Tacloban City
COMPREHENSIVE LAND USE PLAN
2017 – 2025

VOLUME 3

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CHAPTER 1 DEMOGRAPHY

1.1 Population Size and Growth Rate

Tacloban City records a consistently growing population count since 1903. The highest recorded growth rate for the period 1903 - 2014 was 4.90% during census year 1980 while the lowest was 1.07% in censal year 1975.

Table 1. 1 Average Rate of Annual Growth Rate By Census Year 1903-2014 Tacloban City

CENSUS YEAR	POPULATION	GROWTH RATE
1903	11,943	1.78
1918	15,787	3.47
1939	31,233	3.92
1948	45,421	4.25
1960	53,551	1.38
1970	76,531	3.64
1975	80,707	1.07
1980	102,523	4.90
1990	136,890	2.93
1995	167,310	3.84
2000	178,639	1.41
2007	217,199	2.73
2010	221,174	2.16
2014	239,938	2.13
2015	242,809	2.13

Source: PSA

1.1.1 Total Household Population and Number of Households

As of 2014 census, a year after Super typhoon Yolanda devastated the city, the total household population was counted at 239,938 while the total number of households was 50,890. The 2014 census shows a total household population of 239,938 as against the 2010 census of 221,174. It shows an increase of 18,764 household population. The table below shows the projected household population will reach 302,542 by the year 2025 at an average growth rate of 2.13 and the projected number of households will reach 70,359 by year 2025 using the participation rate of the 2014 census at the average household size of 4.3 members.

Table 1. 2 Actual and Projected Household Population and No. of Households, 2010, 2010, 2014 and 2015-2025 Tacloban City

YEAR	TOTAL HOUSEHOLD POPULATION	NO. OF HOUSEHOLD
2010	**221,174**	**45,478**
2014	**239,938**	**50,890**
2015	245,049	56,988
2016	250,268	58,202
2017	255,599	59,442
2018	261,043	60,708
2019	266,603	62,001
2020	272,282	63,321
2021	278,082	64,670
2022	284,005	66,048
2023	290,054	67,454
2024	296,232	68,891
2025	302,542	70,359

Source: PSA/CPDO Computation of Total Household Population using AGR of 2.13: bold numbers are actual population count.Projected No. of HHs from 2016 onward uses participation rate of the 2014 census.

Table 1. 3 Actual and Projected Number of Households by Barangay 2014, 2015-2025 Tacloban City

BRGYS.	NO. OF HH	PROJECTED NO. OF HH										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2	87	97	100	102	104	106	108	111	113	115	118	120
3	567	635	649	662	677	691	706	721	736	752	768	784
1&4	251	281	287	294	300	306	313	319	326	333	340	347
5	76	85	87	89	91	93	95	97	99	101	103	105
6	256	287	293	300	306	312	319	326	333	340	347	355
6-A	367	411	420	429	438	447	457	466	476	486	497	507
7	68	76	77	79	81	82	84	86	88	90	92	94
8	54	60	62	63	64	66	67	68	70	71	73	74
100	634	710	725	741	756	772	789	806	823	840	858	877
101	306	342	350	357	365	372	380	388	397	404	413	423
102	103	115	118	120	123	125	128	131	133	136	139	143
103	879	984	1005	1026	1048	1070	1093	1116	1140	1164	1189	1216
103-A	113	127	129	132	135	138	141	144	147	150	153	156
104	470	526	537	548	560	572	584	597	609	622	636	649
105	343	385	393	401	410	418	427	437	446	455	465	477
106	326	366	374	382	390	398	407	415	424	433	443	453
107	243	273	279	285	291	297	303	310	316	323	330	338
108	210	235	240	245	250	256	261	267	272	278	284	291
12	471	527	538	550	561	573	586	598	611	624	637	650
13	23	25	26	26	27	28	28	29	29	30	31	30
14	34	39	39	40	41	42	43	44	45	46	47	48

BRGYS.	NO. OF HH	PROJECTED NO. OF HH										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
15	20	22	23	23	24	24	25	25	26	26	27	27
16	52	58	60	61	62	64	65	66	68	69	71	72
17	22	24	25	25	26	27	27	28	28	29	30	29
18	47	53	54	55	56	57	59	60	61	62	64	66
19	52	58	59	60	61	63	64	65	67	68	70	71
20	104	117	119	122	124	127	130	132	135	138	141	144
21	63	70	71	73	75	76	78	79	81	83	85	86
21-A	56	63	65	66	67	69	70	72	73	75	76	78
22	19	21	22	22	23	23	24	24	25	25	26	26
23	100	112	114	116	119	121	124	127	129	132	135	138
24	63	71	72	74	76	77	79	80	82	84	86	87
25	299	335	342	349	356	364	372	380	388	396	405	413
26	39	44	45	46	47	48	49	50	51	52	53	53
27	50	56	57	58	60	61	62	64	65	66	68	70
28	64	72	73	75	76	78	80	81	83	85	87	88
29	40	45	46	47	48	49	50	51	52	53	54	56
30	25	28	29	29	30	31	31	32	33	33	34	33
31	68	76	78	80	81	83	85	87	88	90	92	94
32	24	27	28	29	29	30	30	31	32	32	33	34
33	45	50	51	52	54	55	56	57	58	59	61	62
34	33	37	38	39	39	40	41	42	43	44	45	46
35	42	47	48	49	50	51	52	53	54	55	56	56
35-A	99	111	114	116	119	121	124	126	129	132	135	137
36	275	308	314	321	328	335	342	349	357	364	372	380
37	746	835	853	871	889	908	928	947	968	988	1009	1031
37-A	259	290	297	303	309	316	323	330	337	344	351	359
38	81	90	92	94	96	98	101	103	105	107	109	111
39	648	726	741	757	773	790	806	824	841	859	877	896
40	37	42	43	44	45	46	47	48	49	50	51	51
41	20	22	23	23	24	24	25	25	26	26	27	27
42	192	215	219	224	229	234	239	244	249	254	260	265
43	84	94	96	98	100	102	105	107	109	111	114	116
43-A	237	265	271	277	282	288	295	301	307	314	320	327
43-B	220	246	251	257	262	268	273	279	285	291	297	304
44	95	107	109	111	113	116	118	121	123	126	129	131
44-A	48	54	55	56	57	58	60	61	62	64	65	65
45	54	61	62	63	65	66	67	69	70	72	73	75
46	92	103	105	107	110	112	114	117	119	122	125	127
47	123	138	141	144	147	150	153	157	160	164	167	171
48	80	90	91	93	95	97	99	102	104	106	108	110
49	414	463	473	483	494	504	515	526	537	549	560	572
50	56	63	64	65	67	68	70	71	73	74	76	77

BRGYS.	NO. OF HH	PROJECTED NO. OF HH										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
50-A	159	178	182	186	190	194	198	202	206	211	215	220
50-B	179	200	205	209	214	218	223	227	232	237	242	247
51	70	78	80	82	83	85	87	89	91	92	94	97
52	232	259	265	270	276	282	288	294	301	307	313	320
53	141	157	161	164	168	171	175	179	182	186	190	194
54	174	195	199	203	207	212	216	221	226	230	235	240
55 & 55-A	184	206	210	215	219	224	229	234	239	244	249	254
56	260	291	298	304	310	317	324	331	338	345	352	360
57	253	283	289	295	301	308	314	321	328	335	342	350
58	185	207	212	216	221	225	230	235	240	245	250	256
59	713	799	816	833	851	869	888	907	926	946	966	987
60	238	267	272	278	284	290	296	302	309	315	322	329
60-A	190	213	218	222	227	232	237	242	247	252	258	263
61	159	178	182	186	190	194	198	202	206	211	215	220
62	318	356	364	372	380	388	396	404	413	422	431	440
63	524	587	599	612	625	639	652	666	680	695	710	725
64	492	550	562	574	586	599	612	625	638	652	665	680
65	308	345	352	360	367	375	383	391	400	408	417	426
66	274	307	313	320	327	334	341	348	356	363	371	378
66-A	273	306	313	319	326	333	340	347	355	362	370	378
67	279	312	319	326	333	340	347	354	362	370	378	385
68	436	489	499	510	521	532	543	555	567	579	591	604
69	539	604	617	630	643	657	671	685	700	715	730	745
70	219	245	250	256	261	267	272	278	284	290	296	302
71	1247	1396	1426	1456	1487	1519	1551	1584	1618	1653	1688	1724
72	159	178	182	186	190	194	198	202	206	211	215	220
73	88	98	100	102	105	107	109	111	114	116	119	121
74	1837	2057	2101	2146	2192	2238	2286	2335	2385	2435	2487	2541
75	161	180	184	188	192	196	200	204	208	213	217	222
76	195	218	223	227	232	237	242	247	253	258	263	269
77	681	763	779	795	812	830	847	865	884	903	922	942
78	485	544	555	567	579	592	604	617	630	644	657	671
79	340	381	389	397	406	414	423	432	441	451	460	470
80	283	317	323	330	337	344	352	359	367	375	383	391
81	174	195	200	204	208	213	217	222	226	231	236	241
82	306	343	350	358	365	373	381	389	398	406	415	423
83	561	629	642	656	670	684	699	714	729	744	760	776
83-A	378	423	432	441	451	460	470	480	490	501	511	522
84	1339	1499	1531	1564	1597	1631	1666	1701	1737	1774	1812	1851
85	292	327	334	341	348	355	363	371	379	387	395	404
86	250	280	286	292	298	305	311	318	325	331	338	346
87	682	764	780	797	814	831	849	867	886	905	924	943

BRGYS.	NO. OF HH	PROJECTED NO. OF HH										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
88	1492	1671	1707	1743	1780	1818	1857	1896	1937	1978	2020	2063
89	916	1026	1048	1070	1093	1116	1140	1164	1189	1214	1240	1266
90	18	20	21	21	22	22	23	23	24	24	25	25
91	2194	2457	2509	2562	2617	2673	2730	2788	2847	2908	2970	3033
92	998	1118	1142	1166	1191	1216	1242	1269	1296	1323	1351	1380
93	1112	1245	1272	1299	1326	1355	1383	1413	1443	1474	1505	1537
94	553	619	632	645	659	673	688	702	717	732	748	764
95	1521	1703	1739	1776	1814	1853	1892	1932	1973	2016	2058	2102
96	1450	1624	1659	1694	1730	1767	1804	1843	1882	1922	1963	2005
97	702	787	803	820	838	856	874	893	912	931	951	972
98	290	325	332	339	346	353	361	368	376	384	392	401
99	1203	1347	1375	1404	1434	1465	1496	1528	1561	1594	1628	1663
109	1138	1274	1301	1329	1357	1386	1416	1446	1476	1508	1540	1573
109-A	1602	1794	1832	1871	1911	1952	1994	2036	2079	2124	2169	2215
110	1139	1276	1303	1331	1359	1388	1418	1448	1479	1510	1542	1575
5-A	86	96	98	100	102	104	106	109	111	113	116	118
36-A	165	185	189	193	197	201	206	210	215	219	224	229
42-A	536	600	613	626	639	653	667	681	695	710	725	741
48-A	120	135	138	140	143	146	150	153	156	159	163	166
48-B	110	123	126	129	131	134	137	140	143	146	149	152
51-A	48	54	55	56	57	59	60	61	63	64	65	66
54-A	163	183	187	191	195	199	203	207	212	216	221	226
56-A	128	143	146	149	153	156	159	163	166	170	173	177
59-A	848	950	970	990	1012	1033	1055	1078	1100	1124	1148	1173
59-B	156	174	178	182	186	190	194	198	202	206	211	216
62-A	1160	1300	1327	1355	1384	1414	1444	1475	1506	1538	1571	1605
62-B	972	1089	1112	1135	1160	1184	1210	1235	1262	1289	1316	1344
83-B	607	679	694	709	724	739	755	771	787	804	821	839
83-C	821	920	940	960	980	1001	1022	1044	1066	1089	1112	1137
95-A	830	930	950	970	990	1012	1033	1055	1078	1101	1124	1148
8-A	42	47	48	49	50	51	52	54	55	56	57	57
23-A	113	127	130	132	135	138	141	144	147	150	153	157
94-A	330	370	377	385	394	402	411	419	428	438	447	456
TOTAL	**50,890**	**56,988**	**58,202**	**59,442**	**60,708**	**62,001**	**63,321**	**64,670**	**66,048**	**67,454**	**68,891**	**70,359**

Source: PSA

1.2 Rural-Urban Household Population Distribution

Of the 138 barangays in Tacloban City, 17 are rural and 121 urban barangays. As of the 2014 census, the city's household population of 239,938 is concentrated

in the urban barangays with a total urban household population count of 202,251 while the rural population count is 37,687. In percentage distribution, urban population is 84.30% of the total population while 15.70% accounts for the population in the rural barangays. In the following table, the projected urban population for 2020-2025 is shown given the rate of annual increase of 2.13%. Barangay 91, Abucay has the biggest population at 10,343 while Brgy. 22 located at the commercial area of Tacloban has the least at 90. After Super typhoon Yolanda, many people relocated their families in Barangay 91 where the New Bus Terminal is located providing access to several livelihood opportunities to the people residing at the nearby areas.

Table 1. 4 Actual and Projected Rural-Urban Household Population Distribution by Barangay and by Year 2014 – 2025 Tacloban City

RURAL BRGYS.	LAND AREA	HH. POP. 2014	PROJECTED HH POPULATION										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
12	46.84	2,219	2,266	2,315	2,364	2,414	2,466	2,518	2,572	2,627	2,682	2,740	2,798
37-A	39.79	1,223	1,249	1,276	1,303	1,331	1,359	1,388	1,417	1,448	1,478	1,510	1,542
93	1,110.84	5,242	5,354	5,468	5,584	5,703	5,825	5,949	6,075	6,205	6,337	6,472	6,610
94-A	135.84	1,555	1,588	1,622	1,656	1,692	1,728	1,765	1,802	1,841	1,880	1,920	1,961
97	389.58	3,312	3,383	3,455	3,528	3,603	3,680	3,758	3,839	3,920	4,004	4,089	4,176
98	970.51	1,367	1,396	1,426	1,456	1,487	1,519	1,551	1,584	1,618	1,653	1,688	1,724
99	225.17	5,670	5,791	5,914	6,040	6,169	6,300	6,434	6,571	6,711	6,854	7,000	7,149
100	432.05	2,989	3,053	3,118	3,184	3,252	3,321	3,392	3,464	3,538	3,613	3,690	3,769
101	203.74	1,441	1,472	1,503	1,535	1,568	1,601	1,635	1,670	1,706	1,742	1,779	1,817
102	117.55	484	494	505	516	527	538	549	561	573	585	598	610
103	600.66	4,142	4,230	4,320	4,412	4,506	4,602	4,700	4,800	4,903	5,007	5,114	5,223
103A	494.37	534	545	557	569	581	593	606	619	632	646	659	673
104	397.84	2,214	2,261	2,309	2,359	2,409	2,460	2,512	2,566	2,621	2,676	2,733	2,792
105	817.25	1,619	1,653	1,689	1,725	1,761	1,799	1,837	1,876	1,916	1,957	1,999	2,041
106	585.70	1,539	1,572	1,605	1,639	1,674	1,710	1,746	1,784	1,822	1,860	1,900	1,941
107	188.88	1,148	1,172	1,197	1,223	1,249	1,276	1,303	1,331	1,359	1,388	1,417	1,448
108	308.18	989	1,010	1,032	1,054	1,076	1,099	1,122	1,146	1,171	1,196	1,221	1,247
TOTAL	**7,064.79**	**37,687**	**38,489**	**39,311**	**40,147**	**41,002**	**41,876**	**42,765**	**43,677**	**44,611**	**45,558**	**46,529**	**47,521**

URBAN BRGYS.	LAND AREA	HH. POP. 2014	PROJECTED HH POPULATION										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1 & 4	36.54	1,184	1,209	1,235	1,261	1,288	1,316	1,344	1,372	1,401	1,431	1,462	1,493
2	15.44	410	419	428	437	446	456	465	475	485	496	506	517
3	60.81	2,674	2,731	2,789	2,849	2,909	2,971	3,034	3,099	3,165	3,233	3,301	3,372
5	2.85	358	366	373	381	389	398	406	415	424	433	442	451
5A	2.32	404	413	421	430	440	449	458	468	478	488	499	509
6	12.25	1,209	1,235	1,261	1,288	1,315	1,343	1,372	1,401	1,431	1,462	1,493	1,524
6A	3.04	1,730	1,767	1,804	1,843	1,882	1,922	1,963	2,005	2,048	2,091	2,136	2,181
7	1.38	320	327	334	341	348	356	363	371	379	387	395	403
8	1.67	253	258	264	270	275	281	287	293	299	306	312	319
8A	1.23	199	203	208	212	217	221	226	231	236	241	246	251
13	1.21	107	109	112	114	116	119	121	124	127	129	132	135
14	2.17	162	165	169	173	176	180	184	188	192	196	200	204
15	2.04	93	95	97	99	101	103	106	108	110	112	115	117
16	1.15	246	251	257	262	268	273	279	285	291	297	304	310
17	2.09	103	105	107	110	112	114	117	119	122	125	127	130
18	0.94	223	228	233	238	243	248	253	258	264	270	275	281
19	1.59	243	248	253	259	264	270	276	282	288	294	300	306
20	2.85	492	502	513	524	535	547	558	570	582	595	607	620
21	0.90	295	301	308	314	321	328	335	342	349	357	364	372
21A	1.65	266	272	277	283	289	296	302	308	315	322	328	335
22	1.13	90	92	94	96	98	100	102	104	107	109	111	113
23	1.64	470	480	490	501	511	522	533	545	556	568	580	593
23A	1.29	534	545	557	569	581	593	606	619	632	646	659	673
24	2.44	299	305	312	319	325	332	339	347	354	361	369	377

URBAN BRGYS.	LAND AREA	HH. POP. 2014	PROJECTED HH POPULATION										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
25	19.96	1,409	1,439	1,470	1,501	1,533	1,566	1,599	1,633	1,668	1,703	1,740	1,777
26	1.39	184	188	192	196	200	204	209	213	218	222	227	232
27	3.27	236	241	246	251	257	262	268	274	279	285	291	298
28	1.54	302	308	315	322	329	336	343	350	357	365	373	381
29	1.37	188	192	196	200	205	209	213	218	223	227	232	237
30	1.15	119	122	124	127	129	132	135	138	141	144	147	150
31	1.73	321	328	335	342	349	357	364	372	380	388	396	405
32	1.46	115	117	120	123	125	128	131	133	136	139	142	145
33	1.36	212	217	221	226	231	236	241	246	251	256	262	267
34	1.47	155	158	162	165	169	172	176	180	183	187	191	195
35	0.81	196	200	204	209	213	218	222	227	232	237	242	247
35-A	1.12	469	479	489	500	510	521	532	544	555	567	579	591
36	1.03	1,295	1,323	1,351	1,380	1,409	1,439	1,470	1,501	1,533	1,565	1,599	1,633
36-A	34.40	779	796	813	830	848	866	884	903	922	942	962	982
37	8.95	3,515	3,590	3,666	3,744	3,824	3,906	3,989	4,074	4,161	4,249	4,340	4,432
38	2.33	381	389	397	406	415	423	432	442	451	461	470	480
39	21.07	3,056	3,121	3,188	3,255	3,325	3,396	3,468	3,542	3,617	3,694	3,773	3,853
40	1.18	176	180	184	187	191	196	200	204	208	213	217	222
41	1.32	94	96	98	100	102	104	107	109	111	114	116	119
42	1.48	905	924	944	964	985	1,006	1,027	1,049	1,071	1,094	1,117	1,141
42-A	5.53	2,526	2,580	2,635	2,691	2,748	2,807	2,867	2,928	2,990	3,054	3,119	3,185
43	1.72	397	405	414	423	432	441	451	460	470	480	490	501
43-A	2.47	1,116	1,140	1,164	1,189	1,214	1,240	1,266	1,293	1,321	1,349	1,378	1,407
43-B	6.59	1,036	1,058	1,081	1,104	1,127	1,151	1,176	1,201	1,226	1,252	1,279	1,306

URBAN BRGYS.	LAND AREA	HH. POP. 2014	PROJECTED HH POPULATION										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
44	3.20	448	458	467	477	487	498	508	519	530	542	553	565
44-A	3.25	226	231	236	241	246	251	256	262	268	273	279	285
45	6.17	255	260	266	272	277	283	289	296	302	308	315	322
46	1.70	434	443	453	462	472	482	493	503	514	525	536	547
47	3.28	582	594	607	620	633	647	660	675	689	704	719	734
48	1.54	377	385	393	402	410	419	428	437	446	456	465	475
48-A	1.49	567	579	591	604	617	630	643	657	671	685	700	715
48-B	1.57	519	530	541	553	565	577	589	602	614	627	641	654
49	14.73	1,952	1,994	2,036	2,079	2,124	2,169	2,215	2,262	2,311	2,360	2,410	2,461
50	5.57	264	270	275	281	287	293	300	306	312	319	326	333
50-A	7.52	749	765	781	798	815	832	850	868	887	905	925	944
50-B	2.83	844	862	880	899	918	938	958	978	999	1,020	1,042	1,064
51	1.64	329	336	343	350	358	366	373	381	389	398	406	415
51-A	0.65	227	232	237	242	247	252	258	263	269	274	280	286
52	4.16	1,092	1,115	1,139	1,163	1,188	1,213	1,239	1,266	1,293	1,320	1,348	1,377
53	4.08	663	677	692	706	721	737	752	768	785	801	819	836
54	7.89	820	837	855	874	892	911	931	950	971	991	1,012	1,034
54-A	2.49	770	786	803	820	838	856	874	892	911	931	951	971
55	4.28	868	886	905	925	944	964	985	1,006	1,027	1,049	1,072	1,094
56	6.59	1,227	1,253	1,280	1,307	1,335	1,363	1,392	1,422	1,452	1,483	1,515	1,547
56-A	3.12	603	616	629	642	656	670	684	699	714	729	744	760
57	4.01	1,191	1,216	1,242	1,269	1,296	1,323	1,352	1,380	1,410	1,440	1,470	1,502
58	5.64	873	892	911	930	950	970	991	1,012	1,033	1,055	1,078	1,101

URBAN BRGYS.	LAND AREA	HH. POP. 2014	PROJECTED HH POPULATION										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
59	37.38	3,364	3,436	3,509	3,584	3,660	3,738	3,817	3,899	3,982	4,067	4,153	4,242
59-A	14.86	3,998	4,083	4,170	4,259	4,350	4,442	4,537	4,634	4,732	4,833	4,936	5,041
59-B	5.90	735	751	767	783	800	817	834	852	870	889	907	927
60	3.51	1,122	1,146	1,170	1,195	1,221	1,247	1,273	1,300	1,328	1,356	1,385	1,415
60-A	3.62	898	917	937	957	977	998	1,019	1,041	1,063	1,086	1,109	1,132
61	6.41	749	765	781	798	815	832	850	868	887	905	925	944
62	15.81	1,500	1,532	1,565	1,598	1,632	1,667	1,702	1,738	1,775	1,813	1,852	1,891
62A	16.60	5,471	5,588	5,707	5,828	5,952	6,079	6,209	6,341	6,476	6,614	6,755	6,898
62-B	16.60	4,583	4,681	4,780	4,882	4,986	5,092	5,201	5,312	5,425	5,540	5,658	5,779
63	14.52	2,472	2,525	2,578	2,633	2,689	2,747	2,805	2,865	2,926	2,988	3,052	3,117
64	9.57	2,318	2,367	2,418	2,469	2,522	2,576	2,630	2,686	2,744	2,802	2,862	2,923
65	9.40	1,452	1,483	1,515	1,547	1,580	1,613	1,648	1,683	1,719	1,755	1,793	1,831
66	4.08	1,291	1,318	1,347	1,375	1,405	1,434	1,465	1,496	1,528	1,561	1,594	1,628
66-A	3.64	1,289	1,316	1,344	1,373	1,402	1,432	1,463	1,494	1,526	1,558	1,591	1,625
67	5.54	1,315	1,343	1,372	1,401	1,431	1,461	1,492	1,524	1,557	1,590	1,624	1,658
68	8.92	2,058	2,102	2,147	2,192	2,239	2,287	2,335	2,385	2,436	2,488	2,541	2,595
69	32.42	2,542	2,596	2,651	2,708	2,766	2,825	2,885	2,946	3,009	3,073	3,138	3,205
70	4.49	1,032	1,054	1,076	1,099	1,123	1,147	1,171	1,196	1,222	1,248	1,274	1,301
71	80.13	5,879	6,004	6,132	6,263	6,396	6,532	6,671	6,814	6,959	7,107	7,258	7,413
72	15.57	750	766	782	799	816	833	851	869	888	907	926	946
73	4.29	414	423	432	441	450	460	470	480	490	500	511	522
74	115.38	8,662	8,847	9,035	9,227	9,424	9,625	9,830	10,039	10,253	10,471	10,694	10,922
75	17.50	757	773	790	806	824	841	859	877	896	915	935	955

URBAN BRGYS.	LAND AREA	HH. POP. 2014	PROJECTED HH POPULATION										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
76	15.11	918	938	958	978	999	1,020	1,042	1,064	1,087	1,110	1,133	1,158
77	70.21	3,211	3,279	3,349	3,421	3,493	3,568	3,644	3,721	3,801	3,882	3,964	4,049
78	38.54	2,289	2,338	2,388	2,438	2,490	2,543	2,598	2,653	2,709	2,767	2,826	2,886
79	22.63	1,604	1,638	1,673	1,709	1,745	1,782	1,820	1,859	1,899	1,939	1,980	2,023
80	15.09	1,332	1,360	1,389	1,419	1,449	1,480	1,512	1,544	1,577	1,610	1,645	1,680
81	58.50	822	840	857	876	894	913	933	953	973	994	1,015	1,036
82	59.06	1,444	1,475	1,506	1,538	1,571	1,604	1,639	1,674	1,709	1,746	1,783	1,821
83	14.49	2,647	2,703	2,761	2,820	2,880	2,941	3,004	3,068	3,133	3,200	3,268	3,338
83-A	15.85	1,781	1,819	1,858	1,897	1,938	1,979	2,021	2,064	2,108	2,153	2,199	2,246
83-B	71.13	2,860	2,921	2,983	3,047	3,112	3,178	3,246	3,315	3,385	3,457	3,531	3,606
83-C	10.99	3,873	3,955	4,040	4,126	4,214	4,303	4,395	4,489	4,584	4,682	4,782	4,884
84	100.86	6,312	6,446	6,584	6,724	6,867	7,013	7,163	7,315	7,471	7,630	7,793	7,959
85	6.90	1,376	1,405	1,435	1,466	1,497	1,529	1,561	1,595	1,629	1,663	1,699	1,735
86	8.72	1,179	1,204	1,230	1,256	1,283	1,310	1,338	1,366	1,396	1,425	1,456	1,487
87	59.06	3,217	3,286	3,356	3,427	3,500	3,575	3,651	3,728	3,808	3,889	3,972	4,056
88	224.49	7,036	7,186	7,339	7,495	7,655	7,818	7,984	8,155	8,328	8,506	8,687	8,872
89	99.70	4,319	4,411	4,505	4,601	4,699	4,799	4,901	5,006	5,112	5,221	5,332	5,446
90	27.93	86	88	90	92	94	96	98	100	102	104	106	108
91	687.85	10,343	10,563	10,788	11,018	11,253	11,492	11,737	11,987	12,243	12,503	12,770	13,042
92	129.26	4,706	4,806	4,909	5,013	5,120	5,229	5,340	5,454	5,570	5,689	5,810	5,934
94	124.06	2,606	2,662	2,718	2,776	2,835	2,896	2,957	3,020	3,085	3,150	3,217	3,286
95	133.06	7,170	7,323	7,479	7,638	7,801	7,967	8,137	8,310	8,487	8,668	8,852	9,041
95-A	132.72	3,915	3,998	4,084	4,171	4,259	4,350	4,443	4,537	4,634	4,733	4,834	4,936
96	53.98	6,838	6,984	7,132	7,284	7,439	7,598	7,760	7,925	8,094	8,266	8,442	8,622

URBAN BRGYS.	LAND AREA	HH. POP. 2014	PROJECTED HH POPULATION										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
109	60.69	5,364	5,478	5,595	5,714	5,836	5,960	6,087	6,217	6,349	6,484	6,623	6,764
109-A	90.16	7,554	7,715	7,879	8,047	8,218	8,394	8,572	8,755	8,941	9,132	9,326	9,525
110	286.13	5,372	5,486	5,603	5,723	5,845	5,969	6,096	6,226	6,359	6,494	6,632	6,774
TOTAL	**3,446.07**	**202,251**	**206,557**	**210,960**	**215,455**	**220,041**	**224,729**	**229,515**	**234,406**	**239,400**	**244,494**	**249,701**	**255,018**
	10,510.82	**239,938**											

Source: PSA/ CPDO

The household population projections resulting from the mass relocation effort of the city government and partner NGOs and INGOs, for approximately 15,000 households to the area known as Tacloban North is not covered in the above table. The household population projections resulting from the said relocation are reflected in Tables A and B of Table 1.4: Actual and Projected Household Population of Selected Northern and Coastal Barangays/Barangays of Origin per Relocation below.

A. Selected Northern Barangays

Table 1. 5 Actual and Projected Household Population of Selected Northern and Coastal Barangays/Barangays of Origin per Relocation, 2014, 2015-2018, Tacloban City

BARANGAYS	ACTUAL	PROJECTED											
		2015			2016			2017			2018		
NORTHERN BRGYS.	2014 PSA/CPDO	PSA/CPDO	RELOCATION/ CHCDO	TOTAL	PSA/CPDO	RELOCATION/ CHCDO	TOTAL	PSA/CPDO	RELOCATION/ CHCDO	TOTAL	PSA/CPDO	RELOCATION/ CHCDO	TOTAL
97 – Cabalawan	3,312	3,383	211	3,594	3,455	944	4,399	3,528	550	4,078	3,603	550	4,153
105 – San Isidro	1,619	1,653	-	1,653	1,689	70	1,759	1,725	1,180	2,905	1,761	931	2,692
106 – Sto. Niño	1,539	1,572	495	2,067	1,605	10	1,615	1,639	2,177	3,816	1,674	3,250	4,924
108 – Tagpuro	989	1,010	28	1,038	1,032	70	1,102	1,054	1,486	2,540	1,076	45	1,121
98 – Camansihay	1,367	1,396	-	1,396	1,426	-	1,426	1,456	500	1,956	1,487	500	1,987
104 – Salvacion	2,214	2,261	-	2,261	2,309	-	2,309	2,359	400	2,759	2,409	132	2,541
101 – New Kawayan	1,441	1,472	113	1,585	1,503	693	2,196	1,535	-	1,535	1,568	-	1,568
107 – Sta. Elena	1,148	1,172	-	1,172	1,197	-	1,197	1,223	300	1,523	1,249	700	1,949
99 – Diit	5,670	5,791	-	5,791	5,914	-	5,914	6,040	300	6,340	6,169	198	6,367
103 Palanog	4,142	4,230	20	4,250	4,320	60	4,380	4,412	220	4,632	4,506	-	4,506
TOTAL		**867**		**24,807**		**1,847**	**26,297**		**7,113**	**32,084**		**6,306**	**31,808**

B. Coastal Barangays/Brgy. of Origin

BARANGAY OF ORIGIN	ACTUAL 2014 PSA/ CPDO	PROJECTED											
		2015			2016			2017			2018		
		PSA/ CPDO	RELOCATION/ CHCDO	TOTAL	PSA/ CPDO	RELOCATION/ CHCDO	TOTAL	PSA/ CPDO	RELOCATION/ CHCDO	TOTAL	PSA/ CPDO	RELOCATION/ CHCDO	TOTAL
108	989	1,010	-28	982	1,032	-	1,032	1,054	-	1,054	1,076	1,076	1,076
88	7,036	7,186	-608	6,578	7,339	(366)	6,973	7,495	-447	7,048	6,312	6,312	6,312
61	749	765	-16	749	781	(55)	726	798	-	798	450	450	450
91	10,343	10,563	-	10,563	10,788	(172)	10,616	11,018	-	11,018	11,253	11,253	11,253
95-A	3,915	3,998	-	3,998	4,084	(260)	4,171	4,171	-	4,171	4,259	4,259	4,259
37	3,515	3,590	-	3,590	3,666	(70)	3,744	3,744	-680	3,064	3,736	3,736	3,736
62-B	4,583	4,681	-	4,681	4,780	(230)	4,550	4,882	-	4,882	4,986	4,986	4,986
60-A	898	917	-	917	937	(4)	934	957	-	957	626	626	626
64	2,318	2,367	-	2,367	2,418	(1)	2,417	2,469	-	2,469	2,522	2,522	2,522
89	4,319	4,411	-	4,411	4,505	(1)	4,504	4,601	-263	4,338	4,194	4,194	4,194
75	757	773	-	773	790	(1)	789	806	-	806	699	699	699
31	321	328	-	328	335	-	335	342	-206	136	349	349	349
35-A	469	479	-	479	489	-	489	500	-237	263	510	510	510
90	86	88	-	88	90	-	90	92	-237	145	94	94	94
65	1,452	1,483	-	1,483	1,515	-	1,515	1,547	-154	1,393	1,580	1,580	1,580
66	1,291	1,318	-	1,318	1,347	-	1,347	1,375	-377	998	1,405	1,405	1,405
66-A	1,289	1,316	-	1,316	1,344	-	1,344	1,373	-320	1,053	1,402	1,402	1,402
67	1,315	1,343	-	1,343	1,372	-	1,372	1,401	-149	1,252	1,283	1,283	1,283
48-A	567	579	-	579	591	-	591	604	-151	453	617	617	617

48-B	519	530	-	530	541	-	541	553	-181	372	656	656	656
51	329	336	-	336	343	-	343	350	-168	182	358	358	358
52	1,092	1,115	-	1,115	1,139	-	1,139	1,163	-250	913	1,132	1,132	1,132
102	484	494	-	494	505	-	505	516	-124	392	527	527	527
85	1,376	1,405	-	1,405	1,435	-	1,435	1,466	-111	1,355	1,497	1,497	1,497
86	1,179	1,204	-	1,204	1,230	-	1,,230	1,256	-251	1,005	1,283	1,283	1,283
36	1,295	1,323	-	1,323	1,351	-	1,351	1,380	-447	933	1,409	1,409	1,409
99	5,670	5,791	-	5,791	5,914	-	5,914	6,040	-400	5,640	6,037	6,037	6,037
83-A	1,781	1,819	-	1,819	1,858	-	1,858	1,897	-300	1,597	1,883	1,883	1,883
93	5,242	5,354	-	5,354	5,468	-	5,468	5,584	-	5,584	5,512	5,512	5,512
1 & 4	1,184	1,209	-	1,209	1,235	-	1,235	1,261	-	1,261	1,192	1,192	1,192
71	5,879	6,004	-	6,004	6,132	-	6,132	6,263	-	6,263	6,387	6,387	6,387
25	1,409	1,439	-	1,439	1,470	-	1,470	1,501	-	1,501	1,522	1,522	1,522
27	236	241	-	241	246	-	246	251	-	251	249	249	249
68	2,058	2,102	-	2,102	2,147	-	2,147	2,192	-	2,192	1,879	1,879	1,879
69	2,542	2,596	-	2,596	2,651	-	2,651	2,708	-	2,708	2,274	2,274	2,274
54	820	837	-	837	855	-	855	874	-	874	669	669	669
58	873	892	-	892	911	-	911	930	-	930	710	710	710
54-A	770	786	-	786	803	-	803	820	-	820	654	654	654
56-A	603	616	-	616	629	-	629	642	-	642	474	474	474
74	8,662	8,847	-	8,847	9,035	-	9,035	9,227	-	9,227	9,357	9,357	9,357
76	184	188	-	188	192	-	192	196	-	196	58	58	58
83	2647	2,703	-	2,703	2,761	-	2,761	2,820	-	2,820	2,734	2,734	2,734
TOTAL		**652**		**94,374**		**1,160**	**95,160**		**5,549**	**93,956**		**5,343**	**95,806**

Source: PSA/CPDO/CHCDO

The projections in Table A are to be considered as minimum number or modest estimate. The area at the North is envisioned to become the growth center for Tacloban wherein at least 12,000 households are going to settle themselves in the span of year2017-2025 period, in addition to approximately 15,000 households that are being relocated.

Based on the data provided by the City Housing & Community Development Office (CHCDO), the Barangay of Origin of the following households to be relocated to the different barangays are yet to be identified except for IPI:

2015- Relocated to Brgy. 97 Cabalawan/Ridge View I (211/IPI)
2016- To be relocated to Brgy. 97 Cabalawan/SM Cares (397)
2017- To be relocated to Brgy. 103 Palanog (200)

To be relocated to Brgy. 106 Sto. Niño:
Habitat (427)
SOS (100)
PICE (45)
2018- To be relocated to Brgy. 99 Diit/UPA (198)

1.3 Household Population by Age Group and Sex Distribution

The Tacloban City's total household population during the 2014 census was 239,938. The economically productive or the working age (15-59 years old) has a total of 148,980 which represents the largest share of population which is 62.09% of the total household population. The next largest age group is the child and youth group in the age bracket 1 to 14 years old representing 31.15% of the total household population while the senior citizen those aged 60 and above is 6.76%.

Overall, there is male plurality in practically most of the age brackets especially for those age 20-49 where there are more males to females by about 4.88%. But in the age bracket 50 and above, the female outnumber the male by 16.20%. In totality, there are more males to female's age bracket 60 and above by 1.82% of

the total 2014 household population but considering the minuscule gap, male and female seems to be in an even keel in terms of populating the City of Tacloban.

Table 1. 6 Actual and Projected Household Population by Age Group and Sex by Census Year 2014 - 2025, Tacloban City

	2014 (ACTUAL)			2015 (PROJECTED)			2016 (PROJECTED)			2017 (PROJECTED)		
AGE BRACKET	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
5 Below	13,319	12,293	25,612	13603	12,555	26,158	13892	12,822	26,715	14188	13,095	27,284
5-9	12,441	11,666	24,107	12706	11,914	24,620	12977	12,168	25,145	13253	12,427	25,680
10-14	12,960	12,066	25,026	13236	12,323	25,559	13518	12,585	26,103	13806	12,854	26,659
15-19	13,884	14,255	28,139	14180	14,559	28,738	14482	14,869	29,350	14790	15,185	29,976
20-24	13,035	12,603	25,638	13313	12,871	26,184	13596	13,146	26,742	13886	13,426	27,311
25-29	10,250	9,655	19,905	10468	9,861	20,329	10691	10,071	20,762	10919	10,285	21,204
30-34	9,008	8,314	17,322	9200	8,491	17,691	9396	8,672	18,068	9596	8,857	18,453
35-39	7,435	7,067	14,502	7593	7,218	14,811	7755	7,371	15,126	7920	7,528	15,449
40-44	6,610	6,393	13,003	6751	6,529	13,280	6895	6,668	13,563	7041	6,810	13,852
45-49	6,034	5,902	11,936	6163	6,028	12,190	6294	6,156	12,450	6428	6,287	12,715
50-54	5,146	5,262	10,408	5256	5,374	10,630	5368	5,489	10,856	5482	5,605	11,087
55-59	3,970	4,157	8,127	4055	4,246	8,300	4141	4,336	8,477	4229	4,428	8,657
60-64	2,892	3,239	6,131	2954	3,308	6,262	3017	3,378	6,395	3081	3,450	6,531
65-69	1,779	2,311	4,090	1817	2,360	4,177	1856	2,410	4,266	1895	2,462	4,357
70 & over	2,285	3,707	5,992	2334	3,786	6,120	2383	3,867	6,250	2434	3,949	6,383
Total	121,048	118,890	239,938	123626	121,422	245,049	126260	124,009	250,268	128949	126,650	255,599

	2018 (PROJECTED)			2019 (PROJECTED)			2020 (PROJECTED)			2021 (PROJECTED)		
AGE BRACKET	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
5 Below	14491	13,374	27,865	14799	13,659	28,458	15114	13,950	29,065	15436	14,247	29,684
5-9	13535	12,692	26,227	13824	12,962	26,786	14118	13,239	27,357	14419	13,521	27,939
10-14	14100	13,127	27,227	14400	13,407	27,807	14707	13,693	28,400	15020	13,984	29,004
15-19	15105	15,509	30,614	15427	15,839	31,266	15756	16,177	31,932	16091	16,521	32,612
20-24	14182	13,712	27,893	14484	14,004	28,487	14792	14,302	29,094	15107	14,607	29,714
25-29	11152	10,504	21,656	11389	10,728	22,117	11632	10,957	22,588	11879	11,190	23,069
30-34	9800	9,045	18,846	10009	9,238	19,247	10222	9,435	19,657	10440	9,636	20,076
35-39	8089	7,689	15,778	8261	7,852	16,114	8437	8,020	16,457	8617	8,190	16,807
40-44	7191	6,955	14,147	7345	7,103	14,448	7501	7,255	14,756	7661	7,409	15,070
45-49	6565	6,421	12,986	6705	6,558	13,263	6847	6,698	13,545	6993	6,840	13,834
50-54	5599	5,725	11,323	5718	5,847	11,565	5840	5,971	11,811	5964	6,099	12,063
55-59	4319	4,523	8,842	4411	4,619	9,030	4505	4,717	9,223	4601	4,818	9,419
60-64	3146	3,524	6,670	3213	3,599	6,812	3282	3,676	6,957	3352	3,754	7,106
65-69	1935	2,514	4,450	1977	2,568	4,545	2019	2,623	4,641	2062	2,678	4,740
70 & over	2486	4,033	6,519	2539	4,119	6,658	2593	4,207	6,800	2648	4,296	6,945
Total	131696	129,348	261,043	134501	132,103	266,603	137365	134,917	272,282	140291	137,790	278,082

	2022 (PROJECTED)			2023 (PROJECTED)			2024 (PROJECTED)			2025 (PROJECTED)		
AGE BRACKET	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
5 Below	15765	14,551	30,316	16101	14,861	30,962	16444	15,177	31,621	16794	15,500	32,295
5-9	14726	13,809	28,534	15040	14,103	29,142	15360	14,403	29,763	15687	14,710	30,397
10-14	15340	14,282	29,622	15667	14,586	30,253	16001	14,897	30,898	16341	15,214	31,556
15-19	16434	16,873	33,307	16784	17,232	34,016	17141	17,600	34,741	17507	17,974	35,481
20-24	15429	14,918	30,347	15758	15,235	30,993	16093	15,560	31,653	16436	15,891	32,327
25-29	12133	11,428	23,561	12391	11,672	24,063	12655	11,920	24,575	12924	12,174	25,099
30-34	10662	9,841	20,503	10890	10,051	20,940	11121	10,265	21,386	11358	10,483	21,842
35-39	8801	8,365	17,165	8988	8,543	17,531	9179	8,725	17,904	9375	8,911	18,286
40-44	7824	7,567	15,391	7991	7,728	15,719	8161	7,893	16,054	8335	8,061	16,396
45-49	7142	6,986	14,128	7294	7,135	14,429	7450	7,287	14,736	7608	7,442	15,050
50-54	6091	6,228	12,320	6221	6,361	12,582	6353	6,497	12,850	6489	6,635	13,124
55-59	4699	4,920	9,620	4799	5,025	9,824	4901	5,132	10,034	5006	5,242	10,247
60-64	3423	3,834	7,257	3496	3,916	7,412	3571	3,999	7,569	3647	4,084	7,731
65-69	2106	2,735	4,841	2151	2,794	4,944	2196	2,853	5,050	2243	2,914	5,157
70 & over	2705	4,388	7,092	2762	4,481	7,244	2821	4,577	7,398	2881	4,674	7,555
Total	143280	140,725	284,005	146331	143,723	290,054	149448	146,784	296,232	152632	149,910	302,542

Source: PSA/CPDO

1.4 Migration Pattern by Sex

Tacloban City's migration pattern from 1995 to 2000 has showed a net migration rate of 7 percent as shown by the figures of the National Statistics Office. The net migration rate has tended towards out-migration considering the various reasons and motivations of the Taclobanon's. Although that data is not inclusive of the present upward population trend, it still shows that some residents go out of the city either temporarily or permanently but a certain percentage of in-migrating population balances the migration trend in the city.

In the total migration pattern, there are more women to men migrants. In the in-migration trend, there are a total of 10,046 migrants, 5,278 of whom are females and 4,768 are male. Assessing out-migration, a total of 22,581 residents resettled in other places, women accounting for 11,548 of the total figure while men numbered 11,033. In Table 1.6, a summarized migration pattern from the 1970 to 2000 censal years rationalized the pattern for those who leave the city for the bigger cities or outside the country for economic purposes such as practice of profession, business or educational purposes.

While there were in-migration activities, the purpose was somewhat similar as most have migrated to Tacloban City to look for work or relocate businesses considering the fast paced economic activities of the newly categorized highly urbanized city of Tacloban (HUC). Inter-marriages also played a part in the trend. As the city is gearing up for more economic prospects and investments as a newly categorized HUC, it is expected that migration trend may turn from out-migration to in-migration seeing an increased positive population growth rate in the 2007 census and the economic opportunities and speculations offered by the various economic activities and opportunities of a highly urbanized city.

Table 1. 7 Migration Pattern by Sex Census Years 1970 – 2000

Tacloban City

MIGRATION PATTERN	WOMEN	MEN	TOTAL
In-migration	5,278	4,768	10,046
Out-migration	11,548	11,033	22,581
Net Migration	(6,270)	(6,265)	(12,535)
Net Migration Rate		(7.0)	

Out-migration

Source: National Statistics Office

1.5 Household Distribution

In the 2014 census, Tacloban City has a total population of 239,938 and is projected to reach 245,049 by 2015. The 2014 population distribution per barangay used the same percentile distribution with the 2010 census so it is the same with that of the 2014 data where the number has increased proportionately with its projection rate.

In the 2014 census, household population is over 99 percent of the total population because of the institutional population in the urban barangays. But most of the barangays, particularly rural barangays, have the same household population and total population which mean all their residents are members of the households.

Table 1. 8 Actual and Projected Household Population and No. of Households 2010 – 2025, Tacloban City

YEAR	TOTAL HH POPULATION	NO. OF HOUSEHOLDS
2010	221,174	45,478
2011	225,951	46,460
2012	230,832	47,464
2013	235,818	48,489
2014	239,938	50,890
2015	242,809	56,467
2016	250,268	58,202
2017	255,599	59,442
2018	261,043	60,708
2019	266,603	62,001
2020	272,282	63,321
2021	278,082	64,670
2022	284,005	66,048
2023	290,054	67,454
2024	296,232	68,891
2025	302,542	70,359

Source: PSA, CPDO.
Note: 2010, 2014 are actual survey
Projection of 2.13% annual growth rate after year 2014

1.6 Tempo of Urbanization

In the actual census of 2010 up to 2014, it reflected that the urban and rural population grew by an average of 2.06% annually. It is postulated that constituents are looking towards the rural barangays for residential purposes as the urban barangays gear for increased commercialization and industry as Tacloban City is newly categorized as a highly urbanized city.

According to City Planning and Development Office, when Super Typhoon Yolanda struck Tacloban City in November 2013 many were left homeless. Based on the survey conducted about 59,610 families were found out to have damaged houses. Totally damaged houses were about 28,351 while partially damaged houses were about 31,224. However, there were about 36 Barangays identified to have 14,433 families living in danger zone and in fact, those families were the hardest hit by the storm surge during the onslaught of Super Typhoon Yolanda. The aforementioned 14,433 families were those that need to be relocated to Northern part of Tacloban City.

With this problem face by the city and its solution that the homeless will eventually be relocated in the north, it is a really that in the next few years the rural area in north will be urban in terms of classification as new socialized housing are being built for the said 14,433 families and other residents from barangays living in danger zones.

Urbanization is moving toward the rural barangays for residential purposes as the urban barangays gear for increased commercialization and industrialization owing to its new classification as a highly urbanized city. Aside from the growing commerce and industry, the population inflock to the rural barangays can also be attributed to the impact of climate change on the residential areas in the urban barangays particularly along the coastal and other geohazard prone places. Learning from the Typhoon Haiyan experience in 2013 the City government revisits its development plans and thrusts to focus on the relocation and resettlement of families affected by the typhoons to higher and safer grounds in the northern part of the city. It brings about the establishment of a new township dubbed Tacloban

North. Subsequently, urbanization and development is geared toward the north wherein socialized housing projects will be concentrated. Commercial and industrial establishments as well as eco-tourism facilities and ventures will be established in the new township to provide jobs and livelihood opportunities to the populace.

1.7 Population Density by Barangay

Tacloban City has a total land area of 20,172 hectares. With this figure, Tacloban City has a population density of 11.89 persons per hectare with its 239,938 total population in 2014. Projecting for the year 2015 the population would then count to 245,049 and the population density comes at 12.14 persons per hectare.

In the table below, the population density for 2014 is shown per barangay. Brgy. 109A V&G is the most densely populated with 2,518 persons per hectare with Brgy. 107 Sta. Elena in the rural barangays is the least densely populated with only 1.37 person per hectare.

Table 1. 9 Population Density by Barangay 2014-2025 Tacloban City

RURAL BRGYS	LAND AREA	2014	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
12	46.84	2,219	47.37	48.38	49.41	50.46	51.54	52.64	53.76	54.90	56.07	57.27	58.49	59.73
37A	39.79	1,223	30.74	31.39	32.06	32.74	33.44	34.15	34.88	35.62	36.38	37.16	37.95	38.76
93	1,110.84	5,242	4.72	4.82	4.92	5.03	5.13	5.24	5.36	5.47	5.59	5.70	5.83	5.95
94A	135.84	1,555	11.45	11.69	11.94	12.19	12.45	12.72	12.99	13.27	13.55	13.84	14.13	14.43
97	389.58	3,312	8.50	8.68	8.87	9.06	9.25	9.45	9.65	9.85	10.06	10.28	10.50	10.72
98	970.51	1,367	1.41	1.44	1.47	1.50	1.53	1.57	1.60	1.63	1.67	1.70	1.74	1.78
99	225.17	5,670	25.18	25.72	26.27	26.83	27.40	27.98	28.58	29.18	29.81	30.44	31.09	31.75
100	432.05	2,989	6.92	7.07	7.22	7.37	7.53	7.69	7.85	8.02	8.19	8.36	8.54	8.72
101	203.74	1,441	7.07	7.22	7.38	7.53	7.69	7.86	8.03	8.20	8.37	8.55	8.73	8.92
102	117.55	484	4.12	4.20	4.29	4.39	4.48	4.57	4.67	4.77	4.87	4.98	5.08	5.19
103	600.66	4,142	6.90	7.04	7.19	7.35	7.50	7.66	7.83	7.99	8.16	8.34	8.51	8.69
103A	494.37	534	1.08	1.10	1.13	1.15	1.18	1.20	1.23	1.25	1.28	1.31	1.33	1.36
104	397.84	2,214	5.57	5.68	5.80	5.93	6.05	6.18	6.32	6.45	6.59	6.73	6.87	7.02
105	817.25	1,619	1.98	2.02	2.07	2.11	2.16	2.20	2.25	2.30	2.34	2.39	2.45	2.50
106	585.70	1,539	2.63	2.68	2.74	2.80	2.86	2.92	2.98	3.05	3.11	3.18	3.24	3.31
107	188.88	1,148	6.08	6.21	6.34	6.47	6.61	6.75	6.90	7.04	7.19	7.35	7.50	7.66
108	308.18	989	3.21	3.28	3.35	3.42	3.49	3.57	3.64	3.72	3.80	3.88	3.96	4.05
	7025	36,464												

URBAN BRGYS.	LAND AREA	ACTUAL	DENSITY	PROJECTED DENSITY										
		2014	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1 & 4	36.54	1,184	32.40	33.09	33.80	34.52	35.25	36.00	36.77	37.55	38.35	39.17	40.00	40.86
2	15.44	410	26.55	27.12	27.70	28.29	28.89	29.50	30.13	30.77	31.43	32.10	32.78	33.48
3	60.81	2,674	43.97	44.91	45.87	46.84	47.84	48.86	49.90	50.96	52.05	53.16	54.29	55.45
5	2.85	358	125.65	128.33	131.06	133.85	136.70	139.61	142.59	145.62	148.73	151.89	155.13	158.43
5-A	2.32	404	174.05	177.76	181.54	185.41	189.36	193.39	197.51	201.72	206.01	210.40	214.88	219.46
6	12.25	1,209	98.67	100.77	102.91	105.11	107.34	109.63	111.97	114.35	116.79	119.27	121.81	124.41
6-A	3.04	1,730	569.37	581.49	593.88	606.53	619.45	632.64	646.12	659.88	673.94	688.29	702.95	717.92
7	1.38	320	231.09	236.01	241.04	246.17	251.42	256.77	262.24	267.83	273.53	279.36	285.31	291.39
8	1.67	253	151.17	154.39	157.68	161.03	164.46	167.97	171.54	175.20	178.93	182.74	186.63	190.61
8-A	1.23	199	162.40	165.86	169.39	173.00	176.69	180.45	184.29	188.22	192.23	196.32	200.51	204.78
13	1.21	107	88.77	90.66	92.59	94.56	96.57	98.63	100.73	102.88	105.07	107.31	109.59	111.93
14	2.17	162	74.59	76.18	77.81	79.46	81.16	82.88	84.65	86.45	88.29	90.17	92.10	94.06
15	2.04	93	45.54	46.51	47.50	48.51	49.54	50.60	51.68	52.78	53.90	55.05	56.22	57.42
16	1.15	246	214.73	219.30	223.97	228.74	233.61	238.59	243.67	248.86	254.16	259.57	265.10	270.75
17	2.09	103	49.23	50.28	51.35	52.45	53.56	54.71	55.87	57.06	58.28	59.52	60.79	62.08
18	0.94	223	238.13	243.21	248.39	253.68	259.08	264.60	270.24	275.99	281.87	287.87	294.01	300.27
19	1.59	243	152.45	155.70	159.02	162.40	165.86	169.39	173.00	176.69	180.45	184.29	188.22	192.23
20	2.85	492	172.68	176.36	180.12	183.95	187.87	191.87	195.96	200.13	204.40	208.75	213.20	217.74
21	0.90	295	329.02	336.03	343.19	350.50	357.96	365.59	373.37	381.33	389.45	397.75	406.22	414.87
21-A	1.65	266	160.85	164.28	167.77	171.35	175.00	178.73	182.53	186.42	190.39	194.45	198.59	202.82
22	1.13	90	79.95	81.65	83.39	85.17	86.98	88.83	90.73	92.66	94.63	96.65	98.71	100.81
23	1.64	470	285.93	292.02	298.24	304.59	311.08	317.71	324.47	331.38	338.44	345.65	353.01	360.53
23-A	1.29	534	415.52	424.38	433.41	442.65	452.07	461.70	471.54	481.58	491.84	502.32	513.02	523.94
24	2.44	299	122.50	125.11	127.78	130.50	133.28	136.12	139.02	141.98	145.00	148.09	151.25	154.47
25	19.96	1,409	70.58	72.08	73.61	75.18	76.78	78.42	80.09	81.80	83.54	85.32	87.13	88.99

URBAN BRGYS.	LAND AREA	ACTUAL	DENSITY	PROJECTED DENSITY										
		2014	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
26	1.39	184	131.93	134.74	137.61	140.54	143.53	146.59	149.71	152.90	156.16	159.48	162.88	166.35
27	3.27	236	72.22	73.76	75.33	76.94	78.58	80.25	81.96	83.71	85.49	87.31	89.17	91.07
28	1.54	302	195.58	199.74	204.00	208.34	212.78	217.31	221.94	226.67	231.50	236.43	241.46	246.61
29	1.37	188	136.75	139.66	142.64	145.67	148.78	151.95	155.18	158.49	161.86	165.31	168.83	172.43
30	1.15	119	103.87	106.08	108.34	110.65	113.01	115.41	117.87	120.38	122.95	125.57	128.24	130.97
31	1.73	321	185.18	189.13	193.16	197.27	201.47	205.76	210.15	214.62	219.19	223.86	228.63	233.50
32	1.46	115	78.53	80.20	81.91	83.65	85.44	87.26	89.11	91.01	92.95	94.93	96.95	99.02
33	1.36	212	155.33	158.64	162.02	165.47	169.00	172.59	176.27	180.03	183.86	187.78	191.78	195.86
34	1.47	155	105.13	107.37	109.65	111.99	114.37	116.81	119.30	121.84	124.43	127.09	129.79	132.56
35	0.81	196	242.89	248.07	253.35	258.75	264.26	269.89	275.64	281.51	287.50	293.63	299.88	306.27
35-A	1.12	469	420.34	429.29	438.44	447.78	457.31	467.05	477.00	487.16	497.54	508.14	518.96	530.01
36	1.03	1,295	1,262.05	1,288.94	1,316.39	1,344.43	1,373.07	1,402.31	1,432.18	1,462.69	1,493.84	1,525.66	1,558.16	1,591.35
36-A	34.40	779	22.65	23.13	23.62	24.12	24.64	25.16	25.70	26.25	26.80	27.38	27.96	28.55
37	8.95	3,515	392.91	401.28	409.83	418.56	427.47	436.58	445.88	455.37	465.07	474.98	485.10	495.43
38	2.33	381	163.44	166.92	170.48	174.11	177.81	181.60	185.47	189.42	193.46	197.58	201.78	206.08
39	21.07	3,056	145.04	148.13	151.28	154.51	157.80	161.16	164.59	168.10	171.68	175.33	179.07	182.88
40	1.18	176	149.72	152.91	156.16	159.49	162.89	166.36	169.90	173.52	177.22	180.99	184.85	188.78
41	1.32	94	71.48	73.01	74.56	76.15	77.77	79.43	81.12	82.85	84.61	86.41	88.25	90.13
42	1.48	905	609.69	622.67	635.94	649.48	663.32	677.45	691.88	706.61	721.66	737.03	752.73	768.77
42-A	5.53	2,526	456.86	466.59	476.53	486.68	497.05	507.64	518.45	529.49	540.77	552.29	564.05	576.07
43	1.72	397	230.35	235.26	240.27	245.39	250.61	255.95	261.40	266.97	272.66	278.46	284.40	290.45
43-A	2.47	1,116	451.71	461.33	471.16	481.19	491.44	501.91	512.60	523.52	534.67	546.06	557.69	569.57
43-B	6.59	1,036	157.33	160.68	164.10	167.60	171.17	174.81	178.54	182.34	186.22	190.19	194.24	198.38
44	3.20	448	140.09	143.08	146.13	149.24	152.42	155.66	158.98	162.36	165.82	169.36	172.96	176.65
44-A	3.25	226	69.59	71.07	72.58	74.13	75.71	77.32	78.97	80.65	82.37	84.12	85.92	87.75

URBAN BRGYS.	LAND AREA	ACTUAL	DENSITY	PROJECTED DENSITY										
		2014	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
45	6.17	255	41.35	42.23	43.13	44.05	44.99	45.95	46.93	47.93	48.95	49.99	51.05	52.14
46	1.70	434	254.76	260.19	265.73	271.39	277.17	283.08	289.11	295.27	301.55	307.98	314.54	321.24
47	3.28	582	177.57	181.35	185.22	189.16	193.19	197.31	201.51	205.80	210.18	214.66	219.23	223.90
48	1.54	377	244.15	249.35	254.66	260.08	265.62	271.28	277.06	282.96	288.99	295.14	301.43	307.85
48-A	1.49	567	379.43	387.52	395.77	404.20	412.81	421.60	430.58	439.75	449.12	458.69	468.46	478.44
48-B	1.57	519	329.73	336.75	343.92	351.25	358.73	366.37	374.18	382.15	390.29	398.60	407.09	415.76
49	14.73	1,952	132.48	135.30	138.19	141.13	144.14	147.21	150.34	153.54	156.81	160.15	163.57	167.05
50	5.57	264	47.41	48.42	49.45	50.50	51.58	52.67	53.80	54.94	56.11	57.31	58.53	59.78
50-A	7.52	749	99.58	101.70	103.87	106.08	108.34	110.65	113.01	115.41	117.87	120.38	122.95	125.56
50-B	2.83	844	298.31	304.67	311.15	317.78	324.55	331.46	338.52	345.73	353.10	360.62	368.30	376.15
51	1.64	329	200.15	204.41	208.77	213.21	217.76	222.39	227.13	231.97	236.91	241.96	247.11	252.37
51-A	0.65	227	350.56	358.02	365.65	373.44	381.39	389.52	397.81	406.29	414.94	423.78	432.80	442.02
52	4.16	1,092	262.24	267.82	273.53	279.35	285.30	291.38	297.59	303.92	310.40	317.01	323.76	330.66
53	4.08	663	162.32	165.78	169.31	172.92	176.60	180.36	184.20	188.13	192.13	196.23	200.40	204.67
54	7.89	820	103.93	106.14	108.40	110.71	113.07	115.48	117.94	120.45	123.02	125.64	128.31	131.05
54-A	2.49	770	309.17	315.75	322.48	329.35	336.36	343.53	350.85	358.32	365.95	373.75	381.71	389.84
55	4.28	868	202.63	206.94	211.35	215.85	220.45	225.15	229.94	234.84	239.84	244.95	250.17	255.50
56	6.59	1,227	186.05	190.01	194.06	198.19	202.42	206.73	211.13	215.63	220.22	224.91	229.70	234.60
56A	3.12	603	193.38	197.50	201.71	206.01	210.39	214.87	219.45	224.13	228.90	233.78	238.75	243.84
57	4.01	1,191	296.66	302.97	309.43	316.02	322.75	329.62	336.65	343.82	351.14	358.62	366.26	374.06
58	5.64	873	154.83	158.12	161.49	164.93	168.44	172.03	175.70	179.44	183.26	187.16	191.15	195.22
59	37.38	3,364	90.00	91.92	93.87	95.87	97.92	100.00	102.13	104.31	106.53	108.80	111.11	113.48
59-A	14.86	3,998	268.98	274.71	280.56	286.54	292.64	298.87	305.24	311.74	318.38	325.16	332.09	339.16
59-B	5.90	735	124.63	127.28	129.99	132.76	135.59	138.48	141.43	144.44	147.52	150.66	153.87	157.14
60	3.51	1,122	319.96	326.78	333.74	340.84	348.10	355.52	363.09	370.83	378.72	386.79	395.03	403.44

URBAN BRGYS.	LAND AREA	ACTUAL	DENSITY	PROJECTED DENSITY										
		2014	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
60-A	3.62	898	248.32	253.61	259.01	264.53	270.16	275.92	281.80	287.80	293.93	300.19	306.58	313.11
61	6.41	749	116.93	119.42	121.96	124.56	127.21	129.92	132.69	135.52	138.40	141.35	144.36	147.44
62	15.81	1,500	94.88	96.90	98.96	101.07	103.22	105.42	107.67	109.96	112.30	114.69	117.14	119.63
62-A	16.60	5,471	329.64	336.66	343.83	351.15	358.63	366.27	374.07	382.04	390.18	398.49	406.98	415.65
62-B	16.60	4,583	276.13	282.02	288.02	294.16	300.42	306.82	313.36	320.03	326.85	333.81	340.92	348.18
63	14.52	2,472	170.19	173.82	177.52	181.30	185.16	189.11	193.13	197.25	201.45	205.74	210.12	214.60
64	9.57	2,318	242.12	247.28	252.55	257.93	263.42	269.03	274.76	280.61	286.59	292.70	298.93	305.30
65	9.40	1,452	154.40	157.69	161.04	164.48	167.98	171.56	175.21	178.94	182.75	186.65	190.62	194.68
66	4.08	1,291	316.07	322.81	329.68	336.70	343.88	351.20	358.68	366.32	374.12	382.09	390.23	398.54
66-A	3.64	1,289	354.49	362.04	369.75	377.63	385.67	393.89	402.28	410.85	419.60	428.53	437.66	446.98
67	5.54	1,315	237.41	242.47	247.63	252.90	258.29	263.79	269.41	275.15	281.01	287.00	293.11	299.35
68	8.92	2,058	230.82	235.73	240.75	245.88	251.12	256.47	261.93	267.51	273.21	279.03	284.97	291.04
69	32.42	2,542	78.42	80.09	81.79	83.53	85.31	87.13	88.99	90.88	92.82	94.79	96.81	98.88
70	4.49	1,032	229.69	234.59	239.58	244.69	249.90	255.22	260.66	266.21	271.88	277.67	283.58	289.62
71	80.13	5,879	73.37	74.93	76.53	78.16	79.83	81.53	83.26	85.04	86.85	88.70	90.59	92.52
72	15.57	750	48.17	49.19	50.24	51.31	52.40	53.52	54.66	55.82	57.01	58.23	59.47	60.73
73	4.29	414	96.42	98.47	100.57	102.71	104.90	107.14	109.42	111.75	114.13	116.56	119.04	121.58
74	115.38	8,662	75.07	76.67	78.30	79.97	81.68	83.42	85.19	87.01	88.86	90.75	92.69	94.66
75	17.50	757	43.25	44.17	45.11	46.07	47.05	48.05	49.08	50.12	51.19	52.28	53.40	54.53
76	15.11	918	60.74	62.04	63.36	64.71	66.09	67.49	68.93	70.40	71.90	73.43	75.00	76.59
77	70.21	3,211	45.73	46.71	47.70	48.72	49.75	50.81	51.90	53.00	54.13	55.28	56.46	57.66
78	38.54	2,289	59.39	60.65	61.94	63.26	64.61	65.99	67.39	68.83	70.29	71.79	73.32	74.88
79	22.63	1,604	70.87	72.38	73.92	75.49	77.10	78.74	80.42	82.13	83.88	85.67	87.49	89.36
80	15.09	1,332	88.25	90.13	92.05	94.01	96.02	98.06	100.15	102.28	104.46	106.69	108.96	111.28

URBAN BRGYS.	LAND AREA	ACTUAL	DENSITY	PROJECTED DENSITY										
		2014	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
81	58.50	822	14.05	14.35	14.66	14.97	15.29	15.61	15.95	16.29	16.63	16.99	17.35	17.72
82	59.06	1,444	24.45	24.97	25.50	26.05	26.60	27.17	27.75	28.34	28.94	29.56	30.19	30.83
83	14.49	2,647	182.62	186.50	190.48	194.53	198.68	202.91	207.23	211.65	216.15	220.76	225.46	230.26
83A	15.85	1,781	112.37	114.76	117.20	119.70	122.25	124.85	127.51	130.23	133.00	135.84	138.73	141.69
83B	71.13	2,860	40.21	41.06	41.94	42.83	43.74	44.68	45.63	46.60	47.59	48.61	49.64	50.70
83C	10.99	3,873	352.47	359.97	367.64	375.47	383.47	391.64	399.98	408.50	417.20	426.09	435.16	444.43
84	100.86	6,312	62.58	63.92	65.28	66.67	68.09	69.54	71.02	72.53	74.08	75.66	77.27	78.91
85	6.90	1,376	199.31	203.56	207.89	212.32	216.84	221.46	226.18	231.00	235.92	240.94	246.07	251.31
86	8.72	1,179	135.25	138.14	141.08	144.08	147.15	150.29	153.49	156.76	160.10	163.51	166.99	170.54
87	59.06	3,217	54.47	55.63	56.82	58.03	59.27	60.53	61.82	63.13	64.48	65.85	67.25	68.69
88	224.49	7,036	31.34	32.01	32.69	33.39	34.10	34.83	35.57	36.33	37.10	37.89	38.70	39.52
89	99.70	4,319	43.32	44.24	45.18	46.15	47.13	48.13	49.16	50.21	51.28	52.37	53.48	54.62
90	27.93	86	3.08	3.14	3.21	3.28	3.35	3.42	3.49	3.57	3.64	3.72	3.80	3.88
91	687.85	10,343	15.04	15.36	15.68	16.02	16.36	16.71	17.06	17.43	17.80	18.18	18.56	18.96
92	129.26	4,706	36.41	37.18	37.97	38.78	39.61	40.45	41.32	42.20	43.09	44.01	44.95	45.91
94	124.06	2,606	21.01	21.45	21.91	22.38	22.85	23.34	23.84	24.35	24.86	25.39	25.93	26.49
95	133.06	7,170	53.88	55.03	56.20	57.40	58.62	59.87	61.15	62.45	63.78	65.14	66.53	67.94
95A	132.72	3,915	29.50	30.13	30.77	31.42	32.09	32.78	33.48	34.19	34.92	35.66	36.42	37.20
96	53.98	6,838	126.69	129.39	132.14	134.96	137.83	140.77	143.77	146.83	149.96	153.15	156.41	159.74
109	60.69	5,364	88.38	90.27	92.19	94.15	96.16	98.21	100.30	102.43	104.62	106.85	109.12	111.45
109A	90.16	7,554	83.79	85.57	87.39	89.26	91.16	93.10	95.08	97.11	99.17	101.29	103.44	105.65
110	286.13	5,372	18.77	19.17	19.58	20.00	20.43	20.86	21.31	21.76	22.22	22.70	23.18	23.67
	10,510.86	239,938												

1.8 Dialects Spoken

Tacloban City's populace is predominantly Waray, waray-waray is the spoken dialect in the city by 90% of the population. Cebuano/Kana/Visayan speaking populace accounts 6.08% of the total population, 0.80% are Tagalog, 0.10% are Ilocano, 0.07% are Kapampangan while 2.95% come from other ethnic origin.

1.9 Religious Affiliation

Tacloban City is 94.52% Roman Catholic while the Islam faith is 0.12% of the population. Iglesia Ni Cristo (INC) has 0.83% faithful followers, 0.94% are Evangelicals, 0.49% seventh Day Adventist and 3.10% are faithful followers of 22 other religions.

1.10 School Going Age Population

Table 1. 10 Projected School Going Age Population (2017-2025) Tacloban City

LEVEL OF EDUCATION	SCHOOL AGE	PROJECTED SCHOOL GOING AGE POPULATION											
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Elem.	6-12 years old	29,295	29,936	30,557	31,208	31,872	32,552	33,246	33,953	34,676	35,415	36,170	36,940
Secondary	13-16 yrs.old	20,644	21,107	21,532	21,991	22,459	22,937	23,426	23,925	24,435	24,955	25,487	26,030
Tertiary	17-21 yrs old	27,138	27,716	28,307	28,910	29,256	30,154	30,797	31,453	32,123	32,807	33,506	34,219

Computation was based on the Actual 2014 Census for the Population by Age using the Interpolation technique.

For the elementary education, there is an increase of 641 to 651 pupils on the first three year period. For the second three year period, where there is an increase of 664 to 694 pupils. On the third three year period where the number of pupils increase by 707 to 739. For the last two year period (2024-2025), the increase is 755 to 770.

While for the secondary education, there is an increase of 463 to 459 students for the period (2015-2017). For the period (2018-2020) where there is a minimal increase in the number students.

1.11 Demography and Climate Change Adaptation

Climate change plays a vital role in the demographic characteristics of the city in the past where floods were not the primary concern of the city, this meant climate changes and disasters brought by unusual weather conditions were far and between. Although adverse weather conditions are natural atmospheric situations, the adversity comes on a regular predicted time element or season. At present times, disasters have been affecting the demographic pattern of the city in a more distinct manner in terms of its frequency, unpredictability and strength affecting migration pattern and location of housing suitability.

At present, the households vulnerable to climate change hazards are relocated to the safer grounds in the Northern Barangays. Resilient multi-purpose, day care or school buildings that can be used as evacuation centers during calamities are being constructed in different barangays. The city government gives top priority to the installation and enhancement of its Disaster Risk Reduction facilities such as emergency communication system, repeaters, hand-held and base-radios at Barangay Nula-Tula, Tacloban City in preparation for disasters and calamities.

The city's population is witness to the erratic weather changes such as adverse hot dry spells on a supposed rainy season, monsoons and storms during summer times and an unusual increased sea level on given times. Pollution, inconsiderate and uninformed constituents and improper waste management are few of the concerns that need evaluation and assessment.

The adverse effects of these weather changes on agriculture are given due consideration in the preparation of plans and programs for food production and food security. Studies on crop diversification, crop rotation and planting seasons are underway. Extensive promotion of livestock production is also being done through livestock dispersal projects in order to ensure stable food supply during disasters and calamities.

Human displacements and property issues are but of the few demographic concerns brought by climate change. The city government needs to have a concise

picture of the future depicting its people, their housing requirements and their land and property rights, giving priorities to communities most affected. According to an international organization, strategies for rights-based planning and programming to resolve climate-induced displacement must be instituted in every government. All who are affected by climate change, particularly those who will be displaced must be afforded rights and remedies that protect them, provide them with housing, land and property options consistent with their rights and ensure them the lives and livelihoods that are the essence of human rights and the laws and principles that comprise them.

Tacloban City, with its diverse demographic situation of in-migration and out-migration pattern has prepared for the position. The executive and legislative branches of local government took this into account and the issues on displacement, settlements and property issues were relegated to the sectoral studies and concerns. Aside from the demographic concerns, other issues in the infrastructure, social, economic, institutional and environmental sectors were considered for interventions, mitigation and adaptation in the succeeding chapters of this plan.

Table 1. 11 Number of Households Affected by Climate Change/Hazards by Barangay

BARANGAYS	ACTUAL NO. OF HH	NUMBER OF HOUSEHOLDS AFFECTED BY CLIMATE CHANGE/HAZARDS						
		FLOODING	RAIN-INDUCED LANDSLIDE	EARTHQUAKE INDUCED LANDSLIDE	GROUND SHAKING	LIQUEFACTION	FAULT LINE	STORM SURGE
1 & 4	251				251	200		251
2	87	43			87	87		73
3	567		567		567			
5	76	76	76		76	76		76
5-A	86	86	86		86	86		86
6	256	128			256	256		
6-A	367	245			367	367		
7	68				68	68		68
8	54	27			54	54		54
8-A	42	21			42	42		42
12	471	23	70		471	471		
13	23				23	23		23
14	34				34	34		34
15	20				20	20		20
16	52				52	52		52
17	22				22	22		22
18	47				47	47		47
19	52				52	52		52
20	104				104	104		104
21	63				63	63		63
21-A	56				56	56		56
22	19				19	19		19
23	100				100	100		100

BARANGAYS	ACTUAL NO. OF HH	NUMBER OF HOUSEHOLDS AFFECTED BY CLIMATE CHANGE/HAZARDS						
		FLOODING	RAIN-INDUCED LANDSLIDE	EARTHQUAKE INDUCED LANDSLIDE	GROUND SHAKING	LIQUEFACTION	FAULT LINE	STORM SURGE
23-A	113				113	113		113
24	63				63	63		63
25	299	68			299	80		80
26	39				39	39		39
27	50				50	50		50
28	64				64	64		64
29	40				40	40		40
30	25				25	25		25
31	68				68	68		68
32	24				24	24		24
33	45				45	45		45
34	33				33	33		33
35	42				42	42		42
35-A	99				99	99		99
36	275				275	22		247
36-A	165	66			165	165		
37	746	223						746
38	81				81	56		40
39	648				648	64		
40	37				37	37		37
41	20				20	20		16
42	192	192			192	182		48
42-A	536	64			536	26		
43	84				84	79		36
43-A	237				237	49		
43-B	220	55			220	74		
44	95	95			95	95		18
44-A	48				48	48		28
45	54	21			54	54		48
46	92				92	92		92
47	123				123	123		123
48	80				80	80		80
48-A	120				120	120		120
48-B	110				110	110		110
49	414	165			414	331		103
50	56				56	56		56
50-A	159				159			8
50-B	179				179	179		161
51	70				70	70		70
52	232				232	232		232
53	141				141	112		112
54	174				174	174		156
54-A	163				163	163		163
55 & 55-A	184				184	18		9
56	260				260	260		156
56-A	128				128	128		128
57	253				253	117		
58	185	9			185	185		175
59	713				713	713		
59-A	848				848	848		
59-B	156				156	156		
60	238	21			238	238		130
60-A	190				190	190		152
61	159				159	79		159
62	318				318	318		
62-A	1,160	812			1,160	1,160		
62-B	972	680			972	972		
63	524				524	524		351
64	492				492	492		
65	308				308	92		92
66	274				274	27		82
66-A	273				273	82		82
67	279				279	125		84
68	436				436	261		300
69	539				539	485		377
70	219				219	131		219
71	1,247	499	499		1,247	997		244

BARANGAYS	ACTUAL NO. OF HH	NUMBER OF HOUSEHOLDS AFFECTED BY CLIMATE CHANGE/HAZARDS						
		FLOODING	RAIN-INDUCED LANDSLIDE	EARTHQUAKE INDUCED LANDSLIDE	GROUND SHAKING	LIQUEFACTION	FAULT LINE	STORM SURGE
72	159	21			159	159		31
73	88		70		88	66		
74	1,837		918	55	1,837	955		557
75	161				161	161		161
76	195	78			195	195		195
77	681	11			681	681		544
78	485	73			485	485		
79	340				340	340		34
80	283	14			283	283		
81	174	52			174	174		
82	306	122			306	306		
83	561	112			561	561		561
83-A	378	57			378	378		378
83-B	607	42			607	607		303
83-C	821	164			821	821		821
84	1,339	200			1,339	1,339		1,004
85	292				292	292		292
86	250	100			250	250		250
87	682	48			682	682		682
88	1,492	179			1,492	1,492		1,492
89	916	320			916	916		
90	18	5			18	18		18
91	2,194	877	1,536	373	2,194	658		
92	998	299		10	998	499		
93	1,112			11	1,112	14		78
94	553	66	166	1	553	276		110
94-A	330	109	132		330			
95	1,521	136		684	1,521	912		
95-A	830	166		647	830	332		
96	1,450				1,450	1,450		43
97	702				702			35
98	290	9		129	290			
99	1,203				1,203			180
100	634				634	127		
101	306				306			15
102	103				103			
103	879		176		879			
103-A	113			12	113			
104	470		258	37	470			
105	343			20	343	68		27
106	326				326	32		13
107	243			14	243			
108	210			17	210	63		
109	1,138	79			1,138			
109-A	1,602	160			1,602			
110	1,139	228	569	102	1,139	455		

Source: CDRA

Based on the total area (10,510.86 ha) of Tacloban there are46.37% (4,834 ha) are Flood Prone, 25.39% (2669 ha) are liquefaction prone, 26.59% (2,795 ha) are Storm Surge Prone, 47.7% (5,022 ha) are Landslide, 60.28% (6,3355 ha) are earthquake in the forest area, 39.72% (4175 ha) are earthquake prone in the A&D area.

CHAPTER 2 NATURAL AND PHYSICAL ENVIRONMENT

2.1 Geographic Location and Area

Tacloban City is located in the northeastern part of the Island of Leyte, one of the islands in Eastern Visayas or Region 8. It lays 11 degrees 14' 38.19" north latitude and 125 degrees 0' 18.24" East longitude and is situated about 580 kilometers southeast of Manila.

Tacloban's original land area is 10,510.86 hectares. Including bodies of water, the total area is 20,172.00. In 2004, the Department of Environment and Natural Resources (DENR-LMB) disclosed that the total land area of Tacloban, as submitted in Resolution No. 99-001 and reiterated under Circular Letter No. 2001-21, of the Department is recorded at 20,172 hectares or 201.72 sq. km. that included the small islands within the territorial bounds of the city.

2.2 Territorial Jurisdiction / Subdivision

The City of Tacloban has one hundred thirty eight (138) Barangays divided into ten political subdivisions or areas. The matrix below lists the different barangays per area.

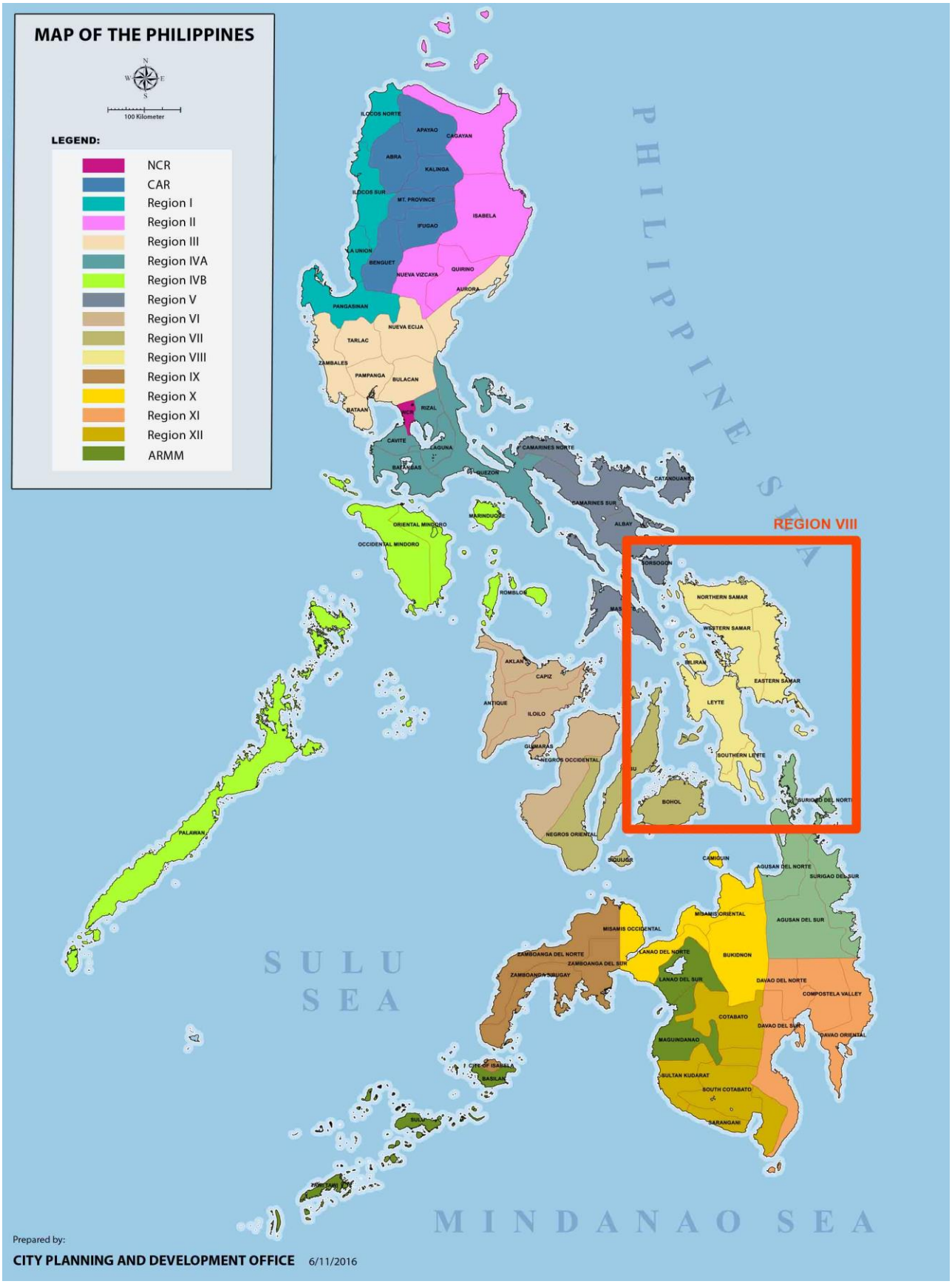
Table 2. 1 Baranggay Jurisdiction, Tacloban City

AREA 1	
Barangay 3	Upper Nulatula
Barangay 65	Paseo de Legaspi, (Seaside)
Barangay 66	Paseo de Legaspi and Anibong
Barangay 66-A	Paseo de Pagaspi
Barangay 67	Paseo de Legaspi
Barangay 68	Anibong District
Barangay 69	Rawis, Anibong
Barangay 70	Rawis, Anibong
Barangay 71	Naga-Naga
Barangay 72	PHHC (Seaside)
Barangay 73	PHHC (Mountainside)
Barangay 74	Lower Nulatula

AREA 2	
Barangay 1 & 4	Libertad, Lopez Jaena Extension
Barangay 2	Jones Street
Barangay 5	Lopez Jaena and Salazar Extension
Barangay 5-A	Lopez Jaena Street
Barangay 6	Sto. Niño and T. Claudio Streets
Barangay 6-A	Sto. Niño Extension
Barangay 8	Sto. Niño, Salazar and del Pilar Streets
Barangay 8-A	Del Pilar, Salazar and J. RomualdezSts.
Barangay 13	Tacloban Shopping Center Area
Barangay 14	Salazar, j. Romualdez, del Pilar&Sto. Niño Streets
Barangay 15	Zamora, J. Romualdez, del Pilar&Sto. Niño Streets
Barangay 16	Salazar, Rizal Ave., Gomez & Zamora Streets
Barangay 17	Gomez, Salazar, del Pilar& Zamora Streets
Barangay 25	Rimas Colon and DYVL
AREA 3	
Barangay 79	Marasbaras District
Barangay 81	Marasbaras District
Barangay 82	Marasbaras Boundary
Barangay 83	Paraiso, San Jose District
Barangay 83-A	Burayan, San Jose District
Barangay 83-B	Burayan, San Jose District
Barangay 83-C	Taguictic, Burayan San Jose District
Barangay 84	Cogon, San Jose and Manlurip
Barangay 85	Bay View, San Jose District
Barangay 86	San Jose Parish Church
Barangay 87	Manlurip, San Jose Elem. School
Barangay 88	San Jose Airport, Costa Brava
Barangay 89	Baybay, San Jose
Barangay 90	Baybay, San Jose (Seaside)
AREA 4	
Barangay 58	Aslum, Sagkahan District
Barangay 59	Picas, Sagkahan District
Barangay 59-A	Sampaguita District
Barangay 59-B	Real Street corner Kalipayan Road
Barangay 60	Real Street, Sagkahan District
Barangay 60-A	Old Road, Sagkahan District
Barangay 61	Real Street, Sagkahan
Barangay 62	Km. 4, Sagkahan District
Barangay 62-A	Km. 4 (Ilong's), Sagkahan District
Barangay 62-B	Kalipayan Road
Barangay 63	Real Street corner Sagkahan, SitioMangga
Barangay 64	Calanipawan BLISS Project, Sagkahan District
Barangay 75	Coca-Cola Junction, Real Street
Barangay 76	Fatima Village
AREA 5	
Barangay 32	Ave. Veteranos, Burgos, Sto. Niño &Paterno Streets

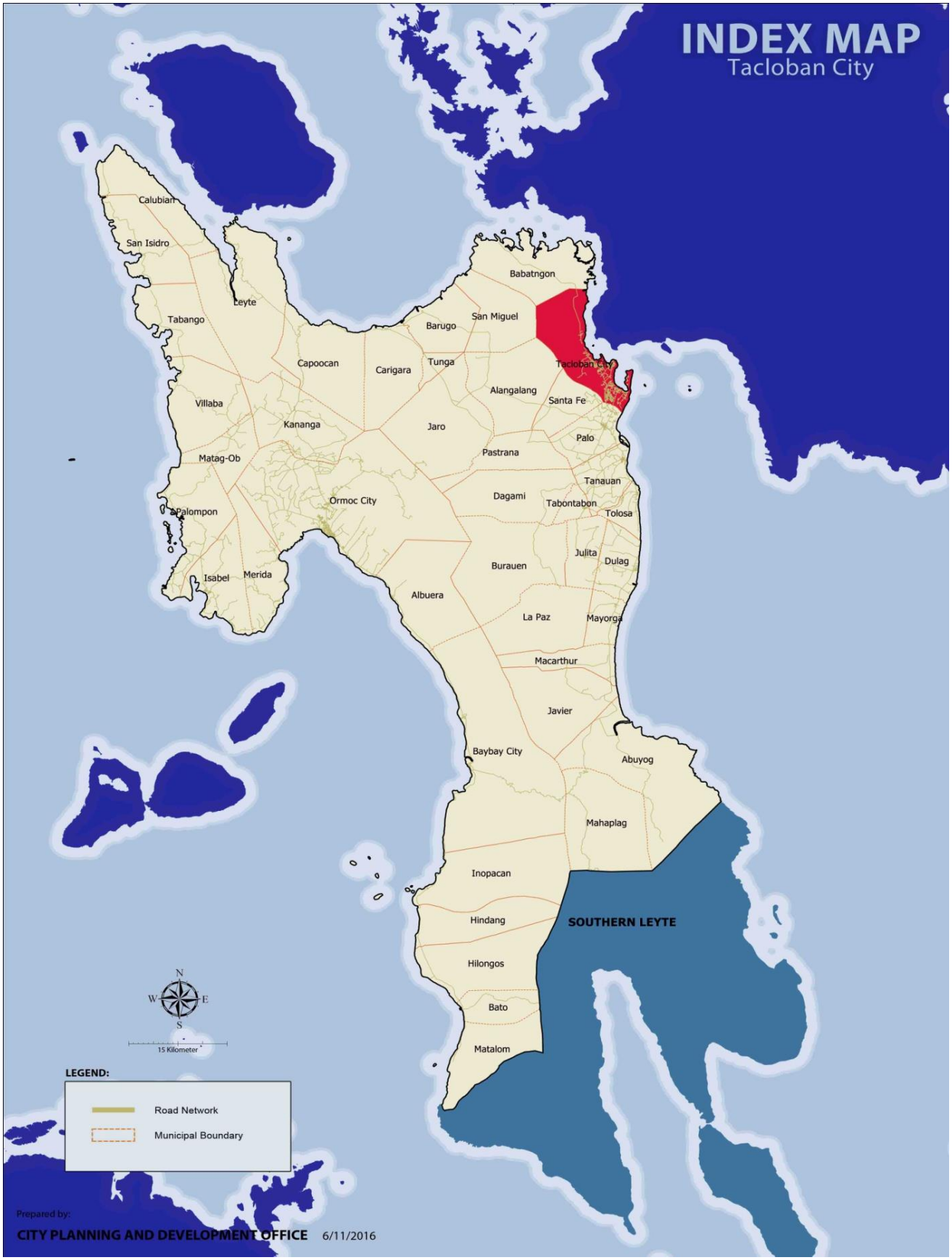
Barangay 33	Ave. Veteranos, Burgos J. Luna and Paterno Streets
Barangay 43	Cong. Mate Ave., Ave. Veteranos, Salazar St., Mangonbangon River
Barangay 43-A	Quarry Dist., Salazar St., Cong. Mate Ave. & Mountainside
Barangay 43-B	Quarry Dist., Salazar St., Cong. Mate Ave. & Mountainside
Barangay 44	Sta. Cruz and Salazar Sts., Mangonbangon River
Barangay 44-A	Mangonbangon, Salazar Street and Ave. Veteranos
Barangay 45	Mangonbangon River, Sta. Cruz &Paterno Street
Barangay 46	Sta. Cruz, Ave. Veteranos and Real Streets
Barangay 47	Independencia, AvenidaVeteranos& Real Streets
Barangay 48	Independencia, Ave. Veteranos and Real Streets
Barangay 48-A	Independencia, Ave. Veteranos&Esperas Avenue
Barangay 48-B	Esperas Ave. and Magallanes District
Barangay 49	Youngfield Area
AREA 6	
Barangay 7	Del Pilar, Zamora and Gomez Streets
Barangay 18	Gomez, Zamora and Sto. Niño Streets
Barangay 21	Del Pilar, Sto. Niño and Burgos Streets
Barangay 21-A	Burgos, Sto. Niño and Gomez Streets
Barangay 26	Sto. Niño, Paterno, J. Romualdez& Gomez Streets
Barangay 27	J. Romualdez, Gomez, J. Luna and Paterno Streets
Barangay 28	Sto. Niño, Paterno, Burgos and Gomez Streets
Barangay 29	Paterno, J. Luna, Gomez & Burgos Sts.
Barangay 30	Burgos, Gomez, Real & J. Luna Sts.
Barangay 31	Pampango and P. Burgos Streets
Barangay 34	Ave. Veteranos, Burgos, J. Luna & Real Streets
Barangay 35	Ave. Veteranos, P. Burgos, Pampango and Real Streets
Barangay 35-A	Pampango Dist. And Esperas Avenue
AREA 7	
Barangay 36-A	Imelda Village
Barangay 77	Bañezville
Barangay 78	Bañezville II
Barangay 80	Marasbaras
Barangay 91	Abucay
Barangay 92	Apitong
Barangay 95	Caibaan
Barangay 95-A	Caibaan
Barangay 96	Calanipawan
Barangay 109	V&G Subdivision
Barangay 109-A	V%G Subdivision
Barangay 110	Utap
AREA 8	
Barangay 19	Rizal Ave., Gomez, Salazar, Gomez & P. Burgos Streets
Barangay 20	Salazar, del Pilar, Gomez & Burgos Sts.
Barangay 22	Rizal Ave., Burgos St. Salazar, Emilda
Barangay 23	Salazar, Rizal,Veteranos& P. Burgos Sts.
Barangay 23-A	Del Pilar, Burgos, and AvenidaVeteranosSts.
Barangay 24	Del Pilar, Sto. Niño, Ave. Veteranos& P. Burgos Streets
Barangay 36	Sabang District
Barangay 37	Reclamation Area
Barangay 38	P. Burgos Ext., AvenidaVeteranos Ext. & F. Torres Streets
Barangay 39	AvenidaVeteranos, Calvary Hill
Barangay 40	Tarcela, P. Burgos, Rizal Ave. & Torres Sts.
Barangay 41	Ave. Veteranos, Burgos, Burgos, Rizal Ave. and Torres Streets
Barangay 42	Rizal Ave. Ext. &AvenidaVeteranos
Barangay 42-A	Rizal Ave. Ext., and Mangonbangon River
AREA 9	
Barangay 12	G.E. Palanog
Barangay 37-A	Palanog Resettlement Area

Barangay 93	Bagacay
Barangay 94	Tigbao
Barangay 94-A	Basper
Barangay 97	Cabalawan
Barangay 98	Camansihay
Barangay 99	Diit
Barangay 100	San Roque
Barangay 101	New Kawayan
Barangay 102	Old Kawayan
Barangay 103	Palanog
Barangay 103-A	Paglaum
Barangay 104	Salvacion
Barangay 105	San Isidro
Barangay 106	Sto. Niño
Barangay 107	Sta. Elena
Barangay 108	Tagpuro
AREA 10	
Barangay 50	Independencia and Real Streets
Barangay 50-A	Youngfield and Mangonbangon River
Barangay 50-B	Youngfield, Ninoy Aquino Ave. &Mangonbangon River
Barangay 51	Independencia, Esperas Avenue and Arellano Streets
Barangay 51-A	Independencia, Real & Arellano Streets
Barangay 52	Magallanes District
Barangay 53	Real Street, Redemptorist Church
Barangay 54	Real, Esperas Ave.,Lukban and Dadison Streets
Barangay 54-A	Esperas Avenue
Barangay 55	El Reposo Area
Barangay 56	Dadison, Real and Esperas Ave. Streets
Barangay 56-A	Old Road Sagkahan
Barangay 57	Sampaguita District



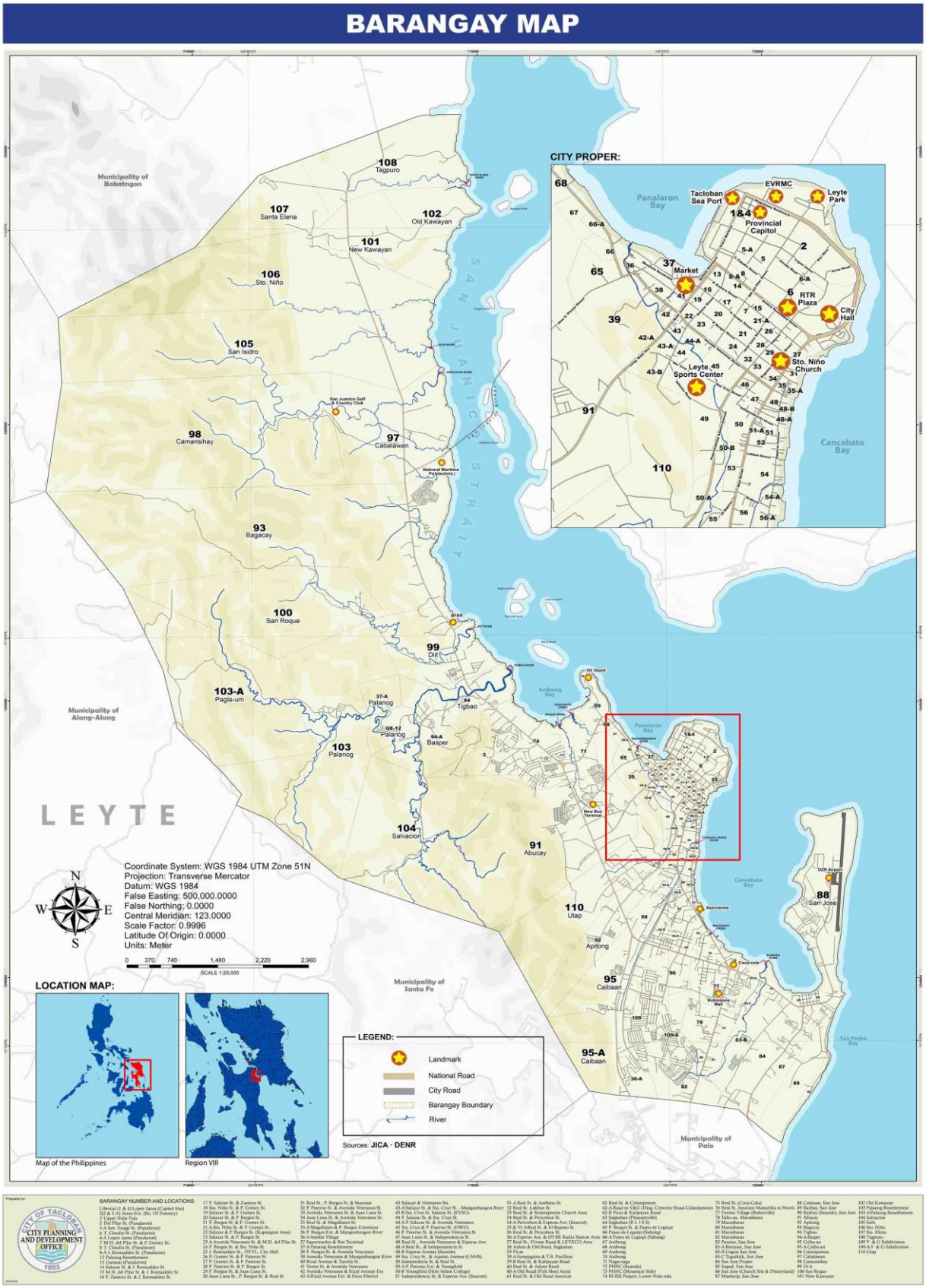
Map 1. Map of the Philippines

Map 2. Map of Eastern Visayas



Map 3. Index Map of Tacloban City

Map 4. Barangay Map (Urban Core)



Map 5. Barangay Map

2.3 Air Shed

2.3.1 Ambient Air Quality

Sub-paragraph g, section 8, art.1 of Republic Act 8749 otherwise known as the Clean Air Act of 1999 mandates LGU to prepare an Action Plan to attain and maintain the airshed quality standard of the atmosphere of the city set by the said law. Anent thereto, DENR Administrative no. 11, series of 2015 was issued by the DENR secretary Ramon J.P. Paje creating Tacloban City's Airshed which covers 138 barangays and its corresponding governing board was formed headed by the incumbent City Mayor. Its members are composed of representatives of people's organizations, national government agencies, the academe and private agencies.

Its major functions, among others, are defined, as:

1. Determine the current status of air quality within its air shed;
2. Establish airshed emission inventory;
3. Intensify the operation of anti-smoke belching;
4. Policy formulation relative to clean air of the Tacloban'sairshed, and;
5. Development of Clean air action plan

After the issuance of the DENR Admin order no. 11, the regional office of the Environment Management Bureau has been dynamic in the activation of the board with the series of meetings and foray as part of the initial advocacy, and thus formulated the Action Plan.

With this welcome development, the safeguard of the airshed quality of the city for the period of the CLUP's 2017-2025 is being ensured and monitored to comply with the standard.

Ambient monitoring assessment including air quality status report

Ambient air monitoring stations are located in areas Robinsons Place Parking lot, Eastern Visayas State University (EVSU) grounds, and Technical Education & Skills Development Authority (TESDA) grounds. Weekly monitoring of Particulate Matter (PM) 10 microns or less in comparison to Total Suspended Particulates was done using the Partisol 2000H Gravimetric PM 10 in Robinsons Place Parking Lot and Aeroqual PM 10 Mobile in EVSU and TESDA Grounds. Results showed that PM10 concentration (24hr averaging time) showed 'good' to 'fair' results

considering the air quality indices indicated under Section 4, Rule VII, Part II of the Implementing Rules and Regulations of RA 8749 (Philippine Clean Air Act of 1999) and within the standard of 150 ug/Ncm based on the Ambient Air Quality Guideline Values. Results showed that the station located in Robinson's Place Tacloban averaged **64 ug/Ncm** which is above the **60ug/Ncm** annual guideline value while the stations located in EVSU and TESDA are both 13 **ug/Ncm which is well below the national guideline**. Robinsons Place Tacloban is categorized as a Road-Side Ambient Monitoring Station with the major source of air pollution coming from mobile or motor vehicles. Stations located at EVSU and TESDA are categorized as General Ambient Monitoring Station with major sources of air pollution from mobile, stationary and area sources.

Figure 2. 1 2015 PM10 Annual Assessment Report

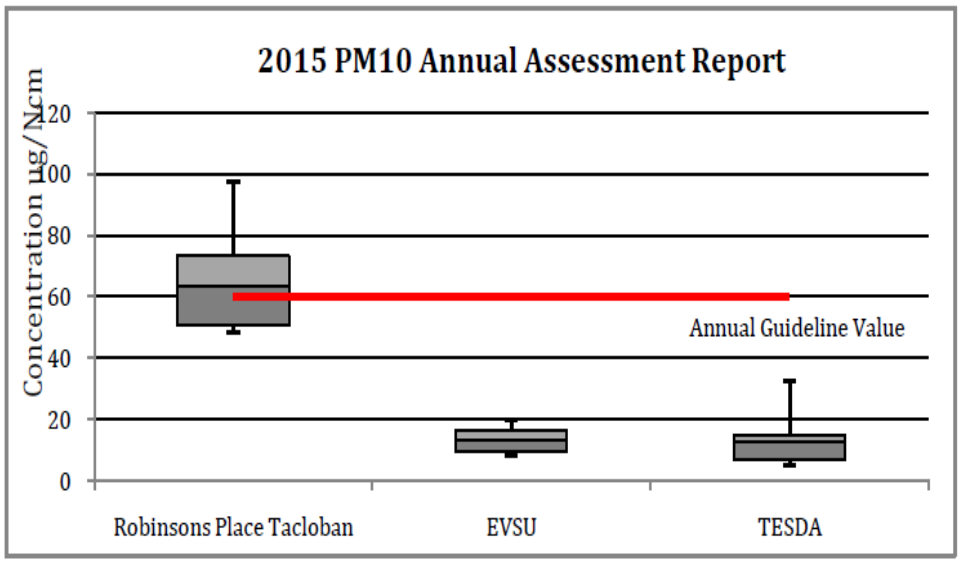


Figure 2. 2 Monitoring

	Robinsons Place Tacloban	EVSU	TESDA
Min	48 ug/Ncm	8 ug/Ncm	5 ug/Ncm
25 Percentile	51 ug/Ncm	10 ug/Ncm	7 ug/Ncm
Average	64 ug/Ncm	13 ug/Ncm	13 ug/Ncm
75 Percentile	73 ug/Ncm	16 ug/Ncm	15 ug/Ncm
Max	97ug/Ncm	20ug/Ncm	33ug/Ncm

Monitoring

Updates

The memorandum of agreement with the LGU for the installation of the DOAS unit in the City Hall Grounds is already signed by both parties and the fencing structure is already established in the area.

Figure 18. DOAS fencing in City Hall Grounds

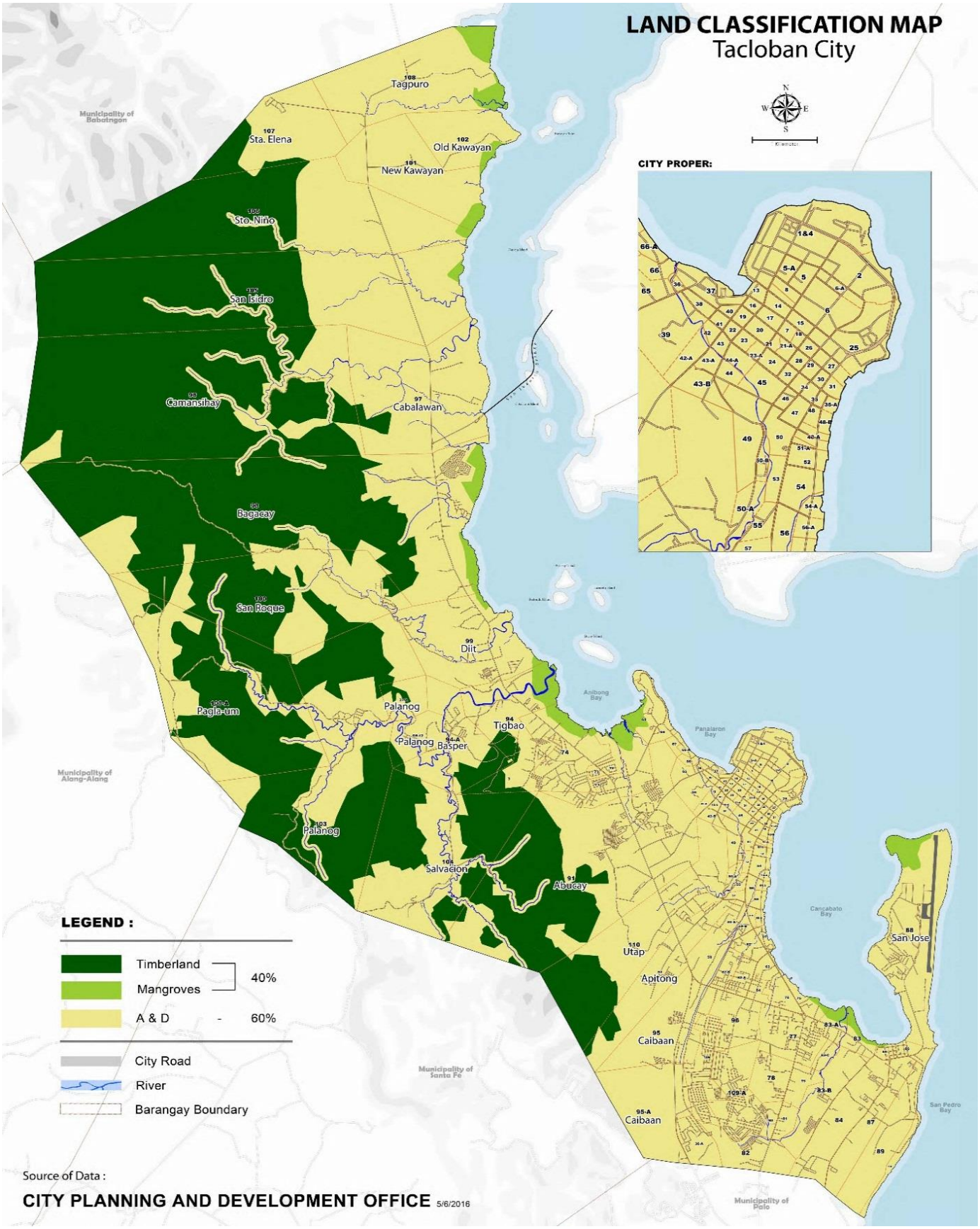
2.4 Area Classification

The area classifications of Tacloban City as follows:

Table 2. 2 Existing Area ClassificationYear 2016

Area Classification	Percentage	Area (Has.)
Alienable and Disposable (A&D Lands)	31.26%	6306.68
Timber Land	20.84%	4204.18
Water Bodies	47.89%	9661.14
Total	100%	20,172.00

Source: CPDO, DENR



Map 6. Land Classification Map

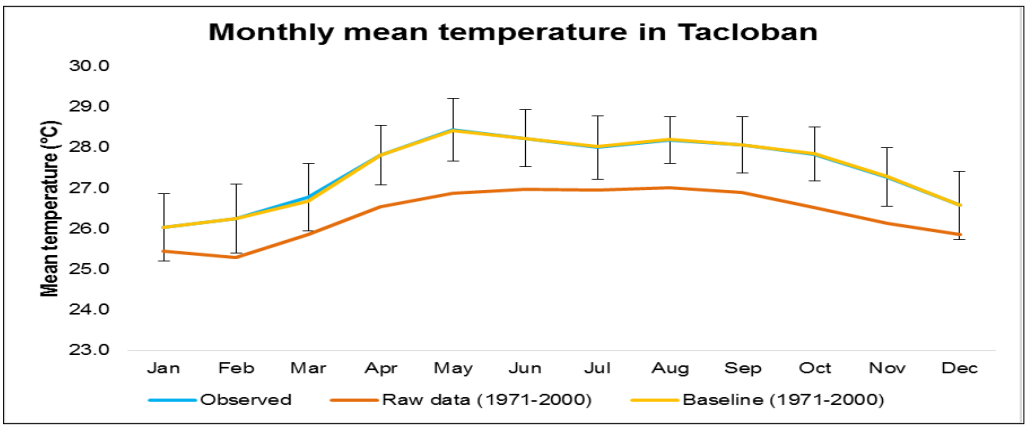
2.5 Climate

Climate in the city is classified by Tacloban PAGASA as falling between the boundary of Type II and Type IV which indicates that there is no dry season and no pronounced period for maximum rainfall which normally runs from July to December, but that rainfall is more or less evenly distributed throughout the year except on adverse periods where there is La Niña or El Niño.

2.5.1 Mean Temperature

A climate study specifically for Tacloban City was commissioned by the USAID and conducted by the Manila Observatory using the observed precipitation and temperature data from 1971 to 2000 provided by PAGASA. The study highlighted that Tacloban City has been experiencing increasing mean temperature throughout these baseline period reaching the highest observed temperature in the 1990s. The result of the study showed that the mean temperature in Tacloban peaked on the months of May, August and September.

Figure 2. 3 Monthly Mean Temperature in Tacloban for the baseline period 1971-2000



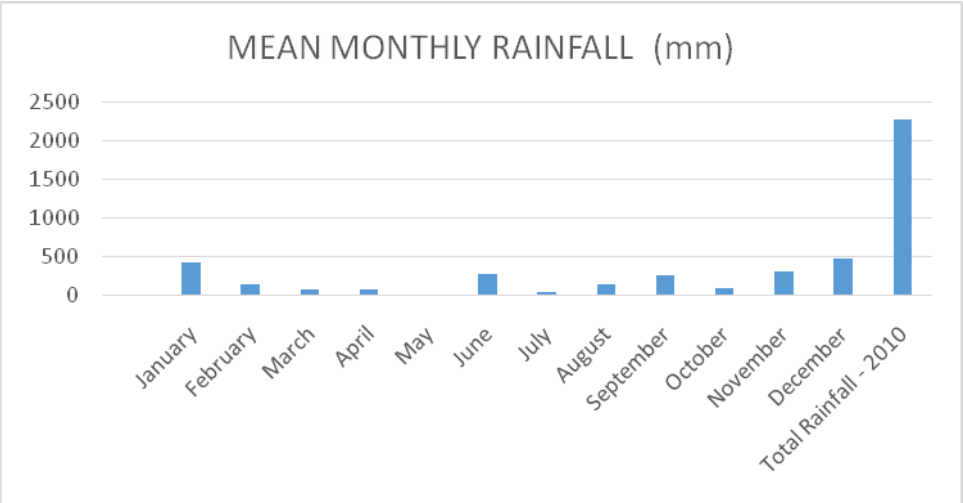
Manila Observatory, Water Security for Resilient Economic Growth and Stability Project: Technical Report on Current and Future Hydroclimatological Profiles of Iloilo City and Leyte Island, Commissioned by USAID Be Secure Project in July 2015

Table 2. 3 2015 Mean Monthly Rainfall

MONTH	MEAN MONTHLY RAINFALL (mm)
January	419.8
February	142.2
March	66.7
April	64.6
May	5.0
June	274.5
July	37.5
August	143.4
September	254.4
October	86.4
November	304.6
December	468.7
Total Rainfall - 2010	**2,267.8**

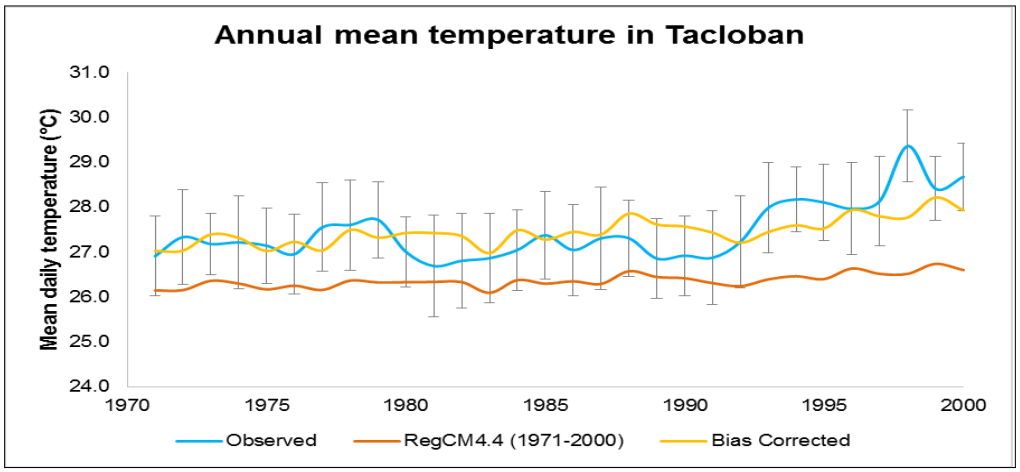
Source: PAGASA 2016

Figure 2. 4 Mean Monthly Rainfall: 2015



In similar tabular information, the period January-December 2015, shows the mean monthly temperature as captured in Table 2.3and Figure 2.4. The month of May has the highest temperature; followed by the months of August, October, July June, September.

Figure 2. 5 Annual Mean Daily Temperature in Tacloban 1971-2000

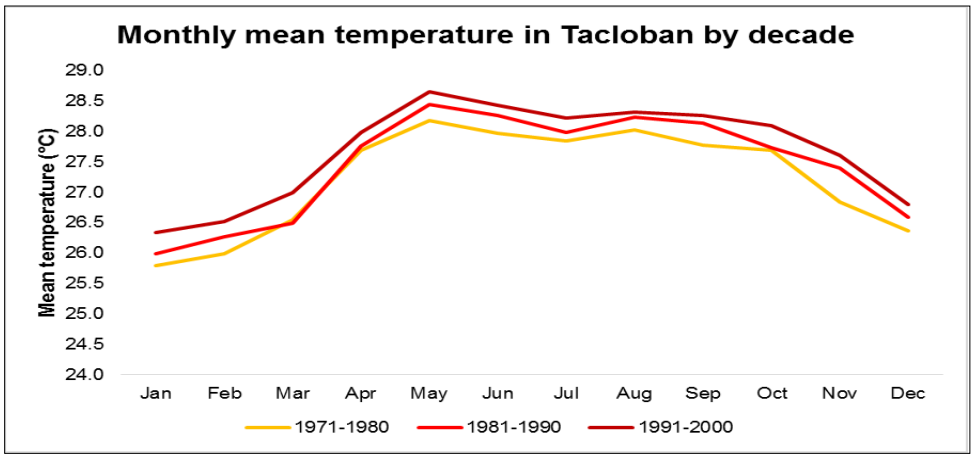


Manila Observatory, Water Security for Resilient Economic Growth and Stability Project: Technical Report on Current and Future Hydroclimatological Profiles of Iloilo City and Leyte Island, Commissioned by USAID Be Secure Project in July 2015

As depicted in Figure 2.4, the mean daily temperature in Tacloban was increasing throughout the baseline period of 1971 to 2000 both in the observed and corrected model outputs in the study.

The Tacloban climate study also revealed that there has been an overall increase in mean daily temperature by decade across all months except in March from the 1970s to the 1980s, although the decrease is less than 0.05°C (Figure 2.5). While there was only an average increase of less than 0.1°C from the 1970s to the 1980s from March to May, the temperature increase was generally larger for these months from the 1980s to the 1990s. A higher increase in mean daily temperature was observed from September to January from the 1980s to the 1990s in both cities. These months typically have longer nights, which indicate that the large increase in mean daily temperature would lead to warmer nights.

Figure 2. 6 Decadal Monthly Mean Temperature in Tacloban for 1971 - 2000



Manila Observatory, Water Security for Resilient Economic Growth and Stability Project: Technical Report on Current and Future Hydroclimatological Profiles of Iloilo City and Leyte Island, Commissioned by USAID Be Secure Project in July 2015

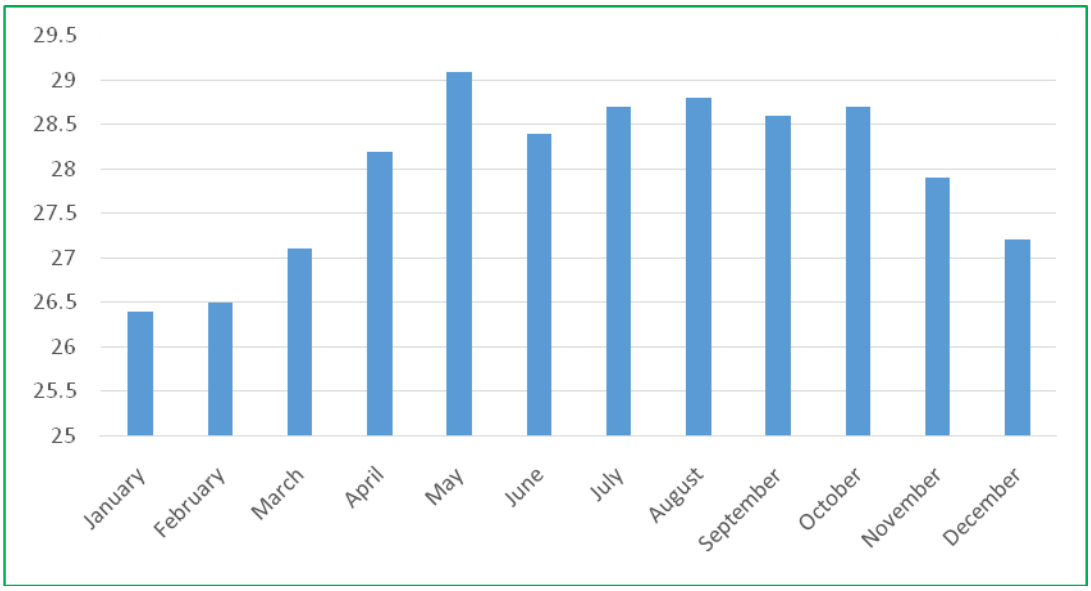
Using the temperature data in recent years, data from PAGASA in Tacloban showed that in the period January-December 2015, the mean monthly temperature as captured in Table 2.4 and Figure 2.5, the month of May has the highest temperature; followed by the months of August, October, July June, September.

Table 2. 4 2015 Mean Monthly Temperature, Tacloban City

MONTH	MEAN MONTHLY TEMPERATURE IN DEGREES CENTIGRADE
January	26.4
February	26.5
March	27.1
April	28.2
May	29.1
June	28.4
July	28.7
August	28.8
September	28.6
October	28.7
November	27.9
December	27.2

Source: PAGASA, Tac. 2016

Figure 2. 7 Mean Monthly Temperature 2015



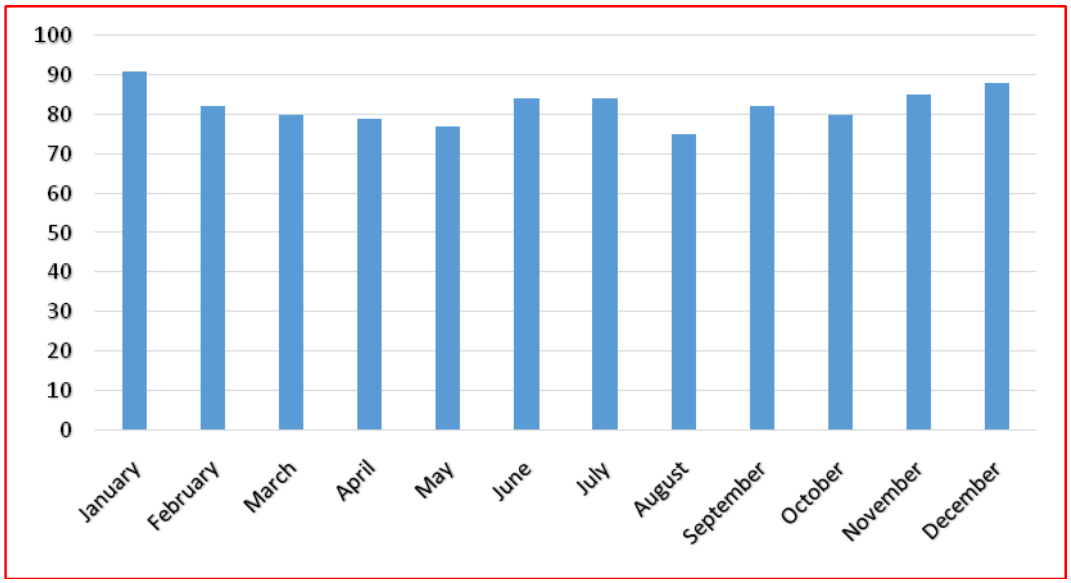
Tacloban City shows a correlative pattern in its humidity and cloudiness as presented in Tables 2.5 and Figure 2.8 attesting to the fact that there is no distinct dry or rainy season as demonstrated in the percentage of humidity and cloudiness of the area as indicated in the following tables.

Table 2. 5 2015 Percentage of Humidity, Tacloban City

MONTH	HUMIDITY (%)
January	91
February	82
March	80
April	79
May	77
June	84
July	84
August	75
September	82
October	80
November	85
December	88

Source: PAGASA, Tac. 2016

Figure 2. 8 Percentage of Humidity, 2015

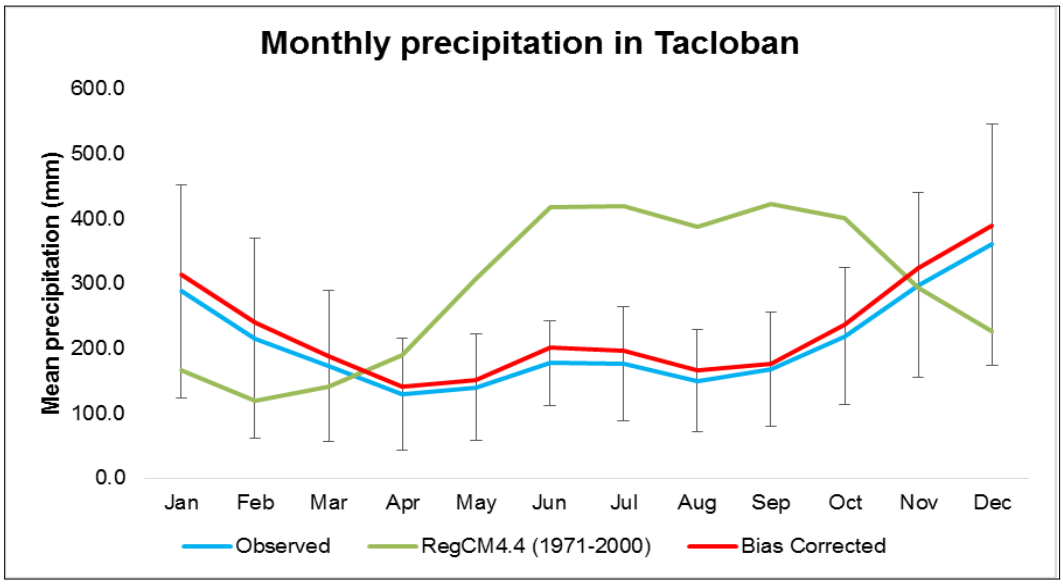


Source: PAGASA, Tac. 2016

2.5.2 Mean Precipitation

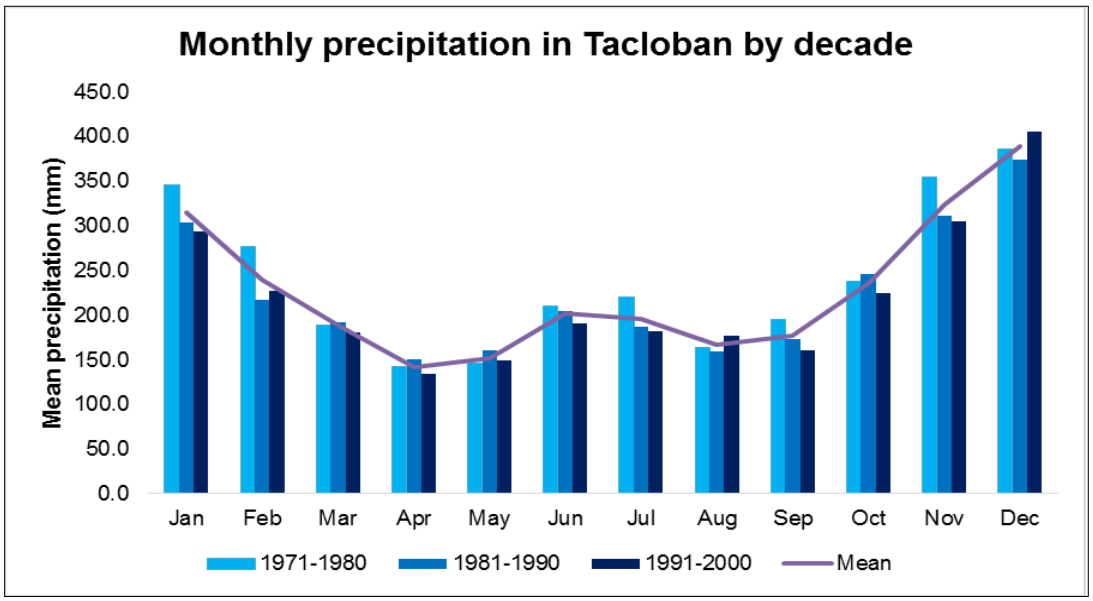
In terms of precipitation, the output of the Tacloban climate study revealed that observed monthly precipitation and the corrected monthly precipitation in Tacloban as shown in Figure 2.9 resembled the seasonal trend of mean precipitation for a Type 2 climate wherein the maximum precipitation rate occurs during December to February. The months of April and May registered the lowest rainfall in Tacloban as per observed data.

Figure 2. 9 Monthly total precipitation in Tacloban for 1971- 2000



The decadal mean monthly total precipitation patterns in Tacloban, as depicted in Figure 2.10, showed that there has been an observed overall decadal decrease in mean precipitation throughout the baseline period, which indicated drier conditions in more months during the year. A decadal increase in precipitation was only observed in May and August, which are normally two of the driest months in the city. A continuous decline in rainfall was observed during the period with the highest precipitation (November to January), except in December, which saw an increase in rainfall from 1971 to 2000

Figure 2. 10 Decadal monthly precipitation in Tacloban for the baseline period 1971 -2000

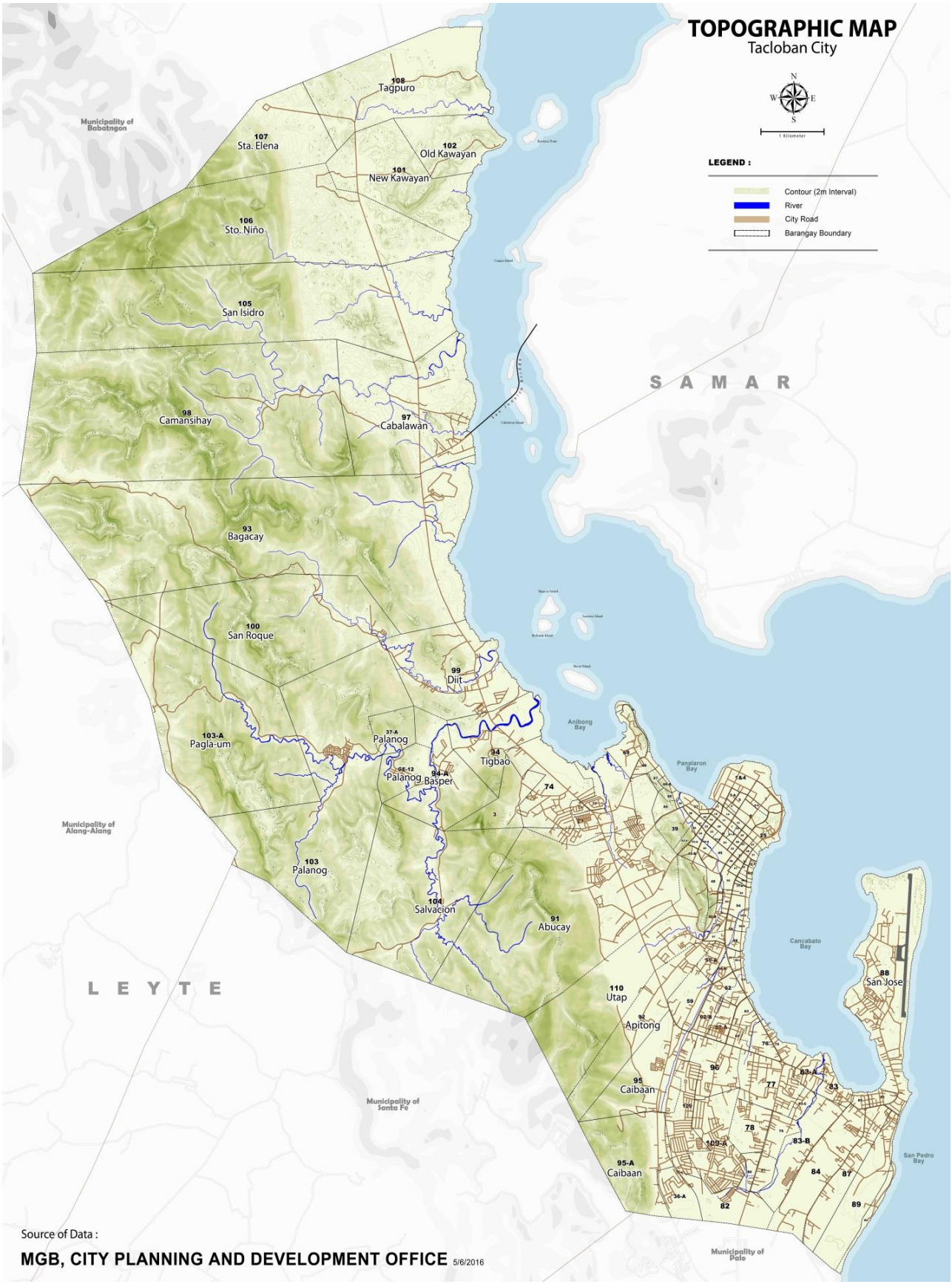


Using the rainfall data in recent years, as demonstrated in Table 2.3, the month of December, 2015 registered the highest rainfall with 468.7 mm. Adversely, May, the driest month for the year registered 5.0 mm of rainfall.

5.0 mm of rainfall.

2.6 Topography

Tacloban City's mean elevation is 5.00 meters above sea level in the urban area. In the western vicinity, along Naga-naga mountain range has a steep slope of 40% with a highest elevation of 305 meters. On the Northern part, the Sta. Elena mountain range has a steeper slope of 60.5% with the highest elevation of 575 meters. These ranges serve as the boundary between Taclobanand its adjacent municipalities such as Palo, Sta. Fe, Alang-Alang, San Miguel and Babatngon. While on the northeastern portion of the city proper, Kanhuraw Hill, seat of the Local Government of Tacloban, has an elevation of 15.09 meters above mean sea level, lies as a landmark overlooking Cancabato Bay. Ten (10) and above are non buildable in all kinds of structure.



