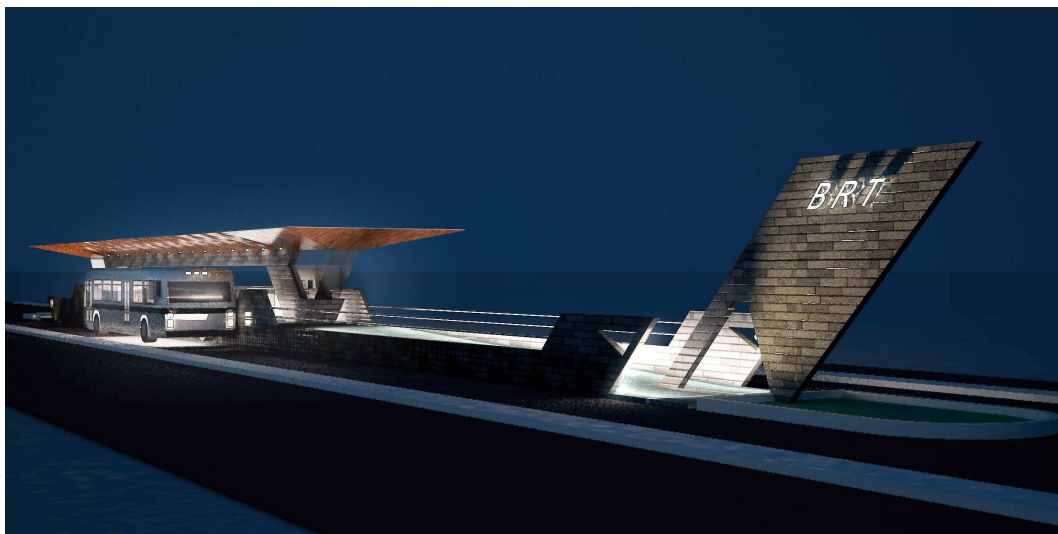


DIRECTORATE OF URBAN LAND TRANSPORT

# Bus Rapid Transit System Hubli-Dharwad

Detailed Feasibility Report \_ Annexure

March 2013



**CEPT University**  
**Ahmedabad**



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# 1 Annexure: Operation Planning

## 1.1 Annexure: List of Existing Bus Services

List of Existing Bus Service					
Sr. No.	Route No.	Description	HDW	Speed	Length
1	2	HBL - DHARWAD N/S	15	25	21.77
2	0	GANDHINAGAR-DWR OCB	15	25	25.04
3	0	SDR-DWR OCBS	36	25	24.67
4	13	NK-DWR OCBS	120	25	22.58
5	10	NO DESCRIPTION	55	25	24.11
6	20	ANN-DWR OCBS	60	25	26.28
7	247	HBL RLY STN-DWR O	3	25	20.64
8	1	HBL OCBS-DWR OCBS	6	25	19.76
9	428	HBL-DWD	14	25	21.77
10	405	HBL-DWR N/S	15	25	21.48
11	369	DWR-HBL	14	25	25.65
12	295	NGOKUL - UNIVERSIT	15	25	21.86
13	220	CBT HBL-D HIGHCOUR	15	25	32.28
14	216	HBL-UNIVERSITY	120	25	24.89
15	126	SDR NEKARN-DHARWAD	15	25	24.1
16	8	CBT HRS - KUD RK	176	25	25.26
17	14	NO DESCRIPTION	0.01	0.01	25.27
18	218	HBL CBT-DWR OCBS	14	25	21.36
19	199	OBS-LOHIYANAGAR	30	15	5.54
20	194	OBS - KMC	30	15	1.6
21	177	OBS-GOKUL	30	15	6.43
22	173	OBS - GANDHINAGAR	30	15	5.42
23	171	OBS - GAMANGATTI	30	15	8.58
24	354	HOSUR - ANANDNAGAR	30	15	3.78
25	440	MTR-KMC	30	15	17.19
26	441	NAVANAGAR-ANANDNAGAR	30	15	14.62
27	58	BWD AGASI-B KOPPA	30	15	22.64
28	57	BWD AGASI-SUTAGATTI	30	15	27.45
29	56	BWD AGASI-GAMANGATT	30	15	28.14
30	55	HBL-GAMANAGATTI	30	15	12.87
31	53	BWD AGASI-KHB	30	15	27.4
32	52	NO DESCRIPTION	60	0.01	25.25
33	51	BWD AGASI-APMC	30	15	24.87
34	48	BWD AGASI-VISHWANAG	30	15	19.2
35	40	HBL-GOPANKOPPA	14	15	5.67
36	33	NAVALUR-NEKARNAGAR	30	15	19.2
37	26	HOSUR-SDR MATH	30	15	4.04
38	0	NO DESCRIPTION	60	0.01	7.37
39	48	NO DESCRIPTION	60	0.01	7.42

40	39	NO DESCRIPTION	60	0.01	6.32
41	32	HBL CBT-RAJEEV NAG	140	15	6.7
42	63	GOPANAKOPPA TO NAV	30	15	13.25
43	23	HBL CBT - LINGRAJ	41	15	6.99
44	0	HBL CBT TO LAXMIN	30	15	5.92
45	209	HOSUR - SIDRUDH M	30	15	5.04
46	208	HOSUR - GOPPANKOPP	30	15	4.88
47	207	HBL OBS - HOSUR	30	15	0.88
48	206	CBT- HOSUR	30	15	2.89
49	203	NO DESCRIPTION	60	0.01	12.59
50	200	HBL CBT-HANUMANTH	30	15	33.79
51	172	CBT-BIDNAL ASK	30	15	3.6
52	164	HBL CBT-TARIHAL	30	15	13.26
53	162	SAINAGAR-SDR MATH	30	15	8.72
54	108	KMC - ANANDANAGAR	30	15	10.7
55	61	NO DESCRIPTION	60	0.01	16.68
56	323	RGN-BSN	30	15	9.5
57	316	PTK NAGAR-GANDHI N	30	15	10.28
58	302	OBS-NGKL	30	15	6.71
59	299	OBS-KEC	30	15	5.15
60	287	HRS-SAI	30	15	8.36
61	285	HRS-NBS	30	15	5.34
62	278	GPK-RGS	30	15	3.45
63	271	DEPT-PTK	30	15	5.59
64	242	OLD HUBLI-RAILWAYRW	30	15	12.29
65	231	GOPANKOPPA-TIMASAGAR	30	15	10.8
66	228	HBT-SARASWATIPUR	60	15	23.1
67	216	HBLCBT-OLD HUBLI	545	15	3.26
68	214	OBS-TAJNAGAR	30	15	5.41
69	213	OBS - KMP	30	15	3.56
70	209	OBS-TIMASAGAR	30	15	6.81
71	208	HUBLICBT-OBS	545	15	2.01
72	203	OBS - NAVANAGAR	30	15	8.07
73	444	HBL CBT-KMC	23	15	3.35
74	32	DWR CBT-BANASHRI	36	12	5.13
75	0	DWR CBT-SHANTINIKET	36	12	4.07
76	53	DWR CBT-SADANAKERI	30	12	3.49
77	61	DWR CBT-SRINAGAR	47	12	3.45
78	310	DWD RLYST-D HQ	36	12	13.51
79	81	CBT-UGH/DRS/SPR	36	12	6.83
80	72	CBT-UGH-AIR	36	12	5.25
81	68	CBT-PAVATE NGR	36	12	5.2
82	67	CBT-TJN/NTF/YMK	36	12	3.56
83	63	CBT-SHRIPADNGR	36	12	5.56
84	55	CBT-SRY/NTF/YMK	36	12	3.95

