List of Tables

Table No.	Title	Page No.
2.1	Limits of water uses due to water quality degradation (Chapman,1996)	9
2.2	Typical objectives of water quality assessment operations	11
2.3	Parameters and frequency of monitoring in surface waters	18
2.4	Measurement methods, units and for different parameters used in water quality monitoring	20
2.5	NSF Water Quality Index ranking	26
2.6	Importance rate and parameter's weight in NFSWQI	26
2.7	Water quality ranking for British Columbia water quality index	28
2.8	An overview of types of indices, their sub- indices, aggregation functions (Bharti & Katyal, 2011)	31
3.1	Rating Scale	50
3.2	Water quality parameters and their assigned Weighing factors	52
3.3	Indicator Parameters for different aspects of Urbanization	55
3.4	Points for Population Size in a district	60
3.5	Points for Population Density in a district	61
3.6	Points for number of Industries in a district	61
3.7	Points for % of Built-up area in a district	62
3.8	Points for Roofing Types in a district	62
3.9	Points for Electricity Facilities in a district	63
3.10	Points for Available Educational Facilities in a district	63
3.11	Points for Available Health Services in a district	63
3.12	Points for Assets in a district	64
3.13	Classes of Urbanicity developed in the study	70
4.1	Elevation zones	75
4.2	Length of major rivers (GIS Calculated)	78
4.3	Land use/ land cover statistics (2005-06)	79
4.4	Sub-basin wise watersheds	80

4.5	Data for the water quality parameters for Station S_1 **(**V. N Bridge, Ahmedabad)	86
4.6	Data for the water quality parameters for Station S_2 **(**Shedhi at Kheda)	87
4.7	Data for the water quality parameters for Station S_3 **(**Kheroj bridge, Sabarkantha)	88
4.8	Data for the water quality parameters for Station S_4 **(**Miroli village, Ahmedabad district)	90
4.9	Data for the water quality parameters for Station S_5 (Mahudi Jain temple, Gandhinagar district)	91
4.10	Data base for Parameters for measurement of Urbanization level of districts located in Sabarmati river basin	93
4.11	System of application for Sabarmati river	95
5.1	Water quality index for the stations under study	97
5.2	Urbanization index computation for the districts under study	108
5.3	Results of Urbanization Index for the districts under study	108
5.4	Area Measurements for Catchment of the stations	115
5.5	Urbanization Index for station S_1	116
5.6	Urbanization Index for station S_4	117
5.7	Results of Urbanization Index of the catchment area of the station	118
5.8	Results of Water Quality Index and Urbanization Index of the catchment area of the station	118
5.9	Water quality parameters and Urbanization Index correlation data	119
5.10	Correlation matrix for water quality parameters and Urbanization index	120
5.11	Sum of Square of Error for different types of Regression	124
6.1	Computation of weightage of water quality parameters using experts opinion	129
6.2	Water quality index for the stations computed using Delphi technique	130
6.3	Urbanization level given by Census of India, 2011	132
6.4	Category of Urbanization level according to Census of India, 2011 and Urbanization Index model developed in the present study	133
6.5	Salient Features of Mahi Basin	134
6.6	State wise distribution of the drainage area of Mahi river	134
6.7	Data of Station M_1 (Kadana Dam)	137

6.8	Data of Station M_2 (Sevalia)	138
6.9	Data of Station M_3 (Umeta Bridge)	139
6.10	Data of Station M_4 (Mujpur)	140
6.11	Data for Parameters for measurement of Urbanization level of districts located on Mahi river basin.	141
6.12	Water Quality Index for the stations on Mahi river	142
6.13	Urbanization index computation for the districts under study	144
6.14	Area Measurements for Catchment of the stations on Mahi river	149
6.15	Urbanization Index computation for station M_1	153
6.16	Urbanization Index computation for station M_2	154
6.17	Urbanization Index computation for station M_3	155
6.18	Urbanization Index computation for station M_4	157
6.19	Results of Water Quality Index and Urbanization Index of the stations on Mahi river	159
6.20	Sum of Square of Error for different types of Regression	161
6.21	Regression Statistics	163
6.22	ANOVA	164
6.23	Regression coefficients	164