Map 7. Topographic Map

2.7 Soils

Tacloban City has 9 principal soil types listed as follows:

1. Tacloban Clay
2. Naga-Naga Clay
3. Caibaan Clay
4. Pawing Silt
5. Caibaan Clay Loam
6. Pawing Silt Loam
7. Calanipawan Clay Loam
8. Nulatula Clay
9. Sta. Elena Clay

Table 2. 6 Soil Type, Tacloban City

SOIL TYPE	AREA COVERED (HAS)	% TO TOTAL	LOCATION (BRGY.)
Caibaan Clay	0.32	0.89	**36-A**
	44.88	6.51	**91**
	25.72	19.31	**92**
	32.36	23.67	**95**
	35.34	23.67	**95-A**
	51.55	16.86	**110**
Hydrosol	6.86	32.45	**39**
	1.23	22.32	**42-A**
	2.47	37.70	**43-B**
	4.27	28.52	**49**
	6.55	84.62	**50-A**
	1.7	37.28	**55 & 55-A**
	1.29	32.65	**57**
	3.43	36.10	**65**
	1.47	37.21	**66**
	2.77	83.43	**66-A**
	5.49	100	**67**
	6.35	75.14	**68**
	31.59	94.55	**69**
	3.9	100	**70**
	32.6	41.05	**71**
	0.21	1.42	**72**
	59.68	8.66	**91**
	0.37	0.27	**92**
	57.84	18.92	**110**
	3.43	0.49	**91**

SOIL TYPE	AREA COVERED (HAS)	% TO TOTAL	LOCATION (BRGY.)
Moderate Suitable	28.59	9.35	**110**
Unclassified	36.2	100	**1 & 4**
	15.13	100	**2**
	2.98	100	**5**
	2.4	100	**5-A**
	12.05	100	**6**
	3.05	100	**6-A**
	1.43	100	**7**
	1.75	100	**8**
	1.22	100	**8-A**
	1.67	100	**13**
	2.19	100	**14**
	2.03	100	**15**
	1.18	100	**16**
	2.18	100	**17**
	0.92	100	**18**
	1.59	100	**19**
	2.84	100	**20**
	0.88	100	**21**
	1.64	100	**21-A**
	1.27	100	**22**
	1.8	100	**23**
	1.3	100	**23-A**
	2.5	100	**24**
	19.61	100	**25**
	1.41	100	**26**
	3.25	100	**27**
	1.51	100	**28**
	1.39	100	**29**
	1.19	100	**30**
	1.71	100	**31**
	1.45	100	**32**
	1.4	100	**33**
	1.44	100	**34**
	0.87	100	**35**
	1.18	100	**35-A**
	1.04	100	**36**
	0.5	1.39	**36-A**
	8.08	100	**37**
	2.37	100	**38**
	12.39	58.60	**39**
	1.12	100	**40**
	1.32	100	**41**
	1.49	100	**42**
	4.29	100	**42-A**
	1.58	100	**43**

SOIL TYPE	AREA COVERED (HAS)	% TO TOTAL	LOCATION (BRGY.)
	2.47	100	**43-A**
	4.08	62.29	**43-B**
	3.27	100	**44**
	3.04	100	**44-A**
	6.26	100	**45**
	1.72	100	**46**
	3.23	100	**47**
	1.55	100	**48**
	1.51	100	**48-A**
	1.54	100	**48-B**
	10.71	71.54	**49**
	5.73	100	**50**
	1.19	15.37	**50-A**
	2.8	100	**50-B**
	1.67	100	**51**
	0.63	100	**51-A**
	4.56	100	**52**
	4.17	100	**53**
	8.02	100	**54**
	2.5	100	**54-A**
	2.86	62.71	**55 & 55-A**
	2.53	100	**56**
	3.17	100	**56-A**
	2.66	67.34	**57**
	5.72	100	**58**
	19.26	50.15	**59**
	13.1	89.41	**59-A**
	6.16	100	**59-B**
	3.44	100	**60**
	3.59	100	**60-A**
	6.25	100	**61**
	15.69	100	**62**
	16.37	95.34	**62-A**
	14.33	85.70	**62-B**
	14.5	100	**63**
	9.81	100	**64**
	3.82	40.21	**65**
	2.48	62.78	**66**
	0.56	16.86	**66-A**
	17.32	100	**75**
	15.23	100	**76**
	63.64	91.97	**77**
	30.61	75.82	**78**
	3.74	16.90	**79**
	9.95	89.80	**80**
	4.87	33.72	**81**

SOIL TYPE	AREA COVERED (HAS)	% TO TOTAL	LOCATION (BRGY.)
	4.9	7.99	**82**
	19.9	100	**83**
	19.09	100	**83-A**
	13.27	18.32	**83-B**
	4.68	43.01	**83-C**
	20.23	19.34	**84**
	6.19	100	**85**
	8.8	100	**86**
	18.18	25.75	**87**
	240.6	100	**88**
	15.2	15.74	**89**
	40.65	30.52	**92**
	10.8	0.97	**93**
	69.39	50.75	**95**
	41.31	27.67	**95-A**
	29.05	53.72	**96**
	7.09	1.95	**97**
	0.35	0.03	**98**
	5.74	1.30	**100**
	15.35	7.35	**101**
	9.94	9.15	**102**
	15.08	2.41	**103**
	0.4	0.07	**103-A**
	39.86	66.28	**109**
	17.25	19.23	**109-A**
	6.96	2.27	**110**
Nula-tula Clay	25.8	42.81	**3**
	19.15	49.86	**59**
	1.55	10.58	**59-A**
	0.8	4.65	**62-A**
	2.4	14.35	**62-B**
	6.95	8.75	**71**
	2.12	49.30	**73**
	61.13	56.60	**74**
	5.55	8.02	**77**
	7.77	19.24	**78**
	18.4	83.14	**79**
	1.13	10.19	**80**
	9.58	66.34	**81**
	56.38	92	**82**
	56.03	77.36	**83-B**
	6.21	57.07	**83-C**
	78.02	74.58	**84**
	32.71	46.34	**87**
	40.64	42.08	**89**
	5.83	38.89	**90**

SOIL TYPE	AREA COVERED (HAS)	% TO TOTAL	LOCATION (BRGY.)
	54.08	7.84	**91**
	38.85	29.17	**92**
	144.95	13.07	**93**
	12.26	10.56	**94**
	21.55	15.76	**95**
	15.84	10.61	**95-A**
	25.03	46.29	**96**
	23.78	6.55	**97**
	3.05	1.44	**99**
	61.1	29.27	**101**
	1.75	1.61	**102**
	6.96	1.66	**104**
	0.96	0.16	**106**
	32.89	17.65	**107**
	1.79	0.58	**108**
	20.28	33.69	**109**
	72.45	80.76	**109-A**
	71.79	23.49	**110**
Naga-naga Clay	38.37	73.56	**12**
	21.35	54.16	**37-A**
	1.9	8.98	**39**
	2.25	23.68	**65**
	2.09	24.73	**68**
	1.77	5.29	**69**
	35.77	45.04	**71**
	14.57	98.57	**72**
	2.18	50.69	**73**
	45.74	42.35	**74**
	180.5	26.19	**91**
	139.99	12.62	**93**
	83.74	72.17	**94**
	58.13	43.18	**94-A**
	295.66	81.45	**97**
	126.14	12.71	**98**
	122.34	58.04	**99**
	56.07	12.73	**100**
	70.22	33.64	**101**
	73.33	11.72	**103**
	47.91	9.04	**103-A**
	92.04	22.04	**104**
	334.47	41.79	**105**
	246.23	41.76	**106**
	13.13	7.04	**107**
	100.65	32.76	**108**
	2.93	0.95	**110**

SOIL TYPE	AREA COVERED (HAS)	% TO TOTAL	LOCATION (BRGY.)
Tacloban Clay	34.46	57.18	**3**
	13.8	26.45	**12**
	18.06	45.81	**37-A**
	4.02	5.06	**71**
	346.62	50.29	**91**
	27.48	20.63	**92**
	754.06	68.01	**93**
	20.09	17.31	**94**
	76.48	56.81	**94-A**
	11.91	8.71	**95**
	51.46	34.47	**95-A**
	35.11	9.67	**97**
	865.65	87.24	**98**
	85.39	40.51	**99**
	348.74	79.21	**100**
	57.75	27.67	**101**
	96.88	89.23	**102**
	536.59	85.84	**103**
	316.26	59.72	**103-A**
	318.57	76.28	**104**
	459.63	57.43	**105**
	340.54	77.96	**106**
	43.86	23.53	**107**
	112.91	36.75	**108**
	83.94	27.46	**110**
Sta. Elena			
	4.31	2.06	**101**
	1.67	0.28	**106**
	96.49	51.76	**107**
	69.71	22.69	**108**
Marsh Moderately Flooded			
	0.09	0.06	**92**
	58.8	5.30	**93**
	1.5	1.09	**95**
	5.33	3.57	**95-A**
	29.62	6.72	**100**
	164.9	31.14	**103-A**

Source: Bureau Soils, 2016

The following soil series are herein illustrated and defined as:

1. The Tacloban series are moderately deep, well drained, fine clayey soils found on the mountainous areas of Tacloban City. The A Horizon is 5 to 15 cm thick

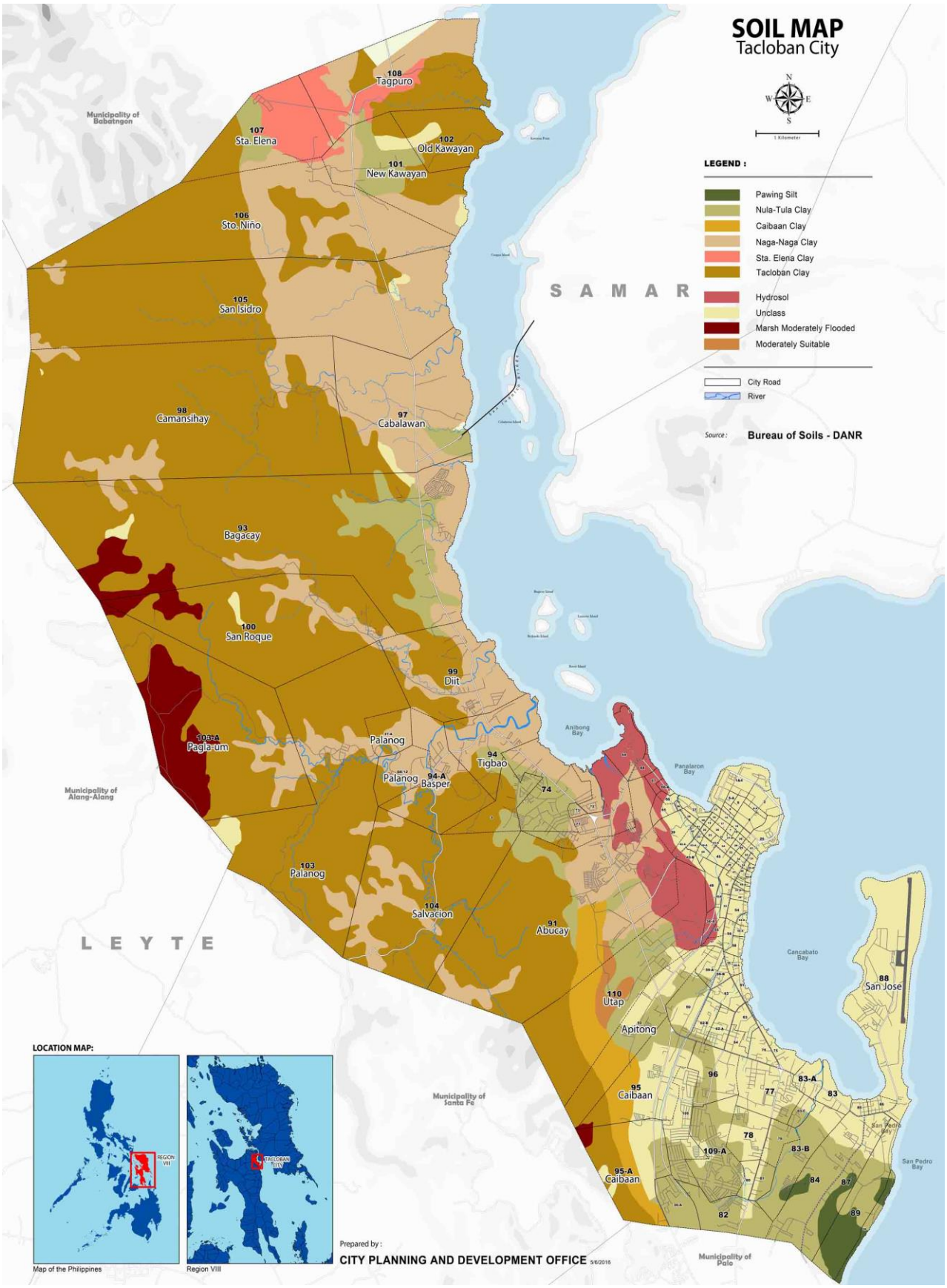
is brown to yellowish-brown granular clay loam or clay. The C Horizon below 90 cm. consist of brown to dark brown, dark yellowish brown or yellowish brown clay loam or clay with few to common highly weathered shale.

2. The Naga-Naga series are poorly drained, fine clayey, recent alluvial soils found on the level areas just above the swamp. The A Horizon 15 to 20 cm thick is light gray to dark gray clay. The B horizon, 50 to 100 cm. deep, is light gray to gray clay with few CaCO3 nodules.

3. The Caibaan series are very deep, somewhat poorly drained fine clayey soils found on the medium plain before the undulating and slightly higher piedmont landscapes. The A horizon 20 to 30 cm. thick is gray to very dark gray, reddish gray to dark reddish gray silty clay to light clay with yellowish red mottles.

4. The A Horizon 10 to 20 cm. thick of the Pawing Clay is brown to dark brown very friable sandy loam. The B Horizon 40 to 60 cm. deep is strong brown to dark brown to dark brown sandy loam. The substrata below 60 cm. consist of stratified layers of gray to grayish brown silt loam, sandy loam, loamy sand and sand.

5. The Sta. Elena series are deep, somewhat poorly drained, very fine clayey soils found on the slightly undulating piedmont landscape. The A Horizon, 15 to 25 cm. thick is grayish brown to dark gray friable clay loam with strong brown mottles. The B Horizon, 120 to 150 cm. deep is very pale brown to heavy yellow clay with yellowish red mottles. The C Horizon, 150 to 220 cm. deep is pale brown heavy clay. Below the C Horizon buries A Horizon which is characteristically greenish gray to dark gray clay loam, silty clay or clay with common to many highly decomposed organic matters.



Map 8. Soil Map

2.8 Geology

Four rock formation units can be found within the immediate area of TaclobanCity and its nearby towns. These are: the Quaternary Alluvium (1.6 mya to present); the Turbidite (successively layered rocks) sequence of Bagahupi Formation, which is Pliocene (0.01 to 1.6 mya) in age; the San Ricardo Formation, which is Early to Middle Miocene (11 to 23 mya) in age; and the TaclobanOphiolite (Balce, C., 1997, pers. Comm..), which encompasses the successive sequence of Schists, Volcanic, Serpentine and Gabbroic rocks all thought to be of Cretaceous (65 to 135 mya) in age.

The TaclobanOphiolite is represented by the long stretch of small mountain chains located west of Tacloban, which extends in a northwest-southeast manner. Limited observations of igneous rock exposures at Salvacion and Tigbao suggest basaltic origin of the rocks found in the areas mentioned. The northern portions of Tacloban, specifically those located at the rolling hills, are underlain by the slightly dipping Bagahupi sedimentary sequence, which has some outcrop exposures at road cuts of hilly portions and along the shoreline of Tagpuro facing the San Juanico Strait. Exposures are also present at the protruding headland at Anibong Bay where three fuel depots are located.

The Tacloban City proper is underlain by the Sedimentary sequence of the San Ricardo Formation, which is very slightly dipping. This can be observed at the Kanhuraw Hill which is characteristically rising within a generally lowland area.

The Quaternary Alluvium overlies most of the older rock units in different areas and it consists of recent soil deposits and sands, which can be loose or compacted. The coastal areas and plains are covered by this kind of rock unit, like those found along the bounding bodies of water. The Tacloban Airport at San Jose is in itself underlain by compacted young sand deposits, which form a characteristic sandspit structure (a coastal feature which denotes a protruding sand body towards the sea and is attached to the mainland). Many places are underlain by the compacted sands and soils, such as those at San Jose and places southwest of Tacloban City proper.

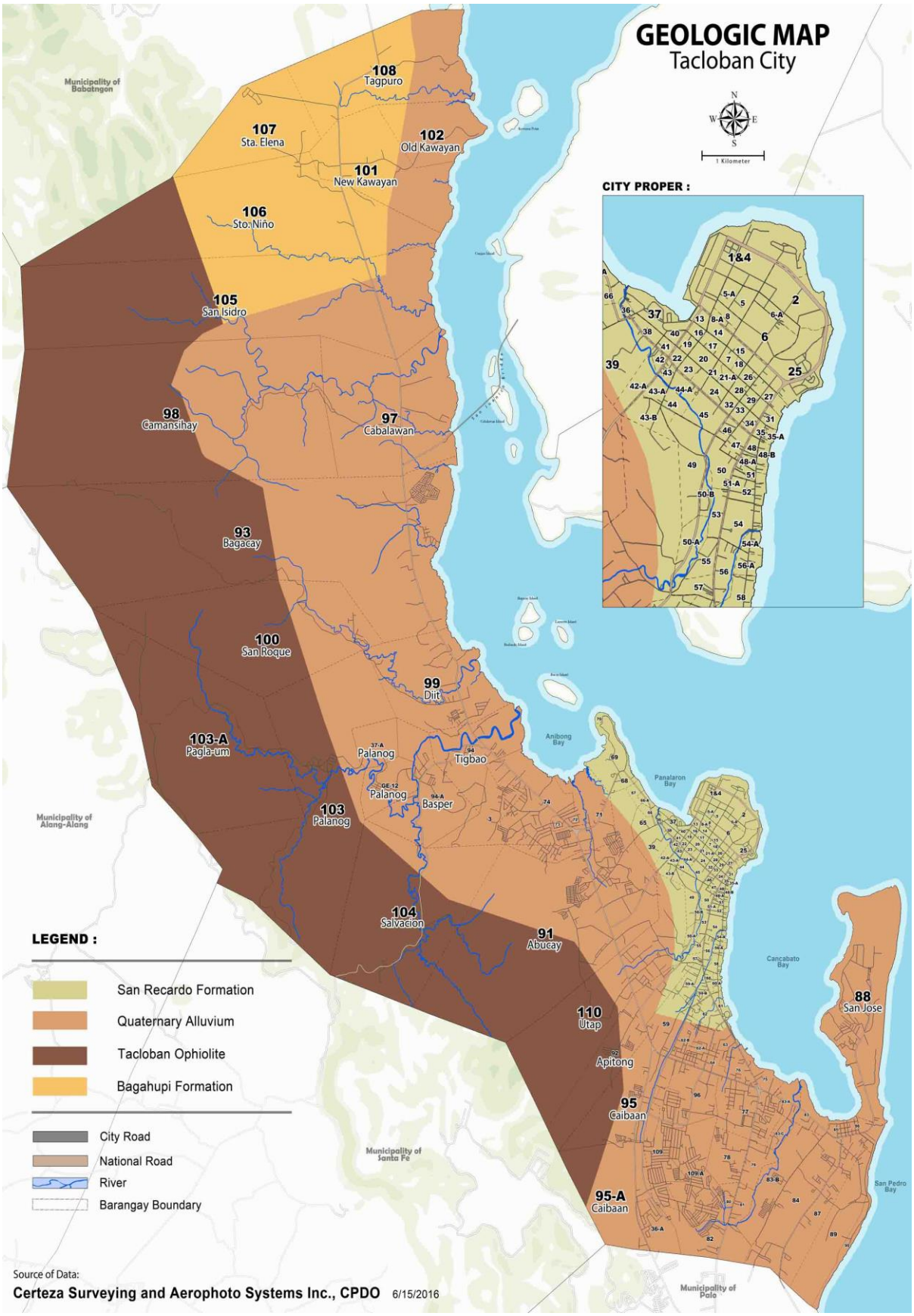
Two minor fault lines have been previously mapped out in the immediate area of Tacloban. One is located at the western flank of the mountain chains west of Tacloban, while the other exists at the northern area, which serves as the boundary between the TaclobanOphiolite and the Bagahupi formation. These faults are identified as thrust faults and are possibly inactive, but detailed studies and data regarding the actual nature of these two geologic structures are non-existent. The potential of these structures as earthquake generators cannot be discounted at the moment.

Tacloban City has deposits of metallic and non-metallic mineral resources. Metallic deposits consist of copper and iron. Non –metallic minerals are comprised of red-burning clay which is used for producing bricks and pottery and chert dimension stone used as interior and exterior building materials.

Table 2. 7 Geologic Classification, Tacloban City

GEOLOGIC TYPE	AREA COVERED	LOCATION
Quaternary Alluvium	Along Coastal Areas; Areas Southwest of City Proper	San Jose District
Bagahupi Formation	Tagpuro facing San Juanico Strait	Brgy. 108
San Ricardo Formation	Tacloban City Proper	Kanhuraw Hill
TaclobanOphiolite	Northern Barangays, Small Mountain Chains West of Tacloban, extending to the Northwest-Southeast Side of the City	Brgy. 104, 94, Anibong Bay

Source: MGB, 2016

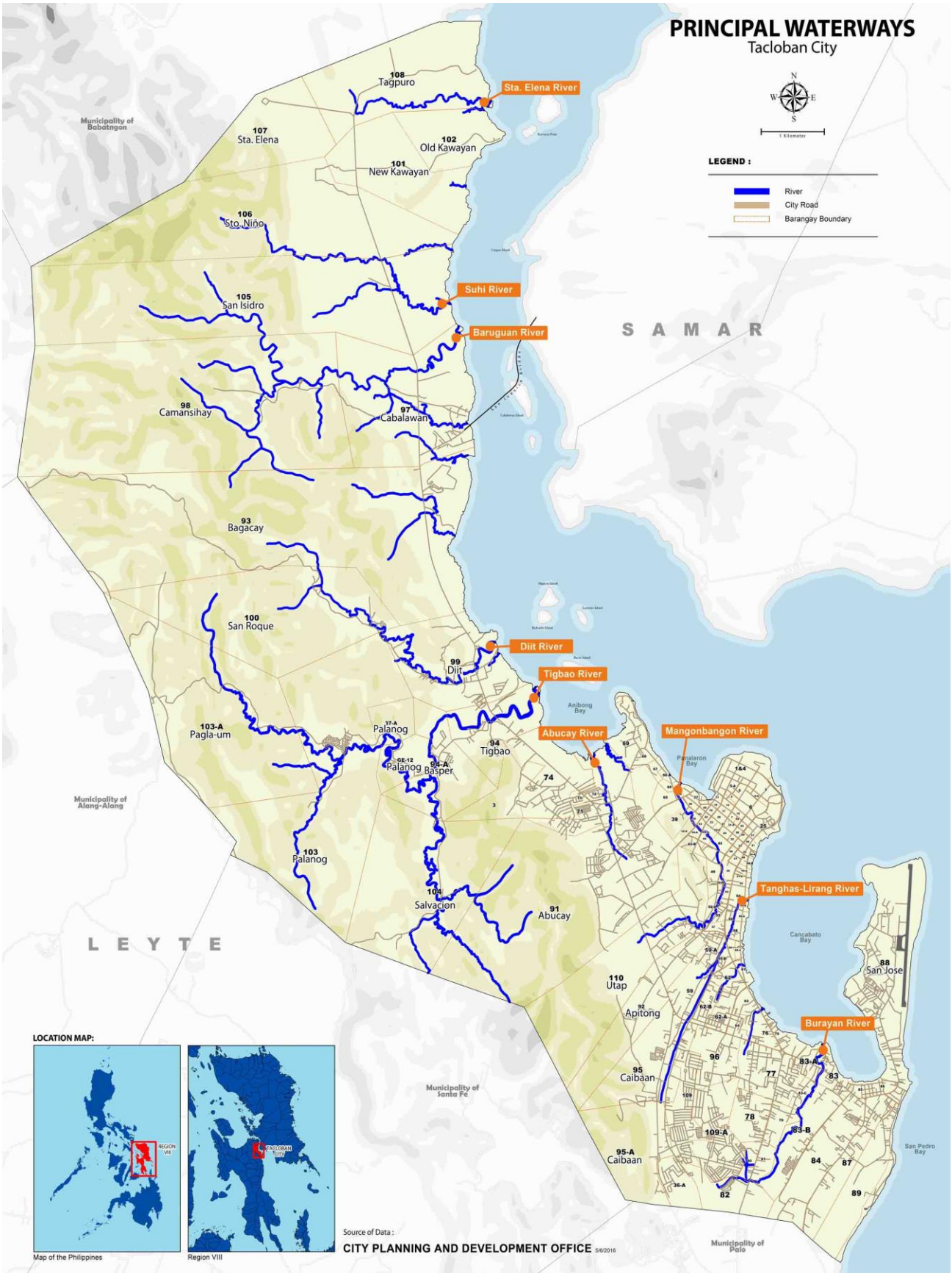


Map 9. Geologic Map

2.9 Water Resources

The water supply of the City primarily comes from the Leyte Metropolitan Water District (LMWD), which is the sole water distributor serving the areas of San Jose, Marasbaras, Caibaan, V & G Subdivision, Janssen Heights, Calanipawan, Sagkahan, City Proper up to Barangay Diit along the National Highway. The water supply source is surface water from the creeks and rivers located outside of the city area. As of 2010, approximately 40,000 cubic meter of potable water was delivered to the LMWD service area on a daily basis. Moreover, Tacloban City, with over 20,000 water connections is about 75% of the total water connections of LMWD in Leyte. Water resources outside the city are Pongso and Cabayugan Rivers located at Municipality of jaro with an estimated watershed area of 31sq.km and 43sq.km, respectively.

Hand pumps and wells were observed at barangays Tigbao, San Roque, Diit, Bagacay, Camansihay, Tagpuro, New and Old Kawayan, and San Jose. Water discharged from these sources is clean and is encouraging although no measurements have been done to quantitatively determine the flow of water. However, there are reports that the water flowing from deep wells close to the coastal areas show signs of salinity which could mean saltwater intrusion into the aquifers. Nevertheless, sub-surface water is being utilized as drinking water in certain places of the city despite the absence of technical studies.



Map 10. Principal Waterways

2.10 Potential Hazards

2.10.1 Earthquake Related/Ground Shaking

Tacloban City is generally close to the active Philippine Fault Zone (PFZ), the 'high angle fault line' that runs through the middle of Leyte Island. The PFZ is a major earthquake generator and may have been the immediate source of earthquakes that has affected Tacloban City in the past. The Philippine Trench (PT), which is located at the eastern coast of Samar but quite far from Tacloban, can also be an earthquake generator on a lesser degree than that of the PFZ.

Most of the city areas are underlain by igneous rocks represented by the TaclobanOphiolite, especially in elevated areas like Salvacion and Tigbao. Settlements and structures located over these areas are less susceptible to ground shaking because igneous rocks generally provide better foundation for infrastructures.

Areas that are underlain by loosely stratified sedimentary rock units and recent alluvial and sand deposits are more susceptible to ground shaking. The presence of weak planar contact between the different beds of sedimentary rocks, as well as their lower density as compared to igneous rocks, allow for an increased effect of ground shaking. The stronger shaking is more prevalent on thick and poorly stratified alluvial soils and poorly compacted or constantly wet sands because these sediments are loose enough to be re-mobilized during ground shaking.

Areas wherein these conditions allow for a strong, ground shaking potential are the areas underlain by all the sedimentary rock units and recent alluvial and sand deposits. Most of these areas are located along the rolling to low-lying coastal areas of the city such as the city proper, San Jose and the Airport area, the low-lying areas southeast of the city proper, and narrow low-lying portions along the coast facing San Juanico Strait.

Liquefaction of the ground is also associated with this ground shaking motion. This process usually happens in regions that are underlain by loose or

compacted and/or wet sands, and poorly consolidated, compact or loose alluvial sediments. Tacloban City had been identified as one of the places in the Philippines with a strong potential for liquefaction (Torres, et.al., 1994). The location of the Airport in San Jose, which is southeast of Tacloban City proper is susceptible to this kind of hazard.

Proper foundation, structural and soil engineering measures can be applied for built structures in areas, that are prone to both ground-shaking and liquefaction hazards. The basement bedrocks that can be stable and can withstand the effects of earthquakes may not be too deep to reach for laying foundation to large-scale, high density structures.

Undertaking a detailed geological and geotechnical studies in the area will be of great importance as this will help in understanding the mechanics of the immediate geological structures, as well as the geotechnical properties of the rocks and sediments. All of these measures will greatly minimize the adverse effects of earthquake-related hazards in prone areas.

Tacloban City may not have experienced tsunami but safeguards through provision of structures which will serve as warning device to the populace of the local government unit and improve their knowledge and preparedness for such particular hazards shall be in placed.

2.10.2 Tsunami Prone Area

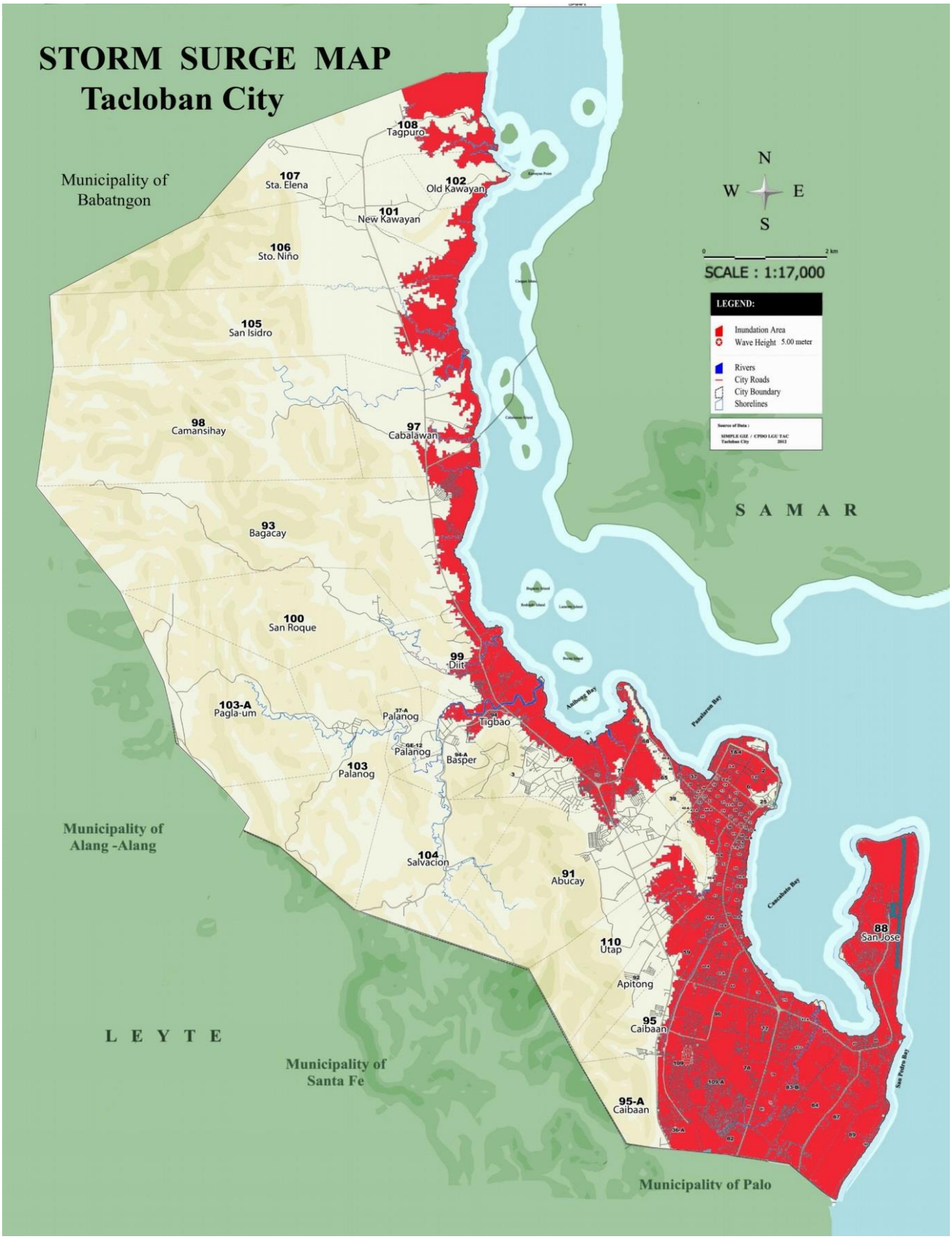
Low lying areas along the open coast are susceptible to tsunami. It occur during the very strong earthquake wherein the wave generated are pushed inland. There is no recorded history of tsunami that affected Tacloban City in the past have been documented. Based on the map provided by MGB, the coastal areas that are particularly susceptible to tsunami are the coastal barangays of San Jose, Marasbaras and Tacloban City proper. Their proximity to deeper and open waters (especially San Jose which is facing the San Pedro Bay), qualifies these places as a tsunami area. See Tsunami Map

2.10.3 Flood Prone Area

The Low-lying Areas in the city are particularly susceptible to flooding. This problem is aggravated by inadequate drainage facilities, encroachment on drainage ways, clogging of drainage systems and removal of vegetation in the watersheds.The low-lying areas that are prone to flooding are the lowland plains southwest of the City proper, which include portions of Apitong, Sagkahan, Caibaan, Calanipawan, all of Marasbaras and San Jose, portions of Tigbao, Diit, Cabalawan, San Isidro, Tagpuro, Old Kawayan, New Kawayan and Tacloban City . See flood hazard Map.

2.10.4 Storm Surges Prone Areas

Low areas along the open coast are susceptible to storm surges. Storm surges occur during the strong typhoons with strong winds and heavy downpour, and sometimes even during strong monsoons. Storm surges that affected Tacloban City in the past have been documented. This means that this potential hazard still exists (Gonzales, 1994). The coastal areas that are particularly susceptible to storm surges are the coastal barangays of San Jose, Marasbaras and Tacloban City proper. Their proximity to deeper and open waters (especially San Jose which is facing the San Pedro Bay), qualifies these places as a surge prone area, especially during typhoons and strong monsoons. The coastal areas along the San Juanico Strait have a low surge potential as these places normally have relatively calm waters and are next to a small body of water.See Storm Surge Map.



Map 11. Storm Surge Map

2.10.5 Coastal and Slope Erosion Potential

Coastal erosion does not seem to be a problem along the coasts of the inner bodies of water. Deposition is otherwise the dominant coastal process occurring in these areas, which is shown by observable situation at the smaller bays. This may have been caused by the high amount of sediments being unloaded by the rivers draining into these waters bodies. The water currents are not too strong to cause any erosional processes along the shore.

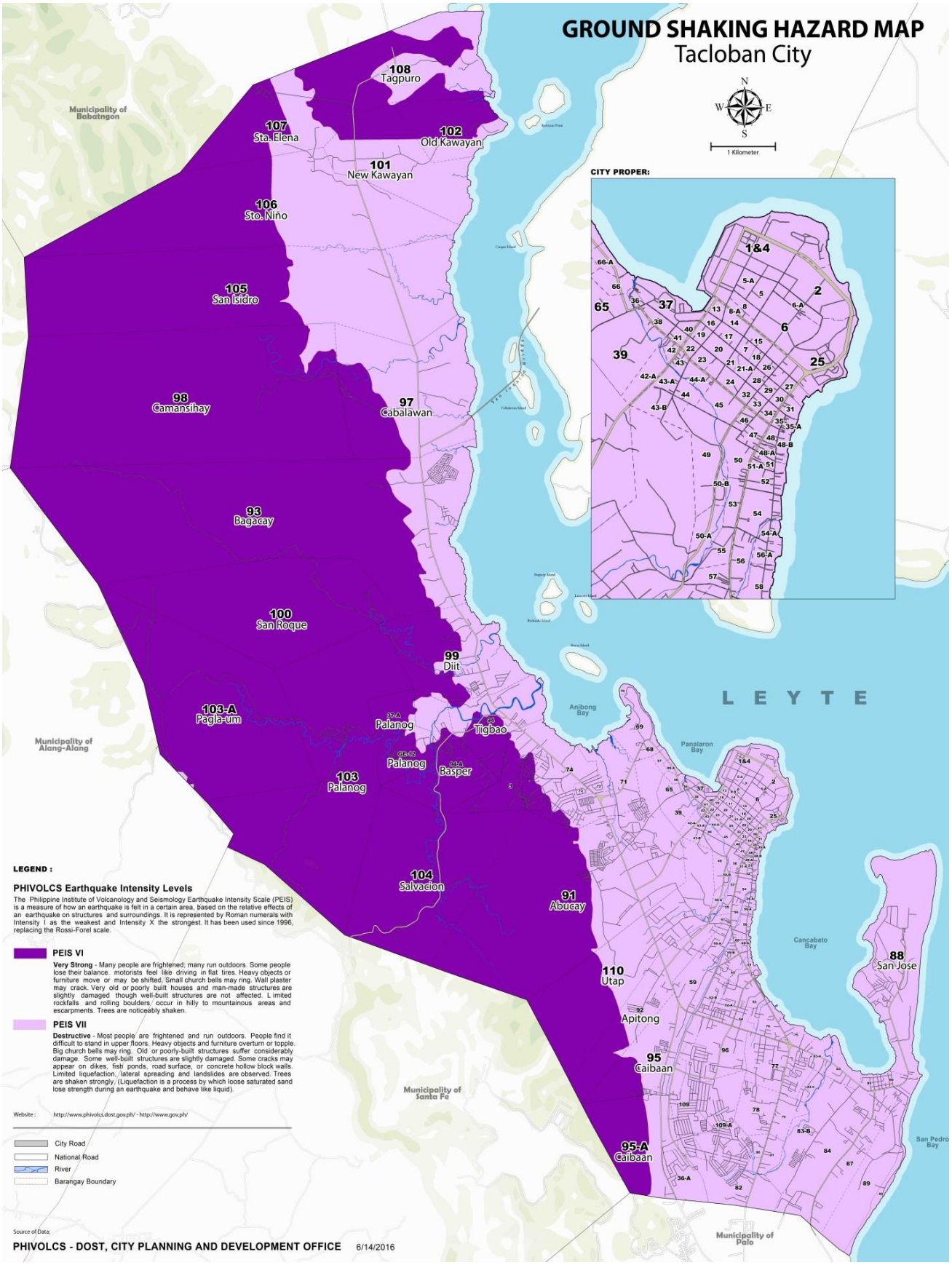
The shoreline along the San Pedro and San Pablo Bay, on the other hand, may have some coastal erosion potential. Although the dominant coastal process at this area is the deposition of sediment particles, such as sand brought about by longshore currents (sea current which moves in a direction along the shoreline, instead of a head-on current directed towards the coast) from the sandy beaches south of Tacloban, a disturbance in the sources of these sediments can reverse the depositional process into an erosional one. The shoreline of San Jose generally experiences minor coastal erosion but the loss of sand is being balanced by the deposition of sediments coming from the south. The disturbance to sediment supply can be caused by the construction of coastal structures at the municipalities south of Tacloban which is beyond its territorial area.

Protection of these coastal areas from possible erosion will call for the involvement of the other coastal municipalities which lie along the shoreline of San Pedro Bay. An integrated coastal management program involving the concerned municipalities will have to be conceived and implemented in order to address these concerns. Any development of coastal structures must be evaluated in terms of their positive and negative impacts to the coastal environment.

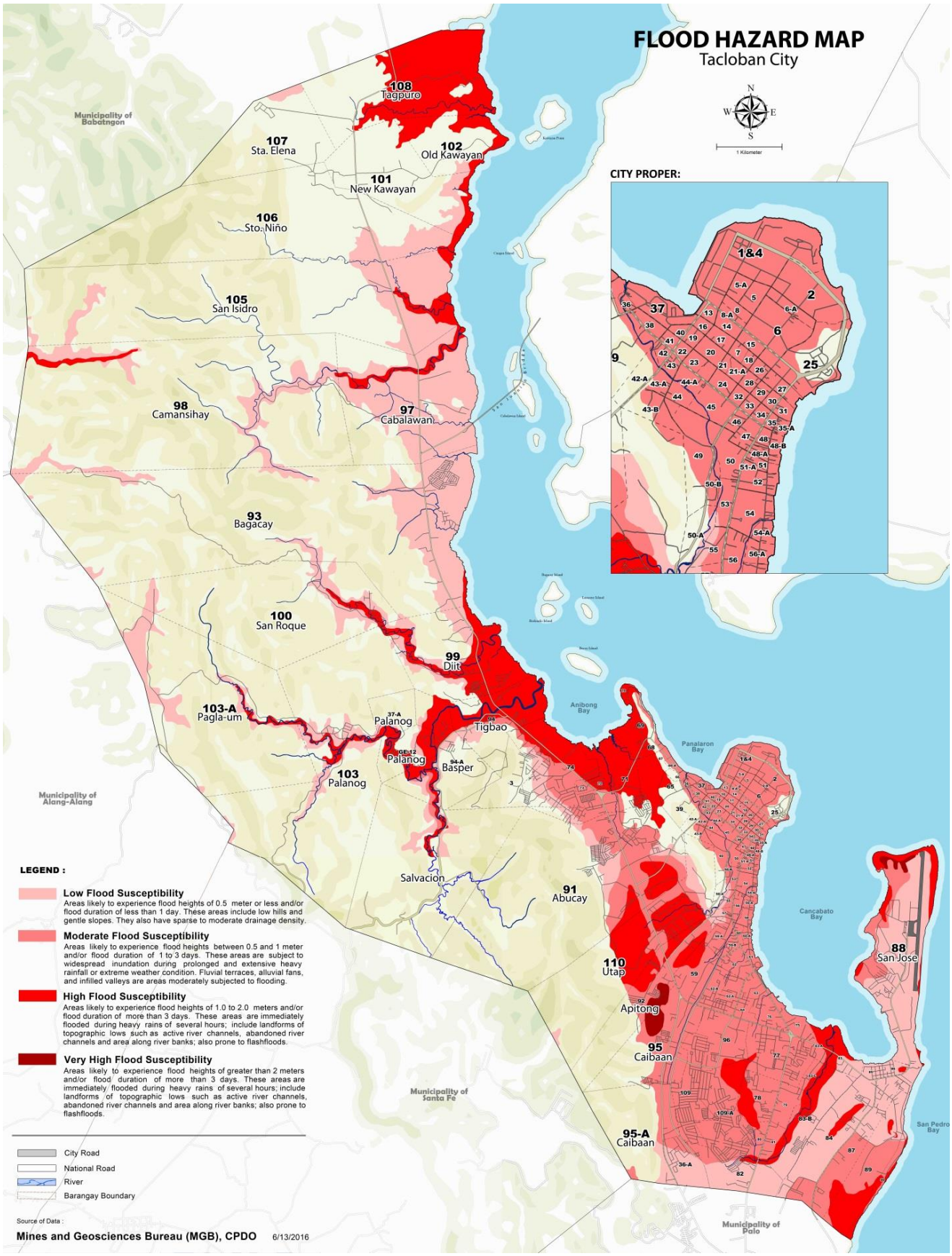
Slope erosion caused by heavy surface runoff during strong rains often occur in elevated areas with considerable steepness of slopes and covered with unconsolidated or loose rocks and alluvium. This can also occur in places where heavy surface runoff occurs and natural vegetative cover is scarce or absent, such as denuded hills covered with cogon grass instead of trees. These conditions cause landslide-prone areas are mostly located at the mid-section towards the

southern portion of the Western mountain and hilly chains of Tacloban, especially in slopes with minimal vegetative cover. The northern section of this mountainous chain also has some slope erosion potential, but these can be more related to earthquake-generated landslides rather than those caused by surface water run-off.

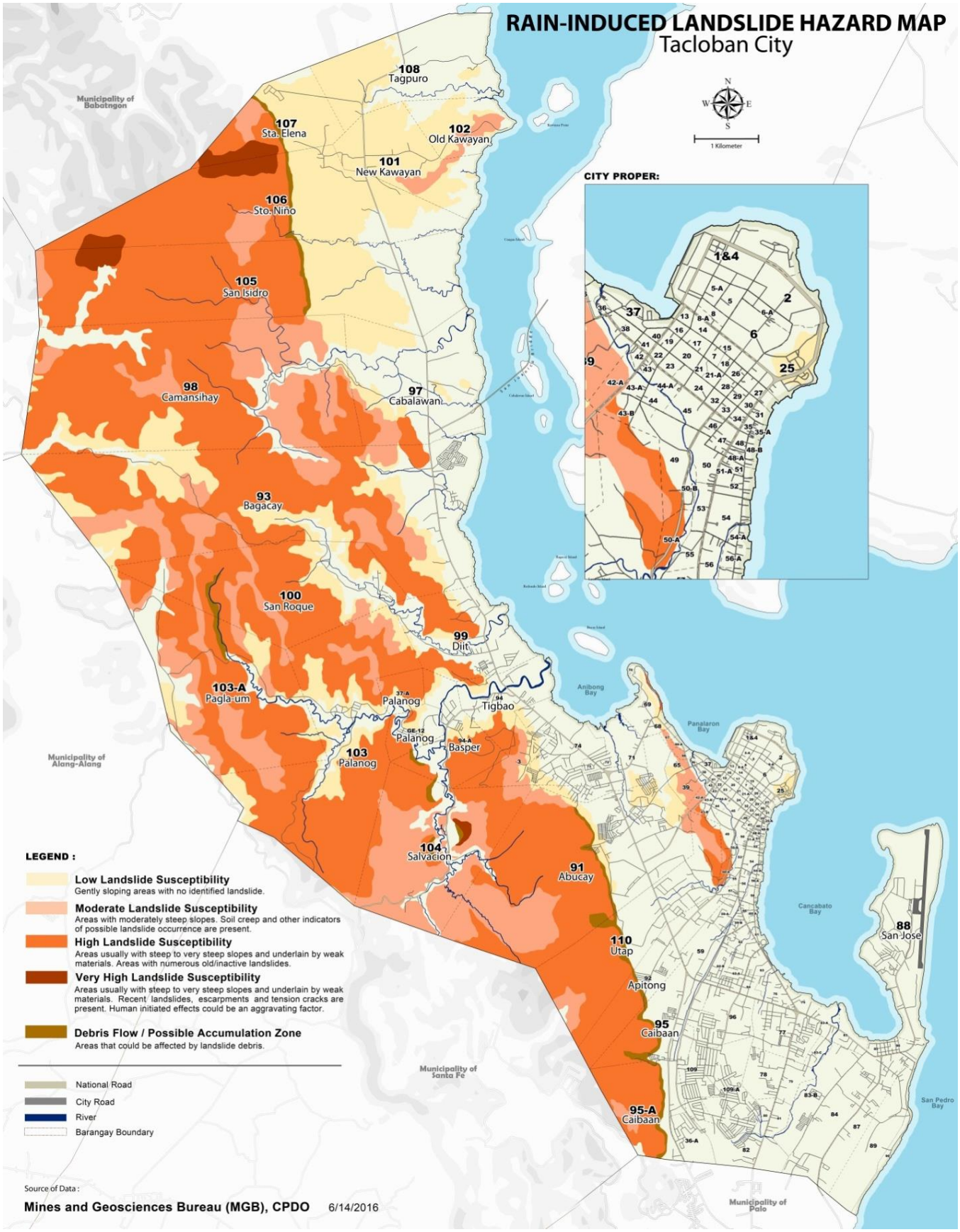
Revegetation of the denuded, steep-slope areas can be an effective measure to limit slope erosion and landslides in vulnerable areas. Engineering measures, when possible, such as slope stabilization, can be applied in landslide-prone areas where major infrastructures, such as national roads, are located. Knowledge of these areas is also important in guiding the location and development of new infrastructure.



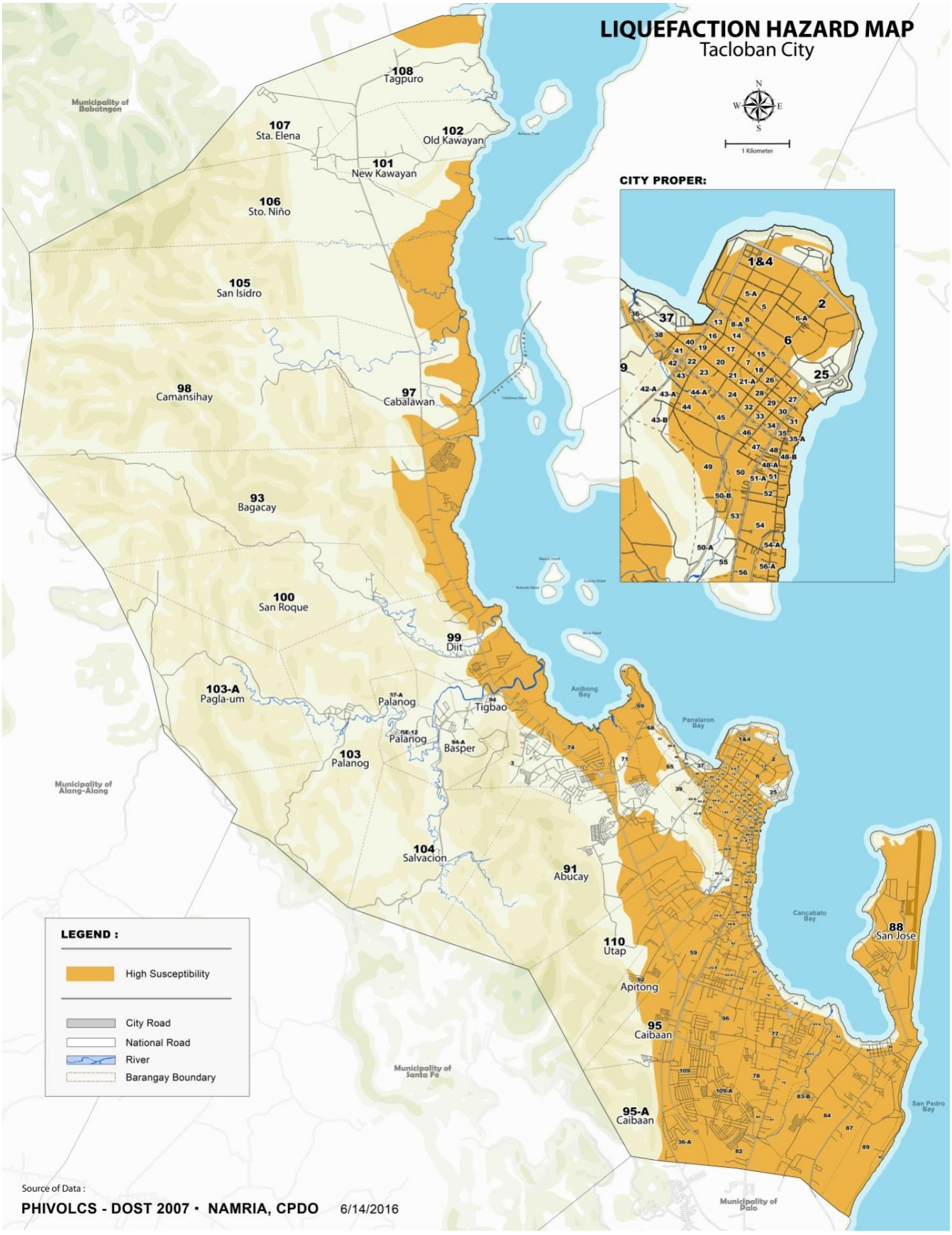
Map 12. Ground Shaking Hazard Map



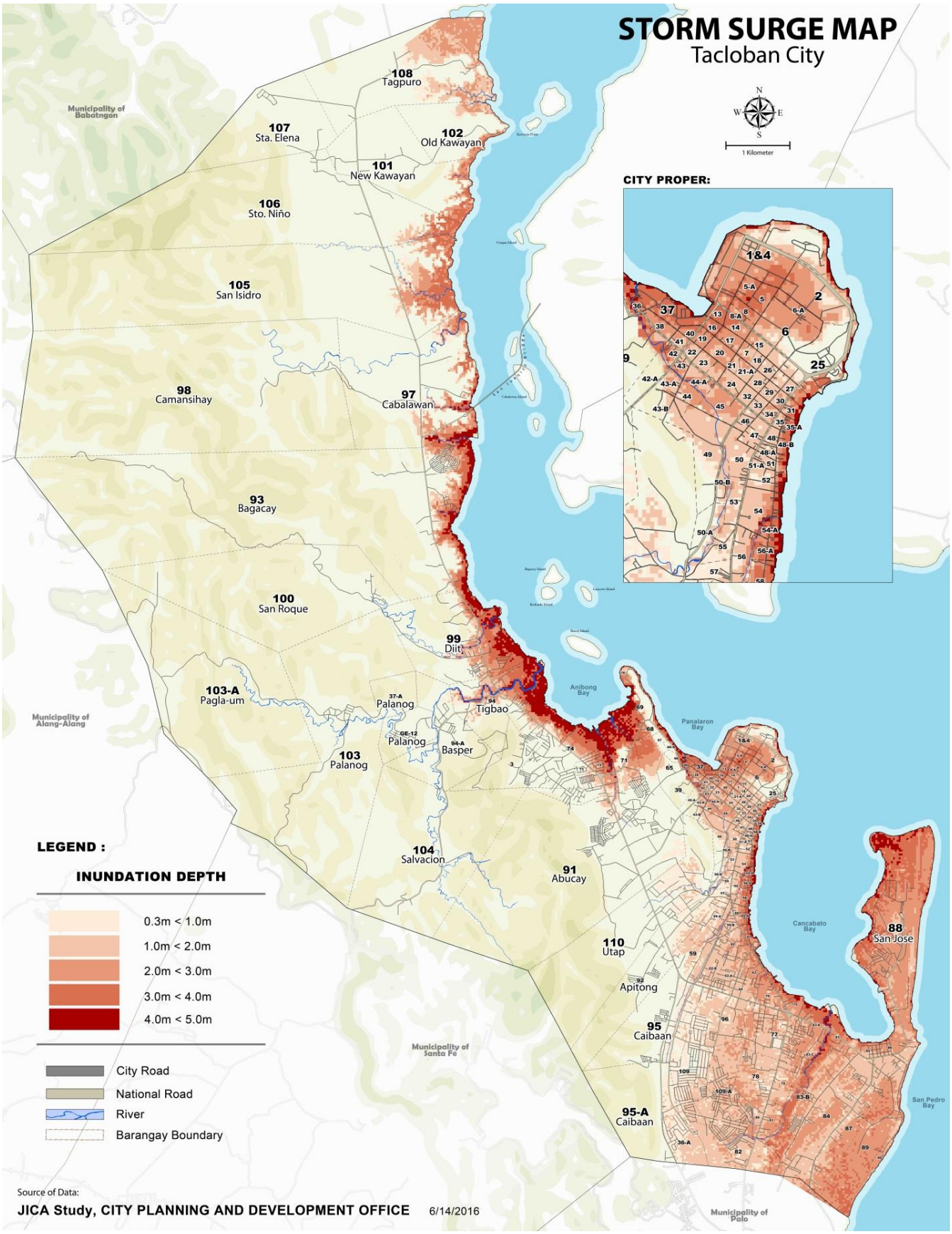
Map 13. Flood Hazard Map



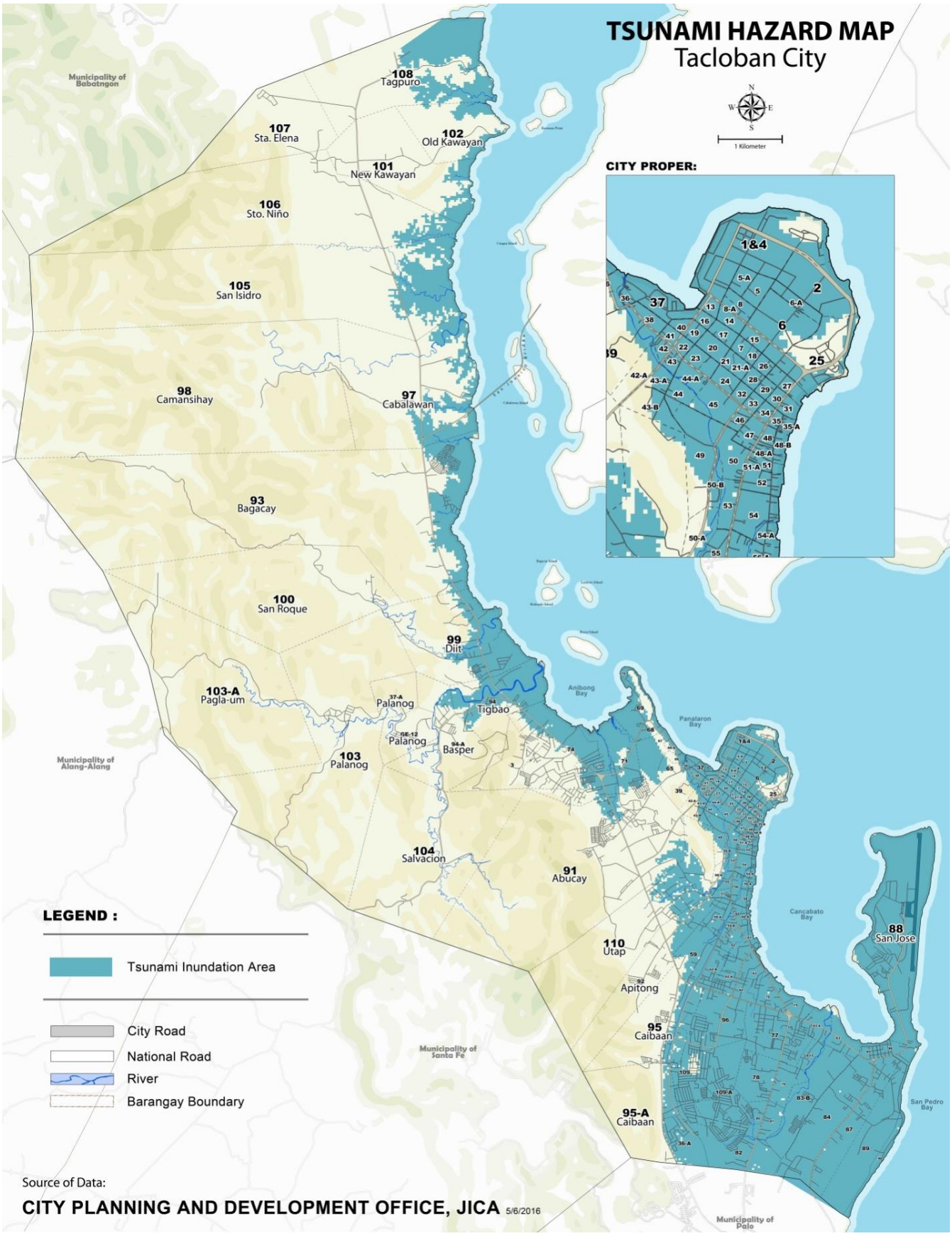
Map 14. Rain-Induced Landslide Hazard Map



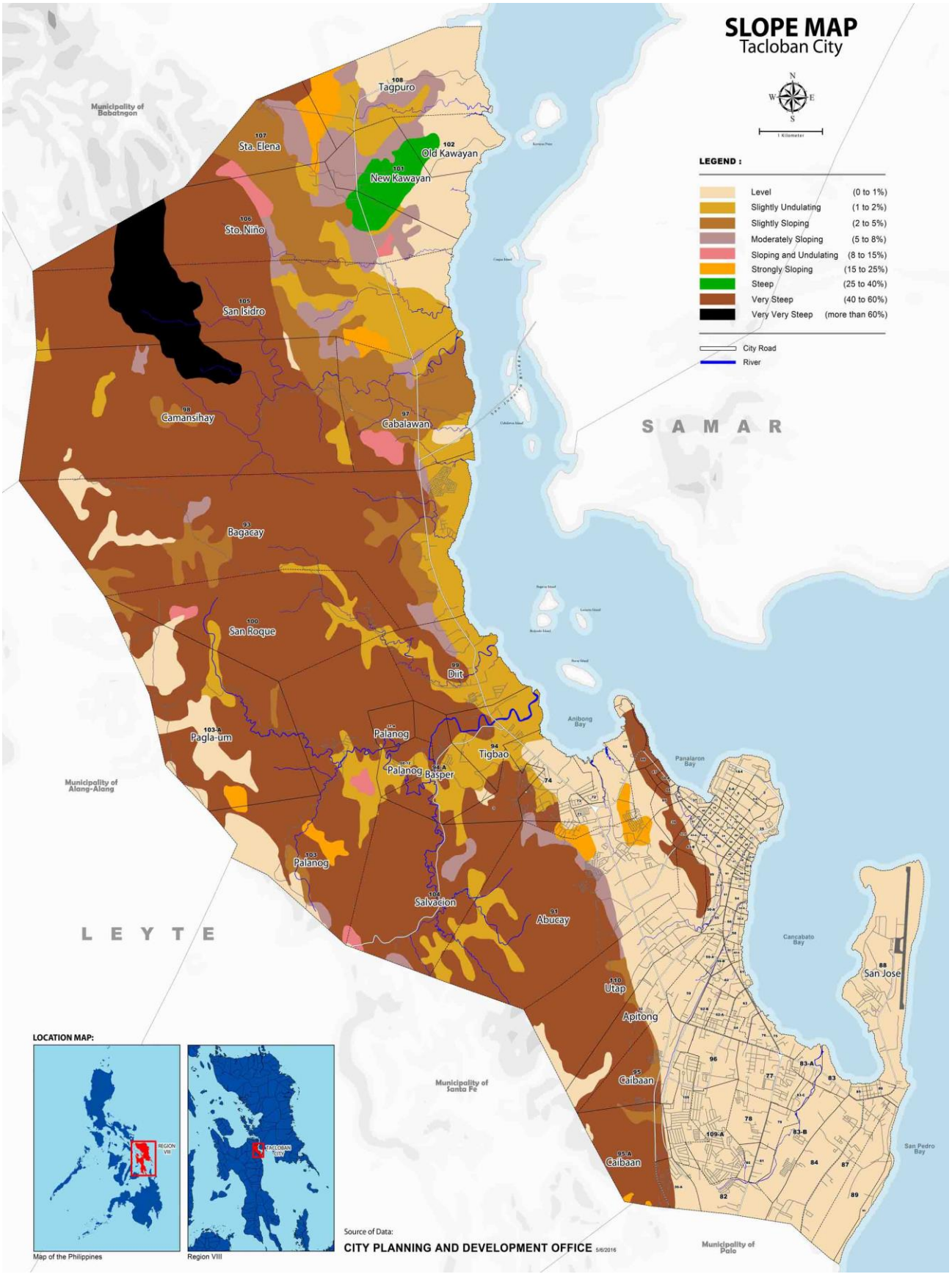
Map 15. Liquefaction Hazard Map



Map 16. Storm Surge Map



Map 17. Tsunami Hazard Map



Map 18. Slope Map

2.11 Climate Change Adaptation

Tacloban City's geographic location and physical characteristics have its advantages and disadvantages that can be used to assess and evaluate the issues concerning climate change adaptation.

The city proper, the central business districts (CBD) and other elevated areas such as Brgys. Tigbao and partly Salvacion are underlain by igneous rocks. These areas are less susceptible to ground shaking and provide a better foundation for higher infrastructures. On the other hand, other areas that have loosely stratified ground characteristics are more susceptible to earthquakes particularly in the San Jose District. With this information, planners can recommend measures on infrastructure such as construction of buildings, possible use of specific areas and other concerns.

Moreover, it has been observed that most low-lying areas in the city are susceptible to floods specifically some areas in the city proper, Brgys. Apitong, Caibaan, Utap, Calanipawan, San Jose and some parts in the downtown area.As a measure, the city has come up with a master drainage plan that will connect the system to the catchment basins. The basins and rivers on the other hand need to be dredged to accommodate big volumes of water during monsoons and prevent massive flooding of city streets and the low-lying areas.

In anticipation of storm surges, especially in areas along the coastal barangays of San Jose, Marasbaras and Tacloban City proper, the present administration has lined-up several programs and projects for this specific weather anomaly. Canals, ditches and barriers will be in place and relocation/evacuation areas have been identified. These areas are in proximity to deeper and open waters (especially San Jose which is facing the San Pedro Bay), and so they are considered surge prone areas during typhoons and strong monsoons. The coastal areas along the San Juanico Strait have a low surge potential as these places normally have relatively calm waters and are next to a small body of water.

In any event of calamity and disaster, Tacloban city has commissioned specific agencies to assist in any eventuality and trained personnel will be dispatched to assist the constituents. Also, identified evacuation centers will

temporarily house affected families for their safety together with other susceptible households and families.

Climate Change Adaptation will come as a measure for any eventuality suited with our geographic location and characteristics. Activities to mitigate any circumstance and assist the constituents in any disaster brought by an erratic climate will help save lives of our people and possibly our economy.

2.12 Primary Forest and other Forest Types & Critical Watersheds

- **Watersheds:**

The stakeholder profile of the City's forest and forestland areas, offers an understanding of the current realities in watershed management. From a forest planning standpoint, decision support systems can be developed to respond to the peculiarities of the City's watershed landscape which is dissected into different watershed management units. Each of these sub-watersheds covers a cluster of barangays suggesting spatial and functional connectivity relationships, in terms of demography and land use. There are 6 major watershed units that had been delineated based on topographical orientation. Seetableandmap below.

Table 2. 8 Watershed Area PerSlope Category Tacloban City

SUB-WATERSHED	TOTAL AREA	AREA PER SLOPE CATEGORY			
		< 18%	18-30%	30-50%	>50%
TIGBAO-DIIT	2633.246	2344.666	285.500	3.075	
CAIBAAN-UTAP	251.682	122.352	121.617	7.713	
BAR-SUHI	1691.453	1389.102	274.545	27.806	
NAG-NULA	179.040	78.037	92.518	8.484	
BAGACAY	386.165	356.713	29.444		
LUKAY-PAGLAUM-PICAS	1102.125	820.414	258.540	23.165	
Total	**6243.711**	**5111.284**	**1062.164**	**70.243**	

2.12.1 Forest Cover Status

The ratio of forest cover to forestland area (40:60) suggests a low forest per capita. This is well below the threshold set by FAO. The REIS land cover map show that the city has 399.39 hectares of open canopy residual natural forests. These are found in the steeps slopes of Tigbao-Diit and Baruguan-suhi

watersheds. These fragments of natural forest occur at elevation ranges 300-500 masl. in the barangays of Camansihay and Bagacay. The 2009 REIS Map identifies several land cover types, namely, annual crops, perennial crops (coconuts), closed forest and shrubs.

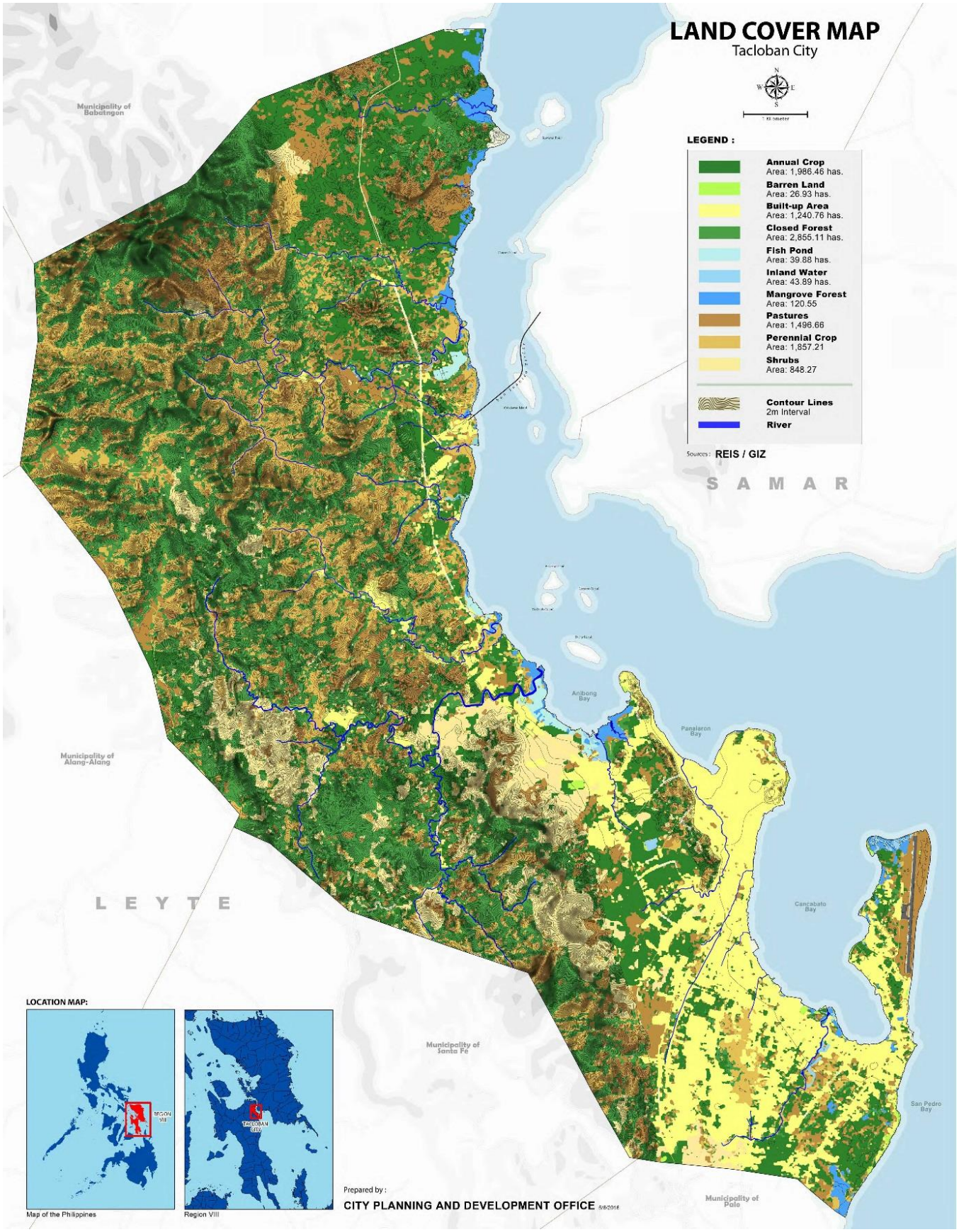
2.12.2 Production and Protection Forestland

The Balance Sheet of Production and Protection Forestlands, based on slope and elevation parameters, suggest a significantly large area (1,910.11 hectares) that can be allocated for production forestry purposes. However, the conservation values placed for source-water protection areas (1,993.43 has) and the presence of discontinuous forest cover, combined to create a needed layer of protection for its degraded watersheds.

The cornerstone of the FLUP is to ensure that the balance of FFL areas not covered by tenure regimes (CBFM, IFMA), will be earmarked for co-management. This implies the operationalizing the provisions of DENR-DILG Joint Memorandum Circular 2003-01 on partnership in the management of forests and forest land areas.

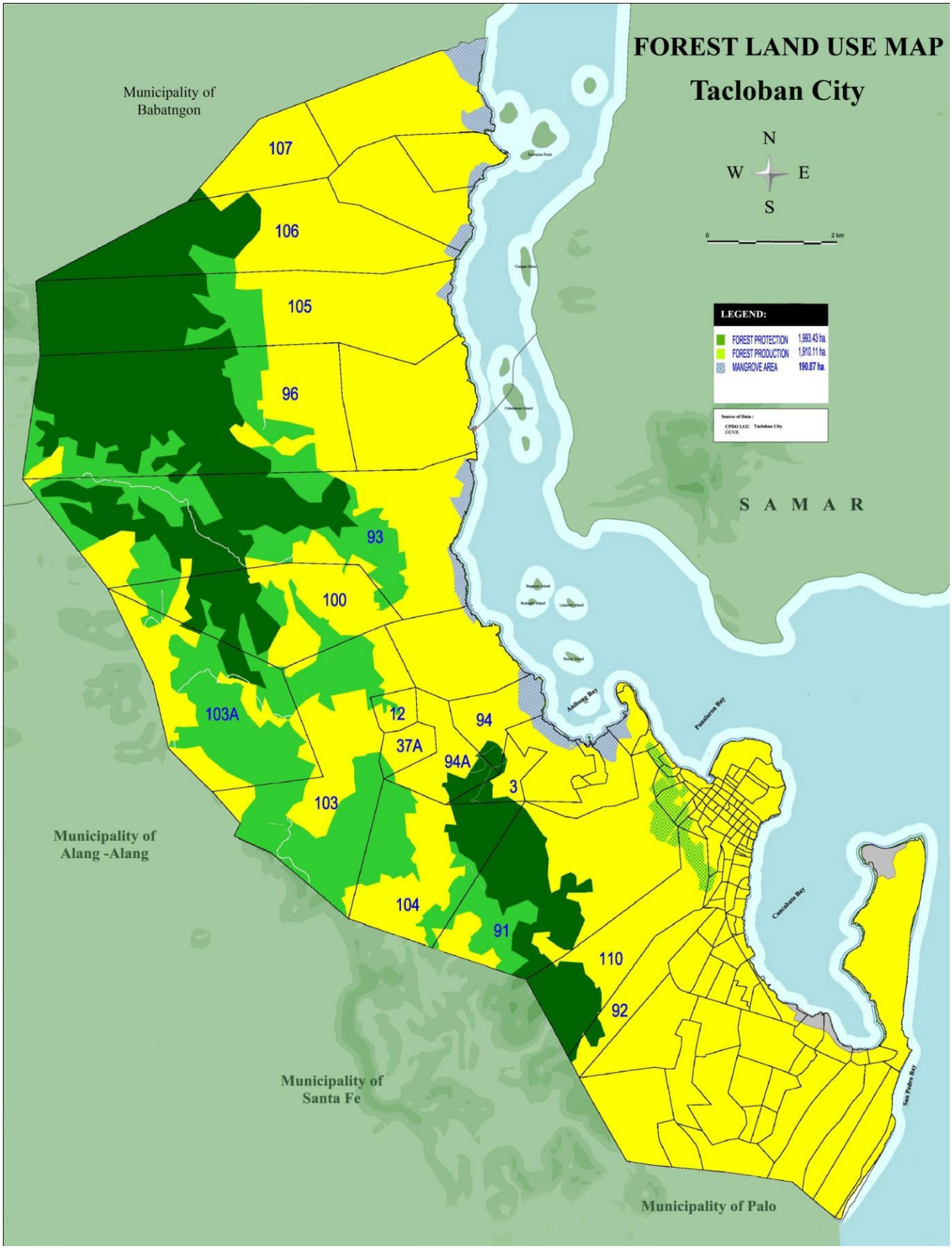
The existing co-management agreement will be retrofitted to include discrete allocation models, with the issuance of individual property rights (IPR).

The prototype for this shall apply to the 440 hectares of forest lands currently developed and managed by the City ENRO, with assistance from GIZ. The enhanced Co-Management Model will apply to discrete, open-access areas specific to a particular sub-watershed. In this instance, the Co-management agreement for Tigbao-Diit sub-watershed specifies discrete open-access, production versus protection forestlands. See map below.



Source: DENR, CPDO

Map 19. Land Cover Map



Map 20. Forest Land Use Map

2.13 Fish Sanctuary and Coral Reefs

Dio Island, resembling like a teardrop is located less than a kilometer in the eastern side portion of the Daniel Romualdez Airport. It is under the jurisdiction of barangay San Jose, Tacloban City. The island was declared as a protected area by the city, although have been privately manage by a local resort for a number of years. The area is also being monitored and protected by the City Agriculture Office and regional BFAR and DENR. The island's 2 hectare area is surrounded by a fringing reef known to many locals with having good coral cover and abundance of fish.

Among all sites surveyed, only in Dio Island showed good coral cover conditions after Typhoon Yolanda with live hard coral cover of 54%. Rubble was also minimal with about 5% in both stations compared to sand and silt found elsewhere in other sites and in Station 1 with 34%. In terms of dead coral with algae, it was however abundant in Station 2 with nearly 30% cover.

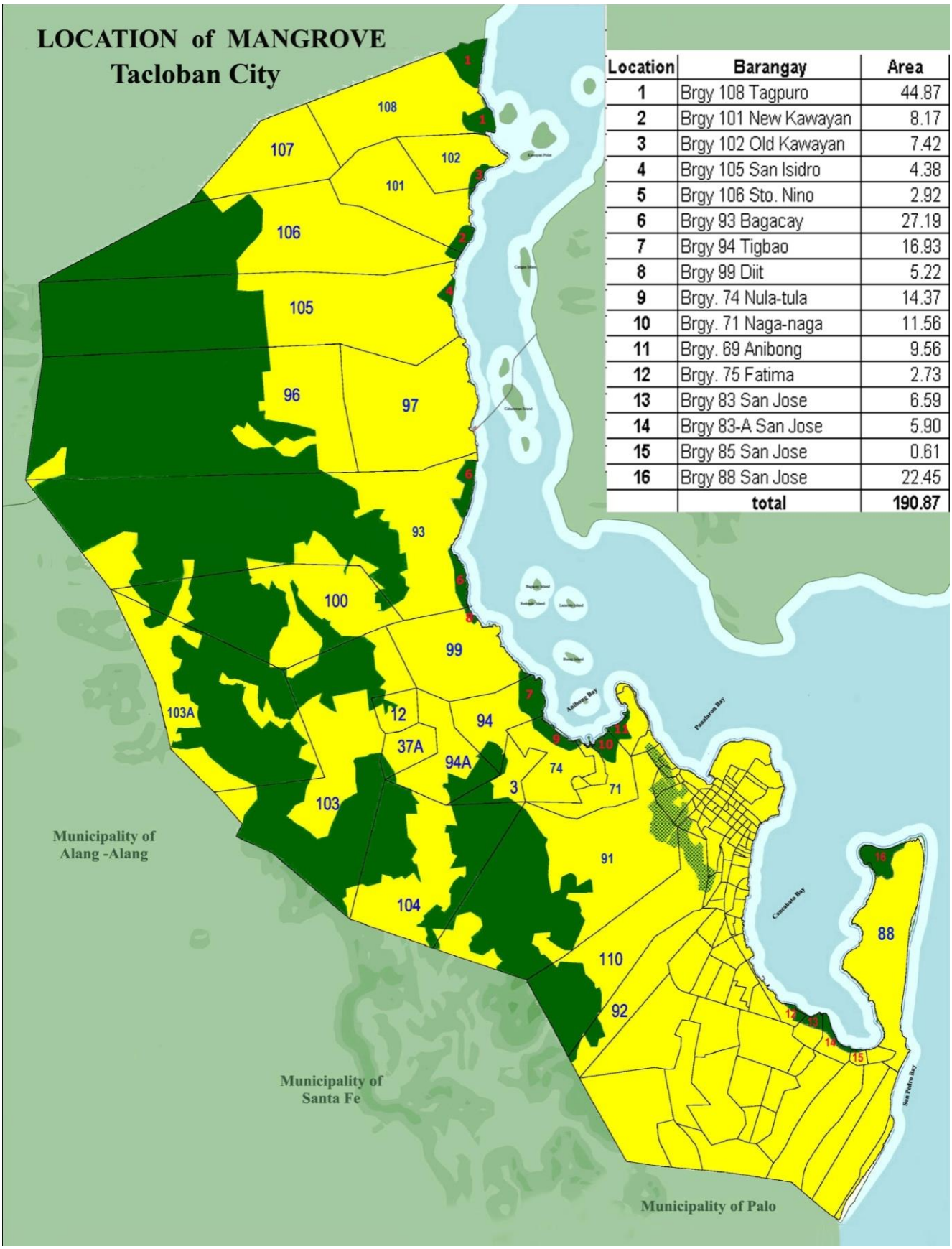
A total of 37 fish species belonging to 15 families and 27 genera were recorded in Dio Island, Tacloban City. Of these, eight (8) fish families with 25 species were non-target and seven (7) families with 12 species were target fish species. Between the two (2) stations established, Station 1 registered the highest number of target and non-target species with 23 and 10 species respectively

- **Mangroves**

Tacloban officially has 190.87 hectares of mangrove area. The mangrove area within the city coastline was in good condition prior to the typhoon in November 2013. However based on GIZ survey of the damage of mangrove areas after the typhoon were summarized as follows: Brgy 75 San Jose – 70% damage; Brgy 83 San Jose - 90% damage; BrgyBagacay- 80% damage; Brgy Nulatula-80% damage.

During the aftermath of Typhoon Yolanda, some agencies, with the support of NGOs have conducted initial damage assessment in Tacloban City's mangrove areas as well as coastal resources. These conducted assessments revealed the extent of damage in these marine ecosystems as well as remaining and resilient species of mangroves, corals and other marine resources.

By 2014 up to December 2015, the Leyte Gulf Project and the 1 Billion Trees project, in line with the the National Greening Program was enacted by the Department of Environment and National Resources across the coastal areas along Leyte Gulf to restore and replace the mangroves that died and got damaged during and after typhoon Yolanda. See map below.



Location	Barangay	Area
1	Brgy 108 Tagpuro	44.87
2	Brgy 101 New Kawayan	8.17
3	Brgy 102 Old Kawayan	7.42
4	Brgy 105 San Isidro	4.38
5	Brgy 106 Sto. Nino	2.92
6	Brgy 93 Bagacay	27.19
7	Brgy 94 Tigbao	16.93
8	Brgy 99 Diit	5.22
9	Brgy. 74 Nula-tula	14.37
10	Brgy. 71 Naga-naga	11.56
11	Brgy. 69 Anibong	9.56
12	Brgy. 75 Fatima	2.73
13	Brgy 83 San Jose	6.59
14	Brgy 83-A San Jose	5.90
15	Brgy 85 San Jose	0.61
16	Brgy 88 San Jose	22.45
	total	190.87

Map 21. Location of Mangrove

- **Seagrass**

There are some seagrass in Cancabato bay but not abundant in which can be reflected in NSAP study that Tacloban's fish catch at San Jose has steadily declined from 2009-2014. According to GTZ study of seagrass condition in Tacloban City in November 2013, the overall, pointed to very poor to poor condition. Results could be attributed to the substrate type of the area which poorly favours the growth of both seagrasses and seaweeds. Presence of debris and material remanants from the typhoon could also have bearing on the quality of substrate and impact on the over-all environmental conditions that possibly also affects its growth.

After the typhoon, the coastal and marine clean-up, on the other hand took about 2-3 years before its enactment in Cankabato Bay in 2016 while the rest of Leyte Gulf also await debris clean-up and retrieval. While DA-BFAR has conducted a rapid assessment of the stocks remaining in Cankabato bay with the National Stock Assessment Program, no Participatory Coastal Resource Assessment has been conducted yet. The last PCRA conducted within Tacloban City's waters was done way back in 2003.

2. 14 Wetlands

2.14.1 Rivers and Natural Drainage System

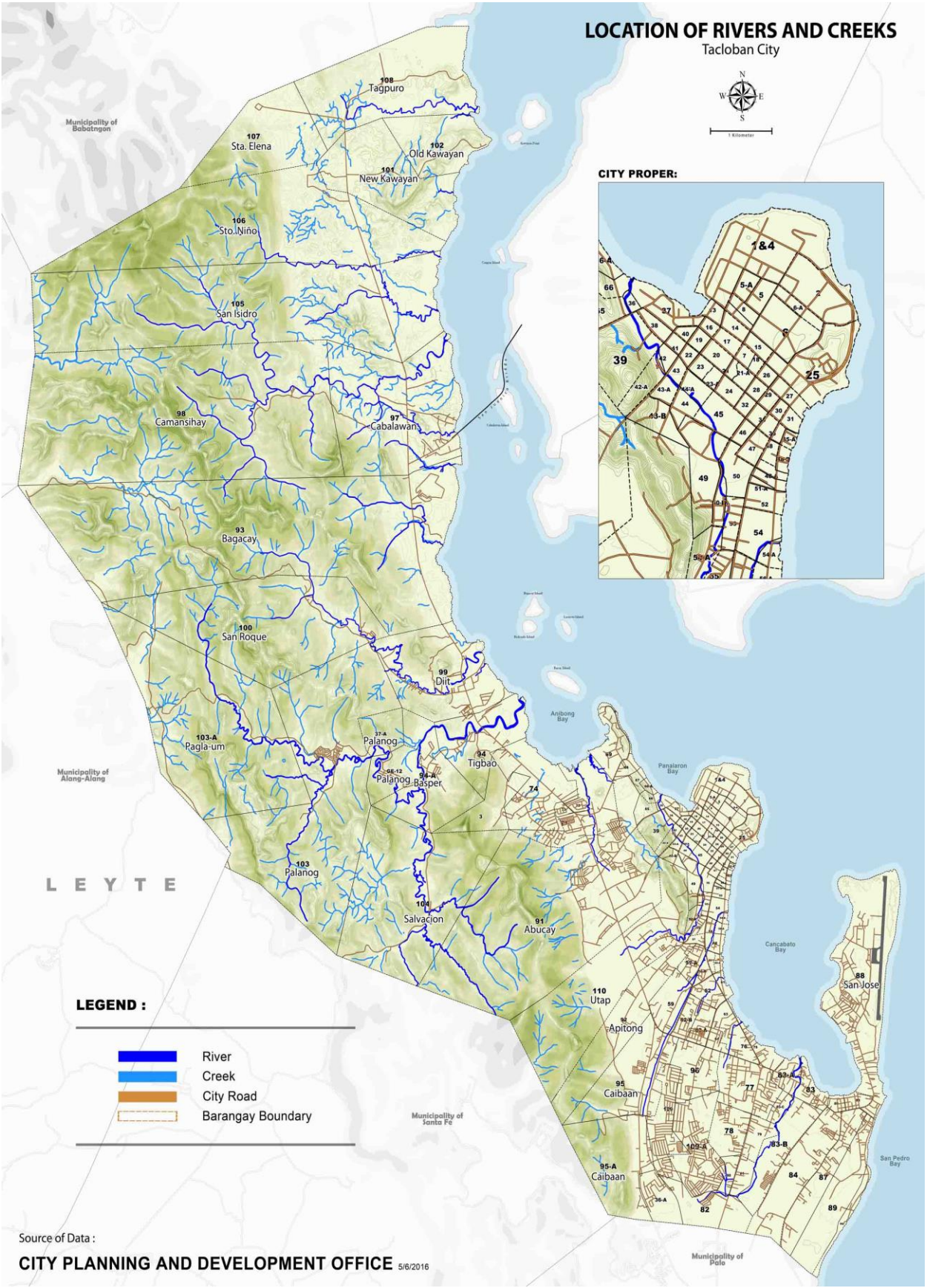
The urban area of Tacloban City has four major natural drainage ways namely; Abucay and Mangonbangon rivers which empties to Anibong bay, while Tanghas-Lirang and Burayan rivers empties to Cancabato Bay. Likewise, these urban natural drainage ways, Abucay, Mangonbangon and Burayan Rivers serve as urban drainage channels.

Likewise, the city has four bodies of water serving as drainage outlets of these rivers and creeks. These bodies of water are Anibong and Panalaron Bays situated in the North, and Cancabato, San Pedro and San Pablo Bays situated in the East. The other smaller natural drainage ways located at the northwestern part of Tacloban, drain the watershed areas of the city such as those found in

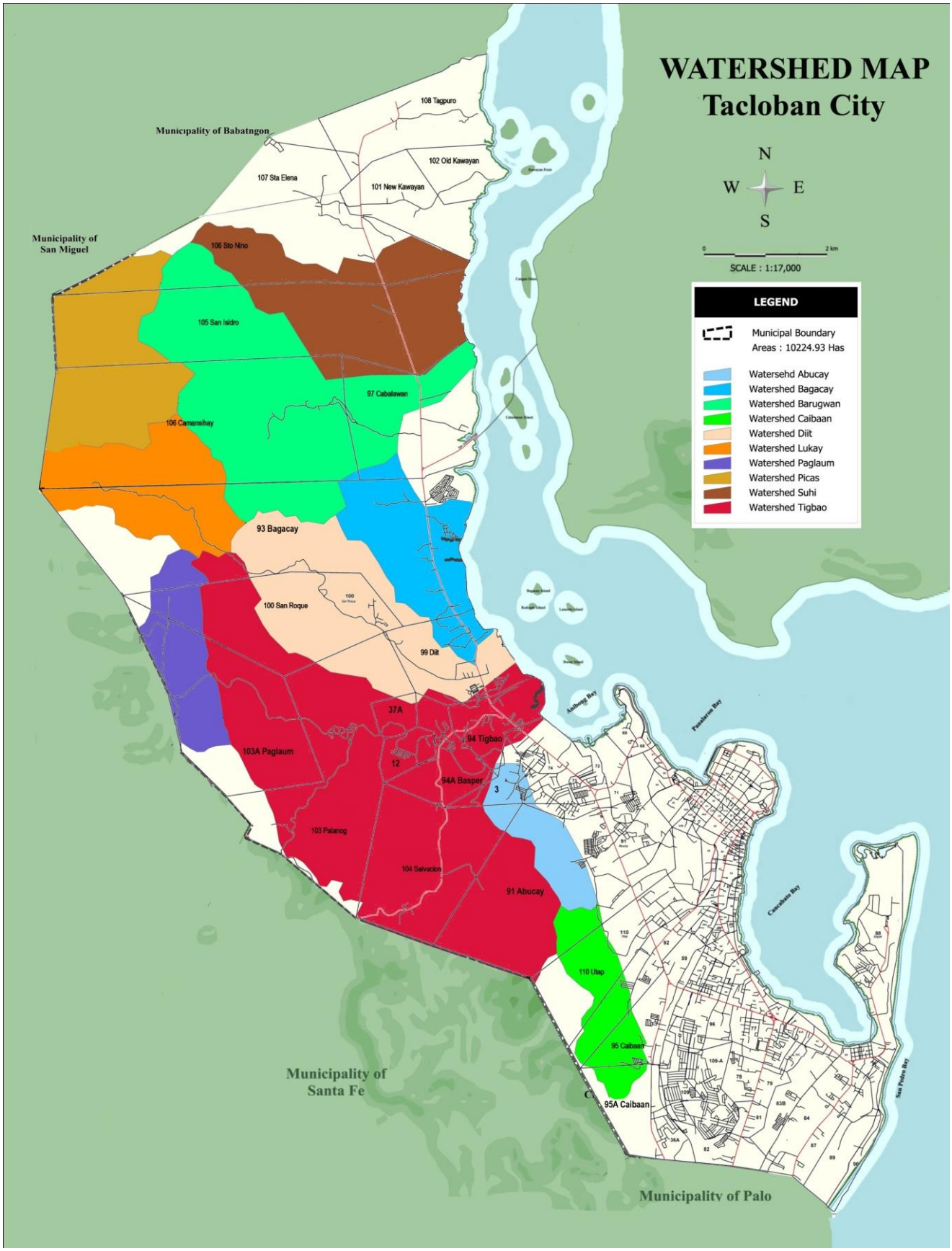
Barangays Camansihay, Bagacay, Cabalawan, Sto. Niño, San Roque and Tigbao towards the San Juanico Strait and Anibong Bay. See map below.

The AbucayRiver, located at the northwestern side of the city's watershed area was previously tapped for irrigation of the farm lands in barangays Abucay and Naga-Naga. It has a catchment area of about 2.4 square kilometers and drains to the Anibong Bay. Mangonbangon River runs 5 kilometers along the western side of the City proper and carries part of the City's runoff, storm water and drains towards Panalaron Bay. The upper stretch of the national highway is swampy. Its catchment area is around 5 square kilometers. Burayan River with a total length of 4 kilometers, has a catchment area of 6.5 square kilometers, flowing from southwest to northeast on the southern part of Tacloban.

The mountainous area serving as the watershed is located west of the City. A small hilly area partitions the Tacloban city's central plain. The eastern plain occupies the Tacloban's Central Business District and the other half on the western side starts to be developed into a mixed residential and commercial use. See map below.



Map 22. Location of Rivers and Creeks



Map 23. Watershed Map

2.15 Geology and Mining Potential Area

The geologic data of Tacloban City is obtained from the Bureau of Mines and Geosciences gathered by CPDO personnel. Four rock formation units can be found within the immediate area of TaclobanCity and its nearby towns. These are: the Quaternary Alluvium (1.6 mya to present); the Turbidite (successively layered rocks) sequence of Bagahupi Formation, which is Pliocene (0.01 to 1.6 mya) in age; the San Ricardo Formation, which is Early to Middle Miocene (11 to 23 mya) in age; and the TaclobanOphiolite (Balce, C., 1997, pers. Comm..), which encompasses the successive sequence of Schists, Volcanic, Serpentine and Gabbroic rocks all thought to be of Cretaceous (65 to 135 mya) in age.

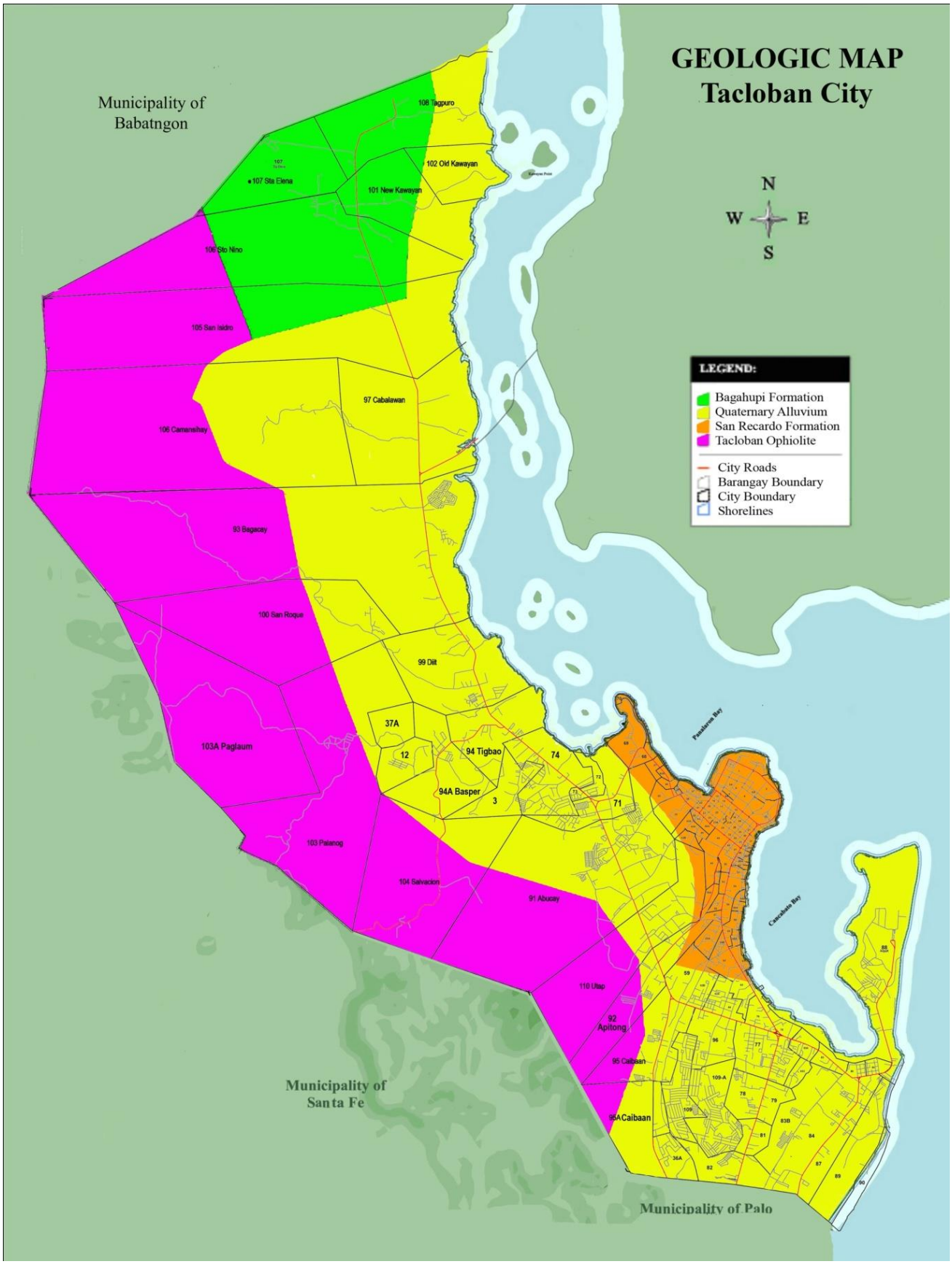
The TaclobanOphiolite is represented by the long stretch of small mountain chains located west of Tacloban, which extends in a northwest-southeast manner. Limited observations of igneous rock exposures at Salvacion and Tigbao suggest basaltic origin of the rocks found in the areas mentioned. The northern portions of Tacloban, specifically those located at the rolling hills, are underlain by the slightly dipping Bagahupi sedimentary sequence, which has some outcrop exposures at road cuts of hilly portions and along the shoreline of Tagpuro facing the San Juanico Strait. Exposures are also present at the protruding headland at Anibong Bay where three fuel depots are located.

The Tacloban City proper is underlain by the Sedimentary sequence of the San Ricardo Formation, which is very slightly dipping. This can be observed at the Kanhuraw Hill which is characteristically rising within a generally lowland area.

The Quaternary Alluvium overlies most of the older rock units in different areas and it consists of recent soil deposits and sands, which can be loose or compacted. The coastal areas and plains are covered by this kind of rock unit, like those found along the bounding bodies of water. The Tacloban Airport at San Jose is in itself underlain by compacted young sand deposits, which form a characteristic sandspit structure (a coastal feature which denotes a protruding sand body towards the sea and is attached to the mainland). Many places are underlain by the

compacted sands and soils, such as those at San Jose and places southwest of Tacloban City proper.

Tacloban City has deposits of metallic and non-metallic mineral resources. Metallic deposits consist of copper and iron. Non –metallic minerals are comprised of red-burning clay which is used for producing bricks and pottery and chert dimension stone used as interior and exterior building materials. See map below.



Map 24. Geologic Map

Natural & Physical Environment Analysis Matrix

TECHNICAL FINDINGS/OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS INTERVENTIONS
Experiencing frequent Flooding due to Inadequate Natural Drainage	Frequent flooding	Install Storm Water System & Flood control System in Flood Prone Areas
		Provide budget to flood control related projects particularly on the formulation of the Storm Water Drainage & Flood Control System
	Slowing down of economy	
Landslides in barangay due to inadequate Coastal Protection Coastal erosion especially along the beach fronting San Pedro Bay	damage to properties/life lines, production and protection areas	Formulate Storm Water System & Flood control System
		Budget allocation to priority flood control projects
		Provide buffer in erosion prone coastal areas
Fifty three percent (53%) of the barangays are affected by storm surge(Refer to Table ___)	Loss of lives, damage to properties/life lines, production and protection areas	- Strict enformement of No dwelling Zone - Construction of a resilient houses, school buildings and other structures -Orientation and implement Climate Change Adaptation and Mitigation activities
Forest degradation due to illegal and destructive activities	Loss of habitat for wildlife and risk to landslide due to lack of forest cover	Forest restoration through assisted natural regeneration (ANR), multi-purpose tree plantation and agroforestry scheme. Land tenure profiling to identify idle land areas subject for tree planting. Enforcement of local and national conservation and protection policies
Damage of mangrove area due to typhoon and other illegal human activities	Decrease of fish catch due to destruction of breeding area of some species.	Mangrove Reforestation Project Legislation, adoption, enforcement of local and national conservation and protection policies.

CHAPTER 3 SOCIAL SECTOR

3.1 Education

I. Existing Situation

In response to the call for a quality and lifelong learning programs and projects the different sectors and institutions for education both public and private are united in achieving quality education for all. Tacloban City is faced with the challenge to sustain and maintain the city's being the center for excellence in education. The city government has to envisage the increasing population of students from pre elementary up to the tertiary level. There is a need for more modern educational equipment and facilities particularly in public schools. Trainings and capability building for teachers and other school personnel are to be sustained and improved. With the 2013 disaster that occurred in the city the education sector was badly devastated in all aspects which include the students, teachers, physical facilities (buildings computers) etc.This time after three years the education sector is fast recovering from the disaster with the help from the different GOs, INGOs, private and government agencies. More resilient school buildings are being built. Both the teaching force and students had undergone Mental Health & Psychological Services. Disaster preparedness and mitigation is on going in the education sector. With this development there is still a need for more school buildings particularly at the Tacloban North because it is where the homeless victims of the disaster is being transfer. For the Tacloban North there is a need for an estimated number of additional 384 elementary school classrooms and 255 highschool. These school classrooms will be needed within three years because of the ongoing transfer of families.

A. Enrollment, Teachers & Classrooms

The Schools Division of Tacloban City has 3 levels of education the Kindergarten, Elementary and the Secondary. Among the 3 levels of education, elementary has the highest enrolment both in public and private schools. (See Table 3.1 for the Comparative Enrolment of public and private schools).

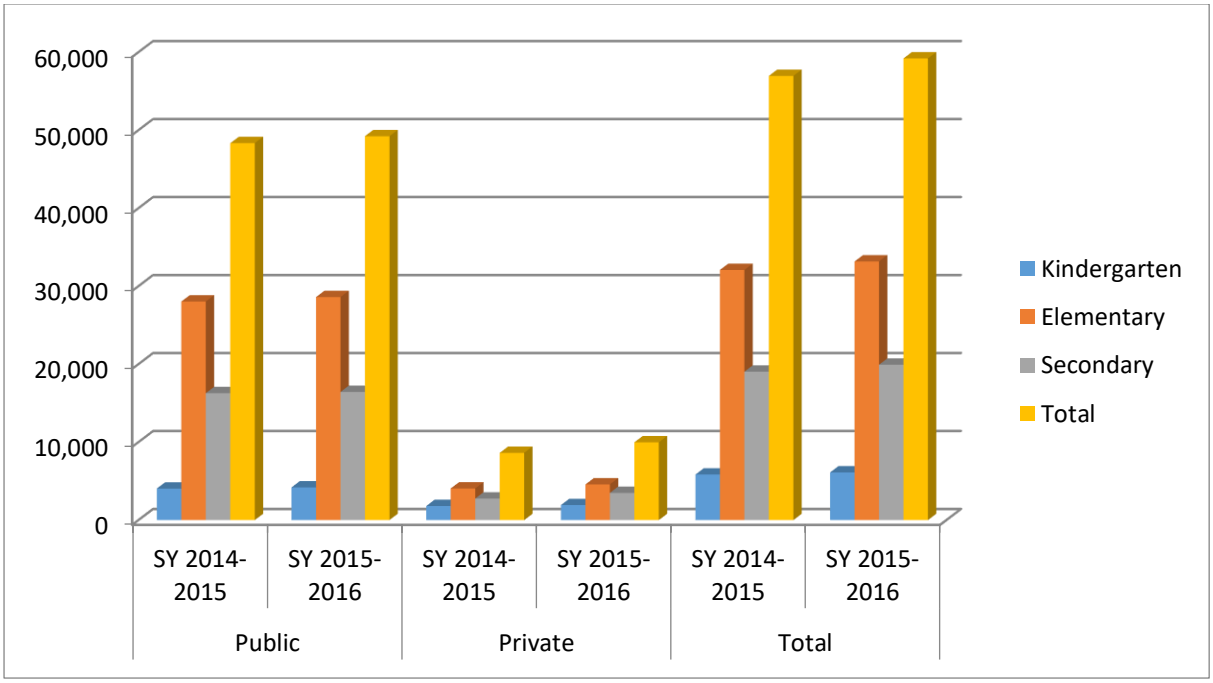
Table 3. 1 Comparative Enrolment of Public & Private Schools SY 2014-2015, 2015-2016

Tacloban City

LEVEL OF EDUCATION	PUBLIC		PRIVATE		TOTAL	
	SY 2014-15	SY 2015-16	SY 2014-15	SY 2015-16	SY 2014-15	SY 2015-16
Kindergarten	4,041	4,192	1,802	1,921	5,843	6,113
Elementary	28,023	28,597	4,056	4,568	32,079	33,165
Secondary	16,273	16,438	2,764	3,483	19,037	19,921
Total	**48,337**	**49,227**	**8,622**	**9,972**	**56,959**	**59,199**

Source: Schools Division of Tacloban City Annual Report 2015

Figure 3. 1 Comparative Enrolment of Public & Private Schools by Level of Education SY 2014-2015 and SY 2015-2016



The enrolment for every elementary and secondary public school is presented in Table 3.2For the elementary level San Jose Elementary School has the highest enrolment for the school years 2014-2015 & 2015-2016. For the secondary level the Leyte National Highschool has the highest number of enrolees for two school years. Generally the enrolment increased in school year 2015-2016 by 2.3%.

Table 3. 2 Public Elementary & Secondary Enrolment Per Schoo SY 2014-15 & SY 2015-16, Tacloban City

SCHOOLS	BARANGAY	ENROLMENT	
Public elementary		**SY 2014-2015**	**2015-2016**
1.Rizal Central School	Brgy. 25	2,272	2,343
2.RTR Elementary School	Brgy. 6	892	832
3.Bliss Elementary School	Brgy. 74	466	463
4.Salvacion Elementary School	Brgy. 104	460	444
5.Caibaan Elementary School	Brgy. 95	1,152	1,153
6.Tagpuro Elementary School	Brgy. 108	199	291
7.Lorenzo Daa Memorial School	Brgy. 103-A	220	261
8.San Fernando Central School	Brgy. 54	2,241	2,192
9.Bañez Memorial School	Brgy. 77	791	804
10.Bayanihan Elementary School	Brgy. 73	432	432
11.San Roque Elementary School	Brgy. 100	159	167
12.Palanog Resettlement	Brgy. 12	540	565
13.Judge Antonio R. Montilla Sr. E.S. (JARMS)	Brgy. 92	901	876
14.UTAP Elementary School	Brgy. 110	536	561
15.Kapangi-an Central School	Brgy. 22	1,966	1,870
16. Sto. Niño SPED Center	Brgy. 6	991	1,122
17.Bulante Elementary School	Brgy. 105	304	363
18.Sta. Elena Elementary School	Brgy. 107	199	201
19.Cabalawan Elementary School	Brgy. 97	536	584
20.Basper Elementary School	Brgy. 94-A	312	304
21.Palanog Elementary School	Brgy. 103	808	813
22.Panalaron Central School	Brgy. 6-A	748	706
23.Sagkahan Elementary School	Brgy. 62-B	1,792	1,875
24.Tigbao- Diit Elementary School	Brgy. 94	913	923
25.Bagacay Elementary School	Brgy. 93	591	643
26.Mercy Ville Elementary School	Brgy. 99	443	477
27.San Jose Central School	Brgy. 87	3,290	3,117
28.Marasbaras Elementary School	Brgy. 79	979	1,002
29.DVQ Memorial School	Brgy. 91	660	669
30.Nula- Tula Elementary School	Brgy. 3	458	482
31.Camansihay Elementary School	Brgy. 98	293	277
32. Sto. Niño Primary School	Brgy. 106	264	369
33.Fishermen's Village ES	Brgy. 88	582	300
34.Manlurip Elementary School	Brgy. 84	360	396
35.City Central School	Brgy. 49	970	1,127
36.Anibong Elementary School	Brgy. 69	1,392	1,364
37.V&G Memorial School	Brgy. 109	1,219	1,183
38Lucio Vivero Memorial School	Brgy. 101	296	780
39.Old Kawayan Elementary School	Brgy. 102	90	96
40.Scandinavian Elementary School	Brgy. 100	347	362
TOTAL Elementary	40	32,064	32,789
Public Secondary			
1.Anibong Night High School	Brgy. 68 Anibong	150	161
2.Antonio Balmes National High School	Brgy. 103-A Paglaum	180	213
3.Cirilo Roy Montejo High School	Brgy. 6	1,670	1,734
4.Cirilo Night High School	Brgy. 6	216	181
5.Leyte National High School	Brgy. 49	5,801	5,532

SCHOOLS	BARANGAY	ENROLMENT	
6.Marasbaras National High School	Brgy. 81	945	902
7. Northern Tacloban City Nat'l. HS	Brgy. 101 New Kawayan	424	611
8.Sagkahan National High School	Brgy. 64 Sagkahan	1,621	2,274
9.San Jose National High School	Brgy. 87 Sn Jose	1,932	1,785
10.San Jose Night High School	Brgy. 87 Sn Jose	217	166
11.Scandinavian National High School	Brgy. 100 Sn. Roque	275	271
12.Tacloban City National High School	Brgy. 93 Bagacay	1,536	1,521
13.Tacloban City Night High School	Brgy. 49	670	426
14.Tacloban National Agri. School	Brgy. 94-A	636	661
Total Public Secondary	**14**	**16,273**	**16,438**

Source: Schools Division of Tacloban City Annual Report 2015

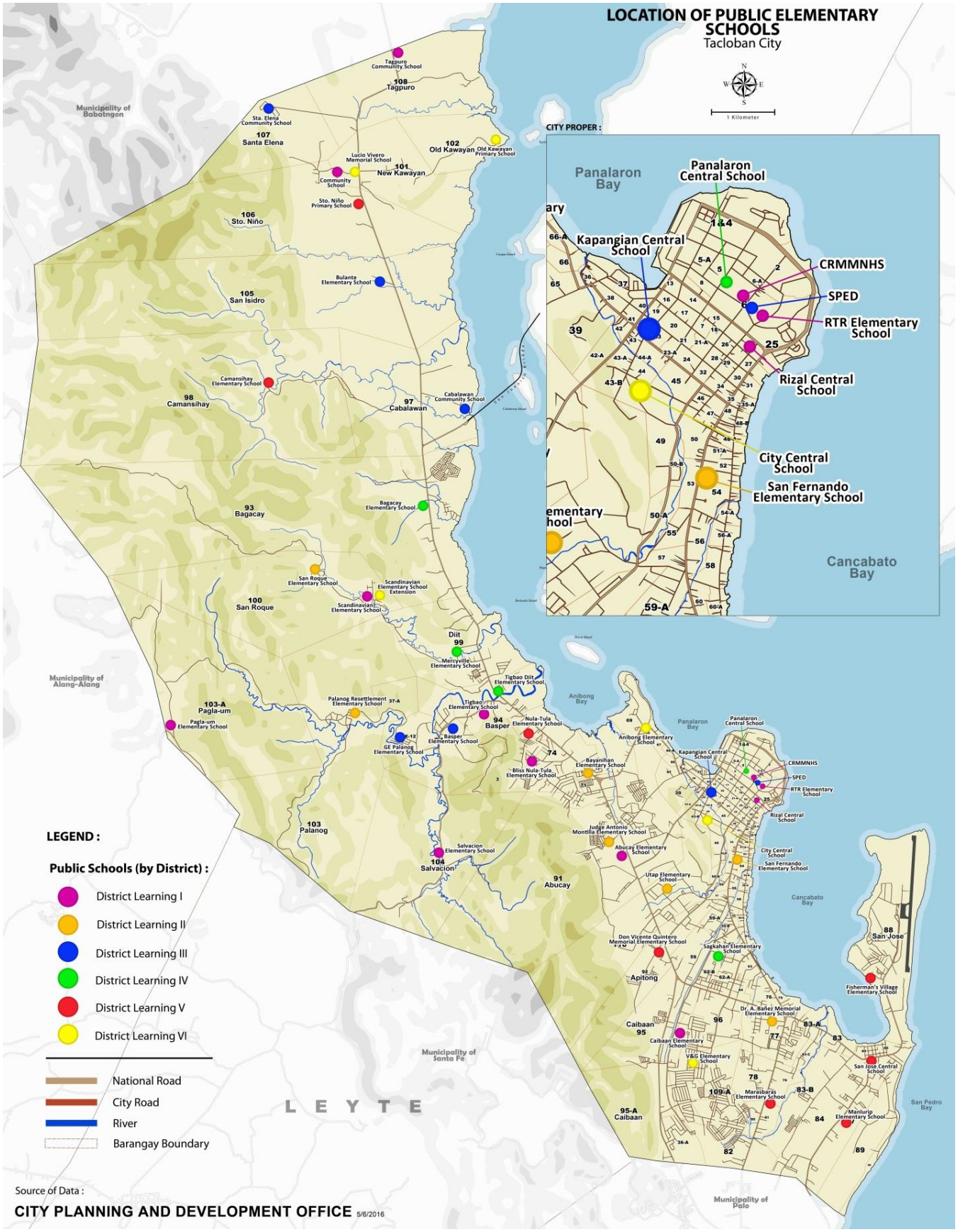
Presented in Table 3.3 is the enrolment by school in the private elementary and secondary. The school with the highest enrolees for school years 2014-2015 and 2015-2016 is St. Therese Educational Fdn of Tacloban Inc. with an enrolment of 1,516 and 1,591 respectively.

Table 3. 3 Private Elementary& Secondary EnrolmentPer School SY 2014-15 & SY 2015-1 Tacloban City

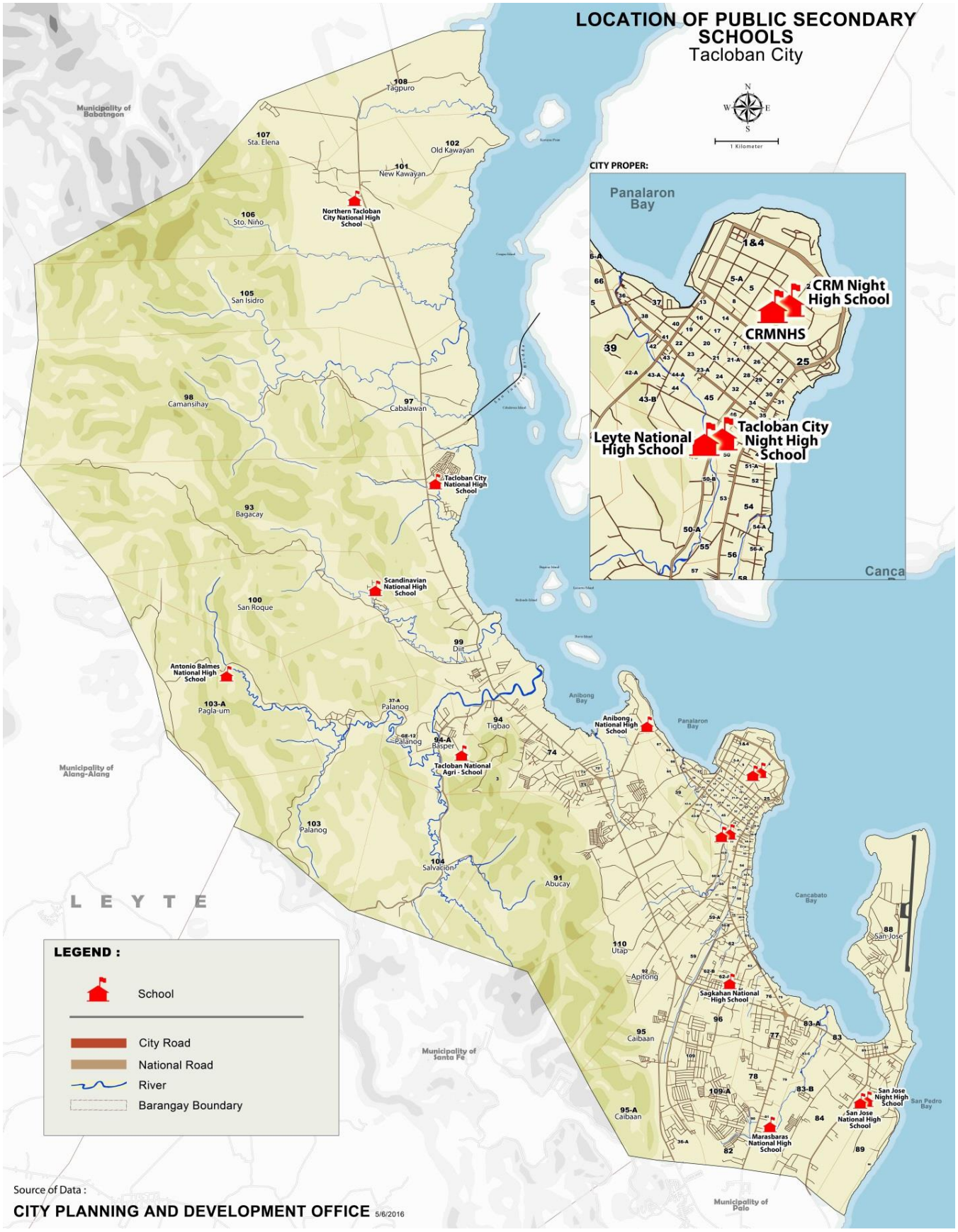
SCHOOLS	BARANGAY	ELEMENTARY	
		SY 2014-2015	SY 2015-2016
Antonio Vargas Salmo School Foundation Inc.	Brgy. 50	90	104
Asian Development Foundation College	Brgy. 62-A	222	205
Cambridge Center for International Studies		78	73
Grace Baptist Academy	Brgy. 77	102	103
Holy Infant College		125	127
Holy Virgin of Salvacion School, Inc.	Brgy. 83-C	152	148
JE Mondejar Computer College	Brgy. 71	63	67
Leyte Progressive High Scholl	Brgy. 39	174	151
Liceo Del Verbo Divino	Brgy. 43	717	736
MSH Sister's Academy		30	35
Perpetual Help Learning Center			76
Sacred Heart College	Brgy. 8	283	282
Sto. Niño Education Center		30	36
St. Therese Christian Development Center (STCDCFI)	Brgy. 27	401	465
St. Therese Educational Foundation of Tacloban (STEFTI)	Brgy. 92	1,221	1,251
Tacloban Angilicum Learning Center, Inc.	Brgy. 110	236	273
Tacloban City Adventist Elementary School	Brgy. 58	132	138
Leyte Normal University- Integrated Laboratory School	Brgy.		298
Total		4,056	4,568
Secondary Level			
Antonio Vargas Salmo School Foundation		72	67

SCHOOLS	BARANGAY	ELEMENTARY	
		SY 2014-2015	SY 2015-2016
Inc.			
Asian Development Foundation College	Brgy. 62A	174	148
Cambridge Center for International Studies		62	46
Grace Baptist Academy	Brgy. 77	17	11
Holy Infant College	Brgy. 49	272	240
Holy Virgin of Salvacion School, Inc.	Brgy. 83-C	109	86
JE Mondejar Computer College	Brgy. 71	62	56
Leyte Colleges	Brgy. 46	72	56
Leyte Progressive High Scholl	Brgy. 39	149	133
Liceo Del Verbo Divino	Brgy. 43	728	758
Sacred Heart College	Brgy. 3	255	223
St. Scholastica's College of Tacloban	Brgy. 43		56
St. Therese Christian Development Center (STCDCFI)	Brgy. 27	94	117
St. Therese Educational Foundation of Tacloban (STEFTI)	Brgy. 91	562	624
Tacloban Angilicum Learning Center, Inc.	Brgy. 92	136	136
Leyte Normal University- Integrated Laboratory School	Brgy. 50		128
Eastern Visayas State University – Secondary Laboratory School	Brgy. 44-A		598
Total		**2,764**	**3,483**

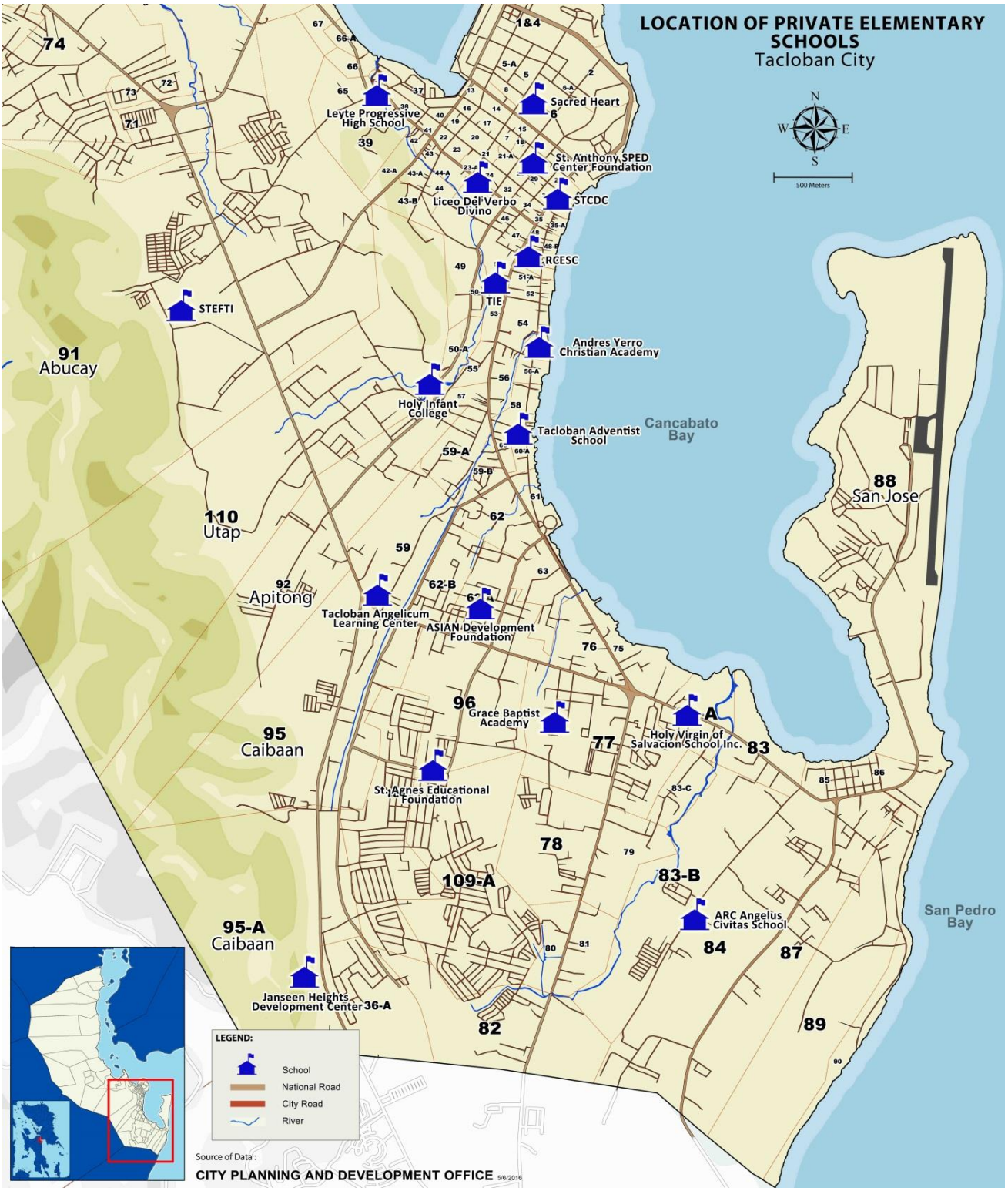
Source:Schools Division of Tacloban City Annual Report 2015



Map 25. Location of Public Elementary Schools



Map 26. Location of Public Secondary Schools



Map 27. Location of Private Elementary Schools

Map 28. Location of Private Secondary Schools

Map 29. Location of Tertiary Schools

As shown in Table 3.4 there are 817public school teachers distributed in the different 40 elementary schools giving a ratio of 40 elementary pupils in every one teacher. While in the secondary school the ratio is 30 highschool students for a teacher. The teacher-student ratio in the elementary and secondary schools are within the standard ratio and is manageable as compared to other urban localities. This means that the teachers could still manage their school room settings because of the convenient number of students per teacher. For the private elementary and private secondary schools the ratio for the elementary is 38 students to one teacher and forty six students to one teacher for the secondary level.

Table 3. 4 Public School Student-Teacher-Classroom Ratio by Level, SY 2015-2016

Tacloban City

ELEMENTARY PUBLIC SCHOOLS	ENROLMENT	NUMBER OF CLASSROOM	CLASSRM RATIO	NUMBER OF TEACHERS	TEACHER RATIO
Rizal Central School	2,343	53	44:1	49	47:1
RTR Elementary School	832	26	32:1	24	36:1
Bliss Elementary School	463	15	31:1	14	33:1
Salvacion Elementary School	444	12	37:1	13	34:1
Caibaan Elementary School	1,153	22	52:1	24	48:1
Tagpuro Elementary School	291	7	42:1	7	41:1
Lorenzo Daa Memorial School	261	7	37:1	6	43:1
San Fernando Central School	2,192	56	39:1	49	44:1
Bañez Memorial School	804	21	38:1	17	47:1
Bayanihan Elementary School	432	11	39:1	12	36:1
San Roque Elementary School	167	7	24:1	8	24:1
Palanog Resettlement	565	14	40:1	14	40:1
JARMS	876	18	49:1	19	46:1
UTAP	561	6	94:1	14	40:1
Kapangi-an Central School	1,870	34	55:1	44	42:1
Sto. Niño SPED Center	1,122	30	37:1	19	59:1
Bulante Elementary School	363	10	36:1	10	36:1
Sta. Elena Elementary School	201	7	29:1	7	28:1
Cabalawan Elementary School	584	17	34:1	15	38:1
Basper Elementary	304	8	38:1	8	:1

ELEMENTARY PUBLIC SCHOOLS	ENROLMENT	NUMBER OF CLASSROOM	CLASSRM RATIO	NUMBER OF TEACHERS	TEACHER RATIO
School					
Palanog Elementary School	813	17	48:1	21	48:1
Panalaron Central School	706	24	29:1	19	29:1
Sagkahan Elementary School	1,875	55	34:1	43	34:1
Tigbao- Diit Elementary School	923	25	37:1	21	37:1
Bagacay Elementary School	643	23	28:1	19	28:1
Mercy Ville Elementary School	477	10	48:1	13	48:1
San Jose Central School	3,117	88	35:1	84	35:1
Marasbaras Elementary School	1,002	29	35:1	25	35:1
DVQ Memorial School	669	18	37:1	18	37:1
Nula- Tula Elementary School	482	11	44:1	13	44:1
Camansihay Elementary School	277	9	31:1	8	31:1
Sto. Niño Primary School	369	9	41:1	10	41:1
Fishermen's Village	300	17	18:1	16	18:1
Manlurip Primary School	396	12	33:1	11	33:1
City Central School	1,127	30	38:1	25	38:1
Anibong Elementary School	1,364	35	39:1	35	39:1
V&G Memorial School	1,183	32	37:1	32	37:1
Lucio Vivero Memorial School	780	16	49:1	16	49:1
Old Kawayan Elementary School	96	3	32:1	6	32:1
Scandinavian Elementary School	362	9	40:1	9	40:1
TOTAL	**32,789**	**853**	**38:1**	**817**	**40:1**
Anibong Night High School	161	4	40:1	9	17:1
Antonio Balmes National High School	213	4	53:1	9	23:1
Cirilo Roy Montejo High School	1,734	25	69:1	52	33:1
Cirilo Night High School	181	11	16:1	8	22:1
Leyte National High School	5,532	165	34:1	184	30:1
Marasbaras National	902	15	60:1	27	33:1

ELEMENTARY PUBLIC SCHOOLS	ENROLMENT	NUMBER OF CLASSROOM	CLASSRM RATIO	NUMBER OF TEACHERS	TEACHER RATIO
High School					
Northern Tacloban City Nat'l. HS	611	13	47:1	17	35:1
Sagkahan National High School	2,274	45	51:1	74	30:1
San Jose National High School	1,785	41	44:1	60	29:1
San Jose Night High School	166	8	21:1	12	13:1
Scandinavian National High School	271	5	54:1	12	22:1
Tacloban City National High School	1,521	26	59:1	47	34:1
Tacloban City Night High School	426	8	53:1	23	18:1
Tacloban National Agri. School	661	29	23:1	21	31:1
TOTAL	**16,438**	**395**	**41:1**	**555**	**30:1**

Source: School Division of Tacloban City Accomplishment Report 2015

Table 3.5 presents the summary of student-teacher –classroom by level both in public and private schools.

Table 3. 5 Public and Private Student-Teacher-Classroom Ratio by LEVEL, SY 2015-2016, Tacloban City

TYPE/LEVEL	ENROLMENT			NO. OF TEACHERS			STUDENT/ TEACHER RATIO	NO. OF CLASS ROOMS	STUDENT/ CLASSROOM RATIO
	M	F	Total	M	F	Total			
Private									
Elementary	2,193	2,375	4,568	33	87	120	38:1	125	37:1
Secondary	1,567	1,916	3,483	20	55	75	46:1	81	43:1
Sub Total	3,760	4,291	8,051	53	142	195			
Public									
Elementary	17,050	15,739	32,789	82	735	817	40:1	853	38:1
Secondary	8,548	7,890	16,438	156	399	555	30:1	395	41:1
Sub Total	25,598	23,629	49,227	238	1134	1372			

Source: School Division of Tacloban City Accomplishment Report 2015

The Cohort Survival Rate is shown in Table 3.6 in the elementary level, the cohort survival rate decreased from 93.75% to 59.38% (34.37% decrease) for SY 2013-2014 to SY 2014-2015. Similarly for the secondary level the cohort survival rate also decreased from 77.37% to 54.32% (22.64%) for the school year 2013-14 and 2014-15.The decrease of the CSR for both the elementary and secondary level is still due to the disaster that happened in 2013.Cohort Survival Rate is the proportion of enrolees in Grade 1 who reach grade 6 for the elementary level. CSR for the secondary level is the proportion of enrolees in Grade 7 three years ago who reach fourth year.

For the tertiary education the different state universities and colleges in the city and other concerned agencies such as TESDA offered various education programs and courses to match not only the city but also the region's labor requirement on agriculture, industry and services. Short term courses on electronics and electricity trades, metal trades, mechanical trades, air conditioning and refrigeration trades were among the center based programs offered. On the other hand food trades, clothing, restaurant management, computer science are some of the school based programs. Although finishing a college degree and even vocational courses had not been a guarantee to land in a job related to the degree these students had attained. Even with the absence of statistics data on the percentage of graduates in the city who gets employed it is clearly felt and can be observed that there are plenty of graduates who are jobless.

Nevertheless even with these challenges the different educational institutions in the city both in the public and private amidst the challenges hadgarnerednational and regional awards and citations in relation to academic achievements, as well as being board placers in the different examinations.

Table 3. 6 Performance Indicator in the Public Elementary & Secondary Level

SY 2013-15

Tacloban City

PERFORMANCE INDICATOR	PUBLIC ELEMENTARY		PUBLIC SECONDARY	
	SY 2013-14	SY 2014-15	SY 2013-14	SY 2014-15
Cohort Survival Rate	93.75	59.38	77.37	54.72
Net Enrolment Ratio or Participation Rate	98.31	88.22	72.09	64.38

Source: DECS, Tacloban CitySchools Division Accomplishment Report 2015

Figure 3. 2 Performance Indicator Public Elementary & Secondary Level

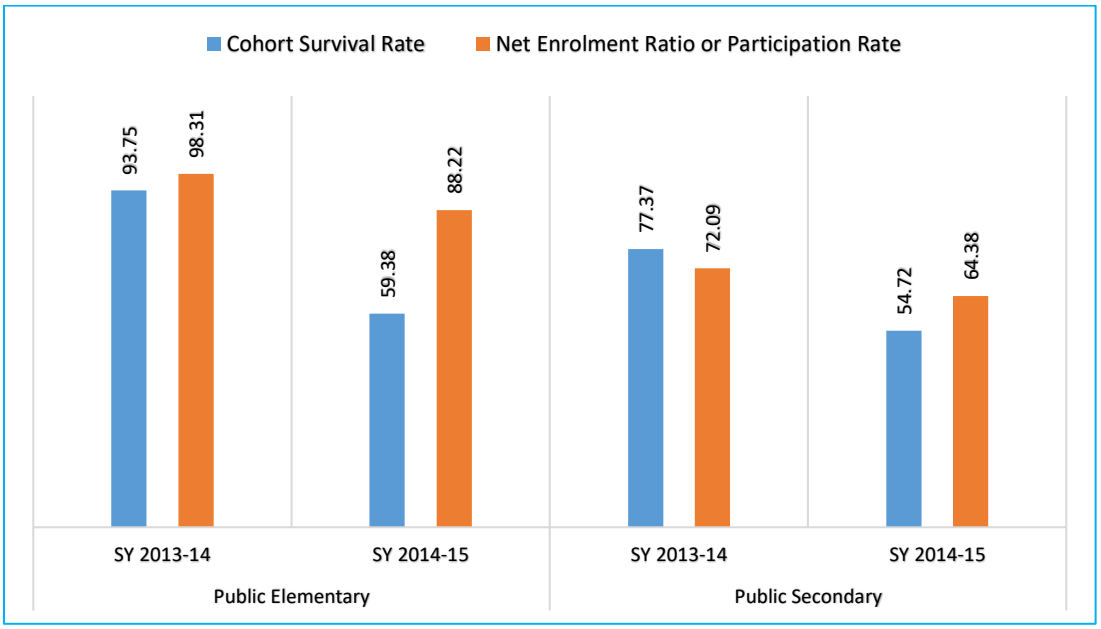


Table 3.7 presents the Net Enrolment Ratio or Participation Rate in the elementary and secondary level which refers to the ratio between the enrolments in the school age range (6-11 years old for the elementary and 12-15 years old for the secondary) to the total population of the respective age range. It is so evident that there is a decrease of EPR for both the elementary and secondary. For the elementary level a decrease of 10.09% and 7.71% decrease for the secondary level. The decrease of the EPR for both elementary and secondary level can be attributed to the Typhoon Yolanda where almost all the families were greatly

affected including the elementary and highschool students. The reasons that can be attributed to the decrease in the EPR are the following:

- Transfer of families to another place/school like Cebu City, Manila etc.
- Trauma/Emotionally disturbed
- Death
- Some classrooms were still used as evacuation center
- Schools were destroyed discouraging students to report to school

Table 3. 7 Historical Enrolment Participation Rate for the Last Three (3) Years Tacloban City

SCHOOL YEAR	PUBLIC ENROLMENT PARTICIPATION RATE (EPR)	
	ELEMENTARY	SECONDARY
2012 -2013	81.67	58.23
2013 – 2014	72.97	51.21
2014 – 2015	88.22	64.38

Source: Department of Education Tacloban City Schools Division (Annual Accomplishment Report 2015)

B. Existing Schools, Location, Facilities & Conditions Hazard Susceptibility

Table 3.8 and 3.9 shows the different schools by level, facilities, condition and hazard susceptibility. It would be noted that all public schools particularly those located at the downtown area and San Jose are susceptible to storm surge. (See Map showing the hazard susceptibility of the schools) This was experienced during the onslaught of Typhoon Yolanda. These public schools were also used as evacuation centers. However for the private schools only few were used as evacuation center. After two years these schools were repaired reconstructed making it more resilient. The schools that are high in hazard susceptibility should be retrofitted, rebuilt or transferred to a higher or safe area. Some of the schools which were provided assistance from the different INGOs were able to build a resilient school classroom or school buildings. Some of these schools are the Marasbaras Elementary School, San Fernando Elementary School, San Jose Elementary etc. These schools are much better than their previous old buildings.Other schools had elevated their buildings and constructed second floors.