85	0	DWR CBT-KUD GUEST	67	12	5.91
86	48	CBT-RK/NGR/AIR	36	12	3.98
87	44	CBT-RJV/NTF/YMK	36	12	5.44
88	37	CBT-NBH-AIR-UAB	36	12	5.71
89	22	CBT-KGR-DSN-SDN	36	12	4.1
90	20	CBT-KGR BNS	36	12	6.42
91	19	CBT-KVD/NTF/YMK	36	12	3.4
92	8	CBT-CTN/VNK/YMK	36	12	5.86
93	101	DWD CBT - KELGERI	36	12	5.62
94	99	SWS CBT-UNIVERSITY	36	12	4.44
95	89	DWD CBT-TJN/SDM	36	12	5.07
96	38	DWR CBT-NB HOSTEL	102	12	5.71
97	83	SWR CBT - KALANNA	36	12	3.48
98	49	DWR CBT-RK NAGAR	53	12	3.94
99	0	DWR CBT-SAINIK CLN	36	12	2.49
100	65	DWR CBT-TAIWAK	273	12	5.94
101	56	DWR CBT-SARASWATIPU	60	12	3.36
102	0	DWR CBT-SOMESHWAR	36	12	4.77
103	86	DWR CBT-HANMATH NR	273	12	4.37
104	16	DWR CBT-JALADARSHIN	109	12	3.62
105	0	DWR CBT-UDAYAGIRI	36	12	7.92
106	39	DWR CBT-NEHRU NAGA	167	12	4.82
107	0	DWR CBT-ADARSH NR	36	12	5.21
108	27	DWR CBT-KALYA NR	58	12	3.75
109	77	DWR CBT-YATTINGUDDA	92	12	7.14
110	60	DWR CBT-SAMPIGE NR	50	12	4.8
111	0	DWR CBT-SAI NR	36	12	3.48
112	35	DWR CBT-MEHBOOB NR	105	12	1.96
113	34	DWR CBT-MALAPUR	51	12	1.56
114	33	DWR CBT-MADIHAL	43	12	2
115	21	DWR CBT-KELIGERI J	70	12	7.9
116	7	DWR CBT-CHAITANY N	70	12	3.82
117	0	DWR CBT-KUD	12	12	4.44
118	197	HBL CBT - LINGRAJ	30	15	6.99
119	195	CBT - KMC	30	15	3.35
120	191	CBT-KHB COLNY	30	15	12.13
121	178	DEPT - GOPANKOPPA	14	15	5.86
122	300	HBL CBT TO KHB C	30	15	12.13
123	351	CBT-ANANDNAGAR	17	15	8.91
124	352	KMC - ANANDNAGAR	30	15	9.82
125	356	CBT (DWN)-GRID(DWN)	53	15	5.22
126	371	CBT-SIDDHRUDHMATH	17	15	5.67
127	372	CBT - NEKARNAGAR	30	15	6.12
128	13	HBL CBT-GAMANGATTI	81	15	12.87
129	373	HBLCBT-ANANDNAGAR	30	15	8.91

130	421	NEKARNAGAR-HBLCBT	30	15	6.44
131	423	SMK NAGAR-HBLCBT	30	15	5.7
132	425	SHARAVATI-CBT	30	15	5.32
133	445	HBL CBT - GANDHIW	30	15	4.92
134	442	GAMANGATTI-ANANDNAGA	30	15	15.13
135	26	HBL CBT - NAVANAG	17	15	10.08
136	424	CBT TO SHARAVATI	60	15	5
137	290	KMC TO TIMMASAGAR	30	15	9.05
138	263	CBT TO VISHVESHWAR	23	15	4.99
139	248	KMC TO GOPANAKOPPA	30	15	5.69
140	0	CBT TO SMYUKT KAR	125	15	6.49
141	217	CBT TO PADMRAJNAGA	30	15	6.36
142	193	SMK TO KMC	30	15	5.53
143	0	HBL CBT TO HUBLI	30	15	7.59
144	91	KMC - SIDDARUDH M	30	15	6.55
145	78	KMC-NEKARNAGAR	30	15	6.61
146	0	YALLAPUR ONI TO K	30	15	3.95
147	64	KMC TO GRID	30	15	6.32
148	420	KMC TO ANANDNAGAR	30	15	9.82
149	54	HBL CBT - BHAVANI	1.69	15	4.05
150	349	HBL CBT TO TIMMAS	31	15	8.56
151	46	HBL CBT TO SHAKTI	85	15	7.37
152	45	HBL CBT TO SHIRAD	72	15	6.02
153	374	HBL CBT TO SIMLA	30	15	5.59
154	42	HBL CBT - SHIDDAR	17	15	5.67
155	40	HBL CBT TO SANTOS	71	15	6.01
156	38	HBL CBT TO SM KR	30	15	5.38
157	257	HBL CBT TO RAILY	48	15	3.92
158	29	HBL CBT TO PATRAK	30	15	6.39
159	207	HBL CBT-NEKARNAGAR	23	15	6.12
160	0	SONIYAGANDHI #NAME?	30	15	5.52
161	17	HBL CBT TO GRID	53	15	5.22
162	16	HBL-GOPANKAPPA	13	15	5.86
163	11	HBL CBT TO DEVANG	21	15	7.15
164	10	HBL CBT TO CENTRA	64	15	7.14
165	8	HBL CBT TO BENDER	65	15	4.22
166	3	HBL CBT TO ANANDN	21	15	8.91
167	176	HBL CBT TO GOKUL	34	15	8.44
168	18	HUBLICBT-JPNAGAR	54	15	6.35
169	15	HBL CBT-NANDGOKUL	30	15	8.72
170	1	HBL CBT - AKSHAY	30	15	6.13
171	31	HBL CBT TO RADHAK	30	15	7.98
172	21	HBL CBT TO KUMAR	87	15	7.83
173	35	HBL CBT TO RENUKA	54	15	9.07
174	6	HBL CBT TO ARUNA	122	15	7.52

