wheelers and 20 2wheelers. The estimated expenditure is Rs. 2.20 lac.

Consideration in road sections:

The existing section is developed, strengthened and graded for easy traffic movement, surface drainage, aesthetics, safety, under ground services etc.

1) Provide @ 600 mm high 1000 mm wide road divider so as to restrict road crossing, provide electric cable for lighting and signals, grow good hardy flowering plants/shrubs (instead of railing which becomes monotonous over years and require maintenance). A segmental pre-cast construction is proposed for quality and less on site work on divider.

2) Light poles are suggested at every 15 m. Thus, about 500 poles are required in total.

3) A road lane width of 6 m is proposed on each side as fast lane, which is to be overlaid with dense bitumen carpet, seal coat and bitumen painting. This fast lane will cater automobiles for speeding.

4) The existing road width is different at all the points but no additional width is proposed except removing the encroachments.

5) Beyond the 6 m width from the center service/ pedestrian/ emergency pavement in balance available width is proposed to

cater local stoppage, pedestrian, roadside drain, service lines below etc. This is to be laid in heavy-duty pre-cast paver blocks on compacted sand cushion layer.

6) The side drains are to be made of RCC pre-cast channels, which will act as border of road as well as will be open except some stretch near Panchbatti where a regular drain is required to carry surface water. Otherwise a nala is available for draining surface water at about each 100 to 300 m on the road length.

7) For parking:

a. Area of pavement;

i. For cars @20mt sq
ii. For auto rickshaws @6mt sq
iii. For two wheelers @2mt sq

b. cost of pavement Rs. 500 per sq mt

8) Traffic circle:

The estimated expenditure for each traffic circle is considered including a light post, fountain/ decorative mural with theme etc.

Typical road sections, road layout and parking places, circles, junctions etc are shown in the enclosed sketches.

Summary of the estimated amount:

1. Roads:			
a.	Road R1 4.34 km	Rs. 73.10 lac per km	Rs. 315.06 lac.
b.	Road R2 1.70 km.	Rs. 73.10 lac per km.	Rs. 124.27 lac.
c.	Road R3 1.20 km.	Rs. 73.10 lac per km.	Rs. 087.72 lac.
d.	Road R4 0.10 km.	Rs. 84.70 lac per km.	Rs. 008.47 lac.
e.	Road R5 0.30 km.	Rs. 108.1 lac Per km.	Rs. 032.43 lac.
		Total	Rs. 567.95 lac.
2. Circles/junctions:			Rs. 28.00 lac.
3. Parking plots:			Rs. 29.40 lac.
4. Street lights, traffic signals, signage etc:			Rs. 100.00 lac.
		GRAND TOTAL :	**Rs. 721.51 lac.**

BHARUCH CITY ROAD DEVELOPMENT

Sr. No.	Location / activity of work	Length	Unit Cost	Amount
		m	Rs.	Rs. In lac
1	**Road A:** From railway station to panch batti, mohamedpura, Jambusar raliway crossing on Dahej bye pass.	4000	15570	622.80
2	**Road B:** From panch batti, shaktinath to junction on Dahej bye pass near Shravan school.	2000	16695	333.90
3	**Road C:** From mohmedpura junction to police lines via Vejal pur turning.	1200	14295	171.54
4	**Road D:** From panch batti towards soneri mahel up to millenim market for stream lining the traffic.	100	13020	13.02
5	**Road E:** From Rotary Club towards north in ravine on west side of bus stand.	200	16695	33.39
6	Traffic circles and parking lots.	20	750000	150.00
7	Lighting poles and services.	LS		100.00
				1424.65
	Add 10% contingencies…			142.47
	Total			1567.12
		Say Rs.	1570 Lacs	

Break up of costs:

No.	Item of work	Unit	Unit cost in Rs.	Cost per unit road length.
1	**Road divider:** 1.0 m wide 600 mm high with RCC L shaped precast to be fixed on site in pair.	2 no. per pair per m.	472.5	945
2	**Road side drain:** 1.0 m wide 1500 mm deep with reinf. Hollow block walls, RCC raft and heavy precast covers.	1 m on each side per m.	2925	5850
3	**Road main carriage way:** 4.0 m to 6.0 m wide for fast lane (automobiles), 75 mm dense bitumen carpet, 25 mm seal coat and bitumen painting.	1 m2.	637.5	
3.1	**For 4 m lane**	2 no.	4	5100
3.2	**For 5 m lane**	2 no.	5	6375
3.3	**For 6 m lane**	2 no.	6	7650
4	**Road side service / emergency lane:** 1.0 m to 2.0 m wide for services, emporary parkig/siding, pedestrian etc. 75 mm thick heavy duty paver blocks over compacted sand.	1 m2.	555	
4.1	**In 1.0 m width.**	2 no.	1	1110
4.2	**In 2.0 m width.**	2 no.	2	2220

Road	Cost per m length of road	Width	Length	Remark
		m	*m*	
A	**630 + 3900 + 750 + 5100 = 10380**	17	4000	
B	**630 + 3900 + 1500 + 5100 = 11130**	19	2000	
C	**630 + 3900 + 750 + 4250 = 9530**	15	1200	
D	**630 + 3900 + 750 + 3400 = 8680**	12	100	
E	**630 + 3900 + 1500 + 5100 = 11130**	19	200	