Table 3. 8 Schools by Level, Type, Facilities & Condition SY 2015 Tacloban City

SCHOOL	BRGY.	AREA IN (HAS)	FACILITIES AND CONDITION							USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CIINIC	COMFORT ROOM	PLAY-GROUND	OTHERS		FL	TY	EQ	LN	SU	OTHERS
District Learning I																
1. Rizal Central School	Brgy. 25	0.393	g	g	g	g	g	g		Y		M			H	
2. Remedios T. Rumualdez Elem. School	Brgy. 6	1.2		g	g	g	g	g		Y		L			M	
3. Lorenzo Daa Memorial School	Brgy. 103-A San Paglaum	1		g	g	g	g	g		Y		M			M	
4. Salvacion Elementary School	Brgy. 104 Salvacion	4.591		g	g	g	g	g		Y		M			M	
5. Caibaan Elementray School	Brgy. 95 Caibaan	0.6714		g	g	g	g	g		Y	M	L			L	
6. Bliss Elementray School	Brgy. 74 Bliss	0.3084		g	g	g	g	g		Y	L	L			L	
7. Tagpuro Elementary School	Brgy. 108, Tagpuro	1		g	g	g	g	g		Y		M			L	

SCHOOL	BRGY.	AREA IN (HAS)	FACILITIES AND CONDITION							USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CIINIC	COMFORT ROOM	PLAY-GROUND	OTHERS		FL	TY	EQ	LN	SU	OTHERS
District Learning II																
8. San Fernando Central School	Brgy. 53	2.0233		g	g	g	g	g		Y		H			H	
9. Bañez Memorial Elem. School	Brgy. 75 Village	1		g	g	g	g	g		Y		M			M	
10. Palanog Ressetlement School	Brgy. 12 Palanog	3		g	g	g	g	g		Y		M				
11. San Roque Elementary School	Brgy. 100 Sn Roque	1		g	g	g	g	g		Y		M				
12. Bayanihan Elemtary School	Brgy. 73 PHHC	0.4		g	g	g	g	g		Y						
13. Judge Antonio R. Montilla Sr. Elem. School	Brgy. 91 Abucay	0.5		g	g	g	g	g		Y	H	M				
14. Utap Elem. School	Brgy. 110 Utap	0.1226		g	g	g	g	g		Y	H	M				
15. Kapangian Central School	Brgy.23	0.2975		g	g	g	g	g		Y	L	M				
16. Sto. Niño Speed Center	Brgy. 6 T. Claudio St.	1		g	g	g	g	g		Y	M	H			M	

SCHOOL	BRGY.	AREA IN (HAS)	FACILITIES AND CONDITION							USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CIINIC	COMFORT ROOM	PLAY-GROUND	OTHERS		FL	TY	EQ	LN	SU	OTHERS
17. Sta. Elena Elem. School.	Brgy. 107 Sta. Elena	1.320		g	g	g	g	g		Y		M				
18. Cabalawan Elem. School	Brgy. 97 Cabalwan	0.9244		g	g	g	g	g		N		M			L	
19. Basper Elementary School	Brgy. 94-A Basper	0.9915		g	g	g	g	g		Y		M				
20. Palanog Elem. School	Brgy. 103 Palanog	0.4816		g	g	g	g	g		Y		M				
21. B. Bulante Elementary School	Brgy. 105, Sn Isidro	0.7688		g	g	g	g	g		Y	M					
District Learning Center IV																
22. Panalaron Central School	Brgy. 8-A Del Pilar St.	1.2777		g	g	g	g	g		Y	L	M				
23. Sagkahan Elem. School	Brgy. 62-B Sagkahan	1.4857		g	g	g	g	g		Y		M				
24.Tigbao-Diit Elem. School	Brgy. 99 Diit	1.035		g	g	g	g	g		Y		H			H	
25. Bagacay Elem. School	Brgy. 93 Bagacay	0.8259		g	g	g	g	g		Y		H				
26.Mercy Ville Elem. School	Brgy. 99 Mercyville	2.5055		g	g	g	g	g		Y		M				

SCHOOL	BRGY.	AREA IN (HAS)	FACILITIES AND CONDITION							USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CIINIC	COMFORT ROOM	PLAY-GROUND	OTHERS		FL	TY	EQ	LN	SU	OTHERS
District Learning Center V																
27. Sn Jose Central School	Brgy. 87 Sn Jose	2.3549		g	g	g	g	g		Y		H			H	
28. Marasbaras Elem. School	Brgy. 79 Marasbaras	0.5031		g	g	g	g	g		Y		H			L	
29. Don Vicente Quintero Memo. Elem. School	Brgy. 92 Apitong	0.5		g	g	g	g	g		Y	H	L				
30. Nula-tula Elem. School	Brgy. 3 & 3A Nula-tula	0.3481		g	g	g	g	g		Y		H				
31. Camansihay Elem. School	Brgy.98 Camansihay	1		g	g	g	g	g		Y		H				
32. Sto Niño Primary School	Brgy. 106 Sto. Niño	0.05		g	g	g	g	g		Y		H				
33. Fisherman's Village Elem. School	Brgy. 88 San Jose	0.5591		g	g	g	g	g		Y		H			H	
34. Manlurip Elem. School	Brgy. 84 Manlurip	0.5408		g	g	g	g	g		Y		H			H	
District Learning Center VI																
35. City Central School	Brgy. 44	0.6943		g	g	g	g	g		Y		H				

SCHOOL	BRGY.	AREA IN (HAS)	FACILITIES AND CONDITION							USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CIINIC	COMFORT ROOM	PLAY-GROUND	OTHERS		FL	TY	EQ	LN	SU	OTHERS
36. Anibong Elem. School	Brgy. 69 Anibong	5.0319		g	g	g	g	g		Y		H			H	
37. V&G Memorial Elem. School	Brgy. 109 V&G	0.5		g	g	g	g	g		Y	M	H				
38. Lucio Vivero Elem. School	Brgy. 101 New Kawayan	1		g	g	g	g	g		Y		H				
39. Old Kawayan Primary School	Brgy. 102 Old Kawayan	2.2524		g	g	g	g	g		Y		H			H	
40. Scandinivian Elem. School	Brgy. 100 Sn Roque	0.3297		g	g	g	g	g		Y		H				
Total Area Public Elem. School		**45.7875 has.**		g	g	g	g	g		Y						
Secondary School (Public)																
1. Leyte National High School	Brgy. 49 Aquino Avenue	8.049		g	g	g	g	g		Y		H				
2. Marasbaras National High School	Brgy. 81 Marasbaras	0.8316		g	g	g	g	g		Y	H	H			H	

SCHOOL	BRGY.	AREA IN (HAS)	FACILITIES AND CONDITION							USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CIINIC	COMFORT ROOM	PLAY-GROUND	OTHERS		FL	TY	EQ	LN	SU	OTHERS
3. Cirilo Roy Montero National High School	Brgy. 6 T. Claudio St.	0.8222		g	g	g	g	g		Y		H			M	
4. Sagkahan National High School	Brgy 64 Sagkahna	1.5		g	g	g	g	g		Y	H	H			L	
5. San Jose National High School	Brgy. 87 Sn. Jose	0.9923		g	g	g	g	g				H			H	
6. Tacloban City National High School	Brgy 93 Bagacay	2.4986		g	g	g	g	g		Y		H			H	
7. Tacloban City Night High School	Brgy. 49 Aquino Ave.	Compd. Leyte NHS		g	g	g	g	g		Y						
8. San Jose Night Hgh School	Manlurip San Jose	Compd. San Jose NH		g	g	g	g	g		Y						
9.Tacloban National Agri School	Brgy 94-A Basper	14		g	g	g	g	g		Y		H				

SCHOOL	BRGY.	AREA IN (HAS)	FACILITIES AND CONDITION							USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CIINIC	COMFORT ROOM	PLAY-GROUND	OTHERS		FL	TY	EQ	LN	SU	OTHERS
10. Cirilo Roy Montejo Night. High School	Brgy. 6 T. Claudio St.	Compd. Cirilo Roy Montejo		g	g	g	g	g		Y						
11. Northern Tacloban City Natl High School	Brgy. 106/101 Sto. Niño	15.04		g	g	g	g	g		Y		H				
12. Anibong Night High School	Brgy. 68											H			H	
13. Antonio Balmes Nat'l High school	Brgy. 103 -A Sn Paglaum	.0295								Y		H				
14.Scandinavian Natl High School	Brgy. 100 Sn Roque	.04								Y		H				
Total Has., Public Secondary Schools		**43.7 has.**														

Source: Division of Tac. City, DepEd, 2016 /g-good,H-high,M-Medium, L-Low,Y- Yes, N-No,Fl-flood,Ty-typhoon,Eq-Earthquake,Ln-Landslide,Su-Storm Surge

Table 3. 9 Private Schools by Level, Type, Facilities and Conditions 2015

Tacloban City

NAME OF SCHOOL	LOCATION	AREA OCCUPIED (HA)	FACILITIES & CONDITION							USE AS EVAC. CTR	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CLINIC	COMFORT ROOM	PLAY GROUND	OTHER (SPECIFY)		FL	TY	EQ	LN	SU	OTHERS
Private Schools																
Pre-Elementary	G- good(Well maintained), P-poor (Needs Improvement), C-Critical(Requiring Priority Action), N-None (No such facility)															
1. Alpha Omega Learning Center	Gomez St.	.016has. (160sqm)		n	g	g	g	g		N		H			H	
2.Antonia Vargas Salmo School Fdn. Inc.										N						
3. Asian Dev't. Foundation College	Sagkahan Bliss	.01 has (100 sq.m.)		n	g	g	g	g		N	H					
4.Bright Sparks International	Brgy.25	.01 has (100 sq.m.)		n	g	g	g	g		N	H	H			H	
5. Cambridge Ctr. For Itnl. Studies										N						
6. JE Mondejar Computer College										N		H			H	
7.Genesis Play & Pre-School	Kassel City	.0075has. (75sqm)								N		H				
8.Holy Infant College	Youngfield	.0085has (85sq.m.		g	g	g	g	g		Y		H				
9. Holy Virgin of Salvacion School, Inc.	Burayan Sn. Jose	.0075has. (75sqm)		g	g	g	g	g		N		H			H	
10. Leyte Progressive High School	Paseo de Legaspi	.015has. (150sq.m.)	n	n	g	g	g	g	g (GYM)	Y		H			H	
11. Liceo del Verbo Divino	Veteranos Ave.	.015has. (150sq.m.)	n	n	g	g	g	g	g	N		M				
12.MSH Sister's Academy of Peerless Village	Brgy. 93 Bagacay	.008has (80sq.m.)	n	n	g	g	g	g	g	N		H			H	

NAME OF SCHOOL	LOCATION	AREA OCCUPIED (HA)	FACILITIES & CONDITION							USE AS EVAC. CTR	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CLINIC	COMFORT ROOM	PLAY GROUND	OTHER (SPECIFY)		FL	TY	EQ	LN	SU	OTHERS
13. Maranata Christian Academy of Tac.			n	n	g	g	g	g	g	N		H				
14.Perpetual Help Learning Center	Real St.	.1112has. (1,112sq.m.)	n	n	g	g	g	g	G (Social Hall)	N		H				
15.Sacred Heart School	T. Claudio St.	.06has. (600sq.m.)	g	g	g	g	g	g		N		H			H	
16. St. Benedict College of Tac.			g	g	g	g	g	g		N		H				
17.St. Bridget Learning Ctr.			g	g	g	g	g	g		N		H				
18.St. Joseph Freinademetz School Inc.			g	g	g	g	g	g		N		H				
19.St. Niño educ. Ctr.										N		H				
20.St. Therese Christian Dev.Center Fdn.(STCDCF)	Real St.	.015has. (150sq.m.)	g		g	g	g	g	g	N		H			M	
21. St. Therese Educational Fdn. Of Tac. Inc. (STEFTI)	Abucay	.0205has. (205sq.m.)	g		g	g	g	g	g	N		M				
22. Tac. Angelicum Learning Ctr.	Maharlika Highway Sagkahan	.02has. (200sq.m.)	g		g	g	g	g	g	Y		M				
23.Tacloban Adventist	Old Rd. Sagkahan	.008has (80sq.m.)	g		g	g	g	g	g	N		H			H	
24. United Church Family Life Program	Independencia St.	0.175has (175sq.m.)	n	n	p	n	g	g		N		H			H	
25.Xavier Early Academy House	Juan Luna St.	.0095has. (95sq.m.)		g	g	g	g	g		N		H			M	
26. Grace Baptist Academy	Brgy. 77		g	g	g	g	g	g	g	N		H			H	
Elementary																
1.Antonia Vargas	Brgy. 50		g	g	g	g	g	g	g	N		H				

NAME OF SCHOOL	LOCATION	AREA OCCUPIED (HA)	FACILITIES & CONDITION							USE AS EVAC. CTR	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CLINIC	COMFORT ROOM	PLAY GROUND	OTHER (SPECIFY)		FL	TY	EQ	LN	SU	OTHERS
Salmo School Fdn. Inc.																
2. Asian Dev't. Foundation	Brgy. 62A									N	H	H			M	
3.Cambridge Ctr.for Intl.studies										N		H				
4. Grace Baptist Academy	Banezville	.0115has. (115sq.m.)	g	g	g	g	g	g		N		H				
5.Holy Infant College	Youngfield	8.5has (whole school)	g	g	g	g	g	g	Computer Lab., Speech Lab, AV Hall (g)	N		H				
6. Holy Virgin of Salvacion School, Inc.	Burayan San Jose		g	g	g	g	g	g		N		H			H	
7.JE Mondejar Computer	Imelda Village		g	g	g	g	g	g		N		H				
8. Leyte Progressive High School	Paseo de Legaspi	3has. all levels	g	g	g	g	g	g	Gym ,g	Y		H			H	
9. Liceo del Verbo Divino	Veteranos Ave.	450sq.m.	g	g	g	g	g	g		N		H				
10.MSH Sister's Academy of Peerless Village	Brgy. 93 Bagacay	.008has (80sq.m.)	g	g	g	g	g	g		N		H			H	
12.Sacred Heart College	T. Claudio St.	372sq.m.	g	g	g	g	g	g	g	N		H			H	
13.St. Therese Christian Dev.Center (STCDC)	Real St.		g	g	g	g	g	g		Y		H			M	
14. St. Therese Educational Fdn. Of Tac. Inc. (STEFTI)	Abucay		g	g	g	g	g	g		N		H				
15.Tacloban Adventist	Old Road Sagkahan		g	g	g	g	g	g		N		H			H	

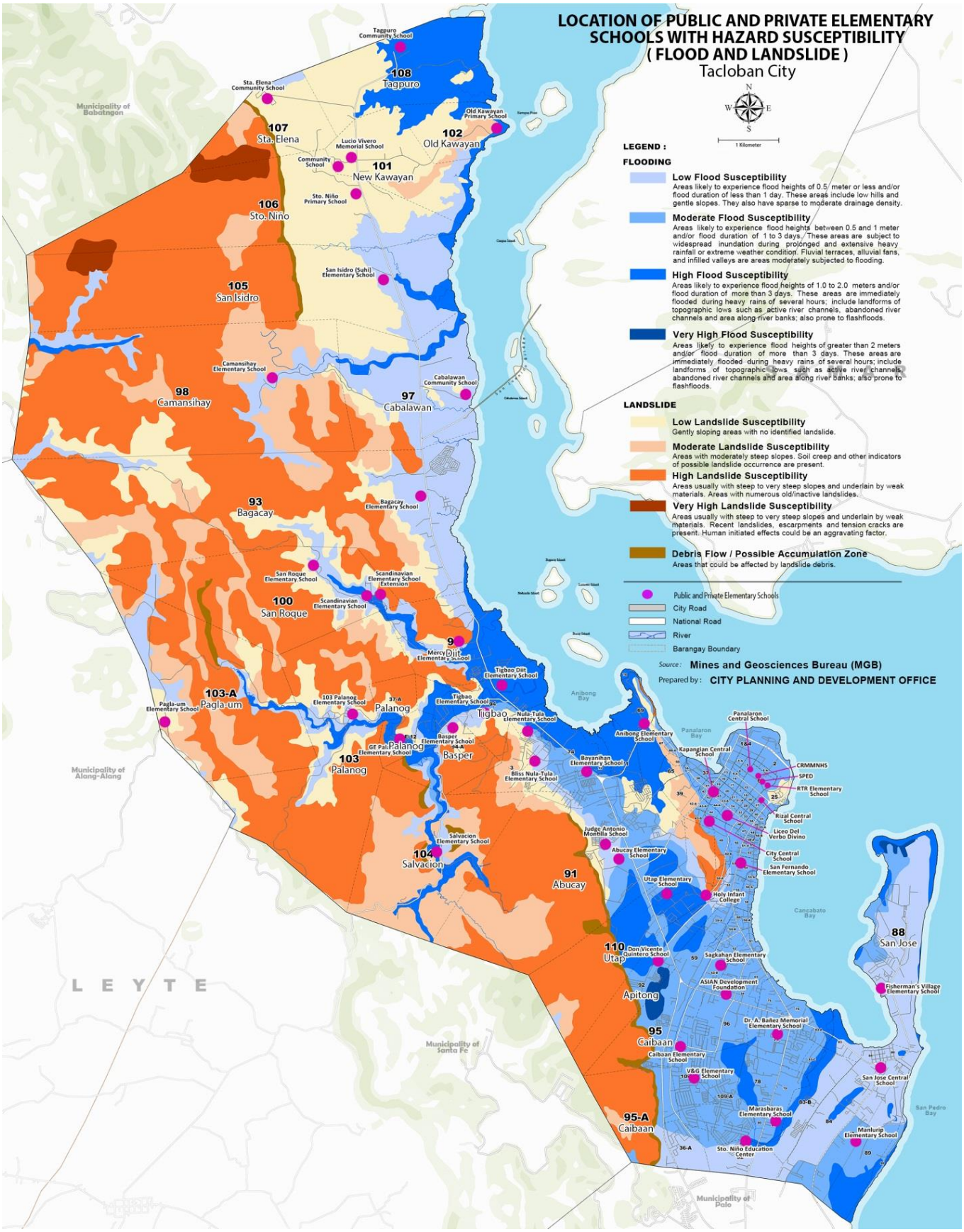
NAME OF SCHOOL	LOCATION	AREA OCCUPIED (HA)	FACILITIES & CONDITION							USE AS EVAC. CTR	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CLINIC	COMFORT ROOM	PLAY GROUND	OTHER (SPECIFY)		FL	TY	EQ	LN	SU	OTHERS
16.Tacloban Angelicum Learning Center	Brgy. 110 Utap		g	g	g	g	g	g		N		H				
17.Perpetual Help Learning Center				g	g	g	g	g		N		H				
Secondary																
1.Antonia Vargas Salino School Fdn. Inc.	Brgy. 50		g	g	g	g	g	g		N		H				
2. Asian Dev't. Foundation	Sagkahan Bliss		g	g	g	g	g	g		N		H			M	
3.Cambridge Center for Intl. Studies			g	n	g	n	g	g		N		H				
4. Grace Baptist Academy	BanezVille		g	g	g	g	g	g		N		H				
5.Holy Infant College	Youngfield	(8.5has.)	g	g	g	g	g	g	Computer Lab.,Speech Lab, AV Hall (G)	N		H				
6. Holy Virgin of Salvacion School, Inc.	Burayan Sn Jose	.00	g	g	g	g	g	g		N		H			H	
7.JE Mondejar Computer College			g	g	g	g	g	g		N		H				
8.Leyte Colleges	Sta Cruz	.06 has.	g	n	g	g	g	N		N		H				
9.Leyte Progressive High School	Paseo de Legaspi	All 3 levels 3 has.	g	g	g	g	g	g	GYM –g	Y		H			H	

NAME OF SCHOOL	LOCATION	AREA OCCUPIED (HA)	FACILITIES & CONDITION							USE AS EVAC. CTR	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CLINIC	COMFORT ROOM	PLAY GROUND	OTHER (SPECIFY)		FL	TY	EQ	LN	SU	OTHERS
10.Liceo del Verbo	Veteranos Ave.	650sq.m.	g	g	g	g	g	g	g	N		H				
11.Sacred Heart College	T. Claudio St.	.0725has.(725 sq.m.)	g	g	g	g	g	g	g	N		H			H	
12. St. Scholastica College of Tacloban			g	g	g	g	g	g		N		H				
13.St. Therese Christian Dev.Center (STCDC)	Real St.		g	g	g	g	g	g		N		H			M	
14.St. Therese Educational Fdn. Of Tac. Inc. (STEFTI)	Abucay		g	g	g	g	g	g		N		H				
15.Tacloban Angelicum Learning Center	Maharlika Highway Sagkahan		g	g	g	g	g	g		Y		H				
Tertiary Schools																
State Colleges/University																
1.Leyte Normal University	Paterno St.	7.2 has.	g	g	g	g	g	g		Y		H			M	
2.Eastern Visayas State University	Quarry District	7.6has.	g	g	g	g	g	g		Y		H				
3.UP Visayas Tacloban College	Magsaysay Blvd.	7.5 has.	g	g	g	g	g	g		N		H			H	

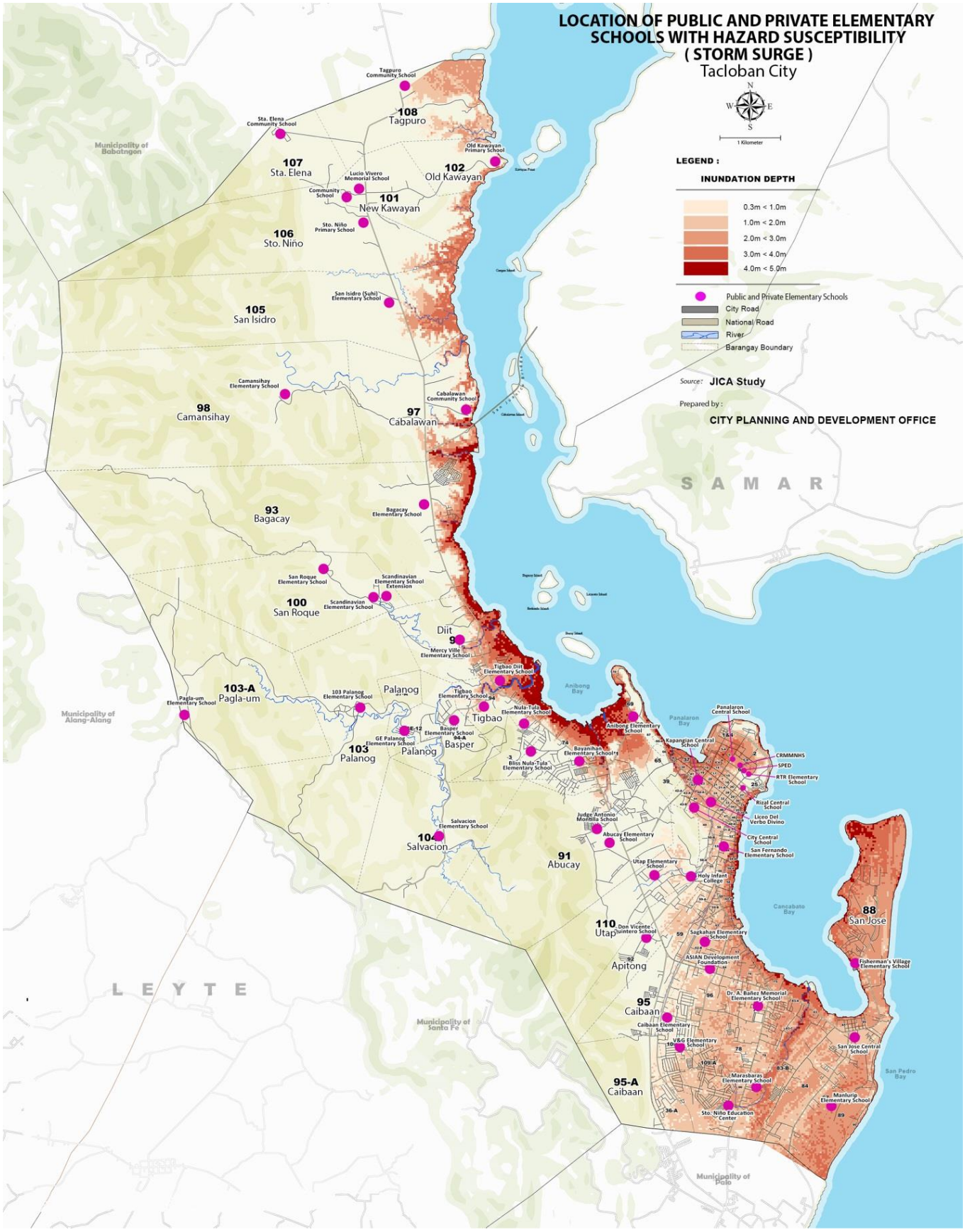
NAME OF SCHOOL	LOCATION	AREA OCCUPIED (HA)	FACILITIES & CONDITION							USE AS EVAC. CTR	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CLINIC	COMFORT ROOM	PLAY GROUND	OTHER (SPECIFY)		FL	TY	EQ	LN	SU	OTHERS
Higher Education Institution																
1. ABE International College of Business &Eco. (Tacloban)										N		H				
2.ACLC College of Tacloban City	Real St.		g	n	g	n	g	N	g(gym MPH)	N		H				
3. AMA Computer College Tac. City				g	g	g	g	g		N		H				
4. Asian Dev't. Fdn.	Burgos St.		g	g	g	g	g	g		N		H				
5. Collegio de la Salle Fdn. Of Tac.				g	g	g	g	g		N		H				
6.Dr. V. Orestes Romualdez Educ. Fdn.	Brgy. 96 Calanipawan		g	g	g	g	g	g		Y		H				
7.RTR Medical Foundation	Brgy. 96 Calanipawan		g	g	g	g	g	g		Y		H				
8.Holy Spirit Foundation College	Real St.		g	g	g	g	g	g		Y		H				
9.Holy Infant College (with vocational & technical course)	Young Field	8.5 has.	g	g	g	g	g	g	Computer Lab.,Speech Lab, AV Hall	N		M				
10.Leyte Colleges	Sta Cruz St.	.517	g	n	g	g	g	g	G (comp .lab)	Y		H				
11. Tacloban Institute of Electronics			g	g	g	g	g	g		N		H				

NAME OF SCHOOL	LOCATION	AREA OCCUPIED (HA)	FACILITIES & CONDITION							USE AS EVAC. CTR	HAZARD SUSCEPTIBILITY (HML)					
			LAB.	SHOP	LIBRARY	CLINIC	COMFORT ROOM	PLAY GROUND	OTHER (SPECIFY)		FL	TY	EQ	LN	SU	OTHERS
Vocational/Technical Schools																
Tacloban Institute of Electronics		900 sq.m.								N		H				
Public Safety Regional Training School (Technical School)	San Jose	1.8 has.	n	n	g	g	g	g(parade ground)	g (AV Hall, MPH)	N		H				

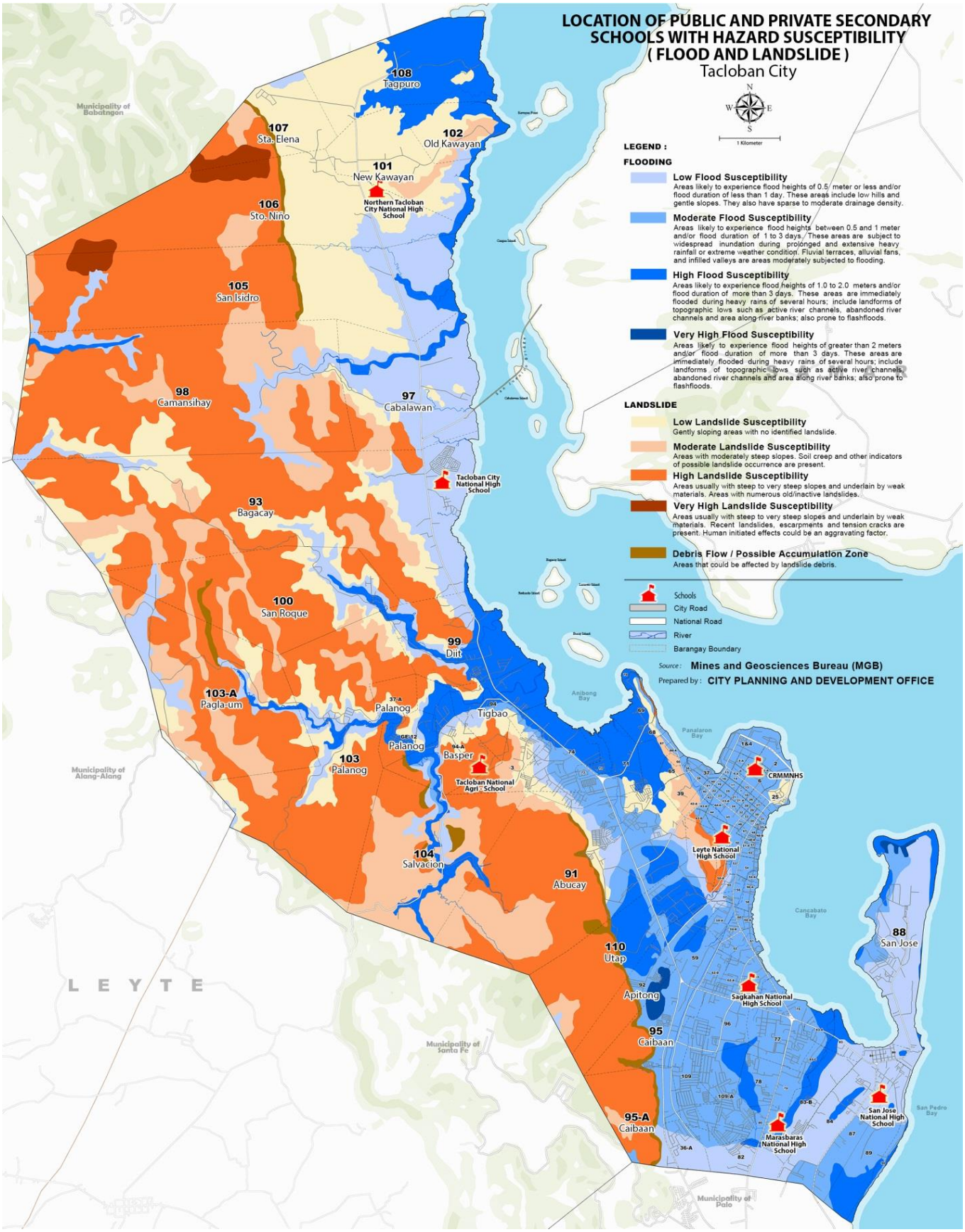
Source: Department of Education Tacloban City Division Note: g-good, Y- Yes, N-No, H-high, M-Medium, L-Low, Fl-flood, Ty-typhoon, Eq-Earthquake, Ln-Landslide, Su-Storm Surge



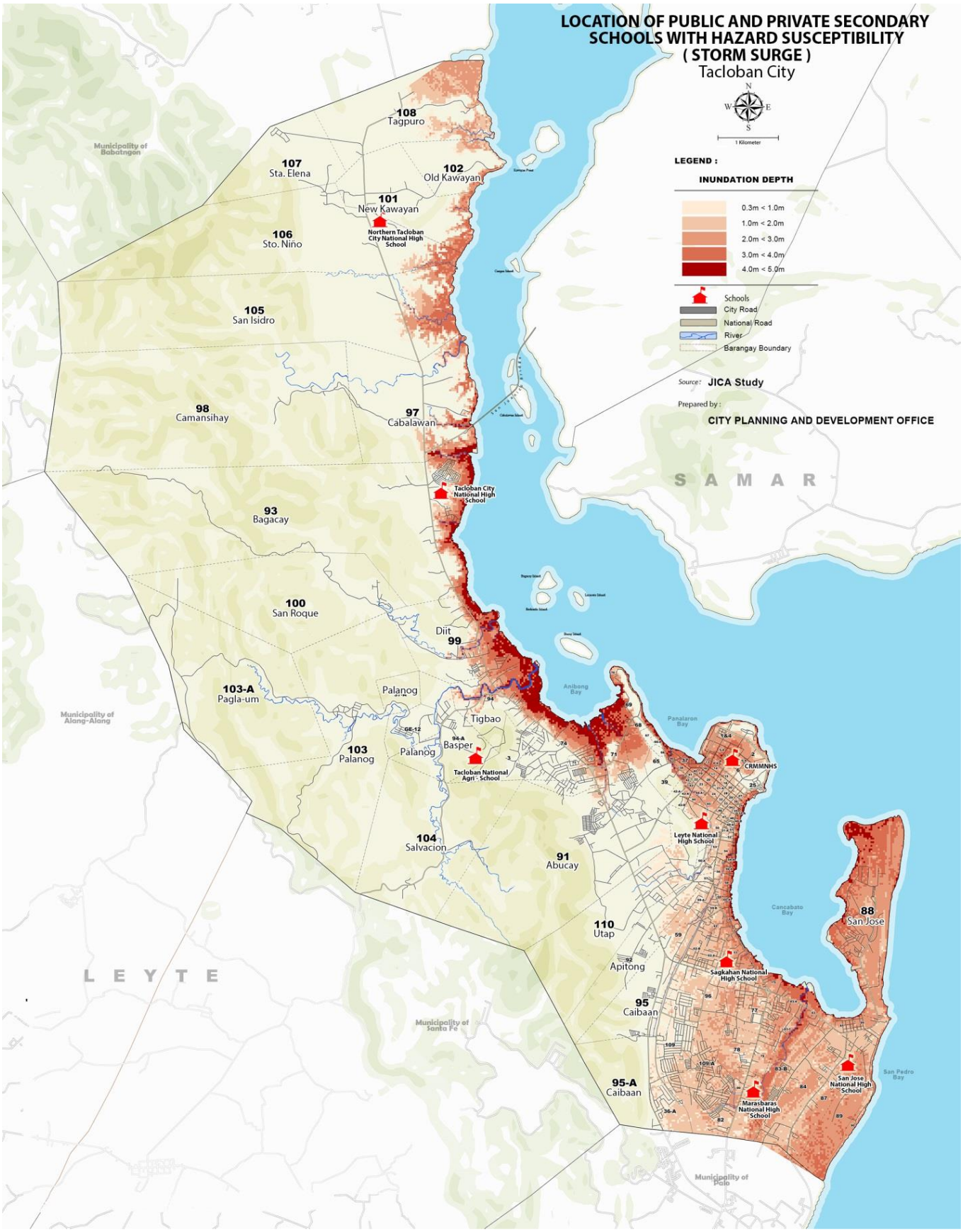
Map 30. Public and Private Elementary Schools with Hazard F/L



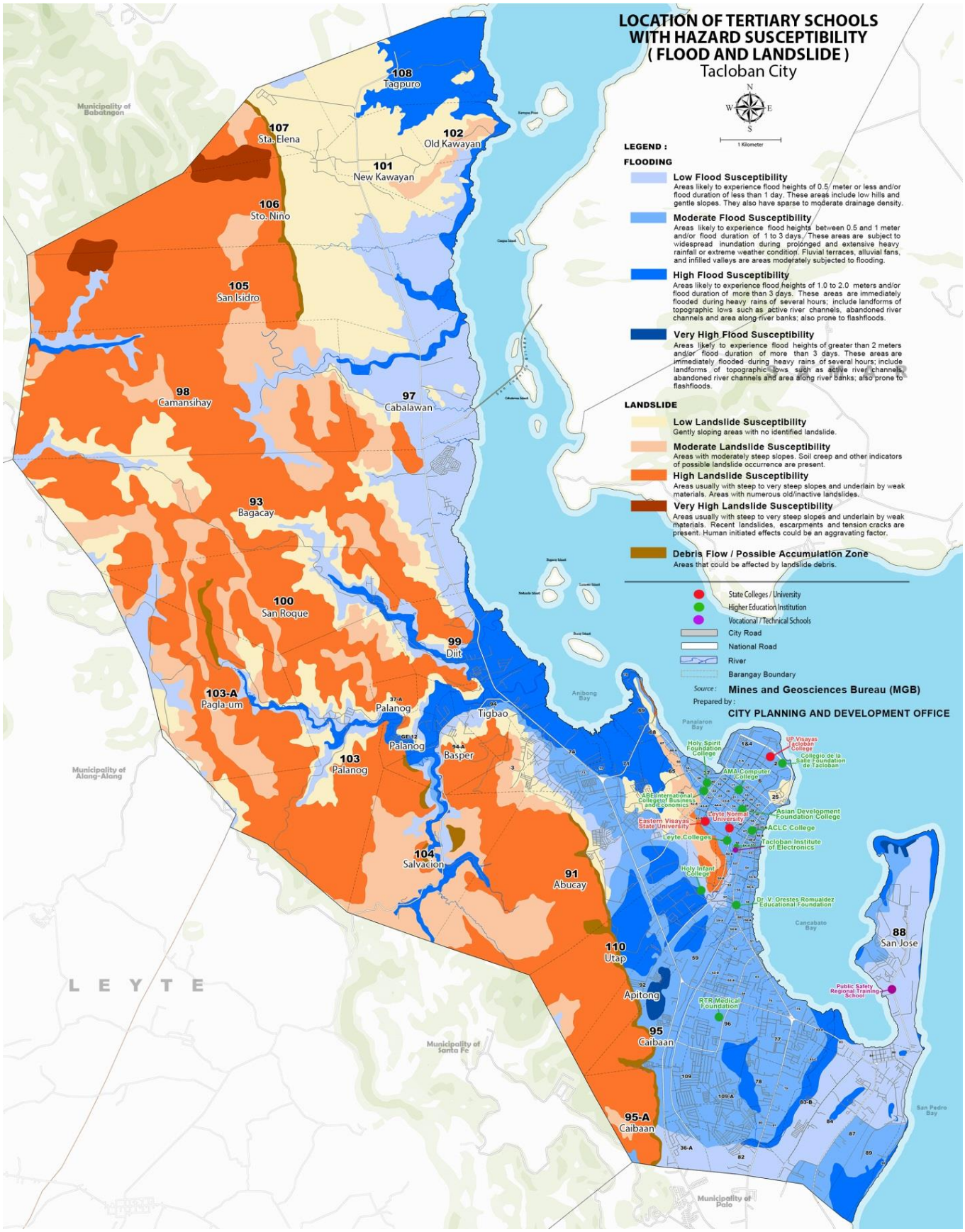
Map 31. Public and Private Elementary Schools with Hazard Su



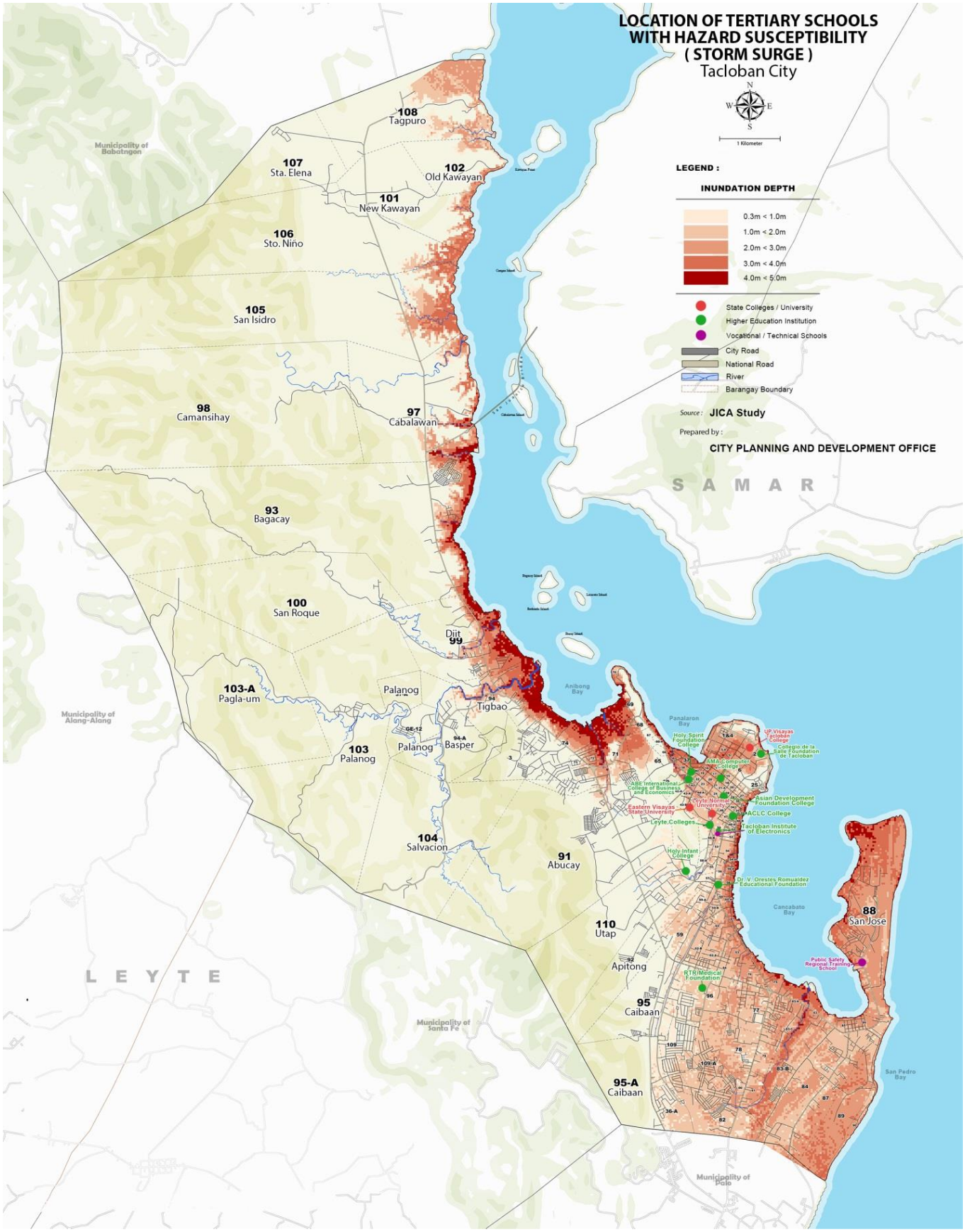
Map 32. Public and Private Secondary Schools with Hazard F/L



Map 33. Public and Private Secondary Schools with Hazard Su



Map 34. Tertiary Schools with Hazard Flood and Landslide



Map 35. Tertiary Schools with Hazard Storm Surge

II. Projected Needs/ Requirement

Correspondingly the number of projected enrolees as shown in Table 3.10 has the same increasing trend at all levels indicating the need for more classrooms and teachers. At the start of the planning period there is a need for 75 teachers in the elementary. However for the secondary school there are enough teachers for the year 2017, but for the year 2018 there is a need for 6 teachers. While for the rooms there is a need for 39 classrooms in the elementary and 155 classrooms in the secondary at the start of the planning period. For the 9 year planning period a total of 202classrooms in the elementary and 256 classrooms are needed for the secondary public schools. (See Map for the proposed elementary & secondary school classrooms) On the other hand there are 238teachers needed in the elementary and 95 teachers in the secondary level.

Table 3. 10 Projected Enrolment, Classroom, Teacher Requirements in Public Schools by Level (2017-2025) Tacloban City

LEVEL	ACTUAL 2015-2016	PROJECTED ENROLMENT								
		2017	2018	2019	2020	2021	2022	2023	2024	2025
Projected Enrolment (Elem)	28,597	31,208	31,872	32,552	33,246	33,953	34,676	35,415	36,170	36,940
Projected Enrolment (Secondary)	16,438	21,991	22,459	22,937	23,426	23,925	24,435	24,955	25,487	26,030
Classroom	No. of Existing Classrooms	Projected Classroom Requirement								
Elementary	853	39	18	20	19	21	20	21	22	22
Secondary	395	155	11	12	13	12	12	13	14	14
Teacher	No. of Existing Teachers	Projected Teacher Requirement								
Elementary	817	75	18	20	20	20	21	20	22	22
Secondary	555		6	12	13	12	13	13	13	13

Source of Actual Data Tacloban City Schools Division (Annual Accomp. Report 2015)

Figure 3. 3 Projected Enrolment 2017-2025 Elementary & Secondary

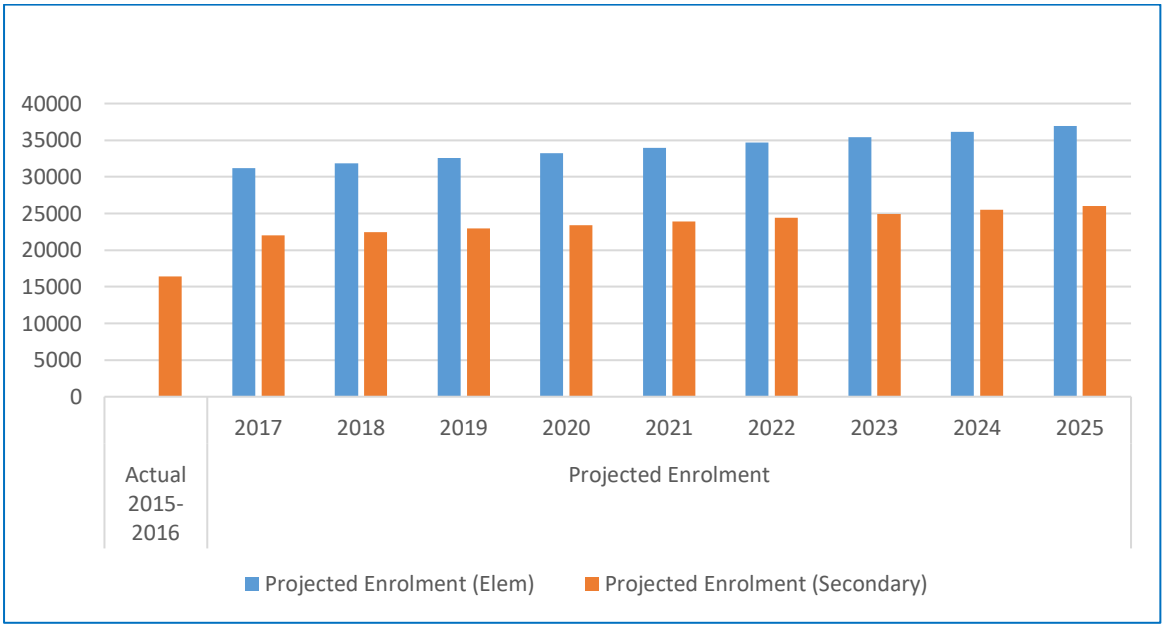
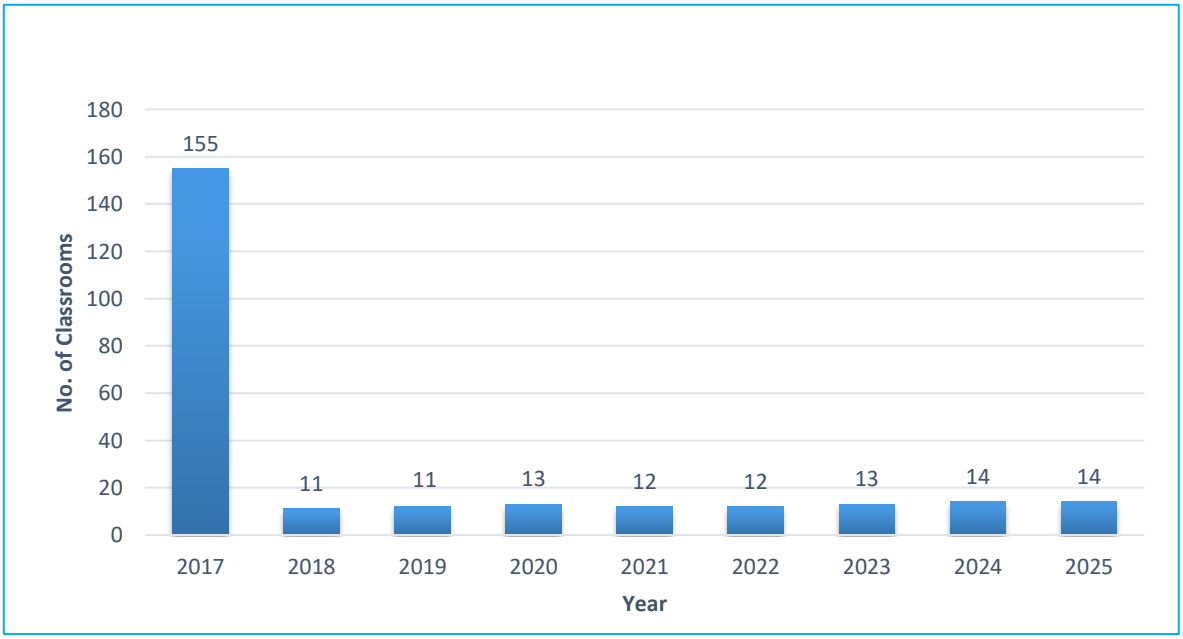
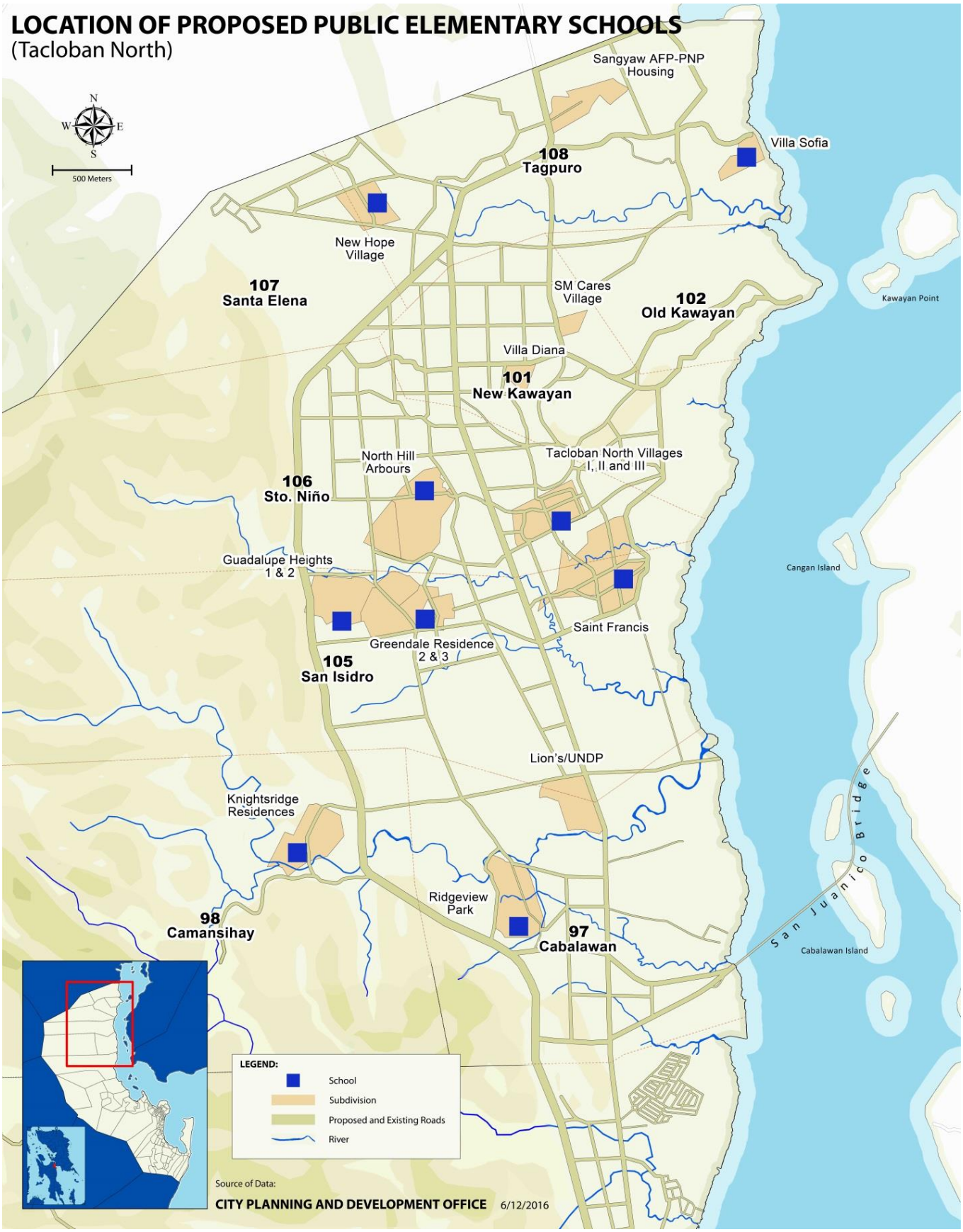
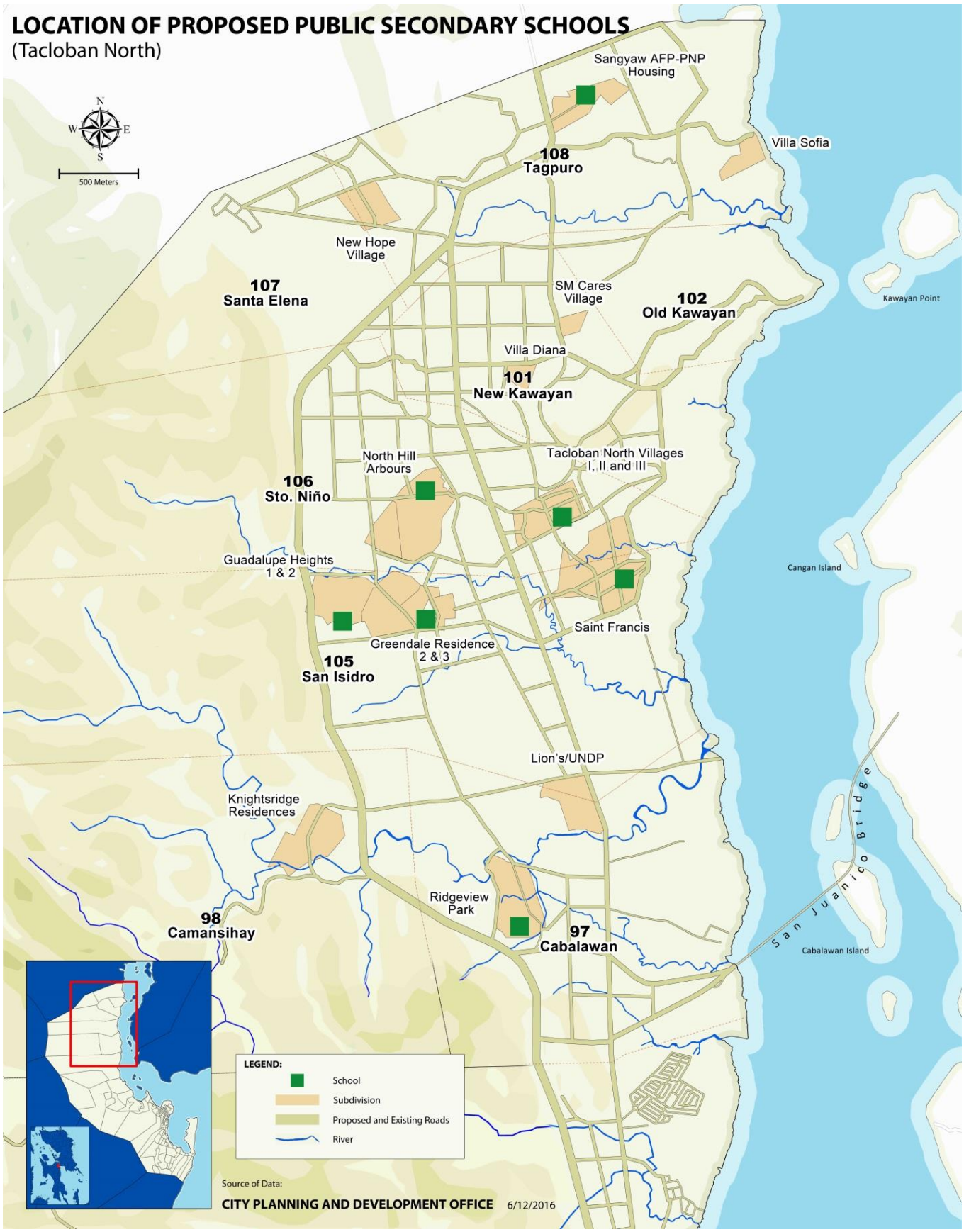


Figure 3. 4 Projected Classroom Requirements





Map 36. Location of Proposed Public Elementary Schools



Map 37. Location of Proposed Public Secondary Schools

A total of 8.25 has. is needed to meet the standard area requirement for a school site in the public elementary school. Table 3.11 presents the variance area requirement for the school site. However other schools like the Rizal Central School they opt to increase their area through building additional classrooms in the second to third level.

Table 3. 11 Projected Land Area Requirement per School (2025), Tacloban City

NAME OF SCHOOL	CURRENT AREA (HAS.)	STANDARD REQUIREMENT OF SCHOOL SITE (HAS)	2025PROJECTED AREA REQUIREMENT (HAS.)
1.Rizal Central School	0.393	1	.60
2. RTRElem. School	1.2	1	-
3. BlissElem. School	0.3084	1	.69
4. SalvacionElem. School	4.591	1	-
5. Caibaan Elem. School	0.6714	1	.3286
6. Tagpuro Elem. School	1	1	
7. LorenzoDaaElem. School	1	1	
8. San Fernando Central School	2.0233	2	-
9. Dr. Banez Mem. School	1	1	-
10. Bayanihan Elem. School	0.4	1	.6
11. San Roque Elem. School	1	1	-
12. Palanog Resettlement	3	1	-
13. JARMS	0.5	1	. 5
14. UTAP Primary School	0.1226	1	.88
15.Kapangian Central School	0.2975	1	.7025
16. Sto. Niño SPED	1	1	-
17. B. Bulante Elem. School	0.7688	1	.2312
18. Sta. Elena Elem. School	1.32	1	-
19. Cabalawan Elem. School	0.9244	1	.0756
20. Basper Elem. School	0.9915	1	.0085
21. Palanog Elem. School	0.4816	1	.5184
22. Panalaron Central School	1.2777	1	

NAME OF SCHOOL	CURRENT AREA (HAS.)	STANDARD REQUIREMENT OF SCHOOL SITE (HAS)	2025PROJECTED AREA REQUIREMENT (HAS.)
23. Sagkahan Elem. School	1.4857	1	
24. Tigbao Diit Elem. School	1.035	1	
25. Bagacay Elem. School	0.8259	1	.1741
26. Mercyville Primary School	2.5055	1	
27. San Jose Central School	2.3549	2	
28. Marasbaras Elem. School	0.5031	1	.4969
29. DVQMS	0.5	1	.5
30. Nula Tula Elem. School	0.3481	1	1
31. Camansihay Elem. School	1	1	
32. Sto. Niño Primary School	0.05	.5	.45
33. Fishermen's Primary School	0.5591	.5	
34. Manlurip Primary School	0.5408	1	.5
35. City Central School	0.69426	1	.30574
36. Anibong Elem. School	5.0319	1	
37. V&G Mem. School	0.5	1	.05
38. Lucio Vivero Elem. School	1	1	
39. Old Kawayan Primary	2.2524	. 5	
40. Scandinavian Elem. School	0.3297	1	.5
	Total		**8.25 has.**

Source: Department of Education Tacloban City Schools Division

Climate Change Adaptation and Disaster Risk Reduction and Management

With the experience of the worst disaster the city has ever encountered the education sector has to start back from scratch. Looking back three years ago when the city was considered to be in 'ground zero', the education sector survived the challenges. With all the aid from both local and international organizations, resilient school buildings were constructed, retrofitted and transferred. School facilities were replaced.

III. Education Analysis Matrix

Education Analysis

TECHNICAL FINDINGS/OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS INTERVENTIONS
1.Lack of classrooms in public schools particularly at Tacloban North where those affected by typhoon Yolanda are being transferred	Poor quality of education due to an atmosphere not conducive for learning	Construction of 639 classroomswith a land area requirement of 3.8 has. Located at the Tacloban North particularly at Brgys. 108, 105, 106, 107, 97, 101,98,102
2. There are schools that are located in flood prone areas like the schools along Brgy. Old Kawayan, Fishermans Village in Brgy. 88 Sn Jose, Manlurip Primary School, Brgy. Cabalawan	Risk to life and health of school children	Construction of drainage in flooded areas, transfer of school in safe areas at schools located in the following brgys, 92, 88,97, 102, 108,106,
3.Lack of modern educational equipments in public schools	Poor/low level of education	Provision of modern educational equipments and facilities in public schools like computers, auditorium or Audio visual Hall etc. to reinforce learning of students
4.Increasing tuition fee in private schools - Overpopulated students in public schools	Poor quality of education especially the slow learners,	Increasing the number of scholars from private schools and extend scholarship programs in far flung barangays
5.Lack of training & sports facilities in schools	Those in public schools are much behind in competing in national sports competition /events	Linkages and networking with NGAs, NGOs, and other groups for sports facilities and sports training for deserving students
6.Students lack knowledge on Climate Change and Its effect and Impact	Risk is high for the young people when disaster occurs since they don't know anything about climate change and mitigating measures	Mainstream Climate Change Adaptation in the classes Orient students on Climate Change Adaptation Child Centered Planning on Disaster Risk Reduction & Mgt.
7.Overstaying of evacuees at school	-Classes are disrupted -School not conducive for learning	Construction of a separate evacuation centers in safe areas.

3.2 Health and Sanitation

I. Existing Situation

A. General Health Situation

As a Highly Urbanized City, the present administration envisioned to improve the delivery of basic health and sanitation services, nutrition, other socio-economic and developmental services including infrastructures responsive to the needs of the population especially to the poor and the underserved with the ultimate goal of attaining quality of life for all Taclobanos complimenting with the National Objectives for Health and the Millennium Development Goals (MDG's) in implementing framework for health reforms.

These plans are programmed through the path of socio-economic transformation through urbanization. The City Government is equipped to meet the health demands for this general revolution towards progress that will give back every edge of benefit to its people. With the grace of the Lord Almighty and the help and cooperation of its citizens, Tacloban will be one of the healthiest and the safest place to live in the Region and the Philippines as well.

Table 3.12 shows comparative description of the health condition of the city for the past five years (2011 – 2015). These figures are not exclusive for the residents of the city because a modest number of residents from other municipalities or provinces who accessed the different health care facilities in the city, given medical attention and died in Tacloban City were included in the statistics.

It is evident that there is an erratic increase of mortality cases in year 2013 and 2014 basically due to typhoon Yolanda's aftermath, damages to life. It is somehow reflected with the highest Crude Death Rate during these years of 12.26 and 17.35 respectively. Drowning as the top leading cause of mortality in 2013.

Infant Mortality Rate (IMR), Neonatal Mortality Rate (NMR) and Under Five Mortality Rate (U5MR) is consistently way below the MDG target for the past 5

years. The most common cause of death among neonates, infants and children under five are pneumonia, prematurity and sepsis. These deaths can be attributed to non immunization, poor management of common childhood illnesses, poor health practice of some parents especially at the rural and informal settlements, poor environmental sanitation, congestion or poor health seeking behavior of the family. Factors associated with IMR-NMR-U5MR warrant not just improving maternal and child health care programs but uplifting the socioeconomic conditions as well.

Prematurity among newborns can be attributed to gaps in care for pregnant women before, during, and the immediate period after childbirth.Services under the domain of the City Health Office and hospitals (private/public). Special emphasis has to be made on access to prenatal care services, during which infections that are known to cause prematurity are detected and addressed appropriately.

The uprising trend in Maternal Mortality Rate (MMR) is quite alarming. Though only 3/18 maternal deaths are residents of Tacloban, the gaps still needs to be addressed and given more emphasis especially that all deaths are hospital based. Maternal, Neonatal, Child Health and Nutrition (MNCH) interventions and advocacy campaigns needs to be strengthened. The most common maternal death causes are pregnancy induced hypertension, bleeding/shock, obstetric complications and pregnancy related infections. These can be attributed on the three delays: delay in deciding to seek medical care, delay in reaching appropriate facility and delay in receiving appropriate and adequate care at the facility.

Table 3. 12 General Health Situation for the Last Five Years 2011 – 2015, Tacloban City

Health Indicator	2011		2012		2013		2014		2015	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Fertility										
Crude Birth Rates		32.73		19.2	6104	25.92	4340	17.97	5008	20.35
Morbidity (Total)	14823		7222		5294		4369		4346	9.32
Mortality (Total)	2102				2887		4191		2294	

Health Indicator	2011		2012		2013		2014		2015	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Crude Death Rate (CDR)/100,000 population		8.83		5.53		12.26		17.35		10.52
Infant Mortality Rate (IMR)/1000 live births		6.67		3.4		4.98		6.21	40	7.79
Under Five Child Mortality Rate/1000 live births										22.76
Maternal Mortality Rate (MMR)/100,000 livebirth		25.67		54.11				253.39	18	359.42

Source: City Health Office, 2016

It is evident in Table 3.13 that diseases of the lungs such as URTI, pneumonia, ARI, PTB, bronchial asthma and bronchitis consistently on top ranks as the most common leading causes of morbidity among all ages for the past 5 years. Pneumonia on its 1st rank in 2013, and consistent on its 2nd rank for two consecutive years (2014 & 2015). The consistency of these diseases as leading causes of morbidity may be attributed in poor environmental condition, sudden change of climate, poor health and hygiene practices especially in rural and resettlement areas, congestion, poor health seeking behavior and lack to financial access for medical consultation.

Pulmonary Tuberculosis (PTB) is drastically climbing up from rank 10 in 2012, 6th in 2014 and now it's on its 4th rank as leading cause of morbidity and ranks 8th in mortality. These remains to be a major problem in the city. Environment - Friendly Ordinances like anti-spitting Ordinance, solid waste management and other related laws and regulations has to be revisited and strictly implemented to somehow contain disease transmission. Factors such as congestion, living in one quarter due to limited space, climatic condition, patient treatment compliance and financial capacity is also to be considered.

The lack of permanent NTP nurse significantly impacts the implementation of the program. Continuity of care is disrupted; gathering of data,

recording/monitoring and reporting is delayed and compromised specially in advising/scheduling patients for sputum exam, follow up examinations and tracking lost to follow up patients (TALF) which resulted to lowering of the Cure Rate. Advocacy, communication and social mobilization remain to be strengthened, presently there is no community based organization established to help disseminate information and improve awareness/education in the fight against TB.

It is also worth noting that road traffic injuries (vehicular accident) is an emerging problem in the city. Advocacy and strict implementation of road traffic – related ordinances, laws, rules and regulations need to be strengthened.

Healthy Lifestyle, Health Risk Management Initiatives in the aim of removing the common cause of mortality and morbidity from the top 10 linelist has started. It is evident enough in the sudden drop of lifestyle diseases in the linelist as shown in this table. HPN of all types drops from 4th rank in 2014 to 7th in 2015. Health consciousness and adaptation to healthy lifestyle activities and exercises has contributed much. Access to regular provision of maintenance medications for hypertensive and diabetic is also considered. Climate change adaptation measures are also being strongly advocated and taken into consideration.

Table 3. 13 Ten Leading Causes of Morbidity for Past 5 years, (2011 - 2015)
Tacloban City

CAUSES	2011	2012	2013	2014	2015
Bronchitis	3686 (1)			390 (3)	593 (6)
Acute Respiratory Infection (ARI)	4,049 (2)	1767 (1)	723 (2)	1890 (1)	1655 (3)
Hypertensive Vascular Diseases	666 (3)				
Soft Tissue Skin Infection	576 (4)				
Pneumonia	551 (5)	904 (3)	1203 (1)	1045 (2)	1656 (2)
Musculoskeletal Disorders	421 (6)				
Systemic Viral Infection (SVI)	303 (7)	1193 (2)	486 (3)		643 (5)
Headache/Migraine/Vertigo	275 (8)				

CAUSES	2011	2012	2013	2014	2015
Wounds (all forms)	273 (9)	178 (6)	225 (6)	105 (10)	
Scabies		402 (4)	101 (10)		
Hypertension all types		264 (5)		290 (4)	469 (7)
Bronchial Asthma		173 (7)	161 (8)	217 (5)	366 (8)
Impetigo		150 (8)			
Allergic Rhinitis		117 (9)			
Pulmonary Tuberculosis (PTB)		109 (10)		161 (6)	1129 (4)
URTI			456 (4)		3060 (1)
UTI			245 (5)	111 (9)	230 (10)
Soft Skin Tissue Infection			186 (7)	115 (8)	
AGE/Diarrhea			155 (9)	150 (7)	295 (9)

Source: City Health Office, 2016

Table 3.14 shows that lifestyle diseases such as Hypertensive Cardiovascular Disease (HCVD), Myocardial Infarction (MI), kidney Diseases and CA of all types are fast rising as leading causes of mortality in the city. Emphasis on health service delivery must be taken into account in the prevention of onset of lifestyle diseases through promotion of healthy lifestyleadvocacies and activities. Limitations in the provision of diagnostic and therapeutic support to these patients at the primary health care facilities has to be considered such as lack of Medical Technologists and laboratory equipments in providing blood chem. analysis and ECG. Provision of medications is also limited.

On the other hand, road traffic injury (vehicular accidents) is an emerging problem as well and causes death at no. 6 while pulmonary tuberculosis remains a major health problem and is climbing up from rank 9 in 2014 to 8 in 2015. TB Cure Rate and Treatment Success Rate of 47%, 63% in 2014 and 62%,66% in 2015 respectively is still below the national benchmark .

Table 3. 14 Ten Leading Causes of Mortality, CY 2011 – 2015, Tacloban City

CAUSES	NO. OF DEATHS				
	2011	2012	2013	2014	2015
CAP/Pneumonia	357 (1)		274 (3)	383 (2)	343 (1)
Myocardial Infection (MI)	211 (2)	556 (1)	245 (4)	405 (1)	215 (3)
Trauma, unspecified	167 (3)	176 (3)	105 (6)	82 (7)	
Diabetes Mellitus	142 (4)			112 (5)	
Hypertensive Cardiovascular Disease	140 (5)	117 (5)	339 (2)	157 (3)	67 (9)
Pulmonary Tuberculosis (All forms)	92 (6)				
Congestive Heart Failure (CHF)	57 (7)	78 (7)	87 (8)	61 (8)	
CP Arrest (Unknown Etiology)	44 (8)				
Bronchial Asthma	40 (9)				
Dengue Hemorrhagic Fever	33 (10)				
AGE/Diarrhea		318 (2)			
Septecemia		124 (4)	102 (7)	101 (6)	137 (5)
Kidney Disease		107 (6)	126 (5)	129 (4)	146 (4)
GI Bleeding		68 (8)	64 (10)		74 (7)
Liver Cirrhosis		67 (9)	68 (9)	44 (10)	
Anemia		36 (10)			
Drowning			736 (1)		
Pulmonary Tuberculosis (PTB)				57 (9)	71 (8)
CA of all types					234 (2)
Vehicular Accident					126 (6)
Cerebrovascular Accent					55 (10)

Source: City Health Office, 2016

B. Facilities and Manpower

Table 3.15 shows that pool of health facilities and manpower resources is within the city. It has six operating hospitals. Two are government owned hospitals namely: Eastern Visayas Regional Medical Center (EVRMC) which is under the Department of Health RO8 and Tacloban City Hospital under the City Government of Tacloban. Four other hospitals are privately owned such as Divine Word Hospital, Remedios Trinidad Romualdez (RTR) Hospital, Mother of Mercy Hospital and Tacloban Doctors Medical Hospital. In line with the hospital capabilities, EVRMC and Divine Word Hospital are providing the highest level curative care (Tertiary Care/Level III) while others provide secondary level/Level II of care.

The city provides, with efficiency, all the priority government health services in its 6 District Health Centers and 24 primary health care facilities. These 6 District Health Centers are all PhilHealth accredited with PCB, MCP and TB-DOTS and 1 speacial health unit (MASA) accredited with PCB. Tacloban City Hospital is a 25-bed hospital providing general adult and pediatric medical, obstetric-gynecology and surgical care. It is a CEmONC center and is PhilHealth-accredited. It still lacks equipment for more complex clinical care.

There are 2 newly built Health Centers donated by INGO's which the city is planning to establish as District Health Center (Abucay District Health Center and Sto. Niño (GMA) District Health Center).

Followingthe DOH-prescribed population to health personnel ratios, the city does not conform to the standards. As shown in table above it is evident enough that the city really needs additional manpower resources. We are in dire need of doctors, nurses, midwives, medical technologists and other allied health workers that will cater the primary health care needs of the constituents with quality and efficiency although the DOH provides health manpower support through their Deployment Program (NDP', RHMPP's, PHA, DDP, MDP).

The voluntary sector such as Barangay Health Worker's (BHW), Barangay Nutrition Scholars (BNS) and Barangay Service Point Officers (BSPO's) also

provides support at the health center and community levels. They are our active partners in the delivery of basic health care services on the field.

All these health facilities (hospitals, district health centers and barangay health stations) are susceptible to typhoon (Low, Medium, and High). Flood prone BHS is Apitong BHS while other BHS such as Magallanes BHS, Bliss Sagkahan BHS, Ilong BHS, Fatima BHS, Seawall BHS, Cabalawan BHS, Burayan BHS and Fisherman"s BHS are storm surge susceptible.

Table 3. 15 MEDICAL HEALTH FACILITIES and MANPOWER, 2015, Tacloban City

BRGY	TYPE OF HEALTH SERVICES	OWNERSHIP	CAPACITY (NO. OF BEDS)	PERSONNEL							PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (HML)					
				D	N	M	ADMIN & ALLIED MEDICAL	SI	OTHERS	TOTAL		FL	TY	LN	TS	SU	OTHERS
	HOSPITAL																
Brgy. 1&4	1. EVRMC	Public	500	111	150	12	209		225	707	O	L			L	M	
Brgy. 82	2. Tacloban City Hospital	Public	25	9	23	1				33	O	L	M				
	Total Personnel Public Hospital			**120**	**173**	**13**	**209**		**225**	**740**							
Brgy. 44-A	3. Divine Word Hospital	Private		140	197	19				356	O	M				L	
Brgy. 96	4. RTR Hospital	Private	75	165	69	13				247	O		M				
Brgy. 50 – B	5. Mother of Mercy Hospital	Private	100	148	78	4			45	275	O		L				
Brgy. 91	6. Tacloban Doctor's Medical Hospital	Private	100	77	55		109			241	O		L				
Brgy. 8	7. Tacloban Women's Club Mother and Child Peuriculture Center	Private	25	7	3	3	3		3	19	O					M	

BRGY	TYPE OF HEALTH SERVICES	OWNERSHIP	CAPACITY (NO. OF BEDS)	PERSONNEL							PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (HML)					
				D	N	M	ADMIN & ALLIED MEDICAL	SI	OTHERS	TOTAL		FL	TY	LN	TS	SU	OTHERS
	Total Personnel Public Hospital			**537**	**402**	**39**	**112**		**48**	**1138**							
Brgy. 109-A	1. V&G District Health Center	Public			1	1		1			O		M				
Brgy. 61	2. Sagkahan District Health Center	Public		1	1	1		1			O		M			H	
Brgy. 99	3. Diit District Health Center	Public		1	1			1			O		M			H	
Brgy. 105	4. Suhi District Health Center	Public			1	1		1			O	M	M				
Brgy. 85	5. San Jose District Health Center	Public			1	1		1			O	M	M		L	H	
Brgy. 25	6. CHO Main Health Center (Multi Services Clinic)	Public		2	1	1	13	4			O		M				

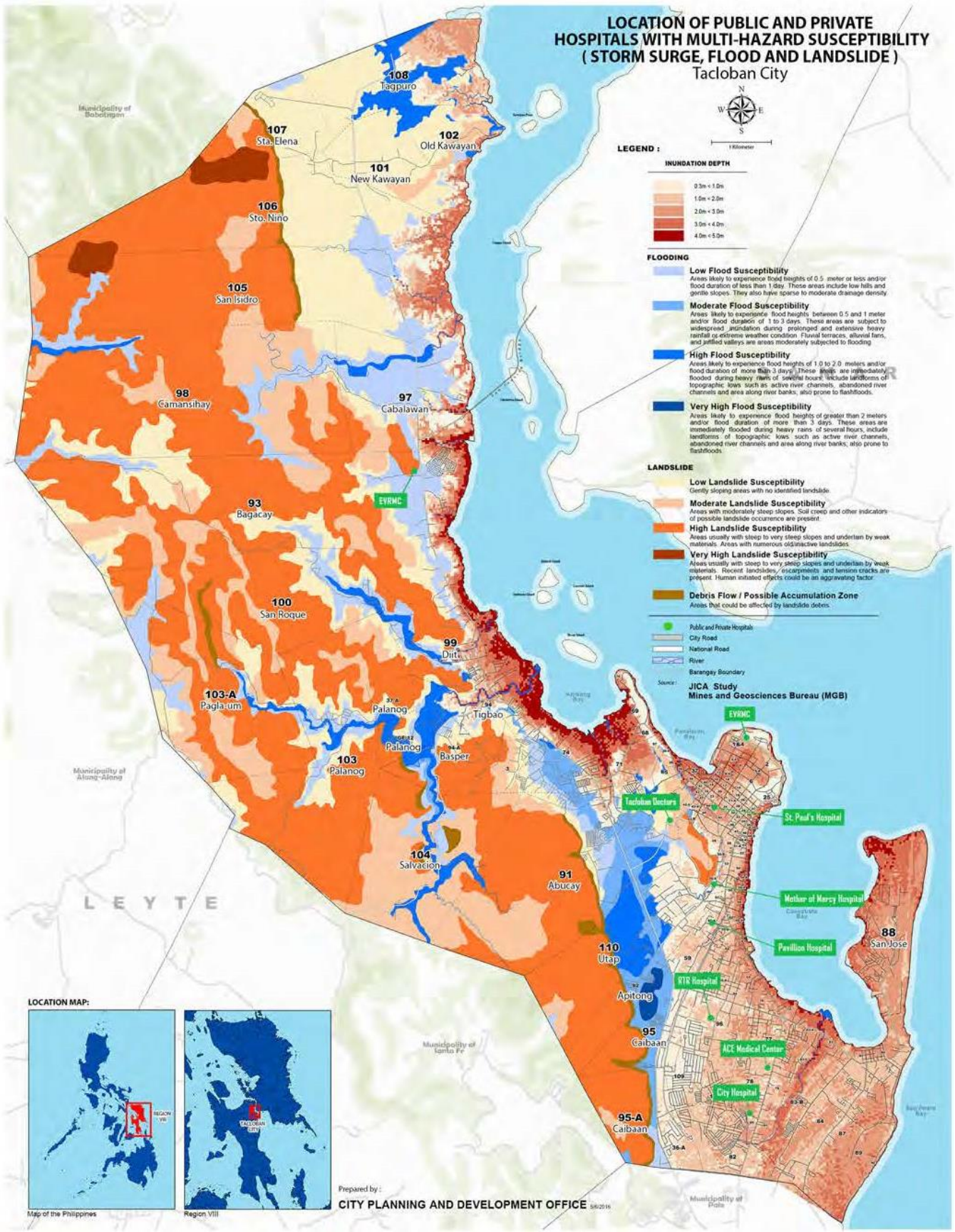
BRGY	TYPE OF HEALTH SERVICES	OWNERSHIP	CAPACITY (NO. OF BEDS)	PERSONNEL							PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (HML)					
				D	N	M	ADMIN & ALLIED MEDICAL	SI	OTHERS	TOTAL		FL	TY	LN	TS	SU	OTHERS
Brgy. 91	7. Abucay District Health Center	Public (NEW)									O		L				
Brgy. 106	8. Sto. Niño District Health Center (GMA)	Public (NEW)									O		M				
Brgy. Health Stations																	
Brgy. 37	MASA Health Unit	Public									O		L			M	
Brgy. 52	Magallanes BHS	Public				1					O					H	
Brgy. 64	Bliss Sagkahan BHS	Public									O					M	
Brgy. 62-A	Ilong BHS	Public				1					O					M	
Brgy. 76	Fatima BHS	Public				1					O					H	
Brgy. 92	Apitong BHS	Public				1					O	H					
Brgy. 110	Utap BHS	Public									O	M					
Brgy. 68	Anibong BHS	Public				1					O		H			H	

BRGY	TYPE OF HEALTH SERVICES	OWNERSHIP	CAPACITY (NO. OF BEDS)	PERSONNEL							PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (HML)					
				D	N	M	ADMIN & ALLIED MEDICAL	SI	OTHERS	TOTAL		FL	TY	LN	TS	SU	OTHERS
Brgy. 37	Seawall BHS	Public				1					O		H			H	
Brgy. 49	Youngfield (Brgy. 49) BHS	Public				1					O	M					
Brgy. 74	Nula Tula BHS	Public									O		H				
Brgy 3	Lower Nula Tula BHS	Public				1					O		H				
Brgy. 43-A	Quarry BHS	Public									O		M				
Brgy 94	Tigbao BHS	Public				1					O	M				H	
Brgy. 103	Palanog BHS	Public									O		H				
Brgy. 103-A	Paglaum BHS	Public									O		H				
Brgy. 101	New Kawayan BHS	Public									O		H				
Brgy. 97	Cabalawan BHS	Public									O					H	
Brgy. 97	Ridge View BHS	Public									O			M			
Brgy. 83-A	Burayan BHS	Public				1					O					H	
Brgy. 88	Fisherman's BHS	Public				1					O					H	

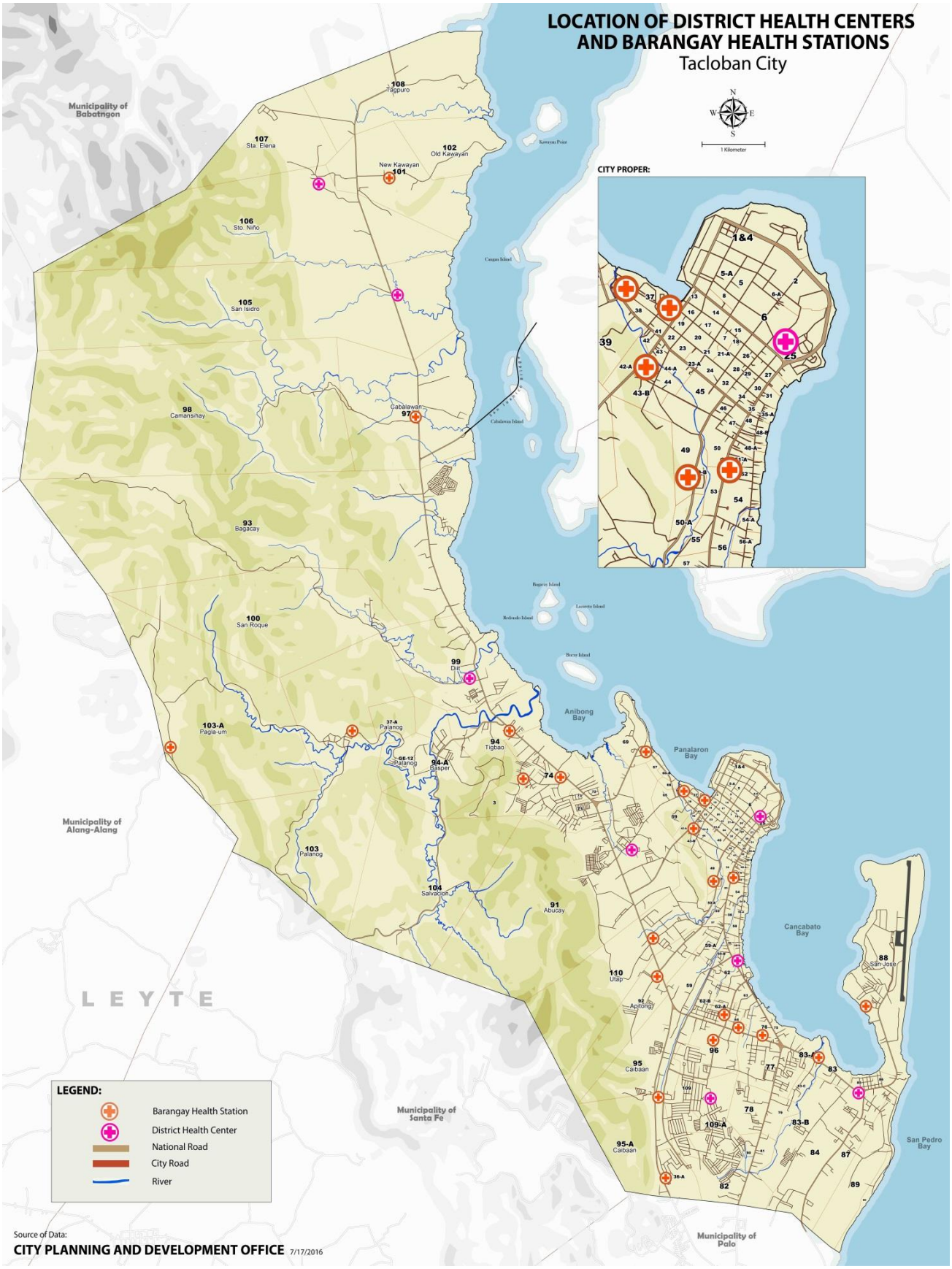
BRGY	TYPE OF HEALTH SERVICES	OWNERSHIP	CAPACITY (NO. OF BEDS)	PERSONNEL							PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (HML)					
				D	N	M	ADMIN & ALLIED MEDICAL	SI	OTHERS	TOTAL		FL	TY	LN	TS	SU	OTHERS
Brgy. 36-A	Imelda Village BHS	Public									O		M				
Brgy. 95-A	Caibaan BHS	Public									O	M					
Brgy. 96	Calanipawan BHS	Public									O	M					

Source: City Health Office, 2016

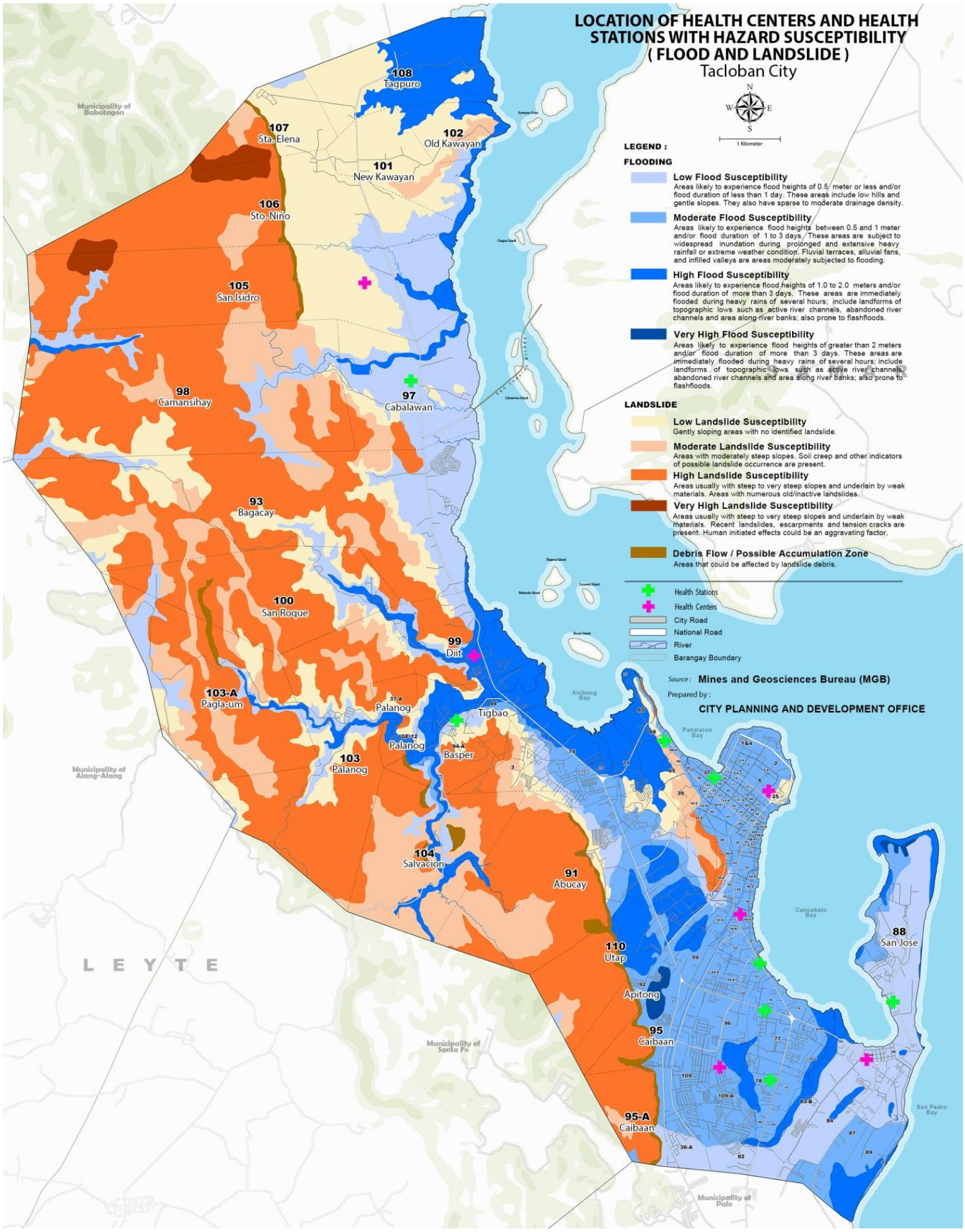
Map 38. Location of Government and Private Hospitals



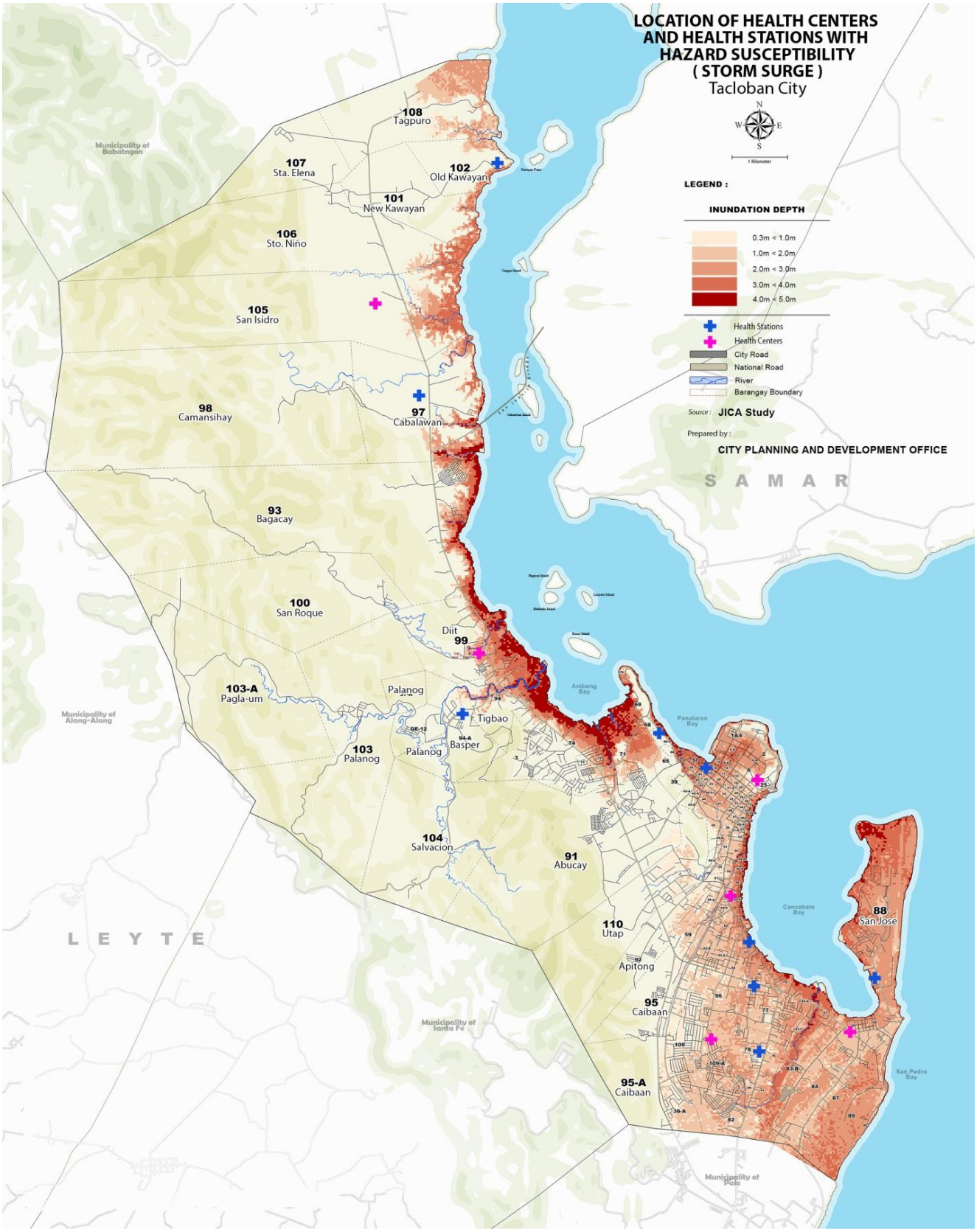
Map 39. Location of Public and Private Hospital with Multi Hazard



Map 40. Location of District Health Centers and Brgy. Health Stations



Map 41. Location of Health Centers and Health Stations with Hazard F/L



Map 42. Location of Health Centers and Health Stations with Hazard Susceptibility

C. Nutrition

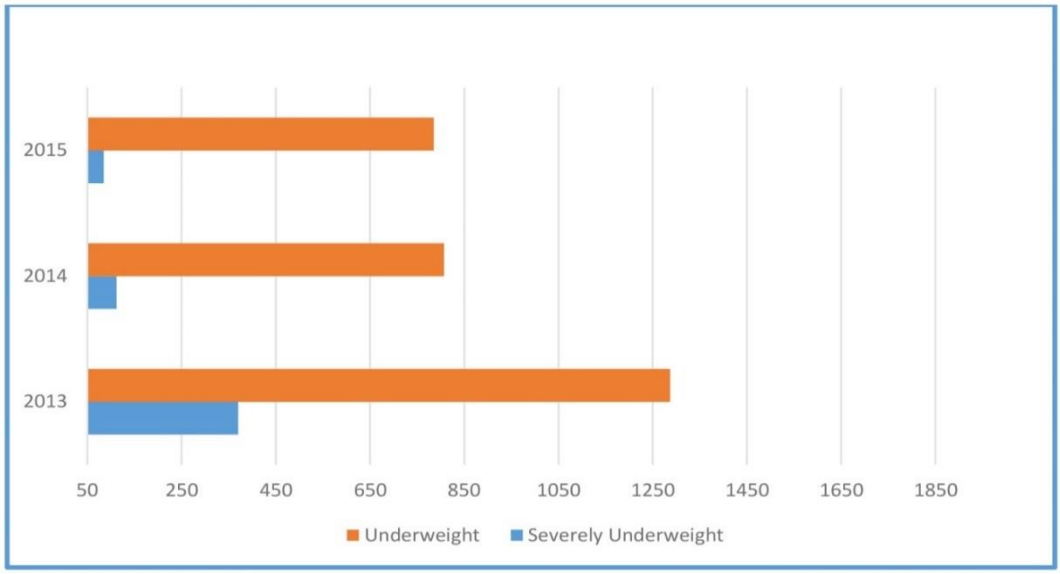
The City Nutrition Office is in charge in monitoring the nutritional status of preschool children in Tacloban City. The office also provides programs and services related to nutrition with the assistance of the trained Barangay Nutrition Scholars (BNS). Table 3.16 shows the nutritional status of preschool children for the last three years. For the year 2013, of the 26,913 preschool children weighed 370 or 1.37% were severely underweight. The alarming increase in the underweight and severely underweight children was an aftereffect of typhoon Yolanda. Lacks of nutritious food, potable water were among the contributory factors to the increase of underweight and severely underweight children in the year 2013. With the efforts of the city government and assistance from NGOs, INGOs& other agencies supplemental feeding, nutrition education, and trainings on Nutrition in Emergencies (NIE) were provided both to the child and mothers. This resulted to the decrease of underweight and severely underweight children in the years 2014 and 2015. The number of severely underweight children and prevalence of underweight children is one of the indicators for the Millennium Development Goals under the number one goal which is eradication of extreme poverty and hunger.

Table 3. 16 Malnourished Children for the Last Three Years (2013-2015), Tacloban City

DEGREE OF MALNUTRITION	YEAR	NO. OF PRESCHOOL CHILDREN WEIGHED BY SEX			NORMAL			UNDERWEIGHT			SEVERELY UNDERWEIGHT			OVERWEIGHT		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
	2013	13,674	13,239	26,913 (76%)	12,695	12,302	24,997	656	631	1,287 (4.48 %)	195	175	370 (1.37 %)	128	131	259 (.96%)
	2014	6,527	6,524	13,051	5,964	6,023	11,987	415	392	807 (6.17 %)	58	54	112 (.85%)	90	55	145 (.42%)
	2015	7,910	7,423	15,333	7,315	6,965	14,280	448	337	785 (5.11 %)	45	40	85 (.55%)	102	81	183 (1.18 %)

Source: City Nutrition Office, Tacloban City, 2016

Figure 3. 5 Malnourished Children (CY 2013-2015)



D. Burial Grounds

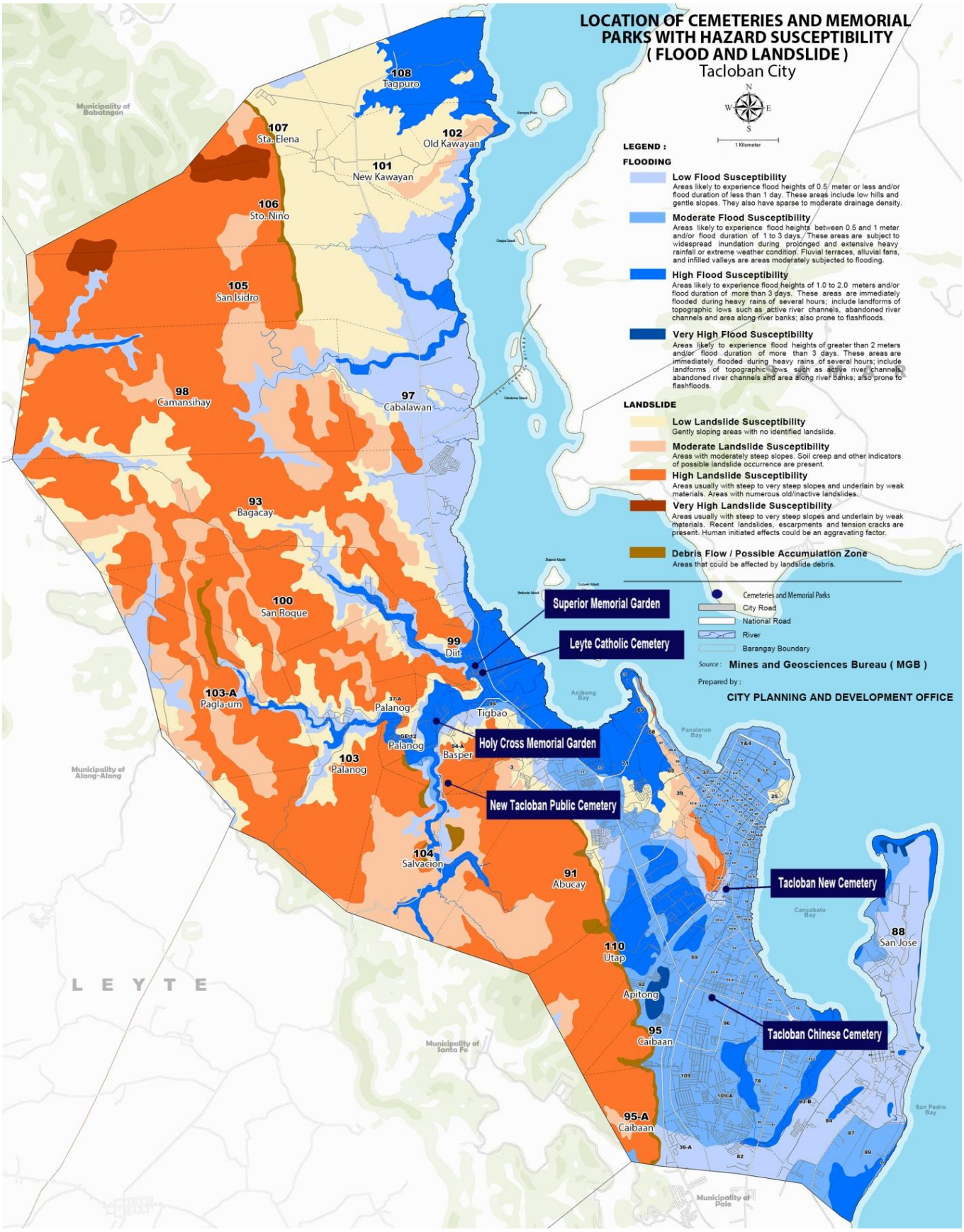
Table 3.17 presents the different Cemeteries and Memorial Parks of Tacloban City. There are two public cemeteries in the city. However the one located at Brgy. 55 El Reposo is already full. The North Tacloban Cemetery isalmost full and the city is in need of additional cemetery. On the other hand the city has 4 private cemeteries located at Brgy. 94-A Basper, Brgy, 99 Diit and Brgy. 96. These cemeteries are not yet fully occupied, because of its high cost. Only a few could afford these private cemeteries.

Table 3. 17 Cemeteries & Memorial Parks, 2015, Tacloban City

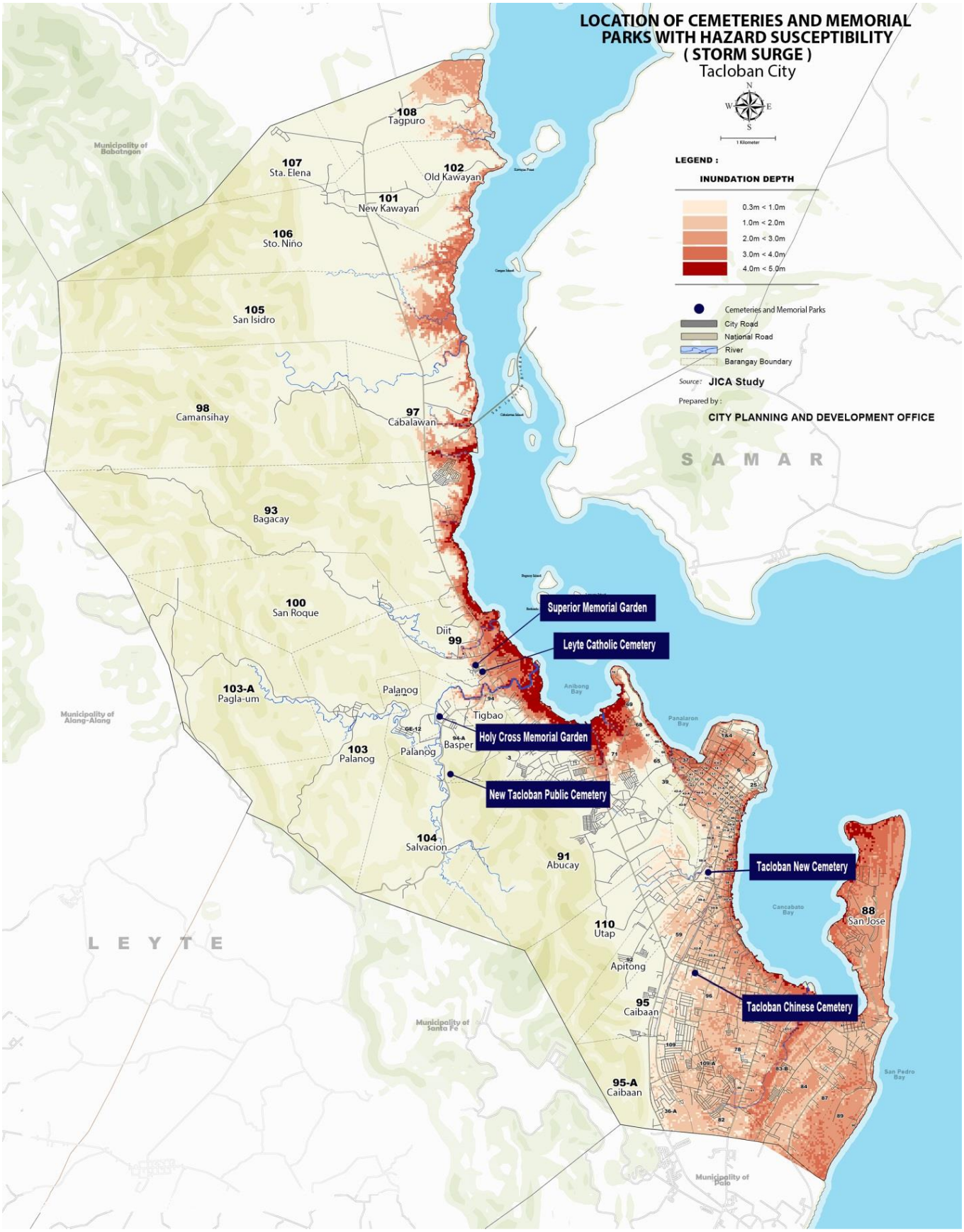
NAME OF CEMETERY	BARANGAY	OWNERSHIP	AREA	CAPACITY(NO. OF PLOTS)
1.Leyte Catholic Cemetery	Brgy. 55 El Reposo	Public	3 has	12,500
2.Tacloban Chinese Cemetery	Brgy. 96 Calanipawan	Private	2.93has.	12,208
3.Holy Cross Memorial Garden	Brgy. 94-A Basper	Private	7. 5 has	31,250
4. North Tacloban Cemetery	Brgy. 94-A Basper	Public	5has.	20,833
5. Diit Memorial Park	Brgy. 99 Diit	Private	6.87has.	28,625
6. Superior Memorial Garden	Brgy. 99 Diit	Private	10.1837 has.	42,429
		Total	35.483. Has.	147,845

Source: City Planning & Development Office, 2016

Map 43. Location of Cemeteries and Memorial Parks



Map 44. Location of Cemeteries and Memorial Parks with Hazard F/L



Map 45. Location of Cemeteries and Memorial Parks with Susceptibility

E. Toilet Facilities

Table 3.18 shows that 91% of the total households have access to sanitary toilet facilities, while 4% with unsanitary toilet facilities and 4% has no toilet facility. Households with unsanitary/no toilet facilities can be attributed with poor knowledge on the importance of toilet facility and it's health effects, financial capability, geographical location of the household and the type of land ownership. However, the city has initiated interventions in addressing this issue. Strengthened advocacy campaigns on Phil. Approach to Total Sanitation (PhATS), Water Sanitation and Hygiene Promotion (WASH) activities has been conducted and enhanced.

It would be noticed that those barangays living along the coastal areas are the ones with unsanitary toilet or no toilet at all. With the assistance from INGOs particularly Save the Children in partnership with the City Health Office Zero Defecation Program.

Table 3. 18 Number of Household in Occupied Housing Units by Type of Toilet Facility, 2014, Tacloban City

BARANGAY	KIND OF TOILET FACILITY								
	TOTAL	WATER-SEALED SEWER SEPTIC TANK USED EXCLUSIVELY BY HOUSEHOLD	WATER-SEALED SEWER SEPTIC TANK SHARED	WATER-SEALED OTHER DEPOSITORY USED EXCLUSIVELY	WATER-SEALED OTHER DEPOSITORY SHARED WITH OTHER HOUSEHOLDS	CLOSED PIT	OPEN PIT	OTHERS (PAIL SYSTEM AND OTHERS)	NONE
Tacloban City	50,890	34,025	10,033	605	1,916	221	1,201	878	2,011
Libertad (Barangay 1&4)	254	126	40	-	83	-	3	1	1
Barangay 2	81	72	8	-	1	-	-	-	-
Nula- Tula (Barangay 3 & 3A)	580	493	23	-	50	-	13	-	1
Barangay 5	72	60	10	-	2	-	-	-	-
Barangay 5-A	100	69	31	-	-	-	-	-	-
Barangay 6	235	204	30	-	-	-	-	1	-
Barangay 6-A	384	283	95	-	-	-	-	-	6
Barangay 7	91	32	59	-	-	-	-	-	-
Barangay 8	52	48	4	-	-	-	-	-	-
Barangay 8-A	42	12	30	-	-	-	-	-	-
Barangay 12 (Palanog resettlement)	485	311	155	1	4	3	7	3	1
Barangay 13	29	11	15	-	2	-	-	1	-
Barangay 14	39	29	7	-	1	2	-	-	-
Barangay 15	21	21	-	-	-	-	-	-	-
Barangay 16	50	49	1	-	-	-	-	-	-
Barangay 17	22	19	3	-	-	-	-	-	-
Barangay 18	45	45	-	-	-	-	-	-	-
Barangay 19	54	37	17	-	-	-	-	-	-
Barangay 20	102	80	18	-	4	-	-	-	-
Barangay 21	64	44	4	-	16	-	-	-	-

BARANGAY	KIND OF TOILET FACILITY								
	TOTAL	WATER-SEALED SEWER SEPTIC TANK USED EXCLUSIVELY BY HOUSEHOLD	WATER-SEALED SEWER SEPTIC TANK SHARED	WATER-SEALED OTHER DEPOSITORY USED EXCLUSIVELY	WATER-SEALED OTHER DEPOSITORY SHARED WITH OTHER HOUSEHOLDS	CLOSED PIT	OPEN PIT	OTHERS (PAIL SYSTEM AND OTHERS)	NONE
Barangay 21-A	64	53	-	-	11	-	-	-	-
Barangay 22	14	13	1	-	-	-	-	-	-
Barangay 23	89	76	13	-	-	-	-	-	-
Barangay 24	61	57	3	-	1	-	-	-	-
Barangay 25	298	210	74	2	6	-	3	-	3
Barangay 26	51	51	-	-	-	-	-	-	-
Barangay 27	58	47	11	-	-	-	-	-	-
Barangay 28	63	62	1	-	-	-	-	-	-
Barangay 29	37	36	1	-	-	-	-	-	-
Barangay 30	28	-	-	-	-	-	-	-	-
Barangay 31	70	26	3	1	29	2	8	1	-
Barangay 32	24	24	-	-	-	-	-	-	-
Barangay 33	48	39	8	-	-	-	1	-	-
Barangay 34	31	30	1	-	-	-	-	-	-
Barangay 35	38	37	1	-	-	-	-	-	-
Barangay 35-A	100	40	13	-	3	-	14	25	5
Barangay 36	271	101	62	36	43	8	15	6	-
Barangay 37	744	192	11	-	23	2	144	190	182
Barangay 37-A	304	155	30	-	10	1	5	1	102
Barangay 38	92	67	21	-	-	-	-	-	4
Barangay 39	599	271	46	33	14	-	-	10	225
Barangay 40	32	30	1	-	-	-	-	1	-
Barangay 41	21	20	1	-	-	-	-	-	-
Barangay 42	181	156	19	1	-	-	-	4	1
Barangay 42-A	546	194	132	19	23	-	-	1	-
Barangay 43	95	63	30	-	2	-	-	-	-
Barangay 43-A	263	128	111	4	6	-	-	-	14
Barangay 43-B	219	127	37	4	8	-	-	-	43
Barangay 44	88	87	1	-	-	-	-	-	-
Barangay 44-A	50	46	4	-	-	-	-	-	-
Barangay 45	57	46	10	-	-	-	-	-	1
Barangay 46	81	65	16	-	-	-	-	-	-
Barangay 47	128	108	20	-	-	-	-	-	-
Barangay 48	77	75	1	-	1	-	-	-	-
Barangay 49	422	203	92	28	40	-	3	32	24
Barangay 50	61	52	9	-	-	-	-	-	-
Barangay 50-A	156	133	20	-	-	-	-	3	-
Barangay 50-B	181	144	35	-	1	-	-	-	1
Barangay 51	76	54	16	1	2	-	3	-	-
Barangay 51-A	48	444	-	-	-	-	-	-	-
Barangay 52	227	182	44	-	-	1	-	-	-
Barangay 53	132	102	26	-	-	-	4	-	-
Barangay 54	185	21	96	-	-	-	68	-	-
Barangay 54-A	162	72	43	1	5	-	41	-	-
El Reposo (Barangay 55&55-A)	205	154	45	-	-	-	6	-	-
Barangay 56	268	236	29	-	-	-	2	1	-
Barangay 56-A	127	34	12	2	50	3	26	-	-
Barangay 57	258	212	44	-	-	-	2	-	-
Barangay 58	198	142	55	-	-	-	1	-	-
Barangay 59	685	457	186	4	14	-	22	-	2
Barangay 59-A	811	611	174	11	5	4	5	-	1
Barangay 59-B	164	101	52	-	2	-	-	-	9
Barangay 60	221	147	70	1	1	-	-	-	2
Barangay 60-A	193	65	72	1	-	-	3	52	-
Barangay 61	174	59	56	12	16	4	25	-	2
Barangay 62	275	236	38	1	-	-	-	-	-
Barangay 62-A	1,105	792	293	1	6	4	8	1	-
Barangay 62-B	922	601	318	2	1	-	-	-	-
Barangay 63	485	348	92	29	3	12	1	-	-
Barangay 64	448	380	48	2	-	5	2	10	1
Barangay 65	311	143	129	-	-	-	-	2	37
Barangay 66	264	122	91	1	23	-	23	1	3
Barangay 66-A	272	98	58	-	1	2	102	6	5
Barangay 67	287	60	55	-	-	-	3	169	-
Barangay 68	438	154	198	-	7	-	1	2	76
Barangay 69	528	259	109	19	78	1	-	8	54
Barangay 70	249	51	32	6	1	-	147	11	1
Barangay 71	1,235	1,062	121	9	3	-	6	2	2
Barangay 72	127	126	-	1	-	-	-	-	-
Barangay 73	86	70	11	1	-	-	-	3	-

BARANGAY	KIND OF TOILET FACILITY								
	TOTAL	WATER-SEALED SEWER SEPTIC TANK USED EXCLUSIVELY BY HOUSEHOLD	WATER-SEALED SEWER SEPTIC TANK SHARED	WATER-SEALED OTHER DEPOSITORY USED EXCLUSIVELY	WATER-SEALED OTHER DEPOSITORY SHARED WITH OTHER HOUSEHOLDS	CLOSED PIT	OPEN PIT	OTHERS (PAIL SYSTEM AND OTHERS)	NONE
Barangay 74	1,769	1,518	210	2	12	13	5	2	7
Barangay 75	181	94	84	1	-	2	-	-	-
Barangay 76	180	156	21	-	3	-	-	-	-
Barangay 77	658	593	63	-	1	1	-	-	-
Barangay 78 (Marasbaras)	494	473	18	-	2	-	-	-	1
Barangay 79 Marasbaras)	340	228	100	2	6	-	-	2	2
Barangay 80 (Marasbaras)	261	179	68	-	-	1	-	-	13
Barangay 81 (Marasbaras)	180	125	41	-	2	1	3	2	6
Barangay 82 (Marasbaras)	302	250	48	1	1	-	-	2	-
Barangay 83 (San Jose)	516	452	29	-	12	6	16	-	1
Barangay 83-A (San Jose)	411	249	71	-	10	-	79	-	2
Barangay 83-B	609	466	89	-	5	2	-	-	47
Barangay 83-C (San Jose)	821	304	41	10	24	4	20	244	174
Barangay 84 (San Jose)	1,382	1,102	175	10	10	1	1	-	83
Barangay 85	312	292	18	-	-	-	2	-	-
Barangay 86	229	164	51	4	5	-	4	1	-
Barangay 87	641	530	92	2	2	2	3	9	1
Barangay 88	1,589	761	520	14	255	1	30	1	7
Barangay 89	942	401	410	1	42	4	81	3	-
Barangay 90 (San Jose)	22	9	12	1	-	-	-	-	-
Barangay 91 (Abucay)	2,280	1,697	346	63	87	25	7	2	53
Barangay 92 (Apitong)	994	722	215	2	23	-	6	11	15
Barangay 93 (Bagacay)	538	390	131	-	7	-	9	-1	
Barangay 94 (Tigbao)	538	390	131	-	7	-	9	-	1
Barangay 94- A	338	143	177	2	-	1	15	-	-
Barangay 95 (Caibaan)	1,534	762	628	30	47	9	2	1	
Barangay 95-A (Caibaan)	840	505	315	10	6	-	4	-	
Barangay 96 (Calanipawan)	1,449	1,116	193	18	72	2	7	1	40
Barangay 97 (Cabalawan)	659	417	173	-	9	5	1	-	54
Barangay 98 (Camansihay)	292	96	119	-	2	-	-	5	70
Barangay 99 (Diit)	1,237	740	471	1	2	1	15	2	5
Barangay 109 (V&G)	1,161	1,130	15	4	-	5	1	1	
Barangay 109-A	1,597	1,533	40	4	14	-	5	-	
Barangay 110 (Utap)	1,143	798	211	3	45	11	19	-	

Source: PSA

Table 3.19 presents the Solid Waste Generation where in domestic waste generated averages 209.34 tons per day, while those commercial wastes generated averages 102 tons per day.

F. Solid Waste

Table 3. 19 Solid Waste Water Generation by Source, 2015, Tacloban City

SOURCES	TYPES OF WASTE	VOLUME OF SOLID WASTE GENERATED (TONS/DAY)	VOLUME OF SOLID WASTE COLLECTED(TONS/DAY)	DISPOSAL METHODS/TREATMENT FACILITIES	DISPOSAL SITE
Domestic	Mixed Waste	Ave. 209.34 ton/day	Ave. 138.0 ton/day	Controlled Dumpsite Facility	Brgy. 106, Sto Niño Tac. City
Commercial	Mixed Waste	Ave.102.00 ton/day			
Hospital	Infectious Waste	Ave. 0.48 ton/day	Ave. 0.48 ton/day	Dig & Bury, cover	Brgy. 106, Sto Niño Tac. City

Source City EnRO 10 year Solid Waste Mgt. Plan of Tac. City, 2016

Table 3. 20 Households by Usual Manner of Garbage Disposal and Barangay, 2014, Tacloban City

BARANGAY	USUAL MANNER OF GARBAGE DISPOSAL							
	TOTAL	PICKED UP BY GARBAGE TRUCK	DUMPING IN INDIVIDUAL PIT (NOT BURNED)	BURNING	COMPOSTING	BURYING	FEEDING TO ANIMALS	OTHERS
Tacloban City	50,890	22,687	1,901	3,202	454	338	22,200	108
Barangay 2	81	58	3	1	1	-	18	-
Nula-tula (Bgys. 3 & 3A)	580	11	2	1	1	-	565	-
Libertad (Barangays 1 & 4)	254	178	55	4	-	-	17	-
Barangay 5	72	53	2	-	-	-	17	-
Barangay 6	2 35	2 26	-	-			9	
Barangay 6-A	384	118	-	1	-	-	265	-
Barangay 7	91	20	-	-	-	-	71	-
Barangay 8	52	4	-	-	-	-	46	2
Barangay 100 (San Roque)	660	2	25	4	1	4	624	-
Barangay 101 (New Kawayan)	255	112	95	40	-	-	8	-
Barangay 102 (Old Kawayan)	113	1	34	77	1	-	-	-
Barangay 103 (Palanog)	861	15	2	2	1	2	838	1
Barangay 103-A (San Paglaum)	133	2	-	5	-	-	126	-

BARANGAY	USUAL MANNER OF GARBAGE DISPOSAL							
	TOTAL	PICKED UP BY GARBAGE TRUCK	DUMPING IN INDIVIDUAL PIT (NOT BURNED)	BURNING	COMPOS TING	BURYING	FEEDING TO ANIMALS	OTHERS
Barangay 104 (Salvacion)	496	1	40	3	1	1	450	-
Barangay 105 (Suhi)	342	-	7	-	-	2	333	-
Barangay 106 (Santo Niño)	321	226	4	87	-	1	3	-
Barangay 107 (Santa Elena)	250	-	17	13	7	2	211	-
Barangay 108 (Tagapuro)	208	-	23	7	4	-	174	-
Barangay 12 (Palanog Resettlement)	485	375	4	95	-	11	-	-
Barangay 13	29	29	-	-	-	-	-	-
Barangay 14	39	39	-	-	-	-	-	-
Barangay 15	21	21	-	-	-	-	-	-
Barangay 16	50	50	-	-	-	-	-	-
Barangay 17	22	22	-	-	-	-	-	-
Barangay 18	45	31	-	-	-	-	14	-
Barangay 19	54	54	-	-	-	-	-	-
Barangay 20	102	19	11	-	-	-	72	-
Barangay 21	64	63	-	-	-	-	1	-
Barangay 21-A	64	64	-	-	-	-	-	-
Barangay 22	14	8	1	-			5	
Barangay 23	89	2	-	-			87	
Barangay 24	61	40	-	-	-	-	21	-
Barangay 25	298	180	2	1	1	-	114	-
Barangay 26	51	51	-	-	-	-	-	-
Barangay 27	58	10	-	-	-	-	48	-
Barangay 28	63	61	1	-	1	-	-	-
Barangay 29	37	37	-	-	-	-	-	-
Barangay 30	28	28	-	-	-	-	-	-
Barangay 31	70	6	-	2	-	-	62	-
Barangay 32	24	24	-	-	-	-	-	-
Barangay 33	48	48	-	-	-	-	-	-
Barangay 34	31	31	-	-	-	-	-	-
Barangay 35	38	31	-	-	-	-	7	-
Barangay 35-A	100	51	-	-	-	-	49	-
Barangay 36	271	150	5	35	-	1	80	-
Barangay 37	744	614	17	30	-	2	81	-

BARANGAY	USUAL MANNER OF GARBAGE DISPOSAL							
	TOTAL	PICKED UP BY GARBAGE TRUCK	DUMPING IN INDIVIDUAL PIT (NOT BURNED)	BURNING	COMPOSTING	BURYING	FEEDING TO ANIMALS	OTHERS
Barangay 37-A	304	140	-	71	23	52	18	-
Barangay 38	92	91	-	1	-	-	-	-
Barangay 39	599	399	46	15	-	1	135	3
Barangay 40	32	32	-	-	-	-	-	-
Barangay 41	21	21	-	-	-	-	-	-
Barangay 42	181	179	-	-	-	-	2	-
Barangay 43	95	90	-	-	-	-	5	-
Barangay 43-A	263	253	2	-	-	-	8	-
Barangay 43-B	219	91	14	2	1	-	111	-
Barangay 44	88	88	-	-	-	-	-	-
Barangay 44-A	50	6	-	-	1	-	43	-
Barangay 45	57	57	-	-	-	-	-	-
Barangay 46	81	81	-	-			-	
Barangay 47	128	126	1	-			1	
Barangay 48	77	9	-	-	-	-	68	-
Barangay 49	422	39	9	5	2	6	361	-
Barangay 50	61	16	-	-			45	
Barangay 50-A	156	26	-	-	-	-	130	-
Barangay 50-B	181	6	-	-	-	1	174	-
Barangay 51	76	44	-	-	-	-	32	-
Barangay 52	227	90	-	-	-	1	136	-
Barangay 53	132	30	-	-	-	-	102	-
Barangay 54	185	3	-	-	-	-	182	-
El Reposo (Barangays 55 & 55A)	205	47	-	-	-	-	158	-
Barangay 56	268	18	-	-	-	-	250	-
Barangay 57	258	26	5	-	-	-	227	-
Barangay 58	198	190	2	2	-	-	4	-
Barangay 59	685	543	4	44	18	-	76	-
Barangay 60	221	219	-	-	-	-	2	-
Barangay 60-A	193	108	6	5	-	-	74	-
Barangay 61	174	164	-	-	-	-	10	-
Barangay 62	275	196	4	5	2	7	61	-
Barangay 63	485	388	1	25	-	-	71	-

BARANGAY	USUAL MANNER OF GARBAGE DISPOSAL							
	TOTAL	PICKED UP BY GARBAGE TRUCK	DUMPING IN INDIVIDUAL PIT (NOT BURNED)	BURNING	COMPOSTING	BURYING	FEEDING TO ANIMALS	OTHERS
Barangay 64	448	367	13	6	3	-	59	-
Barangay 65	311	12	-	-	-	-	299	-
Barangay 66	264	172	-	-	-	-	92	-
Barangay 66-A	272	37	-	-	-	-	235	-
Barangay 67	287	166	69	-	-	-	52	-
Barangay 68	438	381	1	32	2	3	3	16
Barangay 69	528	450	3	56	1	8	4	6
Barangay 70	249	90	-	11	1	-	135	12
Barangay 71	1,235	757	40	15	1		412	
Barangay 72	127	117	-	3			6	
Barangay 73	86	83	-	-	-	-	3	-
Barangay 74	1,769	1,088	20	29	18	2	612	-
Barangay 75	181	43	1	1	1	6	128	1
Barangay 76	180	174	-	1	-	-	5	-
Barangay 77	658	299	19	27	3	2	308	-
Barangay 78 (Marasbaras)	494	367	49	77	-	-	1	-
Barangay 79 (Marasbaras)	340	187	72	61	15	2	2	1
Barangay 80 (Marasbaras)	261	175	55	31	-	-	-	-
Barangay 81 (Marasbaras)	180	129	13	29	-	5	3	1
Barangay 82 (Marasbaras)	302	159	9	9	3	3	119	-
Barangay 83 (San Jose)	516	171	10	68	-	11	256	-
Barangay 83-A (San Jose)	411	317	14	21	17	4	38	-
Barangay 84 (San Jose)	1,382	553	75	50	22	9	673	-
Barangay 85 (San Jose)	312	86	2	1	-	5	218	-
Barangay 86	229	200	1	7	6	2	13	-
Barangay 87	641	24	4	1	4	2	606	-
Barangay 88	1,589	263	208	225	16	2	875	-
Barangay 89	942	397	42	1	17	48	436	1
Barangay 90 (San Jose)	22	3	-	-	2	-	17	-
Barangay 91 (Abucay)	2,280	1,054	193	182	10	20	820	1
Barangay 92 (Apitong)	994	157	5	19	10	1	802	-
Barangay 93 (Bagacay)	1,144	473	108	229	51	1	282	-
Barangay 94 (Tigbao)	538	298	5	186	24	-	25	-

BARANGAY	USUAL MANNER OF GARBAGE DISPOSAL							
	TOTAL	PICKED UP BY GARBAGE TRUCK	DUMPING IN INDIVIDUAL PIT (NOT BURNED)	BURNING	COMPOSTING	BURYING	FEEDING TO ANIMALS	OTHERS
Barangay 95 (Caibaan)	1,534	432	27	16	5	4	1,050	-
Barangay 96 (Calanipawan)	1,449	599	32	98	11	3	706	-
Barangay 97 (Cabalawan)	659	48	36	208	10	5	351	1
Barangay 98 (Camansinay)	292	4	48	165	37	-	38	-
Barangay 99 (Diit)	1,237	462	57	154	3	6	244	
Barangay 109 (V & G Subd.)	1,161	980	2	18			156	
Barangay 109-A	1,597	1,135	3	10	12	2	435	-
Barangay 110 (Utap)	1,143	28	150	87	11	9	858	-
Barangay 5-A	100	21	-	-	-	-	79	-
Barangay 36-A	166	161	1	1			3	
Barangay 42-A	546	194	5	-	6	3	325	13
Barangay 48-A	121	7	-	-	-	-	114	-
Barangay 48-B	117	10	-	-	-	-	107	-
Barangay 51-A	48	2	-	-	-	-	46	-
Barangay 54-A	162	17	1	-	-	-	144	-
Barangay 56-A	127	17	3	-	-	-	107	-
Barangay 59-A	811	74	22	3	7	14	642	49
Barangay 59-B	164	161	-	1	-	-	2	-
Barangay 62-A	1,105	516	6	8	8	6	561	-
Barangay 62-B	922	408	1	-	6	1	506	-
Barangay 83-B	609	179	1	2	1	16	410	-
Barangay 83-C (San Jose)	821	731	13	54	4	3	16	-
Barangay 95-A (Caibaan)	840	75	1	-	3	1	760	-
Barangay 8-A	42	42	-	-	-	-	-	-
Barangay 23-A	92	4	-	-	-	-	88	-
Barangay 94-A	338	149	17	155	5	1	11	-

Source: PSA

II. Development Needs/Requirements

As shown on Table 3.21 the city will need a total of 6.8 has in the next nine years. The city has identified 2 sites for a public cemetery to be located at the North and the other at the south.

Table 3. 21 Projected Number of Deaths and Area for Burial Grounds 2017-2025

Tacloban City

YEAR	PROJECTED POPULATION	PROJECTED NUMBER OF DEATHS	PROJECTED AREA REQUIREMENT FOR BURIAL GROUNDS (HAS.)
2015	245,049	2,294 (Actual)	.5597
2016	250,268	2,325	.5673
2017	255,599	2,377	.5799
2018	261,043	2,427	.5921
2019	266,603	2,479	.6048
2020	272,282	2,532	.6178
2021	278,082	2,586	.6309
2022	284,005	2,641	.6444
2023	290,054	2,697	.6580
2024	296,232	2,754	.6719
2025	302,542	2,813	.6863
			6.8

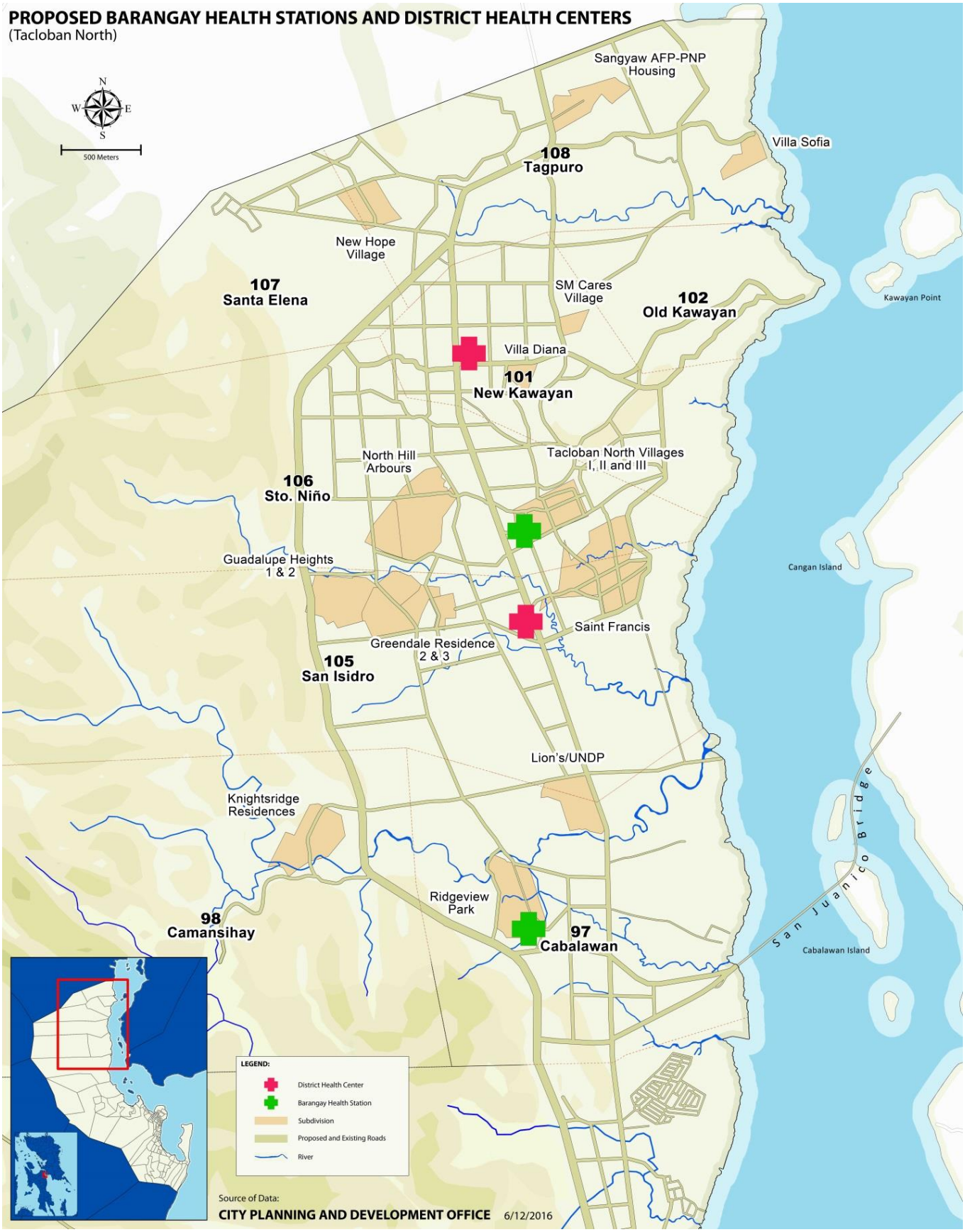
Source: CPDOComputations for projected no. of deaths was based on the projected population & Crude Death Rate for 2014. Projected area requirement for burial grounds was based on the projected no. of Deaths & the standard minimum plot size of 1.0m by 2.44m.

Table 3.22 shows the projected number of barangay health stations for the next 9 years. On the assumption that the variance of 28 Barangay Health Stations (BHS) will be met at the beginning of the plan period, the city will still need 38 barangay health stations with in the plan period.

Table 3. 22 Projected no. of Brgy. Health Stations 2017-2025, Tacloban City

YEAR	PROJECTED POPULATION	PROJECTED NO. OF BRGY. HEALTH STATIONS	AREA IN HAS.
Existing no. of BHS	23		
2017	255,599	28	.14
2018	261,043	1	.005
2019	266,603	1	.005
2020	272,282	1	.005
2025	302,542	7	.035
	Total	38	.19 has

Note: Projection was based on the standard of 1BHS per 5,000 populations



Map 46. Proposed Brgy. Health Stations and Dist. Health Centers

III. Health & Sanitation Analysis Matrix

TECHNICAL FINDINGS/OBSERVATIONS	IMPLICATIONS (EFFECTS)	POLICY OPTIONS/INTERVENTIONS
No available warehouse storage for medicines & other medical supplies	Medicines are exposed and not properly stored	Construction of warehouse/ storage in a safe area
Inadequate space for some health facilities and health stations	Ineffective delivery of health services	Renovation/expansion of district health centers and brgy. health stations
Lack of BHS & District Health Centers at the Tacloban North	Ineffective delivery of health services	-Constructionn of 2 BHS & 2 District Health Centers at the Tacloban North Construction of BHS at other barangays
Prevalence of teenage pregnancy, STI,HIV/AIDS		Implementation of Reproductive Health Law Establishment of Youth Friendly Space at Brgy. 105 near Health Station (size:2 container van with complete IEC materials
Congested Public Cemetery	Harmful to environment and neighboring communities,	Identify &Develop another site for a Public Cemetery (6.8 has.)
Lack of Health Manpower	-Not all patients are attended thereby risking lives and health of people -Inadequate health service delivery	Hire additional health manpower Train additional health volunteers
Lack access to safe water especially in highly populated areas like the Tacloban North		- Encourage rain harvesting -Negotiate with other water system provider

3.3 Housing

I. Existing Situation

On 08 November, 2013, Super Typhoon Yolanda (International Name: Haiyan) struck the Philippines with wind speeds of more than 300 km/h and storm surges of over four meters. Typhoon Yolanda affected a total of 3 million families or 14 million people and damaged a total of 1 million houses across 9 of the 17 regions of the country (DSWD, 2014). Tacloban, the regional hub of Region VIII and the 5th fastest growing city in the country, suffered the greatest damage to housing and settlements among all cities/ municipalities in the country with 30,513 totally damaged and 23,718 partially damaged houses, accounting for 5 percent of the total damaged houses at the national level (TRRP, 2014).

Tacloban Development Group was created to come up with a plan to solve the increasing housing backlog of the city which was aggravated with the worst disaster that struck the region/city. This group is spearheaded by the City Housing and Development Office together with other offices, UN habitat and other partner NGOs/INGOs. A Climate Change Vulnerability Assessment (CCVA) was conducted with different stakeholders of the city. CCVA analysed the city's exposure, sensitivity, adaptive capacity and relative vulnerability to climate change.

In Tacloban City out of the 138 barangays there are 102 barangay identified as coastal barangays (RA 8550 known as the Phil. Fisheries Code of 1998 defining coastal barangays within 1km from the shoreline)from this total HH there are 12,012 Informal Settler Families. However the ISFs that would be given priority are the ISFs along the 36 coastal barangays that experienced 3-5 meter storm surge (5,400 ISFs)

.

Initially the city government identified the Northern Barangays as the relocation sites for ISFs and housing projects. There are 26 New Resettlement Areas/Socialized Housing located at the Tacloban North.

Table 3.25 shows the housing situation of the city for the last three censal years. For the years 2007 and 2010 there was a 7% increase in the no. of household. However the increase in number of household is not equivalent with the number of housing units. There is an excess of 720 household between 2007 and 2010. Similarly the increase in the number of household between 2010 and 2014 does not correspond with the increase in housing units. This data indicates that the city has a high housing shortage and it will continue to increase in the next years. The city government and other agencies have to come up with housing projects particularly for the ISFs, those along the NBZ and other hazardous area to answer the increasing housing backlog of the city.

Table 3. 23 Housing Situation for the Past Three Censal Years (2007, 2010, 2014), Tacloban City

	2000	2007		2010		2014	
		NO.	%INCREASE/(DECREASE)	NO.	%INCREASE/(DECREASE)	NO.	%INCREASE/DECREASE
Households (HH)	34,758	42,522	22.34	45,478	7.0%	50,890	12%↑
Households Population	177,602	216,214	21.74	219,314	1.4%↑	239,938	9.4%↑
Housing Units (HU)	37,057	42,245	14.00	44,758	5.3%↑	50,100	12%↑
Occupied HU	33,775	41,977	24.28	44,613	6.3%↑	49,648	11%↑
Vacant HU	3,282	268	91.83↓	865	222.8%↑	452	-47%↓
Ratio of HH to Occupied HU	1.03	1.01		1.01		1.02	
Ratio of HH Population to Occupied HU	5.26	5.15		4.9		4.8	

Source: NSO 2010 Census of population & Housing

The housing backlog of the city for the year 2015 is shown in Table 3.26 Housing backlog are composed of the doubled-up households, unacceptable housing units and makeshift/salvage and improvised household. In addition to these, informal settlers, homeless, and those living along danger zones are also included in determining the housing backlog. Table 3.26 shows 14,659 housing backlog.

Table 3. 24 Housing Backlog, Year 2015, Tacloban City

BACKLOG	CY 2015	
	No.	%
Doubled- Up Household	1,242	7
Displaced Units	13,417	93
Total Backlog	**14,659**	**100%**

Source: PSA

Tacloban City being a highly urbanized city where economic activity is at its highest, the influx of people also increases. There is a rapid increase of informal settlers. They have proliferated in vacant and government lots along coast, riverbanks and creeks. With this condition aggravated by the fast increase in population, consequentially, the problem of growing housing needs. Informal settlers are those living in danger areas like along the shoreline, on lands earmarked for government infrastructure, areas where there is a court order for eviction and demolition. It would be noted that these informal settlers are mostly families who earn income in a daily basis like vendors, drivers, farmers, fisherfolks and migrants who flock into the city to earn a living.

Then again, Table 3.27 presents the different informal settlers in the city occupying an area of 37.6hectares with a minimum of 15 sqm per household. Most of these settlers are found in the urban area especially where economic activities are conducted. Since they are situated in urban barangays they also have access to the different facilities, utilities and amenities afforded to the people like electricity, water, roads, transportation, etc.