175	0	HBL CBT TO R.M L	30	15	7.7
176	14	HBL CBT TO GNR	30	15	7.67
177	24	HBL CBT TO MANJUN	20	15	6.42
178	7	HBL CBT TO BASAVE	31	15	5.91
179	65	BWD AGASI-KEC	0.01	0.01	23.44
180	0	HBL CBT TO APMC	30	15	8.99
181	0	HBL CBT TO SUTAGA	86	15	12.18
182	225	DEPT-SAINAGAR	0.01	0.01	6.32
183	446	CBT-PADMRAJNAGAR	30	15	6.36
184	170	DEPT-GAMANGATTI	83	15	12.87
185	439	HBL CBT - SHANTNA	30	15	12.2
186	74	DWD-CBT VINAYAKANAG	87	12	3.67
187	11	DWD-CBT GAMANAGATTI	86	12	13.79
188	73	DWD CBT-VANASHRINAG	36	12	7.44
189	64	DWD CBT-TADASINKOPP	107	12	10.03
190	36	DWD CBT-NAVALUR	30	12	5.3
191	18	DWD CBT-JOGELLAPUR	143	12	8.43
192	0	DWD CBT- RAJIVNAGA	128	12	5.52
193	61	DWD CBT - S R N	98	12	4.26
194	0	DWD CBT-TEJSVINAGAR	21	12	3.87
195	45	DWD CBT-RAMNAGAR	39	12	3.82
196	10	DWD CBT-DWD RLYSTA	17	12	2.48
197	2	DWD CBT TO AGRI	17	12	5.93
198	180	CBT TO CBT (VIA)	30	15	5.98
199	169	CBT-CBT VIA SIRUR	30	15	12.6

## 1.2 Annexure: List of Existing Services Terminated for proposed BRT

List of Services Terminated					
Sr. No.	Route No.	Description	HDW	Speed	Length
1	18	DWD CBT-JOGELLAPUR	143	12	8.43
2	36	DWD CBT-NAVALUR	30	12	5.3
3	64	DWD CBT-TADSINAKOPPA	107	12	10.03
4	73	DWD CBT-VANASHRI NAGAR	36	12	7.44
5	11	DWD CBT-GAMANAGATTI	86	12	13.79
6	170	DEPOT - GAMANGATTI	83	15	13.27
7	257	HBL CBT- RGS	48	15	3.92
8	64	GRIDD - KMC	30	15	6.32
9	26	HBL CBT- NAVANAGAR	17	15	10.08
10	13	HBL CBT- GAMANGATTI	81	15	12.87
11	203	OBS- NAVANAGAR	30	15	8.07
12	208	DEPOT - OBS	545	15	2.01
13	285	HRS - NBS	30	15	5.34
14	172	CBT	30	15	3.92



15	206	CBT	30	15	2.89
16	207	HBL-OBS	30	15	0.88
17	63	GOPANAKOPPA -NOR	30	15	13.25
18	257	HBL CBT- RGS	60	0.01	3.96
19	57	BWD AGASI	60	0.01	12.58
20	218	HBL CBT- DWR OCBS	14	25	21.36
21	14	HBL CBT	0.01	0.01	25.27
22	8	CBTHRS	176	25	25.26
23	126	SDR NEKAR N	15	25	24.1
24	216	HUBLI	120	25	24.89
25	220	CBT HBL	15	25	32.28
26	295	N GOKUL - UNIVERSITY	15	25	21.86
27	369	HUBLI DHARWAD	14	25	25.65
28	405	HUBLI DHARWAD N/S	15	25	21.48
29	428	HUBLI - DHARWAD	14	25	21.77
30	1	HBL OCBS - DWR OCBS	6	25	19.76
31	247	HBL RLY STN - DWR OCBS	3	25	20.64
32	20	ANN- DWR OCBS	60	25	26.28
33	10	GPK - DWR OCBS	55	25	24.11
34	13	NK - DWR OCBS	120	25	22.58
35	2	HUBLI	15	25	21.77

### 1.3 Annexure: List of Existing Services passing through proposed BRT route

List of Services passing through Proposed BRT route (No change in Existing Services)						
Sr. No.	Route No.	Description	Initial Route Length(KM)	Changes	HDW	Speed
1	310	DWR RLY STN	13.51	Passing through BRT stretch	36	12
2	216	DEPT - OLD HUBLI	3.26	Passing through BRT stretch	545	15
3	228	CBT- SARASWATIPUR	22.51	Passing through BRT stretch	60	15
4	231	GOPANKOPPA - TIMASAGAR	10.8	Passing through BRT stretch	30	15
5	323	RGN - BSN	5.66	Passing through BRT stretch	30	15
6	203	HUBLI	12.59	Passing through BRT stretch	60	0.01

#### 1.4 Annexure: List of Existing Services splitted along proposed BRT route

List of Services Splitted along proposed BRT corridor										
SR No.	DESCRIPTION	Route No.(A)	Route No (B)	Changes	Route A- Length (KM)	Route B- Length (KM)	Deleted segment length (KM)	Total length of route (KM)	HDW	Speed
1	BWD AGASI	65	65a	Segments eliminated from Hubli Railway station to Hosur	5.44	12.73	2.36	23.44	0.01	0.01
2	ANAND NAGAR-KMC	420	420a	Segments eliminated from Hubli Railway station to Hosur	1.74	7.09	0.99	9.82	30	15
3	OLD HUBLI - RAILWAY RWH	242	242a	Segments eliminated from Hosur to HBL CBT	3.21	5.82	3.26	12.29	30	15
4	PTK NAGAR - GANDHINAGAR	316	316a	Segments eliminated from Hubli Railway station to OCBS HBL	4.7	4.59	0.99	10.28	30	15
5	RGN - BSN	323	323a	Segments eliminated from Hubli Railway station to OCBS HBL	4.8	3.85	0.85	9.5	30	15
6	BWD AGASI	48	48a	Segments eliminated from Hubli Railway station to OCBS HBL	13.44	2.77	2.99	19.2	30	15
7	BWD AGASI	52	52a	Segments eliminated from Hubli Railway station to OCBS HBL	14.16	2.13	8.96	25.25	60	0.01
8	BWD AGASI	53	53a	Segments eliminated from Hubli Railway station to OCBS HBL	14.16	1.73	11.51	27.4	30	15
9	BWD AGASI	56	56a	Segments eliminated from Hubli Railway station to OCBS HBL	2.47	14.16	10.03	28.14	30	15
10	BWD AGASI	57	57a	Segments eliminated from Hubli Railway station to OCBS HBL	14.16	1.27	12.02	27.45	30	15
11	GAMANGATTI-ANANDNAGAR	442	442a	Segments eliminated from B. Koppa to OCBS HBL	6.34	3.06	5.65	15.13	30	15
12	MTR ROAD-KMC	440	440a	Segments eliminated from Hubli Railway station to OCBS HBL	12.73	1.61	2.85	17.19	30	15