Table 3. 25 Informal Settlements, 2015, Tacloban City

BRGY.	AREA (HA)	NO. OF HOUSEHOLDS	UTILITIES PRESENT (Y/N)						HAZARD SUSCEPTIBILITY (H/M/L)						
			W	P	S	T	C	TOTAL	FL	TY	EQ	LN	TS	SU	OTHERS
Tacloban City	37.6	24,548													
Barangay 2	.105	70	Y	Y		Y	Y	4	M					H	
Nula-tula (Brgys. 3 & 3A	.82	547	Y	Y		Y	Y	4	M			M			
Libertad (Brgys. 1 & 4	.33	224	Y	Y		Y	Y	4	M					H	
Barangay 5	.066	44	Y	Y		Y	Y	4	M					H	
Barangay 6	.32	211	Y	Y		Y	Y	4	M					H	
Barangay 6-A	.5	314	Y	Y		Y	Y	4	M					H	
Barangay 7	.52	35	Y	Y		Y	Y	4	M					H	
Barangay 8	.013	9	Y	Y		Y	Y	4	M						
Barangay 100 (San Roque)	.8	520	Y	Y		Y	Y	4				H			
Barangay 101 (New Kawayan)	.64	128	N	Y		Y	Y	3				M		L	
Barangay 102 (Old Kawayan)	.17	112	N	Y		Y	Y	3				M		H	
Barangay 103 (Palanog)	1.25	836	N	Y		Y	Y	3	M			H			
Barangay 103-A (San Paglaum)	.017	11	N	Y		Y	Y	3				H			
Barangay 104 (Salvacion)	.5	333	N	Y		Y	Y	3	M			M			
Barangay 105 (Suhi)	0.4005	267	N	Y		Y	Y	3	M			H		M	
Barangay 106 (Santo Nino)	0.189	126	N	Y		Y	Y	3				H			
Barangay 107 (Santa Elena)	0.1995	133	N	Y		Y	Y	3				H			
Barangay 108 (Tagpuro)	0.21	140	N	Y		Y	Y	3		M				M	
Barangay 12 (Palanog Resettlement)	0.7005	467	N	Y		Y	Y	3	M			M			
Barangay 13	0.015	10	Y	Y		Y	Y	4	M					H	

BRGY.	AREA (HA)	NO. OF HOUSEHOLDS	UTILITIES PRESENT (Y/N)						HAZARD SUSCEPTIBILITY (H/M/L)						
			W	P	S	T	C	TOTAL	FL	TY	EQ	LN	TS	SU	OTHERS
Barangay 14	0.0105	7	Y	Y		Y	Y	4	M					H	
Barangay 15	0.006	4	Y	Y		Y	Y	4	M					M	
Barangay 16	0.015	10	Y	Y		Y	Y	4	M					M	
Barangay 17		-							M					M	
Barangay 18	0.0045	3	Y	Y		Y	Y	4	M					M	
Barangay 19	0.021	14	Y	Y		Y	Y	4	M					M	
Barangay 20	0.036	24	Y	Y		Y	Y	4	M					M	
Barangay 21	0.018	12	Y	Y		Y	Y	4	M					M	
Barangay 21-A	0.003	2	Y	Y		Y	Y	4	M					M	
Barangay 22	0.0015	1	Y	Y		Y	Y	4	M					M	
Barangay 23	0.006	4	Y	Y		Y	Y	4	M					M	
Barangay 24	0.0135	9	Y	Y		Y	Y	4	M					M	
Barangay 25	0.4065	271	Y	Y		Y	Y	4	M					H	
Barangay 26	0.0405	27	Y	Y		Y	Y	4	M					H	
Barangay 27	0.0045	3	Y	Y		Y	Y	4	M					H	
Barangay 28	0.0525	35	Y	Y		Y	Y	4	M					M	
Barangay 29	0.0075	5	Y	Y		Y	Y	4	M					M	
Barangay 30	0.009	6	Y	Y		Y	Y	4	M					H	
Barangay 31	0.0975	65	Y	Y		Y	Y	4	M					H	
Barangay 32		-	Y	Y		Y	Y	4	M					M	
Barangay 33	0.012	8	Y	Y		Y	Y	4	M					M	
Barangay 34	0.0045	3	Y	Y		Y	Y	4	M					M	
Barangay 35	0.0045	3	Y	Y		Y	Y	4	M					H	
Barangay 35-A	0.1185	79	Y	Y		Y	Y	4	M					H	
Barangay 36	0.396	264	Y	Y		Y	Y	4	M					H	
Barangay 37	1.0755	717	Y	Y		Y	Y	4	M					H	
Barangay 37-A	0.0015	1	N	Y		Y	Y	4	M			H			
Barangay 38	0.0285	19	Y	Y		Y	Y	4	M					M	
Barangay 39	0.759	506	Y	Y		Y	Y	4	M			H		M	
Barangay 40	0.0105	7	Y	Y		Y	Y	4	M					H	
Barangay 41	0.003	2	Y	Y		Y	Y	4	M			H		M	
Barangay 42	0.018	12	Y	Y		Y	Y	4	M			H		M	
Barangay 43	0.0255	17	Y	Y		Y	Y	4	M						

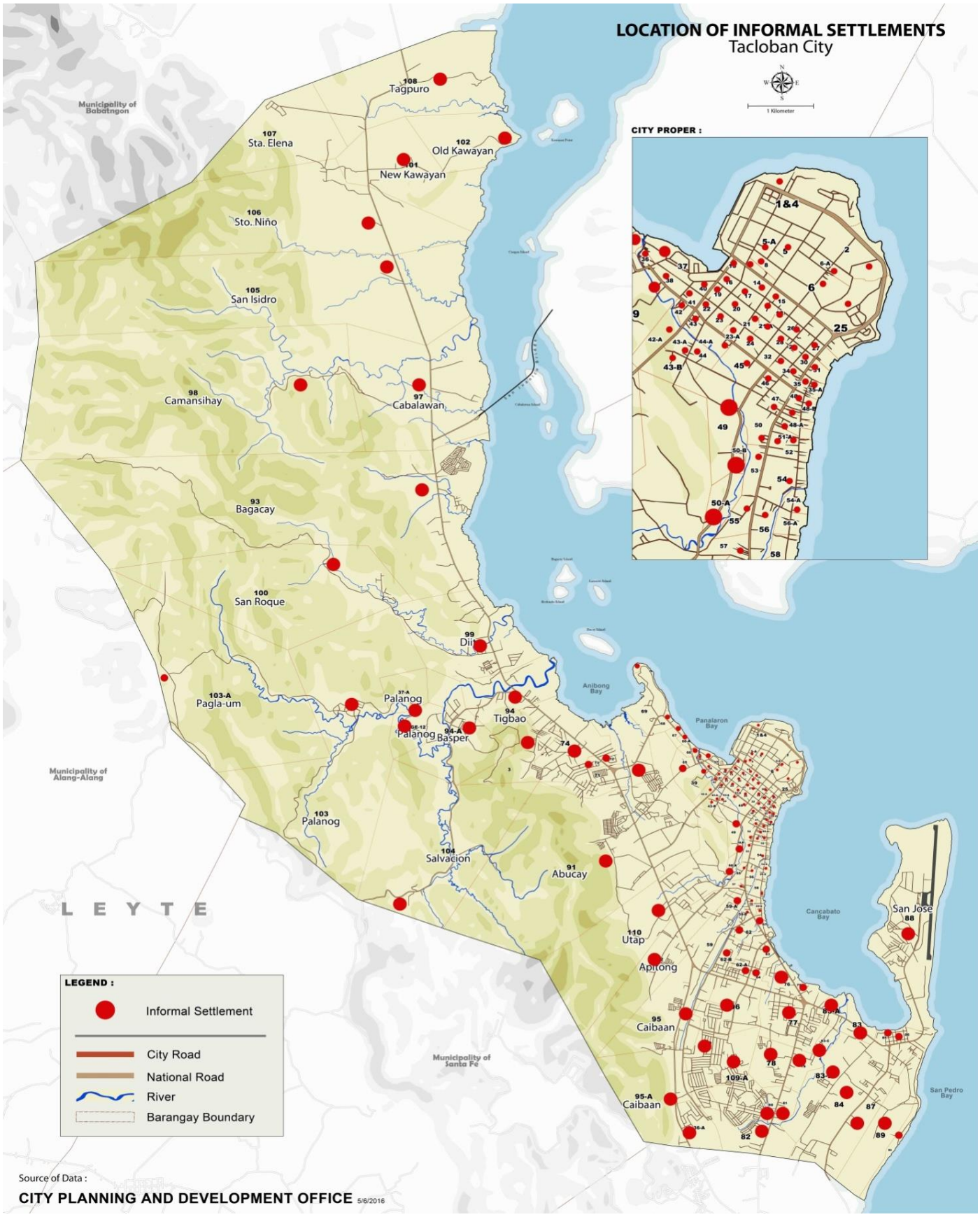
BRGY.	AREA (HA)	NO. OF HOUSEHOLDS	UTILITIES PRESENT (Y/N)						HAZARD SUSCEPTIBILITY (H/M/L)						
			W	P	S	T	C	TOTAL	FL	TY	EQ	LN	TS	SU	OTHERS
Barangay 43-A	0.0255	17	Y	Y		Y	Y	4	M			M			
Barangay 43-B	0.219	146	Y	Y		Y	Y	4	M			M			
Barangay 44	0.0465	31	Y	Y		Y	Y	4	M			M		M	
Barangay 44-A	0.0135	9	Y	Y		Y	Y	4						M	
Barangay 45	0.0285	19	Y	Y		Y	Y	4						M	
Barangay 46	0.0105	7	Y	Y		Y	Y	4						M	
Barangay 47	0.045	30	Y	Y		Y	Y	4						M	
Barangay 48	0.0165	11	Y	Y		Y	Y	4						M	
Barangay 49	0.213	142	Y	Y		Y	Y	4						M	
Barangay 50	0.0345	23	Y	Y		Y	Y	4						M	
Barangay 50-A	0.1155	77	Y	Y		Y	Y	4						M	
Barangay 50-B	0.153	102	Y	Y		Y	Y	4						M	
Barangay 51	0.063	42	Y	Y		Y	Y	4						H	
Barangay 52	0.141	94	Y	Y		Y	Y	4						H	
Barangay 53	0.0645	43	Y	Y		Y	Y	4						M	
Barangay 54	0.1425	95	Y	Y		Y	Y	4						M	
El Reposo (Barangays 55 & 55-A)	0.159	106	Y	Y		Y	Y	4						M	
Barangay 56	0.012	8	Y	Y		Y	Y	4						H	
Barangay 57	0.273	182	Y	Y		Y	Y	4						M	
Barangay 58	0.114	76	Y	Y		Y	Y	4						H	
Barangay 59	0.408	272	Y	Y		Y	Y	4						M	
Barangay 60	0.012	8	Y	Y		Y	Y	4						H	
Barangay 60-A	0.2145	143	Y	Y		Y	Y	4						H	
Barangay 61	0.21	140	Y	Y		Y	Y	4						H	
Barangay 62	0.096	64	Y	Y		Y	Y	4						M	
Barangay 63	0.375	250	Y	Y		Y	Y	4						M	
Barangay 64	0.1335	89	Y	Y		Y	Y	4						M	
Barangay 65	0.2955	197	Y	Y		Y	Y	4						H	
Barangay 66	0.3885	259	Y	Y		Y	Y	4						H	
Barangay 66-A	0.375	250	Y	Y		Y	Y	4						H	
Barangay 67	0.3945	263	Y	Y		Y	Y	4	M					H	
Barangay 68	0.5085	339	Y	Y		Y	Y	4	M					H	

BRGY.	AREA (HA)	NO. OF HOUSEHOLDS	UTILITIES PRESENT (Y/N)						HAZARD SUSCEPTIBILITY (H/M/L)						
			W	P	S	T	C	TOTAL	FL	TY	EQ	LN	TS	SU	OTHERS
Barangay 69	0.69	460	Y	Y		Y	Y	4	M					H	
Barangay 70	0.357	238	Y	Y		Y	Y	4	M					H	
Barangay 71	0.447	298	Y	Y		Y	Y	4	M					H	
Barangay 72	0.006	4	Y	Y		Y	Y	4	M					H	
Barangay 73	0.0195	13	Y	Y		Y	Y	4	M					M	
Barangay 74	1.0185	679	Y	Y		Y	Y	4	M					HM	
Barangay 75	0.21	140	Y	Y		Y	Y	4	M					H	
Barangay 76	0.1275	85	Y	Y		Y	Y	4	M					H	
Barangay 77	0.339	226	Y	Y		Y	Y	4	M					H	
Barangay 78 (Marasbaras)	0.2445	163	Y	Y		Y	Y	4	M					L	
Barangay 79 (Marasbaras)	0.2865	191	Y	Y		Y	Y	4						L	
Barangay 80 (Marasbaras)	0.135	90	Y	Y		Y	Y	4						L	
Barangay 81 (Marasbaras)	0.1725	115	Y	Y		Y	Y	4						L	
Barangay 82 (Marasbaras)	0.093	62	Y	Y		Y	Y	4						L	
Barangay 83 (San Jose)	0.159	106	Y	Y		Y	Y	4						H	
Barangay 83-A (San Jose)	0.3135	209	Y	Y		Y	Y	4						H	
Barangay 84 (San Jose)	0.546	364	Y	Y		Y	Y	4						H	
Barangay 85 (San Jose)	0.12	80	Y	Y		Y	Y	4						H	
Barangay 86	0.1635	109	Y	Y		Y	Y	4						H	
Barangay 87	0.2235	149	Y	Y		Y	Y	4						H	
Barangay 88	1.8945	1,263	Y	Y		Y	Y	4						H	
Barangay 89	0.7905	527	Y	Y		Y	Y	4						H	
Barangay 90 (San Jose)	0.024	16	Y	Y		Y	Y	4						H	
Barangay 91 (Abucay)	1.0935	729	Y	Y		Y	Y	4				H			

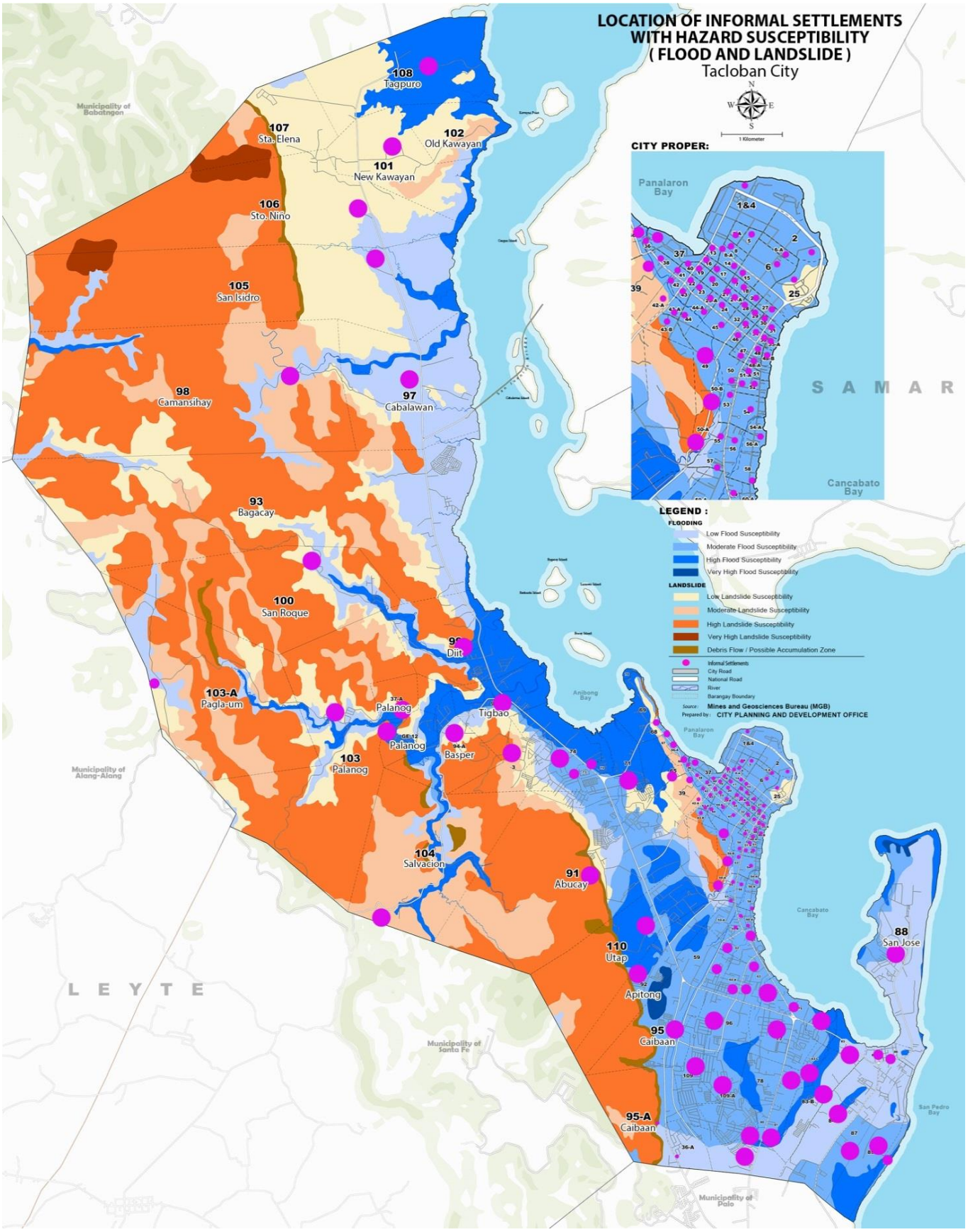
BRGY.	AREA (HA)	NO. OF HOUSEHOLDS	UTILITIES PRESENT (Y/N)						HAZARD SUSCEPTIBILITY (H/M/L)						
			W	P	S	T	C	TOTAL	FL	TY	EQ	LN	TS	SU	OTHERS
Barangay 92 (Apitong)	0.72	480	Y	Y		Y	Y	4	H						
Barangay 93 (Bagacay)	0.6915	461	N	Y		Y	Y	4						M	
Barangay 94 (Tigbao)	0.6135	409	Y	Y		Y	Y	4						H	
Barangay 95 (Caibaan)	0.6795	453	Y	Y		Y	Y	4	M						
Barangay 96 (Calanipawan)	1.1415	761	Y	Y		Y	Y	4	M						
Barangay 97 (Cabalawan)	0.786	524	N	Y		Y	Y	4	M						
Barangay 98 (Camansihay)	0.432	288	N	Y		Y	Y	4	M						
Barangay 99 (Diit)	1.122	748	Y	Y		Y	Y	4	M					H	
Barangay 109 (V & G Subd.)	0.255	170	Y	Y		Y	Y	4	M						
Barangay 109-A	0.3075	205	Y	Y		Y	Y	4	H						
Barangay 110 (Utap)	0.5355	357	Y	Y		Y	Y	4	H			M			
Barangay 5-A	0.0705	47	Y	Y		Y	Y	4						H	
Barangay 36-A	0.039	26	Y	Y		Y	Y	4						L	
Barangay 42-A	0.696	464	Y	Y		Y	Y	4	M						
Barangay 48-A	0.1335	89	Y	Y		Y	Y	4						H	
Barangay 48-B	0.117	78	Y	Y		Y	Y	4						H	
Barangay 51-A	0.009	6	Y	Y		Y	Y	4						H	
Barangay 54-A	0.198	132	Y	Y		Y	Y	4						H	
Barangay 56-A	0.177	118	Y	Y		Y	Y	4						H	
Barangay 59-A	0.4755	317	Y	Y		Y	Y	4						M	
Barangay 59-B	0.096	64	Y	Y		Y	Y	4						M	
Barangay 62-A	0.3525	235	Y	Y		Y	Y	4						M	
Barangay 62-B	0.2325	155	Y	Y		Y	Y	4						M	
Barangay 83-B	0.252	168	Y	Y		Y	Y	4						H	
Barangay 83-C (San Jose)	0.5475	365	Y	Y		Y	Y	4						H	
Barangay 95-A (Caibaan)	0.7875	525	Y	Y		Y	Y	4	M			M			

BRGY.	AREA (HA)	NO. OF HOUSEHOLDS	UTILITIES PRESENT (Y/N)						HAZARD SUSCEPTIBILITY (H/M/L)						
			W	P	S	T	C	TOTAL	FL	TY	EQ	LN	TS	SU	OTHERS
Barangay 8-A	0.0285	19	Y	Y		Y	Y	4						H	
Barangay 23-A	0.045	30	Y	Y		Y	Y	4						H	
Barangay 94-A	0.3465	231	Y	Y		Y	Y	4				H			
TOTAL															

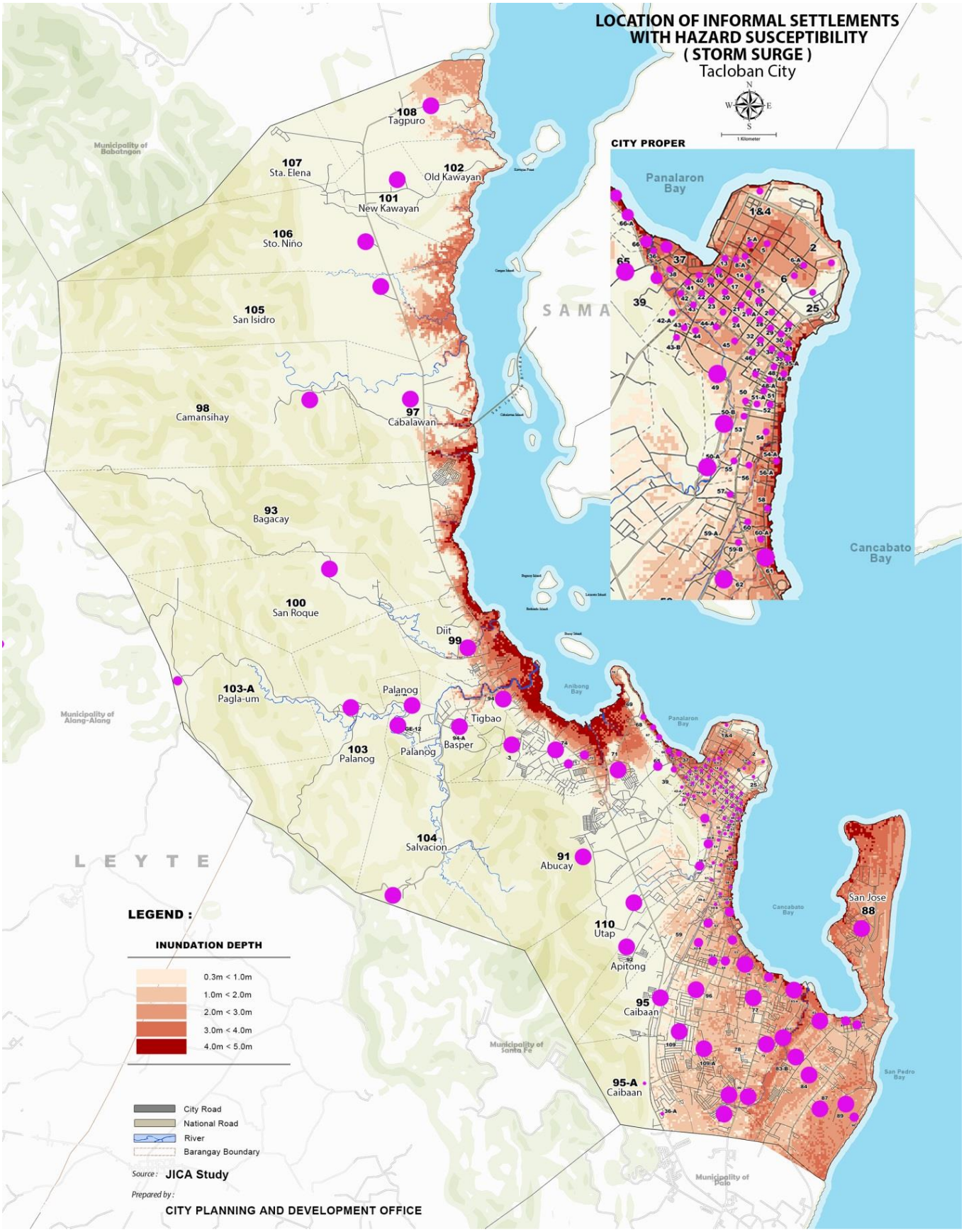
Source: PSA 2014



Map 47. Location of Informal Settlements



Map 48. Location of Informal Settlements with Hazard Flood / Landslide



Map 49. Location of Informal Settlements with Hazard Storm Surge

Table 3.26 shows an updated list of subdivisions in Tacloban City, covering a total area ofhectares. These are mostly situated in the urban barangays and nearby barangays of the city. These subdivisions cater the upper, middle, & lower classes not only the residents of the city but other residents coming from nearby municipalities and cities.

Table 3. 26 Inventory of Residential Subdivisions as of Year 2015, Tacloban City

NAME OF SUBDIVISION	CLASSIFICATION	LOCATION	AREA(HA)	NO. OF LOTS/ UNITS	HAZARD SUSCEPTIBILITY(H/M/L)						
					FI	TY	EQ	LN	TS	SU	OTHERS
1. Beriso Heights Subd.	Economic & Socialized	Marasbaras	1has		M	M					
2. St Andrew Subd.	Economic & Socialized	Brgy. 78	.5		M	M					
3. RJD Homes Subd.	Economic & Socialized	Brgy. 84 Manluri p Jose	.05			H				H	
4. Lolita Village	Economic & Socialized	Brgy. 96	1			L					
5. Richmond Court Subd.	Economic & Socialized	Brgy. 93	2,.5			H				M	
6. Cancabatoville	Economic & Socialized	Brgy. 88 San Jose	.5		M	H				H	
7. Villa Lolita	Economic & Socialized	Marasbaras & San Jose	1.5		M	H				H	
8. Aguirre Subd.	Economic & Socialized	Brgy. 110 Utap	1.2		M	M				L	
9. Kassel City	Economic & Socialized	Brgy. Abucay 91	4.2		M	M					
10. Beta Bayview Homes/timex	Open Market	Brgy. 88 San Jose	1.5			H				H	
11. Villa Cinco Subd.	Economic & Socialized	Brgy. 88 San Jose	1.2			H				H	
12. Villa Leoncia Subd.	Economic & Socialized	Cogon San Jose	1			H				H	
13. Basioville Subd.	Economic & Socialized	Brgy. 94 Tigbao	1.5			H				H	

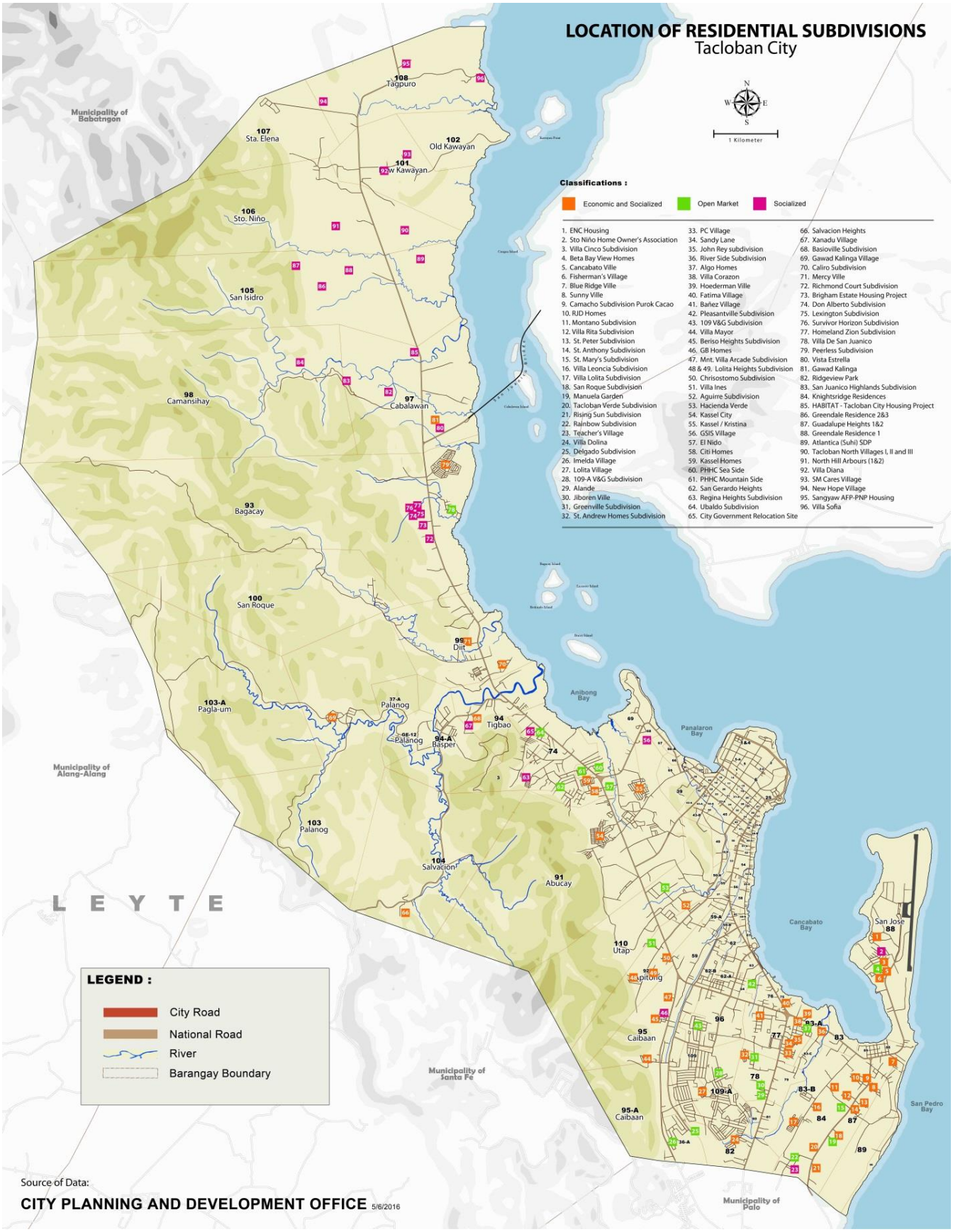
NAME OF SUBDIVISION	CLASSIFICATION	LOCATION	AREA(HA)	NO. OF LOTS/ UNITS	HAZARD SUSCEPTIBILITY(H/M/L)						
					FI	TY	EQ	LN	TS	SU	OTHERS
14. Mary Queen Ville	Socialized	Brgy. 94 Tigbao	.5			H				M	
15. Villa Ines Homes	Open Market	Apitong & San Jose	1.8		M	H				H	
16. Villa de San Juanico	Open Market	Brgy. 93	1.5			H				M	
17. Villa Rita Subd.	Economic & Socialized	Manluri p San Jose	.8			H				H	
18. G.B. Realty Dev't Corp	Socialized	Brgy. 94 Tigbao	1.8			H					
19. Xanadu Village	Socialized	Brgy. 94 Tigbao	1.7			H					
20. Villa Mayor Subd.	Economic & Socialized	Caibaa n	1			H					
21. Vista Estrella	Socialized	Brgy. 97 Cabalw an	1.5			H					
23. Jeboren Ville	Open Market	Marasb aras	.5			H					
24. Natividad De Los Santos Subd.	Open Market	Caibaa n	1			H					
25. Regina Heights	Socialized	Abucay/ Brgy. 74	2			H					
26. Villa Dolina Subd.	Economic & Socialized	Brgy. 80 Marasb aras	1.5			H					
27. Kassel Homes Subd.	Economic & Socialized	Brgy. 71	1.2			H					
28. V&G Subd.	Open Market	Brgy. 109	60.7		H					L	
29. Hacienda V.	Open Market	Utap	4		H						
30. Manuela Garden	Open Market	Sn Jose	1		H					H	
31. Sunny Ville		Sn Jose	.8		H					H	
32. Kassel/Kristina	Economic & Socialized	Brgy. 71 Naga-Naga	3.5		H					M	
33. GB Homes	Economic & Socialized	Brgy. 94 Toigbao	1		H					M	

NAME OF SUBDIVISION	CLASSIFICATION	LOCATION	AREA(HA)	NO. OF LOTS/ UNITS	HAZARD SUSCEPTIBILITY(H/M/L)						
					FI	TY	EQ	LN	TS	SU	OTHERS
34. Delgado Subd.	Open Market	Brgy. 95-A	4		H						
35. PHHC	Open Market	Brgy. 72&73	2.8		H					H	
36. Sn. Gerardo Heights	Open Market	Brgy. 74	15.2		H					L	
37. Peerless	Economic & Socialized	Brgy. 93	8		H					H	
38. Lolita Village	Economic & Socialized	Brgy. 92 Apitong	2.8		H						
39. Ubaldo Subd.	Open Market	Brgy. 74	1		H						
40. City Government	Socialized	Brgy. 74	3		H						
41. Rainbow	Open Market	Brgy. 84	2.8		H					H	
42. Fisherman's	Socialized	Brgy. 88	1.2		H					H	
43. GreenVille	Open Market	Marasbaras	2		H						
44. Pleasantville	Open Market	Sagkahan	1.8		H						
45. Algo Homes	Open Market	Brgy. Burayan San. Jose	1		H					H	
46. Teacher's Vilage	Socialized	San Jose	.5		H					H	
47. GSIS Village	Socialized	Brgy. 71	1		H					M	
48. El Nido	Open Market	Naga-Naga	2.5		H					M	
49. Imelda Village	Open Market	Brgy. 71 Naga-Naga	5		H						
50. Alande	Open Market	Brgy. 36-A	1		H						
51. Sto Niño Homeowners	Socialized	Marasbaras	1.8		H						
52. Citi Homes	Economic & Socialized	Brgy. 91	1.2		H						
53. Tacloban Verde Subdivision	Economic & Socialized	Manluri p , San Jose	28,037 (sq. m.)	88 units/ 92 units						H	
54. Sangyaw AFP-PNP Housing Project	Socialized	Brgy. Tagpuro	86,682 (sq. m.)	1,400 units		M					

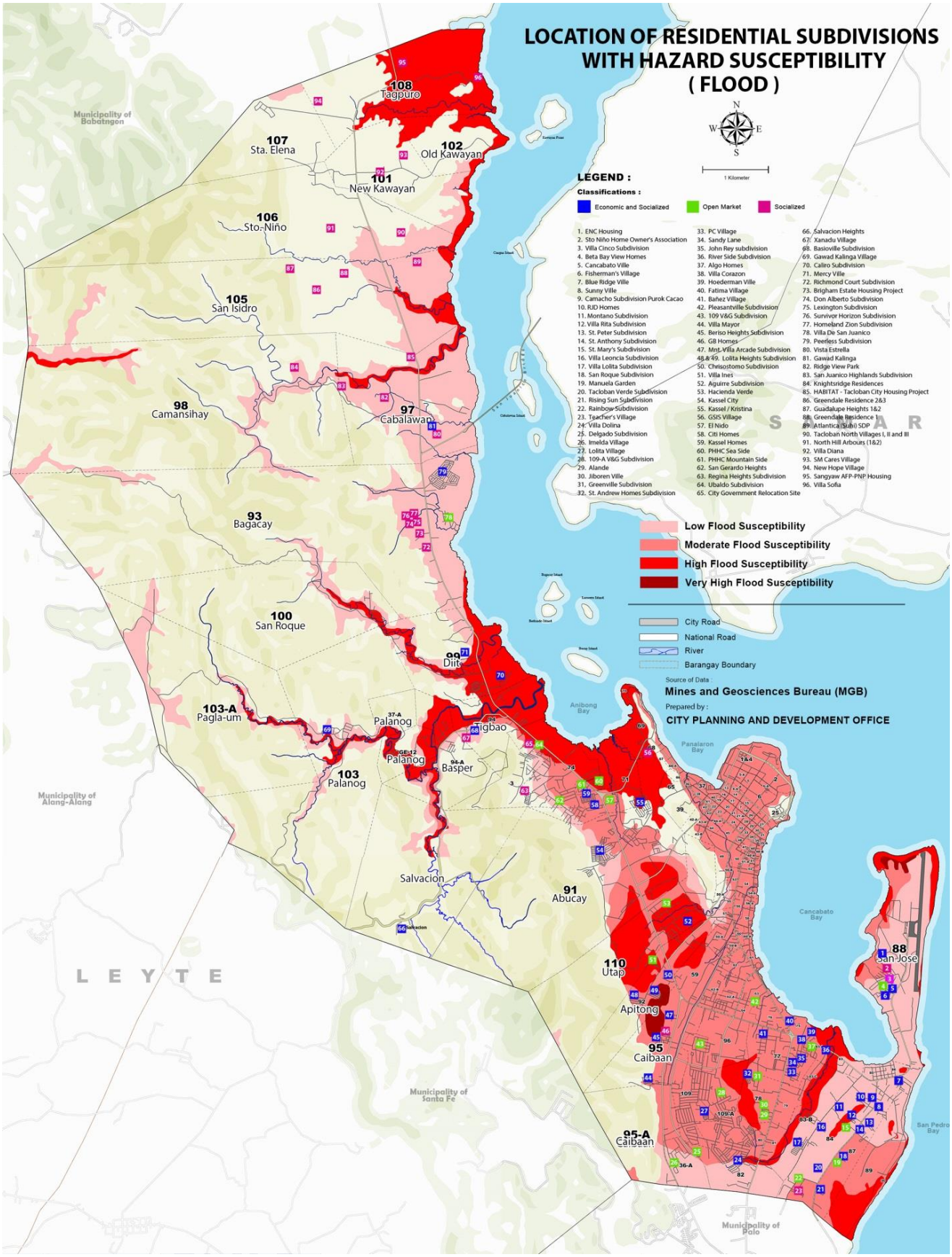
NAME OF SUBDIVISION	CLASSIFICATION	LOCATION	AREA(HA)	NO. OF LOTS/ UNITS	HAZARD SUSCEPTIBILITY(H/M/L)						
					FI	TY	EQ	LN	TS	SU	OTHERS
55. San Juanico Highlands Subdivision		Brgy. Nula-Tula	13,363 (sq. m.)	140 units							
56. San Gerardo Subdivison	Open market & Socialized	Brgy. Nula-Tula	11,628.65 & 3,982.56 (sq. m.)	42 units/ 40 units							
57. Tac. North Resettlement Project	Socialized	Brgy. San Isidro & New Kawayan	100,984 (sq. m.)	100 units		M					
58. Brigham Estate Housing Project	Socialized	Brgy. 91, Bagacay	35,000 (sq. m.)	492 units							
59. Ridge View Park 1 and 2	Socialized	Brgy. 97, Cabalawan	6.57 ha. & 6.4 ha.	913 units/ 1,000 units				M			
60. Villa Diana Subdivision	Socialized	Brgy. 101, New Kawayan	25, 588 (sq. m.)	409 units							
61. Don Alberto Subdivision	Socialized	Brgy. 93, Bagacay	27, 081 (sq. m.)	213 units							
62. Lexington Subdivision	Socialized	Brgy. 93, Bagacay	14, 679 (sq. m.)	186 units							
63. Survivor Horizon Subdivision	Socialized	Brgy. 93, Bagacay	30450 (sq. m.)	356 units							
64. Homeland Zion Subdivision	Socialized	Brgy. 93, Bagacay	12, 667 (sq. m.)	145 units							
65. Villa Sofia Housing Project	Socialized	Brgy. Tagpuro	46, 397 (sq. m.)	582 units							
67. Salvacion Heights	Socialized	Brgy. 104, Salvacion	58, 493 (sq. m.)	532 units				M			
68. Greendale Residences Phase 1	Socialized	Brgy. 105, San Isidro	25, 644.57 (sq. m.)	327 units				M			

NAME OF SUBDIVISION	CLASSIFICATION	LOCATION	AREA(HA)	NO. OF LOTS/ UNITS	HAZARD SUSCEPTIBILITY(H/M/L)						
					FI	TY	EQ	LN	TS	SU	OTHERS
69. NorthHil Arbours 2	Socialized	Brgy. 106, Sto. Niño	104,682 (sq. m.)	1,000 units							
70. NorthHil Arbours 1	Socialized	Brgy. 106, Sto. Niño	97,167 (sq. m.)	1,000 units							

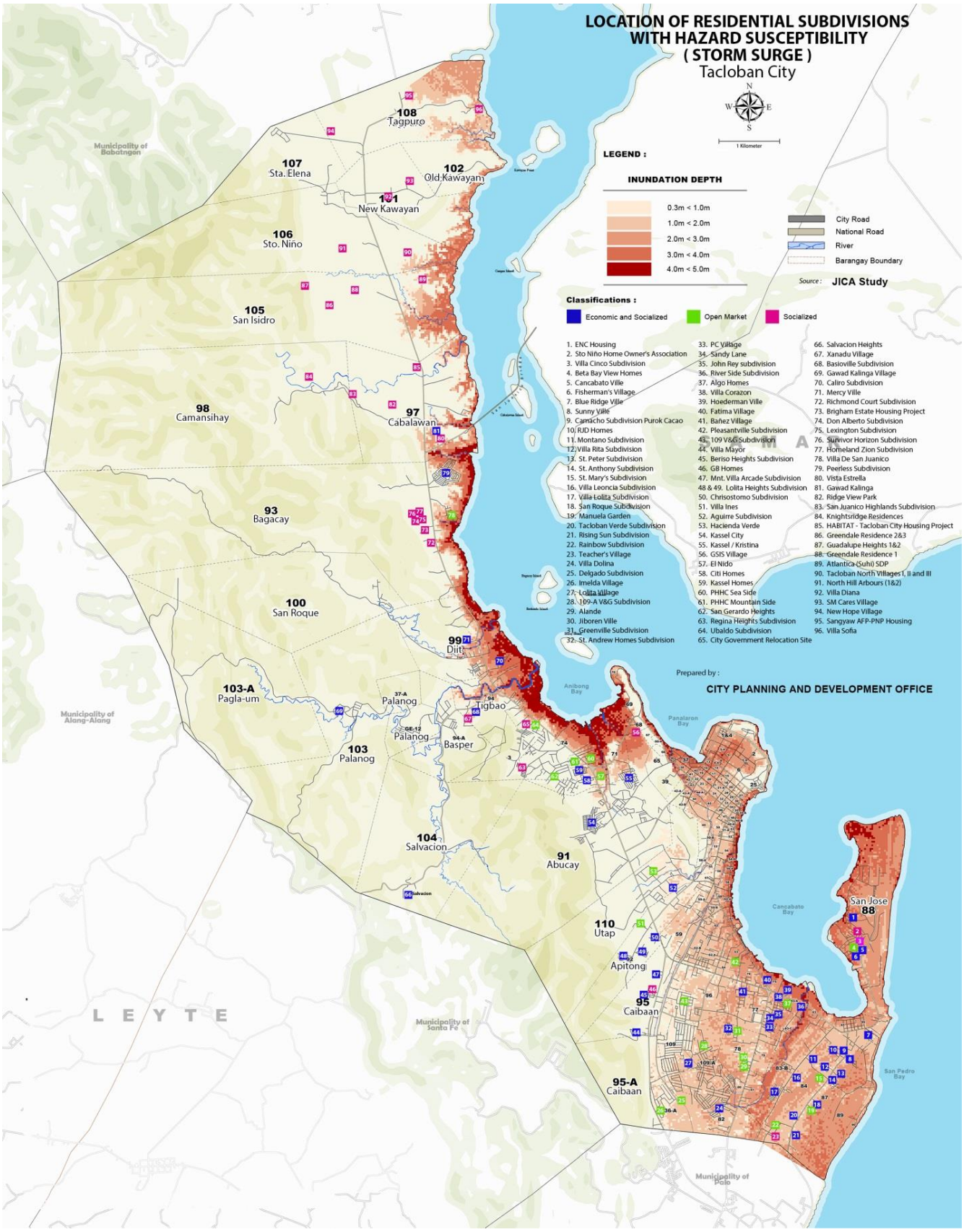
Source: CPDO, 2016



Map 50. Location of Residential Subdivisions



Map 51. Location of Residential Subdivisions with Hazard Flood



Map 52. Location of Residential Subdivisions with Hazard Storm Surge

Table 3.27 shows the resettlement areas in the city, occupiedby a total number of 3,464 families. These sites are already fully occupied. The city had identified resettlement sites at the Tacloban North. These resettlement sites are located at the northern barangays namely Brgys. Cabalawan, Camansihay, San Isidro, Sto Nino, Old and New Kawayan, Sta. Elena & Tagpuro. These resettlement sites had already houses available a total of 16,531 families will be beneficiaries of the housing program of the city. The barangay officials have a crucial role in minimizing the informal settlers in the city. They have to be vigilant on people who want to live in their respective barangays and should not allow informal settlers but rather refer them to concern agencies. This resettlement site has a total of 733.624 hectares.

Table 3. 27 Existing Resettlement Areas, Year 2015, Tacloban City

NAME OF RESETTLEMENT AREA	BRGY	LAND OWNERSHIP	NO. OF HOUSE HOLDS	NO. OF HOUSING UNITS	UTILITIES/FACILITIES/ AMENITIES	HAZARD SUSCEPTIBILITY (H/M/L)						
						FI	TY	EQ	LN	TS	SU	OTHERS
1.Brgy. 74 Nulatula Resettlement Area (RA)	Brgy. 74 Nulatula	Tacloban City Gov't.	250	248	Water,electricity health center, school, mini grocery,talipapa,tranport, communication, cemented roads				M			
2.Brgy. 3 Nulatula RA	Brgy. 3 Nulatula	Tacloban City Gov't.	649	643	Water,electricity health center, elem. school, mini grocery,talipapa,transport, communication, cemented roads				M			
3. Brgy. 12 Palanog RA	Brgy. 12 Palanog	Tacloban City Gov't.	538	530	Water,electricity Brgy.Health Stn.,Elem. school, tranport, communication, cemented roads				M			
4. Brgy. 103 Palanog	Brgy. 103 Palanog	Tacloban City Gov't	1005	998	Water,electricity Brgy.Health Stn.,Elem. school, tranport, communication , cemented roads	M	H		H			

NAME OF RESETTLEMENT AREA	BRGY	LAND OWNERSHIP	NO. OF HOUSE HOLDS	NO. OF HOUSING UNITS	UTILITIES/FACILITIES/ AMENITIES	HAZARD SUSCEPTIBILITY (H/M/L)						
						FI	TY	EQ	LN	TS	SU	OTHERS
5. Scandinavian Resettlement	Brgy. 100	Tacloban City Gov't	725	720	Water,electricity Brgy.Health Stn.,Elem. school, tranport, communication	M	H		H			
6.Brgy. 37-A Resettlement	Brgy. 37-A	Tacloban City Gov't Total	207 3,464	182	Water,electricity Brgy.Health Stn.,Elem. school, tranport, communication	M			H			

Source: CSWDO, CPDO

Table 3.28 presents the resettlement areas/socialized housing that has newly been constructed at the Tacloban North. The beneficiaries of these resettlement areas which are funded by INGOs, NGOs, and the City Government of Tacloban are those affected by typhoon Yolanda and those along no build zones area. As of this time a total of 1,291 units are occupied consisting of 6,692 individuals. Most of these families came from the San Jose Area. Others families are still occupying the temporary shelters at bunkhouses. These resettlement areas still lack primary facilities like water and electricity.

Table 3. 28 Resettlement Areas/Socialized Housing for Yolanda Survivors/Affected Families 2015 Tacloban City

NAME OF RESETTLEMENT AREA	BRGY	LAND OWNERSHIP	NO. OF HOUSE HOLDS	NO. OF HOUSING UNITS	UTILITIES/ FACILITIES	HAZARD SUSCEPTIBILITY						
						FL	TY	EQ	LN	TS	SU	OTHERS
1.OC 1	Brgy. 101	Private	35	35			M					
2. OB Sto. Nino	Brgy. 106	Private	39	39			M					
3. LGU Duplex 1	Brgy. 101	Govern-ment	64	64			M					
4.LGU Duplex 2	Brgy. 101	Govern-ment	52	52			M					
5.OB Tagpuro	Brgy. 108	Private	67	67			M					
6.Badato	Brgy. 106	Private	23	23			M					
7.Cali	Brgy. 97	Private	115	115								
8.Yu	Brgy. 105	Private	73	73			M					
9.Habitat	Brgy. 106	Private	71	71			M					
10.Villa Diana	Brgy. 101	Private	113	113			M					
11.Ridgeview	Brgy.97	Private	211	211			M		M			
12.GMAK V	Brgy.106	Private	400	400			M					
13Villa Sofia	Brgy.108	Private	28	28			M					
Total			**1,291**	**1,291**			M					

Source: City Housing & Development Office

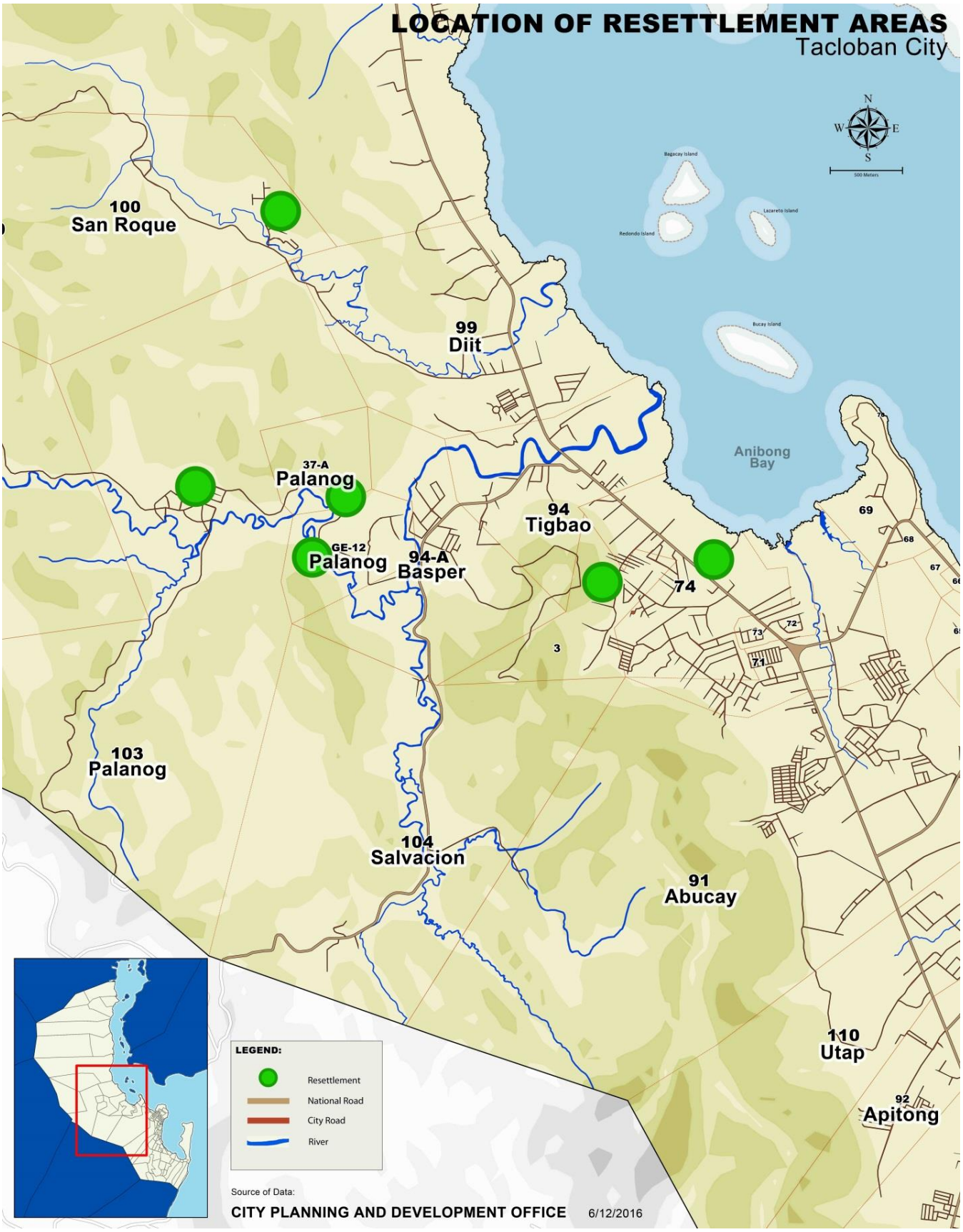
Presented below in Table 3.29are the housing facilities for the last 3 censal years. For the city of Tacloban majority of households are served with essential facilities and utilities such as water, electricity and garbage collection system. However there is a lot to be desired in terms of efficiency and quality of service with these mentioned facilities and utilities. Almost all household in the city are not satisfied with the water system due to its insufficient flow of water. Likewise the increasing electric bill is a cause for much complains from electric consumers. In terms of garbage collection, a household has to practice waste segregation so as to minimize garbage. Collection of garbage is sometimes inefficient because schedule is not followed.

Table 3. 29 Housing Facilities and Utilities Situation for the Past Three Censal Years (2007, 2010, 2014)

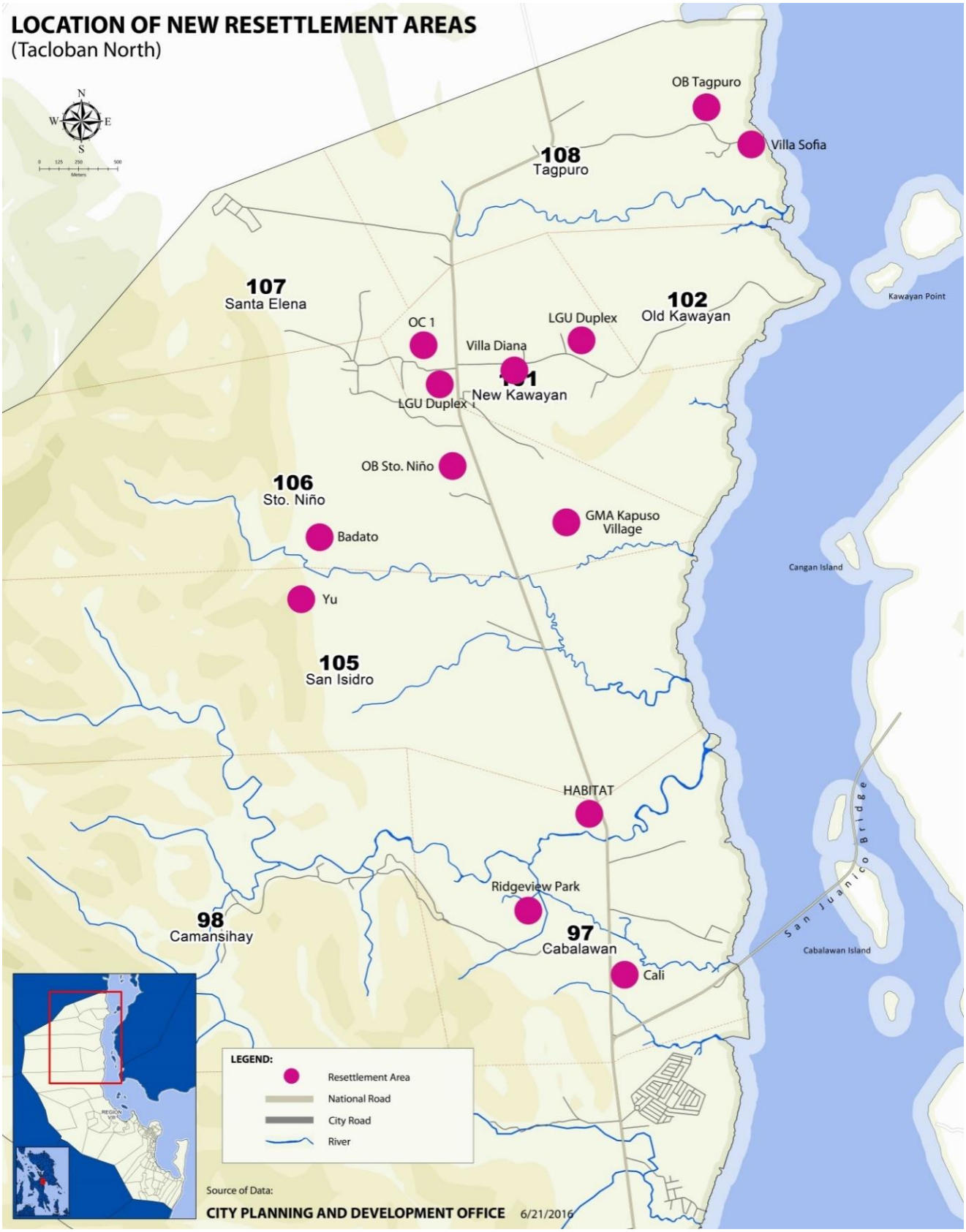
Tacloban City

UTILITIES	CENSAL 2007			CENSAL 2010			CENSAL 2014		
	NO. OF HOUSING UNITS	NO. SERVED	% SERVED	HOUSING UNITS	NO. SERVED	% SERVED	NO. OF HOUSING UNITS	NO. SERVED	% SERVED
Electricity	46,148	39,246	85%	44,758	42,002	94%	hh=50890	42,861	84%
Water-Sealed Toilets	46,148	28,000	61%	44,578	43,686	98%	50,890	44,050	87%
Garbage Collection System	46,148	42,731	92%	44,578	22,537	50.50%	50,890	22,867	44%
Water Supply	46,148	36,914	80%	44,578	41,840	93%	50,890	44,870	88%

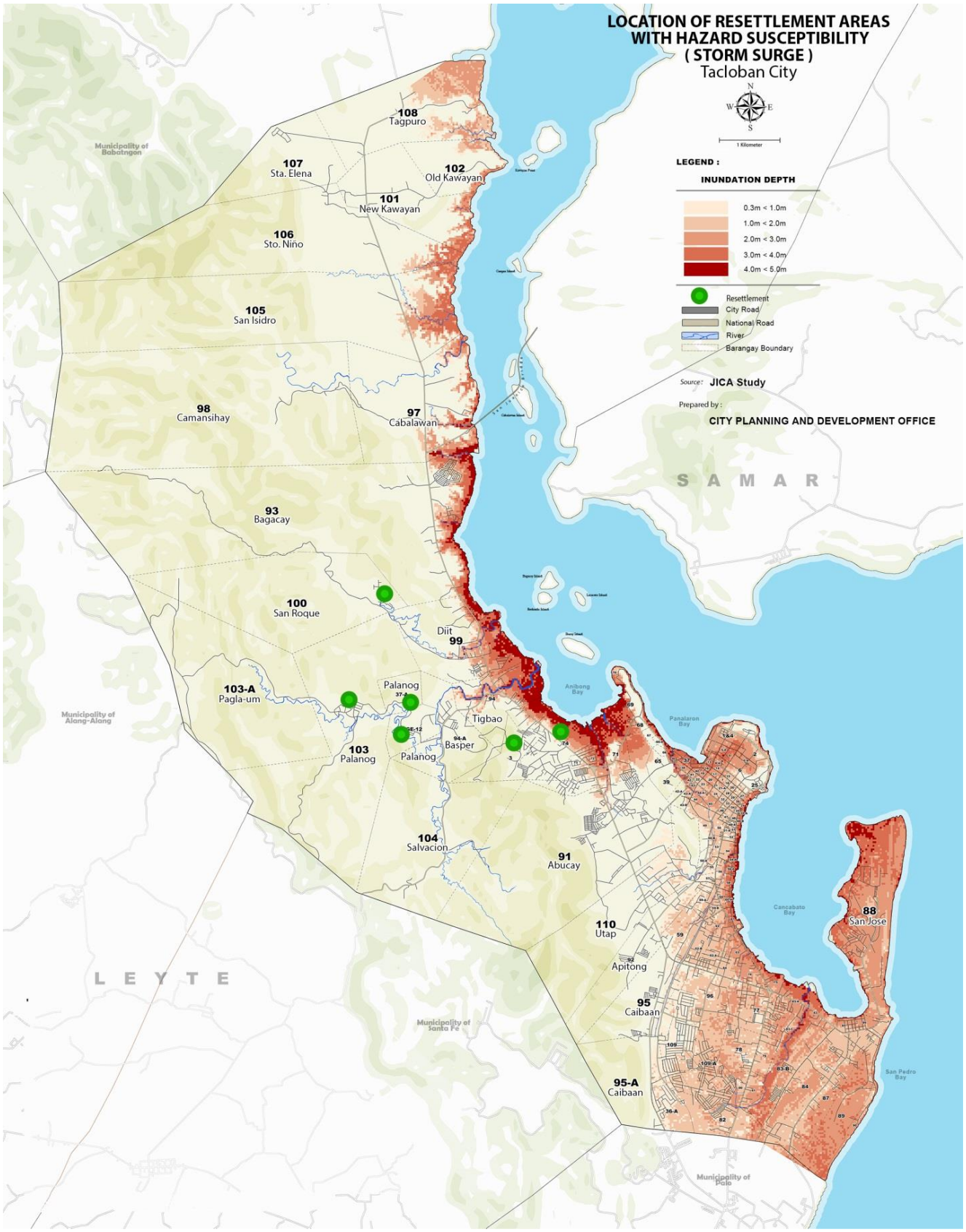
Source: PSA



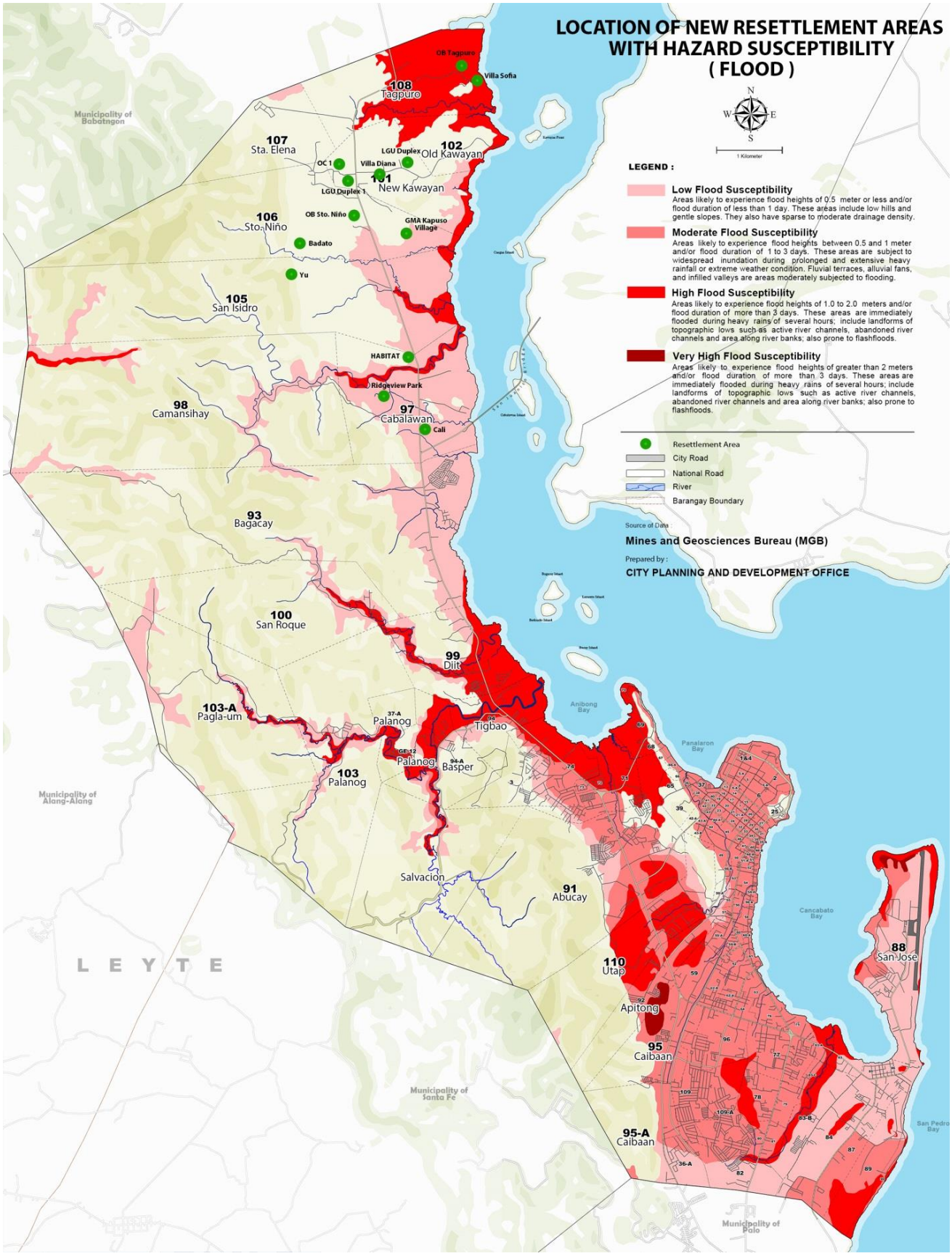
Map 53. Location of Resettlement Areas



Map 54. Location of New Resettlement Areas



Map 55. Location of Resettlement Areas with Hazard Storm Surge



Map 56. Location of New Resettlement Areas with Hazard Flood

For the tenure status of housing and lot, it is shown in Table 3.30 that 35 % of the household does not own the lot while 9% live in a lot without the consent of the owner. On the other hand 37% of the household in the city owns house and lot. This shows that there is more than half of the household in the city which has no security of tenure for housing. The need for low cost housing is increasing as the population grows. Likewise there is proliferation of informal settlers in the city especially that it is a highly urbanized city. More low cost housing projects should be implemented by the local government.

Table 3. 30 Household by Tenure Status of the Housing/Lot and Brgy. Tacloban City

BARANGAY	TENURE STATUS OF THE HOUSING/LOT							
	TOTAL	OWN OR OWNER LIKE POSSESSION OF HOUSE AND LOT	RENT HOUSE/ROOM INCLUDING LOT	OWN HOUSE RENT LOT	OWN HOUSE RENT-FREE LOT WITH CONSENT OF OWNER	OWN HOUSE RENT-FREE LOT WITHOUT CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITH CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITHOUT CONSENT OF OWNER
TACLOBAN CITY	49,648	18,514	2,755	3,831	17,186	3,804	2,857	701
Barangay 2	81	9	1	1	68	-	2	-
Nula-tula (Bgys. 3 & 3A)	580	32	-	1	536	-	10	1
Libertad (Barangays 1 & 4)	254	14	12	4	190	5	28	1
Barangay 5	72	22	5	1	30	6	8	-
Barangay 6	235	17	6	1	89	114	6	2
Barangay 6-A	384	34	36	-	22	259	22	11
Barangay 7	91	21	32	3	32	-	3	-
Barangay 8	52	34	9	-	4	2	3	-
Barangay 100 (San Roque)	660	123	-	17	508	1	10	1
Barangay 101 (New Kawayan)	136	7	1	-	120	-	8	-
Barangay 102 (Old Kawayan)	113	1	-	-	109	-	3	-
Barangay 103 (Palanog)	861	21	-	4	829	-	6	1
Barangay 103-A (San Paglaum)	133	122	-	-	9	1	1	-
Barangay 104 (Salvacion)	496	160	1	2	331	-	2	-
Barangay 105 (Suhi)	342	75	-	-	262	-	5	-
Barangay 106 (Santo Niño)	263	53	1	83	122	-	4	-
Barangay 107 (Santa Elena)	250	117	-	-	3	-	1	129
Barangay 108 (Tagapuro)	208	68	-	-	2	-	-	138
Barangay 12 (Palanog Resettlement)	485	17	1	-	453	5	9	-
Barangay 13	29	3	16	-	7	-	3	-
Barangay 14	39	28	4	-	6	-	1	-
Barangay 15	21	13	3	1	2	1	1	-
Barangay 16	50	27	13	-	1	-	9	-
Barangay 17	22	18	4	-	-	-	-	-
Barangay 18	45	31	11	-	-	-	3	-
Barangay 19	54	24	15	1	-	-	14	-
Barangay 20	102	42	33	3	19	-	5	-

BARANGAY	TENURE STATUS OF THE HOUSING/LOT							
	TOTAL	OWN OR OWNER LIKE POSSESSION OF HOUSE AND LOT	RENT HOUSE/ROOM INCLUDING LOT	OWN HOUSE RENT LOT	OWN HOUSE RENT-FREE LOT WITH CONSENT OF OWNER	OWN HOUSE RENT-FREE LOT WITHOUT CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITH CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITHOUT CONSENT OF OWNER
Barangay 21	64	39	13	-	1	2	6	3
Barangay 21-A	64	18	43	1	-	-	2	-
Barangay 22	14	11	2	-	1	-	-	-
Barangay 23	89	69	11	5	-	-	3	1
Barangay 24	61	31	18	3	2	2	5	-
Barangay 25	298	12	11	4	43	203	18	7
Barangay 26	51	18	6	-	-	-	27	-
Barangay 27	58	42	10	3	-	-	3	-
Barangay 28	63	22	6	-	13	-	22	-
Barangay 29	37	24	8	-	-	-	5	-
Barangay 30	28	17	5	-	-	-	6	-
Barangay 31	70	3	1	1	4	59	2	-
Barangay 32	24	19	5	-	-	-	-	-
Barangay 33	48	26	14	-	-	-	8	-
Barangay 34	31	28	-	-	-	-	3	-
Barangay 35	38	32	3	-	-	-	3	-
Barangay 35-A	100	15	-	6	11	68	-	-
Barangay 36	271	4	2	1	7	253	2	2
Barangay 37	744	25	2	2	701	6	7	1
Barangay 37-A	304	303	-	-	1	-	-	-
Barangay 38	92	45	27	1	15	1	3	-
Barangay 39	599	47	28	18	488	7	11	-
Barangay 40	32	6	19	-	-	-	7	-
Barangay 41	21	14	5	-	-	-	2	-
Barangay 42	181	43	19	107	10	-	2	-
Barangay 43	95	35	28	15	16	-	1	-
Barangay 43-A	263	141	46	59	8	-	7	2
Barangay 43-B	219	51	13	9	139	-	7	-
Barangay 44	88	45	10	2	11	3	17	-
Barangay 44-A	50	40	1	4	4	1	-	-
Barangay 45	57	15	21	2	16	-	3	-
Barangay 46	81	51	23	-	-	-	7	-
Barangay 47	128	61	37	-	13	-	17	-
Barangay 48	77	63	3	-	-	1	10	-
Barangay 49	422	42	7	131	228	4	10	-
Barangay 50	61	25	10	3	10	-	13	-
Barangay 50-A	156	47	8	24	66	2	9	-
Barangay 50-B	181	52	14	13	87	-	15	-
Barangay 51	76	34	-	-	1	1	22	18

BARANGAY	TENURE STATUS OF THE HOUSING/LOT							
	TOTAL	OWN OR OWNER LIKE POSSESSION OF HOUSE AND LOT	RENT HOUSE/ROOM INCLUDING LOT	OWN HOUSE RENT LOT	OWN HOUSE RENT-FREE LOT WITH CONSENT OF OWNER	OWN HOUSE RENT-FREE LOT WITHOUT CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITH CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITHOUT CONSENT OF OWNER
Barangay 52	227	115	18	-	8	78	8	-
Barangay 53	132	43	19	27	33	-	10	-
Barangay 54	105	10	-	-	93	-	-	2
El Reposo (Barangays 55 & 55A	205	58	8	33	88	-	18	-
Barangay 56	268	174	30	56	6	-	2	-
Barangay 57	258	14	58	4	146	5	31	-
Barangay 58	198	78	7	37	27	24	18	7
Barangay 59	685	237	26	150	263	1	8	-
Barangay 60	221	82	12	119	6	1	1	-
Barangay 60-A	193	6	-	44	14	121	8	-
Barangay 61	174	22	8	4	43	94	2	1
Barangay 62	275	178	8	25	59	4	1	-
Barangay 63	485	152	32	51	189	2	59	-
Barangay 64	448	306	45	6	28	8	53	2
Barangay 65	311	91	20	3	90	106	1	-
Barangay 66	264	2	3	-	4	254	1	-
Barangay 66-A	272	21	1	-	3	243	3	1
Barangay 67	287	16	1	7	61	202	-	-
Barangay 68	438	67	5	27	46	235	23	35
Barangay 69	527	41	15	11	361	77	22	-
Barangay 70	249	8	3	-	3	233	2	-
Barangay 71	1,235	779	136	22	198	9	90	1
Barangay 72	127	113	10	-	-	-	4	-
Barangay 73	86	57	15	1	6	-	7	-
Barangay 74	1,769	865	81	144	583	20	65	11
Barangay 75	181	32	8	1	1	104	25	10
Barangay 76	180	85	7	3	79	1	5	-
Barangay 77	658	391	32	9	196	-	29	1
Barangay 78 (Marasbaras)	494	289	22	20	142	1	20	-
Barangay 79 (Marasbaras)	340	84	15	50	133	51	7	-
Barangay 80 (Marasbaras)	261	127	17	27	39	11	11	29
Barangay 81 (Marasbaras)	180	50	5	10	98	2	15	-
Barangay 82 (Marasbaras)	302	185	40	15	39	1	21	1
Barangay 83 (San Jose)	516	259	24	127	91	5	10	-
Barangay 83-A (San Jose)	411	100	36	66	200	1	8	-
Barangay 84 (San Jose)	1,382	824	67	127	235	26	96	7
Barangay 85 (San Jose)	312	206	25	1	59	1	19	1
Barangay 86	229	102	8	10	95	7	6	1

BARANGAY	TENURE STATUS OF THE HOUSING/LOT							
	TOTAL	OWN OR OWNER LIKE POSSESSION OF HOUSE AND LOT	RENT HOUSE/ROOM INCLUDING LOT	OWN HOUSE RENT LOT	OWN HOUSE RENT-FREE LOT WITH CONSENT OF OWNER	OWN HOUSE RENT-FREE LOT WITHOUT CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITH CONSENT OF OWNER	RENT-FREE HOUSE AND LOT WITHOUT CONSENT OF OWNER
Barangay 87	641	367	6	119	126	4	18	1
Barangay 88	1,587	292	10	22	735	315	210	3
Barangay 89	942	311	6	98	379	136	12	-
Barangay 90 (San Jose)	22	4	-	2	7	1	7	1
Barangay 91 (Abucay)	2,102	1,063	247	63	465	64	158	42
Barangay 92 (Apitong)	994	427	55	32	368	80	30	2
Barangay 93 (Bagacay)	1,144	158	2	523	435	22	4	-
Barangay 94 (Tigbao)	538	121	3	5	223	-	-	186
Barangay 95 (Caibaan)	1,048	481	76	38	307	21	123	2
Barangay 96 (Calanipawan)	1,449	587	75	26	597	3	154	7
Barangay 97 (Cabalawan)	659	104	17	14	421	21	81	1
Barangay 98 (Camansinay)	292	4	-	-	52	-	236	-
Barangay 99 (Diit)	1,237	416	23	50	726	-	22	-
Barangay 109 (V & G Subd.)	1,161	867	121	3	16	-	154	-
Barangay 109-A	1,597	1,228	161	3	26	60	117	2
Barangay 110 (Utap)	1,143	632	19	135	294	8	46	9
Barangay 5-A	100	34	16	3	14	16	14	3
Barangay 36-A	166	129	11	-	3	3	20	-
Barangay 42-A	546	42	21	19	450	-	14	-
Barangay 48-A	121	23	4	5	81	-	8	-
Barangay 48-B	117	21	-	18	72	-	6	-
Barangay 51-A	48	32	9	1	5	-	1	-
Barangay 54-A	162	24	4	2	132	-	-	-
Barangay 56-A	127	8	-	1	114	-	1	3
Barangay 59-A	810	324	91	78	229	51	34	3
Barangay 59-B	164	38	23	39	13	43	8	-
Barangay 62-A	967	396	76	260	145	-	88	2
Barangay 62-B	743	372	43	173	93	3	59	-
Barangay 83-B	609	362	39	40	143	6	18	1
Barangay 83-C (San Jose)	821	177	15	264	342	5	14	4
Barangay 95-A (Caibaan)	840	286	15	14	504	2	18	1
Barangay 8-A	42	17	4	2	12	5	2	-
Barangay 23-A	92	50	8	4	23	-	7	-
Barangay 94-A	338	100	5	2	219	-	12	-

Source: PSA Census, 2016

II. Development Needs/ Requirements

For the next 9 years the city has a total housing needs of 26,816 and on the first year of the plan period (CY 2017) the city has to respond to the housing backlog of 14,659 (Table 3.26). Likewise in the succeeding years the city has to take action to the increasing housing needs from the year 2017-2025. The housing need for every year of the plan period is a result of the increasing number of new households per year and the housing backlog of the city. If not addressed this type of urban problem will keep on increasing especially that Tacloban is a highly urbanize city. The proliferation of informal settlers will increase, thereby creating more problems to the city and the whole population. Republic Act No. 7279 otherwise known as Urban Development and Housing Act of 1992 provides an answer or solution to this problem. It promotes socialized housing for underprivileged and homeless individuals. On the other hand the localleaders particularly at the barangay level has to be vigilant in monitoring the influx of people in their respective barangaysand should not tolerate informal settling. The proliferation of informal settlements can cause many problems such as inadequate facilities like roads, water, electricity, and no security of tenure, poor health and sanitation, limited opportunities for livelihood etc. solving these problems need link aging with other NGOs, National Agencies, other Civil Society Groups and foreign organizations who can assist homeless families to avail of housing program.

By the end of the planning period, a 100% target on the housing needs is envisioned. Thus, with a total of 28,816 housing needs, wherein 46% of these are informal settlers and 54% are due to increase in population and doubled up households it is. Assumed that a total of 26,816 housing/dwelling units will be constructed. Of these housing needs a total of 17,698 are for socialized housing whose beneficiaries are the victims of typhoon Yolanda..

Total residential land area requirement based on the projected housing needs by year 2025 is 360.2 hectares. Of this total land area requirement 178.98 has is needed for socialized housing where 100 sq.m. is allotted for each housing unit. Socialized housing caters to the needs of the underprivileged and homeless families. The city has identified socialized housing sites at the northern barangays

particularly in Barangays 108, 107,106, 101,102,105, 98, & 97. Different INGOs, INGOs, Government Agencies and the City Government of Tacloban are the proponents of these different housing projects for the city.

Table 3. 31 Current & Projected Housing Need 2017-2025, Tacloban City

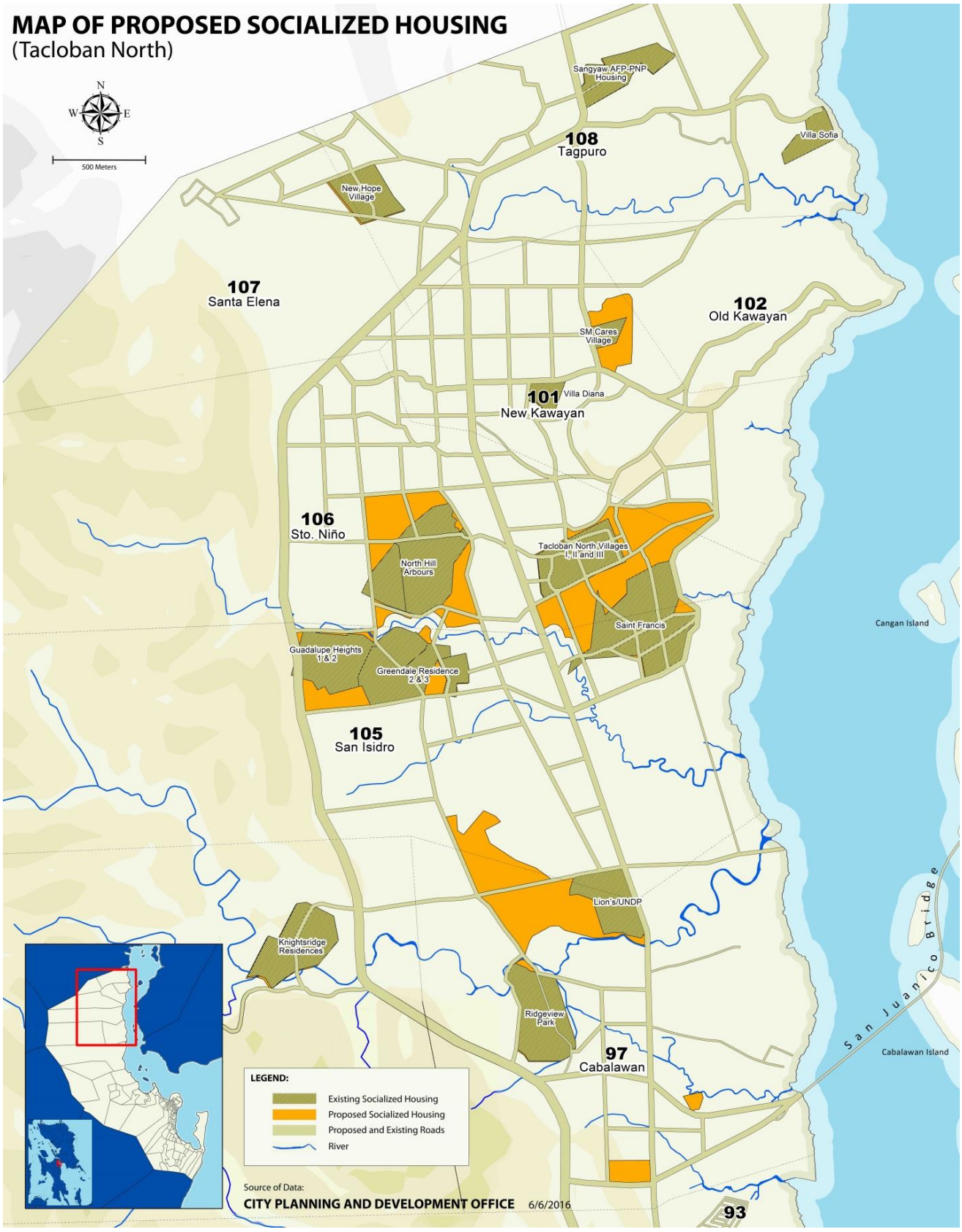
YEAR	NO. OF HOUSEHOLD	PRESENT & PROJECTED HOUSING NEEDS	TARGETED SOCIALIZED HOUSING NEEDS	AREA REQUIREMENTS/ SINGLE UNIT FOR SOCIALIZED HOUSING (.01HAS)	OTHER HOUSING UNITS	AREA REQUIREMENT FOR OTHER HOUSING UNITS(.02HAS)
Housing Backlog		14,659	14,659	147has.		
2016	58,202					
2017	59,442	1,240	310	3.1	930	18.61
2018	60,708	1,266	316	3.16	950	19
2019	62,001	1,293	323	3.23	970	19.4
2020	63,321	1,320	330	3.30	990	20
2021	64,670	1,349	337	3.37	1,012	20.2
2022	66,048	1,378	345	3.45	1,033	21
2023	67,454	1,406	352	3.52	1.054	21
2024	68,891	1,437	359	3.59	1,078	22
2025	70,359	1,468	367	3.67	1,101	22.02
Total		**26,816 Current & Projected Housing needs**	**17,698 Socialized Housing**	**176.98has. (Socialized Housing)**	**9,118**	**183.22**
Total Area Needed for housing = 360.2 has						
Source:PSA , City Housing Office,CPDO,CSWDO						

Climate Change Adaptation

The city had the onslaught of supertyphoon Yolanda. Learn from experience. Build houses at a safer areas. Relocation sites should be situated at safer areas. There has to be a climate change adaptation and mitigation plan for settlement and resettlement in consultation with affected barangays and its constituents including private sectors and civil society groups. The city has identified the Tacloban North for housing projects particularly for the typhoon Yolanda victims. Low cost housing must be constructed in accordance with climate resilient design standards.

In addition the city government must enforce and upgrade standards of building code, incorporating new climate change resilient design standards for new

buildings. Taking into consideration typhoon Yolanda related hazards like storm surge, flooding, and landslide. Site development should adopt more green spaces, rain water cistern and waste water management system to maximize water resources.



Map 57. Proposed Socialized Housing

III. Housing Analysis Matrix

TECHNICAL FINDINGS/OBSERVATION	IMPLICATIONS (EFFECT)	POLICY OPTIONS INTERVENTIONS
-Increasing Number of Housing Backlog -Proliferation of Informal Settlers,	Informal settlers will be prone to high risk of living Harmful to environment, lesser services for increasing population, poor health and sanitation,	Linkages with GOs and NGOs, and other funding agency Re: Housing Program and Financial assistance. -Construction of dwelling units that are resilient and hazard resistant --Brgy. Officials to coordinate with other agencies regarding anti squatting law -Orient Brgy. Officials on Anti-Squatting Law -LGU should strictly monitor illegal construction and strict enforcement of EO 153 (Ani Squatting Law)
Over crowded resettlement area	Poor health and sanitation, harmful to the environment	Conduct of inventory on existing families in resettlement areas -Redesign/redevelop/improve existing resettlement areas covering a total of 733.624 (Has.)In Brgys. 74, 12,37-A,12, 103, 100 and 3.
Lack of Resettlement Area/Housing Sites to address housing backlog of 14,659		-Acquisition of land for socialized housing and additional resettlement site to address housing backlog of 14,659 HU with an area of 176.98 has. -Enact SP Resolution for the purchase of lands feasible for resettlement (Socialized Housing) -Land banking of LGU for socialized housing - Formulation of Rental Housing & rent to own program plans
Lack of data on the number of informal settlers, and those living in dangerous areas (flood prone area, landslide prone area, & areas where liquefaction is imminent	Affected families are not easily identified	-City wide survey / and or completion of CBMS project -Establish M&E for housing - Require barangay to submit to the city housing office a socio economic survey of their constituency -Adopt implementation tagging system initiated by CSWDO
Lack of Basic Services in the resettlement sites	Affected families are suffering from scarcity of vital support that poses a significant threat to their well being.	- Provision of adequate potable water supply, electricity, and transport facilities - Reorientation and implementation of solid waste management - Provision of water source at the northern barangays - Identify source of funding for water supply - Coordinate with LEYECO - Improvement of road networks, existing roads & drainage system

3.4 Social Welfare

I. Existing Situation

Super Typhoon Yolanda that razed Tacloban City last November 08, 2013 caused tremendous damaged on lives and properties of Tacloban City. Records of the City Social Welfare and Development Office showed that 30,513 dwelling units were totally damaged while 23,718 were partially damaged.

With this situation, families were displaced and even lost their livelihoods leaving most of them emotionally disturbed.

City Social Welfare and Development Office being the welfare arm of the City Government of Tacloban immediately provided social protection programs through the delivery of comprehensive social services and projects that are in tuned with the present situation.

Programs Implemented by Division and Target Clientele

NAME OF PROGRAMS	TARGET CLIENTELE
1. Chief Welfare Program 0-14 years old	Disadvantaged children 0-14 years old
2.Youth Welfare Program 15-24 years old	Disadvantaged youth 15-24 years old
3.Women Welfare Program	Women in difficult circumstances and other needy women
4. Family and Community Welfare Program	Disadvantaged families and communities
5. Senior Citizens Welfare Program	Senior Citizens 60 years old and above
6. Persons with Disability Welfare Program	Disabled person or differently able persons
7. Emergency Assistance Program	Individuals in crisis situation
8. Housing and Resettlement Welfare Program	Families and Individual residing in resettlement areas
9. Sustainable Livelihood Program	Families/ individuals 18 years old and above
10. Community Based Street Children	Street and working children in the community
11. Social Development Center for Children	Street children and other needy children
12. Information and Communication Training Center	Out of school youth, differently able person and other needy adults

The City Social Welfare & Development Office covers 12 programs with different target clientele such as disadvantage children, youth, women in difficult circumstances, senior citizens, PWD among others. Table 3.32 presents the historical number of population served by clientele. It would be noticed that there is no presentation for the year 2013. The catastrophe brought about by Yolanda destroyed all documents of the office. For the year 2012 the population served reached 61,610. However for the year 2014 after Super Typhoon Yolanda only 24,436 were served but for the year 2015 clientele served increased to 71,299.

Table 3. 32 Historical Number of Population Served By Type of Clientele (2012, 2014 & 2015), Tacloban City

TYPE OF CLIENTELE	YEAR		
	2012	2014	2015
Day Care Children	3,989	2,165	3,016
Abused Children and Youth			
Sexually	12	13	20
Physically	40	9	25
Emotional/ Psychologically	5	2	3
Abandoned/ Foundling	12	3	3
Orphaned	7		
Neglected	20	4	35
Pre- Delinquent Children and Youth	121		179
Children in Conflict with Law	8	15	28
Street Children(Center Based)	26	16	22
Children at Risk (Community Based)	162	175	684
Trafficked Victims			
Vagrant			
Strandee			
Women			
VAWC Cases	193	130	195
Exploited Women			10
Other Needy Women	25		11
Parents/ Family Heads	31,147	8,845	3,966
Solo Parents	211	40	208
Needy Youths	5,226	2,172	1,536
Pag- asa Youth Association of the Phil.	946	253	653
Would be Couples	312	630	175
Disabled Persons	180		370
Mentally Ill			67
Other Needy Adults	4,209		1,660
Senior Citizen	4,093		3,392
Victims of Disaster			
Typhoon	10,326	14,964	54,531
Landslide			85
Fire	340		425
TOTAL	**61,610**	**29,436**	**71,299**

Source: CSWDO, 2016

Table 3.33 presents the different social welfare facilities in the city both government & private. The clientele served are the disadvantage persons/families, and the vulnerable sector which needs protection. (PWD,Senior Citizen, children & women. These facilities provide different services from financial assistance, referrals, shelter assistance, counseling, trainings, and livelihood opportunities among others.

The Women Center and Day Center for Street Children provides temporary residential care and protection to the abandoned, orphaned, abused, exploited and neglected children, youth and women.

II. Development Needs, Issues/Requirements:

With the present social welfare facilities the city still lacks other facilities such as the following:

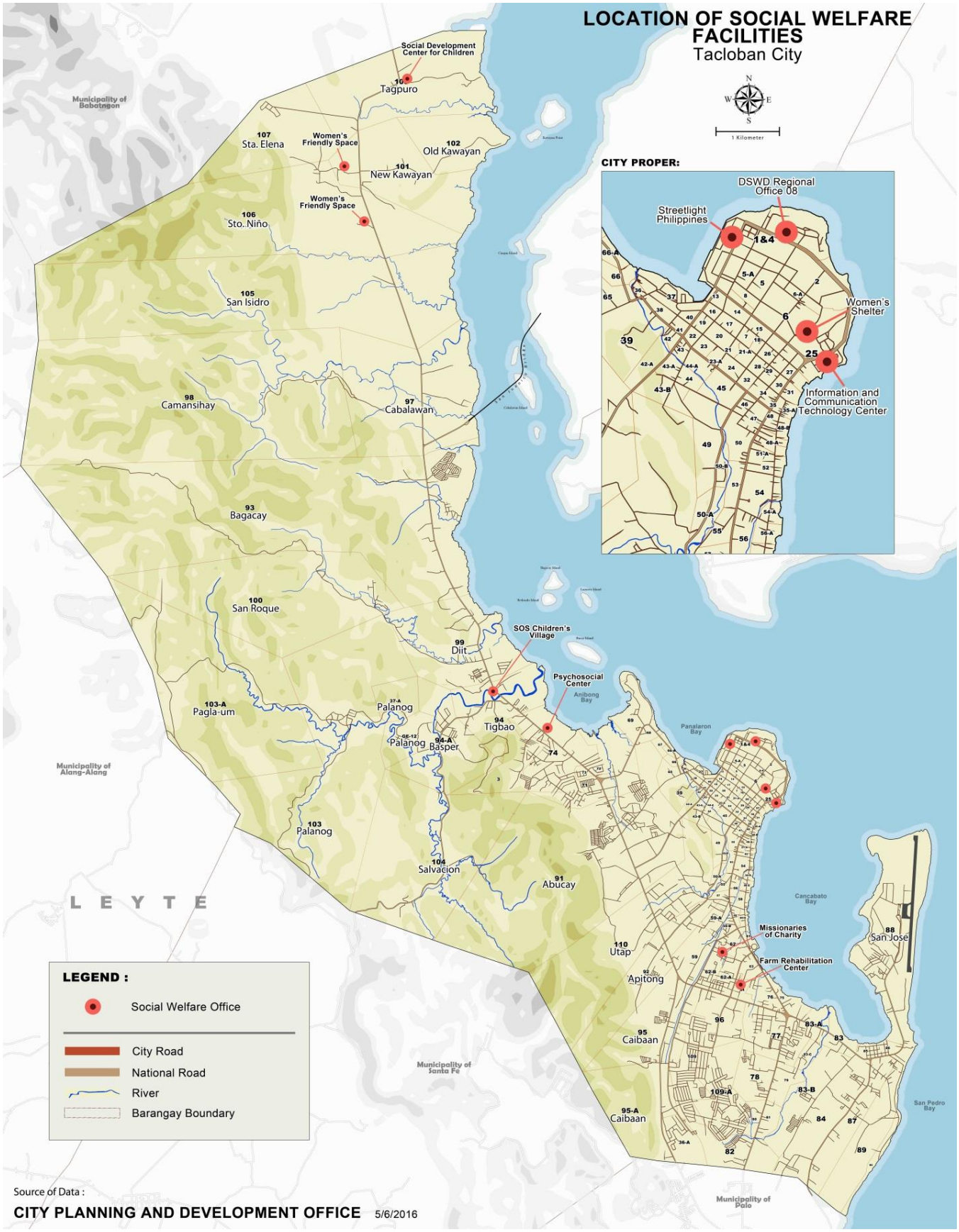
- Holding Center for CICL (.05has) – this center is for the pre delinquent children and youths and children in conflict with Law. The children in conflict with law are those children whose cases filed in court or adjudged, and delinquent youths/ children are those that have committed crimes, but are not filed in court but rather they are given diversion programs in the community by a social worker, barangay council, and parents/ guardians. In most cases they are repeaters of crimes, meaning that diversion program is not so effective in the community but is appropriate on a center based setting.

- Senior Citizens Center (.05has.) During Typhoon Yolanda the Senior Citizens Center in Brgy. 99 Diit, Tacloban City was severely damaged and has not been reconstructed.

- A hospital or center for mentally challenged persons but this is a Regional concern. The City Government of Tacloban thru the City Social Welfare and Development Office has a budget for the medical needs of the mentally challenged persons to residents in Tacloban City. But those proliferating

around the city about 90% come from other municipalities and they are left roaming around the city due to absence of mental care hospital for their confinement.

- Two Information and Communication Training Centers were totally damaged during Typhoon Yolanda in Brgy. 88 San Jose and Brgy. 64 Sagkahan and only one center is operational, at present there are applicants for the program who are waiting for the next batch of computer literacy session since they cannot be accommodated because the capacity of the ICT Center is only good for 25 enrollees (.02has).



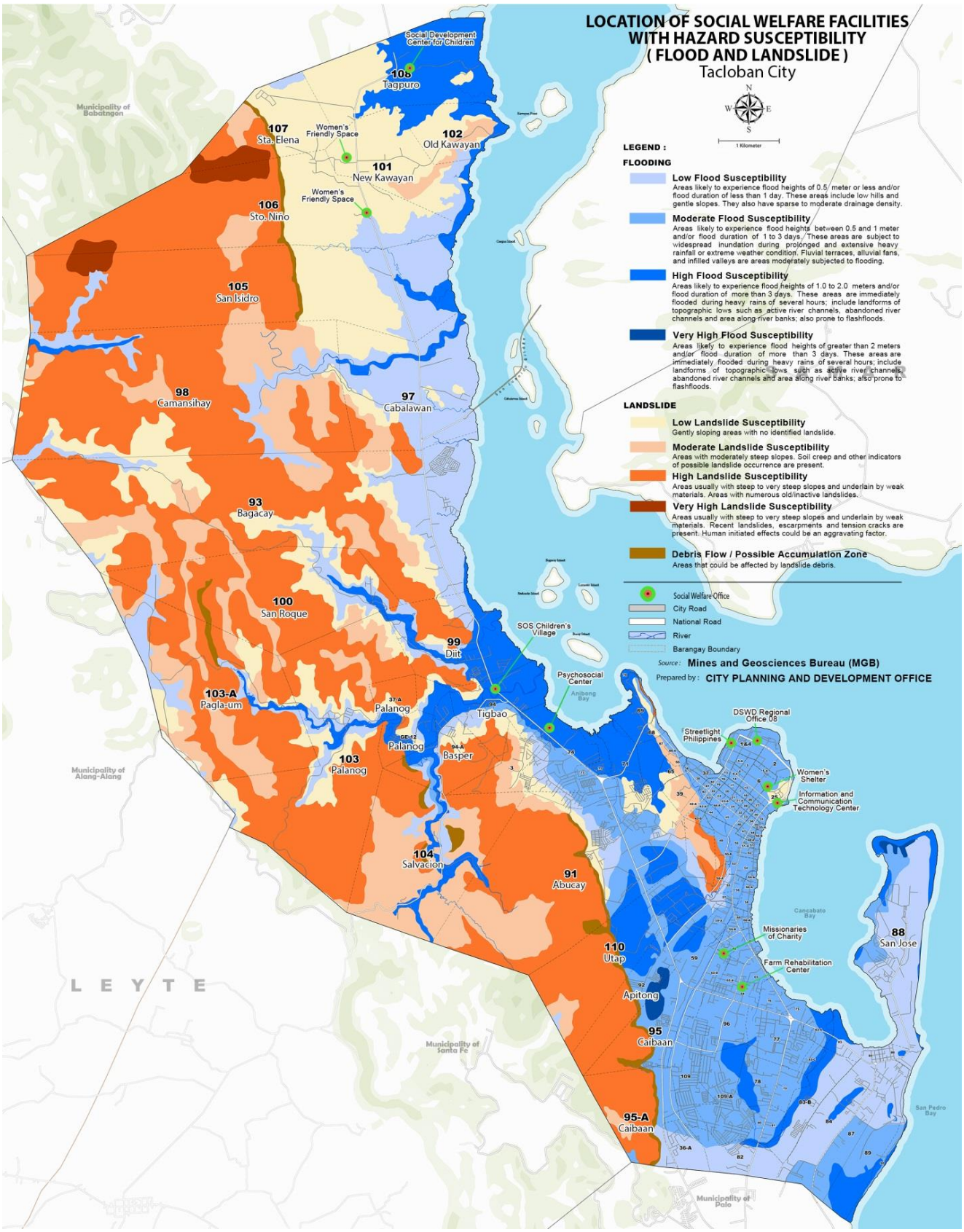
Map 58. Location of Social Welfare Facilities

Table 3. 33 Presence of Social Welfare Facilities, Services and Clientele Year 2015 Tacloban City

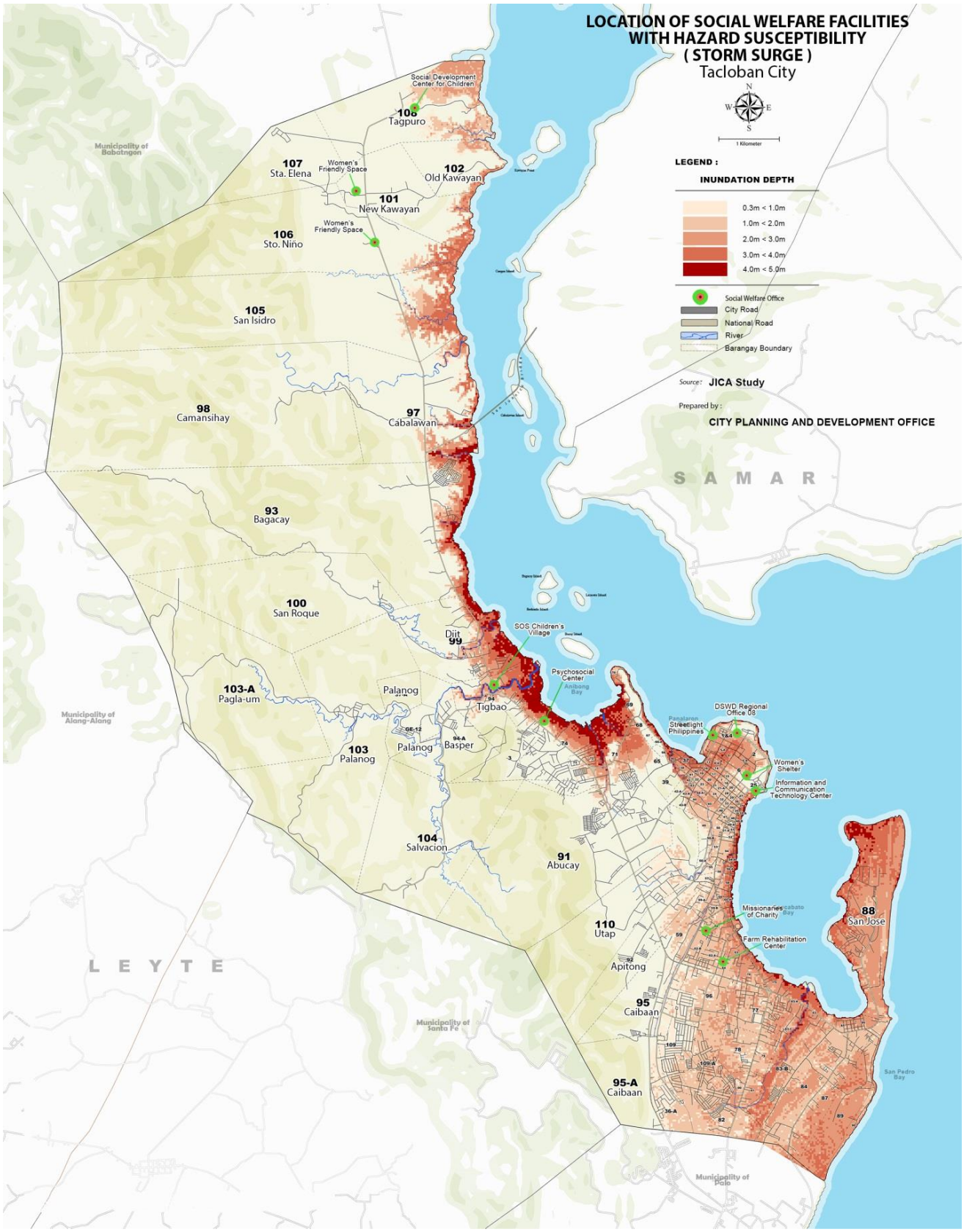
TYPE OF FACILITY	BARANGAY	SERVICES OFFERED	TYPE OF CLIENTELE	NO. OF PERSONNEL	OWNER SHIP	PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (HML)						
							FL	TY	EQ	LN	TS	SU	OTHERS
1.58 Day Care Centers (See Table 3.4.3)	Brgys. of Tacloban City (See Table 3.4.3)	Early Childhood Care and Development	Children 3-4 years old	56 Day Care workers	Public	Good		H					
2.CSWDO	Brgy. 25 Magsaysay Blvd.	Referrals to charitable institutions by providing social case study report, brief case finding, family assessment, pre marriage counselling services. Financial, food and non-food assistance for victims of calamities, resume operation.	Disadvantaged families, individuals, communities, PWDs, Senior Citizens & children	103	Public	Good (Temporary)		H				H	
3.DSWD Regional Office 08	Brgy. 1& 4 Magsaysay Blvd.	Educational, Medical, Burial, Transpo., Livelihood, Food and Financial Assistance for victims of calamities.	Disadvantaged Families & individuals	55	Public	Good		H				H	
4.Women's Shelter	Brgy. 25 Paterno Ext.	Homelife services, rescue operation, facilitates issuance of BPO, TPO, PPO, attendance to court hearings on VAWC, trafficked victims & abused children & youth.	Women's in difficult circumstances and their children, children & youth victims of abuse and trafficked person.	13	Public	Good		M				M	
5.Social Dev't. Center for Children	5. Brgy. 108 Tagpuro	Homelife services, educational assistance, saturation drive, rescue operation, psychosocial support services.	St. Children	9	Public	Good		H				M	
6.SOS Children's Village	6.Brgy. 99 Diit	Residential care/ homelife	Abandoned, orphaned, neglected	25	Private	Good		M				M	

		services, educational assistance	children and youth										
7.Missionaries of Charity	7. Brgy. 62-B	Residential care/ homelife services	Mendicants, neglected, sickly older persons & children	10	Private	Good		H					
8.Streetlight Philippines	8. Brgy. 1&4	Psychosocial support services, mental health care services	Drug & alcohol dependents	20	Private	Good						H	
9.Psychosocial Center	9. Brgy. 74	Psychosocial support services, mental health care services.	Drug and alcohol dependents	15	Private	Good	M	H				H	
10.Farm Rehabilitation Center	10. Brgy. 64 Bliss	Psychosocial support services/ mental health care	Drug and alcohol dependents		Private	Good	M					M	
11.Women's Friendly Space	11. Brgy. 106 Sto. Niño	Advocacy on social protection issues for women	Women in difficult circumstances & other needy women.	5	Public	Good		H					
12.Women Friendly Space	12. Brgy. 101	Advocacy on social protection issues for women	Women in difficult circumstances & other needy women	10	Public	Good (temporary)		H					
13.Information and Communication Technology Center	13. Brgy. 25 CSWDO Balyuan Park	Computer literacy/ values formation	Out of school youths, PWDs and other needy adults.	3	Public	Good						H	

Source: CSWDO



Map 59. Location of Social Welfare Facilities with Hazard Flood and Landslide



Map 60. Location of Social Welfare Facilities with Hazard Storm surge

For the 3-4 years old children the early childhood care and development is provided through the daycare service program. Tacloban City has 58 Day Care Centers located at the different barangays with an average area of 48-50 sq.meter. (See Table 3.34 for the Location of Daycare Centers). Subsequently Typhoon Yolanda damaged these Day Care Centers . Presently these day care centers were reconstructed, retrofitted making it more resilient. Day Care Centers were built on safer areas. For the new Tacloban North 31. Day Care Centers will be needed within three years where in more families will be relocated.

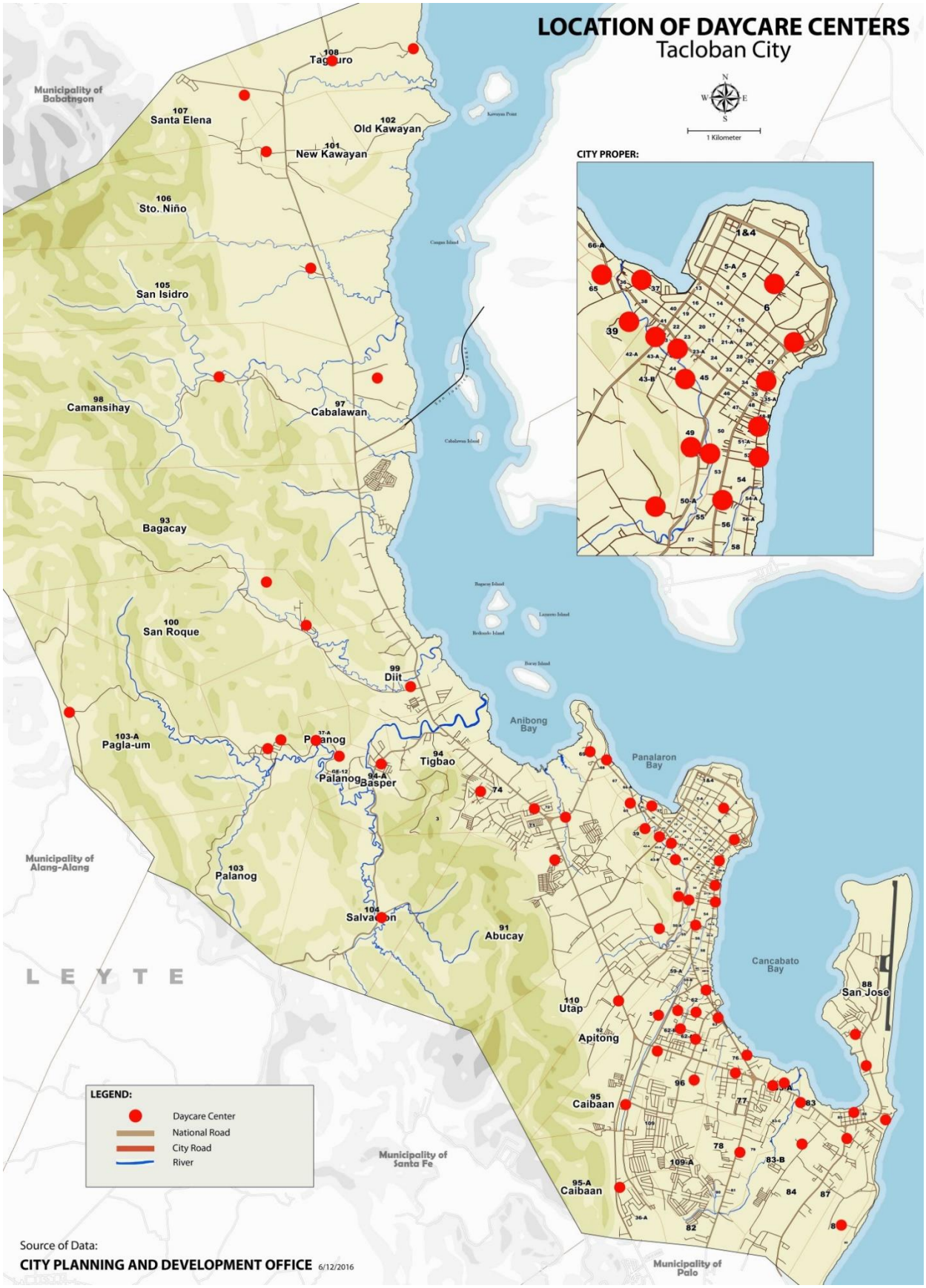
Table 3. 34 Location of Day Care Centers 2015, Tacloban City

NO.	NAME OF DAY CARE CENTER (DCC)	ADDRESS/LOCATION	AREA OCCUPIED (HAS.)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TY	EQ	LN	TS	SU	OTHERS
1.	Barangay 66-A DCC	Barangay 66-A Paseo de Lagazpi	.005						H	
2.	Barangay 68 DCC	Barangay 68 Anibong Central School	.005						H	
3.	Barangay 69 DCC	Barangay 69 Anibong DCC	.005						H	
4.	Barangay 71 DCC	Barangay 71 Naga-Naga	.005						M	
5.	Barangay 73 DCC	Barangay 73 PHHC DCC/Brgy. Hall	.0049							
6.	Barangay 74 DCC	Barangay 74 Lower Nula-Tula	.0052							
7.	Barangay 3 DCC	Barangay 3 Upper Nula-Tula	.0049							
8.	Barangay 2 DCC	Barangay 2 Jones DCC	.005						H	
9.	Barangay 25 DCC	Barangay 25 Paterno/SP Compound	.0045						M	
10.	Barangay 83 DCC	Barangay 83 Paraiso	.005						H	
11.	Barangay 83-A DCC	Barangay 83-A Burayan DCC	.005						H	
12.	Barangay 83-B DCC	Barangay 83-B Cogon/Lolita	.0038						H	
13.	Barangay 83-C DCC	Barangay 83-C Taguictik	.0049						H	
14.	Barangay 84 DCC	Barangay 84 San Jose/RJD Subd.	.0048						H	
15.	Barangay 85 DCC	Barangay 85 San Jose Proper	.0051						H	
16.	Barangay 87 DCC	Barangay 87 San Jose back of Brgy. Hall	.005						H	
17.	Barangay 88 DCC	Barangay 88 Fisherman's Village	.005						H	
18.	Barangay 89 DCC	Barangay 89 San Jose Brgy. Hall	.0048						H	
19.	Barangay 79 DCC	Barangay 79 Marasbaras Elem. School	.0048	M	H					

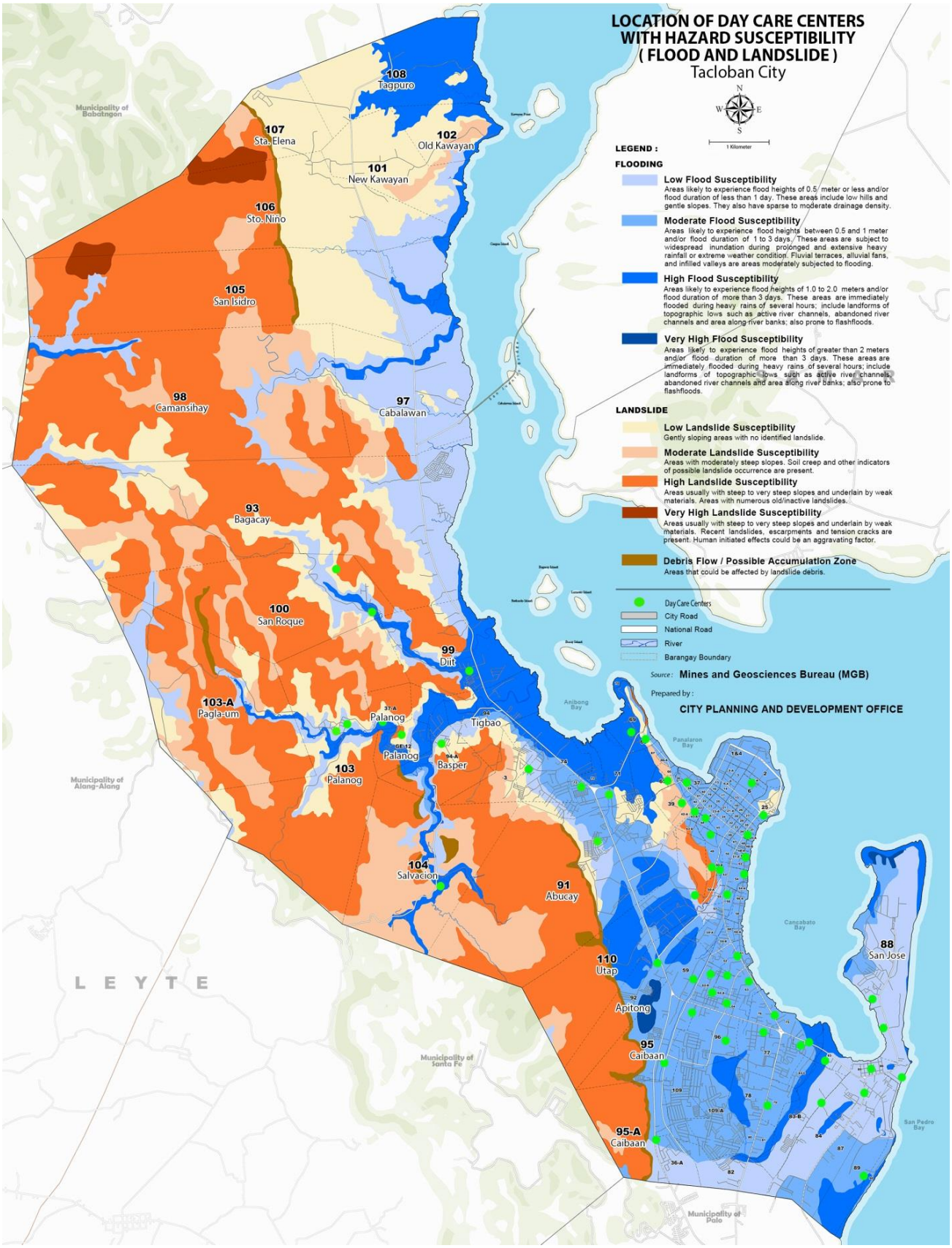
NO.	NAME OF DAY CARE CENTER (DCC)	ADDRESS/LOCATION	AREA OCCUPIED (HAS.)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TY	EQ	LN	TS	SU	OTHERS
20.	Barangay 59 DCC	Barangay 59 Picas	.005	M	H					
21.	Barangay 60-A DCC	Barangay 60-A Old Road	.004		H				H	
22.	Barangay 62-A DCC	Barangay 62-A Sagkahan	.0048		H				H	
23.	Barangay 62-B DCC	Barangay 62-B Molave	.0049		H				H	
24.	Barangay 63 DCC	Barangay 63 Mangga Sagkahan	.0038		H				H	
25.	Barangay 64 DCC	Barangay 64 Bliss Sagkahan	.005		H				H	
26.	Barangay 75 DCC	Barangay 75 Fatima	.0048		H				H	
27.	Barangay 43-A DCC	Barangay 43-A Quarry District	.0036		H		M			
28.	Barangay 44 DCC	Barangay 44 Quarry	.005		H		M			
29.	Barangay 50-A DCC	Barangay 50-A Youngfield	.0048		H					
30.	Barangay 56 DCC	Barangay 56 Pericohon	.005		H					
31.	Barangay 48-B DCC	Barangay 48-B Magallanes	.005		H					
32.	Barangay 77 DCC	Barangay 77 Fatima	.0048		H				H	
33.	Barangay 91 DCC	Barangay 91 Abucay Elem. School	.0049							
34.	Barangay 92 DCC	Barangay 92 Apitong Elem. School	.0055	H						
35.	Barangay 95 DCC	Barangay 95 Caibaan Elem. School	.0052	M						
36.	Barangay 95-A DCC	Barangay 95-A Caibaan	.005	M						
37.	Barangay 96 DCC	Barangay 96 Calanipawan Lolita Village	.005							
38.	Barangay 110 DCC	Barangay 110 Utap	.0048	M						
39.	Barangay 42-A DCC	Barangay 42-A Cong. Mate Avenue	.0045		H					
40.	Barangay 39 DCC	Barangay 39 Calvary Hill (Siren)	.005		H					
41.	Barangay 36 DCC	Barangay 36 Sabang	.005						H	
42.	Barangay 37 DCC	Barangay 37 Reclamation Area (Seawall)	.0048						H	
43.	Barangay 94 DCC	Barangay 94 Tigbao	.005						H	
44.	Barangay 94-A DCC	Barangay 94-A Basper	.005							
45.	Barangay 12 DCC	Barangay 12 Palanog Resettlement	.005							
46.	Barangay 93 DCC	Barangay 93 Bagacay	.005							

NO.	NAME OF DAY CARE CENTER (DCC)	ADDRESS/LOCATION	AREA OCCUPIED (HAS.)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TY	EQ	LN	TS	SU	OTHERS
47.	Barangay 99 DCC	Barangay 99 Diit	.005							
48.	Barangay 97 DCC	Barangay 97 Cabalawan	.005							
49.	Barangay 100 DCC	Barangay 100 San Roque	.005				M			
50.	Barangay 100 DCC	Barangay 100 Scandinavian Village	.005				M			
51.	Barangay 103 DCC	Barangay 103 Core Shelter	.005	M			M			
52.	Barangay 103 DCC	Barangay 103 Palanog Proper	.005				M			
53.	Barangay 104 DCC	Barangay 104 Salvacion	.005				M			
54.	Barangay 105 DCC	Barangay 105 San Isidro	.005				M			
55.	Barangay 106 DCC	Barangay 106 Sto. Nino	.0049				M			
56.	Barangay 107 DCC	Barangay 107 Sta. Elena	.0049				M			
57.	Barangay 108 DCC	Barangay 108 Tagpuro	.005							
58.	Barangay 108 DCC	Barangay 108 Tagpuro Transitional Shelter	.005	M						
	58 Day Care Centers	TOTAL	.2827							

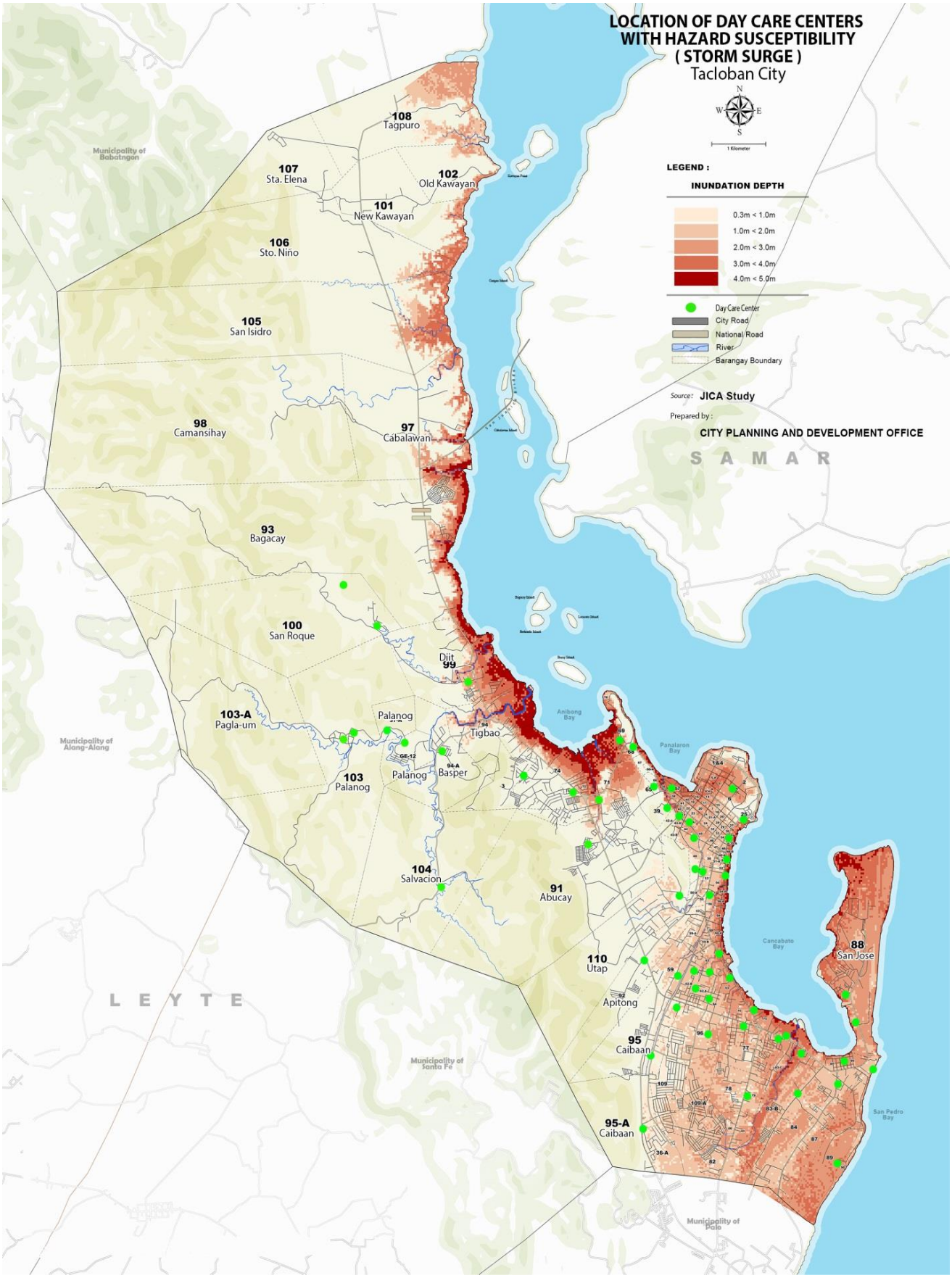
Source:CSWDO,2016



Map 61. Location of Day Care Center



Map 62. Location of Day Care Centers with Hazard Flood and Landslide



Map 63. Location of Day Care Centers with Hazard Storm Surge

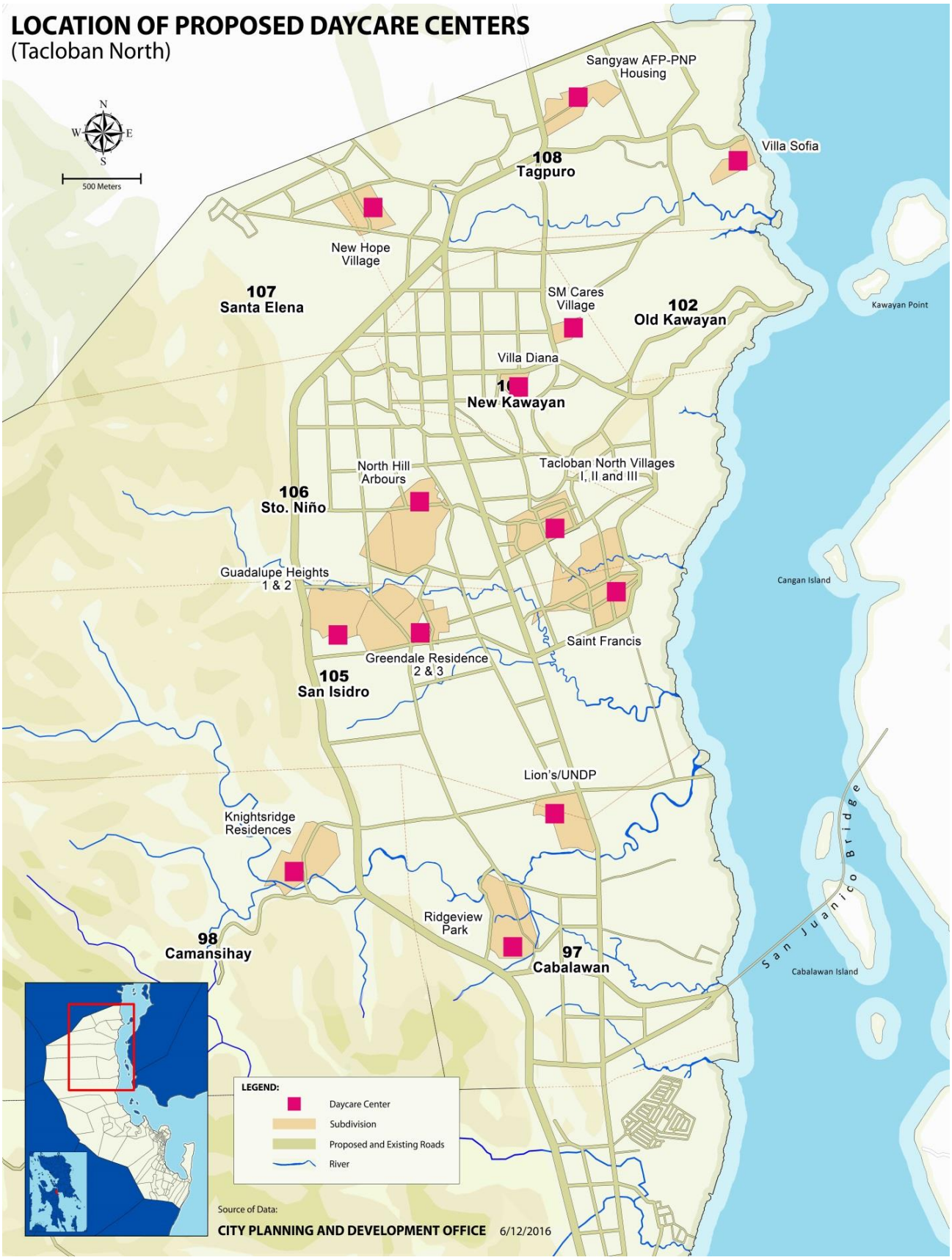
II. Projected Needs/ Requirements

For the projected number of day care centers, the city will need 22 daycare centers for the plan period on the assumption that the variance of 55 day care centers at present will be constructed. The projection for the number of day care centers was on the standard of 1 day care center for every 500 families. For the Tacloban North it will need 31 additional day care centers.(Table 3.35)

Table 3. 35 Projected No. of Day Care Centers (2017-2025), Tacloban City

YEAR	TOTAL NO. OF HOUSEHOLDS	PROJECTED NO. OF DAY CARE CENTERS
2014	50,890	58 (existing DCC)
2015	56,988	55
2016	58,202	2
2017	59,442	2
2018	60,708	2
2019	62,001	2
2020	63,321	2
2021	64,670	2
2022	66,048	2
2023	67,454	2
2024	68,891	3
2025	70,359	3
	TOTAL 77 DCC	

Computation was based on the standard of 1 Day Care Center for every 500 families
Note: Area Needed / DCC=90sqm.
Total Area Needed 1.039 has.



Map 64. Location of Proposed Day Care Centers

For the projected number of social welfare clientele Table 3.36 shows that for the year 2017 the social welfare clientele is 51,120 and for 2025 it increased to 60,508 or by 18.4%. This increase is minimal on the assumption that the social welfare clientele decreased because the individual clientele provided by the social services had improved his way of living and is now self reliant. It is also assumed that the social welfare facilities had been improved and are more resilient where the needed services were provided.

Table 3. 36 Projected No. of Social Welfare Clientele (2017-2025), Tacloban City

YEAR	TOTAL NO. OF POPULATION	PROJECTED NO. OF SOCIAL WELFARE CLIENTELE
2014	239,938	
2015	245,049	49,010
2016	250,268	50,054
2017	255,599	51,120
2018	261,043	52,209
2019	266,603	53,321
2020	272,282	54,456
2021	278,082	55,616
2022	284,005	56,801
2023	290,054	58,011
2024	296,232	59,246
2025	302,542	60,508

Computation was based on the assumption that 20% of the population belong to the bottom poor.
Poverty incidence for Tacloban City is 20%

III. Social Welfare Analysis Matrix

TECHNICAL FINDINGS/ OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS/ INTERVENTIONS
Proliferation of street children, mendicants, vigrants, delinquent youths and CICL	Potential Increase in crimes Children are exposed to hazards	Establish a holding center for CICL and Delinquent Youths Amendment and Enforcement of the Mendicancy Law Enforcement of the Minors Curfew Ordinance Provision of social protective services through networking and linkages with NGO's NGAs for appropriate interventions.

TECHNICAL FINDINGS/ OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS/ INTERVENTIONS
Senior Citizens who falls on the poverty threshold are not covered by social pension, only 1,834 Senior Citizens none availed by the social pension in year 2015 and this is funded by DSWD.	The need for medicines and food are not addressed especially those not covered by the social pension.	The City Government of Tacloban shall appropriate a budget on social pension to indigent senior citizen not covered by the program of DSWD. Availment of social pension should start at age 60.
No permanent Women Friendly Space for the whole city	No common area for women and children to specifically address gender issues.	Institutionalize women friendly space on strategic areas.
Lacking Day Care Centers in the north.	Displaced and neglected 3-4 years old may not be served/provided with appropriate welfare services	Establishment of 31 DCC's in the north.
Increasing cases on VAWC rape, court and other child protection issues.	Women and children vulnerable to exploitation and at risk.	Strengthen BCPC at the barangay level Strengthen inter- agency committee on CIACAT, VAWC, and LCPC Strengthening referral system and help desk at the barangay level. Advocacy on women and children's laws.
Lacking Capacity enhancement in the management of the dead and missing.	Psychological effect, misinformation	Networking and linkages with other agencies (DILG, Health, NBI etc. Crafting of a manual of operations in the management of the dead and missing.
Lack of manpower to implement the programs and services.	Hampered the smooth delivery of social services.	Filling-up of vacant positions . Creation of additional plantilla positions.
Increasing number of informal settlers Over crowded resettlement sites Lack inter-agency coordination	Health hazard Increase criminality	Strict prohibition of squatting/informal settlers Provision of low cost free housing to low and middle income groups.

TECHNICAL FINDINGS/ OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS/ INTERVENTIONS
- Lack interagency coordination Entry of families in resettlement areas is done at the barangay level without the knowledge of the concerned offices.	Inefficient Delivery of Services	Link/ network with NGAs, NGOs for housing program. Organization of house owners on resettlement sites. Identify, develop resettlement sites in the north.
Absence of a permanent CSWDO Office Absence of a facility for persons with disability like ramps. Absence of a counselling room. Limited space of stock room for stock pile of food commodities.	Needs of clients are not fully meet. Affects the effective implementation of the programs and services.	Construct a permanent CSWDO in a 500 sq. meter lot to be situated at a safe area in Brgy. 25
Minimal budget allocation for program implementation	Hinders the speedy delivery services. Not all disadvantaged families/ individuals are served and provided social welfare services due to limited budget.	Increase in budget for social welfare programs and services Resource mobilization with NGOs, NGAs and other funding agencies.
Deteriorating moral values and increasing number of broken families	Teenage pregnancy, young prostitution	Strengthen the conduct of parent effectiveness service and family planning and values formation for children and youth.
Absence of a Senior Citizen Center. The center was severely damaged by typhoon Yolanda.	Social enhancement activities of older persons are not meet or implemented.	Renovation/ construction of Senior Citizen Center at Brgy. 99 Diit, Tacloban City and other facilities/ equipment's.(.05has.)
Absence of an Information and Communication Center in the North for out of school youths, persons with disability and other needy adults.	Out of school youths, PWDs are deprived to computer literacy. Unemployment	Construction of one Information and Communication Center in the north with a capacity of 25 units of computers. (.02has)

TECHNICAL FINDINGS/ OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS/ INTERVENTIONS
There is a need to establish a satellite Office in the north.	Slow delivery of basic programs and services. Needs of clients are not easily meet due to distance.	Construction of one CSWDO Satellite Office preferably in Brgy. New Kawayan or Brgy. Sto. Niño.(.02has)

3.5 Protective Services

A. Tacloban City Police

The major concern of the Tacloban Police is to provide general safety and security to the constituents of Tacloban City. Their main focus is a widespread campaign on crime prevention and control. They also introduced new strategies and devices to combat criminality which brought about reduction in crime incidents.

For the year 2015 the Total Crime Volume (TCV) was placed at 3,408, where in a increase of .24% was recorded as compared to the year 2014 (3,400 TCV). Remarkably, Index Crimes decreased from 1688 in 2014 to 1,124 in 2015. However the Non- Index Crimes increased from 1,712 in 2014 to 2,284 in 2015. The Crime Solution Efficiency for 2014 was 33.38%. For 2015 the Crime Solution Efficiency was recorded at 75.77%. An increase of 42.5% Crime Solution Efficiency was recorded for 2015. The increase of Crime Solution Efficiency can be attributed to the widespread campaign of the police against all forms of criminal acts. The involvement of Barangay Officials and the people can also be contributory to minimize crimes in the city. Police visibility is also effective in crime control and prevention. The current establishment of more Police Sub Stations in strategic areas is also a way of preventing crime and illegal activities.

However with the rapid increase in population where in the city being highly urbanized is not only populated by its residents. The influx of people coming from other municipalities and cities, for various purposes is inevitable. The recent augmentation of police personnel and police volunteers is still not enough to provide for the general safety and security not only of the Taclobanons but also the other people that comes to the city. There is also a need to provide modern equipment and weapons in the different substations. There is also a need to

strengthen and expand the campaign of all forms of crime and illegal activities. The full participation and cooperation of the people in the barangay has to be maximized because it is very crucial and relevant in preventing, controlling and solving crimes. (Table 3.41)

Table 3. 37 Comparative Crime Statistics 2014 & 2015, Tacloban City

	CY 2014	CY 2015	%
Total Crime Volume	3,400	3,408	.24%↑
Index Crime	1,688	1,124	32%↓
Crime Against Persons	591	166	72%↓
Non Index Crime	1,712	2,284	33%↑
Crime Solution Efficiency	33.38%	75.88%	42.5↑

Source: TCPO

B. Tacloban City Fire Protection

The Tacloban City Central Fire Station is located along corner Justice Romualdez and P. Paterno Sts. It is primarily concerned in protecting the people in the city against the occurrence of fire. For the year 2014 there was an increase of fire incidents from 51 in 2014 to 57 in 2015. In order to minimize fire incidents in the city, the Bureau of Fire Protection conducted the following activities:

1. Conducted Pre Fire Planning activities at different fire prone areas
2. Participated in the Business One Stop Shop for the renewal of permits
3. Conduct regular fire prevention activities through fire safety inspections, fire safety information lectures and drills to different establishments and agencies.
4. Career and development trainings for fire personnel
5. Conduct troop information and education program to update BFP personnel with the present policies and guidelines
6. Physical fitness activities for the personnel to obtain physically fit and mentally alert during emergency calls
7. Uncompromised conduct of Fire Safety Inspection of all buildings and establishment in accordance with the Fire Code and other fire related laws
8. Conduct Quad media fire safety education campaign and information drive on the comprehensive Fire Code of the Philippines of 2008.

9. Activation of Fire Sub-Stations in Brgy. Bagacay

For the year 2013 there were 17 fire incidents that occurred. Comparatively the fire incident that happened in 2014 decreased by 47%. This decrease of fire occurrence is a result of the city wide campaign of Tacloban Central Fire station on fire prevention and safety.

Table 3. 38 Table Fire Incidence 2014-2015, Tacloban City

BRGY	ORIGIN/CAUSE	FREQUENCY OF OCCURRENCE		
		2013	2014	2015
Brgy. 80, Marasbaras	Electrical	January 17		
Brgy. 62, Sagkahan	Good Fire	January 30		
Brgy. 83-B, Cogon San Jose	Electrical	February 04		
Brgy. 75, Fatima Sagkahan	Electrical	February 28		
Brgy. 24, Sto. Nino/Burgos		March 07		
Brgy.15, Del Pilar	LPG	March 08		
Brgy. 69, Rawis Anibong	Electrical	March 12		
Brgy. 78, Marasbaras		April 13		
Brgy. 53, Real St. Tacloaban City	Electrical	April 23		
Brgy. 110, Utap	Electrical	May 01		
Brgy. 86, San Jose		May 21		
Brgy. 74, Nula- Tula	LPG	June 21		
Brgy. 32, P. Burgos St.	Candle	November 08		
Brgy. 38, P. Burgos & Torres St.	Candle	November 08		
Brgy. 91, Abucay	Electrical	November 09		
Brgy. 48, Real St.	Electrical	November 25		
Brgy. 25, Paterno St.		December 14		
Brgy. 92, Apitong	Electrical		January 29	
Brgy. 55, El Reposo	Electrical		February 04	
Brgy. 20, Burgos St.			February 15	
Brgy. 69, Anibong	Electrical		March 18	
Brgy. 95, Caibaan	LPG		April 17	
Brgy. 88, Costa Brava San Jose			May 28	
Brgy. 28, Paterno St.	Electrical		May 28	
Brgy. 95, Caibaan	Electrical		August 19	
Brgy. 43-A	Electrical		October 15	

Source: BFP Tacloban,2016

C. Tacloban City Jail

As one of the five pillars of the Criminal Justice System, the BJMP was created to address the growing concern of jail management and penology problem. Primarily, its clients are detainees accused before a court who are temporarily confined in such jails undergoing investigation, waiting final judgement and those who are serving sentence promulgated by the court 3 years and below.

The Tacloban City Jail houses inmates that are awaiting or undergoing investigation or trial, and or transfer to national penitentiary. As such it shall ensure the security, cleanliness, adequately equipped sanitary facilities and ensure the provision of quality services for the custody, safekeeping, rehabilitation and development of inmates.

The Bureau of Jail Management and Penology, Tacloban City is located at Paterno Extension near the police headquarter. It has a total number of 64 personnel with an inmate population of 643 with a ratio of 1:10 or 1 personnel per 10 inmates. The total area of cells is 489sq.meter. Based on the UN Standard of 3sqm per inmate the Tacloban City jail needs an area of 1,440 sq.meter more for all its existing inmates.

The BJMP of Tacloban City has the following activities for their inmates.

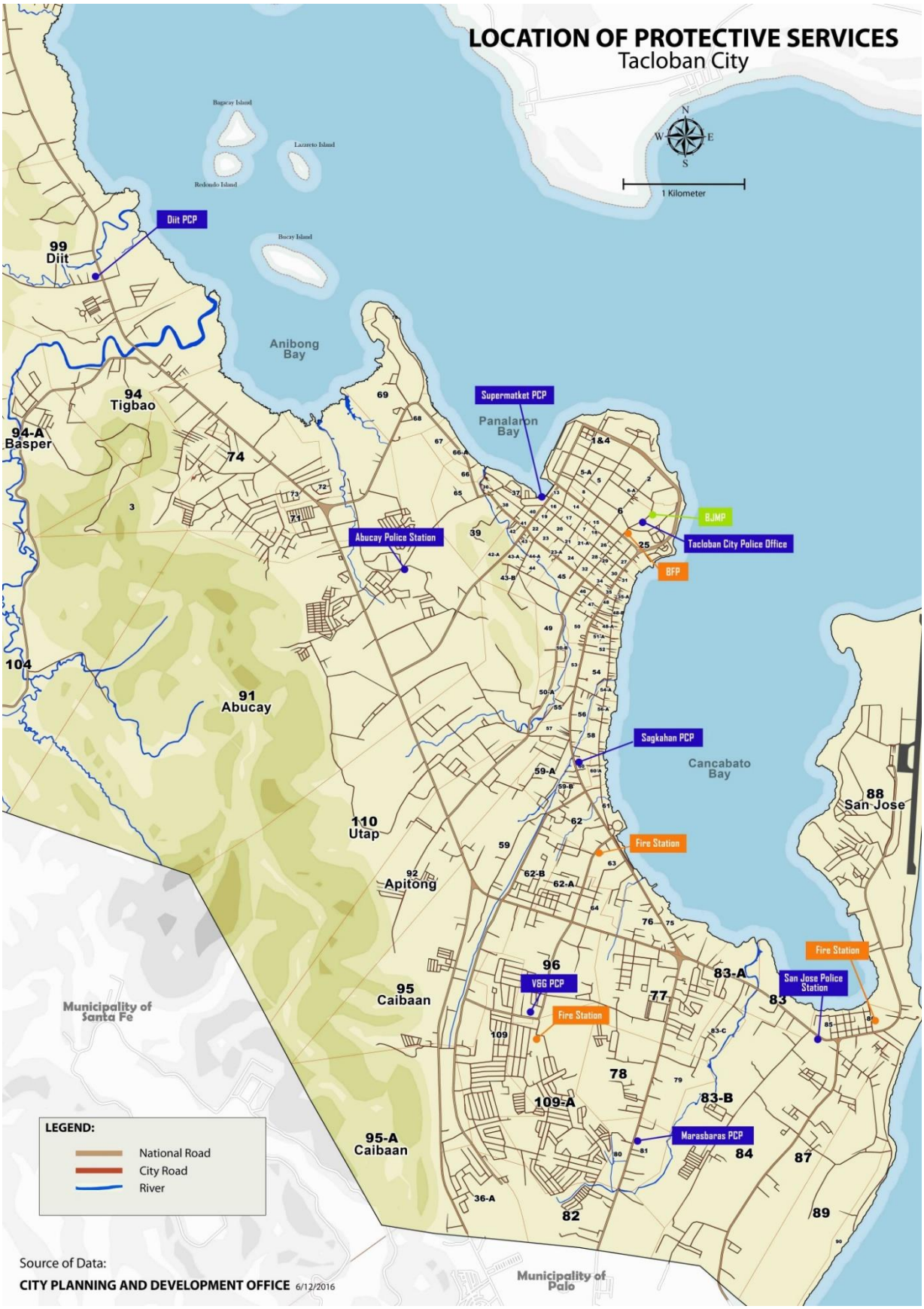
1. Health Services
2. Para-Legal Services
3. Escort Services (to courts, hospitals,
4. Rehabilitation Services
5. Religious Activities
6. Sports Activities
7. Livelihood Program
8. Guidance Counselling

Table 3. 39 Protective Services by Facilities and Equipments, Year 2015, Tacloban City

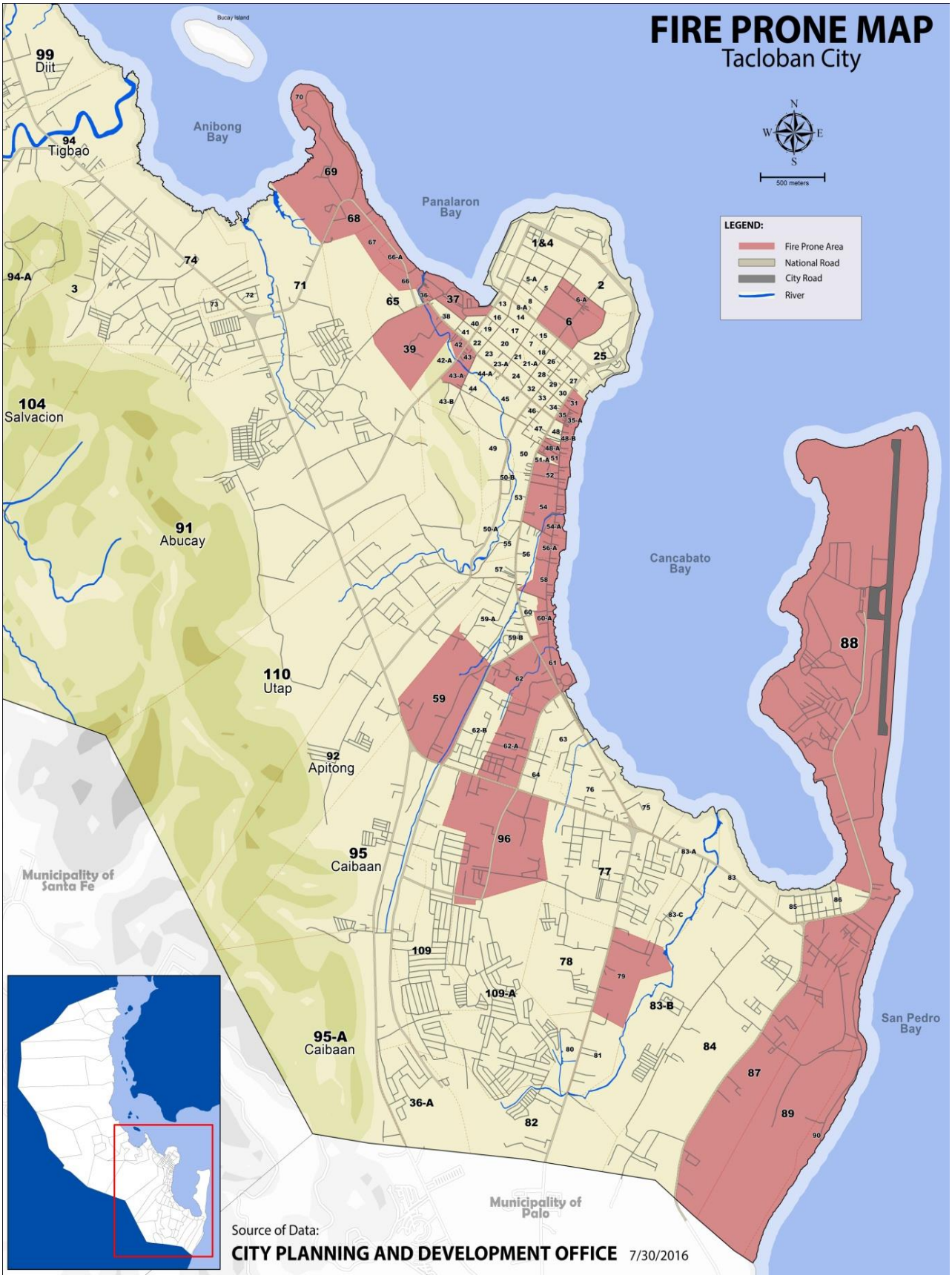
TYPE OF SERVICES	BRGY.	AREA (SQ. M.)	PHYSICAL CONDITION OF FACILITY	NO. OF PERSONNEL			HAZARD SUSCEPTIBILITY (H/M/L)						
					NO.	TYPES	FL	TY	EQ	LN	TS	SU	OTHERS
Police													
Headquarters	Brgy. 25	.5	Fair	63	3	1 Patrol Car, 2 Motorcycle	L	H				M	
Police Station. 1	Brgy. 84	.01	Fair	59	6	1 Car, 5 Motorcycle	L	H				M	
Police Station. 2	Brgy. 91	.01	Fair	53	6	1 Car, 5 Motorcycle	L	H				M	
Police Community Precinct (PCP)	Brgy. 58	.005	Fair	10			L	M				M	
PCP Marasbaras	Brgy. 80	.0025	Fair	8				M					
PCP V& G	Brgy. 96	.005	Fair	9			M						
PCP Diit	Brgy. 99	.005	Fair	8				M					
PCP Market	Brgy. 37	.0075	Fair	8				H				H	
Mobile Patrol Unit				43	8	2 Patrol Car, 6 Motorcycle	L	H				M	
City Public Safety Company				54	10	1 Patrol Car, 9 Bicycles							
Outpost	All Brgys.	.003	Fair l	All Tanods (rotation)			M	H				M	
Fire Protection													
Headquarters	Brgy. 25	.5	Fair	65		5 firetrucks	L					L	
Fire Substation	Brgy. 109-A	.01	Fair	3		1 firetruck	L						

TYPE OF SERVICES	BRGY.	AREA (SQ. M.)	PHYSICAL CONDITION OF FACILITY	NO. OF PERSONNEL			HAZARD SUSCEPTIBILITY (H/M/L)						
					NO.	TYPES	FL	TY	EQ	LN	TS	SU	OTHERS
Fire Substation	Brgy. 86 San Jose	.01	Fair	3		1 firetruck						H	
Fire Substation	Brgy. 88	.0075	Fair	3		1 firetruck	M					H	
Jail Management													
City	Brgy. 25	.5	Fair	64			M					H	

Source: TCPO,BFP,BJMP,2016
Note: H-high, M-Medium, L-Low, Fl-flood, Ty-typhoon, Eq-Earthquake,Ts-tsunami, Ln-Landslide, Su-Storm Surge



Map 65. Location of Protective Services



Map 66. Fire Prone Map

The total number of police personnel for the year 2015 is 315, which place the police to population ratio of 1:778. This ratio is behind the ideal police to population ratio of 1:500. However the number of police meets the minimum standard of police to population ratio of 1:1000.

For the fire force for year 2016 they still lack 51 fire personnel. On the assumption that these shortage of personnel will be fully filled up, from 2017-2025 the Fire Department will need 3 fire personnel per year.

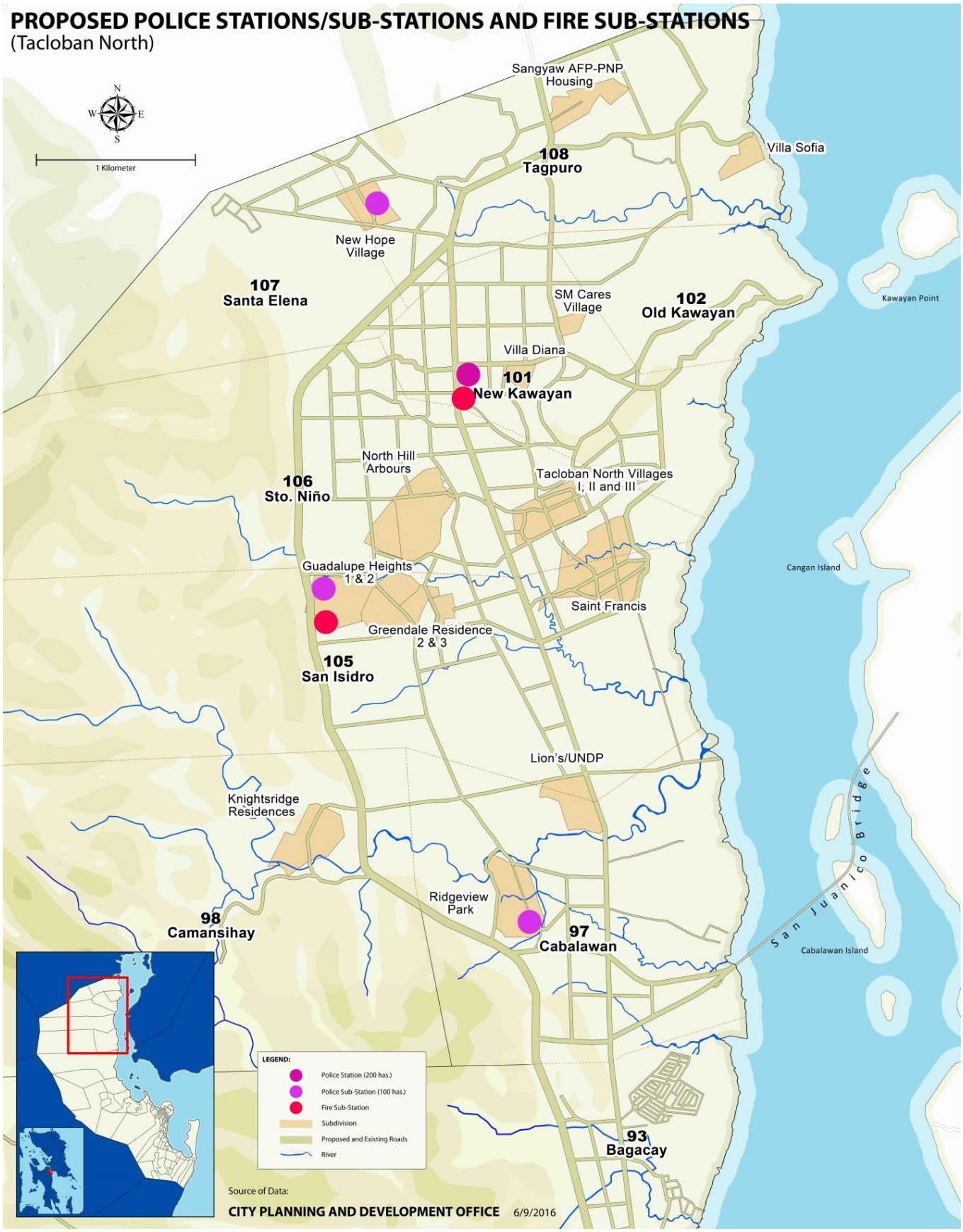
While improvements have been made with the Bureau of Fire Protection in terms of personnel and equipment, there is still a need to augment and upgrade the existing personnel and fire equipment. At present the city has enough no. of fire trucks. At the end of the planning period the fire department of the city will need 3-4 firetrucks .What would be taken into consideration are the maintenance of the firetruck and the availability of water especially during the occurrence of fire.With the increasing number of population at the Tacloban North there is a need for 2 fire Substations to be located at Brgy. 93 and Brgy.106.

Whereas the Jail Personnel the Jail Guard to inmate population ratio is equal to 1 jail guard for 5 jail inmates. At present the number of jail inmates are 643 against 64 jail guards with a ratio of 1:10. Jail personnel needed 64 additional jail guards at present and every year on the assumption that there will be an increase of inmates by 3% the BJMP Tacloban will need 5-6 jail guards every year.

Table 3. 40 Current & Projected Requirement for Police, Fire & Jail Personnel, Tacloban City

TYPE	EXISTING 2015	PROJECTED POPULATION AND PERSONNEL							
		2016	2017	2018	2019	2020	2021	2022	2025
Population	245,049	250,268	255,599	261,043	266,603	272,282	278,082	284,005	302,542
Police Force	315	186	10	11	11	12	11	12	37
Fire Force	74	51	3	3	2	3	3	3	9
Firetruck	8	1			1				1
Jail Personnel	64	69	5	6	4	5	6	6	18

Source: TCPO, BFP, BJMP
Computation for Projected Personnel was based on the ff: standard a. Ideal Police to Population Ratio is 1 policeman for 500 persons b. 1 fireman to 2000 persons c.1 jail guard to 5 jail inmates.



Map 67. Proposed Police Stations/Sub-Stations and Fire Sub-Stations

III. Protective Services Analysis Matrix

TECHNICAL FINDINGS/OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS INTERVENTIONS
Lack of modern technology and equipment in solving crime,	Result to unsolved crimes	Provision of modern technology and equipment
Lack of training to new police personnel	Inefficient performance of duty	Continues training and development to new police personnel
The need for a new and modern Police Headquarters and Bureau of Fire Building	Improved peace & order situation	-Construction of 3 Police Substations to be located at Brgys. 93,106 and downtown area with a total area of 0.0075has. -Construction of 2 Fire Substations to be located at Brgy. 106 and 93 (.030has.)
Lack of personnel particularly fire truck operators	Inefficient service	Hire personnel
Lack of personnel protective equipment (firefighting gears, trousers, boots and fire gloves)	Can gravely affect the efficiency and effectivity of firemen in their fire fighting capabilities	Purchase of firefighting equipment gears, trousers, boots & fire gloves
Lack of installed fire hydrants to address immediate water refill during conflagration (specifically Bgy. 56 Pericohon which is categorized as fire prone area)	Spread of fire is not easily contained	Installation of more fire hydrants at strategic locations
Lack of modern firefighting equipment	Can gravely affect the efficiency and effectivity of firemen in their fire fighting capabilities	Procure modern fire fighting equipment
Congestion of Inmates/Overcrowded cells	Poor health and sanitation	Construction of Additional 10 cells with 20 inmates per cell capacity
BJMP prison facility within storm surge prone area.	Unsafe for prisoners.	Retrofitting of Elevated BJMP building, 3,000,000.00

3.6 Sports & Recreational Facilities

There are different kinds of sports and recreational facilities found in the city. Mini gyms and, basketball courts can be found in different areas particularly in the city proper and barangays with huge areas. The city has also billiard halls, swimming pools, tennis courts, beach resorts and San Juanico Golf Course located at Barangay Cabalawan Tacloban City. There is also a new recreational site, Villa Francisco Resort located at Brgy. 100 San Roque. It has amenities such as swimming pool, horseback riding, billiard and beautiful mountainous scenery. Concert, PBA games, and other events are held in astrodome where it can accommodate 7,000 people. Robinsons is another venue for recreational activity like movies, computer games, shopping and eating. All of these facilities provide the sports and recreational needs of the Taclobanons as well as guests, tourists coming from other places both local and international.

With the existence of the City Sports Development Office, sport activities are conducted not only during summer but the whole year round such as tournaments and sport clinics. The common sports activities/tournaments, sports competition conducted are the following: amateur boxing, taekwando, basketball, fun run, volleyball, football clinic, swimming, chess, golf, body building, billiard and tennis. It can be noted that all these sports activities not only makes the body physically healthy but also provides worthwhile activities to the youth sector. In addition the Laro ng Lahi such as hitting the pot, patintero, planting rice, sipa, etc. are being promoted as part of culture and tradition. There is also the increasing number of fitness center because the people are becoming health conscious. Like wise Taebo Jam is also a physical fitness activity participated by many individuals. As part of the city government's program 'Labs ko an Lawas ko' Zumba is regularly conducted at the Tacloban City Hall grounds. Trainings and sports clinic are also conducted for students, and other youth to improve and enhance their respective sport.

Nevertheless with the Yolanda Tragedy 95% of these sports and recreational facilities were devastated. With the aid from the different NGOs/INGOs, the Local and National Government 70% of these facilities are already restored and the rest are still undergoing repair, construction and retrofitting. (Table 3.46)

Table 3. 41 Existing Sports and Recreational Facilities by Barangay, Year 2015, Tacloban City

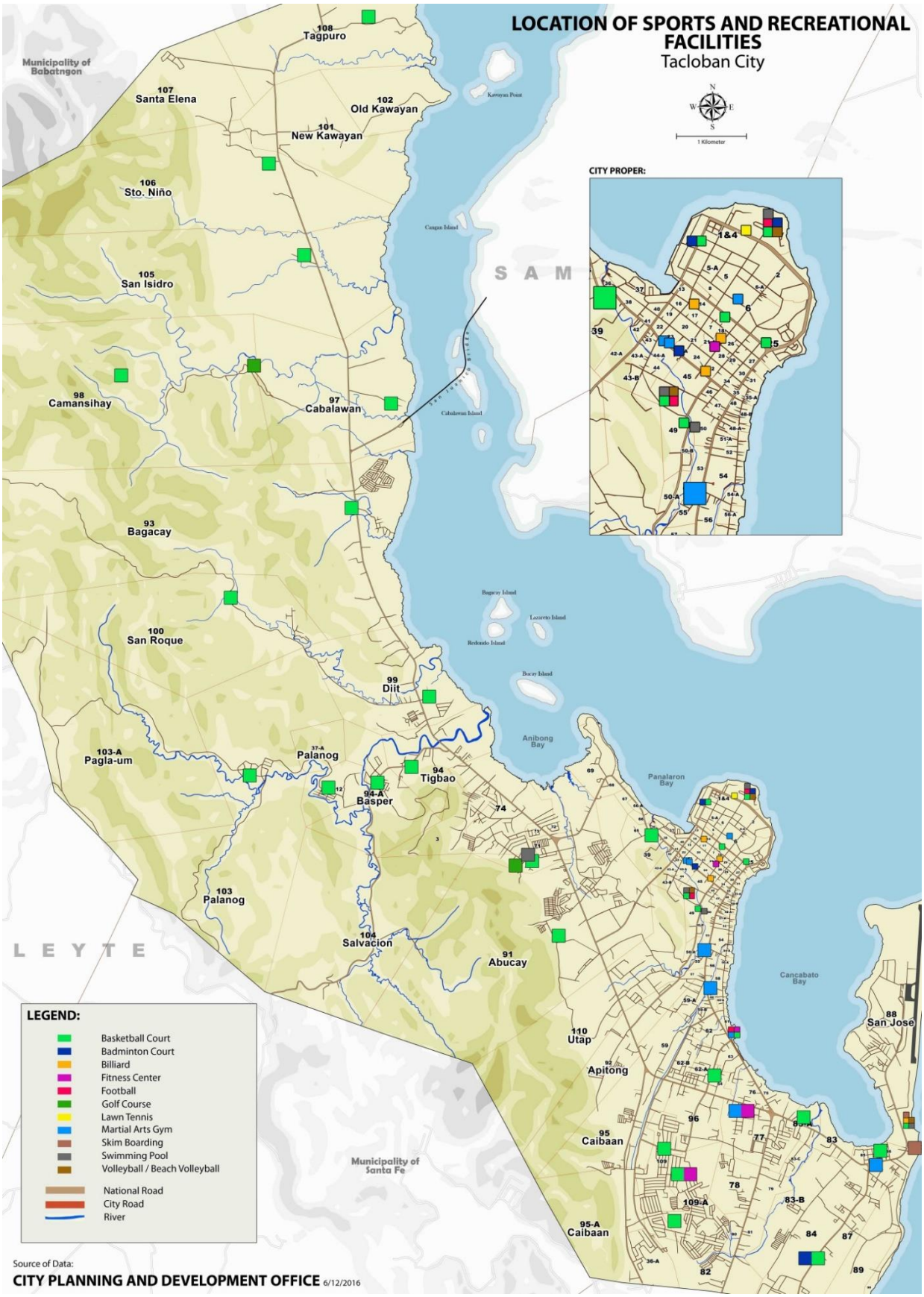
BRGY.	TYPE OF FACILITIES	LOT AREA (SQ.M)	OWNERSHIP	USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (H/M/L)							
					FL	TC	EQ	VO	LN	TS	SU	OTHERS
3 Nula- Tula	1 Basket ball Court	400	Public			M			L			
65	1 Basket ball Court	400	Public							H	H	
66	1 Basket ball Court	400	Public							H	H	
66-A	1 Basket ball Court	400	Public							H	H	
67	1 Basket ball Court	400	Public							H	H	
68	1 Basket ball Court	400	Public							H	H	
69	1 Basket ball Court	400	Public							H	H	
70	1 Basket ball Court	400	Public							M	M	
71	2 Basket ball Court	800	Public							M	M	
72	1 Basket ball Court	400	Public		M	M						
73	1 Basket ball Court	400	Public		L							
74	1 Basket ball Court	400	Public		L							
	Golf Corse		Public									
1&4	Lawn Tennis		Public								H	
	Swimming Pool		Public			M						
2	1 Basket ball Court	400	Public		L	M						
	Volleyball		Public									
5	1 Basket ball Court	400	Public		L					H	H	
5-A	1 Goal Basketball Court	150	Public							H	H	
6	1 Goal Basketball Court	150	Public							H	H	
	Martial Art Gym		Public									
25	Sepak Takraw Court		Public		L					M	M	
79	1 Basket ball Court	400	Public		L					M	M	
81			Public		L					M	M	
82	1 Basket ball Court	400	Public		M					M	M	
83	1 Basket ball Court	400	Public		M					H	H	
83-A	1 Basket ball Court	400	Public		M					H	H	
83-B	1 Goal Basketball Court	150	Public		M					H	H	
83-C	1 Basket ball Court	400	Public		M					H	H	
84	2 Basketball Court	800	Public							H	H	
85	1 Basket ball Court	400	Public							H	H	
86	1 Basket ball Court	400	Public							H	H	
	Billiard		Public							H	H	

BRGY.	TYPE OF FACILITIES	LOT AREA (SQ.M)	OWNERSHIP	USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (H/M/L)							
					FL	TC	EQ	VO	LN	TS	SU	OTHERS
87	1 Basket ball Court	400	Public							H	H	
88	1 Basket ball Court	400	Public							H	H	
	Beach Volleyball		Public							H	H	
89	1 Goal Basketball Court	150	Public							H	H	
90	1 Goal Basketball Court	150	Public							H	H	
58	1 Basket ball Court	400	Public							H	H	
59	1 Basket ball Court	400	Public						L	L	L	
59-A	1 Basket ball Court	400	Public							M	M	
59-B	1 Goal Basketball Court	150	Public							M	M	
60	1 Basket ball Court	400	Public							M	M	
61	1 Basket ball Court	400	Public							H	H	
	Martial Art Gym		Public							H	H	
	Fitness Center		Public									
	Boxing Ring		Public									
62	1 Goal Basketball Court	150	Public							M	M	
	Martial Art Gym		Public							M	M	
62-A	1 Goal Basketball Court	150	Public							L	L	
62-B	No Basketball Court		Public							L	L	
63	1 Basket ball Court	400	Public							H	H	
64	1 Basket ball Court	400	Public	On rehabilitation process						L	L	
75	1 Basket ball Court	400	Public							H	H	
76	1 Basket ball Court	400	Public							M	M	
32	No Basketball Court		Public		M					M	M	
33	No Basketball Court		Public		M					M	M	
43	1 Goal Basketball Court	150	Public		M					M	M	
43-A	No Basketball Court		Public							L	L	
43-B	1 Goal Basketball Court	150	Public						M	L	L	
	Volleyball		Public						M	L	L	
	Lawn Tennis		Public						M	L	L	
	Baseball & Softball Field		Public						M	L	L	
44	1 Basket ball Court	400	Public		M					L	L	
44-A	No Basketball Court		Public		M							
	Martial Art Gym		Public		M					M	M	
45	1 Basket ball Court		Public		M					M	M	
46	No Basketball Court		Public		M					M	M	
47	No Basketball Court		Public		M					M	M	
48	No Basketball Court		Public		M					H	H	
48-A	1 Goal Basketball Court	150	Public		M					H	H	
48-B	No Basketball Court		Public		M					H	H	
49	1 Goal basketball Court	150	Public		L				M	L	L	
	Volleyball		Public		L					L	L	
	Swimming Pool		Public		L				M	L	L	
	Football		Public		L				M	L	L	

BRGY.	TYPE OF FACILITIES	LOT AREA (SQ.M)	OWNERSHIP	USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (H/M/L)							
					FL	TC	EQ	VO	LN	TS	SU	OTHERS
50-B	Swimming Pool		Public		L				L			
7	No Basketball Court		Public		M					H	H	
18	No Basketball Court		Public		M					H	H	
21-A	No Basketball Court		Public		M					M	M	
21	1 Goal Basketball Court	150	Public		M					M	M	
26	No Basketball Court		Public		M					M	M	
27	No Basketball Court		Public		M					H	H	
28	No Basketball Court		Public		M					H	H	
29	No Basketball Court		Public		M					H	H	
30	No Basketball Court		Public		M					H	H	
31	No Basketball Court		Public		M					H	H	
34	No Basketball Court		Public		M					H	H	
35	No Basketball Court		Public		M					H	H	
65-A	No Basketball Court		Public		M					H	H	
36-A	1 Basket ball Court``````````````	400	Public		M							
77	No Basketball Court		Public		M					M	M	
78	1 Basketball Court	400	Public		M					M	M	
80	No Basketball Court		Public		M					M	M	
91	1 Basket ball Court	400	Public		M				H			
92	1 Basket ball Court	400	Public		M				M			
	Martial Art Gym		Public									
95	1 Basketball Court	400	Public		M				M			
95-A	1 Basket ball Court	400	Public		M				M			
96	1 Basket ball Court	400	Public		M							
109	1 Basket ball Court	400	Public		M							
	Fitness Center		Public		M							
109-A	2 Basketball Court	800	Public		M							
110	1 Basket ball Court	400	Public		M				M			
19	No Basketball Court		Public		M					H	H	
20	No Basketball Court		Public		M					H	H	
	Fitness Center		Public		M					H	H	
	Martial Art Gym		Public		M					H	H	
22	No Basketball Court		Public		M					H	H	
23	No Basketball Court		Public		M					H	H	
	Badminton Court		Public		M					H	H	
23-A	No Basketball Court		Public		H					H	H	
24	No Basketball Court		Public		M					M	M	
	Billiard		Public							M	M	
36	No Basketball Court		Public							H	H	
37	1 Basket ball Court	400	Public		M					H	H	
38	1 Basket ball Court	400	Public						L	M	M	
39	1 Basket ball Court	400	Public						M	L	L	
40	No Basketball Court		Public		M					H	H	
41	No Basketball Court		Public		M					H	H	

BRGY.	TYPE OF FACILITIES	LOT AREA (SQ.M)	OWNERSHIP	USED AS EVACUATION CENTER (Y/N)	HAZARD SUSCEPTIBILITY (H/M/L)							
					FL	TC	EQ	VO	LN	TS	SU	OTHERS
42	1 Basket ball Court	400	Public		M					H	H	
42-A	1 Basket ball Court	400	Public						M	M	M	
12 Palanog	1 Basket ball Court	400	Public		L				M			
37-A Palanog	1 Basket ball Court	400	Public		M				M			
93 Bagacay	1 Basket ball Court	400	Public		M				H			
94 Tigbao	1 Basket ball Court	400	Public		M				H		H	
94-A BAsper	1 Basket ball Court	400	Public		M				H			
97 Cabalawan	1 Basket ball Court	400	Public		M				H	M	H	
	Swimming Pool		Public						H	M	H	
	Golf Course		Public									
98 Camansihay	1 Basket ball Court	400	Public		M				M			
99 Diit	1 Basket ball Court	400	Public		M					H	H	
100 San Roque	2 Basketball Court	800	Public		L				M			
101 New Kawayan	1 Basket ball Court	400	Public		M					M	M	
102 Old Kawayan	1 Basket ball Court	400	Public		M					M	M	
103 Palanog	1 Basket ball Court	400	Public		M				M			
103-A Paglaum	1 Basket ball Court	400	Public		M				M			
104 Salvacion	1 Basket ball Court	400	Public		M				M			
105 Suhi	1 Basket ball Court	400	Public		M				M			
106 Sto. Niño	1 Basketball Court	400	Public		M				M			
107 Sta. Elena	1 Basketball Court	400	Public		M				M			
108 Tagpuro	1 Basketball Court	400	Public		M					M	M	

Source: City Sports & Development Office, Brgy. Profile
Note: Y-yes, N-no



Map 68. Location of Sports and Recreational Facilities

Sports & Recreation Analysis Matrix

TECHNICAL FINDINGS/OBSERVATION	IMPLICATIONS (EFFECTS)	POLICY OPTIONS INTERVENTIONS
Inadequate sports equipment and facilities	The city especially the youth sector are logging behind especially in participating to sports competitions on football, swimming, bowling, lawn tennis, boxing, etc.	-Linkages and networking with sports enthusiast groups that can provide sports equipment or will sponsor for sports competition -Conduct regular training or clinic for sports activities

Climate Change Adaptation

Climate Change as the word suggest are changes or alteration or shift in a regions overall weather patterns, including precipitation, temperatures, cloud cover and so on. According to the scientific experts in the field of climatology, climate change is caused by human activities that have resulted in an increased concentration of greenhouse gases in the atmosphere, including carbon dioxide, water vapor, methane, ozone, and nitrous oxide. All write-ups and publications on climate change says that it is not only an environmental issue but also a health issue. Climate change will affect the health of the people through changing patterns of disease. The availability of food and water will also be affected. Not all of the city's infrastructure and other facilities are designed to cope with climate change. Hence the need for reforestation, disaster risks assessment and community mobilization. It is at this point that the people old and young, rich and poor should all be aware of the impact and effect of climate change. Readings on climate change confirms that studies show the increases on cardiovascular diseases, respiratory diseases. In addition the rising temperature will affect the spread of communicable diseases, mosquito causing illnesses like malaria and dengue as well will rise.

On the other hand changing of the climate will also affect the agricultural products. This irratic weather condition will bring about frequent severe floods, droughts, and storms reducing water and food supply.

It is imperative that the city has to take measures and mitigations to adapt to climate change because the environment, health, & economy will be most affected and the people as well especially the vulnerable sectors of society like the children, women, senior citizens, persons with disabilities, poor communities and poor families. When disaster occurs these vulnerable sectors mentioned are the priority group that has to be taken to safety and should be prepared. However with the onslaught of typhoon Yolanda nobody was spared even the rich families were affected. There was no medicine available, no electricity, no water, food shortage, security and peace were at risk and the mental anguish was high. After two years disaster preparedness and mitigation is a must. Everybody should be prepared, every citizen in this city has to be oriented on Climate Change and Disaster Risk Reduction and Prepararedness.

Integrated Social Sector Analysis Matrix

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
1. Lack of classrooms in public schools particularly at Tacloban North where those affected by typhoon Yolanda are being transferred	-Construction of 639 resilient classooms/building with a land area requirement of 3.8 has. Located at the Tacloban North particularly at Brgys. 108, 105, 106, 107, 97, 101,98,102	City Schools Division
2. Flooded schools at Brgy. Old Kawayan, Fishermans Village in Brgy. 88 Sn Jose, Manlurip Primary School, Brgy. Cabalawan	-Construction of drainage in flooded areas, - transfer of school in safe areas -Retrofitting of schoolbuildings	City Schools Division
3. Lack of modern educational equipments in public schools	-Increase budget allocation for educational & modern equipments especially in public schools	City Schools Division
	Provision of modern educational equipments and facilities in public schools like computers, auditorium	City Schools Division

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
	or Audio visual Hall etc. to reinforce learning of students	
4. Increasing tuition fee in private schools	Increasing the number of scholars from private schools and extend scholarship programs in far flung barangays	City Schools Division,Academe
5. Overpopulated students in public schools	Scholarship Programs in private schools for poor students	City Schools Division
6. Lack of training & sports facilities in schools	Construction of Sports & Recreational Facilities (Football Field,Chess Park, Lawn Tennis Center, Open Court Volleyball& Basketball Court &Beach Volleyball court) - Linkages and networking with NGAs, NGOs, and other groups for sports facilities and sports training for deserving students	City Schools Division
7. Students lack knowledge on Climate Change and Its effect and Impact	Mainstream Climate Change Adaptation & Mitigation in classes Orient students on Climate Change Adaptation & Mitigation Child Centered Planning on Disaster Risk Reduction & Mgt.	City Schools Division
8. Overstaying of evacuees at school	Construction of a separate evacuation center in safe areas to be located at Abucay, Naga-naga & San Fernando School	City Government of Tacloban, CDRRMO, CSWDO
9. Inadequate sports equipment and facilities	Procurement of Sports Equipment & construction of sports facilities at the Tacloban North	City Sports & Development Office
10. No available warehouse storage for medicines & other medical supplies	Construction of warehouse/ storage area	CHO

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
11. Lack of Modern medical Facilities and Equipments in Public Hospitals	Source funds from National Agencies, PDAF and Foreign Organizations	CHO, DOH Region 08
12. Mortality cases due to low level of education, late admission of patients to hospitals , and unhealthy lifestyle	Renovation /Expansion of 12 Health Centers Conduct /Strengthen Health Education Classes	City Health Office
13. Lack of Health Manpower	-Increase number of health personnel, -fill up vacant positions -Hire additional health manpower -Train additional health volunteers	City Health Office, HRMO
14. Congested Public Cemetery	Identify & Develop another site for a Public Cemetery (6.8 has.)	City Government of Tacloban
15. Inadequate space for some health facilities and health stations	Renovation/expansion of district health centers and brgy. health stations	CHO
16. Prevalence of teenage pregnancy, STI,HIV/AIDS	Establishment of Youth Friendly Space at Brgy. 105 near Health Station (size:2 container van with complete IEC materials	CHO
17. Lack access to safe water especially in highly populated areas like the Tacloban North		CHO, CHCDO
18. Increasing Number of Housing Backlog	-Construction of Core Houses -Socialized Housing -Implementation of CMP -Identify Sites for Socialized Housing - Linkages with GOs and NGOs, and other funding agency Re: Housing Program and Financial assistance	LGU Tacloban/Housing Office
19. Proliferation of Informal Settlers,	.- Linkages with GOs and NGOs, and other funding agency Re: Housing Program and Financial assistance -Construction of dwelling units that are resilient and hazard resistant --Brgy. Officials to coordinate with other agencies regarding anti squatting law	CHDO

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
	-Orient Brgy. Officials on Anti-Squatting Law -LGU should strictly monitor illegal construction and strict enforcement of EO 153 (Ani Squatting Law)	
20. Over crowded resettlement area	- Organize Homeowners Association in Resettlement Areas -Conduct of inventory on existing families in resettlement areas -Redesign/redevelop/improve existing resettlement areas covering a total of 733.624 (has.) in Brgys. 74, 12, 37-A, 12, 103, 100 and 3.	CSWDO, Brgy. Officials
21. Entry of families in resettlement areas without notice from CSWDO	Deputize Brgy. Officials to disallow proliferation of informal settlers in their respective barangays	LGU Tacloban, Brgy. Officials, City DILG
22. Lack of Resettlement Area/Housing Sites to address housing backlog of 14,659	Acquisition of land for socialized housing and additional resettlement site to address housing backlog of 14,659 HU with an area of 176.98 has. -Enact SP Resolution for the purchase of lands feasible for resettlement (Socialized Housing) -Landbanking of LGU for socialized housing - Formulation of Rental Housing & rent to own program plans	CSWDO, CHCDO
23. Lack of data on the number of informal settlers, and those living in dangerous areas (flood prone area, landslide prone area, & areas where liquefaction is imminent	-City wide survey / and or completion of CBMS project -Establish M&E for housing - Require barangay to submit to the city housing offce a socio economic survey of their constituency -Adopt implementation tagging system initiated by CSWDO	CSWDO
24. Lack of Basic Services in the resettlement sites	-Provision of adequate potable water supply, electricity, and transport facilities -Reorientation and implementation of solid waste management -Provision of water source at the northern barangays	CSWDO

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
	- Identify source of funding for water supply - Coordinate with LEYECO - Improvement of road networks, existing roads & drainage system	
25. Proliferation of street children, mendicants, vigrants, delinquent youths and CICL	Established of a holding center for CICL and Delinquent Youths - Amendment and Enforcement of the Mendicancy Law - Enforcement of the Minors Ordinance - Provision of social protective services through networking and linkages with NGO's NGAs for appropriate interventions.	CSWDO
26. Senior Citizens who falls on the poverty threshold are not covered by social pension, only 1,834 Senior Citizens none availed by the social pension in year 2015 and this is funded by DSWD.	The City Government of Tacloban shall appropriate a budget on social pension to indigent senior citizen not covered by the program of DSWD. Availment of social pension should start at age 60.	CSWDO
27. Only permanent Women Friendly Space for the whole city	Institutionalize women friendly space on strategic areas.	CSWDO
28. Need to increase Day Care Centers in the north.	Establishment of DCC's in the north.	CSWDO
29. Increasing cases on VAWC rape, court and other child protection issues.	Strengthen BCPC at the barangay level - Strengthen inter- agency committee on CIACAT, VAWC, and LCPC - Strengthening referral system and help desk at the barangay level. - Advocacy on women and children's laws.	CSWDO

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
30. Capacity enhancement in the management of the dead and missing.	Networking and linkages with other agencies (DILG, Health, NBI etc.) - Crafting of a manual of operations in the management of the dead and missing.	
31. Lack of manpower to implement the programs and services.	- Filling-up of vacant positions. - Creation of additional plantilla positions.	
32. Increasing number of informal settlers - Over crowded resettlement sites - Entry of families in resettlement areas is done at the barangay level without the knowledge of the concerned offices.	- Strict prohibition of squatting - Provision of low cost free housing to low and middle income groups. - Link/ network with NGAs, NGOs for housing program. - Organization of house owners on resettlement sites. - Identify, develop resettlement sites in the north.	CSWDO
33. Absence of a permanent CSWDO Office appropriate for the client being served. - Absence of a facility for persons with disability like ramps. - Absence of a counselling room. - Limited space of stock room for stock pile of food commodities.	Construct a permanent CSWDO in a 500 sq. meter lot to be situated at Brgy. 25	CSWDO
34. Minimal budget allocation for program implementation	- Increase in budget for social welfare programs and services - Resource mobilization with NGOs, NGAs and other funding agencies.	CSWDO
35. Deteriorating moral values and increasing	Strengthen the conduct of parent effectiveness service and family	CSWDO

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
number of broken families	planning and values formation for children and youth.	
36. Absence of a Senior Citizen Center. The center was severely damaged by typhoon Yolanda.	Renovation/ construction of Senior Citizen Center at Brgy. 99 Diit, Tacloban City and other facilities/ equipment.	CSWDO
37. Absence of an Information and Communication Center in the North for out of school youths, persons with disability and other needy adults.	Construction of one Information and Communication Center in the north with a capacity of 25 units of computers.	CSWDO
38. There is a need to establish a satellite Office in the north.	Construction of one CSWDO Satellite Office (.020 has). preferably in Brgy. New Kawayan or Brgy. Sto. Niño.	CSWDO
39. Increasing number of families who belong to the bottom poor	Livelihood Project	CCDLAO, CA,
40. Identified evacuation centers are not ideal for evacuees due to lack of lighting facility, comfort rooms and limited space	Identify/Construct a permanent evacuation center with all basic facilities that will lessen illnesses due to sanitary problems	City Government of Tacloban, CSWDO
41. Lack of Knowledge on Climate Health Adaptation at the Brgy. level	-Continues trainings and drill on Pre-disaster management -Advocacy on CCA	TOMECO, CSWDO,Barangay
42. The need for a new and modern Police Headquarters and Bureau of Fire Building	Construction of 3 Police Substations to be located at Brgys. 93,106 and downtown area with a total area of 0.0075has. -Construction of 2 Fire Substations to be located at Brgy. 106 and 93 (.030has.)	TCPO,BFP
43. Lack of training to new police personnel	Regular & strengthen training of Police Personnel (old & new) Continues training and development to new police personnel	City PNP

PRIORITY ISSUES/PROBLEMS	POSSIBLE INTERVENTION (POLICIES,PROGRAMS,PROJECTS)	RESPONSIBILITY CENTER
44. Congestion of Inmates	Renovate & expand BJMPConstruction of Additional 10 cells with 20 inmates per cell capacity	BJMP
45. Inefficient assistance from the law enforcers regarding cases especially on domestic violence, prostitution child trafficking etc.	Advocacy,reorientation on the apprehension of perpetrators on Domestic Violence	CSWDO
46. Lack of modern firefighting equipments	Increase allocation for supplies & equipments, linkaging with foreign grants	Bureau of Fire Protection Office, City Government
47. Lack of modern technology and equipments in solving crime,	Increase allocation for supplies & equipment, linkaging with foreign grants	City PNP. City government
48. The need for a new and modern Police Headquarters and Bureau of Fire Building	Construction of a new and modern Police Headquarters and BFP	City PNP, BFP
49. Lack of personnel particularly fire truck operators	Hire personnel	BFP
50. Lack of personnel protective equipment (firefighting gears, trousers, boots and fire gloves)	Purchase of firefighting equipment gears, trousers, boots & fire gloves	BFP
51. Lack of installed fire hydrants to address immediate water refill during conflagration (specifically Bgy. 56 Pericohon which is categorized as fire prone area)	Installation of more fire hydrants at strategic locations	BFP
52. Inadequate sports equipment and facilities	Linkages and networking with sports enthusiast groups that can provide sports equipment or will sponsor for sports competition -Conduct regular training or clinic for sports activities	City Sports n& Development Office

CHAPTER 4 ECONOMIC SECTOR STUDY

Tacloban City has a fast growing economic scenery and this was proven true by its recent transition from a component city into a highly urbanized city (HUC). As the first HUC in Region 8, Tacloban started to set its priorities in terms of economic gains and self-sufficiency. With a healthy local economy and receptive citizenry, Tacloban City is now going through to its full development and expansion.

The study on Tacloban City's local economy seeks to help us understand the structure of the city in terms of its' various economic activities as well as the extent of contribution these activities bring about. With the onslaught of Super Typhoon Yolanda (Haiyan) and the devastation it created to the local economy, it is crucial for the Local Government Unit to recoup what has tremendously been lost while considering the effects of Climate Change which is seriously threatening across the globe.

The performance of various sectoral areas on economy are presented in the following tables, figures and maps to describe the present economic situation of Tacloban City as well as the different strategies necessary to "build-back-better" without compromising the health and well-being of the environment and its populace.

Given its natural endowments, agriculture and fisheries remain as the primary sector of the economy in the wider region despite its high vulnerability to natural disasters. The overall goal is to strengthen the sector asone of the sources of jobs and income among the Internally Displaced Persons (IDPs) through higher farming and fishing productivity and the use of natural and sustainable technologies at the livelihood and enterprise levels that serve the local, regional and national markets. Disaster resilence elements will be the key considerations in the technologies to be adopted and in the institutional arrangements, given the geographical and climatic context of the area.

Considerig the vulnerability of the area to disasters, provision of off-resource livelihood opportunities for farming and fishing families through training in other skills of interest is important to diversify sources of incomes. This will target other members of the family and train them on specific skills demanded by the market in the other economic sectors (e.g. construction, health and wellness, hotel housekeeping, etc.) to promote disaster-resilient economic activities and ensure that at least 2 members of the family have different sources of income.

Tacloban City's Trade and Services has been and is expected to continue to be the backbone of the city's economy in the foresseable future. Agriculture, fisheries and aquaculture and livestock and poultry on the other hand, are also expected to be the primary source of livelihood and employment for the majority of the people of Eastern Visayas. Strengthening the Industry, Manufacturing and Processing sectors' role in Tacloban North while complying with strict environmental regulations results in a win-win scenario as it harnesses and integrates use of the raw outputs from the agriculture and fisheries sector from within the city and surrounding towns and provinces, inclusively employing the available trained labor pool from those that will residenin Tacloban North, thus resulting in increased diversified value-added activities that will bring higher revenue and economic resilience to the city and the rest of the region.

Over the long term period, the Industry sector is projected to contribute a solid thirty percent (30%) or more to the city's annual revenues, coming from a combination of major construction projects in real estate for medium and high-end residential housing, tourism-oriented commercial projects, industrial developments and the diversification into more light manufacturing enterprises within the established economic zones. With the proposed expansion of the Leyte Industrial Development Estate (LIDE) Ecological Industrial Zone in Northwest Leyte, coordinated integration shall be promoted with the downstream copper industry manufacturers providing materials/components as inputs to the light industry enterprises that will be investing in Tacloban North's light industry economic zones such as appliance, electronics/electrical components manufacturers, automobile parts assemblers and construction supply companies.

Within the wider Trade and Services sector, special focus on Tourism and MICE (Meetings, Incentives, Conferences and Exhibits) activities is advocated which ultimately aims for long term development of these areas.

4.1 Agriculture

I. Analysis of Existing Situation

The phenomenal Super Typhoon Yolanda practically destroyed 85% of the meager agricultural products Tacloban City managed to sustain through the years. Popularly dubbed as “Ground Zero”, the very fateful day intensified the challenge to make use of what’s left of the tillable land, seemingly lifeless water and the livestock who could also rightfully claim that they too “survived”. Hand in hand with the farmer communities of the north our pool of agricultural technologists and personnel conducted series of assemblies to evaluate what the need maybe and where the help would come from. The succeeding tables and figures will show how insufficient our supplies are but moreso, on how the Local Government Unit along with the help of various Non-Government Organizations (NGOs) and International Non-Government Organizations (INGOs) have continued to uphold the life and dignity of our unsung heroes.

4.1.1 Crop Production

The total area utilized for crop production is 2,586.53 hectares which consequently yielded a total 7,821.27 metric tons in all major crops with an estimated production value of P192, 436,960.90. It will be observed that the decrease in area for utilization from 3,367.35 (2014) to 2,586.53 (2015) was due to the reclassification of agricultural land use to cater to the housing needs of the displaced families along coastal areas. Table 2.2.1.2 illustrates the specific area consumed by each crop from comparative years 2014-2015 and the volume and rate of increase or decrease of production which is directly supplied in the local market. Translating these figures based on the per capita food requirement of each crop for the year 2017, the city is only capable of supplying about 0.0076% of its rice and corn, 0.038% for vegetables, 0.0077% for fruits and 0.0034% for rootcrops.

In 2014 the entire 386 hectares allocated for rice production was planted with rice because of the several input assistance provided by Food and Agriculture Organization and the Department of Agriculture Regional Field Offie-8 (FAO & DA-RFO8). Likewise, the same was also planted entirely on the succeeding year (2015). However, because of the long dry spell which occurred in the second semester (July – September), the production was adversely affected which showed a decrease of 31.38%.

Meanwhile production of corn includes those of yellow, white and hybrid sweet corn. Howevermore popular is the hybrid sweet corn because more farmers are planting this type as compared to the other two types due to its being a short duration crop (65-70 days) and salable in the market. It was also in the year 2014 that International Organizations such as the Salvation Army and USAID provided farm input assistance and hybrid sweet corn seeds but did not maximize expected yield due to Typhoons Ruby and Senyang which occurred at the end of the year.

In 2015, USAID continued to provide similar interventions (assorted seeds of vegetables, melons, sweet corn, soil supplements and farmtools) and these help came in 3 more tranches. A sweeping 29% increase was attained for sweet corn because of its high tolerance to long dry spell compared to rice. On the other hand a different scenario was seen on the performance of vegetables because of the "Cash-For-Asset' Program of the DA-RFO8 where farmers interested to plant vegetables, root crops, corn and other crops were given P10, 000.00 cash assistance for every hectare planted with these crops. It decreased to about an aggregate of 14.11% in 2015 because the preferred cash assistance was no longer provided.

Fruit crops were heavily damaged by Typhoon Yolanda hence in 2014 yield were very low. However in 2015 these increased because some crops had already recovered and started to bear fruits (banana, pineapple, etc.). Some input assistance were also provided in 2015 to include seedlings (banana, cacao and pineapple) by UNDP, USAID and FAO.

Coconut trees were heavily affected by Typhoon Yolanda which resulted to a very low yield in the succeeding year. However, the yield had increased in 2015. Replanting has been started through the initiative of the Philippine Coconut Authority (PCA). In addition, coconut-based farming system was introduced by PCA to augment coconut farmers' income while the trees are still recovering and replanting is still being undertaken. Planting materials including assorted vegetable seeds, peanuts, corn, fruit trees, ginger and pineapple were distributed for the implementation of this project. The same performance was also obvious in root crop production where interventions were also present in order to improve its production. It was also observed that most of the coconut lands of the city was converted to make way for the 14 (with permits) housing subdivisions/projects timely needed to relocate affected families along danger/unsafe zones.

Worth noting is the fact that Tacloban City was also a recipient of a 90hp, 4-Wheel drive tractor which has somehow helped in increasing efficiency in land preparation where the farmer will only shoulder the expenses for the gasoline and for its maintenance.

A rehabilitation program was also introduced to fruit bearing trees to an estimated area of 5.55 hectares which will hopefully augment to crop yields in the succeeding years.

All of our crops are susceptible to natural hazards but as majority of these crops are planted in elevated areas its susceptibility to storm surges and tsunamis are low. While on the average Typhoon (Tropical Cyclones) and Droughts are high due to the frailness of these products which is primarily the reason why farmers opted to introduce intercropping methods and high value cropping that could withstand prolonged dry spell. Lastly, research showed that Tacloban City is not within the Philippine Trench and no known active volcano within the regions periphery thereby ruling out that we have a low susceptibility to earthquake.

Table 4.1 Existing Major Agricultural Crops by Area, Production and Market, Agricultural Support Facilities

MAJOR CROP	LOCATION (BRGY.)	AREA		ANNUAL PRODUCTION		PRODUCT MARKET	NO. OF FARMERS	NO. OF TENANTS	TYPE OF FARMING TECHNOLOGY	EXISTING AGRICULTURAL SUPPORT FACILITIES		HAZARD SUSCEPTIBILITY (H/M/L)						
		HA.	% UTILIZATION	VOLUME	VALUE (PHP/M)					PRE-HARVEST	POST-HARVEST	FL	TY	DR	EQ	LN	TS	SU
Rice	Tagpuro	146.27	25.62	268.71	4.57	Local	120	44	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Sta. Elena	11.44	8.82	92.52	1.57	Local	166	30	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Old Kawayan	23.84	3.44	36.06	0.61	Local	46	11	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	New Kawayan	72.59	7.39	77.55	1.32	Local	36	20	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Sto. Niño	56.61	14.66	153.74	2.61	Local	29	48	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	San Isidro	100.83	8.95	93.88	1.60	Local	27	29	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Cabalawan	19.53	1.95	20.41	0.35	Local	43	15	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Camansihay	2.20	1.30	13.61	0.23	Local	42	6	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Bagacay	5.95	0.78	8.16	0.14	Local	31	19	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Diit	15.29	1.36	14.29	0.24	Local	26	8	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	San Roque	14.30	2.59	27.21	0.46	Local	55	11	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
Rice	Palanog (103)	1.08	0.26	2.72	0.05	Local	74	33	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Paglaum	21.35	21.08	221.09	3.76	Local	95	12	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	Naga-Naga	5.47	1.82	19.05	0.32	Local	22	3	Rainfed	Grain Storage	Grain Storage	M	H	H	L	M	L	L
	TOTAL	**496.75**		**1,049**	**17.83**		**812**	**289**										
Corn	Tagpuro	3.98	6.03	85.03	1.50	Local	120	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Sta. Elena	3.46	20.94	295.42	5.22	Local	166	-	Crop rotataion	Tractors	Drying Pavement	H	H	M	L	L	L	L
	New Kawayan	4.33	3.80	53.54	0.95	Local	36	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L

MAJOR CROP	LOCATION (BRGY.)	AREA		ANNUAL PRODUCTION		PRODUCT MARKET	NO. OF FARMERS	NO. OF TENANTS	TYPE OF FARMING TECHNOLOGY	EXISTING AGRICULTURAL SUPPORT FACILITIES		HAZARD SUSCEPTIBILITY (H/M/L)						
		HA.	% UTILIZATION	VOLUME	VALUE (PHP/M)					PRE-HARVEST	POST-HARVEST	FL	TY	DR	EQ	LN	TS	SU
	Old Kawayan	2.42	3.01	42052	0.72	Local	46	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Sto. Niño	0.79	1.79	25.20	0.45	Local	29	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	San Isidro	5.89	4.51	63.62	1.12	Local	27	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Camansihay	1.43	7.28	102.67	1.81	Local	42	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Cabalawan	2.24	1.92	27.08	0.48	Local	43	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Bagacay	3.96	4.47	62.98	1.11	Local	31	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Diit	2.53	1.94	27.40	0.48	Local	26	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	San Roque	2.15	3.35	47.24	0.83	Local	55	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Basper	2.91	2.34	33.07	0.58	Local	34	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Palanog (37-A)	2.03	4.47	62.99	1.11	Local		-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Palanog (12)	3.00	8.93	125.96	2.23	Local	25	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Palanog (103)	8.67	17.86	251.92	4.45	Local	74	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Paglaum	0.62	4.58	64.55	1.14	Local	95	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Salvacion	0.53	0.56	7.87	0.14	Local	50	-	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Abucay	-	-	-	-	Local	15	1	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Utap	3.67	2.23	31.49	0.56	Local	40	1	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	Apitong	-	-	-	-	Local	14	4	Crop rotation	Tractors	Drying Pavement	H	H	M	L	L	L	L
	TOTAL	**54.61**		**1,410.55**	**24.88**		**968**											
Vegetables	Tagpuro	24.28	6.64	248.46	7.36	Local	120	44	Crop rotation	K. Sprayers	Bagsakan	H	H	H	L	L	L	L

MAJOR CROP	LOCATION (BRGY.)	AREA		ANNUAL PRODUCTION		PRODUCT MARKET	NO. OF FARMERS	NO. OF TENANTS	TYPE OF FARMING TECHNOLOGY	EXISTING AGRICULTURAL SUPPORT FACILITIES		HAZARD SUSCEPTIBILITY (H/M/L)						
		HA.	% UTILIZATION	VOLUME	VALUE (PHP/M)					PRE-HARVEST	POST-HARVEST	FL	TY	DR	EQ	LN	TS	SU
	Sta. Elena	16.89	20.29	760	22.52	Local	166	30	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	New Kawayan	23.79	3.78	141.65	4.20	Local	36	20	Crop rotation	K. Sprayers	RiceMills	H	H	H	L	L	L	L
	Old Kawayan	11.78	2.65	99.23	2.94	Local	46	11	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Sto. Niño	15.98	6.45	241.64	7.16	Local	29	48	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	San Isidro	35.79	4.96	185.59	5.50	Local	27	29	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Camansihay	7.20	6.60	246.95	7.32	Local	42	6	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Cabalawan	11.98	1.86	69.69	2.07	Local	43	15	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Bagacay	5.93	1.21	45.15	1.34	Local	31	19	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Diit	4.98	.69	25.91	0.77	Local	26	8	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	San Roque	25.85	7.31	273.91	8.12	Local	55	11	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Tigbao	0.04	.10	3.79	0.11	Local	8	-	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Basper	15.40	2.25	84.08	2.49	Local	34	4	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Palanog (12)	5.44	2.93	109.84	3.26	Local	25	8	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
Vegetables	Palanog (37-A)	8.06	3.22	120.44	3.57	Local	38	-	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Palanog (103)	46.05	17.20	643.88	19.08	Local	74	-	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Paglaum	4.13	6.37	238.61	7.07	Local	95	-	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Salvacion	6.47	1.22	45.75	1.36	Local	50	-	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Abucay	4.54	0.50	18.63	0.55	Local	15	1	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Utap	17.81	1.96	73.48	2.18	Local	40	1	Crop rotation	K.	Rice Mills	H	H	H	L	L	L	L

MAJOR CROP	LOCATION (BRGY.)	AREA		ANNUAL PRODUCTION		PRODUCT MARKET	NO. OF FARMERS	NO. OF TENANTS	TYPE OF FARMING TECHNOLOGY	EXISTING AGRICULTURAL SUPPORT FACILITIES		HAZARD SUSCEPTIBILITY (H/M/L)						
		HA.	% UTILIZATION	VOLUME	VALUE (PHP/M)					PRE-HARVEST	POST-HARVEST	FL	TY	DR	EQ	LN	TS	SU
										Sprayers								
	Caibaan	12.76	0.89	33.18	0.98	Local	40	-	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	Apitong	3.68	0.93	34.69	1.03	Local	14	4	Crop rotation	K. Sprayers	Rice Mills	H	H	H	L	L	L	L
	TOTAL	**308.83**		**3,744.55**	**110.98**		**1,054**											
Fruit Crops	Tagpuro	2.35	1.56	8.59	0.17	Local	120	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Sta. Elena	1.06	3.06	16.92	0.34	Local	166	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	New Kawayan	5.22	1.99	11.01	0.22	Local	36	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
Fruit Crops	Old Kawayan	4.15	2.25	12.40	0.25	Local	46	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Sto. Niño	0.79	0.68	3.76	0.08	Local	29	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	San Isidro	9.63	3.21	17.72	0.35	Local	27	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Camansihay	1.87	4.13	22.82	0.46	Local	42	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Cabalawan	6.77	2.53	13.96	0.28	Local	43	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Bagacay	6.77	3.31	18.26	0.37	Local	31	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Diit	3.49	1.17	6.44	0.13	Local	26	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	San Roque	25.74	17.51	96.66	1.93	Local	55	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Basper	3.08	1.08	5.96	0.12	Local	34	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Palanog (12)	2.51	3.26	17.99	0.36	Local	25	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Palanog (37-A)	4.88	4.67	25.78	0.52	Local	38	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Palanog (103-A)	5.78	21.40	118.14	2.36	Local	74	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Paglaum	0.86	3.21	17.72	0.35	Local	95	-	Mono cropping	K.	Threshers	L	H	H	L	H	L	L

MAJOR CROP	LOCATION (BRGY.)	AREA		ANNUAL PRODUCTION		PRODUCT MARKET	NO. OF FARMERS	NO. OF TENANTS	TYPE OF FARMING TECHNOLOGY	EXISTING AGRICULTURAL SUPPORT FACILITIES		HAZARD SUSCEPTIBILITY (H/M/L)						
		HA.	% UTILIZATION	VOLUME	VALUE (PHP/M)					PRE-HARVEST	POST-HARVEST	FL	TY	DR	EQ	LN	TS	SU
										Sprayers								
Fruit Crops	Salvacion	27.83	12.59	69.54	1.39	Local	50	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Abucay	11.07	2.92	16.11	0.32	Local	-	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Utap	14.69	3.89	21.48	0.43	Local	-	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Caibaan	11.65	1.95	10.74	0.21	Local	40	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	Apitong	6.02	3.65	20.13	0.40	Local	-	-	Mono cropping	K. Sprayers	Threshers	L	H	H	L	H	L	L
	TOTAL	**156.21**		**552.13**	**11.04**		**977**											
Cocunut	Tagpuro	49.19	3.71	73.50	1.84	Local	120	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Sta. Elena	27.69	9.19	182.25	4.56	Local	166	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	New Kawayan	62.91	2.76	54.75	1.37	Local	36	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Old Kawayan	49.95	3.10	61.50	1.54	Local	46	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Sto. Niño	51.93	5.79	114.75	2.90	Local	29	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	San Isidro	106.73	4.08	81.00	2.03	Local	27	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
Coconut	Camansihay	31.40	7.94	158.00	3.93	Local	42	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Cabalawan	125.25	5.37	106.50	2.66	Local	43	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Bagacay	191.15	10.74	213.00	5.33	Local	31	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Diit	96.77	3.71	73.50	1.84	Local	26	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	San Roque	91.03	7.11	141.00	3.53	Local	55	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Tigbao	7.76	5.18	103.00	2.57	Local	-	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Basper	45.22	1.82	36.00	0.90	Local	34	-	Mono cropping	K.	Blowers	L	H	M	L	M	H	H

MAJOR CROP	LOCATION (BRGY.)	AREA		ANNUAL PRODUCTION		PRODUCT MARKET	NO. OF FARMERS	NO. OF TENANTS	TYPE OF FARMING TECHNOLOGY	EXISTING AGRICULTURAL SUPPORT FACILITIES		HAZARD SUSCEPTIBILITY (H/M/L)						
		HA.	% UTILIZATION	VOLUME	VALUE (PHP/M)					PRE-HARVEST	POST-HARVEST	FL	TY	DR	EQ	LN	TS	SU
										Sprayers								
	Palanog	78.16	8.06	159.75	4.00	Local	74	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Paglaum	6.84	2.91	58.00	1.44	Local	95	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Salvacion	78.36	4.08	81.00	2.03	Local	50	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Abucay	96.21	2.91	58.00	1.44	Local	15	1	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Utap	31.23	0.95	18.75	0.47	Local	40	1	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	Caibaan	102.79	1.97	39.00	0.98	Local	40	-	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
Coconut	Apitong	47.90	3.33	66.00	1.65	Local	14	4	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	San Jose	42.45	5.30	105.00	2.63	Local	14	5	Mono cropping	K. Sprayers	Blowers	L	H	M	L	M	H	H
	TOTAL	**1,420.88**		**1,984.25**	**49.64**		**997**											
Root Crops	Tagpuro	8.37	5.16	27.06	1.08	Local	120	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Sta. Elena	2.89	7.86	41.19	1.65	Local	166	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	New Kawayan	5.22	1.87	9.82	0.39	Local	36	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Old Kawayan	9.90	5.02	26.35	1.05	Local	46	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Sto. Niño	5.43	3.93	20.59	0.82	Local	29	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	San Isidro	8.03	2.51	13.17	0.53	Local	27	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Camansihay	3.35	6.94	36.40	1.45	Local	42	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Cabalawan	5.47	1.92	10.06	0.40	Local	43	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Bagacay	5.26	2.65	13.89	0.56	Local	31	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
Root	Diit	1.07	0.34	1.77	0.07	Local	26	-	Mono cropping	K.	Blowers	H	H	M	L	M	L	L

MAJOR CROP	LOCATION (BRGY.)	AREA		ANNUAL PRODUCTION		PRODUCT MARKET	NO. OF FARMERS	NO. OF TENANTS	TYPE OF FARMING TECHNOLOGY	EXISTING AGRICULTURAL SUPPORT FACILITIES		HAZARD SUSCEPTIBILITY (H/M/L)						
		HA.	% UTILIZATION	VOLUME	VALUE (PHP/M)					PRE-HARVEST	POST-HARVEST	FL	TY	DR	EQ	LN	TS	SU
Crops										Sprayers								
	San Roque	18.60	11.88	62.27	2.49	Local	55	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Basper	6.38	2.10	11.02	0.44	Local	34	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Palanog (12)	3.00	3.65	19.16	0.77	Local	25	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Palanog (37-A)	5.09	4.57	23.95	0.96	Local	38	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Palanog (103)	30.32	25.58	134.12	5.36	Local	74	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Paglaum	1.80	6.26	32.81	1.31	Local	95	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Salvacion	6.43	2.74	14.37	0.57	Local	50	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Abucay	1.77	0.44	2.30	0.09	Local	-	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Utap	4.41	1.10	5.75	0.23	Local	-	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Caibaan	14.28	2.24	11.73	0.47	Local	40	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	Apitong	2.18	1.24	6.51	0.26	Local	-	-	Mono cropping	K. Sprayers	Blowers	H	H	M	L	M	L	L
	TOTAL	**149.25**		**524.29**	**20.95**		**977**											
For rehab:																		
Fruit trees (mango, jackfruit, cacao, coffee, rambutan)	Tagpuro	1.00	18.18				120											
	Sta. Elena	1.00	18.18				166											
	Cabalawan	0.55	10.00				43											
	Bagacay	0.50	9.00				31											
	Tigbao	0.50	9.00				-											
	Paglaum	1.50	27.02				95											
	Caibaan	0.50	9.00				40											
	TOTAL	**5.55**					**495**											

Source: City Agriculturist Office/Crops Section, 2016

Table 4. 2 Comparative Agricultural Crop Areas and Production, 2014 to 2015

MAJOR CROPS	AREA (HA)			VOLUME OF PRODUCTION (IN METRIC TONS)		
	2014	2015	% INCREASE/ (DECREASE)	2014	2015	% INCREASE/ (DECREASE)
Rice	386.00	496.75	28.69	1,531	1,050.56	(31.38)
Corn	43.67	54.61	25.05	1,100.79	1,417.27	28.75
Veggies	175.80	308.83	75.67	2,249.64	2,287	1.66
Fruit Crops	37.88	156.21	312.38	14.18	553	3,800
Coconut	2,654.00	1,420.88	(46.46)	200.00	1,990	895
Root Crops	70.00	149.25	113.21	216	523.44	142.33
TOTAL	**3,367.35**	**2,586.53**	**(23.19)**	**5,311.61**	**7,821.27**	**47.25**

Source: City Agriculturist Office, 2016

Table 4.3 Existing Agricultural Support Facilities and Services

POST-HARVEST FACILITIES AND SUPPORT	BARANGAY	NO.	% UTILIZATION	TYPE/CAPACITY	REMARKS
Rice Mill	Marasbaras San Isidro	9			
Multi-Purpose Drying Pavement		2	100		
Private Thresher		30	50		
Blowers	13				Someone owned by association
Hand Tractor		12	50		

Source: City Agriculturist Office/CPDO, 2016

4.1.2 Livestock and Poultry

As the city gears for self-sufficiency, livestock and poultry production is promoted and encouraged. This in turn makes for a positive economic posture of the city as it provides local employment and income to the city government by way of revenues. Table 2.2.2.4 illustrates an inventory of privately-owned livestock and poultry farms in the city.

Despite the city's vast losses in practically all sectors of the economy, the livestock and poultry business though inferior as compared to neighboring cities and municipalities still managed to sustain its operations. Presented in the tables below are the existing livestock and poultry farms in Tacloban City and its corresponding production value and volume in peso. Evidently, these livestock and poultry products are insufficient to meet the needs of its people as it only yields about 8.89% in production. Such deficit is met by the influx of various commercial products from neighboring towns and municipalities as well as the cities of Davao, Cebu and General Santos. Supplies of eggs on the other hand can sufficiently cater up to 142.8% of its' requirement as it yielded 1.46 million in 2015 owing to the lone commercial poultry/egg farm located at Barangay 97, Cabalawan, Tacloban City covering an area of 5 hectares.

The City Veterinary Office on its' quest to sustain if not to improve the performce of the livestock and poultry industry has lined-up various programs, projects and activities aimed at doubling the livestock production of the local farmers. The office also finds it imperative to include in the construction of evacuation centers facilities that will cater to the needs of livestock and poultry evacuees so as to lessen/avoid losses in cases of disasters.

In general livestock and poultry farms have high adaptive capacity compared to crops due to its mobility. It can be relocated to safer areas given the time, stead and opportunity. On the average its' susceptibility to almost all hazards are from medium to low. Table 2.2.2.5 will give us a birds-eye view on existing livestock and poultry in Tacloban City as well as the contribution it makes to the local economy.

Table 4.4 Existing Livestock and Poultry Farms, 2015

TYPE	BARANGAY	AREA (HA.)	NO. OF HEADS	PRODUCTION CLASSIFICATION	PRODUCTION		PRODUCT MARKET	NO. OF TENANTS	HAZARD SUSCEPTIBILITY (H/M/L)						
					VOLUME (KG./YR.)	VALUE			FL	TY	DR	EQ	LN	TS	SU
Poultry	108	2.0000	20,000	Commercial	176,000	211,200	Local	1	L	M	H				M
		0.1000	665	Backyard	998	199,500	Local	57	L	M	H				
	107	1.5000	11,000	Commercial	96,800	116,160	Local	1		M	M		M		
		0.1400	877	Backyard	1,315	263,100	Local	69	L	M	H		L		
	99	2.0000	20,000	Commercial	176,000	211,200	Local	1	M	M	M				H
		0.2100	1,348	Backyard	2,022	404,400	Local	118	M	M	M				
	97 (eggs)	5.0000	5,000	Commercial	**1,460,000**	7,300,000	Local	1		M	M	M			
		0.1800	1,151	Backyard	1,726	345,300	Local	50		M	M	M			H
	101	0.0600	381	Backyard	571	114,300	Local	51		M	M				
	102	0.0500	312	Backyard	468	93,600	Local	28		M	M				H
	106	0.0100	625	Backyard	937	187,500	Local	70		M	M				
	105	0.0800	527	Backyard	290	158,100	Local	64		M	M	M			
	98	0.1300	854	Backyard	1,281	256,200	Local	57	M	M	M	M			M
	93	0.3000	1,887	Backyard	2,830	566,000	Local	109		M	M	M			M
	100	0.2000	1,316	Backyard	1,974	394,800	Local	139	M	M	M	M	M		
	94	0.1200	791	Backyard	1,186	273,300	Local	78	M	M					

TYPE	BARANGAY	AREA (HA.)	NO. OF HEADS	PRODUCTION CLASSIFICATION	PRODUCTION		PRODUCT MARKET	NO. OF TENANTS	HAZARD SUSCEPTIBILITY (H/M/L)						
					VOLUME (KG./YR.)	VALUE			FL	TY	DR	EQ	LN	TS	SU
	94-A	0.1100	743	Backyard	1,114	222,200	Local	7	M	M		M			
	104	0.3000	1,661	Backyard	2,491	498,300	Local	13	M	M		M	M		
	103-A	0.0400	256	Backyard	384	76,000	Local	32	M	M	M		M		
	37-A	0.0700	456	Backyard	684	136,800	Local	68	L	M	M	M	M		
	TOTAL	**12.6000**	**69,850**		**469,071**	**12,027,960**		**1,014**							
Swine	108	0.0700	173	Backyard	27,680	5,536,000	Local	65	L	M	H				
	107	0.0600	129	Backyard	20,640	4,128,000	Local	43	L	M	H				
Swine	101	0.0400	85	Backyard	13,600	2,720,000	Local	9		M	M	M			
	102	0.0200	43	Backyard	6,880	1,376,000	Local	13		M	M				
	106	0.0500	92	Backyard	14,720	2,944,000	Local	31		M	M				
	105	0.0600	111	Backyard	17,760	3,552,000	Local	38		M	M	M			
	98	0.0500	92	Backyard	14,720	2,950,000	Local	42	M	M	M	M			
	97	0.0800	164	Backyard	26,240	5,250,000	Local	48		M	M	M			
	93	0.0800	169	Backyard	25,920	5,180,000	Local	87		M	M	M			
	99	0.0300	58	Backyard	9,280	1,860,000	Local	29		M	M	M			
	100	0.0500	95	Backyard	7,600	1,520,000	Local	36	M	M	M	M	M		
	94	0.0200	47	Backyard	7,520	1,500,000	Local	16	M	M					

TYPE	BARANGAY	AREA (HA.)	NO. OF HEADS	PRODUCTION CLASSIFICATION	PRODUCTION		PRODUCT MARKET	NO. OF TENANTS	HAZARD SUSCEPTIBILITY (H/M/L)						
					VOLUME (KG./YR.)	VALUE			FL	TY	DR	EQ	LN	TS	SU
	94-A	0.0700	142	Backyard	22,720	4,540,000	Local	36	M	M		M			
	104	0.0400	74	Backyard	11,840	2,370,000	Local	92	M	M		M	M		
	103-A	0.0200	36	Backyard	5,760	1,150,000	Local	18	M	M		M	M		
	37-A	0.0100	17	Backyard	2,720	550,000	Local	15	M	M	M		M		
	TOTAL	**0.7500**	**1,527**		**235,600**	**47,126,000**		**618**							
Carabao	108	7.7500	31	Backyard	7,750	2,170,000	Local	16	L	M	H				
	107	27.2500	109	Backyard	27,250	7,630,000	Local	49	L	M	H				
	101	4.2500	17	Backyard	4,250	1,190,000	Local	10		M	M				
	102	2.5000	10	Backyard	2,510	700,000	Local	6		M	M				
	106	3.7500	15	Backyard	3,750	1,050,000	Local	9		M	M				
	105	7.7500	31	Backyard	7,750	2,170,000	Local	7		M	M	M			
	98	2.2500	21	Backyard	5,250	1,140,000	Local	15	M	M	M	M			
	97	7.7500	31	Backyard	7,750	2,170,000	Local	25		M	M	M			
	93	7.2500	29	Backyard	7,250	2,030,000	Local	5		M	M	M			
	99	3.7500	15	Backyard	3,750	1,050,000	Local	5	M	M	M	M	M		M
	100	3.5000	14	Backyard	3,500	980,000	Local	16	M	M			M		
Carabao	94	1.0000	4	Backyard	1,000	280,000	Local	1	M	M		M			

TYPE	BARANGAY	AREA (HA.)	NO. OF HEADS	PRODUCTION CLASSIFICATION	PRODUCTION		PRODUCT MARKET	NO. OF TENANTS	HAZARD SUSCEPTIBILITY (H/M/L)						
					VOLUME (KG./YR.)	VALUE			FL	TY	DR	EQ	LN	TS	SU
	94-A	2.0000	8	Backyard	2,000	560,000	Local	5	M	M		M	M		
	104	0.5000	2	Backyard	500	140,000	Local	2	M	M		M	M		
	103-A	3.7500	15	Backyard	3,750	1,050,000	Local	10	M	M		M	M		
	37-A	0.7500	3	Backyard	750	190,000	Local	3	M	M	M		M		
	TOTAL	**85.75**	**355**		**88,760**	**24,500,000**		**184**							
Cattle	108	0.7500	3	Backyard	750	250,000	Local	1	M	M	M		M		
	102	0.5000	2	Backyard	500	150,000	Local	1		M	M				M
	106	0.5000	2	Backyard	480	144,000	Local	2		M	M				
	105	0.2500	1	Backyard	240	72,000	Local	1		M	M	M			
	93	2.2500	9	Backyard	2,160	648,000	Local	4		M	M	M			
	99	1.5000	6	Backyard	1,440	432,000	Local	1	M	M	M	M	M		M
	94	2.7500	11	Backyard	2,640	792,000	Local	2		M	M		M		
	94-A	9.0000	36	Backyard	8,640	2,592,000	Local	8	M	M		M	M		
	104	1.2500	5	Backyard	1,200	360,000	Local	2	M	M		M	M		
	103-A	0.5000	2	Backyard	480	144,000	Local	2	M	M		M	M		
		19.25	**77**		**18,530**	**5,584,000**		**24**							
Goat	108	0.9000	9	Backyard	135	43,200	Local	3	L	M	H				

TYPE	BARANGAY	AREA (HA.)	NO. OF HEADS	PRODUCTION CLASSIFICATION	PRODUCTION		PRODUCT MARKET	NO. OF TENANTS	HAZARD SUSCEPTIBILITY (H/M/L)						
					VOLUME (KG./YR.)	VALUE			FL	TY	DR	EQ	LN	TS	SU
	107	3.7000	37	Backyard	555	177,600	Local	16	L	M	H				
	101	0.4000	4	Backyard	60	19,200	Local	1		M	M				
	102	0.4000	4	Backyard	60	19,200	Local	1		M	M				M
	106	1.2000	12	Backyard	180	57,600	Local	8		M	M				
	105	0.5000	5	Backyard	75	24,000	Local	5		M	M	M			
	98	4.6000	46	Backyard	690	220,880	Local	15	M	M	M	M			
	97	2.4000	24	Backyard	360	115,200	Local	16		M	M	M			
	93	4.6000	46	Backyard	690	220,880	Local	16		M	M	M			
Goat	99	1.5000	15	Backyard	225	72,000	Local	5	M	M	M	M	M		M
	100	9.8000	98	Backyard	1,470	470,400	Local	8	M	M			M		
	94	2.0000	20	Backyard	300	96,000	Local	8	M	M		M			
	94-A	4.1000	41	Backyard	615	196,800	Local	13	M	M		M	M		
	104	0.5000	5	Backyard	75	24,000	Local	1	M	M		M	M		
	103-A	0.7000	7	Backyard	105	33,600	Local	4	M	M		M	M		
	37-A	0.4000	4	Backyard	60	19,200	Local	4	M	M	M		M		
	TOTAL	**37.7000**	**377**		**5,655**	**1,809,760**		**124**							
Sheep	101	0.1000	1	Backyard	15	4,800	Local	1		M	M				

TYPE	BARANGAY	AREA (HA.)	NO. OF HEADS	PRODUCTION CLASSIFICATION	PRODUCTION		PRODUCT MARKET	NO. OF TENANTS	HAZARD SUSCEPTIBILITY (H/M/L)						
					VOLUME (KG./YR.)	VALUE			FL	TY	DR	EQ	LN	TS	SU
	106	0.2000	2	Backyard	30	9,600	Local	2		M	M				
	98	0.6000	6	Backyard	90	28,800	Local	1	M	M	M	M			
	97	0.3000	3	Backyard	45	14,400	Local	1		M	M	M			
	TOTAL	**1.2000**	**12**		**180**	**57,600**		**5**							
Horse	108	0.2500	1	Backyard	1 hd.	20,000	Local	1	L	M	H				
	107	0.5000	2	Backyard	2 hds.	40,000	Local	1	L	M	H				
	106	0.5000	2	Backyard	2 hds.	40,000	Local	1		M	M				
	93	1.2500	5	Backyard	5 hds.	100,000	Local	1		M	M	M			M
	100	5.0000	20	Backyard	20 hds.	400,000	Local	1	M	M	M	M	M		
	94-A	1.2500	5	Backyard	5 hds.	100,000	Local	3	M	M		M			
	TOTAL	**8.7500**	**35**			**700,000**		**8**							

Source: City Veterinary Office, 2016

Table 4.5 Revenue Derived From Livestock and Poultry Business, 2015

ANIMAL COMMODITY	NUMBER OF HEADS	NUMBER OF KILOS	VALUE (IN PESOS)
Carabao	355	88,760	24,500,000.00
Cattle	77	18,530	5,584,000.00
Swine	1,527	235,600	47,126,000.00
Dressed Chicken	69,850	469,071	12,027,960.00
Goat	377	5,655	1,809,760.00
Sheep	12	180	57,600.00
TOTAL	**72,198**	**817,796**	**91,105,320.00**

Source: City Veterinary Office, 2016

Table 4.6 Existing Pasture Area for Large and Small Animals Animals, 2015

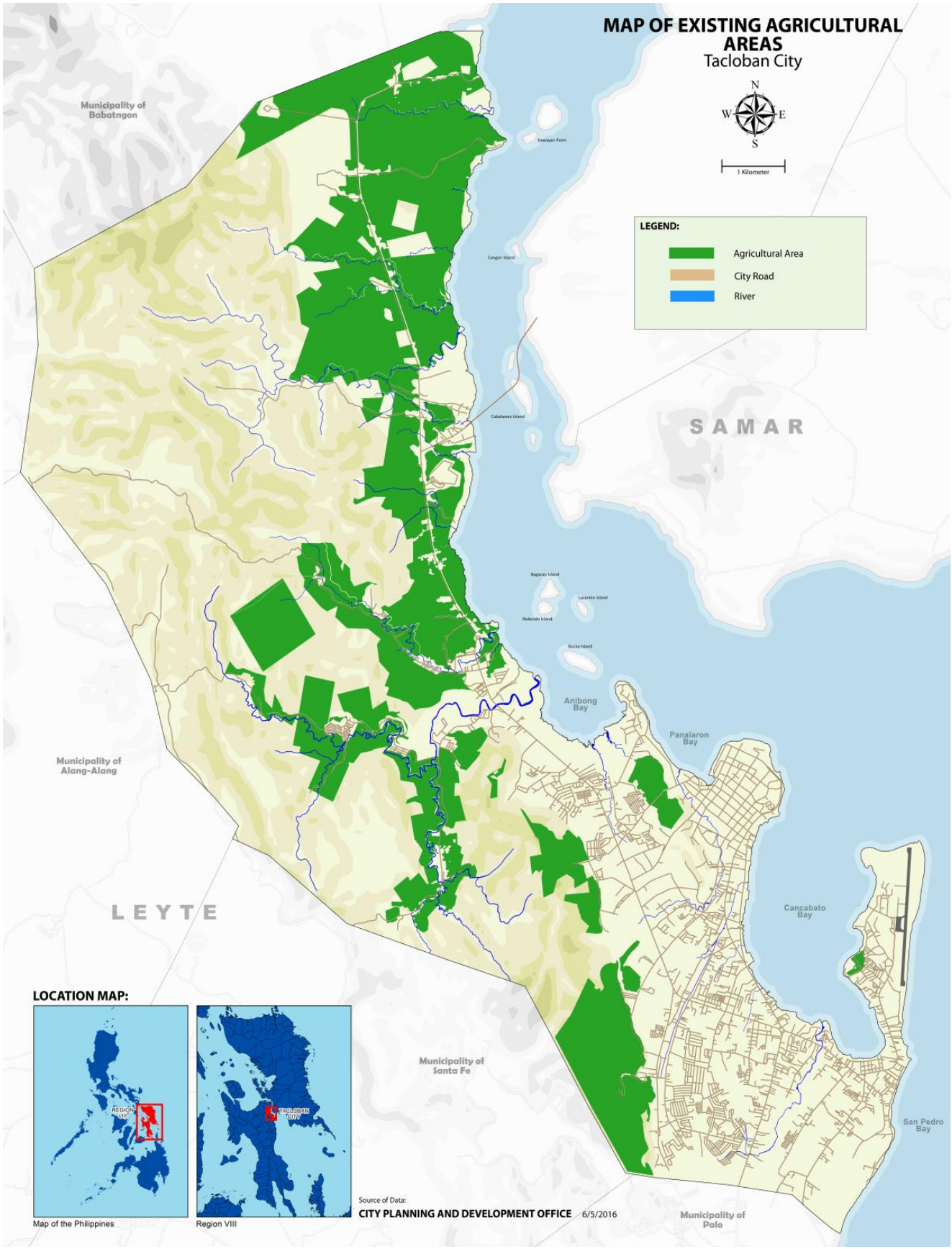
BARANGAY NUMBER	AREA (LARGE ANIMALS)	AREA (SMALL RUMINANTS)
108	8.50	0.9
107	27.75	3.7
101	4.25	0.5
102	3.00	0.4
106	4.75	1.4
105	8.00	0.5
98	5.25	5.2
97	7.75	2.7
93	10.75	4.6
99	5.25	1.5
100	8.50	9.8
94	3.75	2.0
94-A	12.25	4.2
104	2.25	0.5
103-A	4.25	0.7
37-A	0.75	0.4
103	12.75	0.8
12	1.25	0.5
74	2.5	2.7
78		0.8
81		0.4
79		1.1
TOTAL	**133.50**	**45.30**

Source: City Veterinary Office, 2016

Table 4.7 Existing Pig Pens and Range Area, 2015

BARANGAY NUMBER	AREA/HA. (PIG PEN)	AREA/HA. (RANGE)
108	0.0500	0.2660
107	0.0400	0.3500
101	0.0220	0.1600
102	0.0110	0.1300
106	0.0230	0.1400
105	0.0280	0.2100
98	0.0230	0.3500
97	0.0410	0.4700
93	0.0430	0.7600
99	0.0145	0.5400
100	0.0240	0.5300
94	0.0120	0.2500
94-A	0.0360	0.3000
104	0.0190	0.6700
103-A	0.0100	0.1100
37-A	0.0050	0.1900
103	0.0320	0.5700
12	0.0200	0.2700
3	0.0110	0.2400
74	0.0090	0.2800
78	0.0170	0.2400
80	0.0080	0.1400
82	0.0065	0.1900
81	0.0090	0.4700
79	0.0060	0.2800
TOTAL	**0.5200**	**8.1060**

Source: City Veterinary Office, 2016

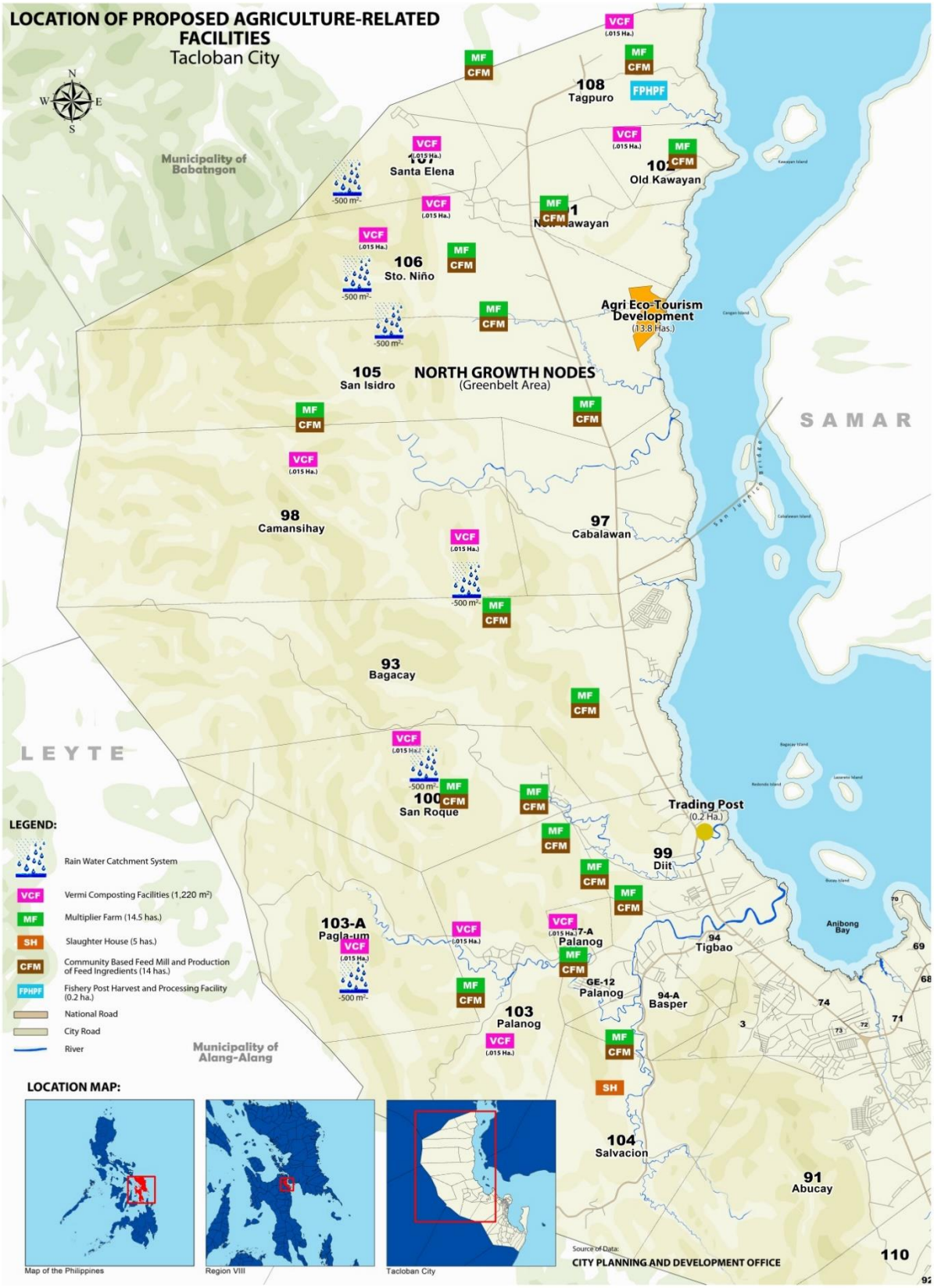


Map 69. Existing Agricultural Areas

Table 4. 8 Proposed Pasture Areas, 2015

TYPE	BARANGAY	AREA (HA.)
Carabao	108	0.7500
	106	0.7500
	101	0.5000
	102	0.5000
	105	0.7500
	99	0.5000
	37-A	0.5000
	12	0.5000
	94-A	1.0000
	98	0.7500
	97	0.2500
	100	0.2500
	104	0.2500
Goat	108	1.5000
	107	1.5000
	98	1.5000
	103	1.5000
	94-A	1.5000
Organic Swine	108	0.0600
	101	0.0600
	104-A	0.0200
	100	0.0200
	106	0.0200
	105	0.0200
	98	0.0200
	102	0.0200
	103	0.0200
Inorganic Swine	108	0.0500
Native Chicken	94-A	0.0400
	12	0.0200
	37	0.0200
TOTAL		**15.1400**

Source: City Veterinary Office, 2016



Map 70. Location of Proposed Agriculture-Related Facilities

4.1.3 Fisheries and Aquaculture

Some residents of Tacloban City are directly engaged in various fishery activities such as deep sea fishing, direct selling, aquaculture, collection of shells, fish fry collection, cultivation of algae and other such economic activities distinctively related to fishing. It is therefore believed that the city's Mariculture Zone and Aquaculture Sub-zone (458.07) is incapable of supplying the fish requirement of the city. The data below illustrate other fishery resources and activities. These activities however, showed a deficiency in fisheries and aquaculture requirement of about 71.37%. It is also worth noting that Tacloban City being the strategic hub of Eastern Visayas is the entry point of all fish products from various fish producing cities and provinces, therefore such deficit will not be so much of a problem.

There are also the existence of agricultural support facilities and services in the locality which directly or indirectly bring about the performance of our agriculture sector in the city.

Table 4. 9 Existing Fishing Grounds and Aquaculture Production, 2015

FISHING GROUNDS	BARANGAY	PRODUCTION		PRODUCT MARKET	HAZARD SUSCEPTIBILITY (H/M/L)						
		VOLUME (MT)	VALUE		FL	TY	EQ	LN	TS	SU	OTHERS
Marine	100	.96	96,000.00	Local	L	H			H	H	
	102	42.24	4,224,000.00	Local	L	H			H	H	
	105	16.32	1,632,000.00	Local	L	H			H	H	
	106	.48	48,000.00	Local	L	H			H	H	
	108	23.52	2,352,000.00	Local	L	H			H	H	
	2	1.92	192,000.00	Local	L	H			H	H	
	20	1.92	192,000.00	Local	L	H			H	H	
	25	28.80	2,880,000.00	Local	L	H			H	H	
	31	12.48	1,248,000.00	Local	L	H			H	H	
	35-A	21.12	2,112,000.00	Local	L	H			H	H	
	37	15.36	1,536,000.00	Local	L	H			H	H	
	48	7.68	768,000.00	Local	L	H			H	H	
	48-A	3.84	384,000.00	Local	L	H			H	H	
	48-B	3.84	384,000.00	Local	L	H			H	H	
	51	1.44	144,000.00	Local	L	H			H	H	
	52	27.36	2,736,000.00	Local	L	H			H	H	
	54	23.52	2,352,000.00	Local	L	H			H	H	
	54-A	1.44	144,000.00	Local	L	H			H	H	
	1&4	6.72	672,000.00	Local	L	H			H	H	
	3 & 3-A	.96	96,000.00	Local	L	H			H	H	
	56	2.88	288,000.00	Local	L	H			H	H	
	56-A	11.04	1,104,000.00	Local	L	H			H	H	
	58	.48	48,000.00	Local	L	H			H	H	
	6-A	4.32	432,000.00	Local	L	H			H	H	
	60-A	11.04	1,104,000.00	Local	L	H			H	H	
	61	2.40	240,000.00	Local	L	H			H	H	

FISHING GROUNDS	BARANGAY	PRODUCTION		PRODUCT MARKET	HAZARD SUSCEPTIBILITY (H/M/L)						
		VOLUME (MT)	VALUE		FL	TY	EQ	LN	TS	SU	OTHERS
	62	.48	48,000.00	Local	L	H			H	H	
	62-B	.48	48,000.00	Local	L	H			H	H	
	63	.48	48,000.00	Local	L	H			H	H	
	66-A	4.80	480,000.00	Local	L	H			H	H	
	66	7.20	720,000.00	Local	L	H			H	H	
	67	15.36	1,536,000.00	Local	L	H			H	H	
	68	21.12	2,112,000.00	Local	L	H			H	H	
	69	25.44	2,544,000.00	Local	L	H			H	H	
	70	32.64	3,264,000.00	Local	L	H			H	H	
	71	17.28	1,728,000.00	Local	L	H			H	H	
	72	2.88	288,000.00	Local	L	H			H	H	
	74	19.20	1,920,000.00	Local	L	H			H	H	
	75	1.32	1,632,000.00	Local	L	H			H	H	
	99	24.00	2,400,000.00	Local	L	H			H	H	
	98	1.92	192,000.00	Local	L	H			H	H	
	83	10.08	1,008,000.00	Local	L	H			H	H	
	83-A	67.68	6,768,000.00	Local	L	H			H	H	
	83-B	1.44	144,000.00	Local	L	H			H	H	
	83-C	7.20	720,000.00	Local	L	H			H	H	
	84	17.28	1,728,000.00	Local	L	H			H	H	
	85	16.80	1,680,000.00	Local	L	H			H	H	
	86	17.28	1,728,000.00	Local	L	H			H	H	
	36	.96	96,000.00	Local	L	H			H	H	
	87	15.6	1,56,000.00	Local	L	H			H	H	
	88	227.52	22,752,000.00	Local	L	H			H	H	
	89	184.32	18,432,000.00	Local	L	H			H	H	
	90	39.84	3,984,000.00	Local	L	H			H	H	
	93	79.20	7,920,000.00	Local	L	H			H	H	
	94	34.56	3,456,000.00	Local	L	H			H	H	
	94-A	7.68	768,000.00	Local	L	H			H	H	
	97	24.00	2,400,000.00	Local	L	H			H	H	
Aquaculture Production											
(Bangus)	108	81.01825	8,101,825.00	Local	L	H			H	H	
	102	3.94475	394,475.00	Local	L	H			H	H	
	93	1.468	146,800.00	Local	L	H			H	H	
	68	1.376	137,600	Local	L	H			H	H	
(Seaweeds)				Local	L	H			H	H	
Fresh	108	19.204	230.448.00	Local	L	H			H	H	
	102	6.78	81,360.00	Local	L	H			H	H	
	93	.5	6,000.00	Local	L	H			H	H	
	99	1.5	18,000.00	Local	L	H			H	H	
Dried	108	.696	20,880.00	Local	L	H			H	H	
	102	.3	9,000.00	Local	L	H			H	H	
	99	.204	6,120.00	Local	L	H			H	H	
TOTAL		**1,317.111**	**128,874,260.00**								

Source: City Agriculturist Office/Fisheries Sector, 2016

Tacloban City has a vast coastal area that extends from the eastern to the northern part of the City. It has 44 coastal barangay's that are distributed on the three rich fishing grounds in the City. On the eastern part lies San Pedro Bay, Cancabato Bay and on the northern part is the San Juanico Strait.

Cancabato Bay used to be one of the riches fishing ground in Tacloban City because of the presence of different species of fish found in the area especially Siganid or Danggit in our local term that serve as the major livelihood of our marginal fisherfolk. It is also considered as one of the best spawning ground of fishes in the City, because of its wide sea grasses found in the area. Surveys and Researches has been conducted in the area by some institutional schools and NGO's and found out that some ofthe resources has been depleted due to the proliferation of illegal activities, wanton collection of marine resources and pollution.

Successful management of coastal resources can only be realized with good leadership and full cooperation of the people. The hidden costs can actually count the most if not handled well. Potential constraints to the initiation of a coastal development program should be identified so that these can be considered in formulating the program strategies and work plan. The success and long-term sustainability of coastal management programs depend on effective institutional arrangements and strong local government commitment, clear national and local policies; allocation of adequate resources; and enhanced public awareness participation.

An efficient manager must be capable of balancing the conservation and development of coastal resources. He/she should be able to effectively coordinate and integrate a wide range of actions to facilitate a logical and synergistic strengthening of the coastal resources management program.

Table 4. 10 Fishery Technology Adopted, 2015

RESOURCE	TECHNOLOGY
Fish Culture	Fish coral, Gillnet, Crab Pot, Fish Pot, Hood and Line
Aquaculture	Bangus in cage, Pen and Pond Culture, Mudcrab culture, Lapu-Lapu in cage culture, Seaweed culture
Post Harvest	Fish salting, Drying and Smoking, Boneless Bangus and Seaweeds Drying and processing

Source: City Agriculturist's Office, 2016

Table 4. 11 Volume and Value of Production of Fishing Grounds/Fishpens

NAME OF FISHERY PRODUCT	VOLUME OF PRODUCTION (IN METRIC TONS)	VALUE OF PRODUCTION (PESOS)	FISHING GROUNDS
Capture Fishes			
Lapu-lapu, sagision, kirawan, danggit, kekero, shrimps, crabs and lomong	1,200.12	120,012,000.00	San Pedro Bay, Cancabato Bay, Panalaron Bay, Anibong Bay & San Juanico Strait
Aquaculture (Fish Cage)			
Bangus Fish Cage	87.807	8,780,700.00	Tagpuro, Old Kawayan and Bagacay
Seaweed (Fresh)	27.984	279,840.00	Tagpuro, Old Kawayan, Bagacay and Diit
(Dry)	1.2	12,000.00	
TOTAL	**1,317.111**	**129,084,540.00**	

Source: City Agriculturist's Office, 2016

Table 4. 12 Number of Fishermen By Type, 2015

TYPE OF FISHING	OWNER-CULTIVATOR	FISHWORKER/LABORER
Capture Fisheries	2,298	80
Aquaculure	50	
Gleaning/Shell Collector	81	
Fish Vending/vendors	800	
TOTAL	**3,229**	**80**

Source: City Agriculturist's Office, 2016

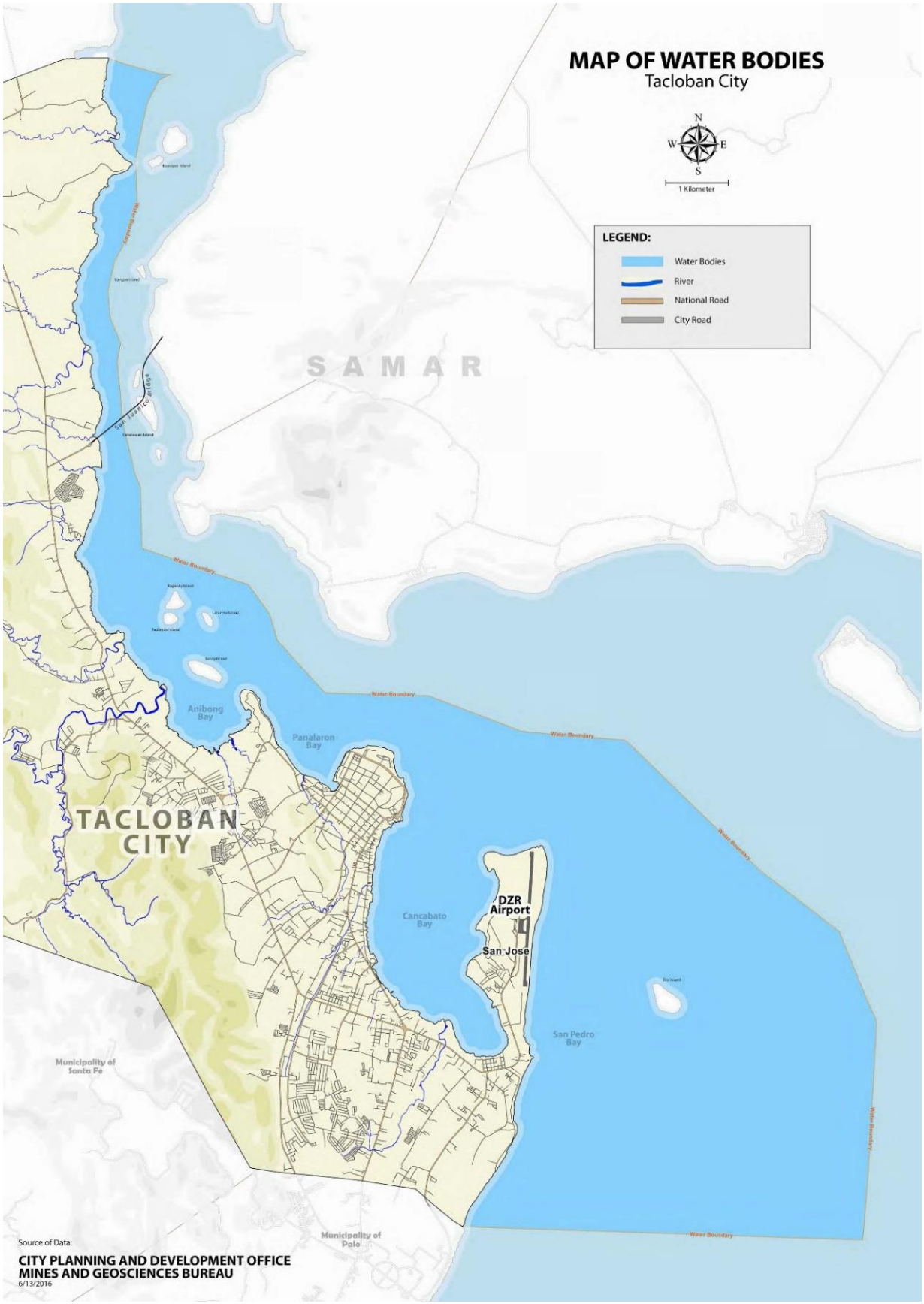
Table 4. 13 Major and Minor Agricultural Occupations/Groups in Urban and Rural Areas, 2015

MAJOR AND MINOR OCCUPATION GROUPS	BARANGAY	NON-ORGANIZATION MEMBER	URBAN			RURAL			TOTAL		
			M	F	TOTAL	M	F	TOTAL	M	F	TOTAL
Farmers											
Crop farmers	San Isidro	22				17	10	27			49
	San Roque	43				21	34	55			98
	Salvacion	80				15	35	50			130
	G.E. Palanog	19				17	8	25			44
	Diit	6				10	16	26			32
	Caibaan	-	19	21	40						40
	Cabalawan	7				30	13	43			50
	Palanog (103)	15				60	14	74			89
	Palanog (37-A)	-				28	10	38			38
	Bagacay	38				17	14	31			69

MAJOR AND MINOR OCCUPATION GROUPS	BARANGAY	NON-ORGANIZATION MEMBER	URBAN			RURAL			TOTAL		
			M	F	TOTAL	M	F	TOTAL	M	F	TOTAL
	Basper	1				15	19	34			35
	Camansihay	25				14	28	42			67
	Old Kawayan	24				24	22	46			70
	Tagpuro	-				53	67	120			120
	Paglaum	-				49	46	95			95
	Sta. Elena	-				75	91	166			166
	Sto. Niño	34				24	5	29			63
	New Kawayan	5				24	12	36			41
	Naga-Naga	22									22
	Abucay	15									15
	San Jose	14									14
	Apitong	36									36
	Colon	2									2
	Youngfield	2									2
Orchard farmers	Cabalawan					3	1	4			4
	Sta. Elena										
	Tagpuro										
	Tigbao										
	Paglaum										
	Bagacay										
	Caibaan										
Ornamental and Other Plant Growers	Palanog (103)					10	15	25			25
	Basper (94-A)										
	Apitong (92)										
	San Roque (100)										
Livestock	16					413	537	950			950
Dairy farmers	16					100	113	213			213
Poultry farmers	16					514	565	1,079			1,079
Farm workers	4					9	3	12			12
Fisher folks											
Aqua-farm cultivators	99		28	1	29						29
	98		2		2						2
	77		1		1						1
	83-A		1		1						1
	87		2		2						2
	88		2		2						2
	93		13	1	14						14
	96		1		1						1
	97		2		2						2
	56-A		1		1						1
	67		2		2						2
	68		4		4						4
	71		2		2						2
	74		1		1						1
	100		1		1						1
	102		26	24	50						50
	105		1		1						1
	108		35	26	61						61
Inland and Coastal Waters Fisher folks											
(Capture Fisheries)	100		2		2						2
	102		88		88						88
	105		34		34						34
	106		1		1						1

MAJOR AND MINOR OCCUPATION GROUPS	BARANGAY	NON-ORGANIZATION MEMBER	URBAN			RURAL			TOTAL		
			M	F	TOTAL	M	F	TOTAL	M	F	TOTAL
	108		49		49						49
	2		4		4						4
	20		4		4						4
	25		60		60						60
	31		26		26						26
	35-A		44		44						44
	37		32		32						32
	48		16		16						16
	48-A		8		8						8
	48-B		8		8						8
	51		3		3						3
	52		57		57						57
	54		49		49						49
	54-A		3		3						3
	1 & 4		14		14						14
	3 & 3-A		2		2						2
	56		6		6						6
	56-A		23		23						23
	58		1		1						1
	6-A		9		9						9
	60-A		23		23						23
	61		5		5						5
	62		1		1						1
	62-B		1		1						1
	63		1		1						1
	66-A		10		10						10
	66		15		15						15
	67		32		32						32
	68		44		44						44
	69		53		53						53
	70		68		68						68
	71		36		36						36
	72		6		6						6
	74		40		40						40
	75		20	14	34						34
	99		50		50						50
	98		4		4						4
	83		15	6	21						21
	83-A		64	77	141						141
	83-B		3		3						3
	83-C		7	8	15						15
	84		29	7	36						36
	85		35		35						35
	86		36		36						36
	36		2		2						2
	87		32		32						32
	88		474		474						474
	89		383	1	384						384
	90		83		83						83
	93		164	1	165						165
	94		72		72						72
	94-A		16		16						16
	97		50		50						50
TOTAL		**410**			**2,748**			**3,220**			**6,378**

Source: City Agriculturist Office/Crops and Fisheries Sectors
City Veterinary Office, 2016



Map 71. Water Bodies

4.1.4 Agrarian Reform:

Data from the Department of Agrarian Reform shows that there are existing Agrarian Reform Communities (ARC) in the city which comprises a total of 985.4355 hectare broken down intoproposed ARC of about 51.4235 hectares and a total of 934.0120 hectares for ARC.

Table 4. 14 Agrarian Related Concerns, 2015

LOCATION	NAME OF LANDOWNER	AREA COVERED (HAS.)	NO. OF BENEFICIARY
ARC Communities			
Paglaum	LSBDA	30.3953	22
Palanog	LSBDA	40.5345	407
	V&G Better Homes Subd.	2.0290	2
Salvacion	Prospero Leanda, Sr.	5.7613	1
	LSBDA	38.7764	26
	Zaldy Quero, et.al.	2.1229	3
San Roque	DBP	4.6988	2
	LSBDA	20.5787	11
Anibong	Cristina Villasin	5.8875	7
Bagacay	Arturo Alicer, et.al.	4.2913	7
	Nicolasa Reyna	0.4420	2
	LSBDA	20.2352	43
	x	23.7881	1
Cabalawan	Aurora Vda. De Uyvico	1.1519	3
	Cartier Realty Dev't. Corp.	36.2207	54
	DBP	2.4925	1
	Glee Properties	3.1678	2
	LSBDA	122.8273	55
	Equitable Banking Corp.	5.1230	8
Diit	Mariquita Cinco	1.0974	2
	Victoria Calabria	3.3547	1
Sto. Niño	Paulino Sancho	28.2206	33
	Paulino Sancho, et.al.	7.1069	4
	LSBDA	16.1100	8
	UCPB	5.9354	2
Tagpuro	Rosalia Montejo	0.4764	1
	Rosalia Montejo, et.al.	1.7229	6
Abucay	LSBDA	19.7233	17
Basper	LSBDA	3.3949	2

LOCATION	NAME OF LANDOWNER	AREA COVERED (HAS.)	NO. OF BENEFICIARY
Camansihay	LSBDA	21.2424	12
	Prudential Bank	20.6087	9
New Kawayan	DBP	11.6972	5
	LSBDA	2.9190	2
	Dionesio Padilla	23.2617	9
	UP System	30.9337	12
Poblacion	LSBDA	181.4722	122
Sagkahan	LSBDA	21.5190	13
San Isidro	NLSF	4.2138	1
Tabanguhay	LSBDA	22.9529	14
Tigbao	Maria Anido	30.0762	12
	Rufina Bato	10.8526	4
	DBP	6.1010	3
	LSBDA	50.3087	34
	V&G Better Homes Subd.	29.6402	19
Utap	UP	8.5460	3
Total		**934.0120**	**1,007**
Proposed ARC Communities			
Bagacay	Concepcion Panilawon	6.14	
Cabalawan	Cartier Realty Devt. Corp.	9.5452	
	Solomon Maceda	7.9828	
Camansihay	Bonifacio P. Mondejar, Jr.	17.6739	
Caibaan	Divine Word University of Tacloban	2.3250	
Tigbao	Teresita De La Cruz	7.1239	
Utap	Mariano Garin	0.6327	
Total		**51.4235**	
GRAND TOTAL		**985.4355**	

Source: Department of Agrarian Reform – City, 2015, Cluster 1-A Palo, Leyte, 2016

Table 4.15 illustrates the Comparative Area Utilization of Significant Agricultural Activities in the city of Tacloban. Crop production in 2015 dramatically increased compared to the previous years. This could be the result of the series of crop production activities initiated by the City Agriculturist's Office. Although there is no point of comparison between the livestock and poultry's area of utilization, it

is clearly presented in the table that only 0.09% of the total city area is being used for the purpose which consequently answers to the very poor production yield from such products. It was only in the year 2015 that a drastic increase of 831% of the area was used in order to improve its' production. On the other hand, bodies of water within the territorial jurisdiction of the city is presumed to be potential fishing grounds, an estimated5,910 hectares is available for fisheries and aquaculture activities but for the past four (4) years only about 1,317.11 hectares is being utilized or 22.29% of the available resources. In the proposed landuse for 2017-2025 (Proposed Agricultural Area) a decrease of 31 percent for agricultural use is allocated due to the immediate need of housing projects for the displaced/affected communities along danger zones but it has been the firm commitment of the City Agriculturist's Office to improve production yield of all agricultural products available in the locality by way of establishing techno-demo farms and other technical assistance to the farmers sans sufficient area needed.

Table 4. 15 Comparative Area Utilization of Significant Agricultural Activities

ACTIVITIES	2012		2013		2014		2015	
	AREA (HAS.)	% (TOTAL LAND AREA)	AREA (HAS.)	% (TOTAL LAND AREA)	AREA (HAS.)	% (TOTAL LAND AREA)	AREA (HAS.)	% (TOTAL LAND AREA)
Crop Production	715.11	34.88	1,047.81	43.97	3,367.35	71.61	2,586.53	63.56
Livestock and Poultry	17.8323	0.87	17.8323	0.75	17.8323	0.38	166.00	4.08
Fisheries and Aquaculture	1,317.11	64.25	1,317.11	55.28	1,317.11	28.01	1,317.11	32.36

Source: CPDO 2016

Table 4. 16 Agriculture Related Projects, Approved/Funded for Implementation, 2015

NAME/ TYPE OF PROJECT	LOCATION	TYPE	PROPONENT (GOVERNMENT,PRIVATE, OTHER)	ESTIMATED START DATE	ESTIMATED DATE OF COMPLETION
Animal infusion & Restocking	Brgys. 108, 102, 106, 105, 98, 97, 93, 99, 100, 104, 94-A & TNAS	Carabao	DA – RF08	March 28, 2016	Completed
Animal infusion & Restocking	TNAS, Brgy. 94-A, 12 & 37	Native Chicken	DA – RF08	June 2016	
Swine production	Brgy. 108, 101	Swine	DA – PRDP	July 2016	July 2018
Multiplier Farm	Brgy. 104, 100, 105, 104, 102, 98 & 103	Swine	DA – BUB	Oct. 2016	Oct. 2018
Dispersal Program	Brgy. 108, 98, 107, 101, 100	Swine	Rotary Club of Kandaya	Nov. 2015	Nov. 2017
Integrated Farming	Brgy. 108	Rice & Swine	DA – YRRP	July 2016	July 2018
	Brgy. 107	Vegetables & Goat	DA – YRRP	July 2016	July 2018
Quail Egg Production	Brgy. 105	Quail	Spaniards	March 2016	March 2018
Duck Egg Production	Brgy. 100	Duck	DSWD	July 2016	July 2018
Promotion of Bio-Intensive Farming for Sustainable Food Productivity: Agricultural Trainings, Farm implements, Tools and Infrastructure Support to Agriculture	Brgys. 108, 107, 101, 102, 106, 105, 97, 98, 93, 99, 100, 94-A, 104, 103, 103-A, 37-A, 12, & 95-A	Production and Infrastructure Support	LGU – Tacloban thru DA's BuB funding	Sept. 2016	Dec. 2016
Trading Post	Diit	Infrastructure Support	LGU – Tacloban thru BuB Funds	Sept. 2016	February 2017
Vermi-Composting	CAgri Office	Production and Infrastructure Support	LGU – Tacloban thru DA's BuB Funds	Sept. 2016	Sept. 2017
Acquisition of Farm Equipment	Brgys. 108, 107, 101, 102, 106, 105, 97, 98, 93, 99, 100, 94-A, 104, 103, 103-A, 37-A, 12, & 95-A	Infrastructure Support	LGU – Tacloban thru DA's BuB Funds	Sept. 2016	Sept. 2017

NAME/ TYPE OF PROJECT	LOCATION	TYPE	PROPONENT (GOVERNMENT,PRIVATE, OTHER)	ESTIMATED START DATE	ESTIMATED DATE OF COMPLETION
Production of organic seeds and other planting materials	Brgys. 108, 107, 101, 102, 106, 105, 97, 98, 93, 99, 100, 94-A, 104, 103, 103-A, 37-A, 12, & 95-A	Production and Infrastructure Support	LGU – Tacloban	Sept. 2016	Aug. 2017
Integrated Community Food Production	Taguiktik, Sampaguita, Brgy. 49 and Cabalawan	Production Support	LGU – Tacloban thru NAPC's Funding	July 2016	June 2017
Small Farm High Value Project	Northern Barangays	Farm Mechanization Support	LGU – Tacloban thru DA's BuB funding	Oct. 2016	Feb. 2017
Agricultural Development Program in the 13.8 has. Agri-Eco-Tourism Site	Brgy. Sto. Niño	Agri-Eco-Tourism Promotion	LGU – Tacloban	Jan. 2017	Dec. 2017*
Leyte Gulf Rehabilitation Project	Tagpuro	Mangrove (13.1 has.)	LGU		
	San Isidro	Mangrove (13.46 has.)			
	Cabalawan	Beach (4.83 has.)			
	Bagacay	Mangrove (7.24 has.)			
		Beach (1.048 has.)			
	Diit	Mangrove (7.43 has.)			
		Beach (1.05 has.)			
	Tigbao	Mangrove (15.34 has.)			
	Anibong	Mangrove (12.45 has.)			
	Naga-Naga	Mangrove (10.45 has.)			
	Nula-Tula	Mangrove (3.66 has.)			
	Brgy. 88, Alimasag	Mangrove (1.34 has.)			
	Old Kawayan	Mangrove (3.08 has.)			
	Old Kawayan	Mangrove (8.73 has.)			
	Cabalawan	Mangrove (5.13 has.)			
	Brgy. 88, Kataisan	Mangrove (16.15 has.)			

NAME/ TYPE OF PROJECT	LOCATION	TYPE	PROPONENT (GOVERNMENT,PRIVATE, OTHER)	ESTIMATED START DATE	ESTIMATED DATE OF COMPLETION
		Beach (2.09 has.)			
	Brgy. 88, Fisherman	Mangrove (2.31 has.)			
	Brgy. 83, Paraiso	Mangrove (5.35 has.)			
	Brgy. 90, Baybay	Beach (2 has.)			
	Brgy. 89, Payapay	Beach (4.14 has.)			

Source:Local Government Unit, City Agriculturist Office, CENRO/PENRO, DA-BFAR, BSWM, NIA, etc.
**-Establishment aspect only but this will be maintained continuously, 2016*

II. Problems & Development Needs/Requirements:

The quest for food self-sufficiency had always been a challenge not just to the city of Tacloban but of the entire country as well. The thrust of the agriculture sector has always been clear as presented in different scenarios of this sector and that is to improve the production capacity of the city by introducing diversified farming technologies and maximizing the area allocated for production.

Table 4.17 illustrates the current and projected food requirement based on sectoral standards. This table will be the basis of analysis of a particular food against the available supply we have as well as our deficiency.

Table 4. 17 Current and Projected Food Requirement Vis-à-vis Sectoral Standards

Tacloban City, 2017– 2025

PER CAPITA DIETARY FOOD REQUIREMENT OF AGRICULTURAL PRODUCTS	IN KILOGRAM PER YEAR									
	CURRENT YEAR (2014)	2017	2018	2019	2020	2021	2022	2023	2024	2025
	239,938	255,599	261,043	266,603	272,282	278,082	284,005	290,054	296,232	302,542
Cereals & cereal products (124)	29,752,312	31,694,276	32,369,332	33,058,772	33,762,968	34,482,168	35,216,620	35,966,696	36,732,768	37,515,208
Sugars & syrups (70)	16,795,660	17,891,930	18,273,301	18,662,210	19,059,740	19,465,740	19,880,350	20,303,780	20,736,240	21,177,940
Starchy Roots and tubers (60)	14,396,280	15,335,940	15,662,580	15,996,180	16,336,920	16,684,920	17,040,300	17,403,240	17,773,920	18,152,520
Vegetables(39)	9,357,582	9,968,361	10,180,677	10,397,517	10,618,998	10,845,198	11,076,195	11,312,106	11,553,048	11,799,138
Fruits (28)	6,718,264	7,156,772	7,309,204	7,464,884	7,623,896	7,786,296	7,952,140	8,121,512	8,294,496	8,471,176
Dried Beans, Nuts & Seeds (4)	959,752	1,022,396	1,044,172	1,066,412	1,089,128	1,112,328	1,136,020	1,160,216	1,184,928	1,210,168
Milk & Milk Products (16)	3,839,008	4,089,584	4,176,688	4,265,648	4,356,512	4,449,312	4,544,080	4,640,864	4,739,712	4,840,672
Eggs (4)	959,752	1,022,396	1,044,172	1,066,412	1,089,128	1,112,328	1,136,020	1,160,216	1,184,928	1,210,168
Meat and Poultry (54)	12,956,652	13,802,346	14,096,322	14,396,562	14,703,228	15,016,428	15,336,270	15,662,916	15,996,528	16,337,268
Miscellaneous (7)	1,679,566	1,789,193	1,827,301	1,866,221	1,905,974	1,946,574	1,988,035	2,030,378	2,073,624	2,117,794

Source: CPDO, 2016

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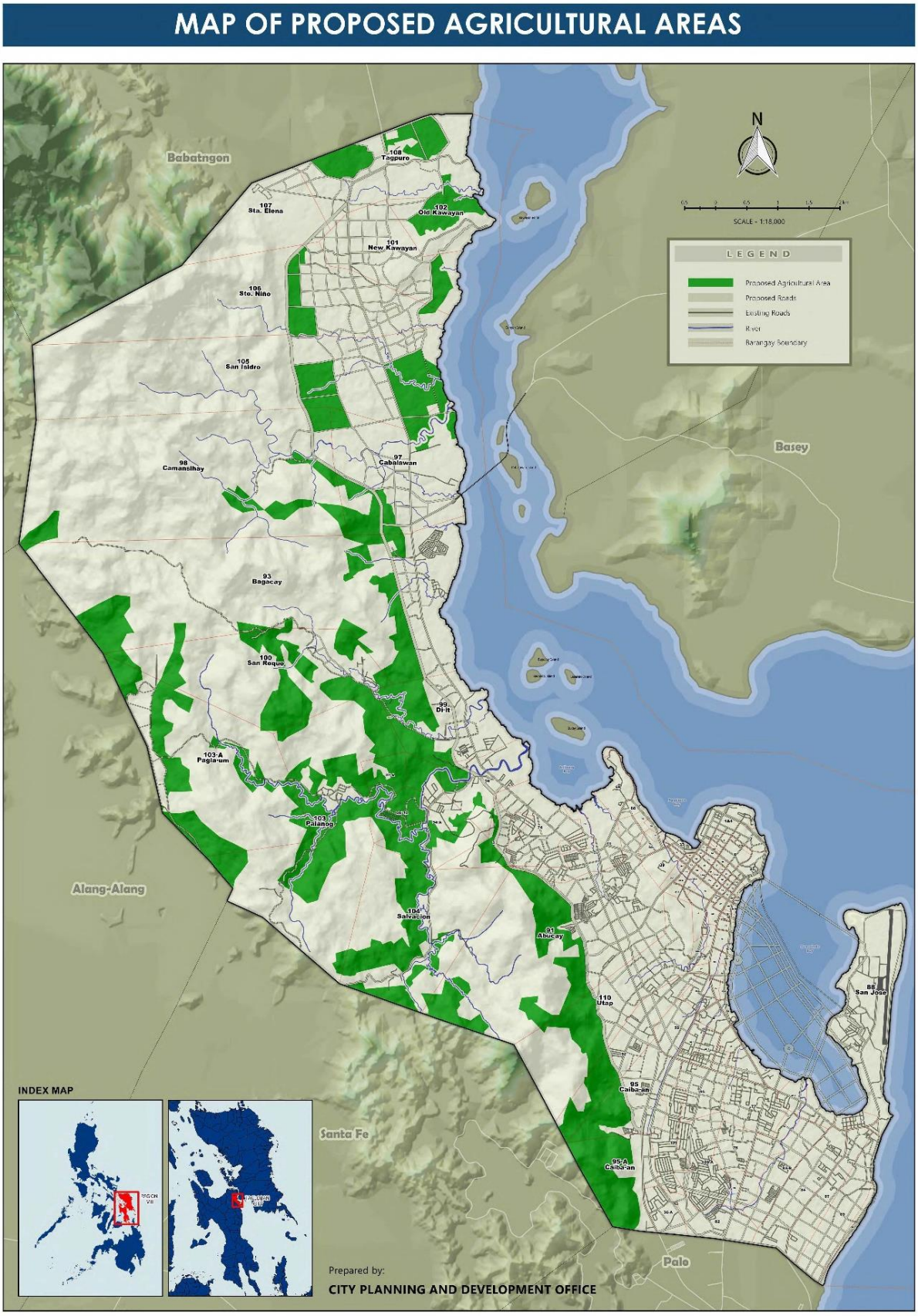

Map 72. Proposed Agricultural Areas

III. Agricultural Analysis Matrix

TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
• Land conversion of agricultural lands to other land use. • Lack of irrigation facilities.	• Inadequate supply of lands for crop production resulting in insufficient food supply to the people of Tacloban. • More farmers living below the economic threshold level.	• Maximize the use of the farm through adoption of suitable diversified farming system. • Adopt organic farming to lessen cost of production, sustain production and preserve the environment. • Indulge in value-adding techniques (processing of agricultural products). • Adopt or practice urban agriculture or containerized gardening. • Adopt water conservation practices such as mulching, deep tillage application of compost, planting of crawling crops such as sweet potato and squash.
• No permanent area in the market where farmers could sell their farm products	• Low income for farmers	• Provide permanent structure as "Bagsakan Area" in the market. • Allow the peddling of agricultural products in different offices.
• Very minimal yield of livestock and poultry products due to high cost of feeds	• The city is compelled to import from other cities, municipalities and provinces.	• Encourage livestock production program through various activities initiated by the City Veterinary Office. • Construction/installation of additional cold storage facilities to augment to the existing commercial cold storages. • Encourage the raising of native chickens and swine at the household level provided that they be given necessary assistance from the City Veterinary Office and the City Health Office on the Sanitation aspect of backyard livestock raising.

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TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
• Location of resettlement are within the buffer zone of existing poultry and piggery farms.	• Possible closure of poultry and piggery farms. • Decrease in production yield of poultry and piggery products.	• Encourage/Promote organic poultry and piggery farm methods. • Encourage households in the resettlement area to plant more trees along available space in order to lessen the effect of foul-smelling odor coming from the neighboring poultry & piggery frams.
• Cancabato Bay degradation due to pollution/siltation, overpopulation of coastal communities, resource use conflicts, climate change and calamaties (typhoons, storm surges, drought, etc.)	• Fish capture affected. • Coastal community in imminent danger. • Coastal resource depletion • Declined fish catch	• Leyte Gulf Rehabilitation Project
• Degraded marine ecosystem caused by Super Typhoon Yolanda	• Low income for fisherfolks	• Ocean/Bay clean-up and retrieval • Coastal Resource Assessment • More data and status of Marine Ecosystem • Coastal area management and local fisherfolk assistance • Study on fishes spawning to determine feasibility of close and open season • Better implementation of the R.A. 10654 and monitoring of other existing fisheries laws.
• Damaged mangrove areas/mangrove seedlings planted in unsuitable areas.	• No natural barrier for storm surges • Declining fish catch • Poor shore soil quality leading to shoreline erosion	• Capacity building on mangrove reforestation and mangrove area management. • Mangrove reforestation program involving/engaging local fisherfolks. • Declare mangrove area as protected area to help better recovery and growth. • Better implementation of policies protecting mangrove areas.

TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
		• Allow aquasilviculture stewardship but with rigid monitoring. • Open public foreshore areas to fisherfolks economic activities (e.g. fish drying, mangrove aquasilviculture, fish landing). • Prioritize fisherfolks applying for foreshore utilization. • Enact/enforce community-based coastal resource management. • Establish satellite FLET Headquarters equipped with wharf and dry docking facilities.

City Planning & Development Office, 2016

4.2 Forestry

Tacloban City's timberland allocation is steady at 19.35% as against its total land area. Tables 4.18 and 4.19 below illustrates the existing area and location of Forestlands by Sub-Sector and Primary Use where a total of 1,692.233 hectares is currently being utilized for production.

Tacloban City requires allocation of more land for urban/residential use. Unutilized agricultural land in the Northern lowlands have already been proposed for reclassification into industrial land whileagricultural lands in the southern lowlands have already been wiped out by the on-rush housing developments.

The rationale for delineating agricultural buffer zone calls for development of remaining agricultural lands that are near surface water sources (e.g. rivers and creeks) which are considered suitable for crop production due to good soil condition. Areas with slopes of less than 18 percent adjoining these waterways should be considered for agricultural land use development.

The reason for establishing agro-forestry/production forest zone is to capitalize on the capability of land in upland areas for tree crop production along

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with the promotion of soil and water conservation in the watershed areas. Areas to be devoted for these uses must be within the slope range of 18-50 percent.

I. Analysis of Existing Situation:

Production Area

Production area in the city are part of barangays Bagacay, Abucay, Basper, Palanog (12, 37-A & 103), Salvacion, San Isidro, San Roque and San Roque with a total area of 1,692.233 hectares.

Production areas include all lands with slopes below 50%, elevation, below 1,000 meters and, outside critical watersheds, not a habitat of any endangered wildlife species and at least 20 meters away from stream channels. All areas not classified as protected areas can be devoted to production. These areas have relatively low value for the conservation of soil, water and biodiversity resources. In addition, these are areas which can be used for cultivation, ago-forestry, grazing, logging and other intensive land uses without resulting in excessive surface soil erosion, gulling, impairment of watershed hydrology and decline in land productivity.

The city has an existing Forest area of 4,800.68 hectares where only about 77.78% is being utilized for production (1,692.233 has.) and protection (2,041.12 has.) areas.

Production forest management strategies include:

- Community-based Forest Management (CBFM)
- Agro-forestry

II. Problems and Development Needs/ Requirements:

Massive destruction and degradation to the locality ensued at the start of economic development. The prominence of Trade and Industry in Tacloban left behind the environment to be devastated as urbanization growth rocketed. The very source of life and the interrelatedness among the living things in the area suffered greatly.

Due to monetary deprivation, the forest-edge communities whose survival and existence depend greatly on forest resources pressured the woodland to the limit of its rearing capacity. Financial demand, made them move deeper into the woods in order to survive. They practiced unsustainable farming through “kaingin system” and firewood gathering that resulted to erosion.

Thousands of hectares of forest in the mountains had been stripped off and coupled with indifferent attitude of the population resulted to shortage of water and other manmade disaster like eroded land, polluted water and air. Forest degradation happened when different destructive factors are present in guise of development. Extraction of forest resources for economic reasons left Tacloban’s forest denuded and deteriorated. Improper land utilization and the unclear demarcation of administrative boundaries on site enhance open access situation and lead to further forest destruction in the watershed.

With the above situations, the City Government of Tacloban strongly upholds and commits to formulate strategies that will effectively mitigate the ever dwindling forest status and improve its natural essence with long lasting benefits given to the communities. Legislation, adoption and enforcement of environmental policies and implementation of sound development and protective strategies are appropriate response to the eminent risk of environmental catastrophe such as flooding, landslide, shortage of water supply, biodiversity, habitat loss and other economic shortfall. Hence, the forest land-use plan is an avenue to provide the city an instrument to orchestrate development plans to attain its vision, mission goals and objectives.

Within the planning period (2017 – 2025), the city has allocted a total of 3,903.54 hectares with 1,910.11 hectares for production areas and 1,993.43 for protection areas. This shows a decrease of about 18.69% because some of the original forest areas have been utilized by the proposed Tacloban North Development Project.