### 1.5 Annexure: List of Existing Services splitted passing through BRT corridor are Truncated

List of Services passing through proposed BRT corridor are Truncated								
Sr. No.	Route No.	Description	Initial Route Length (KM)	Changed Length (KM)	Truncated length (KM)	Changes	HDW	Speed
1	169	CBT-CBT VIA SIRUR	12.6	5.35	7.25	Truncated from HBL CBT to Hosur	30	15
2	180	CBT TO CBT (VIA)	5.98	3.25	2.73	Truncated from HBL CBT to Hosur	30	15
3	2	DWD CBT TO AGRI UNIVERSITY	5.93	5.48	0.45	Truncated from DWD CBT to Jubilee circle	17	12
4	10	DWD CBT-RLY STN	2.48	1.6	0.88	Truncated from DWD CBT to Court circle	17	12
5	45	DWD CBT-RAMNAGAR	3.82	2.94	0.88	Truncated from DWD CBT to Court circle	39	12
6	61	DWD CBT-S.R. NAGAR	4.26	3.38	0.88	Truncated from DWD CBT to Court circle	98	12
7	74	DWD CBT-VINAYAK NAGAR	3.67	3.22	0.45	Truncated from DWD CBT to Court circle	87	12
8	439	HBL CBT-SHANTNAGAR	12.2	1.8	10.4	Truncated from HBL CBT to Navanagar	30	15
9	170	DEPOT - GAMANGATTI	12.87	2.47	10.4	Truncated from HBL CBT to Navanagar	83	15
10	446	HBL CBT- PADMARAJ NAGAR	6.36	3.63	2.73	Truncated from DWD CBT to Hosur	30	15
11	225	DEPOT TO SAINAGAR	6.32	1.09	5.23	Truncated from HBL CBT to Vidyanagar	0.01	0.01
12	65	BWD AGASI	23.44	5.44	18	Truncated from HBL CBT to Vidyanagar	0.01	0.01
13	7	HBL CBT- BS NAGAR	5.91	3.18	2.73	Truncated from HBL CBT to Hosur	31	15
14	24	HBL CBT- MNJ NAGAR	6.42	3.69	2.73	Truncated from HBL CBT to Hosur	20	15
15	14	HBL CBT- GNR	7.67	4.94	2.73	Truncated from HBL CBT to Hosur	30	15
16	6	HBL CBT- ARUNA COLONY	7.52	4.79	2.73	Truncated from HBL CBT to Hosur	122	15
17	35	HBL CBT- RENUKA NAGAR	9.07	6.34	2.73	Truncated from HBL CBT to Hosur	54	15
18	21	HBL CBT- KUMAR PARK	7.83	5.1	2.73	Truncated from HBL CBT to Hosur	87	15
19	31	HBL CBT- R.K NAGAR	7.98	5.25	2.73	Truncated from HBL CBT to Hosur	30	15
20	1	HBL CBT- AKSHAY COLONY	6.13	3.4	2.73	Truncated from HBL CBT to Hosur	30	15
21	15	HBL CBT- NANDGOKUL	8.72	5.99	2.73	Truncated from HBL CBT to Hosur	30	15
22	18	HBL CBT- J.P NAGAR	6.35	3.62	2.73	Truncated from HBL CBT to Hosur	54	15
23	176	HBL CBT- GOKUL	8.44	5.71	2.73	Truncated from HBL CBT to Hosur	34	15
24	3	HBL CBT- ANAND NAGAR	8.91	7.03	1.88	Truncated from HBL CBT to OCBS HBL	21	15
25	8	HBL CBT- BENERI	4.22	2.96	1.26	Truncated from HBL CBT to OCBS HBL	65	15
26	10	HBL CBT- CEC	7.14	4.41	2.73	Truncated from HBL CBT to Hosur	64	15
27	11	HBL CBT- DEVANG PETH	7.15	5.3	1.85	Truncated from HDMC to HBL CBT	21	15
28	16	HBL CBT- GOPANKOPPA	5.86	4.01	1.85	Truncated from HDMC to HBL CBT	13	15
29	17	HBL CBT- GRIDD	5.22	3.34	1.88	Truncated from HBL CBT to OCBS HBL	53	15

30	207	HBL CBT- NEKAR NAGAR	6.12	4.24	1.88	Truncated from HBL CBT to OCBS HBL	23	15
31	29	HBL CBT- PATRAKRT NAGAR	6.39	4.54	1.85	Truncated from HDMC to HBL CBT	30	15
32	38	HBL CBT- SMK NAGAR	5.38	3.5	1.88	Truncated from HBL CBT to OCBS HBL	30	15
33	40	HBL CBT- SANTOSH NAGAR	6.01	4.16	1.85	Truncated from HDMC to HBL CBT	71	15
34	42	HBL CBT- SDR	5.67	3.79	1.88	Truncated from HBL CBT to OCBS HBL	17	15
35	374	HBL CBT- SIMLA NAGAR	5.59	3.71	1.88	Truncated from HBL CBT to OCBS HBL	30	15
36	45	HBL CBT- SHIRADI NAGAR	6.02	4.17	1.85	Truncated from HDMC to HBL CBT	72	15
37	46	HBL CBT- SHAKTI COLONY	7.37	5.52	1.85	Truncated from HDMC to HBL CBT	85	15
38	349	HBL CBT- TIMMASAGAR	8.56	6.68	1.88	Truncated from HBL CBT to OCBS HBL	31	15
39	54	HBL CBT- BHAVANI NAGAR	4.05	2.03	2.02	Truncated from HBL CBT to OCBS HBL	1.69	15
40	78	KMC- NEKARA NAGAR	6.61	5	1.61	Truncated from HBL CBT to OCBS HBL	30	15
41	91	KMC-SDR	6.55	4.94	1.61	Truncated from HBL CBT to OCBS HBL	30	15
42	0	HBL CBT- HUBLI. H.H	7.59	5.71	1.88	Truncated from HBL CBT to OCBS HBL	30	15
43	193	SMK NAGAR -KMC	5.53	3.46	2.07	Truncated from HBL CBT to OCBS HBL	30	15
44	217	HBL CBT- PADMRAJANAGAR	6.36	3.63	2.73	Truncated from HBL CBT to Hosur	30	15
45	263	HBL CBT- VISHVESHWAR NAGAR	4.99	3.14	1.85	Truncated from HDMC to HBL CBT	23	15
46	290	KMC-TIMMASAGR	9.05	7.44	1.61	Truncated from HBL CBT to OCBS HBL	30	15
47	424	HBL CBT- SHARAVATI	5	3.12	1.88	Truncated from HBL CBT to OCBS HBL	60	15
48	442	GAMANGATTI- ANANDNAGAR	15.13	6.34	8.79	Truncated from HBL CBT to OCBS HBL	30	15
49	445	HBL CBT-GHANDI WADA	4.92	3.07	1.85	Truncated from HBL CBT to HBL RLY STN	30	15
50	425	SHARAVATI-CBT	5.32	3.12	2.2	Truncated from HBL CBT to OCBS HBL	30	15
51	423	SMK NAGAR - CBT	5.7	3.5	2.2	Truncated from HBL CBT to OCBS HBL	30	15
52	421	NEKARNAGAR - CBT	6.44	4.24	2.2	Truncated from HBL CBT to OCBS HBL	30	15
53	373	CBT- ANAND NAGAR	8.91	7.03	1.88	Truncated from HBL CBT to OCBS HBL	30	15
54	372	CBT- NEKAR NAGAR	6.12	4.24	1.88	Truncated from HBL CBT to OCBS HBL	30	15
55	371	CBT- SIDDHRUDHMATH	5.67	3.79	1.88	Truncated from HBL CBT to OCBS HBL	17	15
56	356	CBT(DOWN) - GRID (DOWN)	5.22	3.34	1.88	Truncated from HBL CBT to OCBS HBL	53	15
57	352	KMCTO ANANDNAGAR	9.82	7.09	2.73	Truncated from HBL CBT to Hosur	30	15
58	351	CBTTO ANANDNAGAR	8.91	7.03	1.88	Truncated from HBL CBT to OCBS HBL	17	15
59	300	HBL CBT- KHB COLONY	12.13	1.73	10.4	Truncated from HBL CBT to Navanagar	30	15
60	178	DEPOT - GOPANKOPPA	5.86	4.01	1.85	Truncated from HDMC to HBL CBT	14	15
61	191	HBL CBT- KHB COLONY	12.13	1.73	10.4	Truncated from HBL CBT to Navanagar	30	15
62	197	OBS- LINGRAJNAGAR	6.99	4.26	2.73	Truncated from HBL CBT to Navanagar	30	15

63	7	DWD CBT-CHAITANY NAGAR	3.82	3.37	0.45	Truncated from DWD CBT to Jubilee circle	70	12
64	21	DWD CBT-KELIGERI J.C	7.9	7.45	0.45	Truncated from DWD CBT to Jubilee circle	70	12
65	60	DWD CBT-SAMPIGENAGAR	4.8	4.35	0.45	Truncated from DWD CBT to Jubilee circle	50	12
66	77	DWD CBT-YATTINGUDDA	7.14	6.63	0.51	Truncated from DWD CBT to Jubilee circle	92	12
67	27	DWD CBT-KALYANAGAR	3.75	2.87	0.88	Truncated from DWD CBT to Court circle	58	12
68	39	DWD CBT-NEHARU NAGAR	4.82	4.37	0.45	Truncated from DWD CBT to Jubilee circle	167	12
69	16	DWD CBT-JALADARSHINI NAGAR	3.62	3.17	0.45	Truncated from DWD CBT to Jubilee circle	109	12
70	86	DWD CBT-HANMATH NAGAR	4.37	3.49	0.88	Truncated from DWD CBT to Court circle	273	12
71	56	DWD CBT-SARSWATIPUR	3.36	2.48	0.88	Truncated from DWD CBT to Court circle	60	12
72	65	DWD CBT-TAIWAK	5.94	5.49	0.45	Truncated from DWD CBT to Jubilee circle	273	12
73	49	DWD CBT-R.K NAGAR	3.94	3.49	0.45	Truncated from DWD CBT to Jubilee circle	53	12
74	83	DWR CBT	3.48	2.6	0.88	Truncated from DWD CBT to Jubilee circle	36	12
75	38	DWD CBT-N.B.HOSTEL	5.71	5.26	0.45	Truncated from DWD CBT to Jubilee circle	102	12
76	99	DWD CBT	4.44	3.99	0.45	Truncated from DWD CBT to Jubilee circle	36	12
77	101	DWD CBT	5.62	5.17	0.45	Truncated from DWD CBT to Jubilee circle	36	12
78	8	CBT	5.86	4.98	0.88	Truncated from DWD CBT to Court circle	36	12
79	20	CBT	6.42	5.97	0.45	Truncated from DWD CBT to Jubilee circle	36	12
80	22	CBT	4.1	3.65	0.45	Truncated from DWD CBT to Jubilee circle	36	12
81	37	CBT	5.71	5.26	0.45	Truncated from DWD CBT to Jubilee circle	36	12
82	48	CBT	3.98	3.53	0.45	Truncated from DWD CBT to Jubilee circle	36	12
83	63	CBT	5.56	5.11	0.45	Truncated from DWD CBT to Jubilee circle	36	12
84	68	CBT	5.2	4.75	0.45	Truncated from DWD CBT to Jubilee circle	36	12
85	72	CBT	5.25	4.8	0.45	Truncated from DWD CBT to Jubilee circle	36	12
86	81	CBT	6.83	5.95	0.88	Truncated from DWD CBT to Jubilee circle	36	12
87	61	DWD CBT-SHRINAGAR X	3.45	3	0.45	Truncated from DWD CBT to Jubilee circle	47	12
88	53	DWD CBT-SADANAKERI	3.49	3.04	0.45	Truncated from DWD CBT to Jubilee circle	30	12
89	32	DWD CBT-BANASHRI NAGAR	5.13	4.68	0.45	Truncated from DWD CBT to Jubilee circle	36	12
90	209	OBS- TIMASAGAR	6.81	6.68	0.13	Truncated from HBL CBT to OCBS HBL	30	15
91	213	OBS- KMP	3.56	3.43	0.13	Truncated from HBL CBT to OCBS HBL	30	15
92	214	OBS- TAJ	5.41	2.19	3.22	Truncated from OBS to Vidyanagar	30	15
93	228	CBT- SARASWATIPUR	23.1	20.42	2.68	Truncated from HBL CBT to Hosur	60	15
94	287	HRS - SAI	8.36	1.09	7.27	Truncated from HBL CBT to Vidyanagar	30	15
95	299	OBS- KEC	5.15	4.48	0.67	Truncated from HBL CBT to Hosur	30	15
96	302	OBS- NGKL	6.71	5.99	0.72	Truncated from HBL CBT to Hosur	30	15