Table 4. 18 Area and Location of Forestlands by Sub-Category and Primary Use

NAME OF FORESTRY AREA	LOCATION	AREA (HA)	DOMINANT TREE SPECIES	TYPE OF PRODUCTION	TYPE OF PERMIT	ANNUAL PRODUCTION		REFORESTATION ACTIVITY AREA (HA)	HAZARD SUSCEPTIBILITY (H/M/L)						
						VOLUME (M3)	VALUE (PHP)		FL	TY	EQ	LN	TS	SU	O
Production	Bagacay	349.38	Fast growing spp	Fuel wood	IFMA	3,493.8	6,987,600.00	69.876				H			
	Abucay	90.92			CSC	909.2	1,818,400.00	18.184				H			
	Basper	1.8			CBFM	18.0	36,000.00	0.36				H			
	Brgy. 12 Palanog	4.92			CBFM	49.2	98,400.00	0.984				H			
	Brgy. 37-A (Palanog)	6.61			CBFM	66.1	132,200.00	1.322				H			
	Camansihay	210.063			CSC	2,100.6	4,201,200.00	42.012				H			
	Paglaum	305.82			CBFM	3,058.2	6,116,400.00	61.164				H			
	Palanog (103)	362.54			FLMA	3,625.4	7,250,800.00	72.508				H			
	Salvacion	144.43			CBFM	1,444.3	2,888,600.00	28.886				H			
	San Isidro	90.46			CBFM	904.6	1,809,200.00	18.092				H			
	San Roque	103.83			CSC	1,038.3	2,076,600.00	20.766				H			
	Sto. Niño	21.46			CBFM	214.6	429,200.00	4.292				H			
	TOTAL	**1,692.233**				**16,922.3**	**33,844,600.00**	**338.446**							
Protection	Bagacay	353.71	Indigenous		IFMA			70.742				H			
	Abucay	206.19			CSC			41.238	H			H			
	Apitong	10.75			CBFM			2.15	H			H			
	Basper	25.75			CBFM			5.15				H			
	Brgy. 3 (Upper Nula-Tula)	18.02			CSC			3.604				H			
	Camansihay	540.05			CSC			108.01				H			
	Paglaum	25.32			CBFM			5.064				H			
	Salvacion	76.47			CBFM			15.294				H			
	San Isidro	320.95			CBFM			64.19				H			

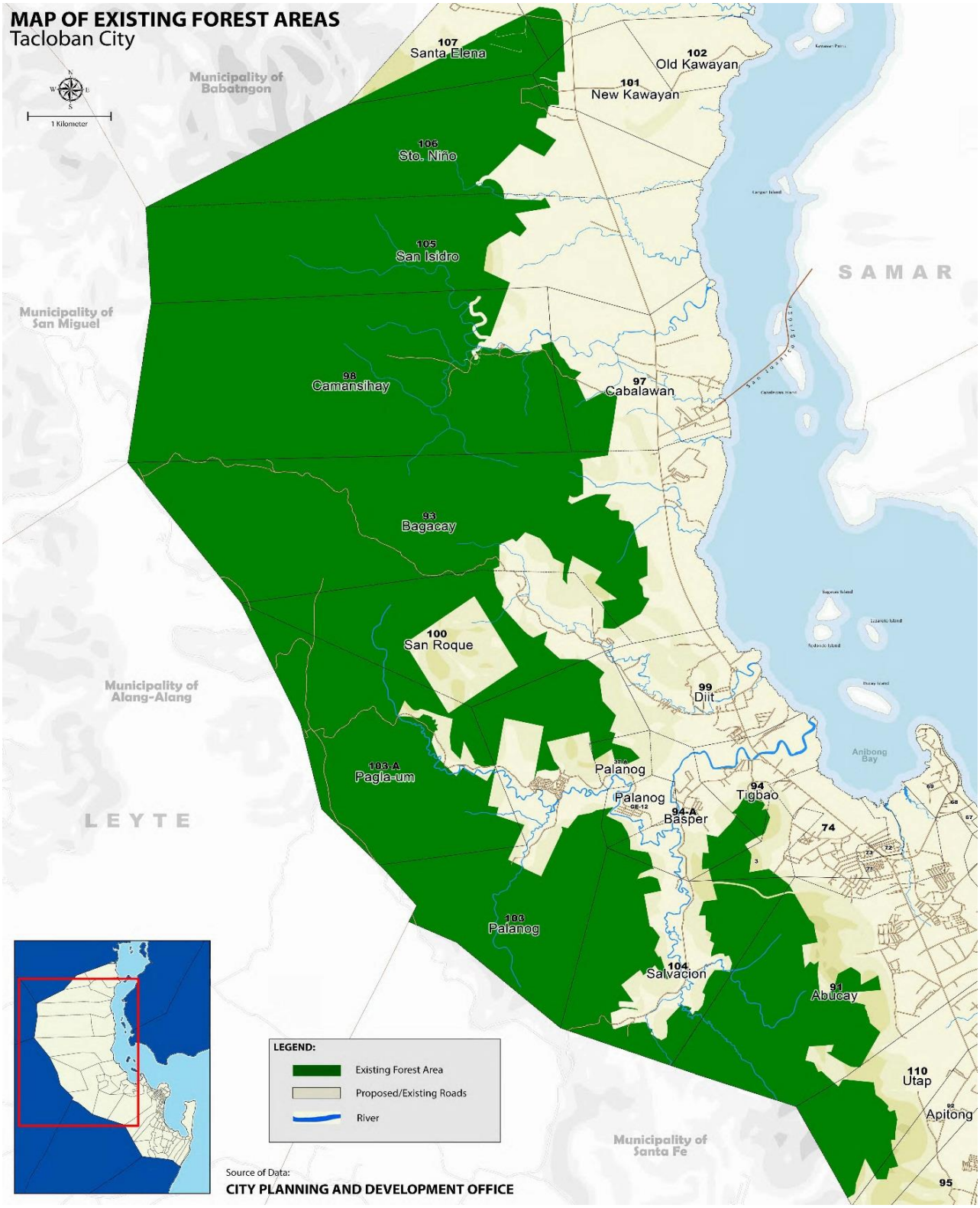
NAME OF FORESTRY AREA	LOCATION	AREA (HA)	DOMINANT TREE SPECIES	TYPE OF PRODUCTION	TYPE OF PERMIT	ANNUAL PRODUCTION		REFORESTATION ACTIVITY AREA (HA)	HAZARD SUSCEPTIBILITY (H/M/L)						
						VOLUME (M3)	VALUE (PHP)		FL	TY	EQ	LN	TS	SU	O
	San Roque	116.16			CSC			23.232				H			
	Sto. Niño	231.58			CBFM			46.316				H			
	Sta. Elena	2.91			CBFM			0.582				H			
	Tigbao	10.43			CSC			2.086	H			H			
	Utap	102.83			CBFM			20.566	H			H			
	TOTAL	**2,041.12**						**408.224**							

Source: City ENRO, 2016

Table 4. 19 Volume of Production by Forest Concessionaires, Year 2015.

FOREST CONCESSIONAIRE	AREA COVERED (HA)	DOMINANT TREE SPECIE/OTHER PRODUCTS DERIVED	PRODUCTION		ESTIMATED NUMBER OF WORKERS	REFORESTATION ACTIVITIES (HA)
			TOTAL	VALUE		
CBFM PO						
BSIRA	23.77	Fast growing, Indigenous and Crops	71.31	142,620.00	41	7
CFLA	11.72	Fast growing, indigenous	35.16	70,320.00	15	4
PIAFDA	540.86	Fast growing, indigenous and Perennial crops	1,622.58	3,245,160.00	105	150
BURAC	97.95	Fast growing, indigenous	293.85	587,700.00	40	30
IFMA (Manobo)	116.12	Fast growing, indigenous and Perennial crops	348.36	696,720.00	50	35
CSC	603.86	Fast growing, indigenous and Perennial crops	1,811.58	3,623,160.00	353	200
FLMA	30	Fast growing, indigenous	90	180,000.00	19	9
TOTAL	**1,424.28**		**4,272.84**	**8,545,680.00**	**623**	**435**

Source: City ENRO, 2016



Map 73. Existing Forest Areas

Table 4. 20 Forestry Data

NAME/ TYPE OF PROJECT	LOCATION	TYPE
*Upland Reforestation Project		
A. Community Based Forest Management Areas (CBFMA)	Utap, Sta. Elena, San Isidro, Caibaan, Salvacion	Timber Production Forest
B. Integrated Forest Mgt. Areas (IFMA)	Bagacay	Timber Production Forest
*Coastal Mangrove Reforestation Project (Non-NIPAS Areas)		
A. Mangrove Rehabilitation Project (Tacloban Urban Community-Based Mangrove Rehabilitation Project)	Tagpuro, San Isidro, Old Kawayan	Mangrove Forest
B. Mangrove Rehabilitation Project	Tagpuro, Diit, Tigbao	Mangrove Forest
C. Cancabato Bay and Dio Island Mangrove Rehabilitation Project	Burayan, San Jose, Dio Island	Mangrove Forest

Source: City Environment& Natural Resources Office, 2016

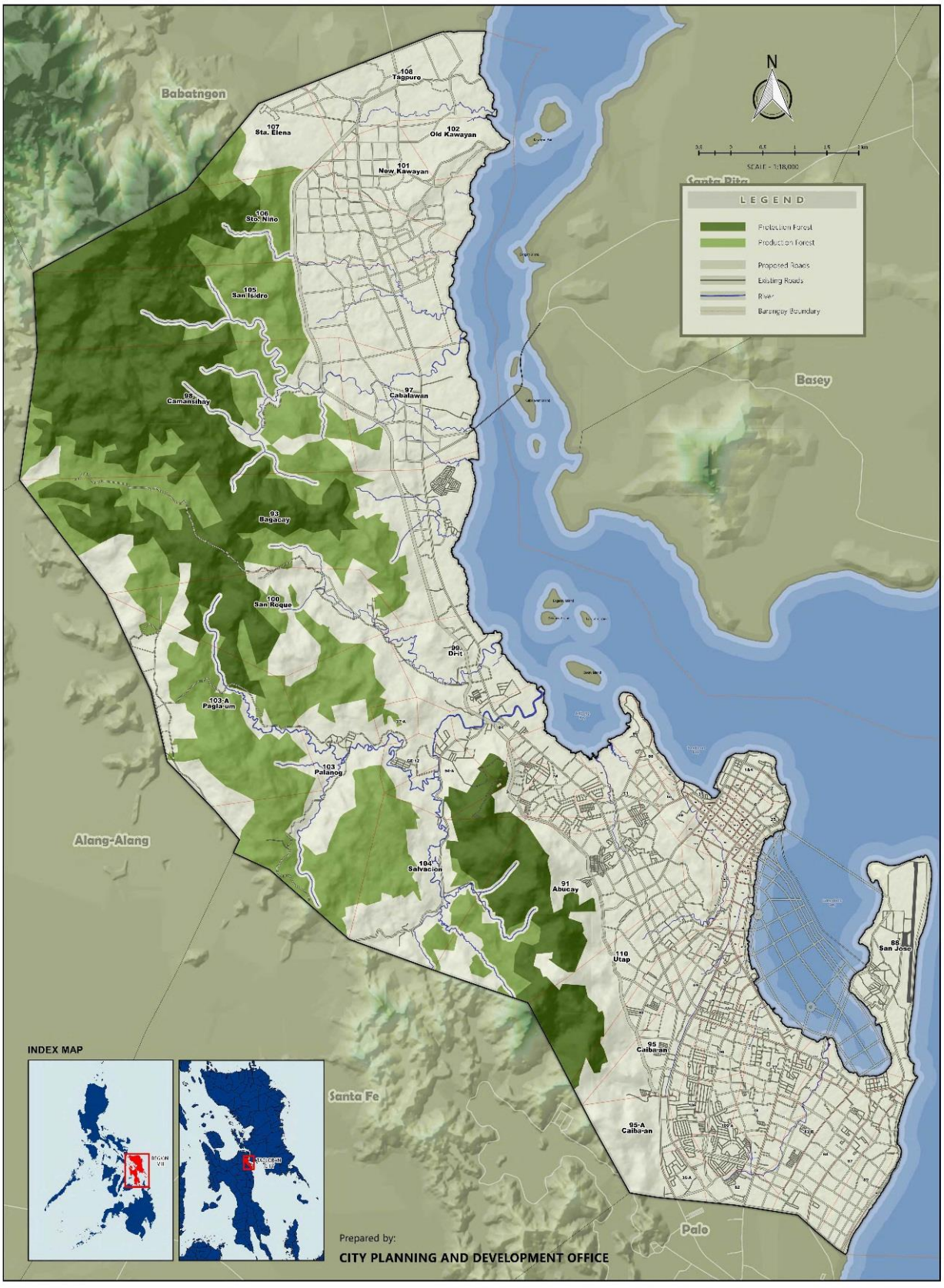
Table 4. 21 Past and Ongoing Projects or Investments in Forest Rehabilitation

BARANGAY	PAST & ON-GOING PROJECTS	PERIOD COVERED STARTED	TYPE OF PROJECTS INTERVENTIONS	SPECIES	AREA (HA.)	IMPLEMENTING UNIT	STATUS	SOURCE OF FUND	COST (PHP)
Brgy. 3 Upper Nu	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	
Brgy. 12 G.E. Palanog	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	
Brgy. 37-A Palanog Resettlement	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	
Brgy. Abucay	National Greening Project	2012		Fruit tree	30	PO	On-going	DENR	150,000.00
Brgy. 92, Apitong									
Brgy. 93, Bagacay	Bamboo Plantation	2015-2016		Tangnan, Kayale, Patong, Bagacay	15	Samaritan's Purse	On-going	INGO	111,000.00
	National Greening Project	2012-2015		Indigenous spp, fuel wood spp	100	PO	Complete	DENR	800,000.00
Brgy. 94, Tigbao	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	Reforestation
Brgy. 94-A, Basper	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	Reforestation

BARANGAY	PAST & ON-GOING PROJECTS	PERIOD COVERED STARTED	TYPE OF PROJECTS INTERVENTIONS	SPECIES	AREA (HA.)	IMPLEMENTING UNIT	STATUS	SOURCE OF FUND	COST (PHP)
Brgy. 98, Camansihay	Bamboo Plantation Project	2015-2016		Tangnan, Kayale, Patong, Bagacay	138	Samaritan's Purse	On-going	INGO	1,021,200.00
	National Greening Project	2012-2015		Indigenous spp, fuel wood spp	150	PO	Complete	DENR	1,200,000.00
Brgy. 100, San Roque	National Greening Project	2012		Fruit tree spp	200	PO	On-going	DENR	1,050,000.00
Brgy. 103 Palanog	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	Reforestation
Brgy. 103-A Paglaum	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	Reforestation
Brgy. 104 Salvacion	Reforestation			Indigenous/ fast-growing fruit trees, Ilang-Ilang		BLGU/City ENRO	Proposed	LGU/ DENR/ Foreign	Reforestation
Brgy. 105 San Isidro	Bamboo Plantation Project	2015-2016		Tangnan, Kayale, Patong, Bagacay	27	Samaritan's Purse	On-going	INGO	199,800.00
Brgy. 106 Sto. Niño	Bamboo Plantation Project	2015-2016		Tangnan, Kayale, Patong, Bagacay	12	Samaritan's Purse	On-going	INGO	88,800.00
Brgy. 107 Sta. Elena									
Brgy. 110 Utap									

Source: City ENRO, CENRO/PENRO, etc., 2016

TIMBERLAND MAP



Map 74. Proposed Forest Areas

III. Forestry Analysis Matrix

TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
• Forest degradation due to illegal and destructive activities like firewood gathering (kaingin) and timber cutting, poaching and trading of flora and fauna.	• Contribute to global warming due to high carbon dioxide in atmosphere • Soil erosion, landslide, shortage of water supply, habitat loss, biodiversity extinction.	• Implement habitat restoration and forest rehabilitation projects like reforestation/tree planting in potential forest areas in the city • Enforcement of forestry and related environmental laws • Legislation, adoption and enforcement of local and national conservation and protection policies. • Establish and operate wildlife rescue center with an area of at least 50 hectares in Brgy. Salvacion
Unsustainable farming system in the upland due to shortage of water supply, lack of technical know-how about agro-farming, lack of funds to finance the project	• Infertile soil, dry soil • Lack of food supply for the general population	• Agro-farming • Soil and water conservation measures (vegeneering) and soil and water conservation measures
No delineation of production, protection and other areas within the forest land due to: • Poor enforcement of environmental laws • Lack of personnel to enforce the law	Encroachment of A&D to the forest area that leads to illegal cutting of timbercontribute to global warming.	• Delineation of production, protection and other areas within the forest land • Monitoring and implementation of the

TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
• Lack of political will • Some areas are occupied by lawless elements (security hazard)		forest and land use plan.

City Planning & Development Office, 2016

4.3 Commerce and Trade

I. Analysis of Existing Situation

Before Super Typhoon Yolanda hit Tacloban City economic dynamism is well reflected in the booming of commercial establishments and trading activities. Influx of malls to the different parts of the city have started while others showed interest in branching out their companies as they saw a very good business potential. It only took a halt like the other sectors in the city just right after that fateful November 8, 2013 and the whole of 2014 as all are busy scurrying up for survival and making do of what's left of their properties and businesses.It was only in 2015 that commercial establishments slowly regained the financial losses they have incurred as a result of massive looting in most part of the city as well as damage to properties and merchandise.Thanks to the benevolence of different international organizations like the Tzu Chi foundation who by way of cleaning-up the city streets gave jobs to the distressed survivors and gave financial assistance to households thus giving them the power to purchase their basic necessities.

Shown in succeeding Tables below are the inventory of commercial areas, historical data of commercial areas by barangay, commercial establishment by activities and employment derived out of these activities. It will be observed in Table 4.22 (Inventory of Commercial Establishment by Economic Activities) that in spite of the decrease in number of establishment who applied for business permits (-3.05%) the number of employment increased. The reason of such increase is due to the presence of big malls which requires large number of manpower. Likewise

Table 4.22 shows that for 2014 and 2015, contractors and services has the highest number of establishments followed by General Merchandise Non-Essential/Retailer while cooperatives has the least number of establishments.

The total land area occupied for commercial activities as shown in Table 4.23 was 1,858 hectares in 2014 and it decreased by .54% with only 1,848 hectares by 2015. This is attributed to the active movement of trading business in the city where some businessmen opted to change their line and business and lessen the area they need for their new endeavor. In terms of revenue, the city was able to generate from the different types/classification of commercial activities a total of 195,216,839.96 for the year 2015. The total existing area occupied by the different commercial establishments is only 179.84 hectares (Existing Commercial Map).

The city through its' local government unit is determined to provide food on the table of each of the household by way of employment opportunities and livelihood projects, it also aims on becoming one of the country's Business-friendly City by enacting ordinances on tax holidays and simplified steps in acquiring necessary licenses and permits.With the cooperation of the various stakeholders it is hoped that the city's economy will better the lives of each Taclobanon which will hopefully radiate to its neighboring towns and municipalities.

Table 4. 22 Inventory of Commercial Areas, 2015

TYPE OF COMMERCIAL AREAS	LOCATION (BRGY.)	AREA (HA.)	MARKET CATERED	
			LOCAL	OUTSIDE (EXPORT)
Commercial Business District	Libertad (1&4)	10.1579	✓	
Commercial complex	2 & 2-A	0.5650	✓	
Commercial strip	3	0.0594	✓	
Commercial strip	5	2.0756	✓	
Commercial Business District	5-A	1.6061	✓	
Commercial complex	6	3.1932	✓	
Commercial complex	6-A	2.0627	✓	
Commercial Business District	7	1.0851	✓	
Malls	8	1.2930	✓	
Malls	8-A	0.7900	✓	
Malls	13	0.8935	✓	
Malls	14	1.4843	✓	
Commercial Business District	15	0.9821	✓	

TYPE OF COMMERCIAL AREAS	LOCATION (BRGY.)	AREA (HA.)	MARKET CATERED	
			LOCAL	OUTSIDE (EXPORT)
Malls	16	0.7412	✓	
Malls	17	1.6009	✓	
Commercial Business District	18	0.6644	✓	
Commercial Business District	19	1.0765	✓	
Commercial Business District	20	2.1832	✓	
Commercial Business District	21	0.6528	✓	
Commercial Business District	21-A	1.2615	✓	
Commercial Business District	22	0.5318	✓	
Commercial Business District	23	1.3572	✓	
Commercial Business District	23-A	0.9466	✓	
Commercial Business District	24	1.8185	✓	
Commercial Complex	25	2.0189	✓	
Commercial Business District	26	0.9759	✓	
Commercial Complex	27	1.1241	✓	
Commercial Business District	28	1.0586	✓	
Commercial Complex	29	0.9521	✓	
Commercial complex	30	0.7324	✓	
Commercial complex	31	0.5547	✓	
Commercial Business District	32	0.7351	✓	
Commercial Business District	33	0.9195	✓	
Commercial Business District	34	0.8957	✓	
Commercial Complex	35	0.4241	✓	
Public Market	37	1.3832	✓	
Public Market	38	1.5399	✓	
Commercial strip	39	1.5632	✓	
Commercial Business District	40	0.6395	✓	
Commercial Business District	41	0.8005	✓	
Commercial Business District	42	1.0711	✓	
Commercial complex	42-A	1.7409	✓	
Commercial complex	43	1.0554	✓	
Commercial complex	43-A	1.8288	✓	
Commercial complex	44	0.9615	✓	
Commercial complex	44-A	1.3826	✓	
Commercial complex	45	0.5169	✓	
Commercial complex	46	0.8851	✓	
Commercial complex	47	2.3830	✓	
Commercial complex	48	1.0392	✓	
Commercial complex	48-A	0.6655	✓	
Commercial complex	50	1.0459	✓	
Commercial strips	50-A	0.5842	✓	
Commercial complex	50-B	1.2043	✓	
Commercial strips	51	0.7401	✓	
Commercial strips	51-A	0.3688	✓	
Commercial strips	52	2.4782	✓	

TYPE OF COMMERCIAL AREAS	LOCATION (BRGY.)	AREA (HA.)	MARKET CATERED	
			LOCAL	OUTSIDE (EXPORT)
Commercial complex	53	2.7767	✓	
Commercial complex	54	3.9192	✓	
Commercial strips	54-A	0.5863	✓	
Commercial strips	55 & 55-A	1.0710	✓	
Commercial complex	56	5.2424	✓	
Public Market	56-A	1.3524	✓	
Commercial strips	57	1.2548	✓	
Public Market	58	3.0187	✓	
Commercial strips	59	7.8665	✓	
Commercial complex	59-A	1.1545	✓	
Commercial complex	59-B	1.2497	✓	
Commercial complex	60	2.7245	✓	
Public Market	60-A	1.6853	✓	
Commercial complex	61	1.0890	✓	
Commercial complex	62	2.4520	✓	
Commercial complex	63	2.4608	✓	
Warehouses	68	1.6290	✓	
Warehouses	69	1.4829	✓	
Commercial strip	71	15.0266	✓	
Commercial strip	72	4.6613	✓	
Commercial strip	73	0.7919	✓	
Commercial strip	74	28.9857	✓	
Commercial complex	75	3.4526	✓	
Commercial complex	76	5.0973	✓	
Malls	77	29.3422	✓	
Commercial complex	78	5.1837	✓	
Commercial complex	79	4.4483	✓	
Commercial strips	80	5.1837	✓	
Commercial strips	81	8.0771	✓	
Commercial strips	82	5.4272	✓	
Commercial strips	83	2.8725	✓	
Commercial strips	83-A	3.2067	✓	
Commercial strips	83-C	0.5337	✓	
Commercial strips	84	4.4003	✓	
Commercial strips	85	1.1471	✓	
Commercial strips	86	2.6167	✓	
Commercial complex	87	33.9828	✓	
Commercial compex	88	47.6050	✓	
Commercial complex	89	0.8998	✓	
Malls	91	74.2561	✓	
Commercial Business District	92	10.1782	✓	
Commercial strips	93	24.0576	✓	
Commercial complex	94	4.1344	✓	
Commercial strips	94-A	4.8790	✓	

TYPE OF COMMERCIAL AREAS	LOCATION (BRGY.)	AREA (HA.)	MARKET CATERED	
			LOCAL	OUTSIDE (EXPORT)
Commercial Business District	95	13.8521	✓	
Commercial complex	95-A	19.7332	✓	
Commercial strips	96	13.6668	✓	
Commercial strips	97	6.2250	✓	
Commercial strips	99	14.1995	✓	
Commercial strips	100	6.2560	✓	
Commercial Business District	101	28.0357	✓	
Commercial strips	103	0.9398	✓	
Commercial strips	103-A	5.6692	✓	
Commercial strips	104	4.6960	✓	
Commercial strips	105	12.8753	✓	
Commercial strips	106	12.1625	✓	
Commercial Business District	107	13.0905	✓	
Commercial Business District	108	7.2534	✓	
Commercial strips	109-A	0.2408	✓	
Commercial Business District	110	11.2128	✓	
	TOTAL	**618.8922**		

Source: BPLO, MIS, Treasurer's Office/Market Administrator/Primary Survey, 2016
Notes: Commercial areas include:

- Commercial Business District (CBD)
- Public market
- Commercial strips/talipapa (wet/dry neighborhood commercial center
- Commercial complex (range of dry goods store, boutique shops, recreational/entertainment establishments and service shops such as food chain branches/establishments)
- Malls (with department stores, supermarket and various shops in one building)
- Other types

Table 4. 23 Historical Data on Commercial Areas, 2014 – 2015

LOCATION (BRGY.)	COMMERCIAL AREAS (HA)		% INCREASE/ (DECREASE)
	2014	2015	
13	146	126	(13.69)
14	232	194	(16.38)
15	102	95	(6.86)
16	122	107	(12.30)
17	257	217	(15.56)
18	55	59	7.27
19	150	119	(20.67)
20	131	155	18.32
21	63	67	6.35
22	68	69	1.47

LOCATION (BRGY.)	COMMERCIAL AREAS (HA)		% INCREASE/ (DECREASE)
	2014	2015	
23	69	61	(11.59)
23-A	101	87	(13.86)
24	144	132	(8.33)
25	133	128	(3.76)
26	48	47	(2.08)
27	77	72	(6.49)
28	61	58	(4.92)
29	38	44	15.79
30	37	41	10.81
31	37	38	2.70
32	76	71	(6.58)
33	62	56	(9.68)
34	89	90	1.12
35	51	50	(1.96)
37	51	50	(1.96)
38	96	103	7.29
39	48	49	2.08
40	136	127	(6.62)
41	78	69	(11.54)
42	56	48	(14.29)
43	66	64	(3.03)
43-B	43	50	16.28
44	59	63	6.78
44-A	97	95	(2.06)
46	110	91	(17.27)
7	66	72	9.09
1&4	272	268	(1.47)
6	16	11	(31.25)
6-A	99	95	(4.04)
8	73	67	(8.22)
8-A	102	102	-
TOTAL	**1,858**	**1,848**	**(0.54)**

Source: Permits & Licenses Division – CMO
MISD – CMO, 2016

Table 4. 24 Business Permits Granted for the Past Five Years

BUSINESS PERMITS	2011		2012		2013		2014		2015	
	NO. 6,324	%	NO. 7,665	%	NO. 12,900	%	NO. 8,823	%	NO. 7,564	%
Gen. Merchandise - Essential	1,440	22.77	1,514	19.75	2,527	19.59	1,733	19.64	1,404	18.56
Gen. Merchandise – Non-Essential	1,759	27.81	2,325	30.33	2,854	22.12	3,039	34.44	1,908	25.22
Contractor & Services	1,374	21.73	1,468	19.15	2,515	19.50	1,657	18.78	1,903	25.15
Sari-Sari Store	492	7.78	351	4.58	1,106	8.57	305	3.46	431	5.70
Eatery Establishments	394	6.23	482	6.29	1,683	13.05	490	5.55	596	7.87
Financial Institution	227	3.59	246	3.21	310	2.40	265	3.00	284	3.75
Manufacturer-Essential	201	3.18	658	8.58	826	6.40	651	7.38	173	2.29
Manufacturer – Non-Essential	23	0.36	34	0.44	91	0.71	68	0.77	70	0.93
Real Estate Lessor	191	3.02	351	4.58	613	4.75	416	4.71	510	6.74
Boarding Houses	99	1.57	117	1.53	159	1.23	81	0.92	141	1.86
Hotels & Lodging Houses	84	1.33	52	0.68	110	0.85	79	0.90	101	1.34
Entertainment	35	0.55	58	0.76	98	0.76	30	0.34	34	0.45
Publication	5	0.08	9	0.12	8	0.06	9	0.10	9	0.12

Source: City Treasurer's Office/City Mayor's Office-Permits and Licenses Division/MIS, 2016

Table 4. 25 Inventory of Commercial Establishment by Economic Activities

ECONOMIC ACTIVITIES	2014		2015		% INC.(DEC.) OVER PREVIOUS YEAR	
	NO. OF ESTABLISHMENTS	NO. OF EMPLOYMENT	NO. OF ESTABLISHMENTS	NO. OF EMPLOYMENT	NO. OF ESTABLISHMENT	NO. OF EMPLOYMENT
Gen. Merchandise - Essential	1,733	3,143	1,404	4,593	(18.98)	46.13
Gen. Merchandise – Non-Essential	3,039	5,112	1,908	6,242	(37.22)	61.10
Contractor & Services	1,657	3,006	1,903	6,224	14.85	107.05
Sari-Sari Store	305	554	431	1,411	41.31	154.69
Eatery Establishments	490	888	596	1,948	21.63	119.37
Financial Institution	265	480	284	928	7.17	93.33

ECONOMIC ACTIVITIES	2014		2015		% INC.(DEC.) OVER PREVIOUS YEAR	
	NO. OF ESTABLISHMENTS	NO. OF EMPLOYMENT	NO. OF ESTABLISHMENTS	NO. OF EMPLOYMENT	NO. OF ESTABLISHMENT	NO. OF EMPLOYMENT
Manufacturer – Essential	651	1,181	173	567	(73.43)	(51.99)
Manufacturer – Non-Essential	68	525	70	234	2.94	(55.43)
Real Estate Lessor	416	754	510	1,669	22.60	121.35
Boarding Houses	81	147	141	460	74.07	212.93
Hotel & Lodging Houses	79	144	101	332	27.85	130.56
Entertainment	30	54	34	111	13.33	105.55
Publication	9	16	9	30	-	87.50
TOTAL	**8,823**	**16,004**	**7,564**	**24,749**	**14.27**	**54.64**

Source: Business Permits and Licenses Division/MIS/Primary Survey, 2016

Table 4. 26 Employment by Type/Classification/Type of Business and Trade

TYPE/CLASSIFICATION KIND OF BUSINESS AND TRADE	NO. OF EMPLOYMENT	REVENUE (IN PHP)	POPULATION SERVED MARKETS CATERED	
			LOCAL	OUTSIDE (EXPORT)
Wholesale Trade and Retail	4,272	63,180,969.60	✓	
Banking and Finance	571	9,693,619.05	✓	
Real Estate/ Construction	630	4,856,407.26	✓	
Services	659	19,579,102.23	✓	
Boarding House	219	849,976.75	✓	
Contractor & Services	8,058	19,579,102.33	✓	
Cooperative	4	400	✓	
Eatery	3,010	9,904,801.63	✓	
Entertainment	207	198,056.05	✓	
Financial Institution	1,457	9,693,619.05	✓	
Gen. Merchandise/ Essential-Retailer	2,393	11,553,405.23	✓	
Gen. Merchandise/ Essential-Wholesaler	903	4,799,982.93	✓	
Gen. Merchandise/ Non-Essential-Retailer	5,025	35,819,504.31	✓	
Gen. Merchandise/ Non-Essential-Wholesaler	2,417	10,531,216.70	✓	
Gen. Merchandise/ Non-Essential-Retailer	8	1,419.75	✓	
Gen. Merchandise/ Rice & Corn – Retailer	86	267,244.60	✓	

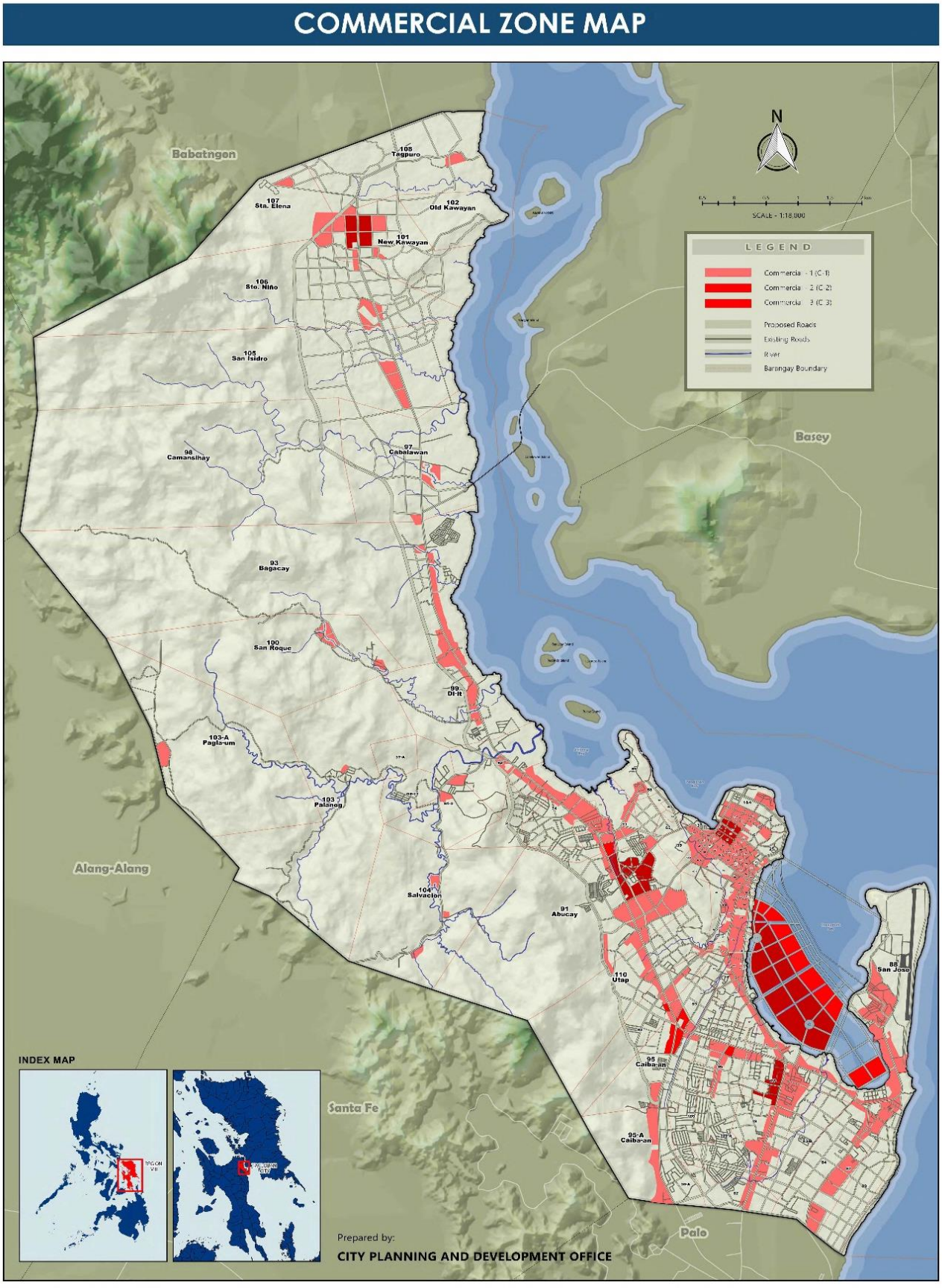
TYPE/CLASSIFICATION KIND OF BUSINESS AND TRADE	NO. OF EMPLOYMENT	REVENUE (IN PHP)	POPULATION SERVED MARKETS CATERED	
			LOCAL	OUTSIDE (EXPORT)
Gen. Merchandise/ Rice & Corn – Wholesaler	117	209,615.83	✓	
Hotel	469	2,078,546.18	✓	
Manufacturer/Essential	903	1,561,665.01	✓	
Manufacturer/ Non-Essential	407	3,994,250.10	✓	
Non-Government Organization		24,289.00	✓	
Publication	29	53,202.98	✓	
Real Estate Lessor	1,353	4,856,407.26	✓	
Sari-Sari Store	780	1,509,138.36	✓	
TOTAL	**33,977**	**195,216,839.96**		

Source: City Treasurer's Office/City Mayor's Office-Permits and Licenses Division/MIS, 2016

II. Problems and Development Needs:

The performance of the business and trade as presented in various tables showed a fluctuating tempo firstly because of the degree of effect brought by Super Typhoon Yolanda and the manner of re-establishment of the business sector given the hazards and they were faced-with as well as the threat most imminent as reflected in hazard susceptibility maps.

Being a Regional Center, the city needs to increase its commercial area to cater the needs not only of its residents who would venture in expanding their business establishments but also to the neighboring LGUs businessmen. The city core will be considered as the center for commercial activities. Expansion areas will be towards the northern and southern part of the city. Hence a total of 618.18 hectares will be allocated for commercial and trading center within the planning period.



Map 75. Proposed Commercial Areas

III. Commerce and Trade Analysis Matrix

TECHNICAL FINDINGS/ ISSUES/ POLICIES	EFFECTS/ IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
Fully congested existing Central Business District.	Discourages the would-be commercial investors/businessmen to invest. Poor services Unsanitary environment	Development of District Growth Nodes/Centers to augment the existing Central Business District (South & North). Introduce "NewTown Center" which will adequately meet the requirement of the relocated communities in Tacloban North and establish a walkable urban core. Construction of additional road network that would make the Tacloban North accessible to all parts of the suburbs.
There are no available incentives to investors/absence of investment promotions package like tax holidays to new investors foreign and local alike.	Investors lack motivations to invest/expand their business.	Sangguniang Panlungsod should come up with a Comprehensive Investment Incentives Code.
Insufficient number of business inspectors in the Permits and Licenses Division.	A considerable amount of revenue is lost due to the very poor tax mapping activities because of lack of personnel.	Increase the number of Business License Inspectors so that 100% of businesses operating in the city will secure a Mayor's Business Permit thereby increasing revenue on business taxes and other regulatory fees.
Presence of Pollutive/Hazardous commercial activities/employment of toxic materials and methods.	Degradation of Natural Resources.	Encourage all businessmen to employ the Green Growth Strategies like the use of Solar Panel/Energy, undertake rain harvesting technique and other ways like waste segregation and practice the RRR (Reduce, Reuse, Recycle).

TECHNICAL FINDINGS/ ISSUES/ POLICIES	EFFECTS/ IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
		Enact an Ordinance prohibiting the use of plastic bags in all commercial establishments of Tacloban City and thereupon impose penalties for violation.

City Planning & Development Office, 2016

4.4 Industry

I. Analysis of Existing Situation

Tacloban City is not primarily an industrialized city but protects its' existing industrial establishments. Table 4.27 (Inventory of Existing Industrial Establishments by Intensity, Capitalization and Employment, 2015) below reflects the presence of industrial establishments in the city and it will be observed that a promising number is really making a name of their own while succeding tables illustrate standards for industrial area requirement and how this requirement should be distributed using population as the basis.Table 4.4.4 (Local Revenue and Industrial Establishment, 2011 – 2015) shows the performance of various local revenue sources and its' rate of increase/decrease. In this table it will be observed that a decrease of 30.05% happened in 2014 where Tacloban City experienced the result of financial setback due to the devastation of Super Typhoon Yolanda.

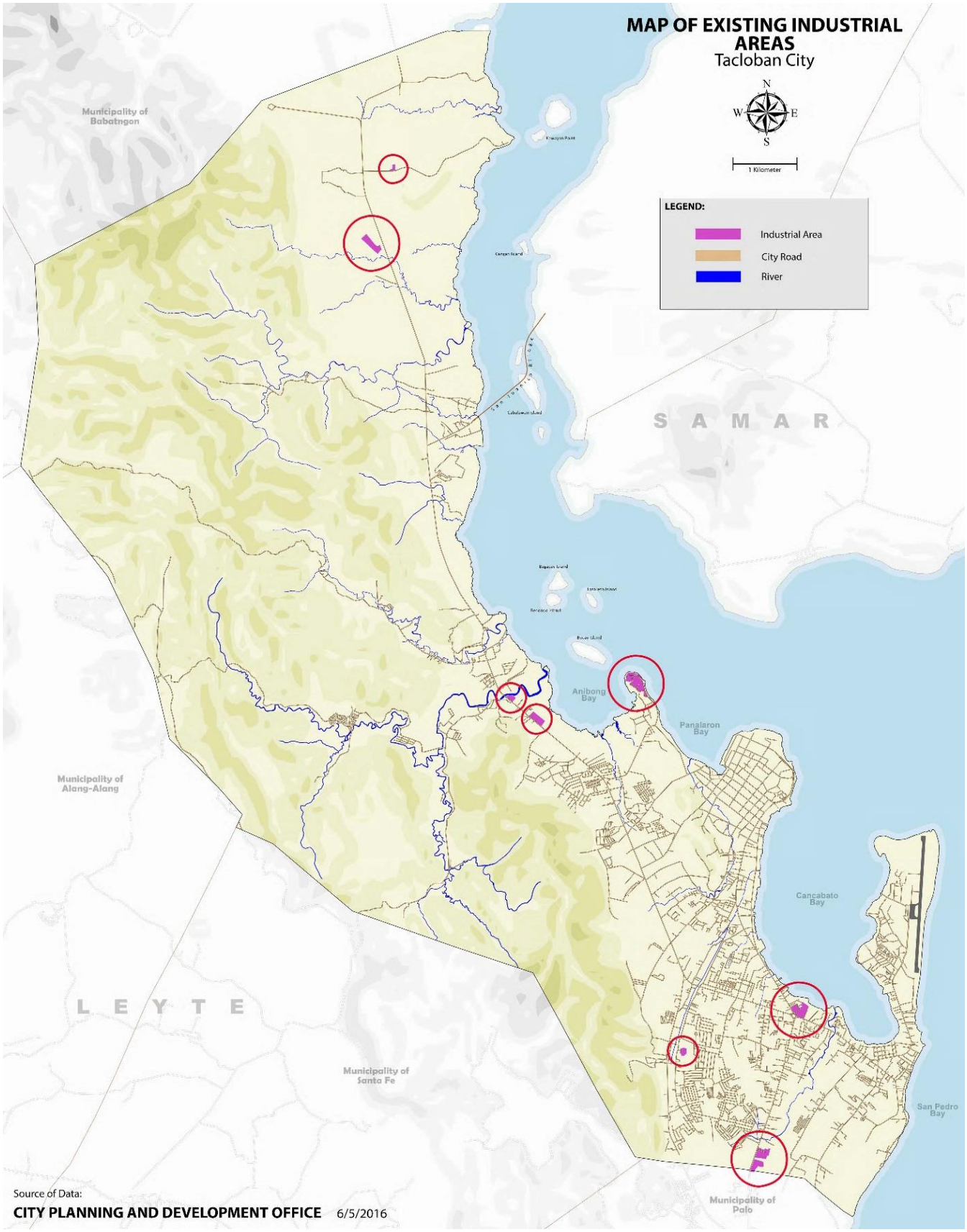
Table 4. 27 Inventory of Existing Industrial Establishments byIntensity, Capitalization and Employment, 2015

NAME OF INDUSTRIAL ESTABLISHMENT	BRGY.	BUSINESS DESCRIPTION	INTENSITY CLASSIFICATION	CAPITALIZATION/ GROSS SALES	EMPLOYMENT
New Potential Ice Producer	62-A	Ice Manufacturer	I1	1,000,000.00	6
San Miguel Foods, Inc.	91	Feeds & Fertilizers	I2	41,528,977.00	-
Phi. Phosphate Fertilizer Corp.	82	Feeds & Fertilizers	I2	15,681,960.00	-

NAME OF INDUSTRIAL ESTABLISHMENT	BRGY.	BUSINESS DESCRIPTION	INTENSITY CLASSIFICATION	CAPITALIZATION/ GROSS SALES	EMPLOYMENT
Pacifica Agrivel Supply, Inc.	37	Feeds & Fertilizers	I2	25,686,553.48	8
San Miguel Foods, Inc.	99		I1	126,537,343.08	4
Tacloban S n M Dairy Products	21	Food Production/ Processing	I1	200,000.00	-
Angel's Enterprises	87	Manufacturer/ Essential	I1	110,015.00	4
Golden Duck Enterprises	95-A	Manufacturer/ Essential	I1	441,976.70	3
Unison Food Products	92	Manufacture of Bihon	I1	950,213.00	15
San Miguel Foods, Inc.	79	Food & Beverage	I1	176,133,342.00	5
Unex Industries, Inc.	94	Manufacturer/ Essential	I1	3,000,000.00	8
G.C. Galangue Enterprises	68	Manufacturer/ Essential	I1	337,500.00	3
Len's Ice Cube	72	Ice Manufacturer	I1	80,000.00	1
Granexport Manufacturing, Corp.	1&4	Manufacturer/ Essential	I1	14,269,200.00	8
Cosmos Bottling Corp.	75	Food & Beverage	I1	5,000,000.00	1
Coconut Shell Novelty Product Mini Factory	84	Manufacturer/ Non-Essential	I1	20,300.00	4
New GL Candle Factory	84	Candle Maker	I1	292,832.00	3
Six "J" Bag Making	84	Bag Maker	I1	25,200.00	-
Abe Fiberglass	42	Manufacturer/ Non-Essential	I1	40,430.00	-
AAAA	1&4	Manufacturer/ Non-Essential	I1	400,000.00	-
Panasonic Manufacturing Phils. Corp.	80	Manufacturer/ Non-Essential	I1	154,4491,172.92	-
K & K Enterprises	94	Manufacturer/ Non-Essential	I1	3,311,596.43	8
Tacloban Guitar Shop	14	Manufacturer/ Non-Essential	I1	288,126.25	2
TBK Canning Corporation	58	Manufacturer/ Non-Essential	I2	527,657.50	6
Sto. Niño Boat Building and Repair	88	Manufacturer/ Non-Essential	I1	-	-
Royce Glenn Gen. Upholstery and Furniture	62	Manufacturer/ Non-Essential	I1	-	-
Tacloban City Ice Plant	15	Ice Plant	I1	3,828,440.00	6
Rose Art Marketing	109-A	Manufacturer/ Non-Essential	I1	75,000.00	1
Mir-J Candles	72	Candle Maker	I1	330,000.00	3

NAME OF INDUSTRIAL ESTABLISHMENT	BRGY.	BUSINESS DESCRIPTION	INTENSITY CLASSIFICATION	CAPITALIZATION/ GROSS SALES	EMPLOYMENT
TBK Manufacturing Corporation	74	Manufacturer/ Non-Essential	I3	11,851,307.00	20
WS Coco Products Trading, Inc.	100	Manufacturer/ Non-Essential	I1	77,000.00	-
Oneaj Store – Videoke Manufacturer	44-A	Manufacturer/ Non-Essential	I1	75,000.00	2
Marie Arts & Crafts	25	Manufacturer/ Non-Essential	I1	-	-
Coca-Cola FEMSA Phils., Inc.	75	Food & Beverage	I1	830,461,058.74	88
San Miguel Brewery, Inc.	75	Manufacturer/ Non-Essential	I1	1,103,203,514.68	26
Rymel's Enterprises	76	Manufacturer/ Non-Essential	I1	1,500,000.00	4
Filipina Zapateria	23-A	Manufacturer/ Non-Essential	I1	115,547.59	3
Arsicon Enterprises	84	Manufacturer/ Non-Essential	I1	2,043,839.28	-
Kawayan Boat Builders	102	Manufacturer/ Non-Essential	I1	20,000.00	-
Giant Phil. Eximport Corp.	68	Manufacturer/ Non-Essential	I1	-	-
Power Plates Development Concepts	6-A	Manufacturer/ Non-Essential	I1	200,000.00	-
Siquijor Island Phosphate	15	Manufacturer/ Non-Essential	I1	150,000.00	-
Philip Morris Phils. Manufacturing Inc.	92	Manufacturer/ Non-Essential	I1	850,000,480.00	-
Pryce Gases Inc.	101	Gas Refilling	I2	16,539,896.01	8

Source: CMO-MIS, 2016
Intensity Classification: I1- Non-Pollutive/Non-Hazardous
I2 – Pollutive/Hazardous
I3 – Highly Pollutive/Highly Hazardous



Map 76. Existing Industrial Areas

II. Problems and Development Needs/Requirements:

Due to a minimal area currently occupied and utilized for industrial/agri-industrial establishment, there is a need to allocate a total area of 242.0336 hectares within the planning period based on the standard requirement. The 102.64 hectares will be developed on the northern part of the city as one of the developments for the Tacloban North Growth Center. The other area will be situated on the southern and western parts asof the city. This will open the valves towards a more tailored industrial area without compromising the various stakeholders' effort to save and preserve mother earth.

Table 4. 28 Industrial Land Intensity Standards

INTENSITY	HECTARE PER 1000 POPULATION	HECTARE PER PERSON
Light	242.0336	0.0008
Medium	605.084	0.0020
Heavy	1,210.168	0.0040
GROSS	685.7619	0.0023

Source: Projections computed using PSA data on population/CPDO

Table 4. 29 Projected Industrial Area Requirement 2017 - 2025

YEAR	POPULATION	AREA REQUIREMENT (HA)
2017	255,599	204.4792
2018	261,043	208.8344
2019	266,603	213.2824
2020	272,282	217.8256
2021	278,082	222.4656
2022	284,005	227.2040
2023	290,054	232.0432
2024	296,232	236.9856
2025	302,542	242.0336

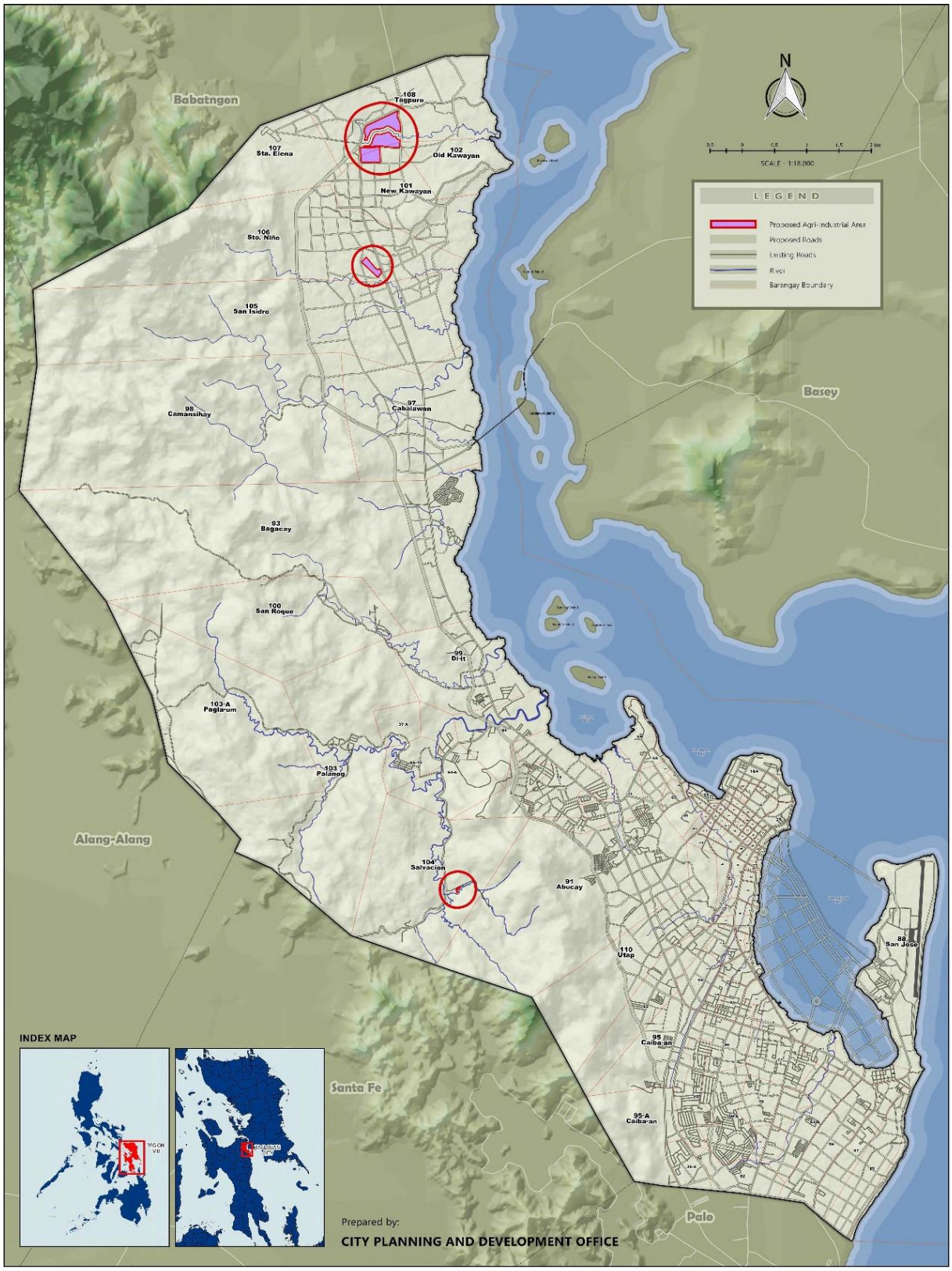
Source: Projections computed using PSA data on population/CPDO, 2016
Requirement/standard – .8 ha/1,000 population

Table 4. 30 Local Revenue and Industrial Establishment, 2011 - 2015

YEAR	REVENUE	INCREASE/(DECREASE)	EMPLOYMENT	INCREASE/DECREASE
2011				
Business tax	**84,985,858.18**			
All Source	**110,146,214.58**			
Total=	**195,130,072.76**		**19,518**	
2012				
Business tax	**96,486,773.92**			
All Source	**125,516,028.24**			
Total=	**222,002,802.16**	**13.77**	**22,029**	**12.87**
2013				
Business tax	**103,009,894.15**			
All Source	**134,267,612.41**			
Total=	**237,277,506.56**	**6.88**	**22,108**	**0.36**
2014				
Business tax	**71,405,417.87**			
All Source	**94,571,798.03**			
Total=	**165,977,215.90**	**(30.05)**	**18,180**	**(17.77)**
2015				
Business tax	**71,356,539,96**			
All Source	**102,846,094.29**			
Total=	**174,202,634.25**	**4.95**	**24,800**	**36.41**

Source: City Treasurer's Office, City Mayor's Office/MIS, 2016

MAP OF PROPOSED AGRI-INDUSTRIAL AREAS



Map 77. Proposed Agri-Industrial Areas

III. Industry Analysis Matrix

TECHNICAL FINDINGS/ISSUES	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
Lack of value-adding activities for locally grown crops (e.g. rootcrops like cassava & taro (gabi), fruits (banana & pineapple) & nuts etc.) and poultry & livestock produce to be packaged as processed food (e.g. chips, jam, spreads, skinless longganisa, tocino, embotido, lechon grilling, etc.) and fish processing (e.g. marinated deboned bangus & fish drying) ➢ Lack of entrepreneurial awareness/interest of local farmers & producers ➢ Lack of entrepreneurial mindset and technical know-how of farmers on meat and fish processing ➢ Inadequate food processing shared service facilities for meat and fish processing ➢ Lack of knowledge on Food Safety and Current Good Manufacturing Practices ➢ Lack of information on how to avail low-cost financing.	a) Forgone additional income for local MSMEs and producers b) Forgone additional revenue for LGU c) Forgone additional job employment	a) Industry Clustering and Value-Chain Analysis for Rootcrops, Fruits & Nuts, Livestock and Milkfish b) Conduct of Entrepreneurial Development Trainings & Skills Trainings for Food Processing c) Product Development d) Provision of Shared Service Facilities for Food Processing & Meat Processing e) Food Safety & CGMP Seminar f) Technology Transfer for Potential Food Processors g) Credit Brokering and Financing Opportunities for Food & Meat Processing MSMEs h) Investment Promotion Activities with Local SMED Council, DTI, & BOI
Lack appropriate site for agri-processing activities, resulting to proliferation of industrial activities in areas outside the allowable zone.	Health and safety of the populace are at stake.	Identify and develop suitable sites for industrial/agri-industrial activities (on the north and south) of the city and provide support facilities, services, amenities and infrastructure.

4.5 Tourism

I. Analysis of Existing Situation:

Fast-paced development in a Highly Urbanized City like the city of Tacloban is inevitable considering that it carries with it the influx of commercial and industrial establishments. Contrary to most of the peoples' belief, local economy is based not only on the movement of increase in the number of business establishments but also on the number of visitors coming in and out of the city. Tacloban City has been the most sought after destination after it made history due to the massive devastation of Super Typhoon Yolanda. All roads lead to Tacloban City not just for tourists who want to witness for themselves the havoc that the city had been faced with but moreso to the different organizations around the globe who brought with them much needed help for recovery.Succeeding tables below will depict Tacloban City's tourism industry by showcasing the different aspect of tourism package.

The Local Government Unit with the assistance of the City Tourism Office and various stakeholders are determined to make Tacloban City as "the most visited city" by way of promoting Tacloban as Potential MICE (Meetings, Investments, Conferences/Conventions and Exhibitions) destination. The ongoing airport expansion and upgrading will make it an International Airport with available flights directly to and from other parts of the world. Now is also the time to consider the construction of large-capacity state-of-the-art convention centers that could accommodate at least five thousand (5,000) participants and cater to all kinds of events and gatherings.

Table 4.31 presents a list of Tourism Attractions where majority of these attractions are at an average, low susceptible to flooding and landslide, high susceptible to typhoon and storm surge and medium susceptible to earthquake and tsunamis. Table 4.32 on the other hand reflects a list of tourism establishment and how can it be accessible. Most obviously, all are land accessible, all pavement are cemented and in good condition. It also reflects its' distance from airport.

Table 4. 31 Inventory of Tourism Establishments, 2015

NAME OF TOURIST ATTRACTION	BRGY./ LOCATION	TYPE OF TOURISM PRODUCTS AND SERVICES	DESCRIPTION	HAZARD SUSCEPTIBILITY (H/M/L)					
				FL	TY	EQ	LN	TS	SU
Balyuan Amphitheater	Magsaysay Boulevard	Leisure & Entertainment	Located along the shores of Cancabato Bay is often the venue of cultural, musical, social and religious events. It is the site of the annual Balyu-an Rites	L	H	M	L	M	H
Boy Scout Monument	Coca-Cola Junction	Cultural	Erected in 1941 right in the center of the Fatima Village round-about stands a life-size statue of the world's first Boy Scout Monument in human form	M	H	M	L	L	M
Calvary Hill	Avenida Veteranos Extension	Cultural	Overlooking the city and San Juanico Strait, Calvary Hill is where larger-than-life statues of Jesus Christ and other personages in tableaux depicting Christ's sacrifice and sufferings.	L	H	M	H	L	L
CAP Building	J. Romualdez corner Sto. Niño Street	Cultural	Built in 1910, the Price Mansion served as residence and headquarter of General Douglas MacArthur for three months during the liberation period. In the general's room, a hole in the wall caused by a dud bomb has been preserved.	L	H	M	L	L	L
Leyte Provincial Capitol	Sen. Enage St. corner Magsaysay Boulevard	Cultural	The Leyte Provincial Capitol was the seat of the Philippine Commonwealth Government in 1944.	L	H	M	L	L	M
Maria Kanon Madonna of Peace Shrine	Magsaysay Boulevard	Cultural	Located in a tranquil little valley near City Hall is the Maria Kanon Madonna of Peace Shrine home of a lovely statue of	L	H	M	L	L	L

NAME OF TOURIST ATTRACTION	BRGY./ LOCATION	TYPE OF TOURISM PRODUCTS AND SERVICES	DESCRIPTION	HAZARD SUSCEPTIBILITY (H/M/L)					
				FL	TY	EQ	LN	TS	SU
			an Asian Madonna carved out of rare Miyagi rock and fashioned by Japanese sculptor Shinichi Tani.						
People's Center and Library for Leyte and Samar	Real St.	Leisure & Entertainment Cultural	It houses volumes of books from the US, Europe and other countries. It is often visited by local students as well as researchers coming from other parts of the Philippines.	L	H	M	L	L	L
Philippine-Japan Commemorative Peace Park	Magsaysay Boulevard	Cultural	The Philippine-Japan Commemorative Peace Park is a stone's throw away from the City Hall. It was donated by the Tokyo Survivors association in honor of soldiers and paramilitary personnel who perished in WWII,	L	H	M	L	L	L
Redoña Residence	T. Claudio St.	Cultural	The Redoña Residence was the official residence of President Sergio Osmeña Sr. during the liberation period	M	H	M	L	L	M
San Juanico Bridge	Cabalawan	Cultural	About 15 minutes away north of Tacloban City, is a 2.16 km. long S-shaped span connecting the islands of Leyte and Samar.	L	H	M	L	L	L
San Juanico Park, Golf and Country Club	Cabalawan	Leisure & Entertainment	An 18-hole golf course located 10 km. north of Tacloban is one of the prime greens in Eastern Visayas.	L	H	M	L	L	L
Sto. Niño Shrine and Heritage Museum	Real Street	Cultural	Built from 1979 to 1981, it is a showcase of Filipino ingenuity. On display are collections of art objects, priceless	L	H	M	L	L	L

NAME OF TOURIST ATTRACTION	BRGY./ LOCATION	TYPE OF TOURISM PRODUCTS AND SERVICES	DESCRIPTION	HAZARD SUSCEPTIBILITY (H/M/L)					
				FL	TY	EQ	LN	TS	SU
			furniture, fine porcelain, ivory sculptures of local and foreign origin.						
Tacloban City Convention Center	Sagkahan	Leisure & Entertainment	Popularly known as the astrodome, it is the venue of basketball tourneys and other sports activities, concerts and other big gatherings.	L	H	M	L	L	H
World War II Japanese Pillboxes	San Jose (Patio Victoria)	Cultural	At the beachfront of Dio Mainland Beach Resort	L	H	M	L	H	H
Yolanda Memorial Marker	Anibong	Cultural	Unveiled on November 7, 2015. This the actual bow of the M/V Eva Jocelyn made into a memorial marker. This memorial is in honor of the residents of Barangays 67, 68 and 69 who died in that spot when this cargo vessel was swept ashore by a gigantic storm surge that was caused by the strong wind that reached 300 kilomers per hour.	L	H	M	M	H	H
Yolanda Memorial Monument	Astrodome Grounds	Cultural	The Astrodome Memorial Marker was unveiled on November 8, 2015 located in Sagkahan District, Tacloban City beaside Tacloban Convention Center where more than eight thousand people evacuated and survived the storm surge.	L	H	M	L	H	H

Source: City Tourism Operations Office, 2016

Table 4. 32 Accessibility of Existing Tourism Establishment and Tourist Attraction, 2015

NAME OF TOURISM ESTABLISHMENT	1MEANS OF TRANSPORTATION AVAILABLE	DISTANCE FROM NEAREST AIRPORT (KM)	2ACCESS ROAD		ACCESSIBILITY
			PAVEMENT	CONDITION	
Acacio Golf Hotel	Land	17.0	Cement	Good	1
Ace Francis Hotel	Land	4.80	Cement	Good	1
AIS Hotel	Land	7.50	Cement	Good	1
Angela Pension House	Land	4.60	Cement	Good	1
Asia Stars Hotel	Land	8.32	Cement	Good	1
Basic Rooms Hotel	Land	5.07	Cement	Good	1
Casa Real Inn	Land	7.06	Cement	Good	1
Cecilia's Lodge	Land	7.66	Cement	Good	1
Cielo Vista	Land	2.16	Cement	Good	1
Danel Pension House	Land	5.19	Cement	Good	1
Don's Cabin Pension	Land	8.45	Cement	Good	1
Don Pedro Suites	Land	7.01	Cement	Good	1
Eco Lodge	Land	8.13	Cement	Good	1
EP Travellers Home	Land	7.11	Cement	Good	1
ES Park Inn	Land	5.95	Cement	Good	1
Etsu Hotel	Land	8.52	Cement	Good	1
Go Hotel	Land	4.80	Cement	Good	1
Golden Key Inn	Land	8.27	Cement	Good	1
Golden Sun Pension and Restaurant	Land	7.28	Cement	Good	1
Granda Manor	Land	7.74	Cement	Good	1
Grand Royal Suites	Land	7.64	Cement	Good	1
Green Meadows Inn	Land	6.70	Cement	Good	1
GV Hotel	Land	7.52	Cement	Good	1
Hayward Travel Inn	Land	8.10	Cement	Good	1
Highness Pensione and Suites	Land	7.70	Cement	Good	1
Hotel El Ranilo	Land	8.92	Cement	Good	1
Hotel Alejandro	Land	7.81	Cement	Good	1
Hotel Canelsa	Land	8.33	Cement	Good	1
Hotel Consuelo	Land	7.59	Cement	Good	1
Hotel Lai Rico	Land	7.80	Cement	Good	1
Hotel Lorenza	Land	7.87	Cement	Good	1
Hotel Rodolfo	Land	7.77	Cement	Good	1
Island Regional Townhouse Pension	Land	8.58	Cement	Good	1
Ironwood Hotel	Land	7.64	Cement	Good	1
JCP Pension	Land	9.27	Cement	Good	1
Jerucen Pensionne	Land	9.15	Cement	Good	1
Jerucel Lodging House	Land	7.55	Cement	Good	1
La Rica Hotel	Land	8.51	Cement	Good	1
La Viajera Bed and Bath	Land	8.22	Cement	Good	1
La Villa Antonia	Land	10.24	Cement	Good	1
Leo's Lodge	Land	8.13	Cement	Good	1
Leyte Park Hotel	Land	9.07	Cement	Good	1
Loremar	Land	8.13	Cement	Good	1
Lorenzo's Way	Land	7.92	Cement	Good	1

NAME OF TOURISM ESTABLISHMENT	1MEANS OF TRANSPORTATION AVAILABLE	DISTANCE FROM NEAREST AIRPORT (KM)	2ACCESS ROAD		ACCESSIBILITY
			PAVEMENT	CONDITION	
LNU House	Land	8.37	Cement	Good	1
Luxury Suite	Land	8.38	Cement	Good	1
Manabo Lodge	Land	8.38	Cement	Good	1
Mathew's Lodging House	Land	8.33	Cement	Good	1
Milka Hotel	Land	8.76	Cement	Good	1
Pension De San Juanico	Land	15.91	Cement	Good	1
Primrose Hotel	Land	8.52	Cement	Good	1
Resvenil Hotel	Land	7.58	Cement	Good	1
Setic Apartelle	Land	5.49	Cement	Good	1
Shalom	Land	6.77	Cement	Good	1
Tacloban Plaza Hotel	Land	8.28	Cement	Good	1
The Ambassador Hotel	Land	7.60	Cement	Good	1
Tacloban Village Townhouse	Land	7.45	Cement	Good	1
The Loft	Land	5.36	Cement	Good	1
Traveller's Suite	Land	8.30	Cement	Good	1
Villa Leonardo Inn	Land	8.26	Cement	Good	1
Villa Lolita Apartelle	Land	7.58	Cement	Good	1
Welcome Home Pensione	Land	7.78	Cement	Good	1
XYZ Hotel	Land	8.25	Cement	Good	1
Yellow Doors	Land	7.61	Cement	Good	1
Your Home Pension	Land	8.63	Cement	Good	1
ZPAD Residences	Land	6.47	Cement	Good	1
Balyuan Amphitheater	Land	8.04	Cement	Good	1
Boy Scout Monument	Land	4.15	Cement	Good	1
Calvary Hill	Land	8.66	Cement	Good	1
CAP Building (Price Mansion)	Land	8.19	Cement	Good	1
Leyte Provincial Capitol	Land	9.37	Cement	Good	1
Maria Kanon Madonna of Peace Shrine	Land	8.24	Cement	Good	1
People's Center & Library	Land	7.04	Cement	Good	1
Philippine-Japan Commemorative Peace Park	Land	8.22	Cement	Good	1
Redoña Residence	Land	8.81	Cement	Good	1
San Juanico Bridge	Land	16.29	Cement	Good	1
San Juanico Park, Golf and Country Club	Land	17.0	Cement	Good	1
Sto. Niño Church	Land	7.75	Cement	Good	1
Sto. Niño Shrine and Heritage Museum	Land	7.04	Cement	Good	1
Tacloban City Convention Center	Land	5.33	Cement	Good	1
Worl War II Japanese Pillboxes	Land	2.16	Cement	Good	1
Yolanda Memorial Marker (Anibong)	Land	10.54	Cement	Good	1

NAME OF TOURISM ESTABLISHMENT	1MEANS OF TRANSPORTATION AVAILABLE	DISTANCE FROM NEAREST AIRPORT (KM)	2ACCESS ROAD		ACCESSIBILITY
			PAVEMENT	CONDITION	
Yolanda Memorial Monument	Land	5.33	Cement	Good	1

Source: City Tourism Operations Office, 2016

Table 4.33 lists an inventory of Tourism Establishments with their facilities and markets catered. Table 4.34 illustrates that we have a total of 67 accommodation facilities with a total of 1,902 rooms and an estimated average capacity of 7,608 while Tavle 4.35 showed a total of 470,066 (2015) tourists both local and foreign who visited Tacloban City and this showed an increase of 25% from 376,067 of 2014.

Table 4. 33 Inventory of Tourism Establishments and Support Facilities, 2015

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Acacio Golf Hotel	✓								Local
Ace Francis Hotel	✓				✓				Local
AIS Hotel	✓								Local
Angela Pension House	✓								Local
Asia Stars Hotel	✓				✓				Local
Basic Rooms Hotel	✓								Local
Casa Real Inn	✓								Local
Cecilia's Lodge	✓								Local
Cielo Vista	✓				✓				Local
Danel Pension House	✓								Local
Don's Cabin Pension	✓								Local
Don Pedro Suites	✓								Local
Eco Lodge	✓								Local
ES Park Inn	✓								Local
Etsu Hotel	✓								Local
Go Hotel	✓								Local
Golden Key Inn	✓								Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Golden Sun Pension and Restaurant	✓				✓				Local
Granda Manor	✓				✓				Local
Grand Royal Suites	✓								Local
Green Meadows Inn	✓								Local
GV Hotel	✓								Local
Hayward Travel Inn	✓				✓				Local
Highness Pensione and Suites	✓								Local
Hotel El Ranilo	✓								Local
Hotel Alejandro	✓				✓				Local
Hotel Canelsa	✓				✓				Local
Hotel Consuelo	✓				✓				Local
Hotel Lai Rico	✓				✓				Local
Hotel Lorenza	✓				✓				Local
Hotel Rodolfo	✓				✓				Local
Island Regional Townhouse Pension	✓								Local
Ironwood Hotel	✓				✓				Local
JCP Pension	✓								Local
Jerucen Pensionne	✓								Local
Jerucel Lodging House	✓								Local
La Rica Hotel	✓				✓				Local
La Viajera Bed and Bath	✓								Local
La Villa Antonia	✓								Local
Leo's Lodge	✓								Local
Leyte Park Hotel	✓				✓				Local
Loremar	✓								Local
Lorenzo's Way	✓				✓				Local
LNU House	✓				✓				Local
Luxury Suite	✓				✓				Local
Manabo Lodge	✓								Local
Mathew's Lodging House	✓								Local
Milka Hotel	✓				✓				Local
Pension De San Juanico	✓								Local
Primrose Hotel	✓								Local
Rosvenil Hotel	✓				✓				Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Setic Apartelle	✓								Local
Shalom	✓								Local
Tacloban Plaza Hotel	✓				✓				Local
Tacloban Village Townhouse	✓				✓				Local
The Ambassador Hotel	✓								Local
The Loft	✓								Local
Travellers Suite	✓								Local
Travellers Home	✓								Local
Villa Leonardo Inn	✓								Local
Villa Lolita Apartelle	✓								Local
Welcome Home Pensione	✓								Local
XYZ Hotel	✓				✓				Local
Yellow Doors	✓								Local
Your Home Pension	✓								Local
ZPAD Residences	✓								Local
Allied Bank		✓							Local
Banco de Oro – Zamora		✓							Local
Banco de Oro - J. Romualdez		✓							Local
Banco de Oro –Savemore		✓							Local
Bangko Sentral ng Pilipinas		✓							Local
Bank of Makati		✓							Local
Bank of the Phil. Islands – J. Romualdez		✓							Local
Bank of the Phil. Islands – Rizal Avenue		✓							Local
Bank of the Phil. Islands – Marasbaras		✓							Local
City Savings Bank		✓							Local
China Banking Corporation		✓							Local
Development Bank of the Philippines		✓							Local
Eastwest Bank		✓							Local
Eastwest Rural Bank		✓							Local
First Consolidated Bank		✓							Local
Greenbank		✓							Local
Kauswagan Bank, Inc.		✓							Local
Landbank of the Philippines – Real		✓							Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Landbank of the Philippines – Sagkahan		✓							Local
Maybank		✓							Local
Metrobank – Zamora		✓							Local
Metrobank – Burgos		✓							Local
Metrobank – Marasbaras		✓							Local
O.K. Bank		✓							Local
Philippine National Bank – J. Romualdez		✓							Local
Philippine National Bank – Rizal Avenue		✓							Local
Philippine National Bank – Zamora		✓							Local
Philippine Postal Savings Bank		✓							Local
Philippine Veterans Bank		✓							Local
Rizal Commercial Banking Corporation		✓							Local
Robinsons Savings Bank		✓							Local
Rural Bank of Dulag		✓							Local
Security Bank		✓							Local
Unionbank of the Philippines		✓							Local
United Coconut Planters Bank		✓							Local
Bayan Telecommunictions			✓						Local
Digitel Mobile Philippines			✓						Local
Globe Telecommunications			✓						Local
National Telecommunications Commission			✓						Local
Philippine Long Distance Telephone Company			✓						Local
Smart Communications			✓						Local
Eastern Visayas Regional Medical Center				✓					Local
Divine Word Hospital				✓					Local
Mother of Mercy Hospital				✓					Local
Remedios Trinidad Romualdez Medical Foundation				✓					Local
Tacloban City Hospital				✓					Local
Tacloban Doctors Medical Center				✓					Local
Tacloban Maternity Hospital and Puericulture Center				✓					Local
Alberto's Pizza					✓				Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Alexis Pizzeria					✓				Local
Andoks					✓				Local
Asian Café and Restaurant					✓				Local
A.R.S. Infinitea					✓				Local
Bento Bai					✓				Local
Biaños Real					✓				Local
Biaños Pizza					✓				Local
Bo's Coffee – Imelda					✓				Local
Café Cosina					✓				Local
Café Teresa – Hotel Alejandro					✓				Local
Canto Fresco					✓				Local
Carmela's Restaurant					✓				Local
Casa Ilongga					✓				Local
Chew Love					✓				Local
Chowking – Zamora					✓				Local
Chowking – Imelda					✓				Local
Chowking – Robinsons					✓				Local
Coffee Lounge					✓				Local
Dahil Sa Iyo Restaurant					✓				Local
Dimsum Break					✓				Local
Dream Café Restaurant					✓				Local
Dunkin Donuts – Zamora					✓				Local
Dunkin Donuts – J. Romualdez					✓				Local
Dunkin Donuts – Robinsons					✓				Local
Fahrenheit					✓				Local
Gerry's Grill Restaurant & Bar					✓				Local
Fireglass					✓				Local
Ginger Wok Restaurant					✓				Local
Giuseppe's					✓				Local
Goldilocks					✓				Local
Great Palace					✓				Local
Greenwich					✓				Local
Happy Jaqs					✓				Local
Hayward Coffee and Mini Mart					✓				Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Highside					✓				Local
Hot Mug's Coffee					✓				Local
Hukad Restaurant					✓				Local
Infinitea					✓				Local
JCO Food Spt					✓				Local
Jollibee – Zamora					✓				Local
Jollibee – Gomez					✓				Local
Jollibee – Gaisano Capital					✓				Local
Jollibbee – Bethany					✓				Local
Jollibee – Robinsons					✓				Local
Jose Karlos Coffee Shop					✓				Local
Juliana Café and Restobar					✓				Local
Julio's Buffet					✓				Local
K Patisserie					✓				Local
Kenny's Restaurant					✓				Local
KFC					✓				Local
Kitchenetto's – Salazar					✓				Local
Kitchenetto's – Zamora					✓				Local
Kitchenetto's – Gaisano Capital					✓				Local
KTV Republic					✓				Local
Kyle's					✓				Local
La Fideral Kusin					✓				Local
Leaf Lounge					✓				Local
Lillybells Café & Restaurant					✓				Local
Lorenzo's Way Bed & Breakfast					✓				Local
McDonald's – Zamora					✓				Local
McDonald's – Real					✓				Local
Mang Inasal					✓				Local
Mango Magic & Potato Corner					✓				Local
Max's Restaurant					✓				Local
Milagrina – Burgos					✓				Local
Milagrina – Robinsons					✓				Local
Miyara Cakes & Patissrie					✓				Local
Mex Em Up – Robinsons					✓				Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Mex Em Up – Real					✓				Local
Mex Em Up – Savemore					✓				Local
Milyas Restaurant					✓				Local
Mwaah					✓				Local
New Socsargen Grill					✓				Local
Ocho Restaurant					✓				Local
Panny's Bakeshop & Coffee Shop					✓				Local
Pinutos					✓				Local
Pizza Factory					✓				Local
Pop Up Kitchen					✓				Local
Porbida Restaurant					✓				Local
R. Roast and Grill					✓				Local
Rai Rai Ken Restaurant					✓				Local
Rafael's Lomi Bulalo Silog					✓				Local
Red Ribbon Bakeshop – Savemore					✓				Local
Red Ribbon Bakeshop – Robinsons					✓				Local
Ritz Tower de Leyte					✓				Local
Rosvenil Coffee Shop & Restaurant					✓				Local
Royal Restaurant					✓				Local
Sal's Restaurant					✓				Local
Sam-Sam Bistro					✓				Local
Savory Restaurant					✓				Local
Shakey's – Zamora					✓				Local
Shakey's – Robinsons					✓				Local
Sizzler's					✓				Local
Stephanie's Eat All You Can					✓				Local
Surprice Food House					✓				Local
White Spice					✓				Local
Zilog Café Real					✓				Local
Abby's Boutique and Giftshoppe						✓			Local
Bahandi Pasalubong						✓			Local
Dana Flower Souvenir Shop						✓			Local
Festivali						✓			Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
Gaisano (Capital)						✓			Local
Gaisano (Central)						✓			Local
Red Cherry Giftshoppe						✓			Local
Savemore						✓			Local
Red Cherry Giftshoppe						✓			Local
Robinson's Place						✓			Local
Tacloban City Pasalubong Center						✓			Local
Duptours							✓		Local
Grandtours							✓		Local
Haiyan Rent-A-Car							✓		Local
Haven's Rent-A-Car							✓		Local
J Life Travel and Tours Agency							✓		Local
JS Travel and Tours							✓		Local
JT Express							✓		Local
Local M Lhuillier Taxi							✓		Local
Van-Vans							✓		Local
All World Travel House and Services							✓		Local
Amore Travel and Tours							✓		Local
Ann Gold Ticketing Outlet							✓		Local
AS Ticketing Office							✓		Local
Bella Via Travel and Tours							✓		Local
C and C Travels							✓		Local
C and D Ticketing Services							✓		Local
Local Calacat Tours Ticketing Office							✓		Local
Crown Money Changer							✓		Local
EDJ Travel and Tours							✓		Local
Flymegrace Booking Agent							✓		Local
Flyral Travel Agency							✓		Local
GTC Travel Agency							✓		Local
Goliath Travel and Tours							✓		Local
Haiyan Holidays Travel and Tours							✓		Local
Hershey's Travel & Tours							✓		Local
HIS Travel Services							✓		Local

NAME OF TOURISM ESTABLISHMENT	1FACILITIES PRESENT								MARKETS CATERED
	AF	FF	CF	MF	EF	S/F	TR	OTHERS	
JP Travels Tickets and Enterprises							✓		Local
Lakat Travel Agency							✓		Local
Larga Ticketing Office							✓		Local
LDA Travel and Tours							✓		Local
Marsdenisse Travel and Tours							✓		Local
MLE Travel and Tours							✓		Local
One Planet Courier and Travel Services							✓		Local
Pais Blano Travel and Tours							✓		Local
Paradiso Travel Tours							✓		Local
Philippines Air Asia Inc.							✓		Local
SEAB Travel and Tours							✓		Local
Summit World Tacloban Inc.							✓		Local
Sunrise Travel and Tours							✓		Local
St. Matthew Money Changer & Travel Agency							✓		Local
Tribor Travel and Tours							✓		Local
Turris Money Changer							✓		Local
USSC Service Store							✓		Local
Viajero Travel and Tours							✓		Local
Virgo Travel and Tours							✓		Local
World Jumper Travel and Tours							✓		Local
Yahweh Communication and Business Center							✓		Local

Source: City Tourism Operations Office, 2016
1Facilities:
af-accommodation facilities (hotels, resorts, picnic huts, cottages, comfort rooms, dressing/change rooms, swimming pool, vehicular parking)
ff-financial facilities (banks and money changers)
cf-communication facilities (Telecommunications)
mf-medical facilities (hospitals, clinics)
ef-restaurants and other eating facilities (restaurants and other food and beverage facilities)
s/f-shopping facilities (shopping centers/malls, handicraft stores/souvenir shops)
tr-travel

Table 4. 34 Tourist Accommodation Data Sheet

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
1. Acacio Golf Hotel (Whelhelmina Acacio)	Cabalawan Hills, Tacloban City	09173212400/ 09177954735/ 09088723100		Inner Room	10	26	2-4	2,500.00	Golf Course/ Horseback Riding/ Restaurant/ Resort/Function Room/ Driving Range/ Massage/ Gift Shop/wifi zone
				Outer Room	15		2-4	3,000.00	
				Executive Room	1		2-4	6,000.00	
				Extra (Outer & Executive)				500.00	
				(Inner)				400.00	
2. Ace Francis Hotel (Neil M. Camenforte)	Real Street, Sagkahan-Fatima Village, Tacloban City	09989979646/ 09178295275/ 832-4852 Email add: acehoteltac@gmail.com		Standard Rooms		25			Free breakfast/ wifi zone/ Function Room/ Shuttle/ Projector
				Single Bed	3		1	1,200.00	
				Queen Bed	1		2	1,700.00	
				Deluxe Rooms					
				Single Bed	8		1	1,350.00	
				Queen Bed	4		2	1,800.00	
				Twin Bed	6		2	1,800.00	
				Family Room					
				Junior Suite	3		3	2,300.00	
3. AIS Hotel (Atty. Neil Matol Sia)	Brgy. 110, Utap Rd., Zone 3, Tacloban City	09985625567	Motel	Standard Room		12			12 hrs. (1,000.00)
				Overnight	12		2	1,200.00	
				Short Time				300.00	
4. Angela Pension House (Erlinda Reyes)	Algo Homes San Jose, Tacloban City	09178956199		De Luxe Room	6	15	3	1,850.00	Free Wifi/ Parking Area
				Suite Room	2		2	1,800.00	
				Family Room	7		3	2,500.00	
				Extra Bed				250.00	
5. Asia Stars Hotel (Justin Joseph Uy)	P. Zamora St., Tacloban City	321-5388; 325-5888; 325-5889; 09501667548; 09352896448	Standard	De Luxe: Matrimonial	12	53	2	1,500.00	Free continental breakfast; Function Room; free wifi in every room
				Twin Bed	19		2	1,500.00	
				Triple Bed	2		3	1,800.00	
				Family Room	3		3-4	2,150.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
				w/Ref					
				Suite: Junior Suite Room w/Ref	6		2	1,950.00	
				Executive Suite Room w/bath	3		2	2,400.00	
				Annex Single Occupancy	8			900.00	
				Triple Bed	8		3	1,400.00	
				Extra Bed/Person				300.00	
6. Basic Rooms Hotel (Atty. Simeon Caparoso)	Corner Mangga & Real St. Sagkahan, Tacloban City	8324064; 8325045; 09153063283	Economy	De Luxe (Twin Bed)	10	43	2	950.00	Restaurant; Laundry; Service; wifi zone; parking area; Function room; CCTV
				Standard (Matrimonial)	10		2	950.00	
				Executive Room	21		2	1,350.00	
				Family Room	2		4	2,500.00	
				Extra Person				200.00	
				Extra Bed				250.00	
7. Casa Real Inn (Teresita Rojas)	Real St., Tacloban City	321-2523		Standard Twin Bed	3	12	3	850.00	Function Room; free wifi; res Taurant
				Matrimonial	3		2	850.00	
				Twin Bed	4		3	950.00	
				Matrimonial	1		2	950.00	
				Family Room	1		4	1,350.00	
8. Cecilia's Lodge (Roberto A. Cecilia)	178 Paterno St., Tacloban City	325-5022		Ordinary Room	20	25	2	300.00	
				Aircon					
				Single Bed	4		1	900.00	
				Family Room	1		8	3,500.00	
				Double Bed	2		2	1,500.00	
9. Cielo Vista (Cielo Northington)	Airport Road, San Jose, Tacloban City	09205295758; 09175291672		Universe	3	15	2	3,500.00	All accommodations w/ free wifi,
				Sky	2		2	2,200.00	
				Comet	2		2	2,000.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
				Big Bang	2		2	2,000.00	complimentary breakfast & shared refrigerator, function hall; café
				Stellar	2		2	2,500.00	
				Constellation	2		2	1,798.00	
				Galaxy 1	1		1	1,200.00	
				Galaxy 2, 3, 4	1		1	1,000.00	
10. Danel Pension House (Dr. Sarah Baquilod)	Greenville, Marasbaras, Tacloban City	09177968577	Pension House	Twin Sharing	12	12	2	1,200.00	Wifi zone; huge parking space; airconditioned rooms
				Extra Joiner/Extra Person				200.00	
				Extra Bed				300.00	
11. Don's Cabin Pension House (Marlyn Ruiz Co.)	J. Romualdez St., Tacloban City	321-2645		Single Bed	4	16	2	650.00	
				Double Bed	6		3	1,000.00	
				Family Bed	4		4	1,200.00	
				Ordinary Double Bed	2		3	600.00	
				Short Time				500.00	
12. Don Pedro (Randy Kierulf)	Magallanes St., Tacloban City	09052959129		Standard (Single Bed)	3	3	2	1,000.00	Bar; Pool; Wifi Zone
13. Eco Lodge (Maria Remy Liza Bague Lee)	M.H. Del Pilar St., Tacloban City	09989802766		Single Bed (Fan & Common C.R.)	14	30	2	350.00	Wifi zone
				Double (Fan & Common C.R.)	10		4	550.00	
				Single Room (Aircon & Private C.R.)	2		2	700.00	
				Double Room (Aircon & Private C.R.)	4		4	1,000.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
				Short Time				200.00	
14. EP Travellers Home (Emmelie Pflieder Silao)	Brgy. Caibaan, Maharlika Highway, Tacloban City	327-5061; 09253081731		Standard Room	4	8	1	899.00	Wifi zone; coffee shop; telephone; standby gen. set
				Standard Twin Bed	2		2	999.00	
				Suite Room Matrimonial	1		2	1,099.00	
				Suite Room Twin Bed	1		2	1,199.00	
15. ES Park Inn (Imelda Encinas)	Brgy. 81, Marasbaras, Tacloban City	832-4332		Overnight		15		600.00	Fully Airconditioned rooms; private c.r.
				Short Time				300.00	
16. Etsu Hotel (Rosa Uy)	Cor. Rizal Ave. & Tarcela Sts., Tacloban City	321-4165; 325-5900		Single Room	18	44	1	900.00	Restaurant; wifi zone
				Double (Twin Bed)	18		2	1,500.00	
				Triple Occupancy	2		3	2,000.00	
				Executive Mat	4		2	3,000.00	
				Executive Twin-Bed	2		2	2,800.00	
17. Go Hotel (Robina Gokongwei)	Brgy. 77, Marasbaras, Tacloban City	09328529363; 09988401720		Queen Rm. (Matrimonial Bed)	48	98	2	1,778.56 depend on the occupancy of the hotel	2 conference room; freewifi; breakfast; transport service
				Twin Room (separate bed)	50				
18. Golden Key Inn (Sandra Dy Tan)	Salazar cor. Burgos Sts., Tacloban City			Matrimonial	9	14	2	700.00	
				Twin Room	5		2	700.00	
19. Golden Sun Pension & Restaurant (Dana Marie Dorola)	Km. No. 908 Maharlika Highway, corner Villa Mayor Subd. Caibaan, Tacloban City	09173782196; 832-4088		Family Room	1	18	6-7	2,000.00	Function room; wifi zone; free breakfast; transport service
				Regular Room	7		2	1,000.00	
				Couple's Room	6		2	1,000.00	
				Standard Room	4		1	850.00	
				Extra Bed				250.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
20. Granda Manor (Johanna Granda Andrade)	Juan Luna Cor. P. Gomez Sts., Tacloban City	321-8998; 321-8999; 09176961420 grandamanor@yahoo.com		Standard Suite	8	11	4	4,450.00	Function Room; airconditioned; mini bar; wifi free; fitness gym
				Penthouse	2		2-5	7,550.00	
				Family Suite	1		7	7,250.00	
				Extra Bed w/complimentary breakfast				1,100.00	
21. Grand Royal Suites (Roy Salinas)	186 Paterno St., Tacloban City	321-2828; 09152679828	Hotel	Family Room	1	24	4	1,500	Wifi zone; fully airconditioned
				Matrimonial Bed	14		2	980.00	
				Twin Bed	9		2	980.00	
				Extra Person				150.00	
				Extra Bed				150.00	
22. Green Meadows Inn (Edwin Mañas)	Brgy. 92, Apitong, Tacloban City	832-5125; 09351047175; 09063561425		Twin Bed	6	8	2	1,280.00	Wifi zone; free breakfast for 2; function room
				Matrimonial	2		2		
23. GV Hotel (Flordeliza Villegas)	Imelda Veteranos St., Tacloban City	523-0267; 09198145538	Economy	Family Room/VIP Room	4	153	4	3,300.00	Excess hrs. (1-5 half rate); All rooms have private CR w/Standby Gen Set
				Standard - Single	15		1	1,100.00	
				Double	83		2	1,600.00	
				Deluxe - Single	6		1	1,150.00	
				Double	20		2	1,800.00	
				Ordinary	25		2	1,050.00	
24. Hayward Travel Inn (Cristina Marie Reyes)	118 P. Paterno St., Tacloban City	523-2916; 321-6367; 09059493125		Matrimonial Room	3	11	2	1,792.00	Fully airconditioned, wifi zone, café, mini mart, free pick-up (airport) w/van for rent
				Twin Bed	3		2	1,792.00	
				2 Matrimonial & 1 Single	9		3	1,950.00	
				Family Room	10		4	2,700.00	
				Extra Foam w/breakfast per person				300.00	
25. Highness Pensione & Suites		09198115900; 523-1069		Single Bed	22	35	2	950.00	Wifi zone
				Twin Bed	8		2	1,250.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
(Hermogenes Timola Jr.)	174 Paterno St., Tacloban City			Family Room	5			1,800.00	
				Extra Bed				550.00	
26. Hotel El Ranilo (Ranillo Quinto)	Brgy. 91, Abucay, Tacloban City	09163174292		Family (Matrimonial)	1	9	4	1,200.00	
				Guest (Matrimonial)	1		2	1,300.00	
				Regular (Matrimonial)	7		2	950.00	
				Short Time				300.00	
				Extra Bed				250.00	
27. Hotel Alejandro (Montejo Corporation)	P. Paterno St., Tacloban City	321-7033; 321-7510	Economy	Standard Double	23	59	2	1,700.00	Function Room; Coffee Shop; Restaurant; Swimming Pool
				Superior Double	2		2	1,900.00	
				De Luxe Room	25		3	2,400.00	
				Superior De Luxe	5		3	2,600.00	
				Bridal Room	2		2	2,800.00	
				Executive Room	2		2-3	3,000.00	
				Extra Bed				500.00	
28. Hotel Allondra (Mary Allyn Altura)	Manlurip, San Jose, Tacloban	27301228		Matrimonial Room	14	14	2	1,200.00	Free Breakfast for 1, Resto, Wifi
				Extra Bed				550.00	
29. Hotel Canelsa (Canelsa Uy)	Cor. Rizal Ave. & P. Burgos Sts., Tacloban City	325-2341; 325-2342; 325-2343		Single Room	8	51	1	1,000.00	Restaurant
				Double Room	35		2	1,800.00	
				Junior Executive	4		2	2,000.00	
				Senior Executive	4		2-3	2,800.00	
				Extra Joiner/Person				300.00	
30. Hotel Consuelo (Edwin Pflieder)	Avenida Veteranos, Tacloban City	520-8134; 321-3588; 09255843588	Economy	Superior Room	2	38	3	1,800.00	Function Room; Free Internet Wifi; Room Telephone; Coffee Shop & Restaurant;
				Suite Room	10		2	1,600.00	
				Standard Rm. Twin Bed	2		2	1,450.00	
				Standard Matrimonial	24		2	1,250.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
				Extra Bed				300.00	Transportation Service
31. Hotel Lai Rico (Yang Lai Wah Wong)	2nd Floor Okey Commercial Complex, P. Paterno St., Tacloban City	523-0880; 09178412838		Single	2	23	1	1,000.00	Restaurant w/ bar; spa & salon; internet café; City tour packages, mini convenience in-house laundry, Function Hall; fully airconditioned
				Twin Single	3		2	1,500.00	
				De Luxe Room	10		2	1,500.00	
				Family De Luxe	6		6	2,500.00	
				Family Superior	2		5	3,500.00	
				Extra Bed				500.00	
				Extra Person				250.00	
32. Hotel Lorenza (Robert Montejo)	160 Avenida Veteranos, Tacloban City	321-5056-57; 321-8890; 09158141624	Economy	Superior Double Deluxe	2	50	2	3,000.00	Free Breakfast; Coffee Shop; Restaurant; Function rooms
				Junior Suite	1		2	3,500.00	
				Superior Deluxe	2		2	2,650.00	
				Matrimonial	18		2	2,000.00	
				Standard	5		1	1,700.00	
				Deluxe Double	17		2	2,400.00	
				Premium Deluxe	2		2	2,800.00	
				Suite Room	2		2	4,000.00	
				Extra Bed				450.00	
33. Hotel Rodolfo (Rodolfo Pfleider)	Sto. Niño St., Tacloban City	832-1729; 09985625578		Classic Superior Twin Bed	1	46		2,450.00	Complimentary breakfast; coffee shop; Restaurant; Music Lounge; Function Rooms; Transportation Service; Spa Services; Convenience Store
				Superior Twin Bed	4			2,180.00	
				Superior	3			1,850.00	
				Suite A	4			1,680.00	
				Suite B				1,540.00	
				Standard Twin Bed	13			1,380.00	
				Standard	3			1,280.00	
				Extra Bed	13			300.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
34. Island Regional Townhouse Pension (Santiago Lee, Jr.)	155 Salazar St., Tacloban City	523-9770		Ordinary Rm. (Fan & Common CR)	5	11	2	400.00	
				Ordinary Rm. (Private C.R.)	2		2	500.00	
				Aircon	4		2	700.00	
				Extra Fan/Aircon				100.00	
35. Ironwood Hotel (Steve Laurence Ruiz)	Cor. Juan Luna & Burgos Sts., Tacloban City	321-9999; 09176276099		Executive Suite	3	21	3	4,500.00	w/free breakfast; café; foregrass restaurant; function room
				Premium King	3		2	3,750.00	
				Premium Double	6		2	3,250.00	
				Premium Queen	3		2	3,250.00	
				Deluxe Double	3		2	2,750.00	
				Deluxe Queen	3		2	2,750.00	
				Extra Bed				1,200.00	
36. JCP Pension (Avelino Pascual)	Brgy. 71, Naga-Naga, Tacloban City	09386471821; 321-8654		Double Room	5	19	2	1,150.00	Conference room; bridal room
				Family Room	3		4	1,950.00	
				Single Room	4		1	1,100.00	
				Mini Single	4		1	970.00	
				Twin Bed	3		2	1,260.00	
37. Jerucen Pensionne (Noel Ilardo)	Brgy. 43, Salazar St., Tacloban City	09077818035		Aircon (Common CR)	4	12	2	400.00	
				Aircon (Private CR)	8		2	500.00	
38. Jerucel Lodging House (Alexander Parut)	65-A, Real St., Tacloban City	832-1832		Single (Fan & Common C.R.)	19	36	2	200.00	
				Single (Fan & Private C.R.)	6		2	300.00	
				Double (Fan & Common C.R.)	8		2	250.00	
				Double (Fan & Private C.R.)	3		2	350.00	
		09179969018; 325-3337-40	Economy	Executive Room	4	51	2	2,000.00	Free wifi; free breakfast;
				Double Room	4		2	1,500.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
39. La Rica Hotel (Atty. Orlando Alcaraz)	P. Zamora St., Tacloban City			Twin Room	31		2	1,500.00	restaurant; function rooms; videoke & live band
				Single Room	12		1	1,000.00	
				Extra Bed				150.00	
40. La Viajera Bed & Bath (Josefina Valmores)	Del Pilar St., Tacloban City	09177703058		Double Deck	6	6	8	250.00/ head	Fully Airconditioned; wifi @ lobby
41. La Vlla Antonia (Ida Kierulf)	Brgy. 66-A, Anibong, Tacloban City	09152836644		Double	15	24	2	1,500.00	Function Room
				Double	2		4	3,000.00	
				Single	3		2	2,000.00	
				Combo	4		3	2,500.00	
42. Leo's Lodge (Lealy Dudan)	M.H. del Pilar St., Tacloban City	09193481616		Aircon Room, TV & CR	8	30		750.00	Wifi Zone
				Rm. w/Fan & Com. CR				250.00	
				Rm. w/Fan, TV & CR				350.00	
				Rm. w/Fan & CR				300.00	
				Rm. w/TV & Com. CR				300.00	
				Aircon Rooms				300.00	
43. Leyte Park Hotel (Gov't./Rent by Wilson Chan)	Magsaysay Blvd. Tacloban City	09399040863; 09173214471	Standard	Standard Room	3	78	1	2,496.00	Function Room; Restaurant; Veranda; Swimming Pool; Wifi
				Standard Twin	45		2	2,696.00	
				Studio Room	11		2	1,400.00	
				Cottage Villa Single	16			2,736.00	
				Cottage Villa Twin	16			2,896.00	
				Grand Villa	5		2	4,000.00	
				Family Room	2		12	5,200.00	
				Dormitories	4		17	6,800.00	
44. Loremar (Singzon)	Youngfield, Tacloban City	832-1890; 09162742569	Economy	Standard Single (A/C)	15	54	1-2	1,000.00	

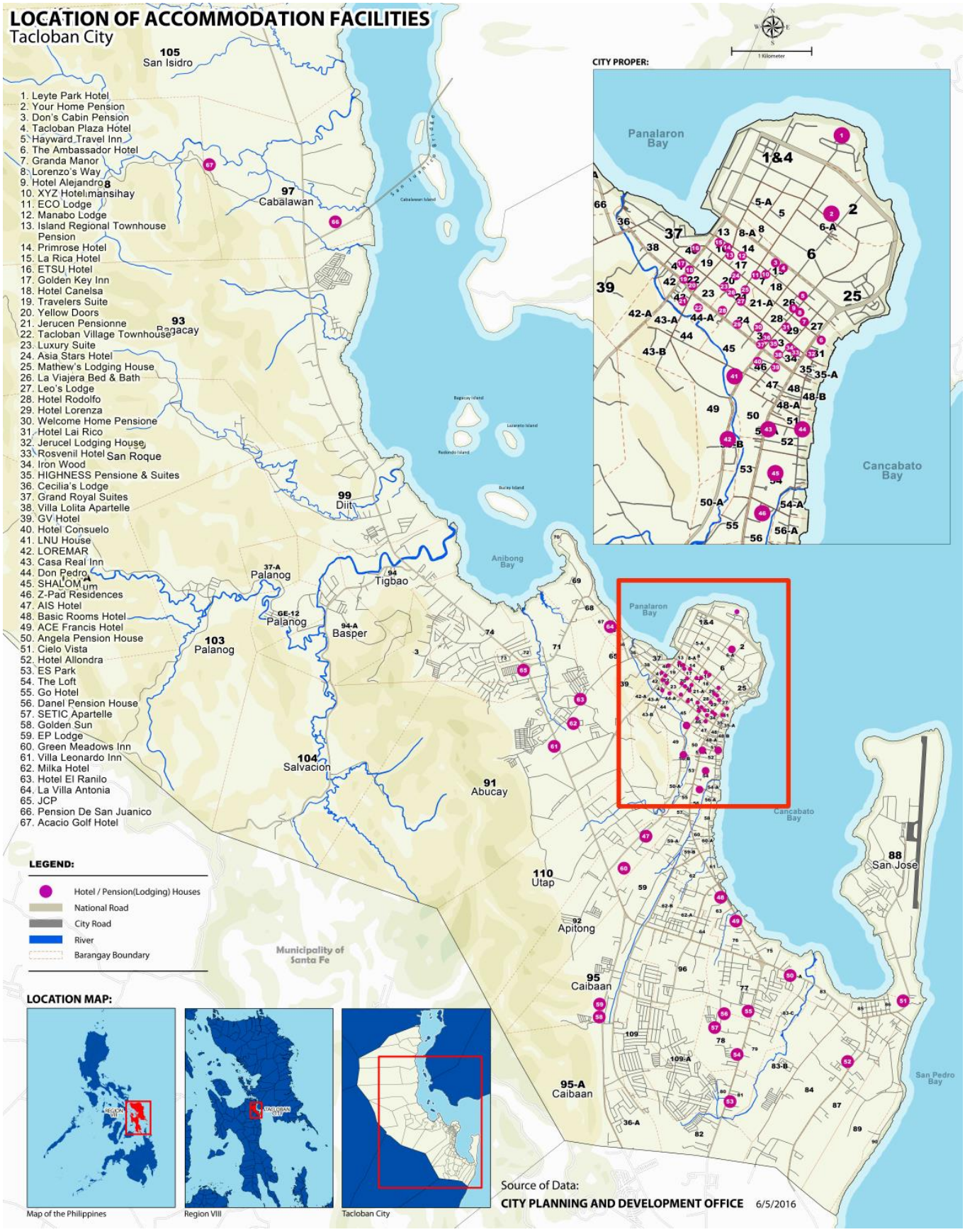
NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
				Standard Double/Matri	30		2	1,500.00	
				Twin Bed	9		2	1,500.00	
				Extra Bed				300.00	
45. Lorenzo's Way (John Jeffrey Jadway C. Go)	Paterno St., Tacloban City	325-6182; 09176478477		Standard Rm (Single)	4		2	1,250.00	
				Deluxe Room (Pr.CR)	1	5	2	1,650.00	
				Extra Joiner				500.00	
46. LNU House (Candice P. Aguilos)	Cor. P. Paterno & Sta. Cruz St., Tacloban City	321-3175; 321-3170		Single Room	2		1	750.00	
				Twin Room	7		2	850.00	
				Suite Room	1	17	2-10	1,600.00	
				Guest House	7		2	1,000.00	
				Extra Bed/Joiner				150.00	
				Joiner				300.00	
47. Luxury Suite (Eugene Tan)	P. Burgos St., Tacloban City	321-8844; 321-8855	Economy	Matrimonial	10		2	1,000.00	
				Double Deluxe Room	6		2	1,000.00	
				Double Standard	12		2	1,000.00	
				Single Room	4	37	1	1,000.00	
				Executive Suite Room	1		4	2,500.00	
				Standard Room	4		3	1,500.00	
				Extra Bed				250.00	
48. Manabo Lodge (Randy Kierulf)	P. Zamora St., Tacloban City	321-3727		Twin Bed	7		2	1,000.00	
				Single Bed	12	17	1	800.00	
49. Matthew's Lodging House (Arlene Solis Chan)	Josmar Bldg. M.H. Del Pilar St., Tacloban City	523-0829		Ordinary Room (Small)	19		2	300.00	
				Ordinary Room (Family)	2	21	2	400.00	
				Extra person				100.00	
		09085433021; 832-1477		Single Bed	4	28	1-2	1,000.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
50. Milka Hotel (Robert Gosyco)	New Bus Terminal, Abucay, Tacloban City			Twin Bed	8		2	1,500.00	Restaurant; Function Hall; Transportation Serve
				Matrimonial	9		2	1,500.00	
				Family Room	7		3-4	2,500.00	
51. Pension de San Juanico (Valentine O. Fano)	Maharlika Highway, Cabalawan, Tacloban City	09053507002		Aircon	5	20	2	800.00	Function Hall
				Non-Aircon	5		2	500.00	
				Ordinary/regular	8		1-2	250.00	
				Family Room	2		4-6	1,000.00	
				Extra Bed					
52. Primrose Hotel (Manuela Azucena Mayor)	Cor. Zamora & Salazar Sts., Tacloban City	832-0576; 09153450061		Mayora's Suite	4	32	2-10	1,700.00	Function Hall; wifi zone
				Midying's Suite	8		2-10	1,600.00	
				Standard Double	8			1,500.00	
				Matrimonial	4		2-9	1,400.00	
				Single Bed	4		2-5	1,100.00	
				Ordinary w/Fan	4		2-4	700.00	
53. Rosvenil Hotel (Vicente Quintero, Jr.)	302 P.Burgos St., Tacloban City	321-2676; 321-2677; 321-6009; 832-0577; 09399248973		Single (Single Bed)	3	58	1	1,280.00	Function Room; free wifi; coffee shop; resto; convenience store
				Single (Matrimonial Bed)	6		2	1,480.00	
				Twin (Two Single Beds)	9		2	1,680.00	
				Deluxe Room (Single)	14		2	2,080.00	
				Deluxe (Twin Single)	17		2	2,480.00	
				Deluxe (Family)	7		3	2,880.00	
				Deluxe (Suite)	2		4	3,780.00	
				Extra Bed				400.00	
54. Setic Apartelle (Bobby)	Brgy. 78, Marasbaras, Tacloban City	09239571638	Motel	Double (Twin Size)	21	24	2	1,400.00	
				Family (2 Single Bed)	3		2-3	950.00	
55. Shalom (UCCP)				Family Room	2	11	4	1,850.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
	UCCP Compound, Real Street, Tacloban City	832-1169; 09277815293; 09292886753		Standard Room	2		2	1,150.00	
				Dorm Type Aircon Rm.	5		4-5	350.00/h	
				Non-Aircon Dorm Type	2		4-5	200.00/h	
				Extra Bed					
56. Tacloban Plaza Hotel (Susan & William Chan)	J. Romualdez Street, Tacloban City	325-5850		Deluxe (Single)	4	54	1	1,725.00	Wifi zone; complimentary breakfast & tea; fully-airconditioned
				Deluxe (Twin)	23		2	2,490.00	
				Deluxe (Matrimonial)	8		2	2,490.00	
				Executive Deluxe	3		3	4,215.00	
				Premier Single	1		1	1,915.00	
				Premier Twin	12		2	3,240.00	
				Premier Suite	3		4	4,870.00	
				Extra Person				650.00	
57. Tacloban Village Townhouse	Imelda Veteranos St., Tacloban City			Single (Common CR, fan)	4	12	2	500.00	Wifi zone
				Single (Aircon & Common CR)	3		2	800.00	
				4 Beds, Private CR	1		4	1,800.00	
				2 Beds, CR	2		2	1,200.00	
				1 Single Bed w/CR	1		1	1,000.00	
				2 Single Beds, com. CR	1		2	850.00	
58. The Ambassador Hotel (Dennis & Jenny Chu)	Real Street, Tacloban City	321-2885; 523-1149		Superior Room	4	13	2	3,100.00	Function Room; coffee shop; mini-bar, wifi
				Deluxe Room	6		2	2,800.00	
				Matrimonial Room	3		2	2,750.00	
				Extra Person				600.00	
59. The Loft (Tropiqbel Corp.)	Marasbaras, Tacloban City	09274863434		Matrimonial Room	7	32	2	1,800.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
				Twin Sharing (2 single)	25		2	1,800.00	Function Room
				Extra Head				1,500.00	
60. Villa Leonardo Inn (Icy Encinas)	Abucay, Tacloban City	09173220766; 832-1605		Single Room (overnight)	14	14	2	600.00	
61. Traveller's Suite (Frederick Dy)	Rizal Ave., Tacloban City	832-1572; 09062607139		Non-Aircon (Com. Bath)	4	28	2	400.00	Wifi zone
				Aircon Rm. (Com. Bath)	5		2	700.00	
				Aircon Rm. (Pr. Bath)	19		2	850.00	
62. Villa Lolita Apartelle (David Chu)	64 J. Luna St., Tacloban City	325-3584; 325-3585		Lovely Room	2	14	2	1,700.00	
				Deluxe Room	1		2	1,300.00	
				Sweetie Room	7		4	2,500.00	
				Honey Room	3		6	3,200.00	
				Deluxe Room	1		2	1,200.00	
				Extra Person/Bed				350.00	
63. Welcome Home Pensione (Severina G. Cam)	168 Sto. Niño St., Tacloban City	321-2739; 09193415213; 09156502187; 321-2139; 09177027166		Budget (Common CR, Aircon)		28			
				3 Single Beds	4		2-3	800.00	
				2 Single Beds	2		2	800.00	
				1 Single Bed (Fan)	1		1	400.00	
				Standard (Aircon, Private CR)					
				6 Single Beds	5			1,700.00	
				3 Single Beds	3		2-3	950.00	
				2 Double Beds	1		2-4	1,000.00	
				1 Single Beds	1		1	900.00	
				Suite (Aircon, Private CR, Refrigerator)					
				2 Double Beds	5		2-4	1,200.00	

NAME OF ESTABLISHMENT	ADDRESS	TEL.NO.	CLASSIFICATION	TYPES OF ROOM	# OF ROOMS	TOTAL # OF ROOMS	CAPACITY	RATE	OTHER FACILITY
				2 Double & 1 Single	1		2-4	1,200.00	
				2 Double & 1 Sofa	3		2-5	1,400.00	
				3 Single Beds	1		3	1,200.00	
				1 Double & 2 Single	1		2-3	1,200.00	
				Extra Bed				200.00	
64. XYZ Hotel (Uy Corporation)	P.Zamora St., Tacloban City	09989606822; 09162376619		Fine Room (Queen/Twin	30	56	2	2,990.00	
				Fantastic Room	18			3,490.00	
				Fantabulous Room	3		4	3,990.00	
				Fabulous Room (Loft)	4			5,990.00	
				First Class Room	1			7,980.00	
				Extra Person				1,200.00	
65. Yellow Doors (Lucia & Jake Palami)	Cor. Burgos & J. Luna St., Tacloban City	09274500984; 09216000165		Private Room	2	4	2	1,250.00	Wifi Zone @ Lobby
				Dorm Bed (6 person)	1		6	650.00/b	
				Dorm Bed (12 person)	1		12	550.00/b	
66. Your Home Pension (Romeo Dy)	Lopez Jaena St., Tacloban City	523-8863		Standard Room	14	25	2	800.00	Wifi zone
				Family Room	10		4	1,300.00	
				Extra Person/Bed				200.00	
				Extra Pillow, Towel, Blanket				50.00	
67. ZPAD Residences (Uy Corporation)	Dadison St., Beside Bethany Hospital	09283212286; 09275209810		Junior Suite	4	34	3	2,995.00	Wifi zone
				Single	12		1	1,250.00	
				Mini	1		1	1,100.00	
				Queen Room	10		2	1,995.00	
				Twin Sharing	7		2	1,995.00	
				TOTAL	**1,902**				



Map 78. Location of Accommodation Facilities

Table 4. 35 Inventory Tourists by Country of Origin for the Past Three Years

NO. OF TOURISTS/VISITORS					
2013		2014		2015	
LOCAL 292,864	FOREIGN 11,306	LOCAL 358,214	FOREIGN 17,853	LOCAL 444,430	FOREIGN 25,636
	Australia, Austria, Belgium, Canada, China, France, Germany, Greece, India, Indonesia, Israel, Italy, Ireland, Japan, Korea, Malaysia, Netherlands, New Zealand, Norway, Poland, Saudi Arabia, Singapore, Sri Lank, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, USA, Vietnam		Australia, Austria, Belgium, Canada, China, Finland, France, Germany, Hong Kong, India, Indonesia, Israel, Italy, Japan, Korea, Luxembourg, Malaysia, Mexico, Netherlands, Norway, Portugal, Saudi Arabia, Singapore, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, USA, Vietnam		Argentina, Austrialia, Austria, Bangladesh, Belgium, Brazil, Cambodia, Canada, China, Colombia, Denmark, Egypt, France, Finland, Germany, Greece, Guam, India, Indonesia, Ireland, Israel, Italy, Japan, Korea, Kuwait, Malaysia, Mexico, Myanmar, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Papua New Guinea, Poland, Portugal, Russia, Saudi Arabia, Singapore, South Africa, Sweden, Switzerland, Taiwan, Thailand, United Arab Emirates, United Kingdom, USA, Venezuela

Source: City Tourism Operation Office, 2016

Table 4. 36 Regional Distribution of Travellers, Tacloban City, 2015

COUNTRY OF RESIDENCE	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Filipino Nationality	37,394	35,194	34,646	29,322	40,956	38,623	37,683	38,491	36,411	40,381	38,599	36,730	**444,430**
Brunei												1	1
Cambodia	1												1
Indonesia	14	9	21	16	70	5	23	11	3	1	27	19	229
Malaysia	59	13	24	20	15	4	24	78	31	43	29	20	360
Myanmar										70			70
Singapore	2	15	16	66	143	202	7	39	49	1	55	13	694
Thailand	2	2		10	72	27	1	15	28	243	3		403
Vietnam		2								27			29
China	134	247	332	126	191	149	153	227	198	123	127	215	2,222
Hongkong			9	54	3	32	21	8	90	87	22	4	330
Japan	162	233	180	86	140	242	175	265	131	249	443	492	2,798
Korea	68	41	34	143	141	132	161	173	74	81	85	98	1,231
Taiwan	38	74		9	25	12	29	32	8	65		7	299
Bangladesh	1	1			2				1				5
India	3	2			3	4	2	5	1	1	2		23
Pakistan				1					1				2
Egypt			1										1
Israel	2		1					1		1			5
Kuwait							2				1		3
Saudi Arabia	5	3		63	70	2	12	36	39	46	8	57	341
United Arab Emirates	35	31		2	5	5	10	3	5		1	4	101
Canada	99	104	163	55	134	88	56	69	56	144	147	91	1,206
Mexico	2												2
USA	661	918	737	523	835	711	758	452	592	618	487	681	7,973
Argentina						1							1
Brazil					1		2	2					5

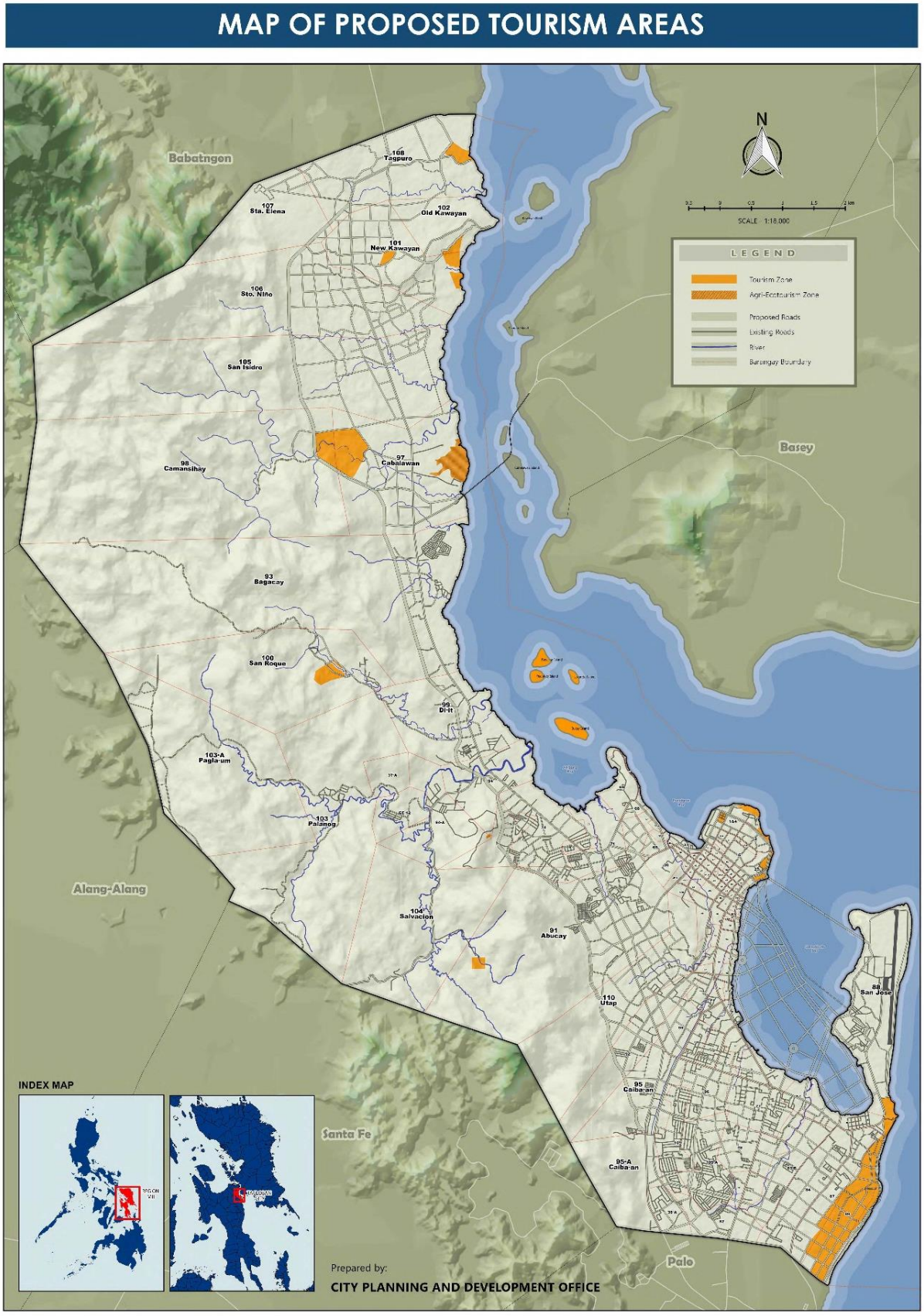
COUNTRY OF RESIDENCE	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Colombia	1					1	1	1	1		1		6
Venezuela							1						1
Austria			2			1		1				2	6
Belgium		5	3		2		3	8	1		2		24
France	17	20	42	38	113	5	9	39	19	66	77	18	463
Germany	29	44	42	43	78	34	15	40	35	17	13	39	429
Netherlands			3	1	2	1			2	2	1	2	14
Switzerland	1					2		2		1	5	2	13
Denmark						1	1	2	5		4	2	15
Finland		1								1			2
Ireland						2	4	2	4				12
Norway	12	2	2	1		4	3	6	2	1	2	6	41
Sweden	8	6	3	2	6	8	3		1	1	4	6	48
United Kingdom	79	16	79	59	57	81	32	60	46	57	45	135	746
Greece											1		1
Italy	6	18	25	27	14	27	8	33	5	22	14	57	256
Portugal					3	6	4	2		4	4		23
Spain			2	3	3	5	4		6	1	5		29
Poland									1				1
Russia									1				1
Australia	124	362	320	183	136	168	181	147	135	191	194	138	2,279
Guam	1	2			15								18
New Zealand				5		4				5			14
Papua New Guinea			1										1
Nigeria				1								1	2
South Africa				1					1				2
													25,636

Source: City Tourism Operations Office, 2016

Table 4.37 Cultural Tourism Activities/ Festivals

ACTIVITY	1FREQUENCY OF ACTIVITY	2DURATION OF ACTIVITY
Balyuan Rites	Annually	3 days
Grand Santacruzan	Annually	1 day
Sangyaw Festival	Annually	2-3 weeks

Source: City Tourism Operations Office, 2016
Note:
1Frequency of Activity: yearly, semestral, quarterly or monthly activity
2Duration : e.g. number of days the activity is held



Map 79. Proposed Tourism Sites

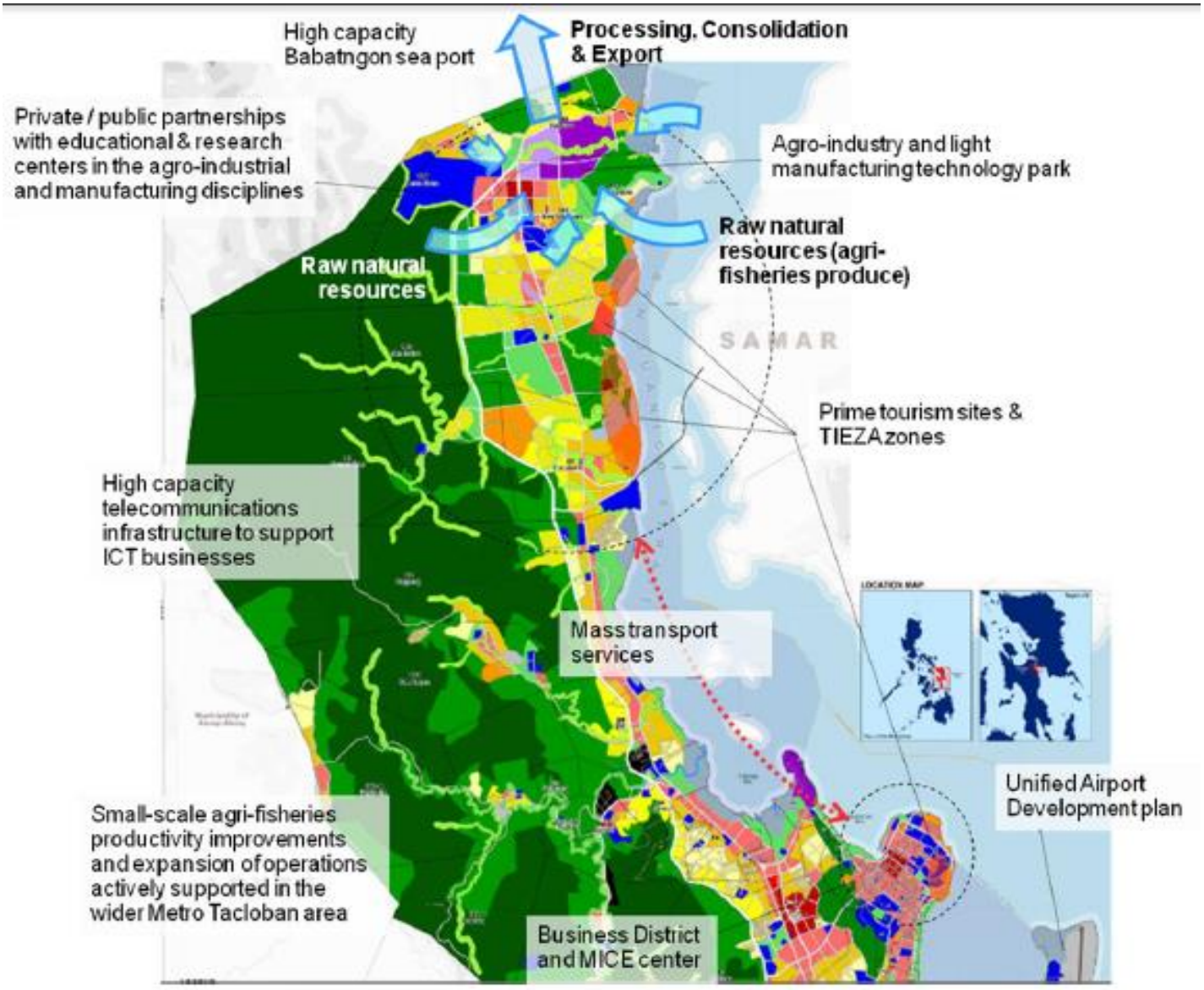
II. Problems and Development Needs/Requirements:

The havoc brought about by Super Typhoon Yolanda had catapulted the city of Tacloban as the most sought-after tourist destination of the world. In whatever shape and size she became the focus of all high-definition lenses. The challenge became even greater on how to maintain such stature in preserving its natural tourism capital given the other sectors' much needed rehabilitation sans a very sound financial capability. For now and within the planning years (2017 – 2025), the immediate need is to establish Tacloban City as a MICE (Meetings, Investments, Conferences/Conventions & Exbititions) destination and just simply make it a point that all guests will have a decent yet affordable place to stay and where pleasure and business worth the while.

III. Tourism Analysis Matrix

TECHNICAL FINDINGS/ISSUES	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
The natural historical site of the city is not a priority for development.	If these historical sites will not be developed, it would mean less number of tourists visiting the city.	Restoration, development and maintenance of historical landmarks within the city.
Like any other parts of the country, Tacloban City also possesses natural resources and indigenous materials which can prove potential for tourism-related projects and initiatives. The natural resources available in the locality are not being developed.	These natural resources are not being showcased to other parts of the country, thereby no knowledge of these materials is being known to others.	Encourage private sector involvement in the development of tourism-oriented ventures by utilizing indigenous architectural forms reflecting the city's traditional and cultural atmosphere.
Absence of historical events to commemorate the city's various historical experiences. No definite activity being undertaken by the city on this particular concern	Less number of activities that the city undertakes consequently less reasons for tourists to come to the city.	Revitalization of special historical and cultural events to promote domestic system tourism.

TECHNICAL FINDINGS/ISSUES	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
No activities are conducted promoting the different tourism programs and projects of the city. Lack of office manpower and logistics to address this problem.	The city's various tourism activities are not known to the local and national scene.	Conduct of various promotional activities through media invitational programs, trade and fair exhibits, festivals and travel marts.
Underdeveloped Cancabato Bay Lack of material funds for the development of the bay	The development of Cancabato Bay as an Eco-Tourism site will boost the tourism industry of the city.	Develop Cancabato Bay as an Eco-Tourism Area
Absence of a Tacloban City Tourism Master Plan No particular group of people is tasked to undertake the formulation of the Tacloban City Tourism Master Plan.	Because the city does not have a master plan for tourism, there are no definite programs and projects scheduled for implementation	Formulation and enactment of pertinent laws on Tacloban City Tourism Master Plan
No documents/magazines are available to tourists on existing heritage houses and other historical structures. Lack of office manpower and logistics to address this problem	The city's various heritage houses and other historical structures are not known to the local and national scene.	Documentation of Heritage Houses and other historical structure of Tacloban City
Exposure of Tourism Establishments to various disasters/hazards.	Tourism establishments are vulnerable to hazards. Decrease in number of tourist arrivals.	Advocate the inclusion of tourism sector in DRRM council especially in the barangay/city councils. Provide IEC materials and advocacy programs on vulnerability risk assessment to all tourism stakeholders. Promote the construction of resilient tourism structures.


High capacity Babatngon sea port
Processing, Consolidation & Export
Private / public partnerships with educational & research centers in the agro-industrial and manufacturing disciplines
Agro-industry and light manufacturing technology park
Raw natural resources (agri-fisheries produce)
Raw natural resources
SAMAR
Prime tourism sites & TIEZA zones
High capacity telecommunications infrastructure to support ICT businesses
Mass transport services
Unified Airport Development plan
Small-scale agri-fisheries productivity improvements and expansion of operations actively supported in the wider Metro Tacloban area
Business District and MICE center

IV. Integrated Economic Analysis Matrix

PRIORITY ISSUES PROBLEMS	POSSIBLE INTERVENTIONS (POLICIES/ PPA'S)	RESPONSIBILITY CENTER
. Imminent Threat to Mangrove, Sea grasses, Coral Reefs along Coastal Areas. - Traveller's from outside Tacloban City - Coastal Erosion - Pollution affecting marine ecosystem - Illegal & distractive Fishing	**Coastal Resource Rehabilitation Mangrove, Sea Grass, Corals.** - San Pedro Bay - San Juanico - Cancabato Bay - San Pedro Bay - Anibong Bay - San Juanico Strait - From 69 (Anibong to Tagpuro) - From 83-A & 83, - 88 (kataisan) - San Jose Area Regulatory, Monitoring Close/Open Season.	BFAR, DENR, LGU,ACADEME, INGO, FISHER FOLKS
. Minimal Productivity / Production - Low income indiscriminate and land conversion	Regulate land Conversion water/rain impounding dam Production and utilization of organic industry intensity land use for Crop Production Farmers to adopt integrated farming system FA's as marketing and Provision of permanent market space	DA, PCA, SP, CPDO, NIA, Market Support Office
. Minimal yield on livestock Products which results to Importation form other Regions.	**Livestock Production Support** - Update Technology Transfer - Establishment of demo farm - Establishment of multiplier Farm - Fund Support for stock Procurement	CITY VETERINARY OFFICE, / DA – RF08 / NGO's / CMO
Land conversion of agricultural lands to other land uses.	➢ Maximize the use of the farm through adoption of suitable diversified farming system. ➢ Adopt or practice urban agriculture or containerized gardening.	City Agriculturist's Office, DAR, DA-RFU-8

PRIORITY ISSUES PROBLEMS	POSSIBLE INTERVENTIONS (POLICIES/ PPA'S)	RESPONSIBILITY CENTER
Lack of irrigation facilities	➢ Adopt water conservation practices such as mulching, deep tillage, application of compost, planting of crawling crops such as sweet potato and squash. ➢ Construction of Water Catchment System (900 sq.m.)	City Agriculturist's Office, DAR, DA-RFU-8, CEO, CTO
No permanent area in the market where farmers could sell their farm products	➢ Provide permanent structure such as "Bagsakan Area" in the market.	CMO, Operations of Markets, CTO, CEO
Very minimal yield of livestock and poultry products due to high cost of feeds	➢ Construction/installation of additional cold storage facilities to augment to the existing commercial cold storages and construction of local feed mill. ➢ Encourage the raising of native chickens and swine at the household level provided that they be given necessary assistance from the City Veterinary Office and the City Health Office on the sanitation aspect of backyard livestock raising.	CMO, CVO, CEO, CTO, CHO
Cancabato Bay degradation due to pollution/siltation, overpopulation of coastal communities, resource use conflicts, climate change and calamities (typhoons, storm surges, drought, etc.)	➢ Leyte Gulf Rehabilitation Project	CMO, City Agriculturist's Office, FLET, BFAR-8
Damaged mangrove areas/mangrove seedlings planted in unsuitable areas/	➢ Mangrove reforestation program involving/engaging local fisherfolks. ➢ Declare mangrove area as protected area to help better recovery and growth. ➢ Allow aquasilviculture stewardship but with rigid monitoring.	CMO, City Agriculturist's Office, FLET, BFAR-8, DA-RFU-8

PRIORITY ISSUES PROBLEMS	POSSIBLE INTERVENTIONS (POLICIES/ PPA'S)	RESPONSIBILITY CENTER
	➢ Open public foreshore areas to fisherfolks economic activities (e.g. fish drying, mangrove aquasilviculture, fish landing). ➢ Establish satellite FLET Headquarters equipped with wharf and dry docking facilities.	
Forest degradation due to illegal and destructive activities like firewood gathering (kaingin) and timber cutting, poaching and trading of flora and fauna.	➢ Implement habitat restoration and forest rehabilitation projects like reforestation/tree planting in potential forest areas in the city. ➢ Establish and operate wildlife rescue center with an area of at least 50 hectares in Brgy. Salvacion.	CMO, City ENRO, CEO, CTO
Fully congested existing Central Business District	➢ Development of District Growth Nodes/Centers to augment the existing Central Business District (South and North) ➢ Introduce "New Town Center" which will adequately meet the requirement of the relocated communities in Tacloban North and establish a walkable urban core. ➢ Construction of additional road network that would make the Tacloban North accessible to all parts of the suburbs.	CMO, CEO, CTO, DTI-8, CPDO
Presence of Pollutive/ Hazardous commercial activities/employment of toxic materials and methods	➢ Construction of 500 sq.m. Central Material Recovery Facilities (MRF) to take charge of the collected wastes of the city.	CMO, City ENRO, CEO, CTO

PRIORITY ISSUES PROBLEMS	POSSIBLE INTERVENTIONS (POLICIES/ PPA'S)	RESPONSIBILITY CENTER
Lack of appropriate site for agri-processing activities, resulting to proliferation of industrial activities in areas outside the allowable zone.	➢ Identify and develop suitable sites for industrial/agri-industrial activities (on the north and south) of the city and provide support facilities, services, amenities and infrastructure.	CMO, CEO, CTO, DTI-8, DA, City Agriculturist's Office
The natural historical site of the city is not a priority for development.	➢ Restoration, development and maintenance of historical landmarks within the city.	CMO, CTOO, CEO, CTO
Underdeveloped Cancabato Bay	➢ Develop Cancabato Bay as an Eco-Tourism Area	CMO, CTOO, City ENRO, DOT-8, CEO, CTO

CHAPTER 5 INFRASTRUCTURE, UTILITIES AND FACILITIES

5.1 Transportation Facilities

I. Analysis of Existing Situation

Tacloban City is accessible by land, sea and air travel. It is the gateway to the south and north by land travel through the San Juanico Bridge. The city built a spacious new North Bus Terminal to accommodate vehicles going to and from Luzon, Visayas and Mindanao. This new facility has improved the land transportation system in the city and brought convenience to the riding public. It covers a land area of 2.2 hectares as reflected in table 5.1.1. This Bus Terminal is highly susceptible to storm surge, moderately susceptible to flooding, tsunami and Tropical Cyclone.

Tacloban City, a highly urbanized city is the center of aviation in the region and is the 8th busiest airport in the Philippines. The Daniel Z. Romualdez Airport is located 4.3 nautical miles southeast of Tacloban City proper, having a road distance of about ten (10) kilometers from kilometer zero (0) origin. The airport runway is 2,140 meters long and 45 meters wide with 1,000 meter wide easements. The width of the runway is enough to accommodate Boeing 737 planes. It occupies a land area of 81 hectares in Barangay San Jose, Southeast of the city. Its location is moderately susceptible to flooding and Tropical Cyclone and low susceptible to landslide. Likewise, Table 5.1 reflects other Transportation terminals not only by land and air but also by sea transport. The airport is being maintained and managed by the Civil Aviation Authority of the Philippines (CAAP). At present, plans are being considered for it to become an airport of international standards.

Table 5. 1 Transportation Terminals by Location and Condition, year 2015

NAME OF TERMINAL	AREA OCCUPIED (HA)	BARANGAY	YEAR CONSTRUCTED	PHYSICAL CONDITION	OWNER/ OPERATOR	TYPE OF TERMINAL	TERMINAL FACILITIES	HAZARD SUSCEPTIBILITY (H/M/L)						
								FL	TC	EQ	LN	TS	SU	OTHERS
Water														
Port of Tacloban	3.5 ha	Brgy. 1 & 4 Port Area, Tacloban City	1944 (please see attached port layout plan for the succeeding repair/rehabilitation works)	Fair (Good condition)	Administered by Philippine Ports Authority – PMO Eastern Leyte / Samar	Seaport	▪ Berthing Facilities o Conventional o RoRo (2-RoRo Ramp) ▪ Open Storage Area ▪ Working Area ▪ Lighting System o High mast steel towers w/ halogen floodlights o Solar Farm Lighting ▪ Fendering System	M	M	L	L	M	H	L
Land														
Abucay Bus Terminal	1.8 ha	Barangay 91	2007	Fair	LGU Tacloban	Bus, Jeepney,		M	M	L	L	M	H	
Philtranco Bus Line	0.40 ha	Barangay 91 Barangay 88	2015	Fair	Philtranco	Bus		M	M	L	L	M	M	

NAME OF TERMINAL	AREA OCCUPIED (HA)	BARANGAY	YEAR CONSTRUCTED	PHYSICAL CONDITION	OWNER/ OPERATOR	TYPE OF TERMINAL	TERMINAL FACILITIES	HAZARD SUSCEPTIBILITY (H/M/L)						
								FL	TC	EQ	LN	TS	SU	OTHERS
Air Daniel Z. Romualdez Airport	81 ha		1950	Fair	CAAP	Airport	○ Rubber dock fenders ▪ Mooring Facilities ○ Cast iron mooring bollards w/ T-heads, 25T capacity ▪ Warehouse / Transit Shed ▪ Port Operations Building ▪ Covered Walkway Passengers Lounge Ticketing Booths Toll Gate Police Sub Station Canteen	M	M	L	L	H	H	

NAME OF TERMINAL	AREA OCCUPIED (HA)	BARANGAY	YEAR CONSTRUCTED	PHYSICAL CONDITION	OWNER/ OPERATOR	TYPE OF TERMINAL	TERMINAL FACILITIES	HAZARD SUSCEPTIBILITY (H/M/L)						
								FL	TC	EQ	LN	TS	SU	OTHERS
							X-Ray Machines Passengers Lounge Ticketing Offices Luggage Carousel Runways Arrival Area Airport Operations Building Parking Area							

Source: LTO, PPA, CAAP, TOMECO; 2016

In terms of available Public utilities for commuting public, the city has buses, vans, jeepneys routing within the Region accessing the six (6) provinces. Within the city area, there are about 1,387 tricycles as well as multicabs and pedicabs servicing all the barangays of the city as reflected in Table 5.2.

For sea transport, Table 5.3 reflects a vessel with once a week route to and from Masbate.