97	61	HOSUR	16.68	14.33	2.35	Truncated from HBLRLY STN to HBL CBT	60	0.01
98	65	BWD AGASI	67.99	5.44	62.55	Truncated from HBLCBT to Hosur	0.01	0.01
99	108	KMC	10.7	6.98	3.72	Truncated from HBL CBT to OCBS HBL	30	15
100	162	SAINAGAR	8.72	4.2	4.52	Truncated from HBL CBT to OCBS HBL	30	15
101	164	CBT	13.26	10.53	2.73	Truncated from HBLCBT to Hosur	30	15
102	172	CBT	3.6	1.72	1.88	Truncated from HBL CBT to OCBS HBL	30	15
103	200	CBT	33.79	29.67	4.12	Truncated from HBL CBT to HBL RLY STN	30	15
104	23	HBL CBT- LINGRAJ NAGAR	6.99	4.26	2.73	Truncated from HBLCBT to Hosur	41	15
105	32	HBL CBT- RAJEEV NAGAR	6.7	3.97	2.73	Truncated from HBLCBT to Hosur	140	15
106	39	HBL CBT- SAI NAGAR	6.32	1.09	5.23	Truncated from HBL CBT to Vidyanagar	60	0.01
107	48	HBL CBT- TAJNAGAR	7.42	2.19	5.23	Truncated from HBL CBT to Vidyanagar	60	0.01
108	26	HOSUR	4.04	0.38	3.66	Truncated from HBLCBT to Hosur	30	15
109	33	NAVALUR	19.2	4.58	14.62	Truncated from HBL CBT to OCBS HBL	30	15
110	51	BWD AGASI	24.87	14.16	10.71	Truncated from HBLRLY STN to HBL CBT	30	15
111	55	HUBLI	12.87	2.47	10.4	Truncated from HBL CBT to Navanagar	30	15
112	58	BWD AGASI	22.64	14.16	8.48	Truncated from HBLRLY STN to HBL CBT	30	15
113	441	NAVANAGAR-ANANDNAGAR	14.62	6.34	8.28	Truncated from HBL CBT to OCBS HBL	30	15
114	171	OBS- GAMANAGATTI	8.58	3.06	5.52	Truncated from HBL OBS to B. Koppa	30	15
115	173	OBS- GANDHINAGAR	5.42	4.7	0.72	Truncated from HBL CBT to Hosur	30	15
116	177	OBS- GOKUL	6.43	5.71	0.72	Truncated from HBLCBT to Hosur	30	15
117	199	OBS- LOHIYANAGAR	5.54	4.82	0.72	Truncated from HBL CBT to Hosur	30	15
118	89	DWD CBT	5.07	4.62	0.45	Truncated from DWD CBT to Jubilee circle	36	12
119	19	CBT	3.4	2.95	0.45	Truncated from DWD CBT to Jubilee circle	36	12
120	44	CBT	5.44	4.51	0.93	Truncated from DWD CBT to Jubilee circle	36	12
121	55	CBT	3.95	3.5	0.45	Truncated from DWD CBT to Jubilee circle	36	12
122	67	CBT	3.56	3.11	0.45	Truncated from DWD CBT to Jubilee circle	36	12
123	195	HBL CBT- KMC	3.35	1.47	1.88	Truncated from HBLCBT to Hosur	30	15
124	444	HBL CBT- KMC	3.35	1.47	1.88	Truncated from HBLCBT to Hosur	23	15
125	271	DEPOT TO PTK	5.59	3.71	1.88	Truncated from HDMC to HBL CBT	30	15
126	208	HOSUR	4.88	3.79	1.09	Truncated from OCBS HBL to Navanagar	30	15
127	63	GOPANAKOPPA -NOR	13.25	5.05	8.2	Truncated from OCBS HBL to Hosur	30	15
128	40	HUBLI	5.67	3.79	1.88	Truncated from HBL CBT to OCBS HBL	14	15

Total 181 Transit services passing through proposed BRT corridor among them:

- 12 services are splitted into two parts ( in between segment are eliminated)
- 35 Services are terminated
- 128 Services are truncated from origin or destination point
- 6 Services are passing through BRT corridor

### 1.6 Annexure: List of Existing services needed to Terminated along proposed feeder network

Services needed to be terminated along proposed feeder network					
SR No.	Route No.	Description	HDW	Speed	Length(Km)
1	1	HBL CBT - AKSHAY COLONY	30	15	6.13
2	6	HBL CBT - ARUNA COLONY	122	15	7.52
3	7	HBL CBT - BS NAGAR	31	15	5.91
4	10	HBL CBT - CEC	64	15	2.48
5	14	HBL CBT - GNR	30	15	7.67
6	15	HBL CBT - NANDGOKUL	30	15	8.72
7	16	DWD CBT -JALADARSHINI NAGAR	109	12	5.86
8	18	HBL CBT - J.P NAGAR	54	15	6.35
9	21	HBL CBT - KUMAR PARK	87	15	7.83
10	24	HBL CBT - MNJ NAGAR	20	15	6.42
11	31	HBL CBT - R.K NAGAR	30	15	7.98
12	35	HBL CBT - RENUKA NAGAR	54	15	9.07
13	37	CBT	36	12	5.71
14	38	DWD CBT -N.B.HOSTEL	102	12	5.38
15	48	CBT	36	12	3.98
16	49	DWD CBT -R.K NAGAR	53	12	3.94
17	61	DWD CBT -SHRINAGAR X	47	12	4.26
18	65	DWD CBT -TAIWAK	273	12	23.44
19	65	BWD AGASI	30	0.01	23.44
20	68	CBT	36	12	5.2
21	72	CBT	36	12	5.25
22	99	DWD CBT	36	12	4.44
23	164	CBT	30	15	13.26
24	173	OBS - GANDHINAGAR	30	15	5.42
25	176	HBL CBT - GOKUL	34	15	8.44
26	177	OBS - GOKUL	30	15	6.43
27	180	HBL CBT - CBT (VIA MNR)	30	15	5.98
28	199	OBS - LOHIYANAGAR	30	15	5.54
29	203	HUBLI	60	0.01	12.59
30	217	HBL CBT - PADMRAJANAGAR	30	15	6.36
31	299	OBS - KEC	30	15	5.15

32	302	OBS - NGKL	30	15	6.71
33	316	PTK NAGAR - GANDHINAGAR	30	15	4.7
34	323	RGN - BSN	30	15	4.8
35	354	HOR DOWN - ANANDNAGAR DOWN	30	15	3.78
36	446	HBL CBT - PADMARAJ NAGAR	30	15	6.36

### 1.7 Annexure: List of Existing services needed to Truncated along proposed feeder network

Services needed to be truncated along proposed feeder BRT service								
SR No.	Route No.	Description	Initial Route Length(KM)	Change d Length (KM)	Truncated length (KM)	Changes	H D W	Sp eed
1	20	CBT	6.42	5.3	1.12	Truncated from DWD CBT to KCD	36	12
2	21	DWD CBT - KELIGERI J.C	7.83	6.73	1.1	Truncated from DWD CBT to KCD	70	12
3	22	CBT	4.1	2.98	1.12	Truncated from DWD CBT to KCD	36	12
4	32	DWD CBT - BANASHRI NAGAR	5.13	4.01	1.12	Truncated from DWD CBT to KCD	36	12
5	39	DWD CBT - NEHRU NAGAR	4.82	1.84	2.98	Truncated from DWD CBT to Shrinagar cross	16 7	12
6	53	DWD CBT - SADANAKERI	3.49	2.37	1.12	Truncated from DWD CBT to KCD	30	12
7	60	DWD CBT - SAMPIGENAGAR	4.8	3.68	1.12	Truncated from DWD CBT to KCD	50	12
8	63	CBT	5.56	3.73	1.83	Truncated from DWD CBT to Saptapur	36	12
9	81	CBT	6.83	3.99	2.84	Truncated from DWD CBT to Saptapur	36	12
10	200	CBT	33.79	25.0 5	8.74	Truncated from DWD CBT to Vijaya bank	30	15
11	209	HOSUR	6.81	4.44	2.37	Truncated from DWD CBT to RWH	30	15
12	228	CBT - SARASWATIPUR	23.1	14.2 4	8.86	Truncated from DWD CBT to Vijaya bank	60	15



13	352	KMC TO ANANDNAGAR	9.82	8.93	0.89	Truncated from DWD CBT to RWH	30	15
14	2	DWD CBT TO AGRI UNIVERSITY	5.9	3.52	2.38	Truncated from DWD CBT to NCBS	17	12
15	77	DWD CBT - YATTINGUDDA	7.15	4.64	2.51	Truncated from DWD CBT to NCBS	92	12
16	101	DWD CBT	5.63	3.92	1.71	Truncated from DWD CBT to NCBS	36	12
17	310	DWR RLY STN	13.61	9.05	4.56	Truncated from DWD Rly to NCBS	36	12

Total 53 Existing Transit services passing through proposed Feeder BRT services among them:

- 36 Services are terminated
- 17 Services are truncated

### 1.8 Annexure: List of Proposed BRT stops

Proposed BRT Stop Details & Chainage				
No	Bus stop locations	Stop Code	Chainage	Type
1	HBL CBT	22050	-2+780	Bus-stop
2	Hubli Rly Station	30080 / 30084	-1+880	Bus-stop
3	Nehru Stadium	30088	-1+ 290	Bus-stop
4	Rani Chennamma	30094	-0+750	Interchange
5	IT Park	30078 / 30074	-0+350	Bus-stop
6	Hosur Interchange	30071	0+250	Interchange
7	Govt. Tech School	30062	0+700	Bus-stop
8	KLE College	30058	1+050	Bus-stop
9	Shrushtha Hospital	30057	1+375	Bus-stop
10	PCJ Science College	30056	1+800	Bus-stop
11	Tata Motors	30055	2+200	Bus-stop
12	Unkal Cross	30054	2+750	Bus-stop
13	Shri Anjaneya Temple	30053	3+260	Bus-stop
14	Unkal Lake	30052	3+700	Bus-stop
15	Naveen Hotel	30051	4+300	Bus-stop
16	Bhairikoppa Underpass	30050	4+720	Bus-stop
17	Bhairikoppa Dargha	30049	5+320	Bus-stop
18	Shantiniketan Layout	30048	5+770	Bus-stop
19	APMC	30047	6+320	Bus-stop
20	Vidhyarthi Bhawan	30046	6+770	Bus-stop
21	Cancer Hospital	30045	7+265	Bus-stop

22	Navanagar	30044	7+765	Bus-stop
23	RTO	30043	8+320	Bus-stop
24	Iskon Temple	30041	9+040	Bus-stop
25	IOCL	30040	9+665	Bus-stop
26	Unknown 01	30039	10+175	Bus-stop
27	Sanjivani van	30038	10+750	Bus-stop
28	Nevalur Station	30037	11+325	Bus-stop
29	SDM Hospital	30036	11+830	Bus-stop
30	SDM Dental College	30034	12+610	Bus-stop
31	Nevalur Lake	30033	14+150	Bus-stop
32	Unknown 02	30032	15+025	Bus-stop
33	Yalakki	30031	15+465	Bus-stop
34	Gandhinagar	30030	16+060	Bus-stop
35	Vidyagiri	30024	16+760	Bus-stop
36	Bye Pass more	30023	17+200	Bus-stop
37	Bagalkot	30019	17+600	Bus-stop
38	NTTF	30017	18+040	Bus-stop
39	Court Circle	30015	18+490	Bus-stop
40	Jubilee Circle	30012	19+000	Bus-stop/Interchange with feeder
41	Dharwad CBT	30007	19+450	Bus-stop

## 2 Annexure: Financial Analysis

### 2.1 Annexure: Key Assumptions for BRT System Alternative

#### Bus

Bus Type	Share in total BRT PAX	Bus cost (Rs lakh)	
Regular Service	38.3%	35	
Express Service	61.7%	35	
Housekeeping Charges (Rs/Bus St/month)	4000		
Increase in Housekeeping charges pa	5.0%		
Passenger Tax	1%		
Admin Expenses (Rs / KM)	1	OR	
Admin Expenses (% of annual revenue)	2%		

#### SPV Staff and Salaries

Employee	No.	Salary pm	Total Sal
General Manager	1	75000	75000
Dy General Manager	1	50000	50000
Manager +depot manager	6	40000	240000
Ass. Manager	6	30000	180000
Others	10	10000	100000
Other staff expenses			250000
Total			895000
Total (Rs Lakh)	24		8.95
Annualised (Rs Lakh)			107.4

**Junction and Security Staff**

Security staff per junction	4
Security Staff per Bus Station in 24 hrs	4
Salary of Security Staff pm (2011 prices)	7500
No. of Junctions entire route	31

**Annual Escalation in Salaries of all staff** **8%**

Inflation in O&M Costs 6%

<b>Ramp up of Staff Costs</b>	
First Year	60%
Second Year	80%
Third Year Onwards	100%

**Escalation in Bus Variable Costs (Rs / Km) for BRT**

Item	Share (%) of total cost	Linked to	Escalation Factor
Fuel	35%	Fuel	5.00%
O&M	65%	WPI	6.50%
Average			5.98%

**Operations**

Km operated per day per bus (blended) under BRT	350
Km operated per day per bus under Non BRT	275
Number of effective full days	340
Passengers Trips per day per bus in BRT	1600
Passenger Trips per Day per bus in non BRT	1000

**Other Assumptions**

Commercial Revenue (% of fare Rev)	<b>5%</b>
ITMS Expenses (% of fare revenue)	<b>10%</b>
Depreciation for Buses	<b>14%</b>
Depreciation for other assets (pa, WDV)	<b>5%</b>
Income Tax Rate	<b>30%</b>

## 2.2 Annexure: Details of BRTS Project Cost

Sr No.	Particular	Project Cost -Phase 1 (Rs. Crore)
1	Trunk corridor (CBT connection)	18.45
2	Foot over bridges and VuP	37.50
3	Lighting KRDCCL corridor	8.00
4	Bus stations	23.45
5	Terminals & Depots (BRT)	31.43
6	Terminals and Depots (Feeder services)	62.29
7	Interchanges	8.80
8	ITS Applications (Trunk)	30.06
9	NMT facilities	9.00
10	Rolling stock (BRT trunk and feeder)	85.10
11	ATCS	7.00
12	Elevated corridor	0.00
13	BRTS Infrastructure on KRDCCL corridor	72.00
	<b>Sub - Total</b>	<b>393.08</b>
	Contingency (15%)	58.96
	Total with contingency	452.04
	Add: Approx Land Cost and R&R	240.00
	<b>Total with land cost and R&amp;R</b>	<b>692.04</b>