Table 5.2 Inventory of Public Land Transportation Vehicles by Type and Service Routes, Year 2015

TYPE OF PUBLIC UTILITY	REGISTERED IN TACLOBAN CITY					FROM OTHER CITY/MUNICIPALITY	
	TOTAL NO.	ROUTE/DESTINATION				TOTAL NO.	ROUTE/ DESTINATION
		WITHIN BARANGAY	BARANGAY TO BARANGAY	BARANGAY TO CITY CENTER	CITY CENTER		
Buses	6						Ormoc
	2						Palompon
	2						Naval
	4						Eastern Samar
	2						Northern Samar
							Western Samar
	8						Luzon
	4						Mindanao
Van						62	Eastern Samar
						12	Northern Samar
						19	Western Samar
						34	Ormoc
						24	Naval
						16	Maasin
PUJ/Multicabs	1009			Northern Barangays-CBD		77	Babatngon

TYPE OF PUBLIC UTILITY	REGISTERED IN TACLOBAN CITY					FROM OTHER CITY/MUNICIPALITY	
	TOTAL NO.	ROUTE/DESTINATION				TOTAL NO.	ROUTE/ DESTINATION
		WITHIN BARANGAY	BARANGAY TO BARANGAY	BARANGAY TO CITY CENTER	CITY CENTER		
				Sagkahan Area- CBD		278	Basey
				San Jose Airport Area- CBD		352	Sta, Rita
				Southern Barangays- CBD		163	Palo, Tanauan,Tolosa
				Barangay 109,109-A,95-95-A,96- CBD		139	Sta,fe, alangalang, Jaro, San Miguel, Tunga, Barugo, Carigara
Tricycles	2116	Barangay 74, 3	CBD Area	Anibong Area- CBD			
				Barangay 71,72,73- CBD			
Others (Multicab)	14			Northern Barangays- CBD			
	8			Southern Barangays- CBD			

Source: LTO, New Bus Terminal, TOMECO, Kanhuraw Business Center 2015

Table 5.3 Other Modes of Transport and Facilities, 2015

MODE	FACILITY	CAPACITY	LOCATION	CONDITION	FREQUENCY OF SERVICE/TRIPS
Sea Transport					
Masbate		40 passengers	Tacloban City	Good	1 x week
Air Transport					
Philippine Airlines	Ticketing Office Cargo Terminal	150 passengers	Tacloban City	Good	3 x daily

MODE	FACILITY	CAPACITY	LOCATION	CONDITION	FREQUENCY OF SERVICE/TRIPS
Cebu Pacific Air	Passenger Terminal Ticketing Office Cargo Terminal	150 passengers	Tacloban City	Good	4 x daily
PAL Express	Passenger Terminal	150 passengers	Tacloban City	Good	1 x daily
Zest Air/Air Asia	Ticketing Office Cargo Terminal Passenger Terminal Ticketing Office Cargo Terminal Passenger Terminal	150 passengers	Tacloban City	Good	3 x daily

Source: CAAP, PPA, 2015

Table 5.4 Transport Related Projects, Approved/Funded for Implementation, 2015

NAME /LOCATION OF PROJECT	LOCATION	TYPE	PROPONENT (GOVERNMENT, PRIVATE, OTHER)	ESTIMATED START DATE	ESTIMATED DATE OF COMPLETION
Rehabilitation/Expansion of Daniel Z. Romualdez Airport	Barangay 88 San Jose	Airport	Government	On-going	2017
Tacloban Port Improvement/ Rehabilitation Project – Phase 2	Port of Tacloban	Wharf	Government	On-going	2017

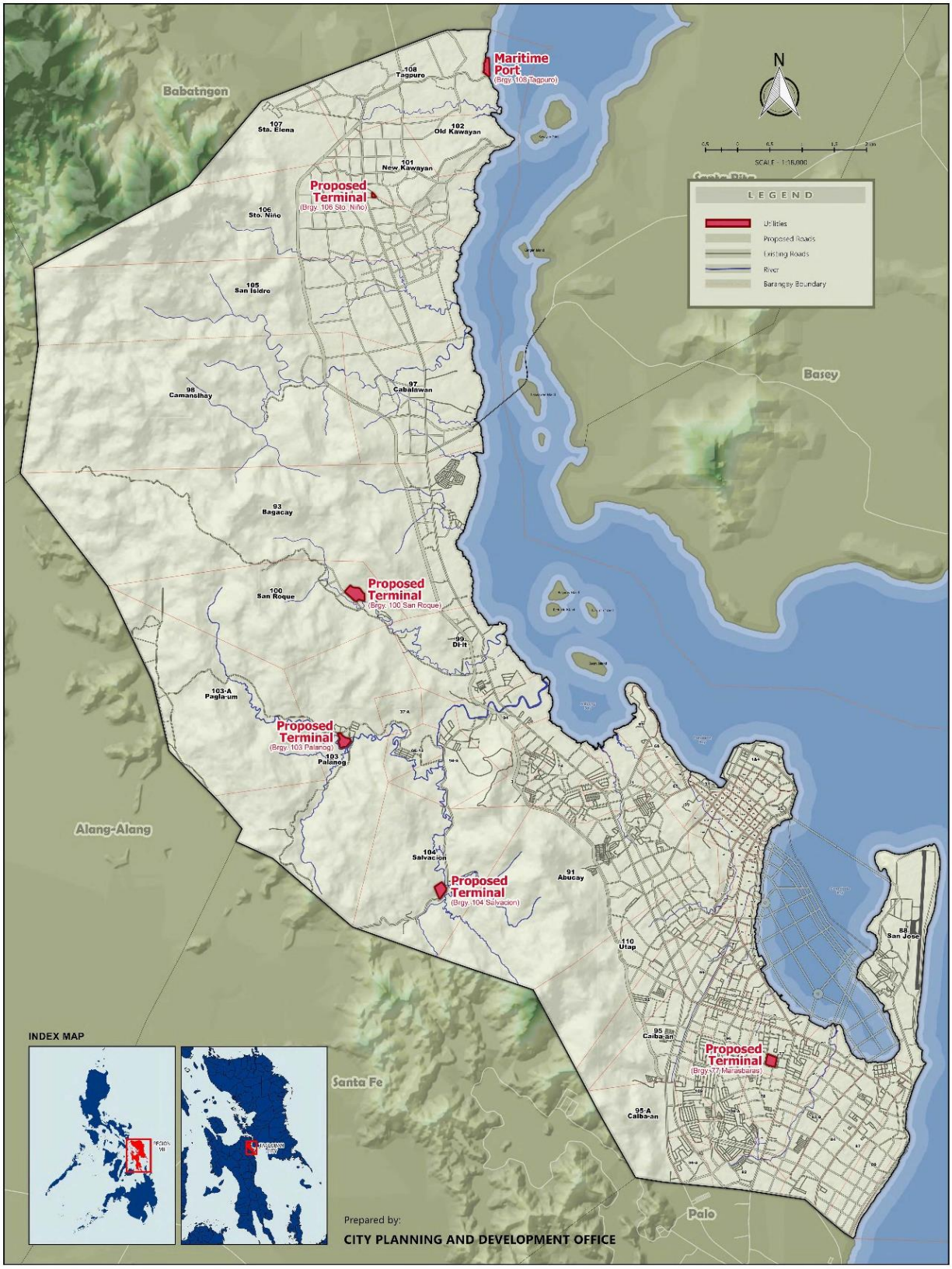
Source: CAAP, PPA, 2016

III. Transportation Analysis Matrix

TECHNICAL FINDINGS, ISSUES, CONCERNS	IMPLICATIONS/EFFECTS/IMPACTS	POSSIBLE SOLUTIONS (LEGISLATION, POLICIES, PROGRAMS, PROJECTS)
Insufficient roads	Traffic & Congestion of Vehicles	1.Open up additional roads;
		2. Widen existing roads to the maximum standard;
		3. Establish all road shoulders, sidewalks, parking areas in CBD areas;
		4. Construct and establish complete ancillary road facilities i.e; Waiting sheds, pedestrian lanes, others;
		5. Strictly implement Traffic Rules and Regulations;
Insufficient Drainage ways	Occurrence of Flooding, Occurrence water-borne diseases, Increased flood-related accidents to motorists and pedestrians, Risk of lives and properties	Revise the 30 year old Master Drainage Plan to adapt the global climate Change
		The proposed revision should consider storm drainage and flood control measures;
		Conduct advocacy workshops, information dissemination and other modes in Bgys. Located along rivers, creeks and shorelines.
Undefined Water Ways	Occurrence of Flooding, Occurrence water-borne diseases, Increased flood-related accidents to motorists and pedestrians, Risk of lives and properties	Construct flood control structures e.g. riprap, etc. Encourage planting of trees along banks of water bodies.
No Drainage ways at all	Stagnant Water	Construct immediately Storm water drainage systems;
Clogged Waterways	Occurrence of Flooding	Clean clogged waterways
		Organize permanent Drainage and Waterways Division within the City Engineer's Office whose activities shall include among others the maintenance for an efficient Storm water drainage;
Unregistered small operator	Discourage all transport terminals in the business	

TECHNICAL FINDINGS, ISSUES, CONCERNS	IMPLICATIONS/EFFECTS/IMPACTS	POSSIBLE SOLUTIONS (LEGISLATION, POLICIES, PROGRAMS, PROJECTS)
	district, they apply for canteen or store but it's a terminal instead	
Excessive number of Motorcycle for hire (MCH) plying in CBD area	Traffic & Congestion of Vehicles	Prohibit MCH means of transportation in CBD area
	Air Pollutant Regulation of old vehicles Promotion of bicycle use	allow MCH to operate within subdivision areas only Regular monitoring of air quality (thru DENR,EMB) and strict implementation of emission testing cars Promote e-transportation

MAP OF PROPOSED TRANSPORT UTILITIES



Map 80. Proposed Transport Utilities

5.2 Roads

Tacloban City has a total of 198.049 kms. road network. The figure includes national roads, 69.901 kms; city roads, 49.047 kms. and barangay roads, 79.497 kms.

The city government is continuously upgrading or repairing its roads and there are new ones being constructed which are not yet included in the inventory. These new roads are being built owing to the expansion and development of some barangays. Also, with the construction of the new North Bus Terminal, a new road network was constructed for the purpose. The tables below illustrate the roads inventory in the city and their corresponding length and condition.

Table 5.5 Inventory of Ancillary Road Facilities, Year 2015

ROAD NAME PER ROAD CLASSIFICATION	TYPE OF ANCILLARY ROAD FACILITIES	NO.	CONDITION
Primary			
Daang Maharlika	Pedestrian Crossing	14	Faded
	Waiting Sheds	8	Bad
	Street Lights	318	Good
	Road Signages	90	Bad
Secondary			
TaclobanBaybay South Road	Pedestrian Crossing	22	Faded
	Waiting Sheds	12	Bad
	Overpass	1	Underconstruction
	Street Lights	85	Good
	Road Signages	84	Bad
AvenidaVeteranos Road	Pedestrian Crossing	11	Faded
	Street Lights	52	Good
	Traffic Lights	1	Good
	Road Signages	2	Bad
Burgos St.	Pedestrian Crossing	14	Faded
	Street Lights	38	Good
Naga-naga-Anibong Road	Pedestrian Crossing	5	Faded
	Overpass	1	Fair
	Waiting Sheds	4	Bad
	Street Lights	76	Good
	Road Signages	47	Bad
Apitong-Paterno Road	Pedestrian Crossing	4	Faded
	Overpass	1	Good

ROAD NAME PER ROAD CLASSIFICATION	TYPE OF ANCILLARY ROAD FACILITIES	NO.	CONDITION
	Waiting Sheds	3	Bad
	Street Lights	55	Good
	Road Signages	28	Bad
Rizal Avenue Extension(S00006LT)	Pedestrian Crossing	2	Faded
Benjamin "Kokoy" Romualdez Diversion Road	Pedestrian Crossing	4	Faded
Picas-San Jose DZR Airport Road	Pedestrian Crossing	4	Faded
	Waiting Sheds	3	Bad
	Street Lights	373	Good
	Road Signages	60	Fair
Trece-Martirez Road	Pedestrian Crossing	3	Faded
	Waiting Sheds	1	Bad
	Street Lights	11	Good
Leyte-Samar Road	Pedestrian Crossing	3	Faded
	Waiting Sheds	4	Bad
	Street Lights	117	Good
	Road Signages	120	Bad
Caibaan Road	Pedestrian Crossing	4	Faded
	Waiting Sheds	3	Bad
	Street Lights	89	Good
Calanipawan Road	Pedestrian Crossing	4	Faded
	Waiting Sheds	3	Bad
	Road Signages	1	Bad
San Jose-Manlurip-MacArthur Park Road	Pedestrian Crossing	4	Faded
	Street Lights	60	Good
	Road Signages	10	Fair
Tigbao-Sta.Fe-San Miguel Road	Pedestrian Crossing	4	Faded
	Waiting Sheds	2	Bad
	Street Lights	84	Good
	Road Signages	154	Fair
Justice Romualdez Street	Waiting Sheds	2	Bad
	Street Lights	28	Good
	Traffic Lights	2	Good
Rizal Avenue Road	Pedestrian Crossing	4	Faded
	Waiting Sheds	1	Bad
	Street Lights	6	Good
	Traffic Lights	2	Good
	Road Signages	5	Bad
Magsaysay Road	Street Lights	77	Good

Source: DPWH, CEO; 2016

Table 5.6 shows the existing bridges, location as well as the capacity and physical condition and the hazards susceptibility.

These are a total of thirty (30) bridges existing within the city, wherein the famous is the San Juanico Bridge in barangay Cabalawan which was constructed in the year 1975. This is considered as a climate resilient bridge.

It is noted that all these existing bridges are still in good conditions. In terms of local capacity, these bridges have a capacity of 15- 20 tons.

Table 5.6 Inventory of Bridges by Location, Type, Capacity and Condition, Year 2015

BRIDGE NAME	BARANGAY	YEAR CONSTRUCTED	LENGTH	TYPE	LOAD CAPACITY (TONS)	PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (H/M/L)						
							FL	TC	EQ	LN	TS	SU	O
1. San Juanico Bridge	97, Cabalawan	1975	2.16km.	RCDG	15 Tons	Good	L	L	M	L	L	M	
2. Payapay Bridge	90 Bay-bay, San Jose		26.0 m	RCDG	20 Tons	Good	H	M	M	M	H	H	
3. Kawayan Bridge	90 Old Kawayan		14.0 m	RCDG	20 Tons	Good	M	L	L	L	L	L	
4. Suhi Bridge	105 San Isidro		15.0 m	RCDG	20 Tons	Good	M	L	L	L	L	L	
5. Barugu-an Bridge	97 Cabalawan		32.0 m	RCDG	20 Tons	Good	L	L	L	L	L	L	
6. Burayan Bridge	83-A		25.0 m	RCDG	20 Tons	Good	H	M	L	L	L	H	
7. Apitong Bridge	110		12.0 m	RCDG	20 Tons	Good	L	L	L	L	L	L	
8. Diit Bridge	99-Diit		22.0 m	RCDG	20 Tons	Good	H	L	L	M	M	M	
9. Diit Bridge II	99-Diit		22.5 m	RCDG	15 Tons	Good	M	L	M	L		L	
10. Bagacay Bridge	93 Bagacay		10.0 m	RCDG	20 Tons	Good	M	L	M	L	L	M	
11.Tigbao Bridge	94-Tigbao		46.0 m	RCDG	20 Tons	Good	H	L	M	M	L	H	
12. Upper Nula- Tula Bridge	3- Upper		10.0 m	RCDG	15 Tons	Good	L	L	M	M	L	L	
13. Camansihay Bridge	98		10.0 m	RCDG	15 Tons	Good	M	L	L	M	L	H	
14. Aslum Bridge	58 & 60		8.0m	RCDG	15 Tons	Good	M	L	L	L	L	H	
15. Dadison Bridge	54 & 56 Pericohon		8.0m	RCDG	15 Tons	Good	M	L	L	L	L	H	
16. MagallanesBridge	54-A		10.0 m	RCDG	15 Tons	Good	M	M	L	L	L	H	
17. Palanog Bridge	12- GE		22.5 m	RCDG	15 Tons	Good	M	L	L	M	L	L	

18.Scandinavian Bridge	99-Diit		10.0 m	RCD G	15 Tons	Good	L	L	M	L	L	L	
19.San Roque Bridge	100		8.0m	RCD G	15 Tons	Good	M	L	L	H	L	L	
20. Utap Bridge	110		12.0 m	RCD G	15 Tons	Good	M	L	L	L	L	L	
21. Utap Bridge 2 (HIC)	110		10.0 m	RCD G	15 Tons	Good	M	L	L	L	L	L	
22. Utap Bridge 3 (Going to Maharlika	110		10.0 m	RCD G	15 Tons	Good	L	L	L	L	L	L	
23. MangonbangonBridgel 1(Siren, Quarry)	49 & 50		24.0 m	RCD G	15 Tons	Good	M	L	L	L	L	M	
24. Mangonbango n Bridge 2 (Anibong)	65		12.0 m	RCD G	20 Tons	Good	H	M	L	L	M	H	
25. Mangonbango n Bridge 3 (AnibongBrgy. 36)	36		10.0 m	FVR	15 Tons	Good	L	L	L	M	L	H	
26.Marasbaras Bridge	80 & 82		8.0m	Box Culvert	15 Tons	Good	H	L	L	L	L	M	
27. Siren Bridge	36		10.0 m	RCD G	15 Tons	Good	M	L	L	L	L	M	
28. Quarry Bridge	43-A		10.0 m	RCDG	15 Tons	Good	M	L	L	L	L	M	
29. Sta. Cruz Bridge	45		24.0 m	RCDG	15 Tons	Good	M	L	L	L	L	L	
30. Paterno Bridge	80 & 82		10.0 m	RCDG	15 Tons	Good	M	L	L	L	L	L	

Source: Tacloban City Engineering Office (TCDEO) and City Engineers Office, 2015

The city has ancillary road facilities which consist of Pedestrian crossing mostly in existing national roads, the overpass in the three (3) roads as reflected in Table 5.7; numerous waiting sheds and streetlights as well as Traffic Lights in the six (6) strategic roads/streets of the urban core and road signages.

All these ancillary facilities are in fair to good conditions except the traffic lights which are now in bad conditions.

As to hazards susceptibility of all these ancillary facilities, Table 5.2.3 reflects.

Table 5.7 Inventory of Ancillary Road Facilities, 2015

ANCILLARY ROAD FACILITIES PRESENT	ROAD NAME PER ROAD CLASSIFICATION	NO.	CONDITION (TONS)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TC	EQ	LN	TS	SU	O
	National Road									
Pedestrian Crossing	*Daang Maharlika (S00002LT)*	10	Fair	M	L	L	L	L	L	
	Daang Maharlika (S00013LT)	2	Fair	L	L	L	L	L	L	
	Tacloban Baybay South Road(S00025LT)	8	Fair	L	L	L	L	L	L	
	Tacloban Baybay South Road(S00026LT)	2	Fair	L	L	L	L	L	L	
	Tacloban Baybay South Road(S00027LT)	3	Fair	L	L	L	L	L	L	
	Avenida Veteranos(S00003LT)	5	Fair	L	L	L	L	L	L	
	Burgos St. (S00008LT)	3	Fair	L	L	L	L	L	L	
	Burgos St. (S00031LT)	4	Fair	**L**	**L**	**L**	**L**	**L**	**L**	
	Naga-naga-Anibong Road(S00015LT)	4	Fair	M	L	L	L	L	M	
	AvenidaVeteranos(S00004LT)	1	Fair	L	L	L	L	L	L	
	Naga-naga - Anibong Road	1	Fair	M	L	L	L	L	M	
	Apitong-Paterno Road	4	Fair	L	L	L	L	L	L	
	Tacloban-Baybay South Road(S00027LT)	3	Fair	L	L	L	L	L	L	
	AvenidaVeteranos(S00003LT)	5	Fair	L	L	L	L	L	L	
	Burgos Street(S00008LT)	3	Fair	L	L	L	L	L	L	
	Burgos Street(S00031LT)	4	Fair	L	L	L	L	L	L	
	Daang Maharlika(S00022LT)	2	Fair	**L**	**L**	**L**	**L**	**L**	**L**	
	Rizal Avenue Extension(S00006LT)	2	Fair	L	L	L	L	L	L	
	Benjamin “Kokoy” Romualdez Diversion Road	4	Fair	M	L	L	L	L	H	
	Picas-San Jose DZR Airport Road	4	Fair	M	L	L	L	H	L	

ANCILLARY ROAD FACILITIES PRESENT	ROAD NAME PER ROAD CLASSIFICATION	NO.	CONDITION (TONS)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TC	EQ	LN	TS	SU	O
	Rizal Avenue (S00009LT)	4	Fair	L	L	L	L	L	L	
	Trece-Martirez Road	3	Fair	M	L	L	L	L	H	
	Tacloban-Baybay South Road(S00012LT)	3	Fair	L	L	L	L	L	M	
	Tacloban-Baybay South Road(S00020LT)	3	Fair	M	L	L	L	L	M	
	Leyte-Samar Road(S00003LT)	3	Fair	L	L	L	L	L	L	
	Caibaan Road(S00018LT)	2	Fair	**M**	**L**	**L**	**L**	**L**	**L**	
	Calanipawan Road(S00019LT)	2	Fair	L	L	L	L	L	L	
	San Jose-Manlurip-MacAthur Park Road	4	Fair	L	L	L	L	L	H	
	Calanipawan Road (S00028LT)	2	Fair	L	L	L	L	L	L	
	Caibaan Road (S00029LT)	2	Fair	L	L	L	L	L	L	
	Tigbao-Sta.Fe-San Miguel Road(S00030LT)	1	Fair	L	L	L	M	L	L	
	Tigbao-Sta Fe-San Miguel Road(S00033LT)	3	Fair	L	L	L	L	M	L	
Overpass	Naga-Naga Anibong Road	1	Fair	L	L	L	L	L	L	
	Apitong-Paterno Road	1	Good	L	L	L	L	L	L	
	Tacloban-Baybay-South Road(S00020LT)	1	Good	**L**	**L**	**L**	**L**	**L**	**L**	
Waiting Sheds	DaangMaharlika(S00002LT)	5	Fair	L	L	L	L	L	L	
	DaangMaharlika(S00013LT)	1	Fair	L	L	L	L	L	L	
	DaangMaharlika(S00022LT)	2	Fair	L	L	L	L	L	L	
	Leyte-Samar Road	4	Fair	L	L	L	L	L	L	
	Tigbao-Sta. Fe-San Miguel Road	2	Fair	L	L	L	M	L	L	
	Picas-San Jose-DZR Airport Road	3	Fair	L	L	L	M	L	L	
	Naga-Naga – Anibong Road	4	Fair	M	L	L	L	L	M	

ANCILLARY ROAD FACILITIES PRESENT	ROAD NAME PER ROAD CLASSIFICATION	NO.	CONDITION (TONS)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TC	EQ	LN	TS	SU	O
	Trece-Martirez Road	1	Fair	L	L	L	L	L	H	
	Apitong-Paterno Road	3	Fair	**L**	**L**	**L**	**L**	**L**	**L**	
	Caibaan Road	2	Fair	L	L	L	L	L	L	
	Calanipawan Road	3	Fair	L	L	L	L	L	L	
	Tacloban-Baybay South Road(S00027LT)	1	Fair	L	L	L	L	L	L	
	Tacloban-Baybay South Road(S00025LT)	11	Fair	L	L	L	L	L	L	
	Justice Romualdez Street	2	Fair	L	L	L	L	L	L	
	Rizal Avenue	1	Fair	L	L	L	L	L	L	
Streetlights	Daang Maharlika	318	Good	L	L	L	L	L	L	
	Leyte-Samar Road	117	Good	L	L	L	L	L	L	
	Tigbao-Sta. Fe-San Miguel Road	84	Good	**L**	**L**	**L**	**L**	**L**	**M**	
	Picas-San Jose-DZR Airport Road	373	Good	L	L	L	L	L	M	
	San Jose-Manlurip-MacArthur Park Road	60	Good	L	L	L	L	M	H	
	Tacloban-Baybay South Road	85	Good	L	L	L	L	L	L	
	Justice-Romualdez Street	28	Good	L	L	L	L	L	L	
	Rizal Avenue	6	Good	L	L	L	L	L	L	
	Caibaan Road	89	Good	L	L	L	L	L	L	
	Calanipawan Road	72	Good	L	L	L	L	L	L	
	Apitong-Paterno Road	55	Good	L	L	L	L	L	L	
	Magsaysay Road	77	Good	**L**	**L**	**L**	**L**	**L**	**H**	
	Trece-Martirez Road	11	Good	L	L	L	M	L	H	
	Naga-Naga – Anibong Road	76	Good	M	L	L	L	L	M	
	Burgos Street	38	Good	L	L	L	L	L	L	
	Avenida Veteranos Road	52	Good	L	L	L	L	L	L	

ANCILLARY ROAD FACILITIES PRESENT	ROAD NAME PER ROAD CLASSIFICATION	NO.	CONDITION (TONS)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TC	EQ	LN	TS	SU	O
Traffic Lights	Justice-Romualdez Street	2	Bad	L	L	L	L	M	L	
	Rizal Avenue	2	Bad	L	L	L	L	M	L	
	AvenidaVeteranos Road	2	Bad	L	L	L	L	M	L	
	Apitong	1	Bad	L	L	L	L	M	L	
	Abucay (Corner Bus Terminal, Maharlika Highway)	1	Bad	**L**	**L**	**L**	**L**	**M**	**L**	
	Calanipawan (Corner Pajara)	1	Bad	L	L	L	L	M	L	
Road Signages	AvenidaVeteranos Road	2	Fair	L	L	L	L	M	L	
	Naga-Naga – Anibong Road	47	Fair	L	L	L	L	M	L	
	Apitong-Paterno Road	28	Fair	L	L	L	L	M	L	
	Calanipawan Road	1	Fair	L	L	L	L	M	L	
	Rizal Avenue Road	5	Fair	L	L	L	L	M	L	
	Tacloban-Baybay South Road	84	Fair	L	L	L	L	M	L	
	Leyte-Samar	120	Fair	L	L	L	L	M	L	
	DaangMaharlika	90	Fair	**L**	**L**	**L**	**L**	**M**	**H**	
	Picas-San Jose- DZR Airport Road	60	Fair	L	L	L	L	H	H	
	San Jose-Manlurip-MacArthur Park Road	10	Fair	L	L	L	L	H	L	
	Tigbao-Sta. Fe-San Miguel Road	154	Fair	L	L	L	M	L	L	
TOTAL		**2,766**								

Source: Tacloban City Engineering Office (TCDEO) 2015

II. Problems and Development Needs/Requirement

- **Traffic Problems, Engineering & Solutions**

In the central business district, choke points, and main arteries and in the public market area, the roads along these areas experience vehicular traffic jam. This situation is a common sight during peak hours of the day mostly 8 to 9 in the morning, 11 to 12 at noon and 4 to 6 in the afternoon. Outside of these peak hours, road users in the central business district create traffic congestion at manageable level.

Traffic problem is also present whenever road accident happen at anytime of the day, is considered as an isolated case. It is in this situation that warm bodies of traffic aides are quickly needed to keep and maintain the streets normal and order, facilitate the call for emergency rescue in the event of extreme necessity and expedite the immediate respond of law enforcers for the proper disposition.

- **Road Management in CBD**

While the road's space in CBD is fixed, the number of vehicles using the roads kept increasing in numbers directly proportionate to the city's economic development. Once the level of road users reaches saturation level, road management comes into play to maintain road in order.

Being one of the aspects in management, road user regulation is the key to put for the optimum use of the road at the same time generate income into the city's coffer. A single vehicle park at a designated parking area occupies 30% of the road space of the road-vehicle length measurement. If two vehicles park on either side of the road at the same time, it occupies 60% of the road space leaving only 40% road space for circulation.

Despite this arrangement, road circulation can still function smoothly and effectively with the presence and assistance of a traffic aide. It is at this juncture that parking fees must be set for collection for the exclusive and notorious use of the road as parking area in a particular time. In Tacloban CBD, parked vehicles numbered an average of 200 vehicles per hour starting from 8 in the morning up

to 6 in the afternoon. With this statistics, the city government of Tacloban should have earned 10,000 per day or 200,000 a month at 5 pesos an hour in additional income.

- **Pedestrian traffic**

Another traffic problem needing urgent resolution is the pedestrian traffic in the use of sidewalks or in its absence, construction of sidewalks, and installation and maintenance of ancillary facilities e.g. Pedestrian crossing, jeep stops and road signs, waiting shed, among others. There is a must to have all roads within the central business district to have a defined sidewalk possibly of international standard distinct and separate from a side parking for vehicles.

One major contribution of intense traffic problem in all central business districts in any city common worldwide is because of mismanaged pedestrian and the lack of ancillary facilities or the absence of either one or both. Keeping pedestrian in the sidewalk, enforcing pedestrian's crossing strictly, right use of waiting stops and putting traffic signs and traffic lights in the right place and operational all the time will surely keep pedestrian off the streets. This will solve vehicular traffic by 50%.

Two situations that gauges if the present vehicular traffic problem in Tacloban will be a cause for alarm in the future are the following:

1. Visual Traffic

Traffic jam should not be a sight in Tacloban City being a countryside city outside of a metropolitan area where the interconnections of cities and big municipalities is the cause of the overpopulation of vehicles regardless of road capacity.

In Tacloban City, the traffic problem is already apparent not only in the central business district but has spilled over to almost all intersections of the city roads sparing not even Maharlika highway even in lean hours.

2. Theoretical Traffic

In year 2015, based from the standard road to population ratio, records showed that Tacloban city was short of 274 kilometers of roads considering a population of 217,199 in order to be compliant to the standard. The existing roads of Tacloban city was only 180.66 kilometers. Based from the disparity, it is not surprising if vehicular jams are a common sight in road intersections.

- **Solutions to Traffic Problems**

1. Organizational Set up

The approach to the organization of the city's traffic body must be anchored on sustainability so that it can be handed on from one local government executive to the incoming one at the end of the term regardless of whoever the political figure occupies the top local executive position.

2. Traffic Management Plan

The traffic management plan shall encompass policy-direction, the charging of particular source of funds, personnel complement in (engineering, law, fiscal & technical management and enforcement) and fund generation.

The most encouraging aspect of incorporating traffic in the city's organic structure primarily is its potential to generate funds within the framework of law to first, sustain its traffic operations and secondly, to contribute to the city's coffer notwithstanding the necessity of the services it offers to the public without the necessarily raising taxes or create new taxes.

One of the traffic engineering approaches to the traffic problem with a long term effect is to conform to the road to population ratio which as of year 2011 urban road length should have been two hundred seventy three 273 kilometers as projected based on the population censal year of 2015.

3. Establishment of Traffic-related Infrastructure

The proposed priority roads to be constructed could be formed parts of the traffic engineering approaches are the following:

a. Proposed Coastal road linking Magsaysay blvd to DZR airport;

While the end objective of constructing a coastal road linking Magsaysay road direct to DZR airport is intended to add ingress and egress which will serve as another main thoroughfare to the city's transport routes thereby absorbing the traffic congestion in the central business district, it will cleanse the once depressed areas and ultimately enhance the natural beauty of Cancabato Bay and its environs which could be a potential tourist destination.

b. Service road parallel to coastal road going to Bgy. San Jose;

The presence of both the coastal and service roads which are parallel to real street will unload by ¾ of its usual vehicles that will be absorb equally by the coastal and service roads. The remaining 1/3 of the vehicles will continue using the real street. This will dramatically reduce to the maximum if not ensure zero traffic anytime of the day;

c. Sub-lateral road that provide link to the parallel coastal and service roads. It also allows motorists a choice of routes either to the service or coastal road at any point of both roads. The presence of the sub-lateral road will doubly ensure zero traffic along this area;

d. Reopening, widening and construction of a network of cadastral roads in Tacloban city which are already invaded by non-formal occupants.

The reopening of cadastral roads in both the urban and rural areas must be acted swiftly and as early before the full conquest of illegal settlers meantime that the problem of squatting is still containable.

e. Link all dead end roads in subdivision projects, barangay roads and other dead-end roads;

f. The slicing of a big blocks into two to three sub blocks by linking dead end roads widening the widths into standard roads and allow them to become thoroughfare is also a solution to the problem on vehicular congestion. The extension of the Jones Street to link Paterno extension road to provide another length of road is only but an example in the urban area. The details of which can be browse in the proposed zoning map for the year 2017 to 2025.

g. Construction of By-Pass Roads.

The by-pass road is a road that runs parallel with Maharlika highway located along the foot of Caiba-an, Utap, Abucay and Nula-tula mountain ranges. The purpose of which is to unload 50% of the vehicles that utilize Mahalika, thus reducing traffic by 50%.

h. Establishment of several intersection, junctions and islands

The intersection of the by-pass road, Maharlika and city roads could provide a best traffic flow situation if it is provided with a well-planned intersection that optimizes the use of the road, provide traffic information and reduces the problem of traffic bottleneck, overcrowding of vehicles and jamming.

- **Traffic Trends**

The solutions laid out above are intended to preempt the projected serious traffic complication that may occur once the problems are left unattended. To catalyze the future development, this present administration shall swiftly act by selecting any of the solutions and projects presented so that this problem could not ballooned to a potential headache to whoever local executive is in the future.

- **Road Capacity**

Given the existing road length of the urban area to be 290 kilometers in year 2015, (please see projected road demand matrix), then the length of the road during that censal year should have been 588 kilometers in so far as the 245,048population count is considered since the road to population ratio is 2.4 kilometers road length to 1000 urban population. Hence, an additional of 298 kilometers road length should have been constructed in the year 2015 for the city to be traffic problem free.

- **Current and Projected Needs**

Shown below is the projected Urban Road Demand Matrix which will show projected urban population and the corresponding road length demand. It is assumed that 5% of the road length demand will be constructed each year.

- Parallel Road
- By-Pass Road
- Bridge Linking Magsaysay and D.Z.R. Airport.

Table 5.8 Projected Urban Road Demand Matrix

Tacloban City

YEAR	URBAN POPULATION	ROAD TO POPULATION RATIO	CURRENT URBAN ROAD REQUIREMENT	EXISTING URBAN ROAD LENGTH	ROAD LENGTH (DEMAND IN KMS)
2017	255,598	0.0024	613.44	320	293.44
2018	261,042	0.0024	626.50	336	290.50
2019	266,602	0.0024	639.84	353	286.84
2020	272,281	0.0024	653.47	371	282.47
2021	278,081	0.0024	667.39	390	277.39
2022	284,004	0.0024	681.61	410	271.61
2023	290,054	0.0024	696.12	416	280.12
2024	296,232	0.0024	710.95	432	278.95
2025	302,542	0.0024	726.10	448	278.10

Source: CPDO, 2016

5.3. Power

I. Analysis of Existing Situation:

- **Power Generation**

All power consumption of Tacloban City traces its two (2) sources from the renewable, natural, abundant and environmental-friendly Tongonan geothermal-based power generation in Ormoc City and municipality of Kananga around 48-60 km. south-west of Tacloban City. The one provider is 200 MW coal-fired power plant Korean Electric Power Corporation (KEPCO) in Brgy. Colon, Naga, Cebu.

After a thorough exploration test and a study conducted by an independent geo-exploration company that explored and investigated the subsurface of several numbers of wells to determine their viability for long-term development into a source of power, such is being turned over to a generating company. A private power generating company that takes charge of the operations of the well whose thermal pressure forced turbine to turn on to generate electric power.

- **Power Transmission**

Once power is being generated by a power transmission provider, a private power company manages the transmission of power to distribution companies including electric cooperatives. In the case of Tacloban City, Leyte Electric Cooperative II services the retailing of power to the first district of Leyte including the city of Tacloban.

A power transmission highway, operated and maintained by a power transmission company traverses in the Municipality of Babatngon going to the direction of Samar island and eventually to the greater Luzon area. Along this transmission highway, particularly in Babatngon, a 69 Kilovoltage power substation junction is established for Tacloban's power supply.

Another transmission highway runs towards the direction of Southern Leyte and Mindanao Grid where a sub power station is also established and where Tacloban originally gets its sole power supply. The 69 kV line in Babatngon power

connection is only but an alternate power source anytime during breakdown occurrences of the original power line source.

Power supply for Tacloban city from LEYECO II is uninterruptible, continuous and constantly available unless the two transmission highways where Tacloban has both the power sources broke down at the same time.

- **Power Distribution and Service**

The Leyte Electric Cooperative II has jurisdiction over electric power distribution direct to the power consumers in retail and at a power rate being fixed by the distributing power cooperative under the regulation and control of the National Electric Administration, a government agency attached to the Department of Energy, which office, is based only in Manila.

There are two (2) power sub stations for Tacloban city. One is located in Barangay Abucay and the other one is located in Sagkahan, Tacloban City.

- **Power Connection**

Tacloban City has more than sufficient power supply provided by the Leyte II Electric Cooperative or LEYECO II. It has its main office in Real Street, Tacloban City and has three substations, two of which are located in Tacloban City. One is located in Barangay Abucay and the other one is located in Sagkahan, Tacloban City. Its' total capacity of power generation is 45 megawatts, enough to supply any projected increase of power needs for the next five years. Tacloban City is 100 percent energized and although there are power outages, they are immediately addressed.

Based on 2014 statistics, the average consumption of the city dropped by 20% as compared to 2012 data. The damage caused by the typhoon Yolanda in 2013 is the main cause of the low consumption, a proof that the city has not yet totally recovered from the disaster.

These unlit households are the marginalized sectors of Tacloban populace where the capita income of the head of the family is much lower than the set minimum wage for the region and whose household are located in the slum areas of the urban core and in countryside or those informal settlers in urban and rural areas with almost dilapidated/makeshifts yet settlers are still present.

Shanties that mushroomed along river easements, in esteros, along salvage zones in the shorelines and abandoned idle lands and those whose temporary dwellings rose without building permit, electrical permits, and other formalities usually do not have power connections at all.

Table 5.9 Households Served with Electricity for the Past Three Years

TYPE OF CONSUMER	2013			2014			2015		
	NO. OF CONNECTIONS	MWH	%	NO. OF CONNECTIONS	MWH	%	NO. OF CONNECTIONS	MWH	%
Residential	45,128	73,270	51.31	42,978	52,491	53.32	45,959	56,070	54.49
Commercial	4,504	24,156	16.92	4,278	17,072	17.34	4,448	17,748	17.25
Industrial	765	28,775	20.15	18,814	18,814	19.11	18,884	18,884	18.35
Public Buildings	564	13,209	9.25	481	8,021	8.15	489	8,157	7.93
Street Lights	185	3,376	2.36	69	2,050	2.08	69	2,050	1.99
TOTAL	51146	142786	100.00	66620	98448	100.00	69,849	102,909	100.00

Source: LEYECO II

Table 5.10 Number of Connections by Type of Users and Average Consumptions for the Past Three Years

TYPE OF CONSUMER	2013			2014			2015		
	NO. OF CONNECTIONS	MWH	%	NO. OF CONNECTIONS	MWH	%	NO. OF CONNECTIONS	MWH	%
Residential	45,128	73,270	51.31	42,978	52,491	53.32	45,959	56,070	54.49
Commercial	4,504	24,156	16.92	4,278	17,072	17.34	4,448	17,748	17.25
Industrial	765	28,775	20.15	18,814	18,814	19.11	18,884	18,884	18.35

TYPE OF CONSUMER	2013			2014			2015		
	NO. OF CONNECTIONS	MWH	%	NO. OF CONNECTIONS	MWH	%	NO. OF CONNECTIONS	MWH	%
Public Buildings	564	13,209	9.25	481	8,021	8.15	489	8,157	7.93
Street Lights	185	3,376	2.36	69	2,050	2.08	69	2,050	1.99
TOTAL	51146	142786	100.00	66620	98448	100.00	69,849	102,909	100.00

Source: LEYECO II, 2016

Graph 5. 1 Power Consumption (MWH) by Type of Consumers, Year 2015

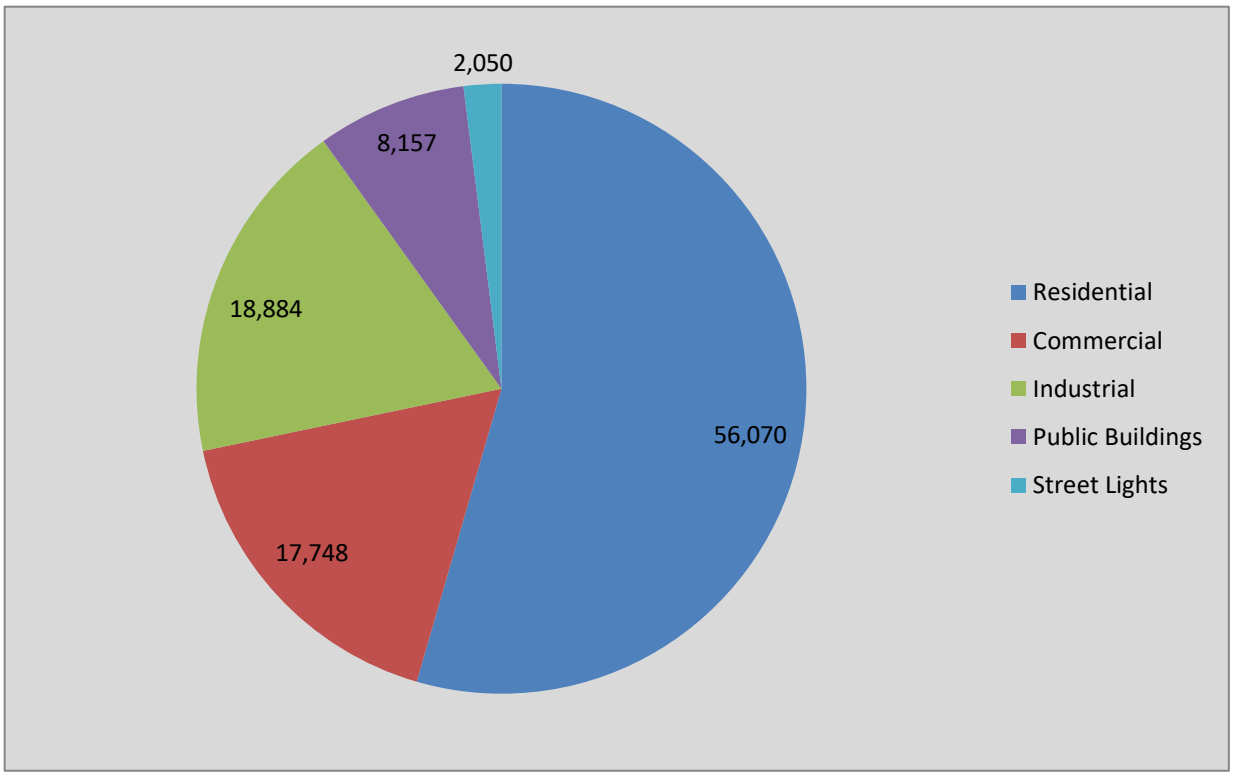


Figure 5. 1 Power Consumption by Type of Consumer, Year 2015

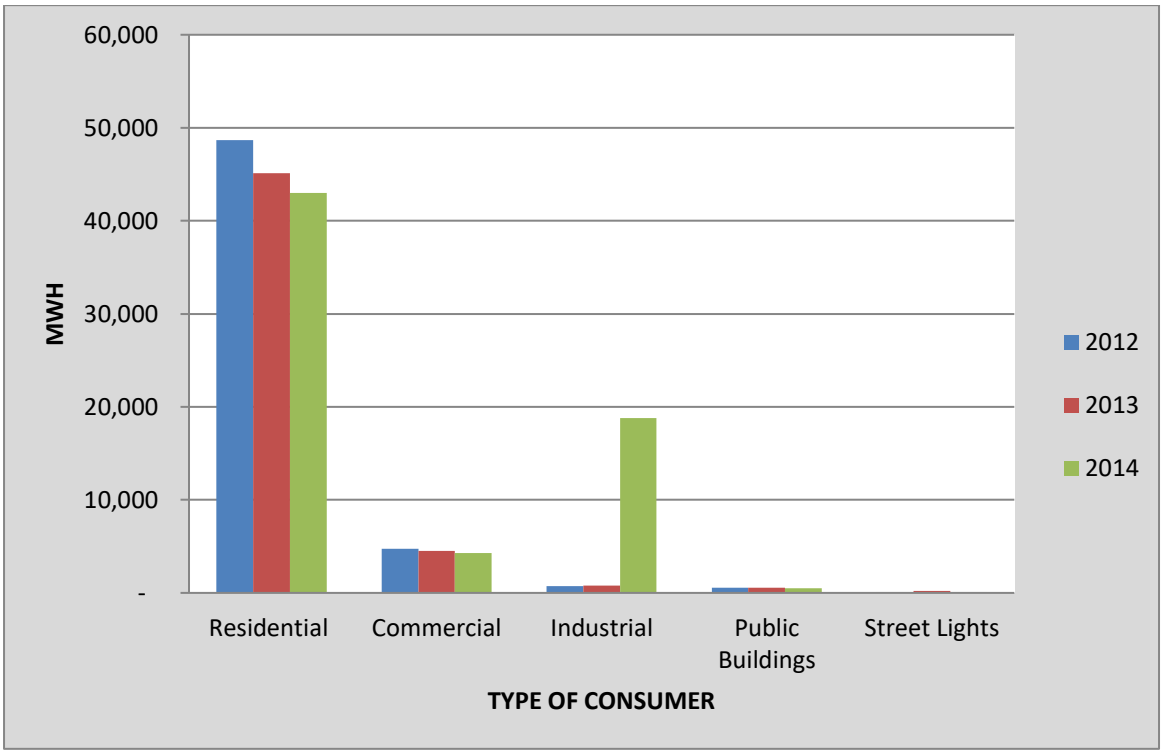


Table 5.11 Projected Number of Connections by Type Users and Average Consumption (KWH / Mo.)

TYPE OF CONSUMER	2015	2017	2019	2021	2023	2025	PERCENT
	MWH	MWH	MWH	MWH	MWH	MWH	%
Residential	56,070	58,484	61,002	63,628	66,368	69,225	54.49
Commercial	17,748	18,512	19,309	20,140	21,008	21,912	17.25
Industrial	18,884	19,697	20,545	21,430	22,352	23,315	18.35
Public Buildings	8,157	8,508	8,874	9,257	9,655	10,071	7.93
Street Lights	2,050	2,138	2,230	2,326	2,427	2,531	1.99
TOTAL	102,909	107,340	111,961	116,781	121,809	127,054	100.00

Source: CPDO, 2016

Table 5.12 Power Sub-Stations, Year 2015

NAME OF SUBSTATION	BARANGAY	AREA OCCUPIED (HA)	CAPACITY (MW)	HAZARD SUSCEPTIBILITY (H/M/L)						
				FL	TC	EQ	LN	TS	SU	O
Sagkahan Substation	Sagkahan	0.25	20	M	M	L	L	M	M	
Abucay Substation	Abucay	0.24	20	L	L	L	L	M	L	

Source: LEYECO II

II. Problems and Development Needs/Requirements:

The onslaught of Super Typhoon Yolanda destroyed 100% of power lines not just of Tacloban City but of its neighboring towns and cities. The challenged had been tremendously great that the local electric cooperative had to tap the different electric cooperatives tagged as “TASK FORCE KAPATID” to help re-energize the city.

III. Power Analysis Matrix

TECHNICAL FINDINGS, ISSUES, CONCERNS	IMPLICATIONS/ EFFECTS /IMPACTS	POSSIBLE SOLUTIONS (LEGISLATION, POLICIES, PROGRAMS, PROJECTS)
Power		
prohibitive cost of providing power supply to households thinly scattered in the outskirts of the urban Barangay	No industrial locators to establish business;	Establish direct power line to power producer/s in Tongonan;
Prohibitive cost of providing power supply to Industry locators	Poor and slow economic growth	Develop;
	Less progressive	Invite private partners in the field of industrial realty development, industrial realty financing, industrial realty management and industrial realty selling in the development of to encourage the provision of Power services.

5.4 Water Supply

5.4.1 Existing Water Supply Systems

A. Leyte Metropolitan Water District

Tacloban City was served by the Leyte Metropolitan Waterworks Supply System (LMWSS) and the Tolosa Water Supply System (TWSS) from 1939 to 1974. During the same period, the services providers also served three (3) other municipalities, namely Dagami, Tanauan, and Tolosa. The two (2) local water utilities was under the supervision and direct control of the National Waterworks and Sewerage Authority (NAWASA). Both service providers obtained its water supply from Hitumnog Creek and Hiabangan River in Dagami Municipality, from

the Tigbao River in Tacloban City; groundwater from Tolosa deep well in Tolosa, from Sampaguita District deep well, and the Leyte Normal School deep well in Tacloban City.

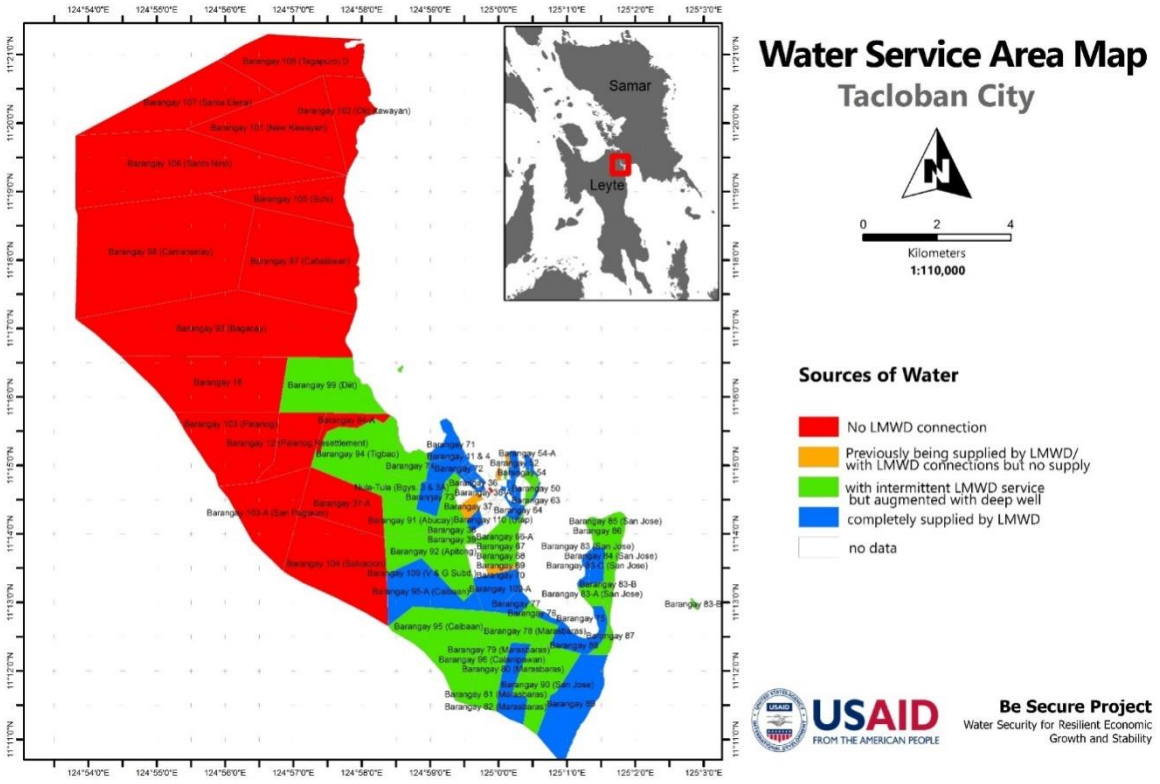
In 1975, the LMWSS and the TWSS were dissolved and operation of the water systems was taken over by the Leyte Metropolitan Water District (LMWD) in accordance with Presidential Decree No. 198. Since 1975, Tacloban City's main water supply was provided by the Leyte Metropolitan Water District. It had since extended its services to seven (7) other local government units: the municipalities of Dagami, Palo, Pastrana, Sta. Fe, Tabontabon, Tanauan and Tolosa.

A new water source was tapped by LMWD in 1975. Located in the Binahaan River in Barangay Tingib, in Pastrana Municipality, this eventually became the main source of water of LMWD. In 1977, LMWD embarked on a Comprehensive Expansion Project designed to serve a projection of 14,000 water service connections by the end of 1988. However, water interruptions were immediately felt by 1989. In 1991, a feasibility study for a proposed expansion program was completed to address water shortage. All rehabilitation works were completed in 1995.

Tacloban City is currently LMWD's largest water concessionaire. As of August 2015, Tacloban City accounts for about 62.50% percent or 20,710 connections of the LMWD's total number of 33,135 active connections.

City water connections from LMWD are concentrated in the urban area while in the northern barangays where there is no piped water service, people use deep wells or shallow wells for their daily water needs. Others have their water supply delivered in tanks by LMWD while some residents resort to the use of electric motor driven deep wells. As shown in the Water Service Area Map, sixteen (16) northern barangays have no supply from LMWD particularly from Barangay 108-Tagpuro up to Barangay 12–Palanog. While other areas such as in Naga-naga, Utap, Abucay, Calanipawan and Sagkahan experience scarce water supply Water shortage is a prevalent issue even in the central business district, where business establishments are compelled to install water pumps.

Figure 5. 2 Water Service Area Map of Leyte Metropolitan Water District

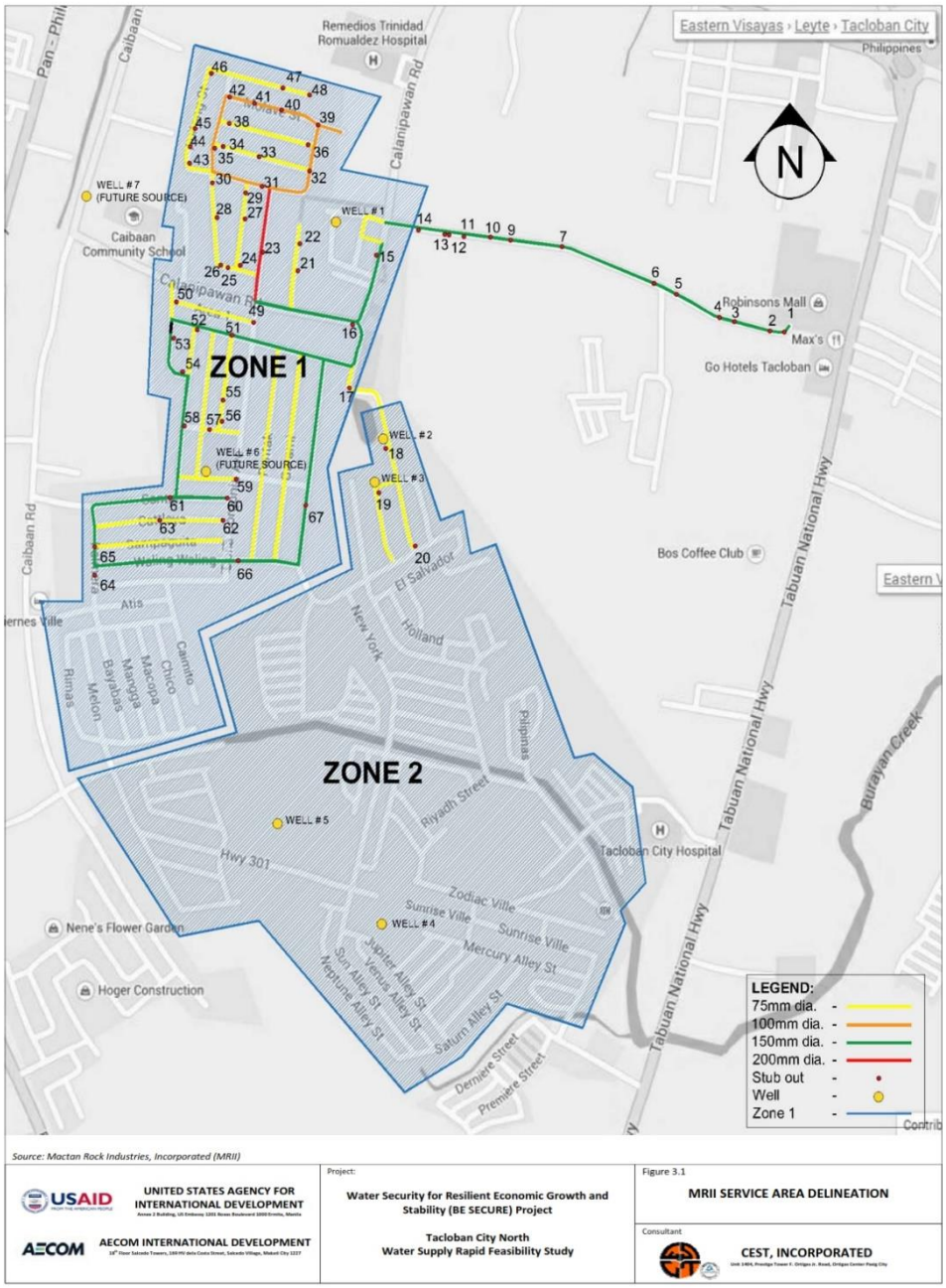


B. Mactan Rock Industries, Incorporated

The Mactan Rock Industries, Incorporated (MRII) is a company established in 1983 in Mandaue, Cebu. The company offers a wide range of services including a) Municipal Bulk Water Supply b) Industrial Bulk Water Supply and c) Wastewater Treatment and Recycling. MRII has also ventured into Reverse Osmosis technology since 1993, and Reverse Osmosis Desalination technology in 1995 to provide clean potable water.

In 2012, MRII was tapped by Tacloban to augment the water supply in the City. It mainly supplies 50% to 60% of the V & G Subdivision. The succeeding figure shows the supply lines of MRII in the V&G subdivision. It also supplies a portion of a subdivision in Barangay New Kawayan in North Tacloban.

Figure 5. 4 Water Service Area Map of Mactan Rocks Industries in V&G Subdivision



5.4.2 Water Resources

A. Existing Surface Water Resources

LMWD obtains it water supply from different surface water sources outside Tacloban City. These are the Binahaan River and the Atipulo/Magculo/Maitom creeks in Jaro Municipality and the Hiabangan River/Hitumnog creeks in Dagami

Municipality. The succeeding table shows the discharges from these sources as per the records of the water district.

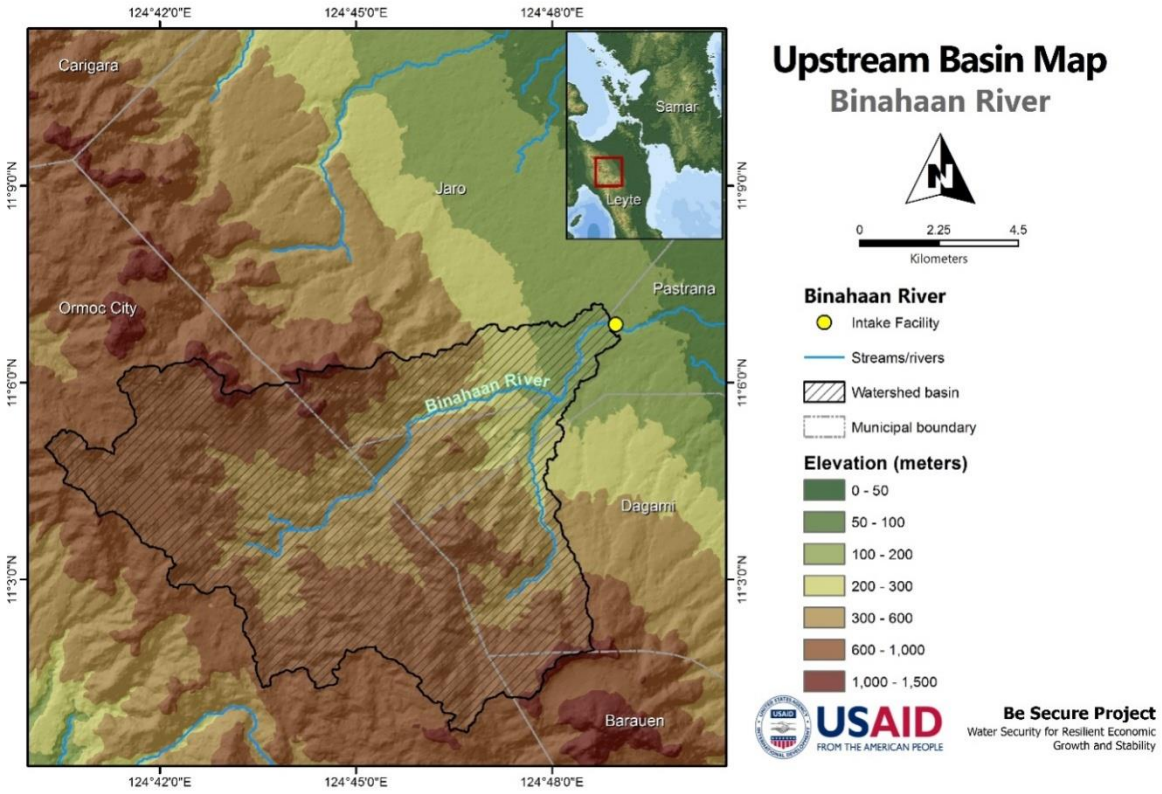
Table 5.13 Existing Surface Water Resources, Volume of Water Discharge, and Classification, Year 2015

SURFACE WATER SOURCE	EXISTING FACILITIES	LOCATION	DISCHARGE (LPS)*	CLASSIFICATION
Binahaan River	Intake Structure	Brgy. San Agustin, Jaro Leyte	349 (11,012,284.00 cu m/yr)	Class A
Maitom Creek	Intake Dam	Brgy. Hibunawon, Jaro, Leyte	33 (1,034,358.85 cu m/yr)	Class A
Atipolo Creek	Intake Dam	Brgy. Atipolo, Jaro, Leyte		Class A
Magculo Creek	Intake Dam	Brgy. Atipolo, Jaro, Leyte		Class A
Hitomnog River	Intake Dam	Brgy. Macalang, Dagami, Leyte	73 (2,310,904.00 cu m/yr)	Class A
Hiabngan River	Intake Dam	Brgy. Macalang, Dagami, Leyte		Class A

Sources:
LMWD, 2015;
USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.
**2008 data from LMWD*

Binahaan River covers an upstream basin of 106.97 sq.km as shown in the map below. The intake facility of LMWD is located at Barangay Tingib, in the neighboring Municipality of Pastrana, Leyte. The water source has two (2) treatment plants with a total daily production of 54,000 cu. m. The average daily discharge of Binahaan River, which represents the amount of water that can still be extracted and tapped for other uses is 279,765 cu.m.

Figure 5. 6 Binahaan River Upstream Basin Map, 2016



Other Possible Alternative Sources of Water

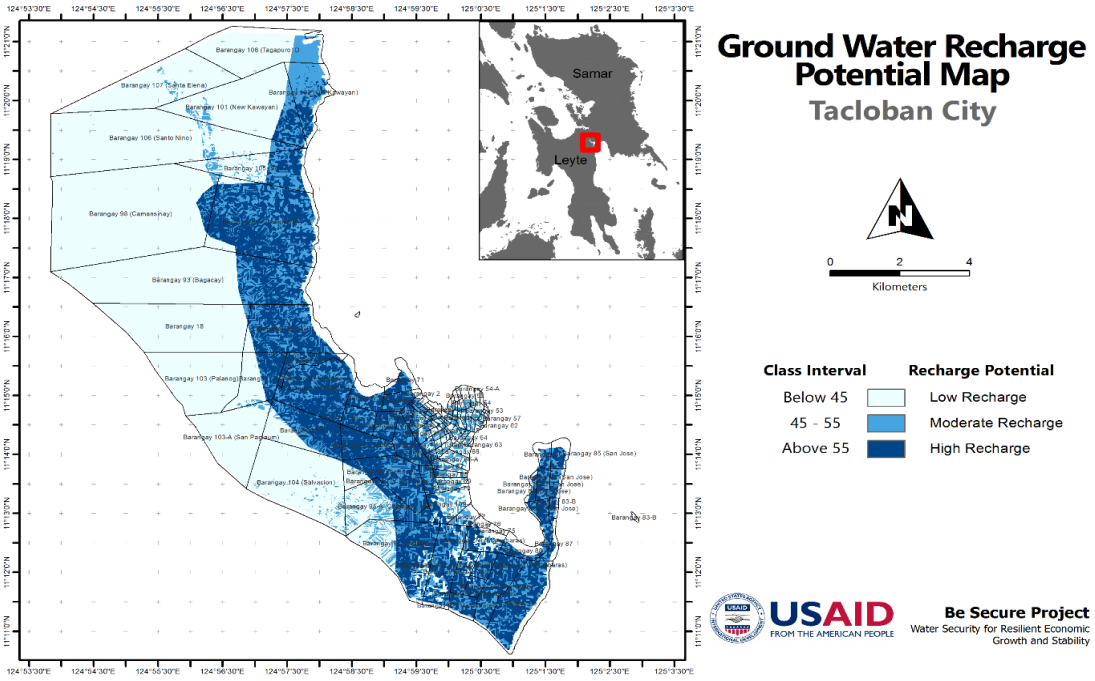
Groundwater Potential within Tacloban City

Results of a study commissioned by USAID Be Secure on Vulnerability Assessments of Water Resources in Tacloban City last January 2016 has shown that there is significant groundwater recharge potential in the City. Figure below shows that areas of high recharge are mostly found in the eastern and southeastern parts of Tacloban, while some isolated zones are also located in the northern and western parts of the City. The barangays at the west of the downtown area may be noted to have the highest density of area with high recharge potential. These areas are Barangays Tigbao, Nulatula, Abucay, 74, and 73.

To further enhance the recharge potential of these areas, certain land use policies are implemented such as increasing the number and land areas allocated to open green parks and buffers in order to increase the vegetative cover. By

decreasing the built-up areas, the amount of run-off produced in these areas are decreased because of the high percentage of infiltration to groundwater. Structures to retain water may also be constructed in these areas.

Figure 5. 8 Ground Water Recharge Potential Map



Potential Sources of Water Outside Tacloban City

The Tacloban City LGU also presented two (2) possible sources of water supply. Pongso and Cabayugan rivers could serve as secondary sources of water for the city if Binahaan River cannot meet water demand. Both are approximately 30.0 kilometers west of Tacloban located. The National Water Resources Board (NWRB) has issued water right permits of 25 MLD each for Pongso and Cabayugan Rivers to the City of Tacloban. Water quality from Pongso and Cabayugan rivers is generally within acceptable limits and drinking water standards.

The Pongso River is located adjacent and north of Cabayugan watershed. The river starts from Mount Mamban then it flows in the north east direction, passing through the town of Tunga and continues to join Himonglos River. It then

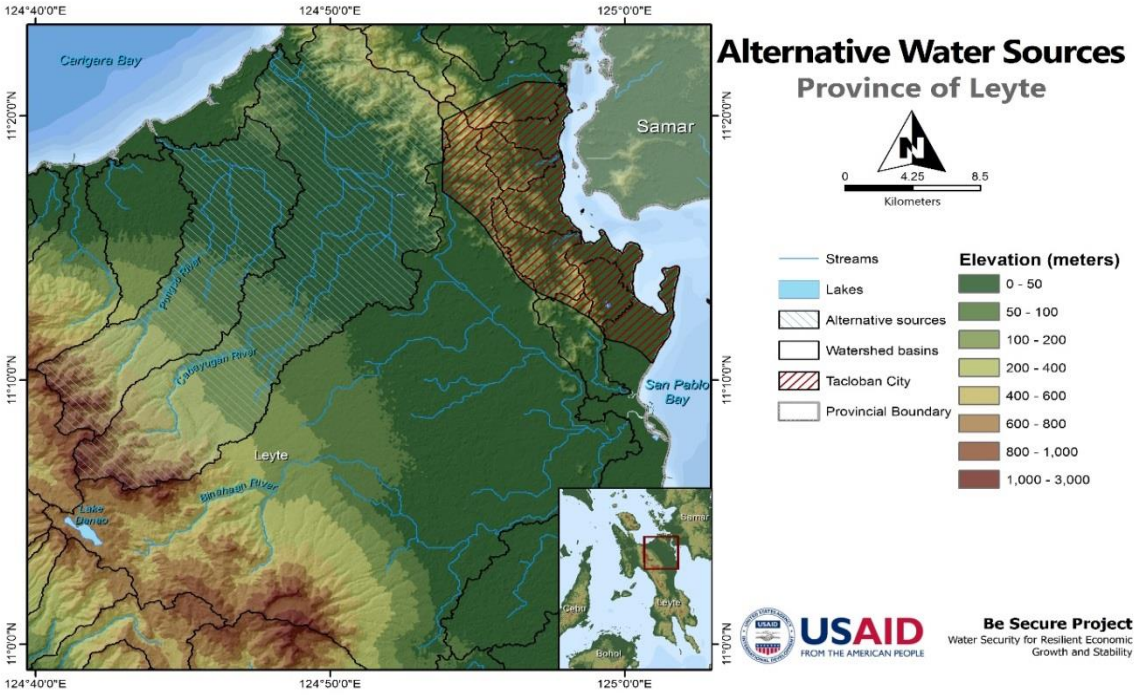
discharges to Carigara Bay. Cabayugan River is located adjacent and south of Pongso watershed. The river flows into north east direction towards the town of Jaro and joins Mainit River into a wide flood plain/wetland. During extreme especially over long sustained rainfall, the floodwaters will be impounded over flood plain/wetland and may eventually discharge northward to Yapan-Pongso Himonglos River and finally to Carigara Bay.

Based on the flow availability curve from the Eastern Visayas Framework Plan –Leyte Basins as published by National Water Resources Council (now National Water Resources Board) in May 1980, the 80% available flow for Pongso and Cabayugan which have almost same drainage area of 30 square kilometers is 900 lps or 78 MLD. Pongso and Cabayugan rivers have sustainable combined capacity of 580 liters per second or an equivalent of 50 MLD.

Table 5.14 Assessment of Pongso and Cabayugan Rivers

PARAMETER	PONGSO RIVER	CABAYUGAN RIVER
Drainage Area(km^2)	31	34
FlowCapacityat80% reliability	43to 70MLD	47to 76MLD
Elevation of Diversion Structure	El. 165mamsl	El. 170mamsl
	Higher head to transport water to Salvacion, smaller transmission diameter and potential impounding reservoir	Lower head to transport water to Salvacion, and bigger transmission diameter
River Banks and bed	Banks are stable. River bed is almost stable.	Banks are potentially erodible. Riverbed highly mobile.
River sediment & floating debris	Less sediment load, sediment Include up to coarse gravel,	High sediment load, Sediment Load includes up to boulders, Floating debris during flood
Desander/ Desilting Structure	Minor	Major
Transmission line immediately downstream of diversion structure	Transmissions along mountain slope leading to barangay road of Mag-aso	Transmission runs parallel to river up to same elevation of barangay road of Daro
Water quality after flood	Water relatively clear	Water is high in turbidity

Figure 5. 10 Location Map of Pongso and Cabayugan Rivers



5.4.3 Water Infrastructure and Facilities

A. Source Facilities

LMWD presently operates two (2) wells, but only one (1) well supplies water to an area in Tacloban City. The San Gerardo Well located in Barangay Nula-tula, Tacloban City has a capacity of 2 lps and supplies water exclusively for San Gerardo Subdivision.

B. Water Treatment Facilities

Water collected from each of the surface water sources shown in Table 5.15 passes through respective water treatment facilities. The Dagami Water Treatment Plant, a sedimentation WTP located at an elevation of 152 mamsl with a capacity of 200 cum/hr is supplied by Hinabangan and Hitumog rivers. The Tingib WTP located at an elevation of 97.50 mamsl, with a capacity of 400 cum/hr supplied via the Atipulo, Magculo and Maitom creeks. The Tingib RGF WTP located at an

elevation of 105.80 mamsl with a capacity of 1,000 cum/hr is supplied via the Binahaan River.

C. Water Storage Facilities

There are three (3) existing distribution reservoirs namely the Utap Hill Reservoir, Ambao Hill Reservoir and the Tolosa Reservoir. Only Utap Hill Reservoir is located in Tacloban City.

Table 5.15 Inventory of Water Reservoir, 2015

RESERVOIR CLASSIFICATION	LOCATION	CAPACITY *(cu m)*	ELEVATION *(masl)*
Utap Hill Concrete Ground Reservoir	Brgy. Siren, Tacloban City	8,300	38
Ambao Hill Concrete Ground Reservoir	Brgy. Sto. Nino, Tanauan, Leyte	2,300	38
Tolosa Elevated Concrete Reservoir	Brgy. Imelda, Tolosa, Leyte	95	10.86

Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

5.4.4 Existing Water Supply Situation

A. Average Water Consumption

Table below shows the average water consumption and number of connections per type of connection in 2015. Data shows that industrial establishments have the biggest share in average water consumption, while bulk sale rates in second on the list. There is no data to qualify the type of connections the water from bulk sale is distributed to. On the other hand, commercial establishments have the least average consumption.

Table 5.16 Average Consumption by Type of Water Connections, 2015

TYPE OF CONNECTION	NO. OF CONNECTIONS	BILLED WATER	AVERAGE CONSUMPTION
Residential	12,279	3,515,321	23.86
Government	245	272,998	92.86

TYPE OF CONNECTION	NO. OF CONNECTIONS	BILLED WATER	AVERAGE CONSUMPTION
Commercial	6,948	862,222	10.34
Industrial	23	249,448	903.80
Bulk Sale	4	33,716	702.43
Total	**19,499**	**4,933,705**	**346.66**

Source: LMWD, 2015

Table 5.17 shows the barangays and the number of population with a Level I water supply system. Based on the data, all of the barangays listed have shallow wells totaling to 1,038 serving 42,589 households. Data shows that there are no deep wells in these same barangays, but some 13,464 households benefit from seven (7) improved springs.

Based on the assessment of the susceptibility to hazards of the Level I facilities, a number of the facilities are highly susceptible to storm surge, and moderately susceptible to flooding and landslides. This implies that these facilities are vulnerable to damages and infiltration of unclean water and thus water in these areas are at high risk to contamination.

Table 5.17 Level I Water Supply System by Type and Number of Population Served, Year 2015

BARANGAY	SHALLOW WELL				DEEP WELL			IMPROVED SPRING			HAZARD SUSCEPTIBILITY (H/M/L)					
	NO.	POP.	HH POP. SERVED		NO.	HH POP. SERVED		NO.	HH POP. SERVED							
			HH	%		NO.	%		NO.	%	FL	TC	EQ	LN	TS	SU
Brgy. 2	10	511	100	1.96%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 3	8	2,542	498	0.31%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 1 & 4	2	1,069	210	0.19%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 5	9	452	89	1.96%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 6	6	297	58	1.96%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 6-A	3	1,335	262	0.22%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 7	6	316	62	1.96%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 8	5	260	51	1.96%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 13	1	62	12	1.96%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 14	7	341	67	1.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 15	1	74	15	1.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 16	4	192	38	1.96%	None	None	None	None	None	None	L	L	L	L	L	L

BARANGAY	SHALLOW WELL				DEEP WELL			IMPROVED SPRING			HAZARD SUSCEPTIBILITY (H/M/L)					
	NO.	POP.	HH POP. SERVED		NO.	HH POP. SERVED		NO.	HH POP. SERVED							
			HH	%		NO.	%		NO.	%	FL	TC	EQ	LN	TS	SU
Brgy. 17	4	228	45	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 18	5	248	49	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 19	6	315	62	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 20	8	612	120	1.31%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 21	5	237	46	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 21-A	5	240	47	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 22	2	96	19	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 23	11	553	108	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 24	8	386	76	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 25	6	1,901	373	0.32%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 26	3	292	57	1.03%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 27	5	230	45	1.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 28	4	363	71	1.10%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 29	3	165	32	1.96%	None	None	None	None	None	None	L	L	L	LL	L	L
Brgy. 30	3	177	35	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 31	13	673	132	1.96%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 32	3	177	35	1.96%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 33	4	218	43	1.96%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 34	7	334	65	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 35	5	271	53	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 35-A	12	883	173	1.36%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 36	7	1,148	225	0.61%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 37	4	3,145	617	0.13%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 38	5	405	79	1.23%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 39	6	2,594	509	0.23%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 40	6	282	55	1.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 41	3	141	28	1.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 42	5	914	179	0.55%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 43	9	454	89	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 43-A	5	1,116	219	0.45%	None	None	None	None	None	None	M	L	L	M	L	L
Brgy. 43-B	6	1,197	235	0.50%	None	None	None	None	None	None	L	L	L	M	L	L
Brgy. 44	9	441	86	1.96%	None	None	None	None	None	None	M	L	L	LM	L	L
Brgy. 44-A	5	259	51	1.96%	None	None	None	None	None	None	M	L	L	M	L	L
Brgy. 45	8	399	78	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 46	9	479	94	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 47	6	630	124	0.95%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 48	9	468	92	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 49	2	1,607	315	0.12%	None	None	None	None	None	None	L	L	L	M	L	L
Brgy. 50	5	266	52	1.96%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 50-A	4	711	139	0.56%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 50-B	5	1,159	227	0.43%	None	None	None	None	None	None	L	L	L	L	L	L

BARANGAY	SHALLOW WELL				DEEP WELL			IMPROVED SPRING			HAZARD SUSCEPTIBILITY (H/M/L)					
	NO.	POP.	HH POP. SERVED		NO.	HH POP. SERVED		NO.	HH POP. SERVED							
			HH	%		NO.	%		NO.	%	FL	TC	EQ	LN	TS	SU
Brgy. 51	3	520	102	0.58%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 52	5	1,316	258	0.38%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 53	4	684	134	0.58%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 54	6	808	158	0.74%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 55 and 55-A	8	813	159	0.98%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 56	5	1,153	226	0.43%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 57	10	1,018	200	0.98%	None	None	None	None	None	None	M	L	L	L	L	M
Brgy. 58	9	1,207	237	0.75%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 59	12	3,038	596	0.39%	None	None	None	None	None	None	M	L	L	L	L	M
Brgy. 60	10	1,219	239	0.82%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 60-A	8	1,573	308	0.51%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 61	12	1,265	248	0.95%	None	None	None	None	None	None	M	L	L	L	M	M
Brgy. 62	9	1,499	294	0.60%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 63	12	2,612	512	0.46%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 64	8	2,347	460	0.34%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 65	10	1,175	230	0.85%	None	None	None	None	None	None	M	L	L	L	M	H
Brgy. 66	9	1,387	272	0.65%	None	None	None	None	None	None	M	M	L	L	M	H
Brgy. 66-A	10	1,321	259	0.76%	None	None	None	None	None	None	M	M	L	L	M	H
Brgy. 67	11	1,179	231	0.93%	None	None	None	None	None	None	L	L	L	M	H	H
Brgy. 68	10	2,106	413	0.47%	None	None	None	None	None	None	L	L	L	M	H	H
Brgy. 69	9	2,039	400	0.44%	None	None	None	None	None	None	L	L	L	L	H	H
Brgy. 70	10	1,156	227	0.87%	None	None	None	1	1,156.00	289	L	L	L	M	H	H
Brgy. 71	11	6,073	1191	0.18%	None	None	None	None	None	None	M	L	L	L	L	M
Brgy. 72	16	802	157	1.96%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 73	9	481	94	1.96%	None	None	None	None	None	None	L	L	L	M	M	L
Brgy. 74	8	6,629	1300	0.12%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 75	8	936	184	0.85%	None	None	None	None	None	None	M	L	L	L	M	H
Brgy. 76	12	1,094	215	1.10%	None	None	None	None	None	None	M	L	L	L	M	H
Brgy. 77	12	3,714	728	0.32%	None	None	None	None	None	None	M	L	L	L	L	M
Brgy. 78	10	1,923	377	0.52%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 79	10	1,214	238	0.82%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 80	12	1,161	228	1.03%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 81	15	761	149	1.96%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 82	14	1,222	240	1.15%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 83	10	2,495	489	0.40%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 83-A	14	1,761	345	0.80%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 84	15	5,660	1110	0.27%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 85	16	1,445	283	1.11%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 86	7	1,306	256	0.54%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 87	8	3,157	619	0.25%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 88	12	9,884	1938	0.12%	None	None	None	None	None	None	L	L	L	L	M	H

BARANGAY	SHALLOW WELL				DEEP WELL			IMPROVED SPRING			HAZARD SUSCEPTIBILITY (H/M/L)					
	NO.	POP.	HH POP. SERVED		NO.	HH POP. SERVED		NO.	HH POP. SERVED							
			HH	%		NO.	%		NO.	%	FL	TC	EQ	LN	TS	SU
Brgy. 89	8	3,652	716	0.22%	None	None	None	None	None	None	L	L	L	L	M	K
Brgy. 90	9	442	87	1.96%	None	None	None	None	None	None	L	L	L	L	M	H
Brgy. 91	9	6,260	1227	0.14%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 92	8	3,802	745	0.21%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 94	10	2,146	421	0.47%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 95	10	5,779	1133	0.17%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 96	9	3,781	741	0.24%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 109	12	6,187	1213	0.19%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 110	8	8,755	1717	0.09%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 110	10	4,195	823	0.24%	None	None	None	None	None	None	L	L	L	L	L	L
Brgy. 5-A	9	473	93	1.96%	None	None	None	None	None	None	M	L	L	L	L	H
Brgy. 36-A	13	645	126	1.96%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 42-A	6	1,654	324	0.36%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 48-A	4	644	126	0.62%	None	None	None	None	None	None	L	L	L	M	L	L
Brgy. 48-B	4	656	129	0.61%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 51-A	5	231	45	1.96%	None	None	None	None	None	None	M	L	L	L	L	M
Brgy. 54-A	6	816	160	0.74%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 56-A	3	563	110	0.53%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 59-A	6	3,209	629	0.19%	None	None	None	None	None	None	M	L	L	L	L	M
Brgy. 59-B	8	831	163	0.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 62-A	8	4,470	876	0.18%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 62-B	8	3,615	709	0.22%	None	None	None	None	None	None	M	L	L	L	L	M
Brgy. 83-B	8	2,609	512	0.31%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 83-C	7	3,494	685	0.20%	None	None	None	None	None	None	L	L	L	L	L	H
Brgy. 95-A	6	2,826	554	0.21%	None	None	None	None	None	None	M	L	L	L	L	L
Brgy. 8-A	5	239	47	1.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 23-A	9	434	85	1.96%	None	None	None	None	None	None	L	L	L	L	L	M
Brgy. 100	12	2,352	461	0.51%	None	None	None	None	None	None	L	L	M	H	L	L
Brgy. 101	10	506	99	1.96%	None	None	None	None	None	None	L	L	L	M	L	M
Brgy. 102	7	381	75	1.96%	None	None	None	None	None	None	M	L	L	M	L	H
Brgy. 103	12	2,943	577	0.41%	None	None	None	4	2,943.00	735.75	M	L	L	H	L	L
Brgy. 103-A	9	478	94	1.96%	None	None	None	None	None	None	M	L	L	M	L	L
Brgy. 104	6	1,829	359	0.33%	None	None	None	3	1,829.00	457.25	L	L	L	M	L	L
Brgy. 105	3	1,441	283	0.21%	None	None	None	None	None	None	L	L	L	H	L	L
Brgy. 106	8	822	161	0.97%	None	None	None	None	None	None	L	L	L	H	L	L
Brgy. 107	5	972	191	0.51%	None	None	None	None	None	None	L	L	L	M	L	L
Brgy. 108	3	573	112	0.52%	None	None	None	None	None	None	H	L	L	L	L	H
Brgy. 12	10	1,702	334	0.59%	None	None	None	None	None	None	H	L	L	M	L	L
Brgy. 37-A	5	907	178	0.55%	None	None	None	None	None	None	H	L	L	M	L	L
Brgy. 93	4	2,729	535	0.15%	None	None	None	1	2,729.00	682.25	M	L	L	M	L	H
Brgy. 97	5	2,249	441	0.22%	None	None	None	1	2,249.00	562.25	M	L	L	L	L	H

BARANGAY	SHALLOW WELL				DEEP WELL			IMPROVED SPRING			HAZARD SUSCEPTIBILITY (H/M/L)					
	NO.	POP.	HH POP. SERVED		NO.	HH POP. SERVED		NO.	HH POP. SERVED							
			HH	%		NO.	%		NO.	%	FL	TC	EQ	LN	TS	SU
Brgy. 98	6	1,146	225	0.52%	None	None	None	None	None	None	M	L	L	H	L	L
Brgy. 99	6	5,501	1079	0.11%	None	None	None	1	5,501.00	1,375.25	M	L	L	H	L	H
Brgy. 94-A	8	1,242	244	0.64%	None	None	None	None	None	None	L	L	L	H	L	L

Source: LMWD; 2016
Notes:
• % = (No. of HH Served/No. of Households) x 100

5.4.5 Water Requirements

A. Population Projections

In order to plan for the water requirements of Tacloban City, the LGU together with the technical assistance from USAID Be Secure conducted a feasibility study (FS) for the City. The study projected relevant data for planning purposes, specifically for Tacloban's bulk water supply. Projections of the water requirements for the entire Tacloban City is based on the population projection released by the Philippine Statistics Authority, using a 1.99% annual average growth rate. At the end of the CLUP timeframe in 2025, the City population would have reached 305,995 inhabitants. And at the end of year 2050, the base population would have more than doubled to 493,327.

A separate area-based projection was also conducted for the Eastern Visayas Regional Growth Center (EVRGC), on which the resettlement and relocation site is located. The initial target population in 2014 is 20,000 inhabitants. At the end of the CLUP timeframe in 2025, the population in EVRGC would have reached 49,069 inhabitants. And at the end of year 2050, the base population of EVRGC would have more than doubled to 88,001. This projection in the North Tacloban is already reflected in the overall population projection of the City.

Table 5.18 Projected Population in Tacloban City from 2014-2050

YEAR	2014	2015	2020	2025	2030	2035	2040	2045	2050
Pop.	243,857	248,993	276,213	305,995	338,338	373,243	410,709	450,737	493,327

Sources: Philippine Statistics Authority

Table 5.19 Projected Population of EVRGC (People Directly Affected by Storm Surge in Tacloban City) from 2013-2050

YEAR	2013	2014	2015	2020	2025	2030	2035	2040	2045	2050
Pop.	39,496	40,186	40,890	44,676	49,069	54,294	60,576	68,137	77,204	88,001

Source: USAID Be Secure Tacloban City North Bulk Water Supply Project Rapid Feasibility Study, March 2015

B. Willingness to Connect to Water Service Provider

A survey on Willingness to Connect to a water service provider (WSP) was conducted as part of the feasibility study. The FS showed that 87% of those not connected to any WSP was willing to pay and connect to have sustainable water supply service.

The said percentage was used to compute for the served population projection as shown in the succeeding table. The same percentage was used in the water demand and service connections projections.

Table 5.20 Projected Population with Water Service from 2014-2050

YEAR	2014	2015	2020	2025	2030	2035	2040	2045	2050
Pop.	212,160	216,630	240,310	266,220	294,360	324,730	357,320	392,150	429,200

Source: USAID Be Secure Tacloban City North Bulk Water Supply Project Rapid Feasibility Study, March 2015

C. Water Service Connections

The same feasibility study computed the water service connections for each type of use. To compute for the projected number of households with water service connections, a mean average of 4.5 persons per household was used. Adopting this number, the projected number of domestic service connections was estimated and presented in the table below. At the end of the CLUP timeframe in 2025, a total of 59,160 households would be connected to a water service provider. And at the end of year 2050, this number would reach 95,380 households.

Demand volume for commercial and industrial establishments were computed relative to the density of connected or served population using the LWUA MC Manual. Using the factor 0.3 per 100 population for low density, commercial/industrial service connections were projected and presented in the succeeding table. At the end of the CLUP timeframe in 2025, a total of 799 establishments would be connected to a water service provider. And at the end of year 2050, this number would reach to 1,288.

Demand volume for institutional connections was computed using a factor of one (1) connection per 2000 people. As shown in the next table, a total of 134 institutions would connect to a service provider by the end of the CLUP in 2025, and this number will increase to 215 by the year 2050.

Table 5.21 Projected Number of Service Connections from 2014-2050

YEAR	RESIDENTIAL (DOMESTIC) HOUSEHOLDS	COMMERCIAL/ INDUSTRIAL	INSTITUTIONAL
2014	47,150	637	107
2015	48,140	650	109
2020	53,410	721	121
2025	59,160	799	134
2030	65,420	884	148
2035	72,170	975	163
2040	79,410	1,072	179
2045	87,150	1,177	197
2050	95,380	1,288	215

Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

D. Water Demand Projections

In computing for the water demand in Tacloban for domestic uses, the following were considered: 1) base year used was 2014; 2) served population was used as baseline data; 3) 125.20 liters per capita per day (LPCD) was used; and 4) the non-revenue water (NRW) was at 20%.

The succeeding table shows the computed domestic water demand. At the end CLUP planning period, the City would need 40 millions of liters per day (MLD)

to serve a population of 266,220 or an equivalent of 59,160 households. By year 2050, the city would require 64.50 MLD to serve a population of 429,200 or an equivalent of 95,380 households.

To compute for the commercial and/or industrial water demand volume, two (2) cubic meters per day was assumed per service connection. At the end CLUP planning period, demand for water for commercial and industrial uses would be 1.6 MLD to serve 799 service connections. By year 2050, the city would require 2.6 MLD to serve a 1,288 connections.

Computation for projected water demand volume for institutional uses considered the established consumption of 7.5 cubic meters per connection. Results showed that at the end CLUP planning period, demand for water for institutional uses would be 1.0 MLD to serve 134 service connections. By year 2050, the city would require 1.7 MLD to serve a 215 connections.

Table 5.22 Projected Water Demand Volume from 2015 to 2050

YEAR	WATER DEMAND VOLUME (MLD)		
	RESIDENTIAL (DOMESTIC)	COMMERCIAL/ INDUSTRIAL	INSTITUTIONAL
2014	31.9	1.3	0.8
2015	32.6	1.3	0.9
2020	36.2	1.5	1.0
2025	40.0	1.6	1.0
2030	44.3	1.8	1.2
2035	48.8	2.0	1.3
2040	53.7	2.2	1.4
2045	59.0	2.4	1.5
2050	64.5	2.6	1.7

Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

The table above was recalculated by location and subdivided into three (3) areas, namely Tacloban North, Resettlement, and Tacloban South, where the last referred to the rest of the City. Table below shows the breakdown of the projected water demand volume by the respective areas. The projected average day demand volume specifically for Tacloban North was adjusted based on the clustered

household. The demand in Tacloban South was also reduced to align with the volume of water provided by MRII.

Table 5.23 Projected Average Day Demand Volume by Area in Tacloban

AREAS	WATER DEMAND VOLUME PROJECTION(MLD)						
	2014	2015	2020	2025	2030	2035	2040
Tacloban North	10.40	10.70	12.10	13.60	15.10	16.70	18.30
Resettlement	6.70	6.80	7.60	8.40	9.30	10.20	11.20
Tacloban South	16.90	17.20	18.80	20.60	22.70	25.10	27.70
Total Tacloban	**34.00**	**34.70**	**38.50**	**42.60**	**47.10**	**52.00**	**57.20**

Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

The feasibility study also computed the maximum day demand volume for key areas with scarce water, specifically in Tacloban North, Resettlement Areas and the V&G Subdivision as shown in the table below. The resettlement areas will have the highest demand for water by 2025 at 10.50 MLD.

Table 5.24 Projected Maximum Day Demand Volume Projections

AREAS	WATER DEMAND VOLUME PROJECTION(MLD)						
	2014	2015	2020	2025	2030	2035	2040
Tacloban North	2.88	3.00	3.25	3.63	4.00	4.38	4.88
Resettlement	8.38	8.50	9.50	10.50	11.63	12.75	14.00
V&G Subdivision	2.50	2.75	2.75	2.88	3.13	3.50	3.88

Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

The excess volume, considering the optimum supply capacity of 50 MLD, may be distributed to the rest of the City of Tacloban.

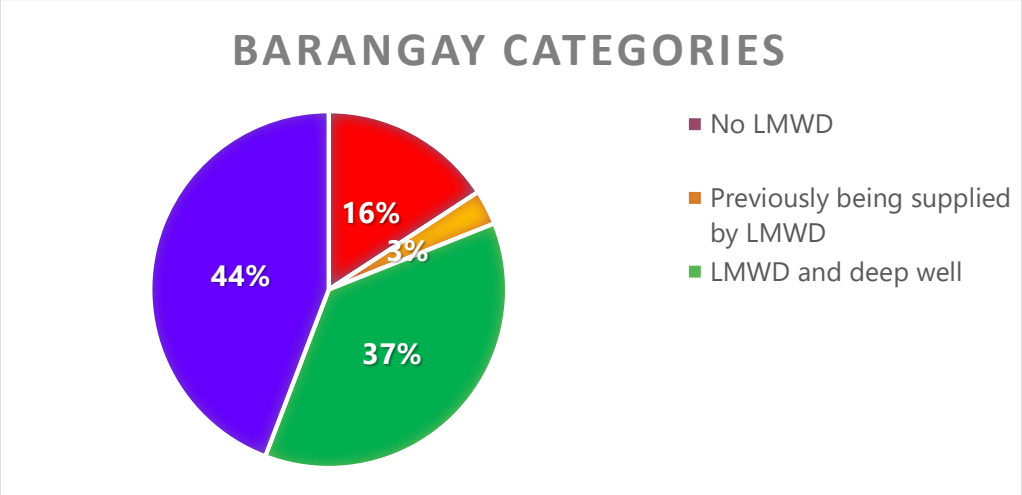
Table 5.25 Excess Water Supply

AREAS	WATER DEMAND VOLUME PROJECTION(MLD)						
	2014	2015	2020	2025	2030	2035	2040
Rest of Tacloban	26.23	25.74	24.49	22.98	21.23	19.36	17.23

Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

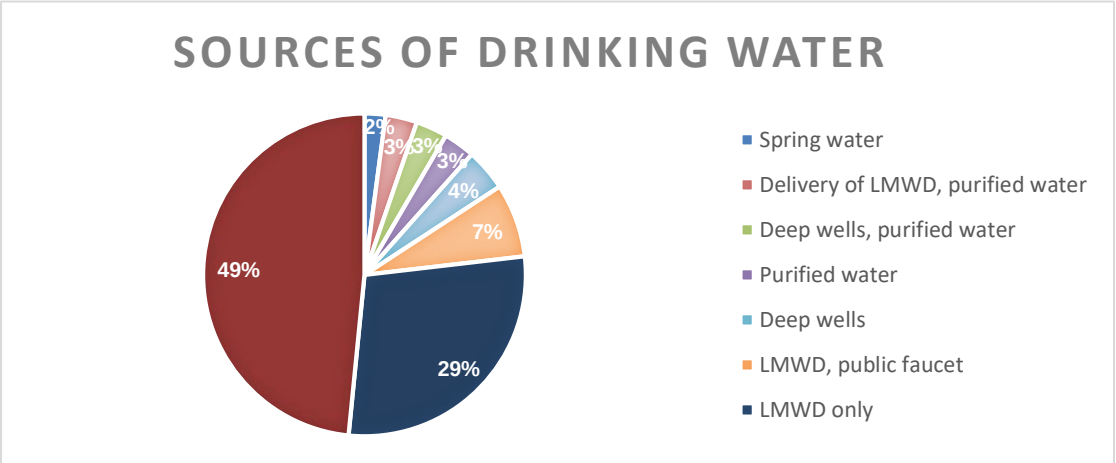
The figure below shows that only 44% of the surveyed Barangays in the city is completely supplied by the LMWD and these are concentrated near the city center. Barangays with no LMWD connection may only be 16% of the total but the area covered by these Barangays is almost half of the city area.

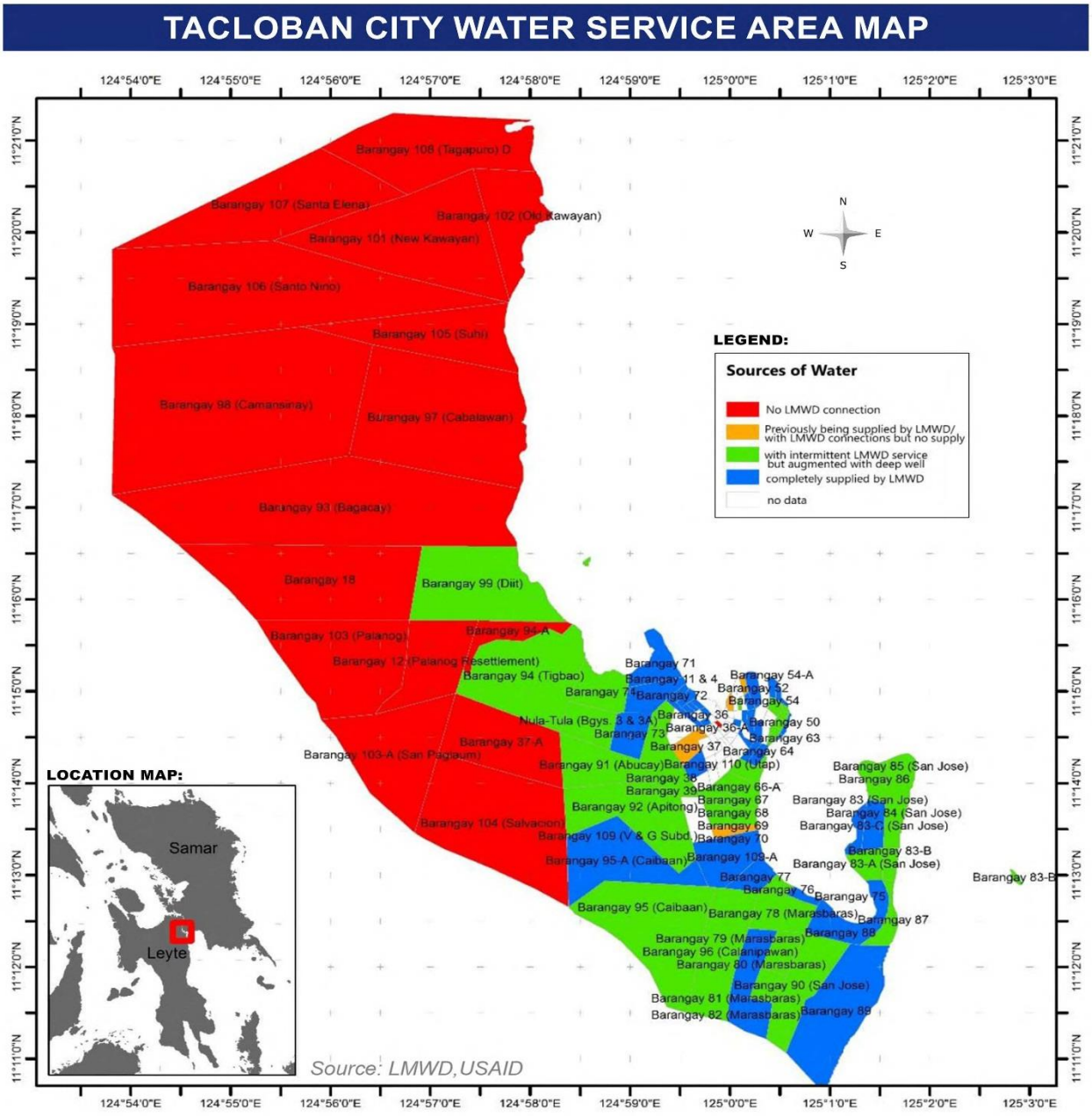
Figure 5. 12 Barangay categorized based on LMWD services



The figure below shows that most of the Barangay rely on LMWD services for their drinking water and only 7% gets from deep wells. There are some Barangays which reported that during storms and extreme droughts, the quality of water deteriorates but in normal days, the water can be used for drinking. Purified water is used as an alternative during these times when water from LMWD is not reliable.

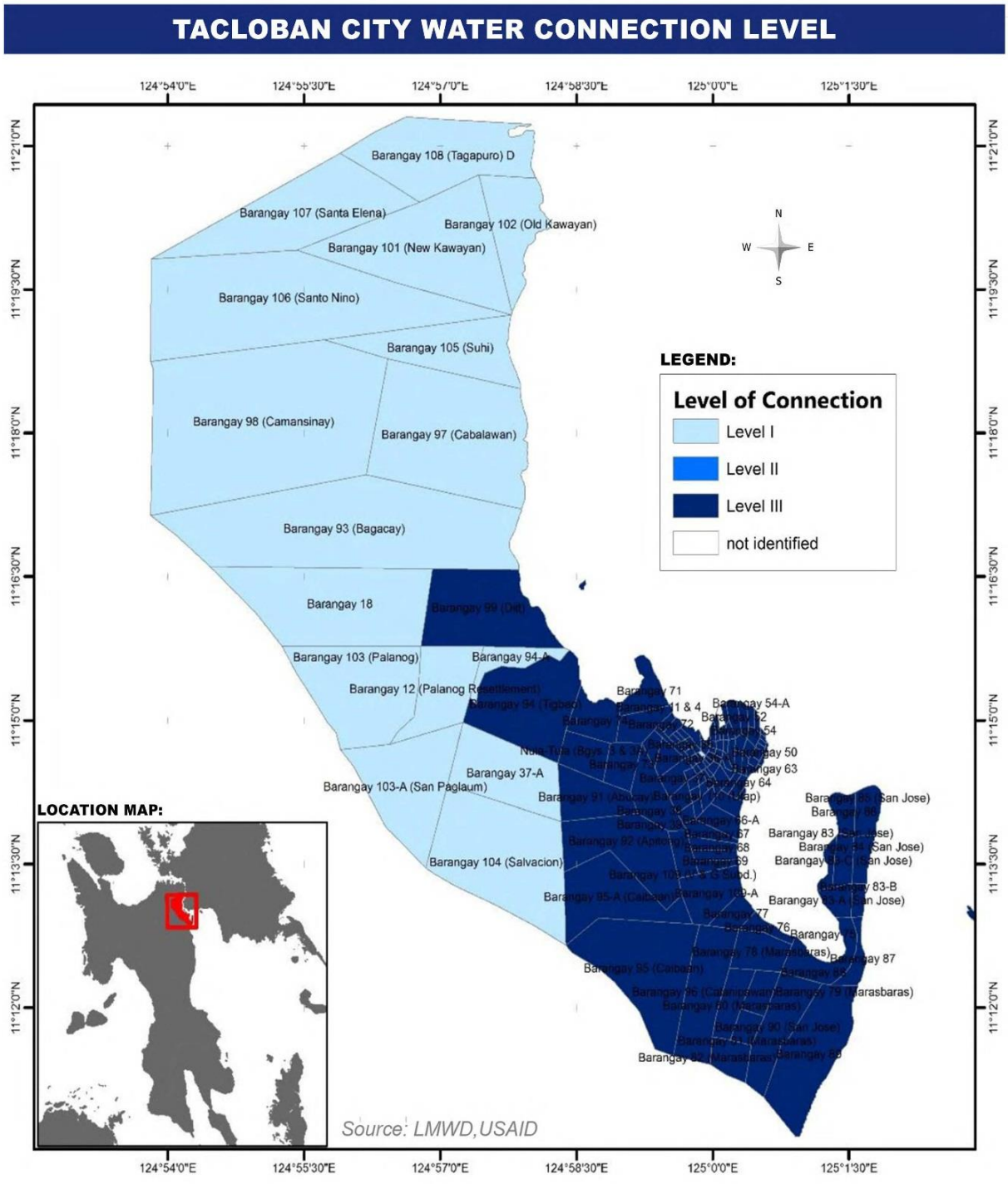
Figure 5. 13 Sources of Drinking Water in the Barangays of Tacloban





Map 81. Water Service Area Map of LMWD

Source: LMWD, USAID



Source: LMWD, USAID

Map 82. Tacloban City Water Connection Level

5.4.6 Proposed Water Transmission and Distribution Lines

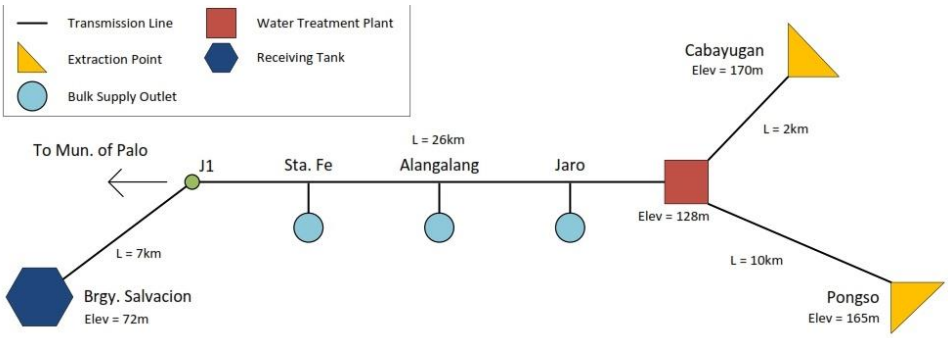
A. Raw Water Source Transmission

There are two (2) extraction points from the alternative sources of water. First is the Pongso River Extraction Point situated at elevation 170 mamsl. From here, the raw water transmission route traverses the river bank unto the Palo-Carigara-Ormoc City Highway to the proposed location of the water treatment plant (WTP). The second is the Cabayugan River Extraction Point which is located south of Pongso River. The elevation of the proposed extraction point is at 165 mamsl and at a distance of approximately 2 kilometers to the proposed WTP.

B. Transmission Route and Main Distribution Lines

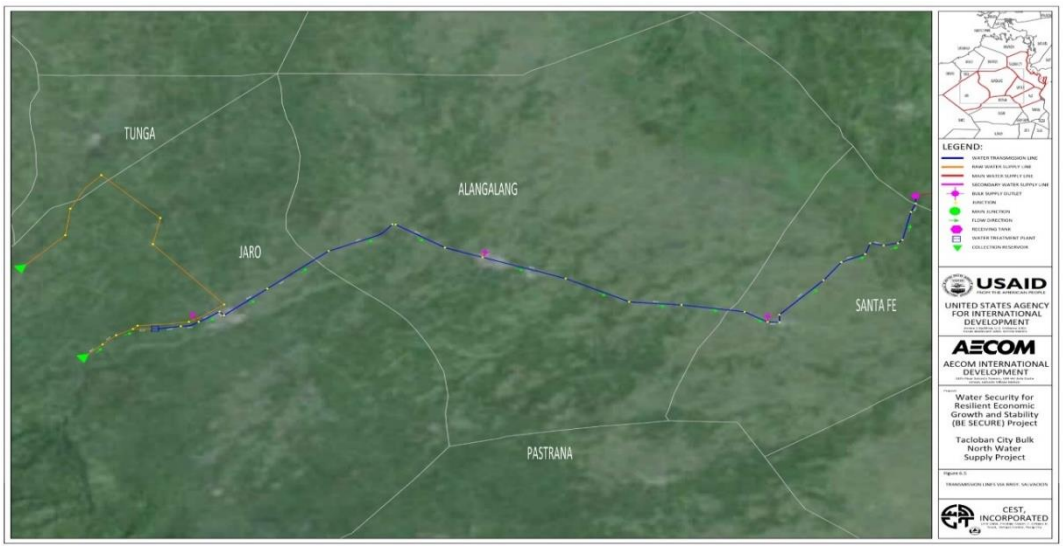
From the proposed location of the water treatment plant (WTP) at elevation 128 mamsl, the transmission line will follow the Palo-Carigara-Ormoc national highway and will traverse the municipalities of Jaro, Alang-alang and Sta Fe up to junction J1 as shown in the schematic diagram below. J1 has a ground elevation of approximately 18.3 mamsl. From junction J1, transmission route will proceed westward towards the boundary of Sta Fe and Tacloban City. The transmission will terminate at the peak of Barangay Salvacion, Tacloban City with a recorded elevation of 72mamsl. Figure 5.6 presents the schematic diagram of treated water transmission route via Brgy. Salvacion and Figure 5.10shows the satellite image where the transmission line will traverse.

Figure 5. 14 Schematic Diagram of Transmission Route via Brgy. Salvacion



Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

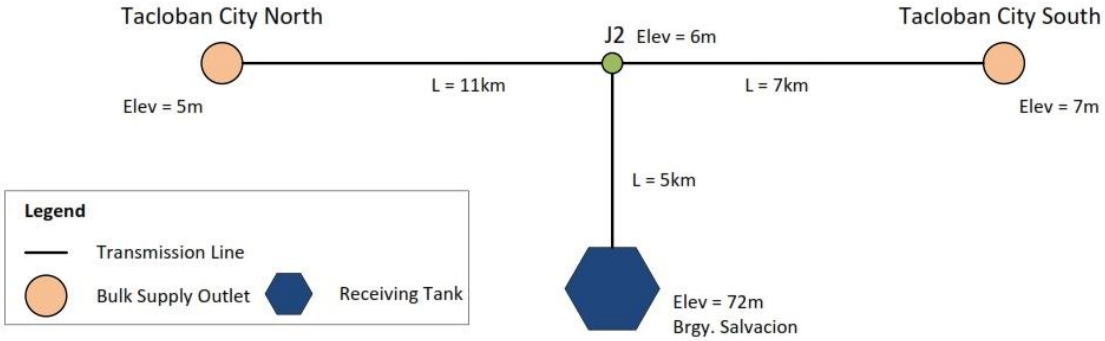
Figure 5. 16 Satellite Image of Transmission Route



Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

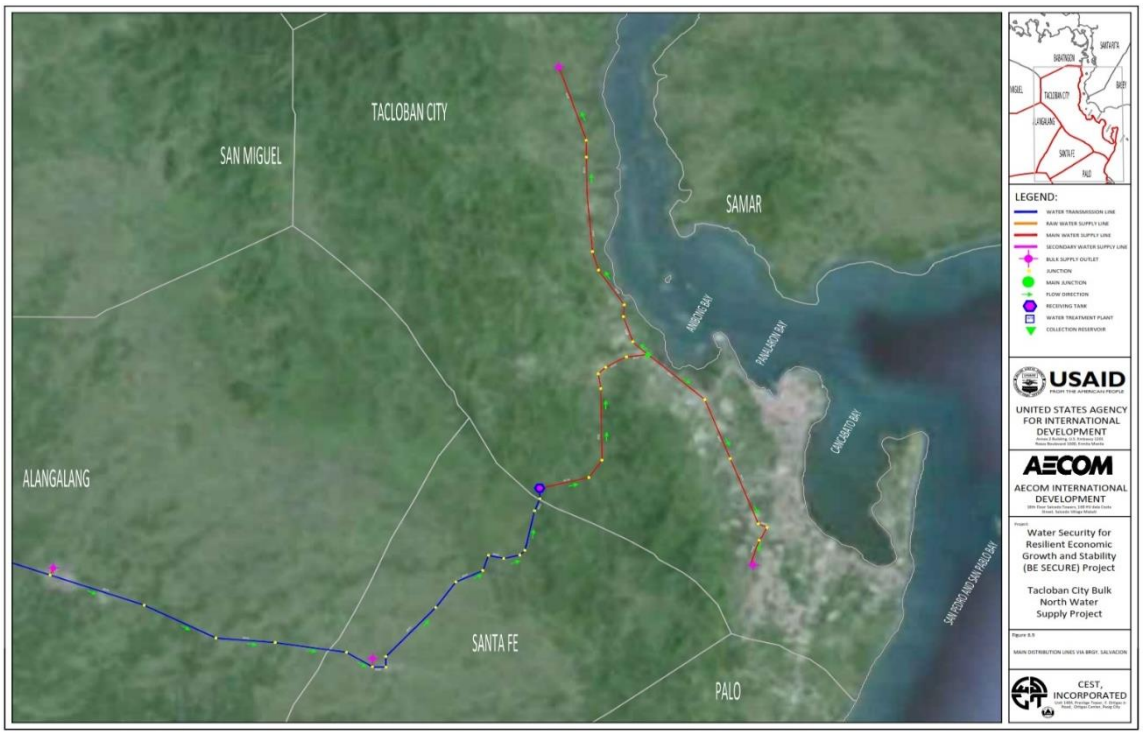
Starting from the peak of Brgy. Salvacion, the main distribution line traversed a gradually rolling terrain down to the poblacion of the City of Tacloban. At junction J2, which is located at the intersection of Salvacion barangay road and Maharlika Highway, a control valve is to be located, which regulates water distribution to Tacloban City North and Tacloban City South. Tacloban City North and Tacloban City Resettlement distribution line corresponds to about 11 km of pipe network, while Tacloban City South line runs to about 7 km. Figure 5.9 shows the schematic diagram and Figure 5.12 shows the satellite image of the Salvacion main distribution line.

Figure 5. 17 Distribution Line from Salvacion Receiving Tank



Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

Figure 5.18 Satellite Image of Distribution Line



Source: USAID Be Secure. Tacloban City North Bulk Water Supply Project Rapid Feasibility Study Final Report, March 2015.

Approximately eighty (80) kilometers of 150mm diameter pipe of secondary lines will be laid on the densely populated areas of Tacloban North and on the expansion service area of Mactan Rock Industries, Inc. in V&G Subdivision.

C. Investment and Operating Costs

In computing the capital and operational expenditures, the FS assumed a PPP scheme will be adopted for the project, where the Tacloban LGU is the proponent.

The total investment cost of the Water Transmission Project amounts to PhP2.843 billion through a 70:30 debt-equity ratio financing scheme assuming an escalation of 4.0% per year. The annual operating expenses amount to PhP31.901 million.

The total investment cost of the Water Distribution Project amounts to PhP2.084 billion through a 70:30 debt-equity ratio financing scheme. This is

inclusive of the finance charges and interest during construction. The annual operating expenses amount to PhP29.027 million.

D. Total Price of Water Service at the Household Level

The base tariff for the Water Transmission Project is calculated at PhP21.25 per cu. m. for a 30year concession term. The base tariff for the Water Distribution Project is calculated at PhP18.60 per cu. m. With the assumption that these two (2) projects shall be run by two separate companies, the total price of water is PhP39.85 per cubic meter. Bundling the projects will result to a slightly lower tariff at PhP38.80 per cubic meter, which is PhP1.05 per cubic meter lesser.

5.5 Waste Water Treatment

The discharge of untreated waste water (sewage) is considered to pose an alarming threat to the population, the viability of mariculture activities in the City water and the general economic development of the area.

As a result, a comprehensive set of waste water (sewage) management strategies are proposed to be established in the Tacloban North relocation sites and in the rest of Tacloban in order to ensure each socialized housing subdivision and other sources of wastewater area are compliant with the standards set by both the Department of Health (DOH) and the Department of Environment and Natural Resources (DENR). Waste Water (sewage) from each relocation site is to be treated through an approved treatment system prior to it being discharged into adjacent creeks or rivers.

In addition to this, a centralized sewerage system to be developed in the 2017-2019 timeframe is proposed for Tacloban in order to provide a long term solution for sewage management and ensure residential, commercial and industrial development do not present a waste water threat to the City waters.

III. Water Analysis Matrix

TECHNICAL FINDINGS, ISSUES, CONCERNS	IMPLICATIONS/ EFFECTS/ IMPACTS	POSSIBLE SOLUTIONS (LEGISLATION, POLICIES, PROGRAMS, PROJECTS)
Unavailable water source within the City for bulk water supply	Requires sourcing from another locality	Implement the bulk water supply project (transmission lines and main distribution lines)
		Introduce and promote the use of rainwater harvesting facilities
		Introduce water impounding infrastructure at appropriate locations
Significant percentage of areas with high water recharge	Potential source of water	Protection of water recharge areas (forest protection, open green spaces, buffer zones)
Existing Level I & II water infrastructure are highly susceptible to storm surge, flood and landslides	Damage to infrastructure and possible water contamination after a disaster	Structural retrofitting and/or relocation of the facility to low risk areas
One connection per residential subdivision project	Poor water services	Enforce strictly the implementing rules and regulations of PD 957 and BP 220.
	Higher rate of water fees	
	Water quality may be put to risk	
Poor water services from LMWD in Northern Barangays with water connection	Hampers quality of life	Establish separate water supply system intended for northern Barangays only even without private partnership involvement
No potable water distribution line for Northern Barangays	Health and well-being of populace at stake.	City Government of Tacloban should establish a separate water supply system facilities to serve all the residents.

5.6 Proposed Waste Water Treatment

I. Analysis of Existing Situation

The discharge of untreated waste water (sewage) into San Juanico Strait is considered to pose an alarming threat to the population of the northern barangays' health, the viability of mariculture activities in the strait and the general economic development of the area.

As a result, a comprehensive set of waste water (sewage) management strategies is to be established in the Tacloban North relocation and the rest of

Tacloban in order to ensure each socialized housing subdivision Add: “and other sources of wastewater area” is compliant with the standards set by both the Department of Health (DOH) and the Department of Environment and Natural Resources (DENR).

Waste Water (sewage) from each relocation site is to be treated through an approved treatment system, such as individual Septic Tanks coupled with, prior to it being discharged into adjacent creeks or rivers flowing into San Juanico Strait. Such systems would require space allocation of approximately 2.5 square meters per household.

In addition to this, a centralized sewerage system to be developed in the 2017-2019 timeframe is proposed for 138 barangays in Tacloban in order to provide a long term solution for sewage management in the northern barangays and ensure residential, commercial and taking place outside of the relocation sites does not represent a waste water threat to San Juanico Strait and other water bodies.

Suggestions:

1. The process of establishing the strategies for wastewater management begins with the estimate of the extent of the problem both quantitatively and qualitatively. The night and day barangay population and the number of different types of businesses should provide for a good volume estimate of domestic and commercial wastewater in each barangay. This of course should be tied with the source and volume of water used in each area. Criteria can be set to qualify whether these sources are high, medium or low level pollutants based on volume and type of wastewater generated. This may also correspond to level of priority --color coding may be assigned. The recent water quality tests done by the CHO may indicate the level of pollutants already in the waters. The water body classification may then be altered and dictate the allowed uses for the water body.

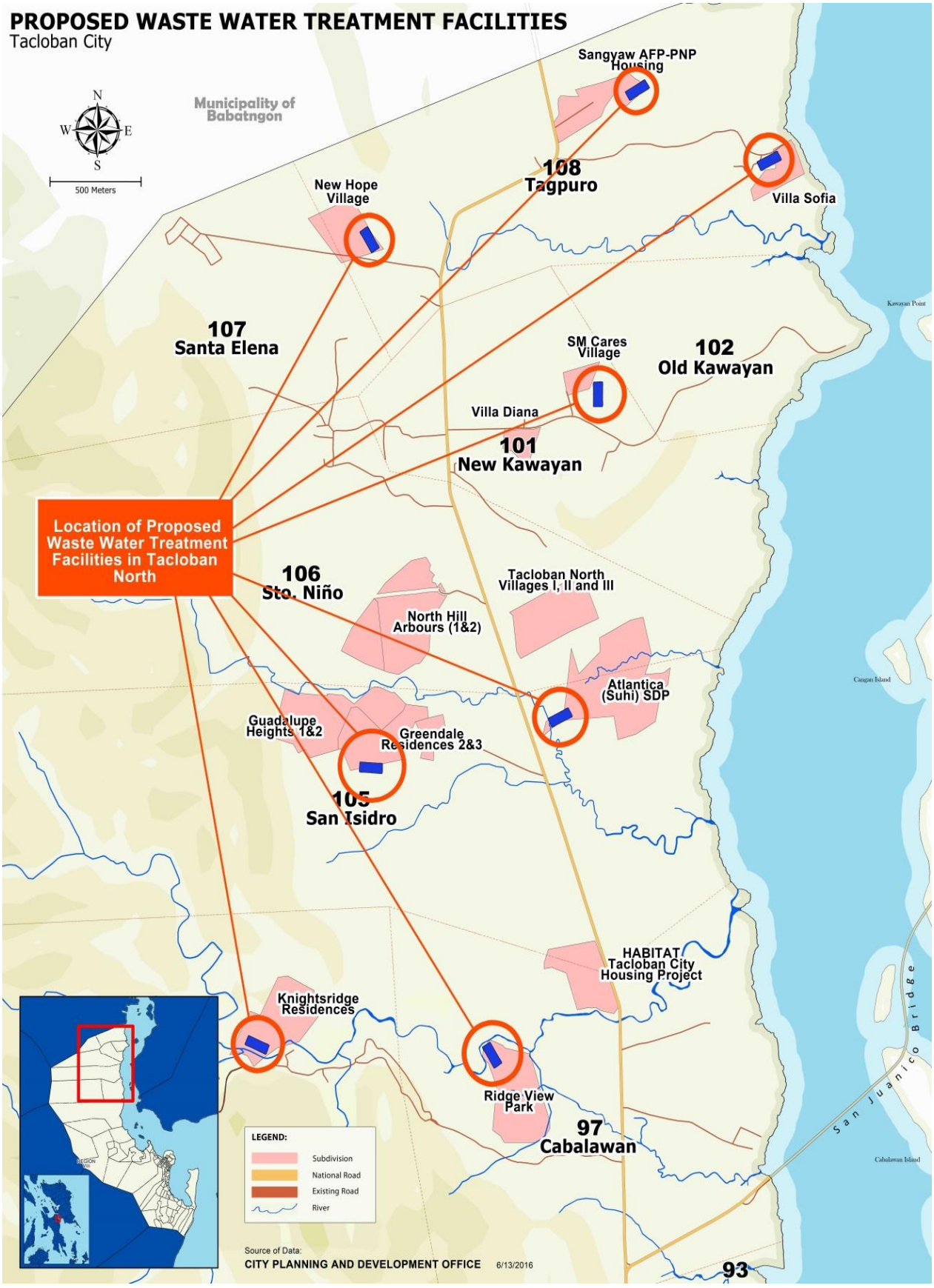
2. For each cluster of barangays (now ranked according to level of pollution and priority), separate strategies need to be developed, starting with the decision on whether to push for onsite or offsite treatment. Based on affordability, distances, population density, and available land, these

strategies should be justified or rationalized in each of the clusters of barangays. The city has already developed its citywide septage management program and has a fully operational treatment plant in Sto. Nino. They have a pending septage ordinance being reviewed now by the City Council and a standing order from the Office of the Building Officials to put in septic tanks when people construct their houses or buildings. So all these can be used to serve as basis for defining the strategies for each area or all areas.

3. For subdivisions (whether located in the north or not), a separate set of strategies should be promulgated and adopted by developers and NHA. For non-domestic wastewater generators, reiterate the requirement of the Clean Water Act for these establishments to provide for onsite treatment or pretreatment (or offsite if by hauling out) to bring down the level of pollutants to domestic quality before discharging to collection and secondary treatment systems.

4. Finally, insert a section to require all sanitation facilities to be climate-resilient. This may mean putting in a flexible system (to answer for extreme changes in water quality, peak and overflow due to increased demand and excessive rain), not locating facilities in hazardous areas, hardening and elevating structures susceptible to strong winds, flooding, and storm surges, and developing contingencies in cases of disasters and operational failures.

5. The LGU may project the future volume/flow of wastewater generated and provide for a timetable when a sewerage system should be put in place. Tacloban City is one of the highly urbanized cities and as such, is required by law to put in an appropriate sewerage system by 2020 especially in areas where it makes sense.



Map 83. Proposed Waste Water Treatment Facilities North

Map 84. Proposed of Waste Water Treatment Facilities

5.7 Proposed Septage Treatment Facility

I. Analysis of Existing Situation

Septage Treatment Facility. All domestic septage must be processed and treated in strict conformance with the DOH Operations Manual on the Rules and Regulations governing Domestic Sludge and Septage and all other relevant national and local laws. Septage facilities, including treatment and disposal facilities and septage truck yards must maintain a hygiene and safe work environment. Facilities must be properly designed installed and maintained. A vector control strategy must be included to insure that no disease-causing elements shall thrive in the treatment facility and a maintenance schedule for clearing excess vegetation growth.

The septage treatment facilities in Tacloban shall use lime stabilization methods composed of lime mixing/treatment pit, anaerobic baffled reactor, facultative pond, and maturation or aerobic ponds. The lime mixing/treatment pit and the anaerobic baffled reactor shall be made of concrete. Mixing or treatment of lime shall be fully mechanized. All stabilization ponds shall be lined with high density polyethylene (HDPE) geomembrane on top of highly compacted soil. Jointing of adjacent sections of geomembrane sections shall be in accordance with manufacturers' jointing guidelines. Effluent from the last anaerobic pond shall flow into a constructed wetland to ensure that the quality of the final effluent shall meet DENR standard for the receiving water body. Periodically, the solid material that accumulates in the receiving tank and ponds shall be removed and deposited in sludge drying beds. Dried sludge shall be recovered as compost material, soil conditioner or landfill material. This shall comply with the DOH Operations Manual on the Rules and Regulations governing Domestic Sludge and Septage.

The operations and maintenance plan also includes provisions for reducing system upset, including immediate actions to prevent the occurrence of foul smells and release of partially treated effluent from the system.

II. Objectives of the Project

The final stage of Phased Approach to the Total Sanitation (PhaTS) involves the safe management of solid and liquid wastes and strengthening water quality monitoring systems, allied with the promotion of water supply protection. As barangays continue to improve their sanitation and hygiene practices, it will become important to have a facility to treat the septage.

The objective of the project is to demonstrate and promote cost effective wastewater management solution, to reduce pollution of nearby water bodies, remove disease water causing organisms and contaminants in the wastewater and prevent the spread of water borne diseases.

This facility will directly benefit more than 245,000 people in 138 barangays of Tacloban City.

As the first of its kind in the region this can be a showcase to other LGUs they can have best available technology without entailing excessive cost.

City ordinance for the operation including the integration of corresponding fees in the Real Property Tax was drafted and for approval by the City Mayor and council.

The establishment of a Sewerage and Septage is a mandated facility for Highly Urbanized City under R.A. 9275 otherwise known us Philippine Clean Water Act of 2004.

III. Location and Condition of the Area

The Septage Treatment Facility is located in Barangay, Sto. Nino, in the northern part of Tacloban City. The location is owned by the city government, the land location is adjacent to the Sanitary Landfill.

Tacloban Septage Treatment Plant

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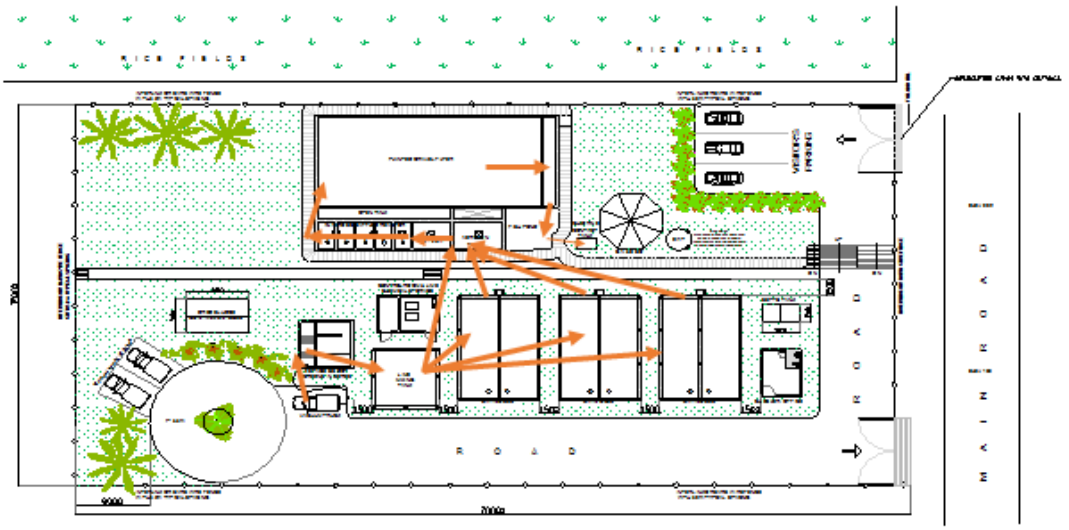
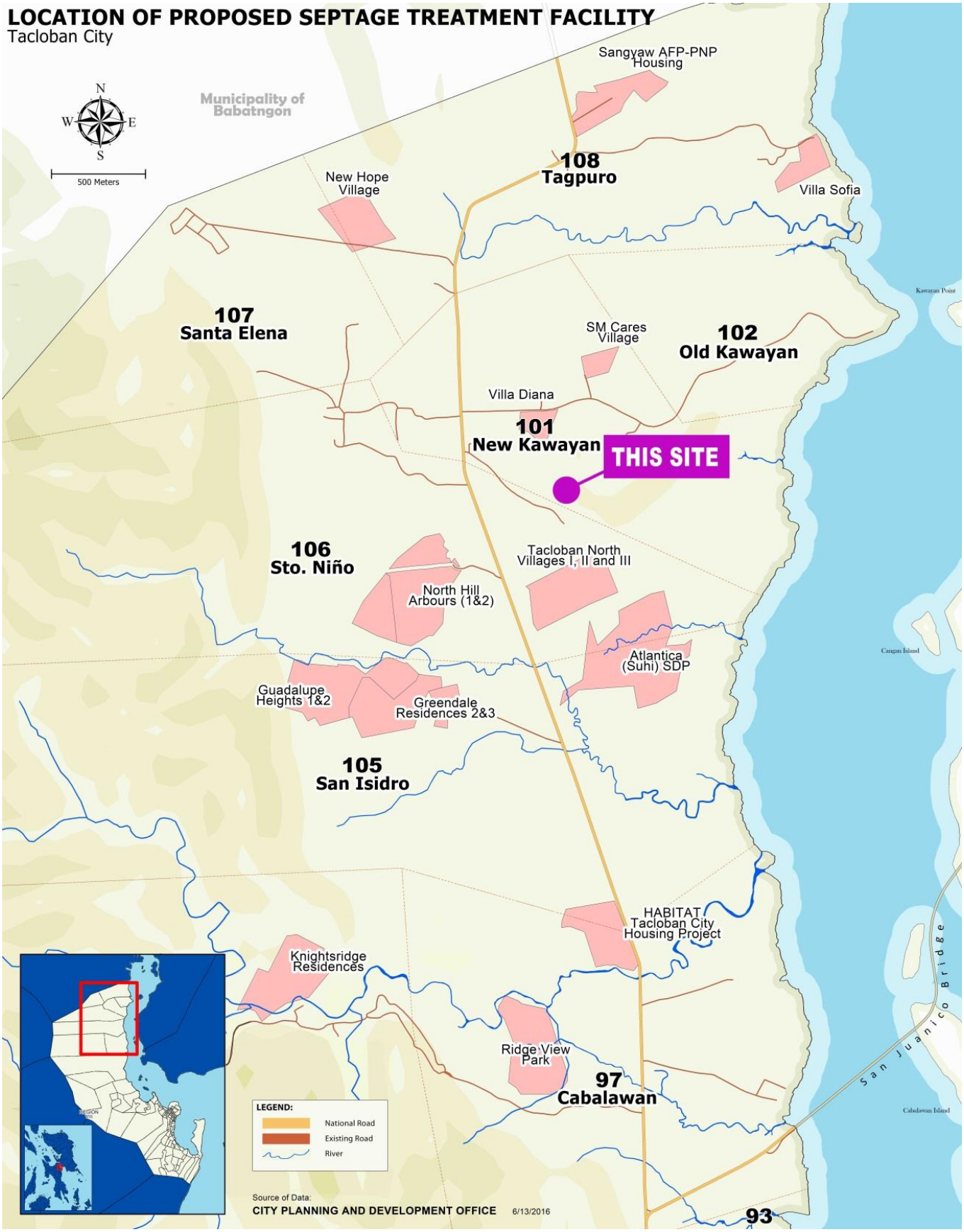



Tacloban Septage Treatment
Screens
Bars
Lime Mixing Tank
Sludge Sand and Gravel Drying Bed



Map 85. Proposed Septage Treatment Facility

5.8 Information and Communication Technology

I. Analysis of Existing Situation

Tacloban City is a Media saturated city. Residents have within their grasp, a variety of media outlets – print, broadcast and Internet. As the city progresses, mass communications is gradually evolving to electronic transmission paving the way for digitized information technology.

Print media boasts of six (6) broadsheets with regionwide distribution, complementing national dailies of which one (1) broadsheet offers daily issues, while the rest have weekly publications. The city is reached by seven (7) radio stations, six (6) broadcast using FM bands, one (1) in AM band. Only in the periphery of the city limit is within the capacity of the transmission of the private television network. In the farther north of the city of Tacloban, TV broadcast is available if a powerful antenna is attached to boost reception.

Moreover, cable television service in urban area of the city and in residential subdivisions and shared by Fil-products Cable Corporation and Leyte Net Cable Incorporated.

Table 5.26 reflects that only the PLDT and Postal Office are highly susceptible to storm surges as these are currently situated near the sea. The rest of the communication services facilities are from low to moderately susceptible to other hazards.

Table 5.26 Communication Services Facilities, Year 2015

TYPE	YEAR CONS-TRUCTED	AREA OCCU-PIED (HA)	BARANGAY	OWNERSHIP		HAZARD SUSCEPTIBILITY (H/M/L)						
				PUBLIC	PRIVATE	FL	TC	EQ	LN	TS	SU	OTHERS
Postal Services												
Postal Services Phil. Postal Corp.	1980	0.06	1 & 4	Gov'tCorp.		L	M	L	L	M	H	
LBC		0.015	12 Outlets		√							
JRS			20, Gomez		√	L	L	L	L	L	M	
Aboitiz Go/Air Cargo			23, A. Veteranos		√	L	L	L	L	L	L	

TYPE	YEAR CONS-TRUCTED	AREA OCCU-PIED (HA)	BARANGAY	OWNERSHIP		HAZARD SUSCEPTIBILITY (H/M/L)						
				PUBLIC	PRIVATE	FL	TC	EQ	LN	TS	SU	OTHERS
DHL			15, J, Romualdez St.		√	L	L	L	L	L	L	
Telephone Service Provider												
Bayantel/ Globe	1986	0.02	6-A, Sto. Nino Ext.		√	L	L	L	L	M	M	
PLDT	2014	0.02	5		√	L	L	L	L	M	H	
Cell Sites Network												
Smart	2014	0.02	26- Sites (Bgy.)		√	L	L	L	L	M	L	
Globe	2014	0.02	17-Sites(Bgy.)		√	L	L	L	L	L	L	
Sun Cellular	2014	0.01	77-Robinsons		√	L	L	L	L	L	L	
Broadcast and Television Network (radio, television, cable)												
ABS-CBN	1990	0.02	23-A Veteranos		√	L	L	L	L	M	M	
Bombo-Radyo	1988	0.01	35- Real		√	L	L	L	L	M	M	
YXY- Radio Mindano Network	1990	0.01	20-Burgoz		√	L	L	L	L	M	L	

Source: NTC, Public/Private Companies; 2016
Notes:
Ownership – Public/Private
Type of Ownership – Public/Private
Indicate level of susceptibility for all hazards - High (H), Moderate (M), Low (L)

Table 5.27 Type of Print Media Available, Year, 2015

TYPE OF PRINT MEDIA	LOCATION	AREA COVERAGE	CIRCULATION		
			NUMBER	TYPE	FREQUENCY
Leyte Samar Daily Express	Brgy. 25, Zamora	Regionwide	1000	Tabloid	Daily
EV Mail	Tacloban City	Regionwide	1000	Tabloid	Weekly
Sunday Punch	Tacloban City	Regionwide	1000	Tabloid	Weekly
Daily People Forum	Tacloban City	Regionwide	1000	Tabloid	Weekly
Tacloban Star	Brgy.49 Leyte Sport Center	Regionwide	1000	Tabloid	Weekly
EV Bulletin	Tacloban City	Regionwide	1000	Tabloid	Weekly

Source: National Telecommunication Commission/Local Companies

Table 5.28 Cell Site Network, Year 2015

LOCATION	AREA OCCUPIED (HA)	ANTENNA HEIGHT	DATE INSTALLED	CATCHMENT RADIUS (KM)	OWNER
Aquino Avenue	0.01	48.00	FEB. 2014		Smart Communications Inc.
Brgy. 77 Banezville, Fatima Village	0.01	48.00	Feb. 2005		Smart Communications Inc.
Brgy. 99 Diit	0.01	48.00	Feb. 2005		Smart Communications Inc.
Brgy. Nulatula	0.01	48.00			Smart Communications Inc.
Burgos cor MH del Pilars	0.01	48.00	2001		Smart Communications Inc.
Fatima Village	0.01	48.00	2001		Smart Communications Inc.
V&G Subd.	0.01	48.00			Smart Communications Inc.
San Jose, Brgy. Poblacion	0.01	48.00			Smart Communications Inc.
MH Del Pilar Street	0.01	48.00			Smart Communications Inc.
Jones Street	0.01	48.00			Smart Communications Inc.
Mt. Naga Naga, Brgy. Nula Tula	0.01	48.00	2007		Smart Communications Inc.
Veteranos Ave.	0.01	48.00	2012		Smart Communications Inc.
Tacloban4-Manlurip	0.01	48.00	2012		Smart Communications Inc.
Rovic Bldg., Zamora St.	0.004	24.00	2014		Smart Communications Inc.
Gaisano Mall	0.003	48.00			Smart Communications Inc.
Leyte Park Hotel	0.01	48.00	2012		Smart Communications Inc.
UPV Campus	0.01	48.00	2012		Smart Communications Inc.
PNP Provl HQ, Tacloban Airport	0.008	48.00			Smart Communications Inc.
Jones St cor MH del Pilar St., Brgy. 2	0.094	48.00			Smart Communications Inc.
Brgy. 109-A, Poblacion	0.005	48.00			Smart Communications Inc.
Brgy. 59	0.005	48.00	2012		Smart Communications Inc.
Marasbaras	0.005	48.00			Smart Communications Inc.
Romualdez Bldg. Veteranos Ave.	0.01	24.00	2014		Smart Communications Inc.