### 3 Annexure: Economic Analysis

#### 3.1 Annexure: Financial and Economic Outcome of different Rail based Urban Transport System

Name of Urban Transport System	FIRR	EIRR	Project Cost (Rs. crore)
Transmilenio, Bogota, Ph I and II	-	24%	USD 1133 m*
Megabus, Pereira	-	45%	USD 211 m*
Mio, Cali	-	15%	USD 194 m*
Ahmedabad BRT	-	45%	
Mexico Line 3	-	16%	-
Delhi Metro Phase-1 and Phase-II	17%	23.88%	14432
Chennai Metro	0.86%	16.22%	14750
Hyderabad Metro- All three Corridors	11.36%	25.60%	9696
Ahmedabad Metro	4.64%	26.95%	4295
Pune Metro	1.93%	18.04%	9534
Jaipur Metro	1.27%	18.70%	7531
Bangalore Metro	8.20%	22.30%	8158
Eastern DFC (Khurja- Kanpur Section)	14%	22%	6551
Mumbai Urban Transport Project	-	17%	4311
Regional Rail Transit System	5%	18.5%	25150

*\*Net Present Value of all Benefits: Source: Project DPRs of respective projects except in case of RRTS, Mumbai Urban Transport Project and Eastern DFC. PAD in case of Mumbai Urban Transport Project and Eastern DFC.*

It is to be noted that economic analysis of above project captures major benefits such as Time savings, savings in VOC, Pollution reduction benefits, accident reduction benefits, comfort benefits etc. The savings in capex of alternate transport mode (i.e road infrastructure) in case of rail based transport system. The economic analysis chapter of Hubli Dharwad BRTS project tried to capture all such major benefits except savings in capex of alternate transport mode and comfort benefits Captured in MUTP.

### 3.2 Annexure: Cash flow for Economic Analysis.

(Amount in Rs Lakh)

Year	Economic Cost			Benefits												
	Infrastructure Capital Cost	Incremental Maintenance and Fare Collection Cost (With project)	Total Cost	VOC Savings				VOT Savings				Accident Benefits	Savings in Carbon Emissions	Savings in VOC due to reduction in dead KM (Owing to Hosur Depot)	Amenity benefits due to Depot	Net Benefit
				Savings in VOC Mixed Lane Traffic	Savings In voc (Buses)	VOC savings to Modal Shift Traffic	Total VOC Savings	Time Savings Mixed Lane Traffic	Time Savings (Buses)	Time savings to Modal Shift Traffic	Total Time Savings					
2012	31142		31142									0	0			-31142
2013	31142		31142									0	0			-31142
2014		1033	1033	0	1290	1227	2517	0	4680	35	4716	205	107	71	408	6991
2015		1102	1102	837	1387	2925	5148	953	6437	0	7390	205	118	74	412	12245
2016		1169	1169	1104	1486	4628	7218	1030	6598	0	7628	205	129	76	416	14504
2017		1241	1241	1614	1614	6500	9728	1137	7354	0	8491	205	140	80	420	17823
2018		1309	1309	2560	1763	8693	13017	1939	8232	151	10322	205	152	83	425	22894
2019		1381	1381	2864	1886	10808	15558	2061	8397	176	10634	205	163	86	429	25693
2020		1448	1448	2721	1999	12700	17421	1482	10874	195	12552	205	175	89	433	29426
2021		1519	1519	3047	2143	14687	19877	1581	11872	213	13667	205	187	93	437	32946
2022		1594	1594	3489	2351	16841	22680	1698	12109	230	14038	205	199	97	442	36066
2023		1660	1660	3807	2540	18943	25290	1799	16107	244	18150	205	209	101	446	42740
2024		1730	1730	4558	2764	23350	30672	2350	16268	3864	22482	205	220	105	451	52404
2025		1788	1788	4934	3001	25353	33288	2487	18720	4176	25384	205	231	109	455	57883
2026		1849	1849	5326	3347	27424	36097	2632	18907	4501	26041	205	242	113	460	61308
2027		1912	1912	5755	3729	29567	39050	2782	24591	4837	32211	205	252	118	464	70388
2028		1978	1978	6120	4073	31817	42010	2920	24837	5187	32944	205	263	122	469	74034
2029		2029	2029	7339	4422	36331	48093	3455	28414	10811	42680	205	274	127	474	89823
2030		2082	2082	7779	4823	38186	50788	3625	28698	11353	43676	205	285	132	478	93483
2031		2137	2137	8235	5328	40078	53641	3803	34854	11912	50570	205	298	138	483	103198



2032		2174	2174	8724	5822	41221	55767	3955	35203	12245	51403	205	308	143	488	106139
2033		2212	2212	9126	6282	42556	57964	4084	37828	12636	54548	205	318	149	493	111465
2034		2251	2251	9936	6891	49119	65946	4463	38055	20502	63020	205	329	155	498	127902
2035		2291	2291	10388	7501	50685	68574	4609	43501	21165	69275	205	338	161	503	136765
2036		2331	2331	10852	7896	52288	71036	4759	43762	21842	70363	205	350	168	508	140298
2037		2352	2352	11690	8269	52879	72839	4974	44025	22113	71113	205	359	174	513	142851
2038		2373	2373	12079	8839	53509	74427	5101	44289	22388	71778	205	367	181	518	145103
2039		2394	2394	13855	9325	60163	83343	6609	44555	31825	82989	205	375	189	544	165250
2040		2415	2415	14302	9783	60925	85009	6775	44822	32241	83839	205	383	196	544	167761
2041		2436	2436	14759	10389	61665	86812	6945	45091	32663	84699	205	392	204	544	170419
2042		2458	2458	15384	11326	62445	89155	7156	45361	33089	85606	205	392	212	544	173656
2043		2480	2480	15384	12370	63235	90989	7156	45634	33520	86309	205	392	221	544	176179

### 3.3 Annexure: Speed of Buses under With and Without Project Option

Vehicle Type	Speed (Km/Hr)									
	2014	2015	2016	2020	2021	2025	2030	2035	2040	2043
<b>With Project Option</b>										
Ordinary Bus	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Express Bus	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5
<b>Without Project Option</b>										
Ordinary Bus	23.9	22.5	22.5	20.0	19.8	17.1	14.4	11.7	11.7	11.7
Express Bus	26.5	25.0	25.0	24.0	22.0	19.0	16.0	13.0	13.0	13.0