LOCATION	AREA OCCUPIED (HA)	ANTENNA HEIGHT	DATE INSTALLED	CATCHMENT RADIUS (KM)	OWNER
Brgy. 96 (Calanipawan)	0.005	48.00			Smart Communications Inc.
Calvary Hills	0.01	48.00			Globe telecom Inc.
Brgy. 58 Old Road Sagkahan	0.01	48.00			Globe telecom Inc.
Brgy. 83, San Jose	0.01	48.00			Globe telecom Inc.
Brgy. 110 Apitong	0.01	48.00			Globe telecom Inc.
Brgy.77, Fatima Village	0.01	48.00			Globe telecom Inc.
GaisanoTacloban - Main	0.01	48.00			Globe telecom Inc.
Globe Tacloban Business Center	0.01	48.00			Globe telecom Inc.
J. Romualdez St.,Gaisano Bldg.	0.01	48.00			Globe telecom Inc.
Dynasty Bldg., Zamora St.	0.01	48.00			Globe telecom Inc.
Brgy. San Isidro	0.01	48.00			Globe telecom Inc.
Leyte Park Hotel	0.01	48.00			Globe telecom Inc.
Brgy. 81, Marasbaras	0.01	48.00			Globe telecom Inc.
Brgy. 3 & 3A, Nula-Tula	0.01	48.00			Globe telecom Inc.
Brgy. 97, Cabalawan	0.01	48.00			Globe telecom Inc.
Brgy. 86, Tigbao	0.01	48.00			Globe telecom Inc.
Brgy. 95-A, Caibaan	0.01	48.00			Globe telecom Inc.
Brgy 55&55A, El Reposo	0.01	48.00			Globe telecom Inc.
TOTAL	**0.459**				

Notes:

- *Catchment Radius – refers to the service radius covered by the cell site network.*
- *Owner – refers to the company owner of the cell site network*

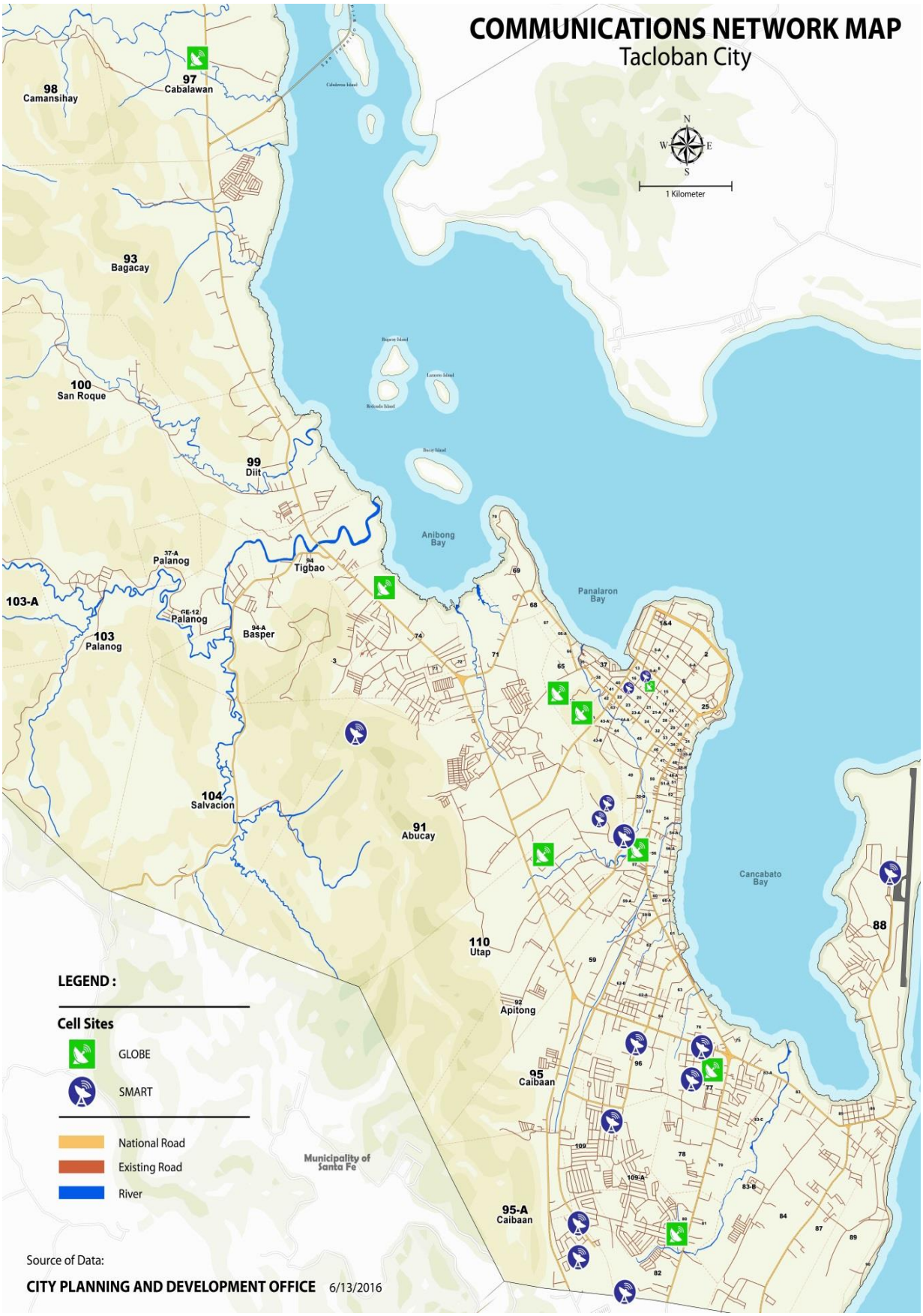
II. Problems and Development Needs/Requirement:

The market for telephone and cellular services in Tacloban are being shared among transnational corporations who is home-grown and Domestic Corporation having bought the existing local telephone service provider from the Province of Leyte. Among these service providers, only Globe, Smart and PLDT offer landline connection services. The other two purely offer remote line connection services with their cell site spread all over the city in head-on competition with Globe and Smart likewise offer cellular phone services. The National Telecommunication, is used to have the mandate to establish the infrastructure for the telephone services and operate the same in the locally especially those LGU's without telephone services offered by the private sector.

Tacloban City, except a calling service right in their office, was overtaken by the events of modernization and perhaps is a candidate for phasing out, as its mandate is already irrelevant to the present situation more so with the introduction of new technological advancement in the communications industry which the private sector has in possession.

III. Information and Communication Technology Analysis Matrix

TECHNICAL FINDINGS / OBSERVATIONS	IMPLICATIONS / EFFECTS	RECOMMENDED INTERVENTIONS
Lack of social acceptability of cell sites due to assumed health/security reasons.	Low economic investment	Advocacy for social acceptability of telecommunication facilities.
No telephone services available and lack of internet access in the northern portion of the city	Residents deprived of fast modem & efficient telecommunication services	Representation/coordination with ICT companies to extend services in the area of establish public-private partnerships in the implementation of ICT projects.
Inadequate ICT investment in city offices and various barangays of tacloban.	"Constricting ICT potential to bridge the knowledge gap" in terms and boundless opportunities available to Taclobanons and as instruments of good governance and global competitiveness.	Invest in ICT (both hardware and soft) and make available cost-efficient and citizen-centric ICT infrastructure, systems and resources and ensure availability of ICT systems for emergency situations (i.e. early warning systems) as part of th climate center.
Lack of ICT literacy among many Taclobanons	Disempowers individuals in all walks of life to seek evaluate, use and create information effectively in order to achieve their personal, social, occupational and educational goal.	Provide opportunities for digital literacy down to the barangay level through formal and informal IT education classes
Weak network signal	Limit chances to avail of current updates in the digital world that may affect financial, social and other aspects of life.	Encourage ICT companies to ensure an efficient and reliable network signal by providing incentives and other strategy possible.



Map 86. Communications Network Map

CHAPTER 6 CLIMATE CHANGE ADAPTATION AND DISASTER RISK REDUCTION

6.1 Basic Principles and Concepts

Climate Change is a “change in climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere in addition to natural climate variability observed over comparable time periods”.

Weather is a snapshot of the state of atmosphere over a relatively short period of time (usually less than a week) while Climate represents an average or collective state of the weather patterns over a long period of time. Simply placed, Climate is what we expect while weather is what we get.

Climate change is the precursor to the present events of disasters and unusual weather conditions manifested in the forms of flooding, unusual hot spells, stronger and more frequent storms and typhoons, landslides, earthquakes, and other calamities.

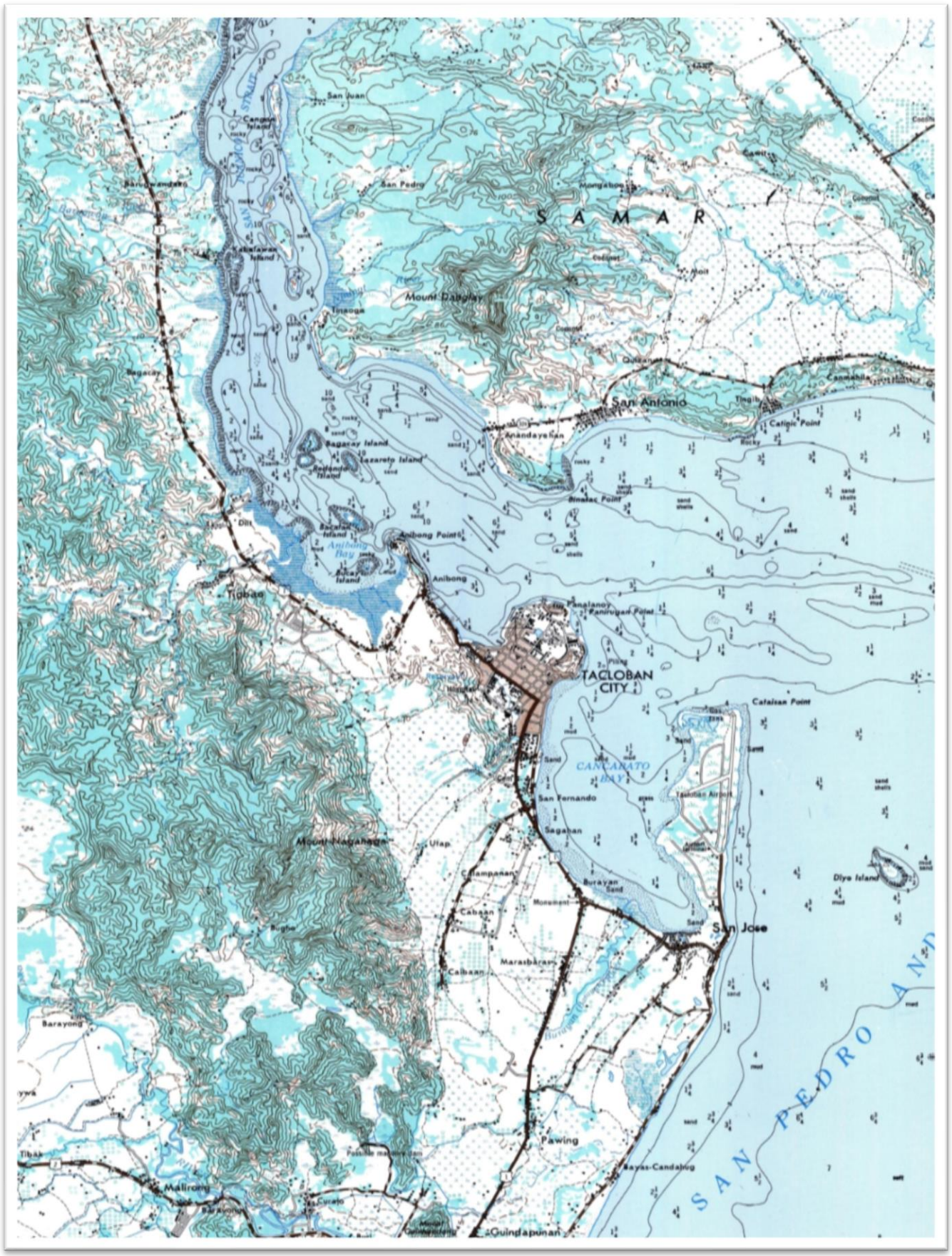
6.2 Tacloban City’s Geographic Realities

Tacloban’s location and physiographic characteristics make it vulnerable to different forms of natural hazards. The city is situated in the mid-section of the country’s Pacific side, a location that is susceptible to the direct and indirect effects of the roughly 20 typhoons that hit the country each year. It also lies in the portion of Leyte Gulf that tends to invite the strongest storm surges due to its funnel effect. About 42 of the city’s 138 barangays have lowlands and coastal areas that are prone to hazards like flooding and storm surges. Considering Tacloban City’s shallow bathymetry, the city is prone or susceptible to higher storm surges.

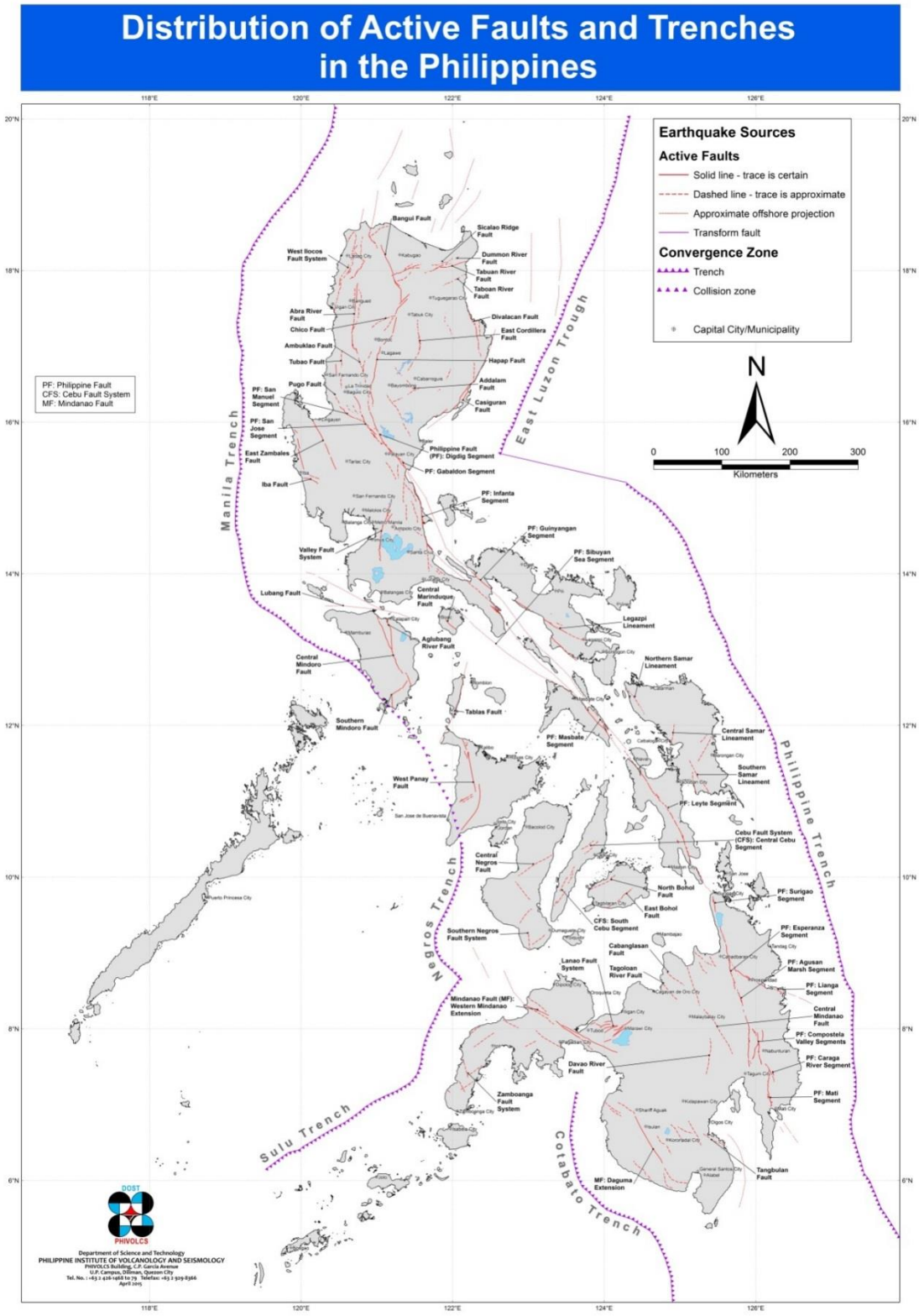
The city also lies 146.30 kilometers west of the Philippine Trench, a subduction zone capable of producing strong earthquakes that can affect Tacloban through liquefaction, earthquake-induced landslides in the mountainous areas and

intense ground shaking in the coasts that could reach up to Intensity VII (destructive) based on the Philippine Earthquake Intensity Scale. It is also capable of producing tsunamis of the same scale as the storm surge from Super Typhoon Yolanda, further increasing the city's risks from disasters.

Another earthquake generator in Philippine fault line Leyte segment which is 31.4 km. from the western boundary line of Tacloban City.



Map 87. Bathymetry Map



Map 88. Active Faults and Trenches in the Philippines

6.3 Climate Changes in Tacloban City

Climate in the city is classified by Tacloban PAGASA as falling between the boundary of Type II and Type IV which indicates that there is no dry season and no pronounced period for maximum rainfall which normally runs from July to December, but that rainfall is more or less evenly distributed throughout the year except on adverse periods where there is La Niña or El Niño.

6.3.1 Projected Changes in Temperature

The 2015 climate study that was conducted specifically for Tacloban City used the observed precipitation and temperature data as obtained from weather stations of PAGASA from 1971 to 2000.

The study projected that the temperature in Tacloban will increase in the period 2011-2040 by 1.8°C and in the period 2036-2065 (2050) by 2.9°C relative to the baseline period 1971–2000. See table below.

Figure 6. 1 Baseline and projected annual mean temperature in Tacloban (1970-2060).

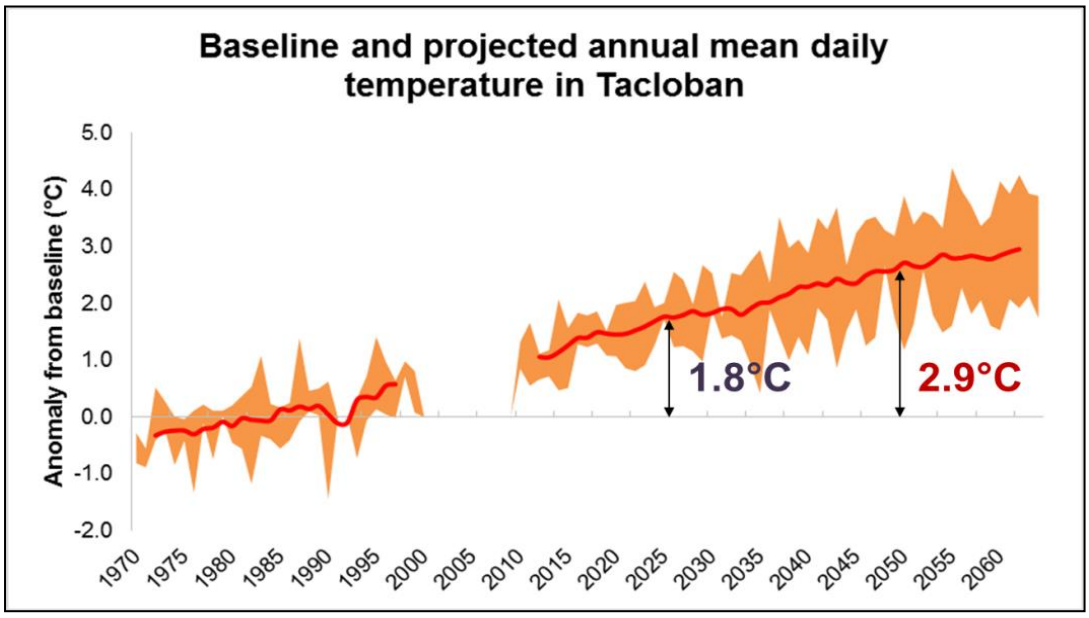
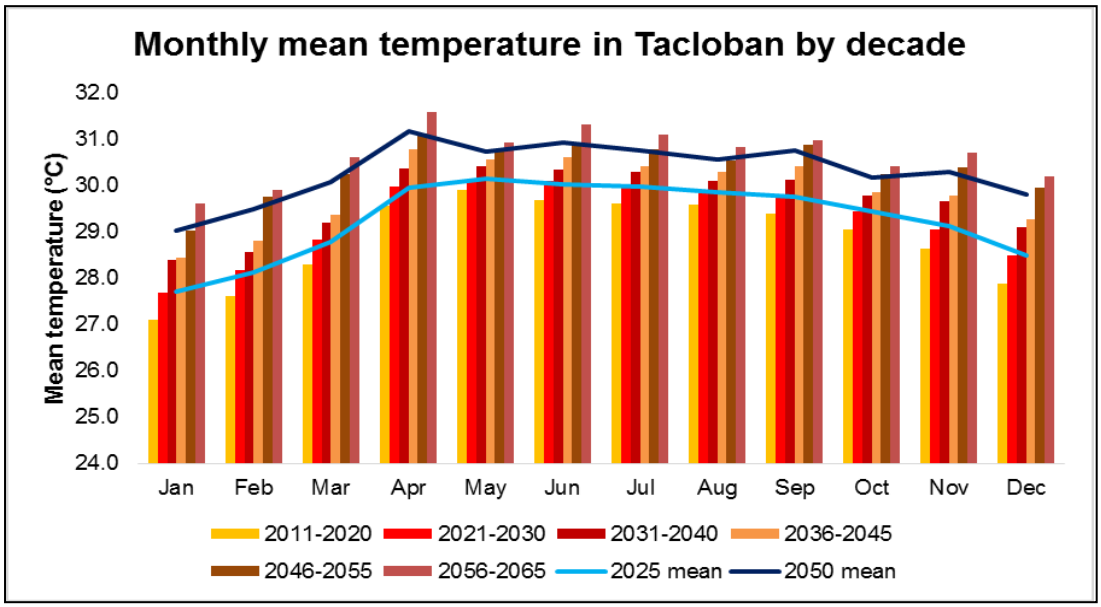


Figure 6. 3 Monthly mean temperature in Tacloban in 2011-2040 and 2036-2065



The mean values for the period 2011-2040 is referred to as 2025, while those for the period 2036-2065 is termed as 2050 mean.

6.3.2 Seasonal Mean Temperature

Based on the date provided by PAGASA, from January-December 2014 the average temperature of Tacloban City was 27.70 degrees centigrade. While in January-December 2015, the average temperature of Tacloban was 29.96 degrees centigrade. The year in review saw drier season which could be attributed to the El Niño phenomenon.

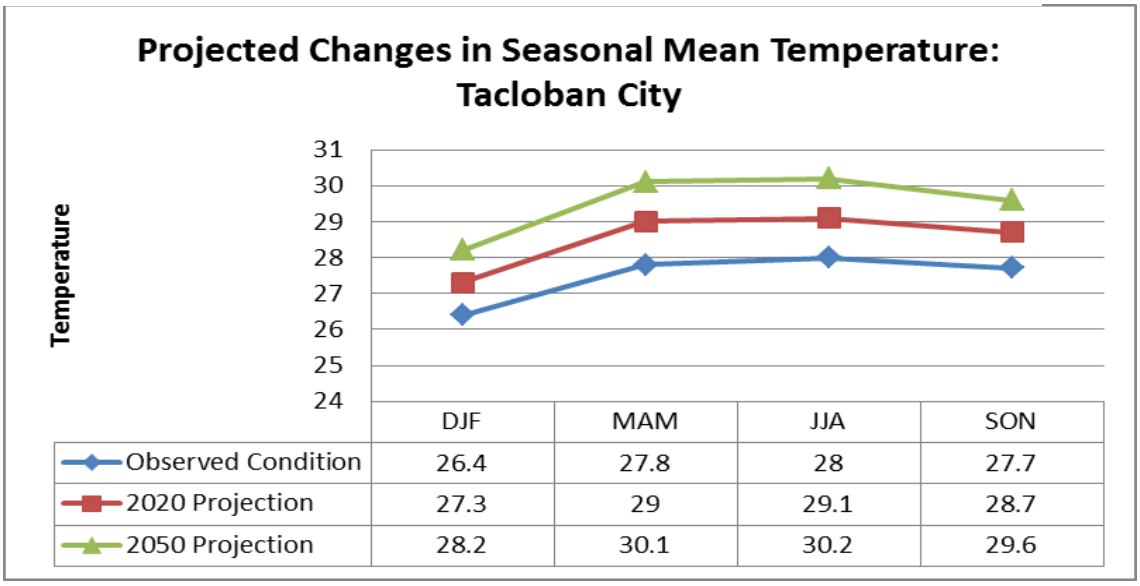
Climate projections of PAGASA reveal that the City will experience an increase in the average temperature between 0.9°C to 1.2°C in 2020 and 1.8°C to 2.3 °C in 2050. Days are becoming hotter as observed by many throughout the city. Projections on seasonal temperature change are presented in the table below.

Table 6.6 Seasonal Mean Temperature Projected Change, Tacloban City

Seasonal Mean Temperature projected change (in °C) in 2020 and 2050 under medium-range emission scenario
Tacloban City

SEASON	OBSERVED (°C)	PROJECTED CHANGE (°C)		PROJECTED MEAN TEMPERATURE(°C)	
	(1971-2000)	(2006-2035)	(2036-2065)	(2006-2035)	(2036-2065)
Dec-Jan-Feb (DJF)	26.4	0.9	1.8	27.3	28.2
Mar-Apr-May (MAM)	27.8	1.2	2.3	29.0	30.1
Jun-Jul-Aug (JJA)	28.0	1.1	2.2	29.1	30.2
Sep-Oct-Nov (SON)	27.7	1.0	1.9	28.7	29.6

Figure 6. 5 Projected Changes in Seasonal Mean Temperature
Tacloban City



6.4 Extreme Events

Tacloban City is experiencing an increasing trend of extreme events such as the episodes of El Nino and La Nina phenomenon. The frequency of these occurrences is a deterrent factor of Tacloban City's upswing development and a threat to its environmental state. There is this PAGASA projection that the number of days with maximum temperature greater than 35 °C will increase to 1398 days and 2495 days in 2020 and 2050, respectively. The current observation of dry days for the same time period has reached 6874 while the projected figure is 5199 days

in 2020 and is expected to increase to 5475 days in 2050. Further, the projected number of days that will pour a rainfall amounting to more than 150 mm will be 10 days in 2020 and 15 days in 2050. Projections on change in temperature and total frequency of extreme events are presented in the table below.

Table 6.6 Projections on Change in Temperature & Frequency of Extreme Events

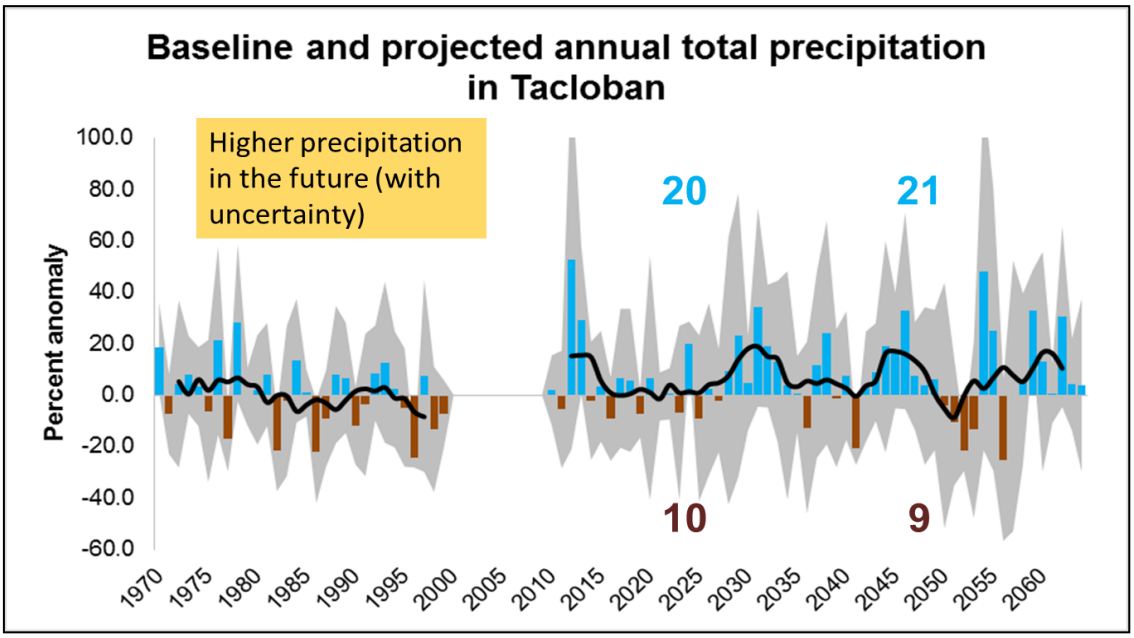
Station	No. of Days w/ Tmax>35 °C			No. of Dry Days			No. of Days w/ Rainfall >150mm		
	OBS (1971-2000)	2006-2035	2036-2065	OBS	2006-2035	2036-2065	OBS	2006-2035	2036-2065
Tacloban	52	1398	2495	6874	5199	5475	1	10	15

6.4.1 Projected Changes in Precipitation

Using the same 2015 Tacloban climate study, Tacloban City is also projected to experience an increase in precipitation by 2025 and 2050. In 2025, Tacloban will experience more drastic fluctuations in precipitation and will receive as much as 52.7% increase in annual total precipitation relative to the baseline mean and 12.7% decrease in rainfall during the first projection period of 2025. For the 2050 period, longer periods with relatively higher precipitation are projected to occur, with only nine years projected to have lower rainfall relative to the baseline mean.

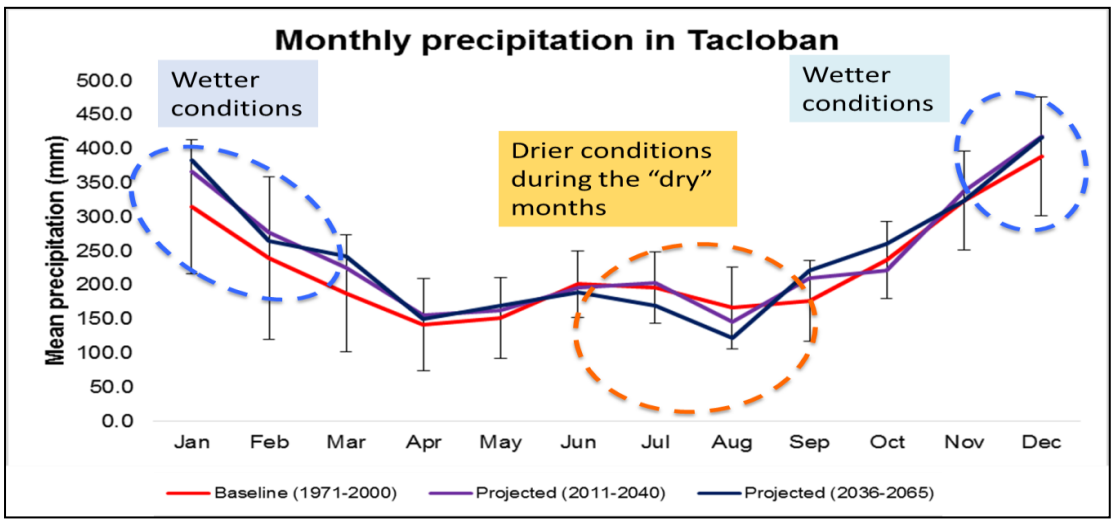
In terms of monthly precipitation as depicted in Figure 6.4, increases of 7.2% and 6.9% are projected to occur in 2025 and 2050. An increase in rainfall is projected for the dry months March to May and in the wet months December to February while an overall decrease in rainfall is projected between June to August.

Figure 6. 8 Tacloban City baseline and projected annual precipitation.



The monthly mean daily precipitation trends in Tacloban throughout the projection period shows that increases in decadal monthly precipitation in 2025 will generally occur from February to April. During the 2050 period, a decadal increase is projected from December to May, while a general decrease is projected from June to August (Figure 6.5).

Figure 6. 11 Monthly total precipitation in Tacloban for the baseline (1971-2000) and projected (2011-2040; 2036-2065) periods.



6.4.2 Comparative Mean Monthly Rainfall

Based on the date provided by PAGASA, from January-December 2014 the average monthly rainfall of Tacloban City was 286.11 mm. While in January-December 2015, the average monthly rainfall of Tacloban was 188.98 mm. The year in review saw less rainfall as compared to the previous year which could be attributed to the El Niño phenomenon.

6.4.3 Seasonal Rainfall Change

Projections on seasonal rainfall changes in Tacloban City using the mid-range scenario are presented in the table below. Generally, there is a reduction in rainfall volume in the City during summer (MAM) season while a rainfall increase is likely during northeast monsoon (DJF) and (SON) season.

Table 6.7 Seasonal Rainfall Change, Tacloban City

Seasonal rainfall change (in %) in 2020 and 2050 under medium-range emission scenario Tacloban City

SEASON	OBSERVED (mm)	PROJECTED CHANGE (%)		PROJECTED RR AMOUNT(mm)	
	(1971-2000)	(2006-2035)	(2036-2065)	(2006-2035)	(2036-2065)
Dec-Jan-Feb (DJF)	689.5	3	9.4	710.185	754.3
Mar-Apr-May (MAM)	342	-8.9	-18.9	311.562	277.4
Jun-Jul-Aug (JJA)	568.7	9.5	19.6	622.7265	680.2
Sep-Oct-Nov (SON)	725.5	7.4	19.5	779.187	867.0

The projections for average monthly rainfall volume are highest during the months of June to October as shown in the figure below. These can be associated with the southwest monsoon, locally known as “Habagat”, which is characterized by strong southwest breeze that is responsible for bringing significant rainfall in the Philippines. It is a predominant weather pattern from late May through early October.

Figure 6. 13 Seasonal Rainfall Change

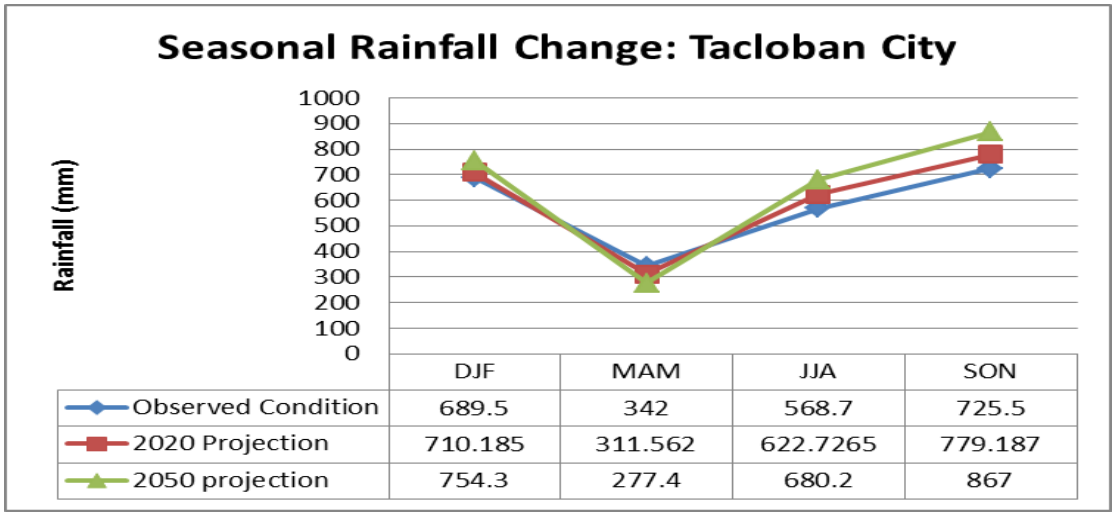


Table 6.8 Summary of Projected Climate Changes, Tacloban City

Climate Variable	General Changes Expected in Climate Variables	Specific Change Expected and Reference Period	Information about patterns of change
Climate Variable	***General Changes Expected in Climate Variables***	***Specific Expected Changes and Reference Periods***	***Information about Patterns of Change***
Temperature	*Increase*	*The mean daily temperature in Tacloban City will increase by* • *1.4 - 2.4°C in 2025,* • *1.5-4.0°C in 2050.* *Increase in projected annual mean temperature by:* • *1.8°C in 2011-2040* • *2.9°C in 2036-2065*	*Highest increase of temperature will be observed from December to February from 2011 to 2040 with an increase of more than 1°C.*
Precipitation *Extreme events*	*Seasonal increase/ decrease*	*Increase in monthly total precipitation by* • *7.2% in 2025* • *6.9% in 2050* *52.7% increase in annual total precipitation relative to the baseline mean* *12.7% decrease in rainfall in 2025* *Longer periods with relatively higher precipitation in 2050*	*An increase in rainfall is projected during the dry months of March and May and in the wet months of December and January. A decrease in rainfall is projected between June to August.* *The "wet" months become wetter at a higher rate than the "dry" months.* *Increase in decadal monthly precipitation in 2025 will occur from February to April.* *Increase in decadal monthly precipitation in 2050 from*

Climate Variable	General Changes Expected in Climate Variables	Specific Change Expected and Reference Period	Information about patterns of change
			December to May and general decrease from June to August
	An increase in the frequency of days with intense rainfall (>160 mm/day) is projected.		

The Tacloban climate study concluded that the projected climate simulations in Tacloban City using the downscaled Global Climate Models under the moderate RCP4.5 scenario of IPCC determined that total precipitation will increase in the city by 2025 and 2050. The mean daily temperatures will increase in the periods 2025 and 2050. Monthly trends indicate long-term shifts in climate, with impacts such as increased precipitation in historically dry months and relatively higher increments in mean temperatures during historically cooler months becoming common in the future.

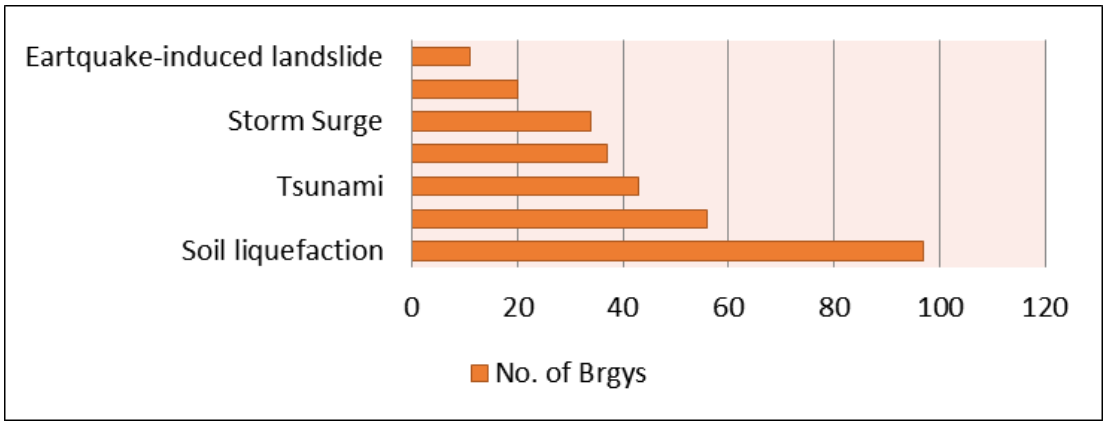
In 2011, DOST-PAGASA published “Climate Change in the Philippines” as a reference for long term spatial planning and medium term multi-sectoral planning of local government units. The changes in climate for 2020 and 2050 were projected using the mid-range emission scenario (A1B) developed by the Intergovernmental Panel on Climate Change (IPCC). The A1 scenarios considered rapid economic growth, global population that rose to 9 billion then gradually declines quick spread of new and efficient technologies, and extensive social and cultural interactions worldwide. The A1B has a balanced emphasis on all energy sources both fossil and non-fossil fuels. Based on the climate projections, Tacloban City will be affected by 3 major climate change drivers: increasing temperature, changes in rainfall in various seasons, and increasing occurrences of extreme events in 2020 and 2050.

Table 6.5 shows almost all (131 out of 138) barangays in Tacloban City are exposed to various hazards, including but not limited to: (a) Earthquake-induced Landslide; (b) Rain-induced Landslide; (c) Flooding; (d) Ground Shaking; (e) Storm Surge; (f) Liquefaction; and (g) Tsunami. The figure below illustrates that most of

the barangays in Tacloban City are susceptible to soil liquefaction, flooding and tsunami.

While barangays differ in risks to hazards, all 138 barangays of the City are susceptible to typhoons.

Figure 6. 14 Summary of Susceptibility of Barangays per Identified Hazards



Barangays in the northern portion of the city are most prone to rain induced landsides while flood hazard is mostly contained in the city proper and in low lying barangays. The San Jose District which is composed of several barangays is most likely to be affected by storm surge hazard together with the rest of the barangays along the Cancabato Bay, San Pedro and Anibong Bays as they are the most vulnerable barangays along the sea coast (Draft CLUP of Tacloban City).

The table below indicates the vulnerabilities of the barangays in Tacloban City with its corresponding percentage of risk. The high risk ranking was based on the result of Tacloban City's Climate Change Disaster Risk Assessment (CDRA) in 2015, an activity undertaken by the city government of Tacloban and UN Habitat.

Table 6.9 Barangay Vulnerability/Hazard Matrix, Tacloban City

Brgy.	Flooding		Rain-Induced Landslide		Earthquake Induced Landslide		Ground Shaking		Liquefaction		Fault Line		Storm Surge		Tsunami	
	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul	%
1&4							√	100	√	80			√	100		95
2	√	50					√	100	√	100			√	84		100
3			√	100			√	100								
5	√	100					√	100	√	100			√	100		100
5-A	√	100					√	100	√	100			√	100		100
6	√	50					√	100	√	100						95
6-A	√	80					√	100	√	100						100
7							√	100	√	100			√	100		100
8	√	50					√	100	√	100			√	100		100
8-A	√	50					√	100	√	100			√	100		100
12	√	5	√	15			√	100	√	100						
13							√	100	√	100			√	100		100
14							√	100	√	100			√	100		100
15							√	100	√	100			√	100		100
16							√	100	√	100			√	100		100
17							√	100	√	100			√	100		100
18							√	100	√	100			√	100		100
19							√	100	√	100			√	100		100
20							√	100	√	100			√	100		100
21							√	100	√	100			√	100		100
21-A							√	100	√	100			√	100		100
22							√	100	√	100			√	100		100
23							√	100	√	100			√	100		100
23-A							√	100	√	100			√	100		100
24							√	100	√	100			√	100		100
25	√	23					√	100	√	27			√	50		50
26							√	100	√	100			√	100		100
27							√	100	√	100			√	100		100
28							√	100	√	100			√	100		100
29							√	100	√	100			√	100		100
30							√	100	√	100			√	100		100
31							√	100	√	100			√	100		100
32							√	100	√	100			√	100		100
33							√	100	√	100			√	100		100
34							√	100	√	100			√	100		100
35							√	100	√	100			√	100		100
35-A							√	100	√	100			√	100		100
36							√	100	√	8			√	90		90
36-A	√	40					√	100	√	100						
37	√	30					√	100					√	100		100
37-A	√	5					√	100								
38							√	100	√	70			√	50		
39							√	100	√	10						50
40							√	100	√	100			√	100		10
41							√	100	√	100			√	73		100
42	√	100					√	100	√	95			√	25		73
42-A	√	12					√	100	√	5						25
43							√	100	√	95			√	43		20
43-A							√	100	√	21						43
43-B	√	25					√	100	√	34						75
44	√	100					√	100	√	100			√	19		20
44-A							√	100	√	100			√	60		19
45	√	40					√	100	√	100			√	90		60
46							√	100	√	100			√	100		90
47							√	100	√	100			√	100		100
48							√	100	√	100			√	100		100

Brgy.	Flooding		Rain-Induced Landslide		Earthquake Induced Landslide		Ground Shaking		Liquefaction		Fault Line		Storm Surge		Tsunami	
	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul	%
48-A							√	100	√	100			√	100		100
48-B							√	100	√	100			√	100		100
49	√	40					√	100	√	80			√	25		100
50							√	100	√	100			√	100		25
50-A							√	100					√	5		100
50-B							√	100	√	100			√	90		5
51							√	100	√	100			√	100		90
52							√	100	√	100			√	100		100
53							√	100	√	80			√	100		100
54							√	100	√	100			√	90		100
54-A							√	100	√	100			√	100		90
55 & 55-A							√	100	√	10			√	5		100
56							√	100	√	100			√	60		5
56-A							√	100	√	100			√	100		60
57							√	100	√	70						100
58	√	5					√	100	√	100			√	95		20
59							√	100	√	100						95
59-A							√	100	√	100						40
59-B							√	100	√	100						30
60	√	9					√	100	√	100			√	55		45
60-A							√	100	√	100			√	80		55
61							√	100	√	50			√	100		80
62							√	100	√	100						100
62-A	√	70					√	100	√	100						100
62-B	√	70					√	100	√	100						100
63							√	100	√	100			√	67		100
64							√	100	√	100						67
65							√	100	√	30			√	30		100
66							√	100	√	10			√	30		70
66-A							√	100	√	30			√	30		45
67							√	100	√	45			√	30		50
68							√	100	√	60			√	69		45
69							√	100	√	90			√	70		80
70							√	100	√	60			√	100		80
71	√	40	√	40			√	100	√	80			√	20		100
72	√	13					√	100	√	100			√	20		95
73			√	80			√	100	√	75						50
74			√	50	√	3	√	100	√	52			√	30		10
75							√	100	√	100			√	100		55
76	√	40					√	100	√	100			√	100		100
77	√	14					√	100	√	100			√	80		100
78	√	15					√	100	√	100						80
79							√	100	√	100			√	10		100
80	√	5					√	100	√	100						10
81	√	30					√	100	√	100						100
82	√	40					√	100	√	100						100
83	√	20					√	100	√	100			√	100		100
83-A	√	15					√	100	√	100			√	100		100
83-B	√	7					√	100	√	100			√	50		100
83-C	√	20					√	100	√	100			√	100		50
84	√	15					√	100	√	100			√	75		100
85							√	100	√	100			√	100		75
86	√	40					√	100	√	100			√	100		100
87	√	7					√	100	√	100			√	100		100
88	√	12					√	100	√	100			√	100		100
89	√	35					√	100	√	100				100		100
90	√	30					√	100	√	100			√	100		100
91	√	40	√	70	√	17	√	100	√	30						100

Brgy.	Flooding		Rain-Induced Landslide		Earthquake Induced Landslide		Ground Shaking		Liquefaction		Fault Line		Storm Surge		Tsunami	
	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul.	%	Vul	%
92	√	30			√	1	√	100	√	50						10
93					√	1	√	100	√	15			√	7		10
94	√	12	√	30		1	√	100	√	50			√	20		22
94-A	√	33	√	40			√	100	√							50
95	√	9				45	√	100	√	60						5
95-A	√	20				78	√	100	√	40						10
96							√	100	√	100			√	3		10
97							√	100					√	5		55
98	√	3			√	10	√	100								30
99							√	100					√	15		
100							√	100	√	20						70
101							√	100					√	5		
102							√	100								15
103			√	20			√	100								10
103-A					√	11	√	100								20
104			√	55	√	8	√	100								
105						6	√	100	√	20			√	8		
106							√	100	√	10			√	4		8
107					√	6	√	100								10
108					√	8	√	100	√	30						
109	√	7					√	100	√	100						45
109-A	√	10					√	100	√	100						55
110	√	20	√	50	√	9	√	100	√	40						95

This was develop per barangay per map, result of CDRA.

Multi-Hazard Assessment Matrix by Barangay

1-2	3-4	5- 7
2 Hazards 48-A, 51-A, 54-A, 59-B, 62-A, 62-B, 101, 5, 8, 14, 15, 17, 23, 26, 27, 28, 29, 30, 33, 34, 35, 45, 46, 47, 48, 50, 50-A 52, 55 – 55-A, 57, 62, 64, 65, 73, 81, 109 **1 Hazard** 7, 18, 19, 20, 21-A, 22, 24, 50-B, 23-A	**4 Hazards** 2, 1&4, 6-A, 25, 31, 32, 36, 38, 39, 44, 49, 60-A, 66, 66-A, 69, 70, 71, 72, 76, 77, 85, 87 92, 36-A, 83-C, 95-A, 102, 106, 107, 94-A **3 Hazards** 8-A, 100, 103, 103-A, 108, 12, 37-A, 3, 6, 13, 16, 35-A, 44-A, 51, 53, 54, 56, 58, 59, 60, 75, 61, 78, 79, 80, 82, 83, 96, 109-A, 110, 5-A, 42-A, 48-B, 56-A, 59-A, 83-B	**7 Hazards** 94, 97 **6 Hazards** 67, 68, 74, 105, 93, 99 **5 Hazards** 83-A, 84, 86, 88, 89, 90, 91, 95, 104, 98, 63

Adaptation/ Mitigation Measures:

There are two ways to respond to climate change impacts.

1. **Climate Change Adaptation** – refers to adjustments in ecological, social, economic system in response to the effect or impact of an actual or expected stimuli and it can also mean as changes in process, practices and structural to lessen or to avoid potential damages or it can also defined as to benefit from opportunities associated with climate change.

2. **Climate Change Mitigation** – is the human intervention aimed of reducing the sources of green gases or enhancing the sink of Green House Gases.

    - **Sink** – is the process activity or mechanism which removes of Green Gas from the atmosphere.

6.5 Protection and Buffer Areas

6.5.1 Coastal Areas

Hazards such as floods and storm surges come from overflowing rivers and surging coasts. The existing buffer zones of Tacloban City consist of river easements, shoreline legal easements and mangrove forest. The city declared these buffers as non-buildable and non-alienable. However, the southern coastal easements were occupied by informal settlements, private and commercial establishments. The central coastlines are occupied by a depot and port area. Initial efforts were made to relocate coastal informal settlers to two barangays in Eastern Tacloban, however, this is not enough and more people must be relocated.

The coastal zones were worst hit by Typhoon Haiyan. The storm surge and strong winds brought by the super typhoon destroyed coastal and inland houses and other structures made of permanent and lightweight materials. Six ships docked along the coast were carried by the surge and destroyed houses and establishments along its way. Insufficiency of protection and the occupancy of the buffer zone increased the exposure of the coastal areas and risk to the effects of storm surges, typhoons and earthquakes.

6.5.2 Delineating the Buffer Zone and Danger Areas

The Water Code of the Philippines (PD 1067) mandates that there should be a 3-meter easement in urban areas, 20-meter in agricultural areas and 40-meter in forest land. Due to recent events, the President ordered the adaptation of the 40m easement to keep coastal areas safe. The Sangguniang Panlungsod of Tacloban City approved an ordinance situating the 40-meter zone as "Non-Dwelling Zones" to prevent people from returning to the area and rebuilding their homes on these zones.

This would mean that the areas cannot be used for private dwelling structures and shall be classified as non-alienable.

Tacloban City prepared multi-hazard maps together with DENR-MGB and DOST showing multiple risks that may affect the city. The delineation of these areas should be coordinated with the social sector (residential and social services) as well as the economic sector but more specifically with the Legislative Body of the City Government of Tacloban and the City Planning Office for regulation.

6.5.3 Finding the appropriate coastal protection measure

Aside from clearing the buffer zone, adaptation measures have to be applied to minimize the exposure of the city to hazards coming from the ocean such as strong winds, storm surge and even the creeping effects of sea-level rise. There is a need to re-establish vegetation and appropriate engineering measures subject to recommendations by technical experts.

6.6 Waste Management

The City Council enacted Ordinance No. 2004-9-09 otherwise known as Tacloban City Solid Waste Management Board Ordinance. This board was created to develop and implement a solid waste management program consistent with the Environmental Protection Programs of the City. The Chief Executive sits as the Chairman of the Board while the City ENRO Officer is the Vice-Chairman. A representative from the City Council also sits as member of the board.

It is projected that by 2021, Tacloban City will generate 176.89 tons per day. This is a challenge for Tacloban City as a new Highly Urbanized City in terms of an effective and efficient disposal system in compliance with RA 9003 and rationalize the integration of its solid waste management in its development agenda.

Institutional Arrangements

The following are the general functions and programs of City Government Offices undertaking the task of addressing related solid waste management issues of the city in the same time that the Environmental Code of Tacloban City has mandated the City Government to implement the following functions with the Chief Executive as the Head for operations.

1. To promote the practice of waste segregation and waste minimization at source.
2. To assist barangay councils in the preparation of a multiyear SWM program, including information, education and communication materials;
3. To facilitate establishment of supportive linkages between barangay and other government and private sector organizations;
4. To assist barangays that may decide to group themselves, consolidate or coordinate their efforts, services and resources for the purpose of establishing a common SWM system or facilities;
5. In coordination with the City Waste Management Board, City ENRO, City GSO, City CEO, DENR, NGO's, and the Liga Ng Mga Barangay, facilitate the establishment of a model barangay unit that demonstrates an effective and efficient SWM system,;
6. To train city personnel to provide technical assistance services, particularly in SWM and EIA (Environmental Impact Assessment) to the City Government; and
7. To install an operational monitoring system to ensure sustainability of SWM Program.

LGU Barangays

The role of the different barangays as mandated by the Local Government Code is crucial in the implementation of the solid waste management plan. The barangays, as articulated in RA 9003 are the key players for the successful implementation of segregation and waste reduction programs for the city. The creation of the Barangay Solid Waste Management Committees will streamline and facilitate the different implementation strategies in solid waste management of Tacloban City.

Other Offices

The following offices will support the initiatives through judicial, logistical, technical and other related assistance deemed necessary in implementing solid waste management initiatives:

City General Services, Sangguniang Panlungsod, City Engineers Office, City Planning and Development Office, City Assessor's Office, City Health Office, City Veterinary Office, City Division Office City Interior and Local Government and the Barangays.

6.6.1 Solid Waste

Tacloban City's waste management is under the City Environment and Natural Resources Office (C ENRO). Measures on proper waste disposal and management at the Barangay level and business sector are strictly implemented other than the regular information dissemination on proper waste management through the media and other forms of information materials and venue. On the other hand, industrial waste is treated differently as it entails specific handling and disposal.

Table 6.10 Key Characteristics of Generated Solid Waste, Tacloban City

PER CAPITA GENERATION	0.38 KG/DAY
Average Daily Generation	150 tons/day
Average Bulk Density	619.84 kg/cu meter

Source: City ENRO, Tacloban City

6.6.2 Contributors to Garbage Volume

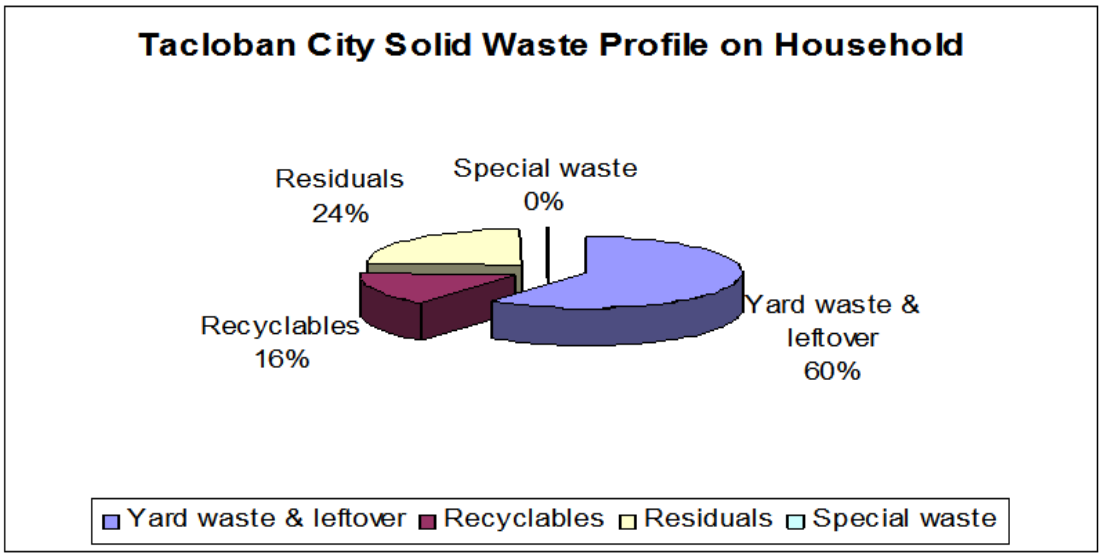
The characterization study revealed categories of waste and its respective volume generated. The following tables and figures show insights of the study. These data are useful in estimating potential waste that can be diverted from the waste stream flow. It can be perceived from the data that a large percentage of generated wastes are biodegradable which can be potentially diverted from the main waste stream thus saving landfill space.

Table 6.11 Household Waste Characteristics, Tacloban City

WASTE COMPONENT, HOUSEHOLD	AVERAGE WT. (KG/CAPITA/DAY)	PERCENTAGE (%)
Yard waste & leftover	0.2290	
Recyclables	0.0594	15.6
Residuals	0.0915	24.0
Special waste	0.0008	0.2
Total	**0.3807**	**100**

Source: City ENR Office

Figure 6. 15 Tacloban City Solid Waste Profile on Household



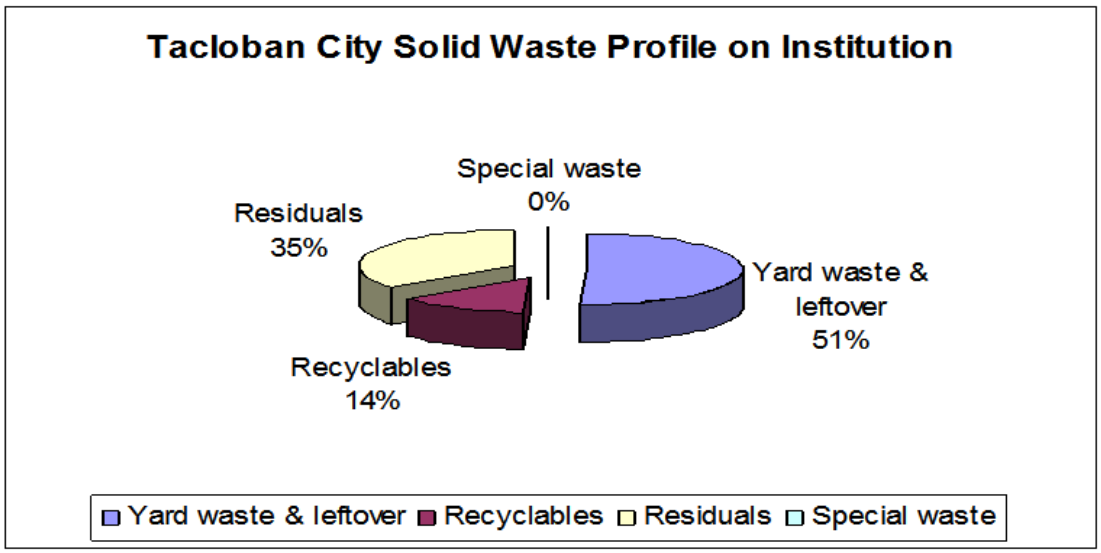
Source: City ENRO, CPDO

Table 6.12 Institutional Waste Characteristics, Tacloban City

WASTE COMPONENT, INSTITUTION	AVERAGE WT. (KG/CAPITA/DAY)	PERCENTAGE (%)
Yard waste & leftover	0.0206	50.7
Recyclables	0.0057	13.9
Residuals	0.0143	35.2
Special waste	0.0000296	0.07
Total	**0.04**	**100**

Source: City ENRO

Figure 6. 16 Tacloban City Solid Waste Profile on Institution

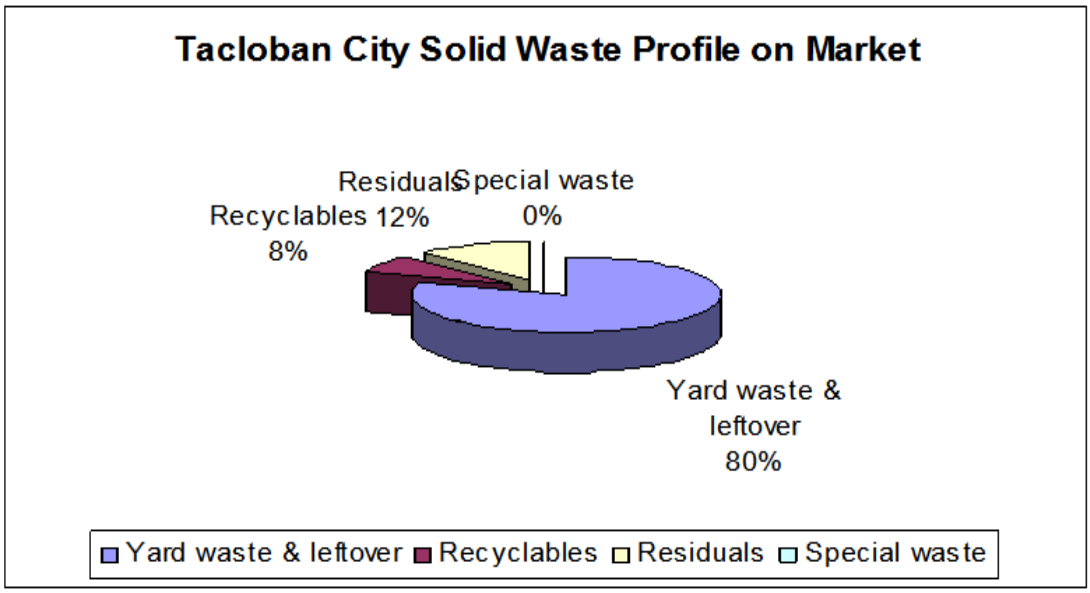


Source: City ENRO, CPDO

Table 6.13 Public Market Waste Characteristics, Tacloban City

WASTE COMPONENT, PUBLIC MARKET	WASTE GENERATED IN TACLOBAN MARKET	PERCENTAGE (%)
Yard waste & leftover	(ton/day)	80.1
Recyclables	0.86	7.7
Residuals	1.35	12.1
Special waste	0.01	0.1
Total	**11.2**	**100**

Figure 6. 17 Tacloban City Solid Waste Profile on Market



Source: City ENRO

6.6.3 Generated Waste

The rapid urbanization of Tacloban City allows SW managers to identify level of pressures on solid waste generation, collection and disposal. It provides a good estimate on how the volume of waste can change over time, a good indicator for appropriate response mechanism of the City Government. It was observed how the volume of waste changes over time. Commercial and industrial waste generation and collection are based on General Services Office record. An increase of 3% is assumed including wastes derived from street sweeping, debris and others. The initial data from waste characterization conducted by City EnRO show per capita waste generation of 0.4 kg/ca/day. However, 0.5 is used as a

safe figure for future projection. Estimated collection rate is around 70%. The remaining 30% is either uncollected, recycled or composted at household level.

Table 6.10 shows the projected solid waste generation of Tacloban City until the year 2021.

Table 6.14 Projected Solid Waste Generation, 2007-2021, Tacloban City

YEAR	POPULATION	DOMESTIC WASTE (IN TONS)	COMMERCIAL, INDUSTRIAL, INSTITUTIONAL (IN TONS)	STREET SWEEPING (IN TONS)	OTHER SOURCE-PRIVATE & LGUS (IN TONS)	TOTAL WASTE (IN TONS)	WASTE COLLECTED (IN TONS)
2016	276,779	125.55	84.50	10.82	6.75	220.86	154.60
2017	284,335	128.98	86.81	11.11	6.94	226.89	158.82
2018	292,098	132.50	89.18	11.42	7.13	233.08	163.16
2019	300,072	136.11	91.61	11.73	7.32	239.44	167.61
2020	308,264	139.83	94.11	12.05	7.52	245.98	172.19
2021	316,679	143.65	96.68	12.38	7.73	252.70	176.89

6.6.4 Source Reduction

At present, observations and monitoring conducted by the City ENRO and the City General Services of Tacloban residents, including business establishments in the city, do not practice segregation of their wastes. However, some residents have their own means of reducing waste by recovering mostly metals and plastic products for personal economic purposes, a minuscule percentage if considered as waste segregation.

6.7 Water Pollution

6.7.1 Coastal Water Pollution

The southern coasts/bays of the city are polluted because of solid and liquid wastes disposed by establishments and informal settlements occupying the city's shorelines. Grease and pollution along the coastline within the depot and port areas are also contributory to this problem. Generally, most of the coastal water pollution come from the rivers and other water tributaries in the city being used as outfalls while its embankments are occupied by informal settlers where most often, they dump their household waste into these rivers.

To minimize water pollution, measures should be taken such as the ***establishment of sewage system, septage treatment plant*** and strict implementation of the Clean Water Act and regulatory laws/ordinances on structures along no dwelling zone areas and dredging of rivers. Other measures are likewise being considered such as information dissemination and public awareness on the adverse effects of water pollution,

6.7.2 Water Source

Tacloban City's main source of water supply is from the Leyte Metropolitan Water District (LMWD), which is the sole water utility provider of the city. Unfortunately, the water supply is not sufficient because there are areas where water supply is limited, with a specific time for distribution. Moreover, water supply does not reach the north area of Tacloban City as there are no water pipelines to the north. This has been a perennial problem of the city where other households resort to open or driven deep wells.

This major problem of the city has been a real concern for the city government. Only 40 percent of the city specifically its southern portion is being served by the water provider. Another problem is that the water district's non-revenue water is high, thus causing high water fees and at the same reducing the supply of water to the constituents.

These pre-existing issues were aggravated by the damages incurred after Yolanda. Expansion of water service is now needed especially in the northern part of the city where resettlement sites will be located. The city government sees that there are opportunities to expand water distribution and designing a whole new water system in unserved and underserved areas of the city.

Likewise, climate change has been a factor in the dwindling of water supply as temperature steadily tend to rise due to the El Niño phenomenon and water sources recede.

6.8 Possible Impacts of Climate Change in Tacloban City

On November 8, 2013, Super Typhoon Yolanda (International Name: Haiyan) struck the Philippines with maximum wind speed of 378 km/h and storm surges of over four (4) meters. Among the regions affected, Eastern Visayas (Region VIII) suffered the greatest damage, accounting for twenty-six (26) percent of the entire number of all affected persons/families and forty-four (44) percent of all damaged houses. The total damage in Region VIII is estimated at P69 Billion Pesos.

Tacloban, the regional hub of Region VIII and the 5th fastest growing city in the country, suffered the greatest damage to housing and settlements among all cities/ municipalities in the country with30,513 totally damaged and 23,718 partially damaged houses, accounting for five (5) percent of the total damaged houses at the national level. The total damages for Tacloban is estimated at about P7 billion, with P2.5 billion for infrastructure, P726 million for productive sectors, P3.4 billion for the social sector, and P361 million for other cross cutting sectors.

It is a known fact that climate change can increase the frequency and severity of climate and weather hazard events such as Typhoon Yolanda and gradual changes in climate parameters such as sea level rise, changes in mean temperature and changes in rainfall precipitation can increase geophysical and ecological disaster impacts.

6.8.1 Impact Analysis

While Typhoon Yolanda left a remarkable dent on the ecology of the City, there are also other identified hazards affecting the city. A summary of existing hazards in Tacloban are then listed below:

Summary of Impact Chain Analysis

SYSTEM	CLIMATE STIMULI & HAZARDS	MAJOR IMPACTS & AFFECTED AREAS	
		With historical reference (based on records of past disasters)	With likelihood of occurrence (based on climate projections)
Coastal and Marine	Hydromet Increased Temperature Sea level rise	Storm surges and tsunami already flood low-lying areas, damage properties along the coast, disrupt transportation systems,	With the projected rise in average temperature, the increase in the intensity of storm surge and heavy precipitation is likely to happen. Sea

SYSTEM	CLIMATE STIMULI & HAZARDS	MAJOR IMPACTS & AFFECTED AREAS	
		With historical reference (based on records of past disasters)	With likelihood of occurrence (based on climate projections)
	Changes in the frequency and intensity of storms Increase in precipitation Warmer ocean temperatures Increased rainfall volume during rainy seasons Storm Surge Typhoon Geologic Earthquake Tsunami Soil Liquefaction Ground Shaking	destroy habitat, and threaten human health and safety. Damage to life and properties in 44 coastal barangays has been observed due to flooding and/or coastal inundation. Intrusion of Sea Water that was observed in Brgy. Tagpuro is attributed to storm surge. The inhabitants have taken to expand beyond the shoreline, but still others continue to reside in coastal areas prone to storm surges. Storm Surges and typhoons lead to siltation of rivers in Coastal Brgys, Displacement of families, and disruptions of livelihoods. The increase in sea surface temperature results in degradation of marine and aquatic resources including coral reefs and other marine habitats that further leads to decline in fish production and reduced income of fisher folks. Rise in the average temperature increases storm intensities and causes heavier rainfall, thereby increasing the terrestrial runoff that supplies the nutrients that feed algae blooms. Algal blooms have been observed in Cancabato Bay Area. Earthquake leads to ground shaking that triggers the increase in water pressure on saturated soils of the coastal areas and causes the loss of strength and stiffness (soil liquefaction), which results to Delineation of Concrete Structures/Roads. Earthquake in coastal areas also often leads to tsunami which destroys properties, threatens human security and damages to natural vegetation along the river system and causes biodiversity	level rise could magnify the impacts of storms by raising the water level that storm surges affect. Rising sea levels could also increase the salinity of ground water. Aggravated by possible incidences of drought, salt water intrusion will reduce fresh water supply and cause contamination and disruption of access to safe and potable water. Rising sea level can also harm important coastal ecosystems like mangrove forests and coral reefs. Sea Level Disturbance in the coast due to Coastal Erosion may also lead to reduced land area, property loss, reduced revenue from the tourism industry and damaged industrial sites and may lead to decline in economy. Higher sea surface temperatures and ocean acidification would increase the risks of coral bleaching events that can lead to loss of critical habitat. Often biological diversity is reduced as natural species will migrate, making the reef even less resilient to future environmental changes. Coral reefs are likely to have less live coral cover and lower biodiversity as a result of increases in the frequency and severity of mass bleaching events. Reduced coral cover and degraded community structures are expected to reduce the viability of coral reefs as habitat for many species, translating to reduced fishery catches, loss in biodiversity economic losses to the tourism industry. Danger to ISFs encroaching the river banks and potential submergence of low-lying settlement areas Increase in the number of severely affected families and possible fatalities and injuries from stronger typhoons, storm surges and tsunami. Maximizing the heat, there is a possible expansion of alternative livelihoods (i.e. dried fish business)

SYSTEM	CLIMATE STIMULI & HAZARDS	MAJOR IMPACTS & AFFECTED AREAS	
		With historical reference (based on records of past disasters)	With likelihood of occurrence (based on climate projections)
		loss in coastal and marine ecosystem. Loss of coastal wetlands and other coastal habitats such as mangroves Reduction in production output/yield that has significantly affected the local economy Increased erosion or damage to coastal infrastructure, beaches, and other natural features Increased costs for maintenance and expansion of coastal erosion/flooding control (natural or manmade) Saltwater intrusion into coastal aquifers Reduction in service capacity or significant disruption to the delivery of basic social services (health, education, and governance) Major disruption in access and distribution systems (road, ports, and water distribution networks)	
Forest/ Upland	Hydromet Increased Temperature Drought Increased rainfall volume during rainy seasons Typhoon Rain-induced Landslides Geologic Earthquake -Ground shaking Earthquake-induced landslide/ rockslide	Heavy rainfall increases the risk to surface / terrestrial run-off resulting in soil erosion and river siltation. Siltation is also being aggravated by destructive mining methods and inappropriate farming practices in agricultural areas (excessive soil cultivation). Displacement of Upland dwellers & IPs due to earthquake and landslides Loss of habitats affect biodiversity such as wetland areas, mangroves, and corals. Decrease in precipitation during summer season could also affect the growth of the trees and other plants within the forest	Increase in mean temperature could increase the risk of forest fires in the upland ecosystems. Changing timber supply will affect the market prices, generally lowering prices. It will also impact supply for other uses, e.g., enhancing the potential of using various types of wood biomass energy. More trees equate to more oxygen and water and less carbon dioxide and greenhouse gases. Groundwater depletion during drought threatens water security. Salt water intrusion leads to contamination and disruption of potable water and further results to reduced fresh water supply.

SYSTEM	CLIMATE STIMULI & HAZARDS	MAJOR IMPACTS & AFFECTED AREAS	
		With historical reference (based on records of past disasters)	With likelihood of occurrence (based on climate projections)
			The decrease in forest cover due to landslides and extreme events will also reduce the supply of fresh water. The projected increase in intensity in temperature and decrease in precipitation could lead to forest disturbances such as insect outbreaks, invasive species, forest fires, and typhoons. These disturbances can reduce forest productivity which can bring massive loss to commercial forestry.
Urban	Hydro-meteorological Storm Surge Flooding Typhoon Tsunami	The storm surge resulted in 28,734 totally damaged and 17,643 partially damaged residential units Of the total number of totally damaged houses, 10,000 belong to the urban poor All hospitals (two government and five private hospitals) and 17 public health facilities sustained major structural and equipment damage, due to storm surge and strong winds 90% of all educational facilities, as well as 36 public buildings incurred major damages due to storm surge and strong winds The storm surge and strong winds caused great extent of damage to the city's electric, water, transportation, and communication facilities, which led to disruptions in business and government operations, as well as the communities Majority of business establishments were heavily damaged by storm surge and strong winds In terms of livelihood, 80% of coconut and copra production have been affected. Fish and produce trading has been severely disrupted affecting mainly poor fishermen and small traders Storm surge and strong winds severely damaged police stations	Damage to residential units located in 33 barangays due to storm surge Damage to approximately 2,700 business establishments located in 29 barangays due to storm surge Strong earthquake can generate tsunami of the same scale as Haiyan, and cause massive destruction to the coastal barangays Severe damage to government facilities due to tsunami Damage to approximately 2,600 business establishments located in 26 barangays due to tsunami Damage to residential units located in 37 barangays due to flooding. Damage to approximately 700 business establishments in 15 barangays due to flooding

SYSTEM	CLIMATE STIMULI & HAZARDS	MAJOR IMPACTS & AFFECTED AREAS	
		With historical reference (based on records of past disasters)	With likelihood of occurrence (based on climate projections)
		and vehicles, which significantly compromised the peace and order situation in the City	

6.9 Climate Change Analysis (Issues & Adaptation/ Mitigation Strategies)

TECHNICAL ISSUES, PROBLEMS, CONCERNS	IMPLICATIONS, EFFECTS, IMPACTS	POSSIBLE SOLUTIONS
138 Barangays susceptible to typhoons	- Potential damages to properties and lives - Destruction of livelihood areas - Displacement of families - Increase in health risks	- Conduct City-wide IEC programs to educate the populace of the possible impacts of typhoons and how to improve their adaptive capacity - Decongest populated areas to minimize potential negative impacts to communities - Retrofit structures to withstand potential negative impacts
56 Barangays susceptible to flooding due to the lack of proper floodwater outfall	- Potential damages to properties and lives - Disruption of economic activities - Potential health risks	- Redesign the Master Drainage Plan adapted to adapt to climate change to be dubbed as “Storm Drainage and Flood Control system” to address the present flood situation. - Design a pumping station specifically in low areas in the city proper - Establish main drainage lines for the following: ▪ Mangon-bangon River all the way to the mountain-side of Brgys. Utap and Apitong. ▪ Burayan River all the way to V & G, mountain-side of Caibaan and Imelda Village. ▪ Establishment of waste water treatment plant in all rivers prior to the outfall. ▪ Establishment of a network of drainage piping systems on all perennial flooded-areas.
34 Barangays susceptible to storm surges	- Potential damages to properties and lives - Destruction of livelihood areas - Displacement of families - Increase in health risks	- Conduct City-wide IEC programs to educate the populace of the possible impacts of storm surges and how to improve their adaptive capacity - Establishment of soft and hard engineering mitigating solutions to combat the effects of storm surges - Retrofitting of structures along the coastal areas - Enactment of local legislations to limit the use of the coastal areas to certain functions - Preparation of a well-developed Evacuation Plan (with a designated

TECHNICAL ISSUES, PROBLEMS, CONCERNS	IMPLICATIONS, EFFECTS, IMPACTS	POSSIBLE SOLUTIONS
		evacuation area nearby and an established evacuation route) for constituents - Identify and prepare sites for evacuation tents - Conduct training of Media anchors on the proper reporting of information regarding incoming disasters (with sensitivity and caution) - To require all households to prepare a Go-Bag (Emergency Kit) before a disaster arrives
37 Barangays Susceptible to Rain-induced landslides	- Potential damages to properties and lives - Destruction of livelihood areas	- Conduct IEC programs to educate the barangays of the possible impacts of RIL and how to improve their adaptive capacity - Implement soil and water conservation measures
11 Barangays susceptible to earthquake-induced landslides	- Potential damages to properties and lives - Destruction of livelihood areas - -Displacement of families	- Conduct IEC programs to educate the barangays of the possible impacts of EIL and how to improve their adaptive capacity - Decongest populated areas to minimize potential negative impacts to communities
138 Barangays susceptible to ground-shaking	- Potential damages to properties and lives - Destruction of livelihood areas	- Retrofit structures to withstand potential impacts
98 Barangays susceptible to liquefaction	- Potential damages to properties and lives - Destruction of livelihood areas - -Displacement of families	- Conduct City-wide IEC programs to educate the populace of the possible impacts of liquefaction and how to improve their adaptive capacity - Decongest populated areas to minimize potential negative impacts to communities
43 Barangays susceptible to tsunami	- Potential damages to properties and lives - Destruction of livelihood areas - Displacement of families	- Conduct IEC programs to educate the barangays of the possible impacts of typhoons and how to improve their adaptive capacity - Decongest populated areas to minimize potential negative impacts to communities
Increase in temperature observed in the city	- Increase consumption of water, water shortage - Potential damages to properties and lives - Potential damages to crops and livestock - Increase in pests and diseases in farm lands - Potential drying up of wells which are the main source of domestic water by the families in the resettlement sites - Pose health related risks	- Plant more trees/vegetation even in urban areas Greening program) - Introduce innovative and resilient roofing designs for good ventilation - Consider solar power storage system - Strict implementation requiring Rain Catchment Systems in all government facilities and even in private establishments - Strict enforcement the Clean Air Act - Conduct IEC programs regarding the negative effects of burning waste materials especially plastic waste

TECHNICAL ISSUES, PROBLEMS, CONCERNS	IMPLICATIONS, EFFECTS, IMPACTS	POSSIBLE SOLUTIONS
	- Requires more electric power to operate cooling systems - Pose health- related risks - Consumes more electric power to operate cooling systems	
Existing Open Dumpsite in the North Resettlement Site	- Potential health risk to inhabitants of the area - Potential devaluation of land within and around the dumpsite - Displacement of families - Loss of livelihood opportunities because of the sanitation and health risks posed by the dumpsite	- Closure of the dumpsite and establishment of a Sanitary Landfill in another location, separate from the resettlement sites - Monitoring of the implementation of the Solid Waste Management Act to improve waste collection and disposal in the city - Propose an ordinance on waste segregation and strictly implement such
90% of the city's barangays have no functional BDRRMCs	- Lack of coordination between response actors and the BDRRMC during times of disaster which leads to ineffective humanitarian response	- Appointment of permanent BDRRMC focal person for continuity - Integration of the BDRRMC in regular barangay functions for sustainability - Strengthen coordination between the BDRRMC and the CDDRMO/CDRRMC to forge better responses during emergencies
Lack of permanent resilient evacuation centers	- Potential damages to properties and lives - No safe areas to evacuate families during times of disaster	- Establishment of permanent Evacuation Centers which can also serve as an Assembly Areas and Training Centers during regular days - Retrofit existing government and private facilities that can also serve as Evacuation Center

To effectively harness the ecological conservation plan and climate change adaptation, the city calls for its full protection by way of implementation of regulatory laws and coordination with the concerned specific agencies for the management, rehabilitation and sustained development of the following concerns:

- Mangroves and fish sanctuaries
- Watershed areas
- Hilly and mountainous areas prone to landslides
- Wetlands and swamps
- Easements
- Other areas of ecological and geological importance for the preservation of our environment
- Improved waste management program
- Design power saving and management program for Tacloban City to be implemented city-wide

6.10 Disaster Risk Reduction & Management

To support Tacloban's goal to maintain its role as the commercial and trading hub of Region VIII, the City is aiming to develop a culture of disaster preparedness in its constituents and those wishing to do business in the city.

The Disaster Risk Reduction and Management Act or RA 10121 has four thematic areas: ***Preparedness, Mitigation and Prevention, Response and Rehabilitation and Recovery***. The law requires all LGUs to prepare their respective Local Disaster Risk Reduction and Management (DRRM) Plan and create their own DRRM Office that will support the activities of the Local Disaster Risk Reduction and Management Council (LDRRMC).

Tacloban aims to assign a permanent City DRRM Officer (CDRRMO) to work fulltime with staff committed solely on DRRM functions. The existing Local DDRM Plan, which is being updated and reviewed in light of the lessons from Yolanda, will need to address the four thematic areas of DRRM and enhance the level of resiliency of the City to disasters, thus reducing potential damage to properties and loss of lives.

6.10.1 Disaster Preparedness Awareness Campaign (Preparedness)

The City Government is continuously working to increasing the awareness levels of the residents and their participation to reducing their own personal risks during disasters. The conduct of community drills and information dissemination ('what to do') on a regular basis are a must in increasing the awareness and participation of the residents.

One consideration of the City Government is the early evacuation of the communities that are likely to be affected by disasters. The City Council has enacted an ordinance for the conduct of pre-emptive and forced evacuation for potential massive disasters. The City Government is intensifying its IEC campaigns through the conduct of dialogues and consultation on this issue as this entails the right of each resident to determine their fate. The City Government is working with

the warning agencies of the national government in establishing standard action protocols for such evacuations.

Alternative regional and inter-municipality/city level communication systems will be established so that each municipality/city can warn each other. Alternative ways of warning that are not dependent on electricity is also proposed to be used to be able to communicate warning in any conditions. To raise the awareness on disasters and early warning, integration of climate change and disaster preparedness can be integrated into the curriculum. An additional subject or even a course of climate change adaptation and DRR can also be part of school/college offerings.

6.10.2 Early Warning System (Preparedness)

In collaboration with the PAGASA, PHIVOLCS and the Mines and Geosciences Bureau (MGB), the City is preparing simulation maps that will determine different scenarios to better develop an early warning system for floods, storm surges, tsunamis, and landslides. It is imperative for the City Government to construct a climate center to monitor the impact of climate change and install the community-based early warning system and activate the Barangay Disaster Risk Reduction and Management Council. The message must be clear and simple for all the residents to understand and to follow. Drills and simulations need to be conducted during summer where the children are at home and the whole household can be involved in the drills and simulations.

The City Government is planning on developing an early warning system involving technology and its integration to the City's Information Management System (IMS). The City Government is using Geographic Information System which can be expanded to include data collected from installed rain gauges. PAGASA is using rain gauges to determine the alerts that must be issued to government agencies and LGUs. A similar system may be installed in the medium term. But in the short term, the City Government will establish an active and working partnership with the warning agencies.

The early warning system will be connected to the communication system of the City Government with its barangays and members of the LDRRMC. It will be able to collect data of hazards such as flooding and storm surges and thus be able to warn the population through alarms or sirens.

6.10.3 Capacity and Capability Enhancement for DRRM (Preparedness)

The City Government of Tacloban and its barangays will increase its capacity and capability on DRRM through the following:

1. Installation of emergency communication system in all barangays and the LDRRMC;
2. Installation of information management system and crowd-sourcing mechanisms for DRRM to support the efforts of the LDDRMC and NDRRMC. This will facilitate the collection, analysis and submission of information from the LGU up to the RDRRMC and NDRRMC;
3. Hiring of permanent CDRRMO staff that will prepare and implement Programs, Projects and Activities (PPAs) for DRRM;
4. Procurement of equipment;
5. Training of employees and barangay and youth leaders in disaster response and engaging the private sector in emergency drills;
6. Increase the level of partnership of the LDRRMC with the PDRRMC/RDRRMC and NDRRMC member agencies in pursuing their PPAs for DRRM. The NDRRMC through the Office of Civil Defense (OCD) is currently forging partnership with the telecommunication companies for the development of early warning system that will disseminate information to the population. A similar set-up can be established between Tacloban and the OCD.

6.10.4 LDRRMC and LDRRMO Training (Response)

The NDRRMC is currently reviewing the draft National Disaster Response Plan (NDRP) through the assistance of the JICA. The draft NDRP espouses the Cluster approach to response but integrated and acknowledged the jurisdictional mandate of the LGUs as first responders through the installation and utilization of

the Incident Command System (ICS). It is necessary for the City Government to have a working LDRRMC that is educated in the principles of Disaster Risk Reduction and Management, Sphere Project, Incident Command System and Cluster approach to response. The LDRRMC and LDRRMO will be trained to do the following:

1. Conduct of Rapid Damage and Needs Assessment (RDANA) and determining the extent of damage and amount of assistance needed by the affected population within 12 hours after disaster has struck;
2. Mobilization of the following to assist the Incident Command Posts during response:
   a. Search, Rescue and Retrieval Team
   b. Engineering Operations Team
   c. Relief Operations Team
   d. Emergency Communication Team
   e. Health Emergency and Nutrition Team
   f. Peace and Order Team
   g. Shelter and Infrastructure Team
   h. Management of the Dead and the Missing Team
   i. Livelihood and Food Security Team
   j. Camp Management and Protection Team
   k. Economics and Fund Management Team
   l. Logistics and Support Team
   m. Price Monitoring and Control Team
   n. Public Information Service and Media Management Team

3. Conduct of Post Disaster Needs Assessment (PDNA) to determine the requirement for recovery and rehabilitation.

6.10.5 Resilient Government Buildings or Complex (Preparedness/Mitigation)

The City Government is proposing the construction of resilient government buildings such as Multi-purpose Evacuation Centers and Emergency Operations Center (EOC). These government buildings should be resilient to typhoons, storm

surges, tsunamis and earthquake. These infrastructures are critical assets that will support the response operations during disasters. Pre-positioning of resources will not be effective if the structure housing the resources is not resilient. The EOC will serve as command centre for all disaster response as well as office for the CDRRMO that will conduct all activities for and with the DRRM Council.

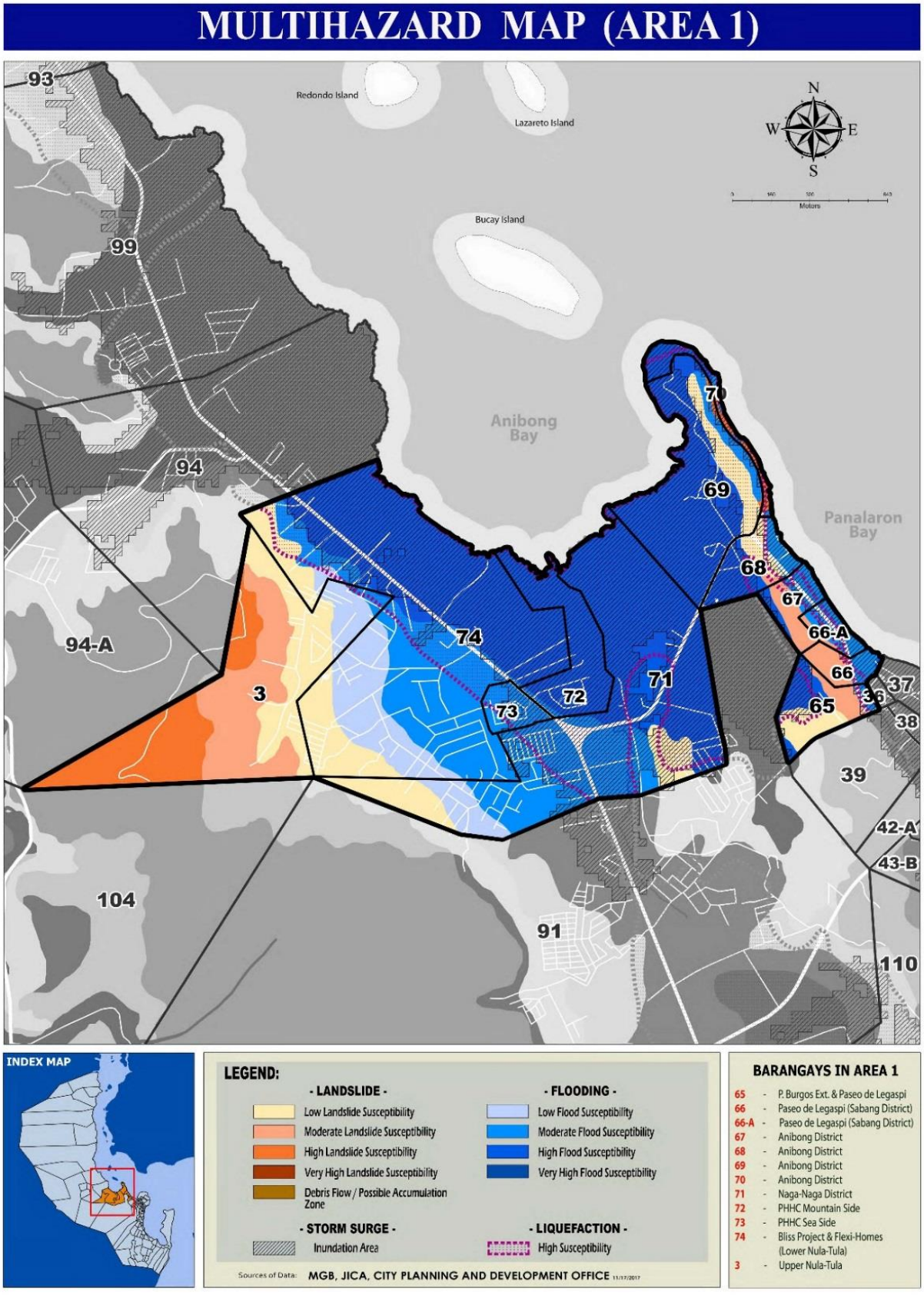
Key private sector developments (such as hospitals, commercial centers, etc.) can also be encouraged through crafting an investments code giving incentives to developers or investors who will design their buildings with resiliency provisions.

6.10.6 Emergency Communication/Telecommunication System (Preparedness)

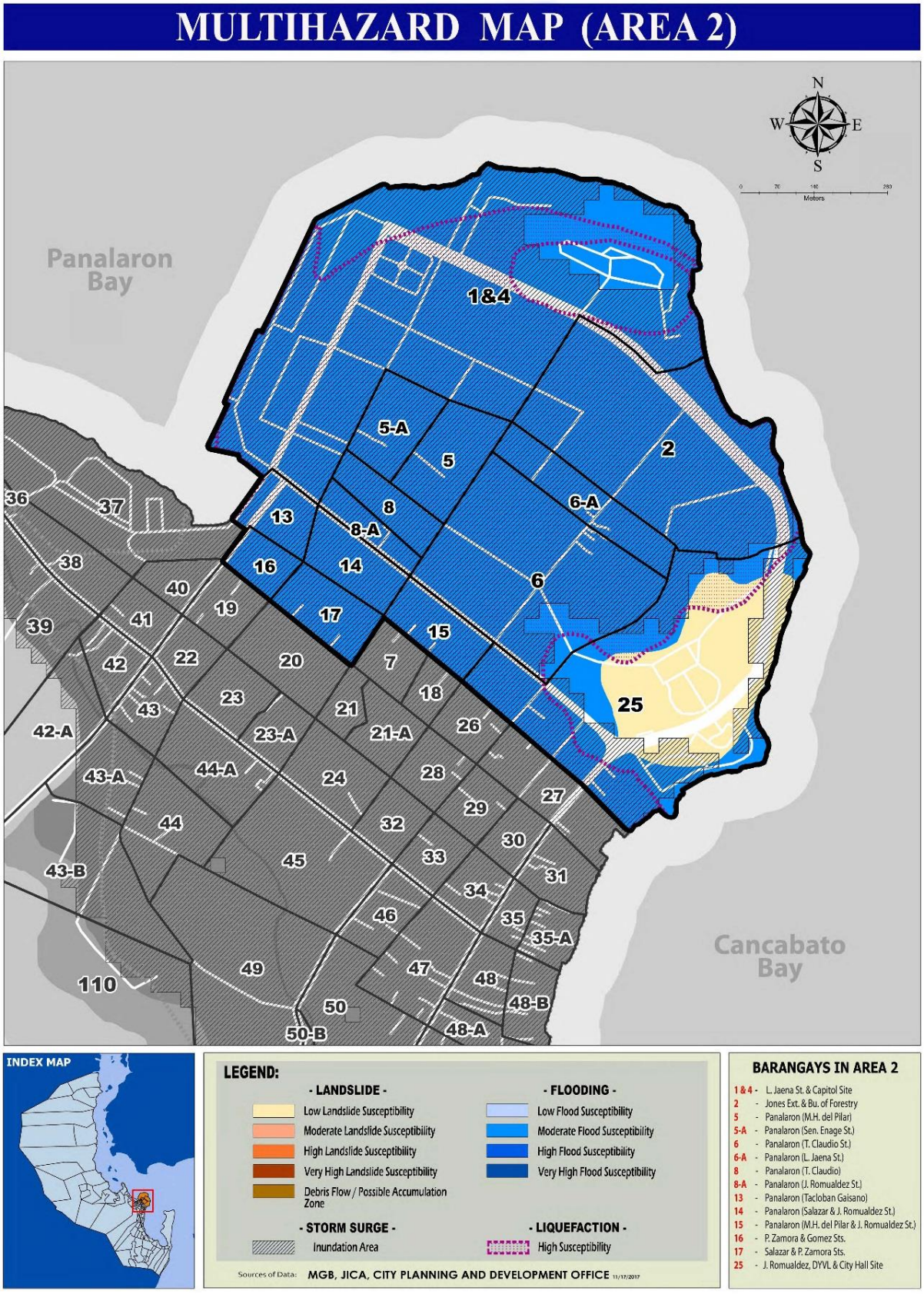
The organization and mobilization of an effective and efficient disaster response and relief operations, essentially need a reliable communications system that can immediately rebound and be back on track immediately after a calamity.

It is in this respect that a program for installation of emergency communication system is recommended for the City Government with its barangays and members of the LDRRMC.

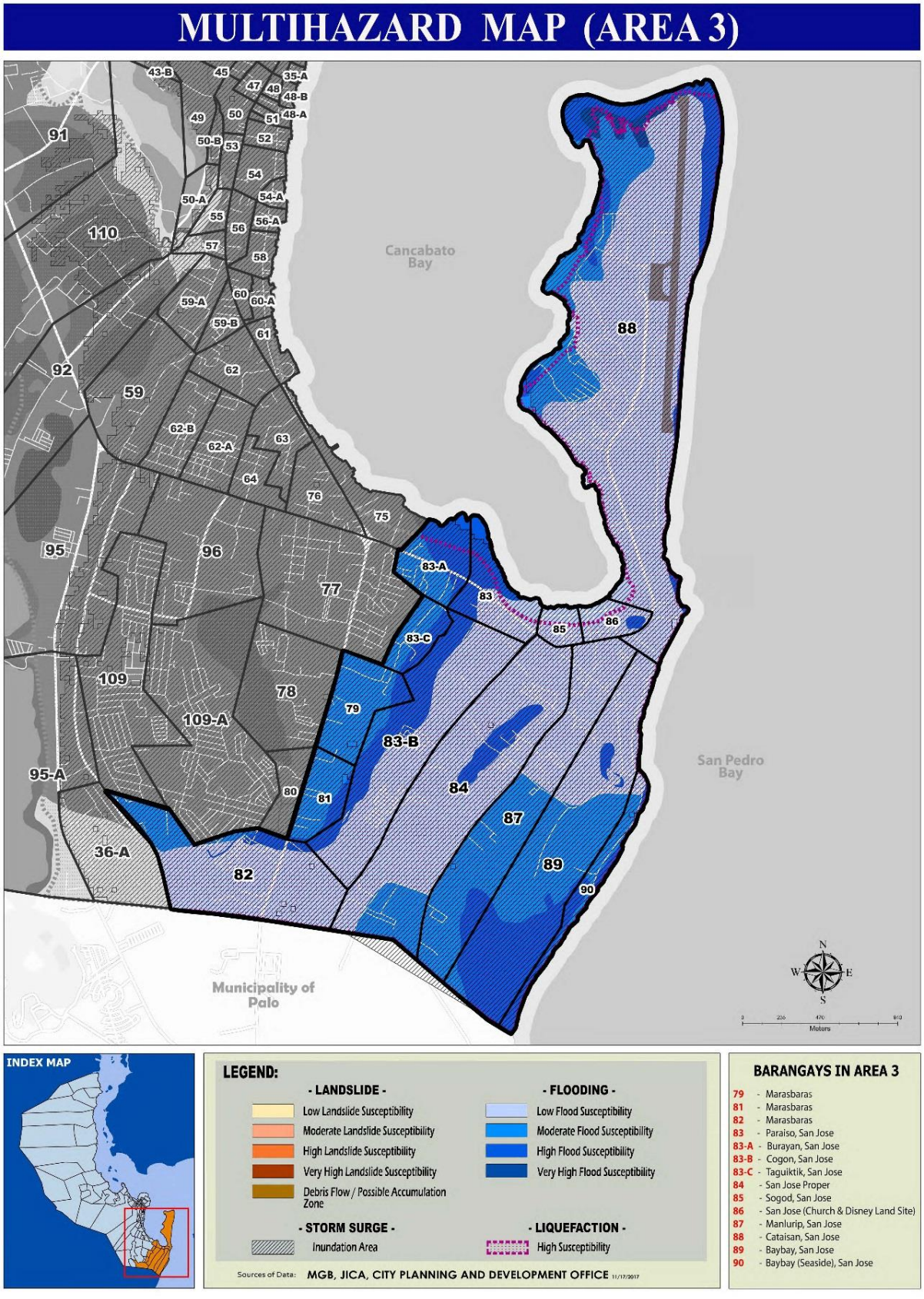
The need for information after a disaster is utmost concern for all response operations. Each barangay should have their respective mobile emergency telecommunication units that can be easily installed after the disaster to establish communications with City, Provincial, Regional or National government agencies. The City Government should also create Rapid Emergency Telecommunications (RET) Groups within its DRRM Office to provide the emergency telecommunication needs of the LDRRMC during disaster response operations. The RET is vital in implementing Incident Command System at the affected areas. The RET may utilize different modes of communications but must be responsible in the IOMs (Installation, Maintenance and Operation) of the system at the City level.



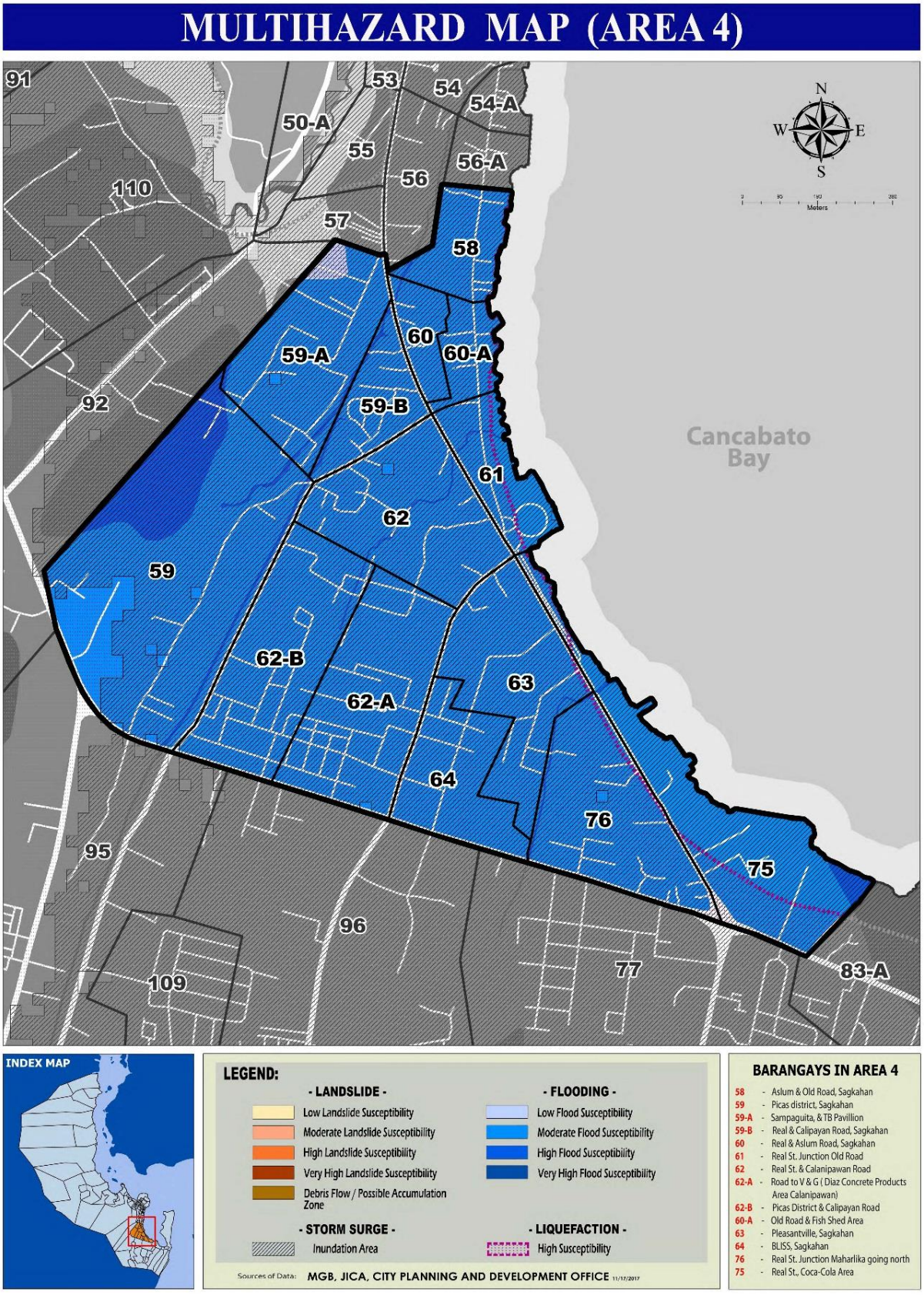
Map 89. Barangay Map Area 1



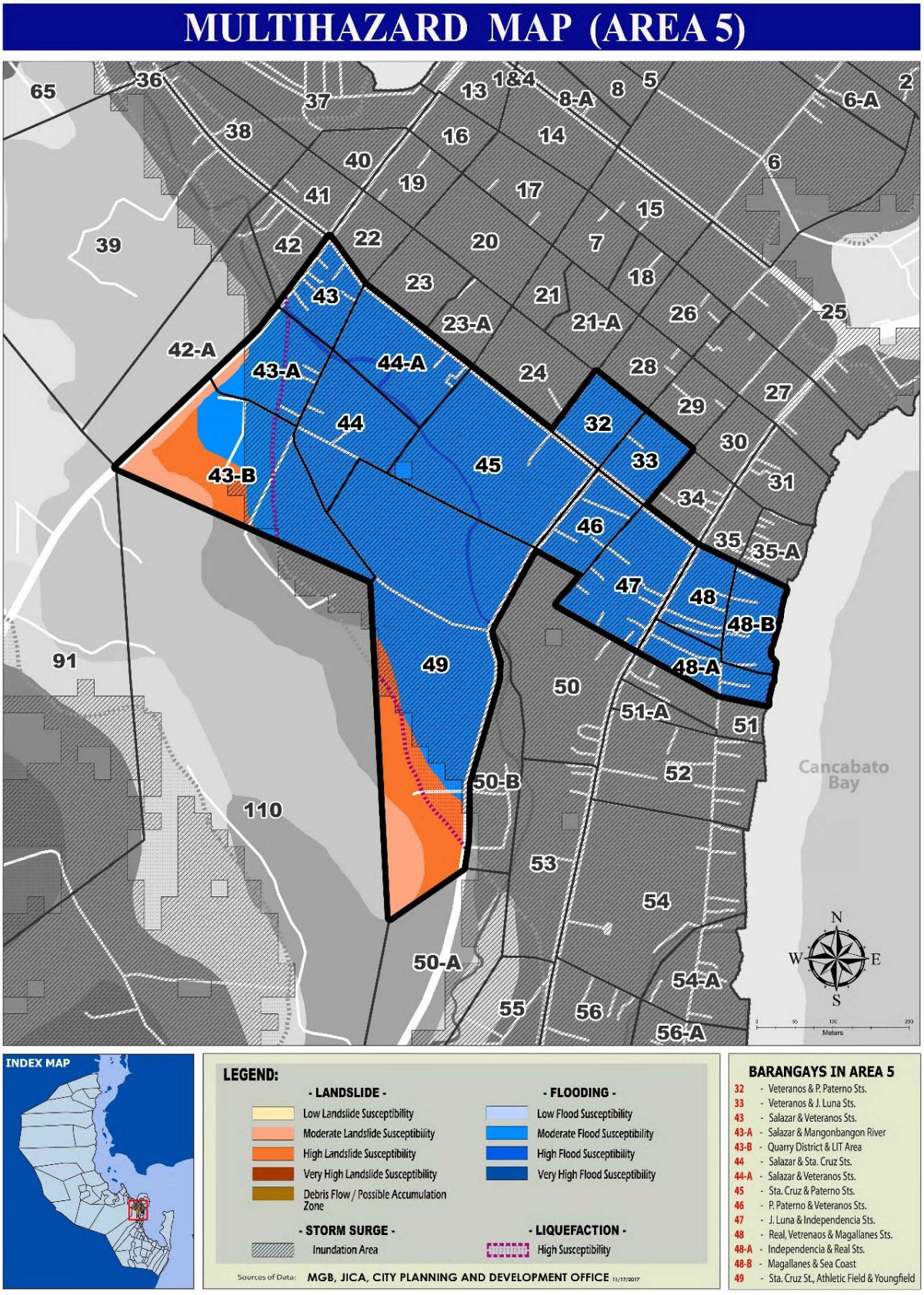
Map 90. Barangay Map Area 2



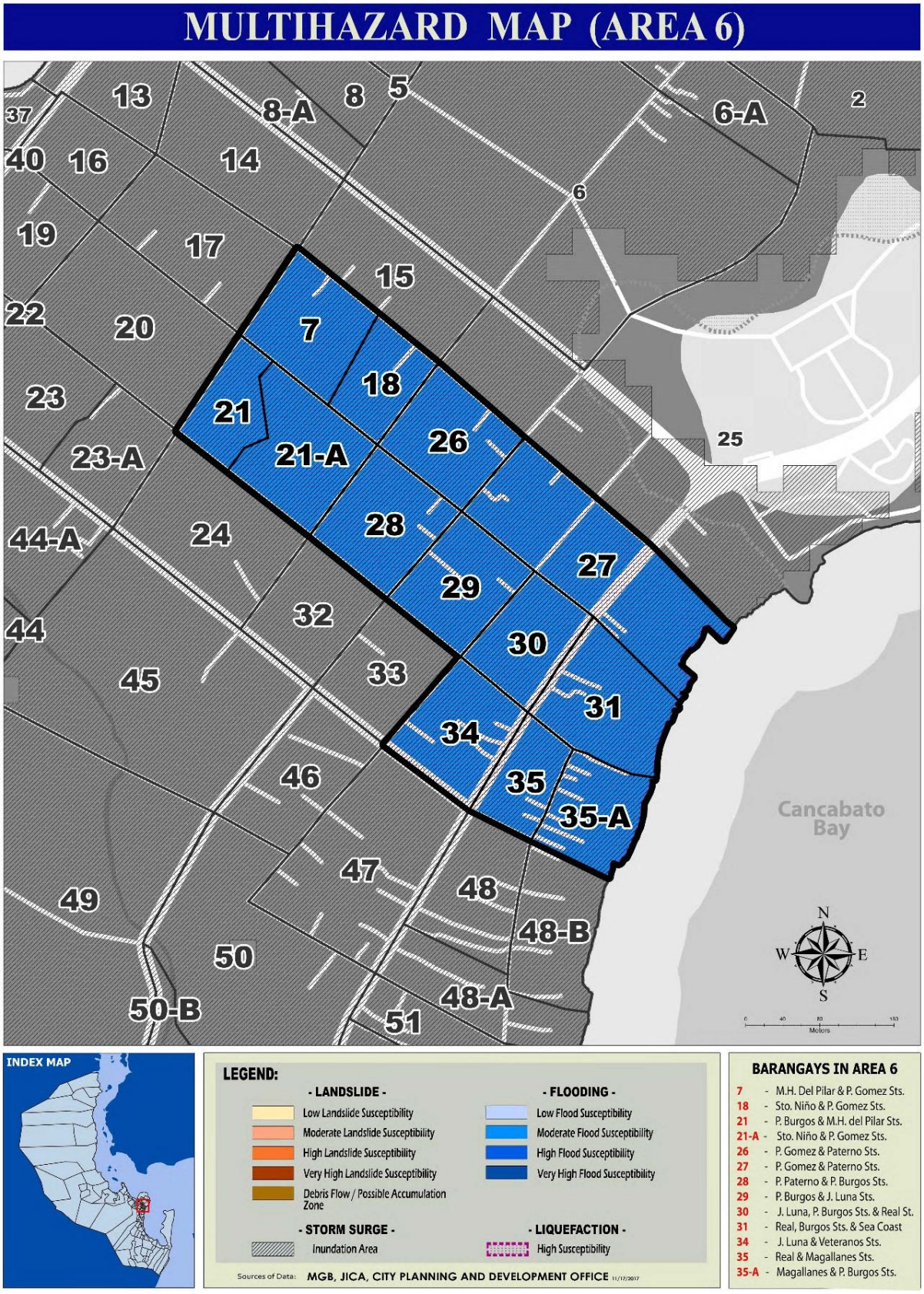
Map 91. Barangay Map Area 3



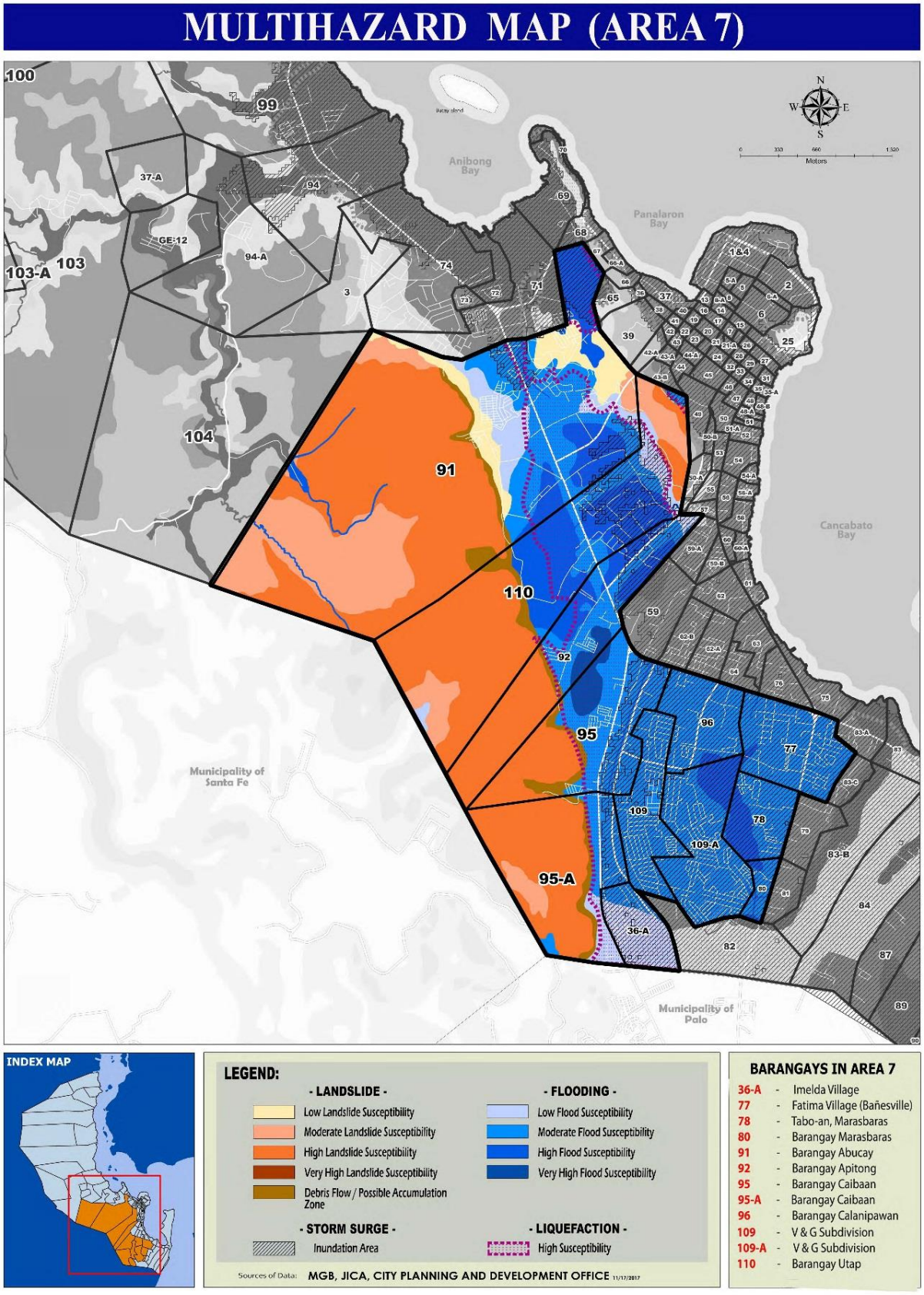
Map 92. Barangay Map Area 4



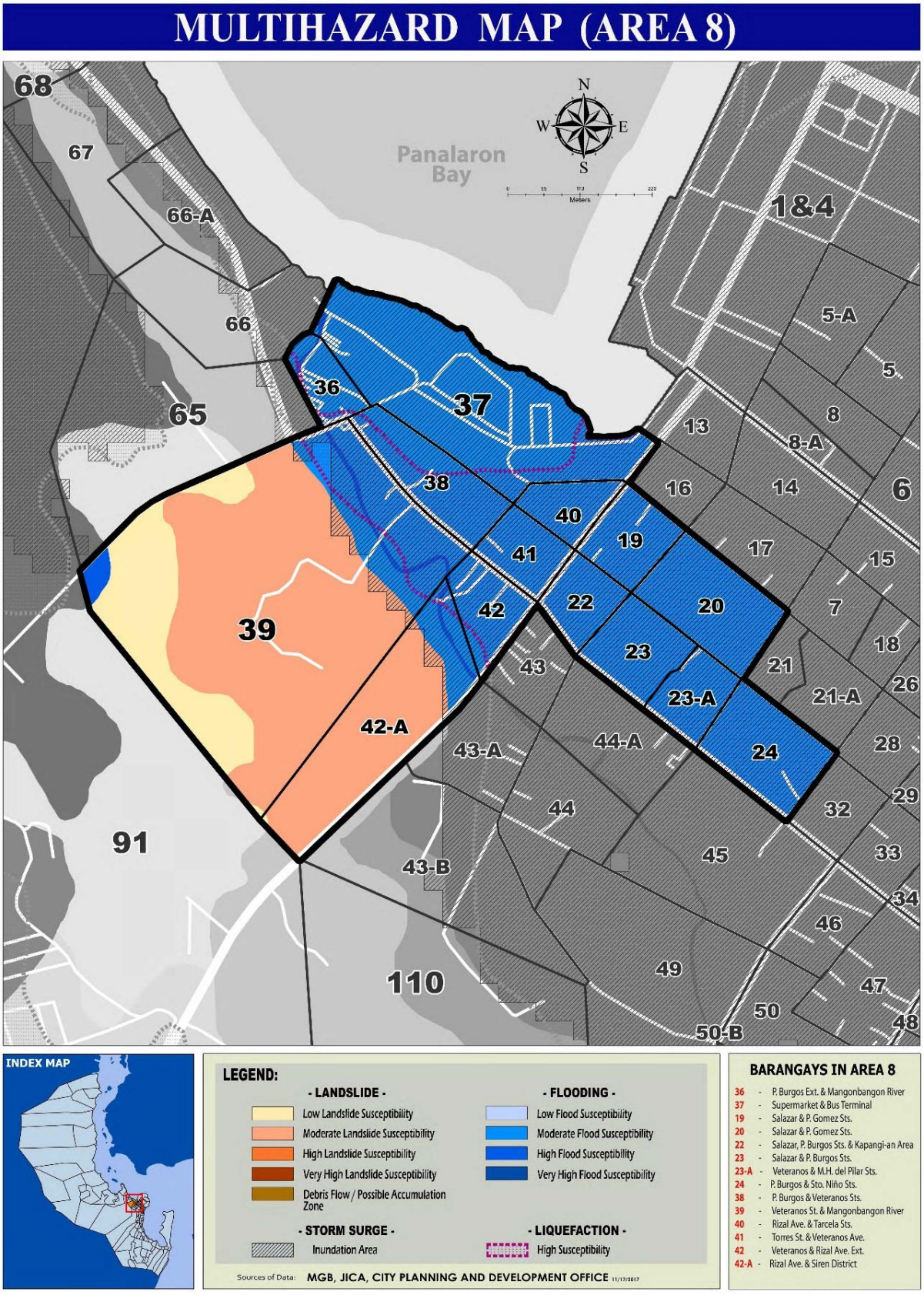
Map 93. Barangay Map Area 5



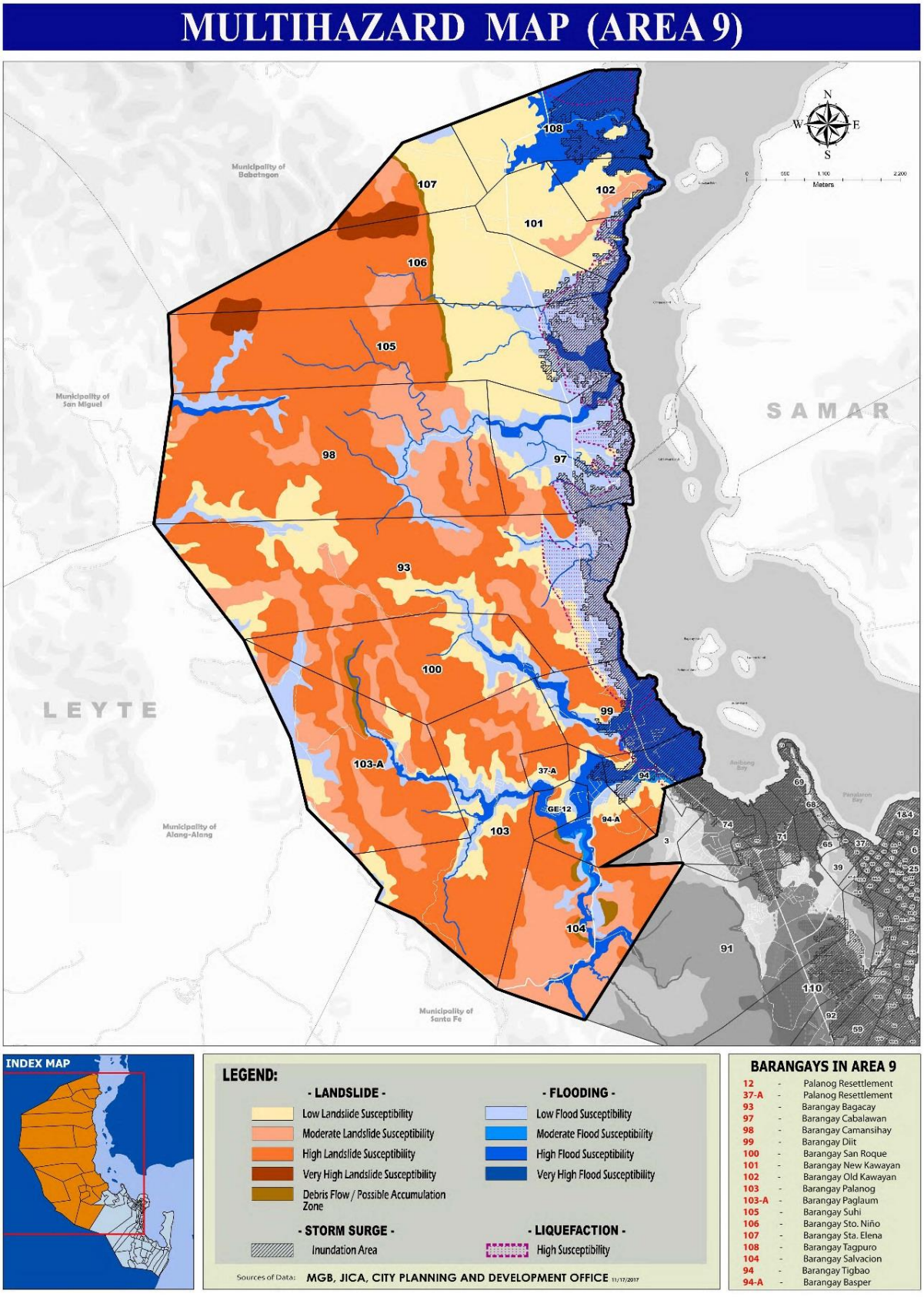
Map 94. Barangay Map Area 6



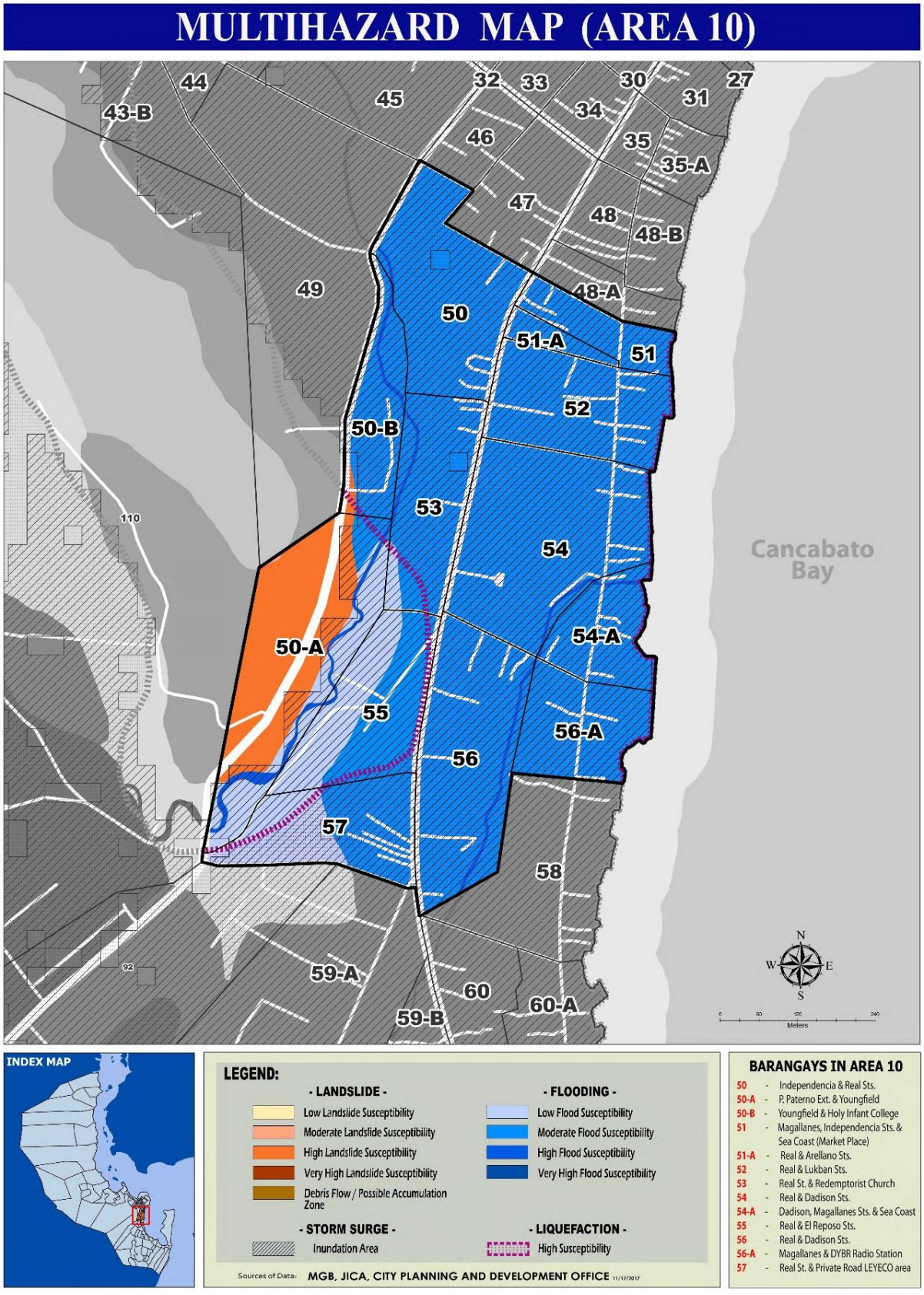
Map 95. Barangay Map Area 7



Map 96. Barangay Map Area 8



Map 97. Barangay Map Area 9



Map 98. Barangay Map Area 10

CHAPTER 7 ECOSYSTEM ANALYSIS

7.1 Forest and Forest Land

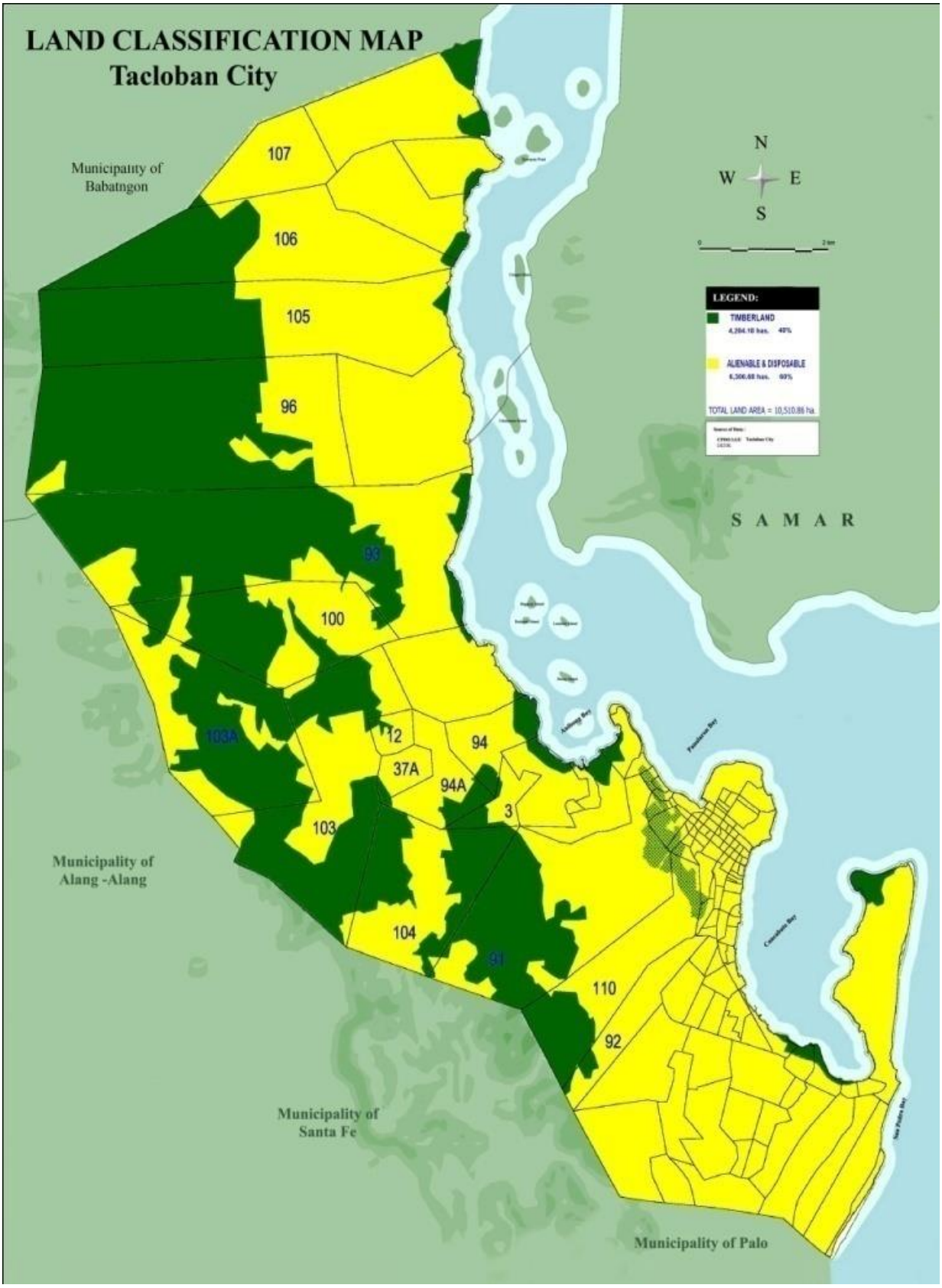
7.1.1 Land Classification

Tacloban City's land classification starts from the ridge to reef passing through the different micro-watersheds whose status is at risk considering the new climatic phenomena and urbanization. The timberland areas claim 40.00% (4,204.18 hectares) while alienable and disposable (A & D) land constitutes 60.00% (6,306.68 has.) of the total city inland jurisdiction. *(See Table 7.1)*

Table 7.1 Land Classification, Tacloban City

LAND CLASSIFICATION	AREA	%
A & D	6,306.68	60.00
Timberland/ Forest	4,204.18	40.00
Total	10,510.86	100.00

Source: CPDO, DENR



Map 99. Land Classification Map

7.1.2 Distribution of Forest and Forestland Area by Barangay

Forest and forestlands in Tacloban embed in 17 adjoining barangays stretching from Barangay Sta. Elena down to Barangay Caibaan. A large track of forest and forestland falls in Barangays Camansihay and followed by Barangay Bagacay with an area of 802.17 hectares and 714.32 hectares, respectively. Accordingly, these areas are the host to many endemic species both flora and fauna where its existence are threatened considering the settlements situated very close to the forestland and within the watershed area in particular locality. *(See Table 7.2)*

Table 7.2 Distribution of Area by Barangay Administrative Coverage, Tacloban City

BRGY	A & D	ISLETS	FORESTLAND	MANGROVE	TOTAL
Brgy. 3 Upper Nula tula	32.39		28.42		60.81
Brgy. 12 GE Palanog	37.04		9.8		46.84
Brgy. 37-A Resettlement	33.17		6.62		39.79
Brgy 91 Abucay	366.4		321.45		687.85
Brgy 92 Apitong	109.74		19.52		129.26
Brgy 94-A Basper	110.88		24.96		135.84
Brgy 98 Camansihay	168.34		802.17		970.51
Brgy 100 San Roque	204.73		227.32		432.05
Brgy 103 Palanog	245.43		355.23		600.66
Brgy 103-A Paglaum	178.06		316.31		494.37
Brgy 104 Salvacion	196.1		201.74		397.84
Brgy 107 Sta Elena	142.25		46.63		188.88
Brgy 110 Utap	191.43		94.7		286.13
Brgy 106 Sto. Nino	240.86		341.92	2.92	585.7
Brgy 105 San Isidro	320.51		492.36	4.38	817.25
Brgy 93 Bagacay	367.8	1.53	714.32	27.19	1,110.84
Brgy 94 Tigbao	93.27	4.02	9.84	16.93	124.06
Brgy 102 Old Kawayan	101.03	9.1	-	7.42	117.55
Brgy 88 San Jose	186.35	15.69	-	22.45	224.49
Brgy 99 Diit	216.68	3.27	-	5.22	225.17
Brgy 108 Tagpuro	263.31			44.87	308.18
Brgy. 71 Naga-naga	68.57		-	11.56	80.13
Brgy. 69 Anibong	22.86		-	9.56	32.42
Brgy. 74 Nula-tula	101.01		-	14.37	115.38
Brgy 101 New Kawayan	195.57			8.17	203.74
Brgy. 75	14.77		-	2.73	17.5

BRGY	A & D	ISLETS	FORESTLAND	MANGROVE	TOTAL
Brgy 83	7.9		-	6.59	14.49
Brgy 83-A	9.95		-	5.9	15.85
Brgy 85	6.29		-	0.61	6.9
Other Brgy's w/o Forest	2,040.37				
Total	**6,273.07**	**33.61**	**4,013.31**	**190.87**	**10,510.86**

7.1.3 Socio-Economic Situations in Forest and Forestlands

Population in FFL

The demographic make-up of the upland barangays suggests a significant number of households that are heavily resource dependent on forest ecosystem with high poverty incidence. Barangays 37-A Palanog Resettlement acquired a highest population density of 2.06 and the lowest is Brgy 105 San Isidro with .22 person unit area. But in terms of population, Brgy. Camansihay is the highest with 624 persons followed by Brgy. San Roque with 538 persons involved in forest activities. A community of Indigenous Peoples (IPS) of about 236 individuals inhabited portion of the forestland in Brgy. 93 Bagacay. The computation of population in a barangay with forest is household times 4.3 average house size hold based on 2014 statistics. Other barangays without tenure instruments was not included in the table since they don't have density. *(See Table 7.3)*

Table 7.3 Population in Barangay with Forest Area, Tacloban City

BARANGAY	FOREST	POPULATION IN FOREST AREA			DENSITY
Forestland	Area	IPs	Non-IPs	Total	
Brgy 94-A Basper	135.84		65	65	0.48
Brgy. 37-A Resettlement	39.79		82	82	2.06
Brgy. 3 Upper Nula tula	60.81		90	90	1.48
Brgy 104 Salvacion	397.84		99	99	0.25
Brgy 110 Utap	286.13		133	133	0.46
Brgy 107 Sta Elena	188.88		155	155	0.82
Brgy 105 San Isidro	817.25		176	176	0.22
Brgy 92 Apitong	129.26		194	194	1.50
Brgy 93 Bagacay	1,110.84	236	215	451	0.41
Brgy 91 Abucay	687.85		267	267	0.39
Brgy 100 San Roque	432.05		538	538	1.25
Brgy 98 Camansihay	970.51		624	624	0.64

BARANGAY	FOREST	POPULATION IN FOREST AREA			DENSITY
Forestland	Area	IPs	Non-IPs	Total	
Brgy 103-A Paglaum	494.37		534	534	1.08

Tenure in Forestland

Except for some 2,637.18 hectares, the balance of approximately 1,376.13 hectares is technically still open access with no specific tenure instruments covering their use. With the tenure instruments, *de facto* resource users are under no obligation to properly manage the forestlands which they occupy.

A total of 2,637.18 hectares are placed under specific tenure regimes granted by the DENR. The key forest and forest land tenures consists of 935.12 hectares placed under Community Based Forest Management (CBFM) located at Barangays Caibaan, Utap, Salvacion, Palanog and San Isidro. A lone Industrial Forest Management Agreement (IFMA) issued to the Manobo settlers covering 241.78 hectares in Barangays Bagacay, San Roque and Camansihay. A due diligence check of the Certificate of Stewardship Contracts (CSC) issued by the DENR under the erstwhile Integrated Social Forestry Program (ISFP) showed that there are 1,006.44 hectares distributed to 353 beneficiary households. These are located in the upland barangays of San Roque, Camansihay, Nula Tula and Abucay. The earliest CSCs issued were in 1983 which render the contracts, as already expired as they reached past the statutory limit of 25 years. There is reason to believe that the CSCs have changed hands from the original beneficiaries to other private interests. The lack of “productive forestry” development is evident in most of these areas.

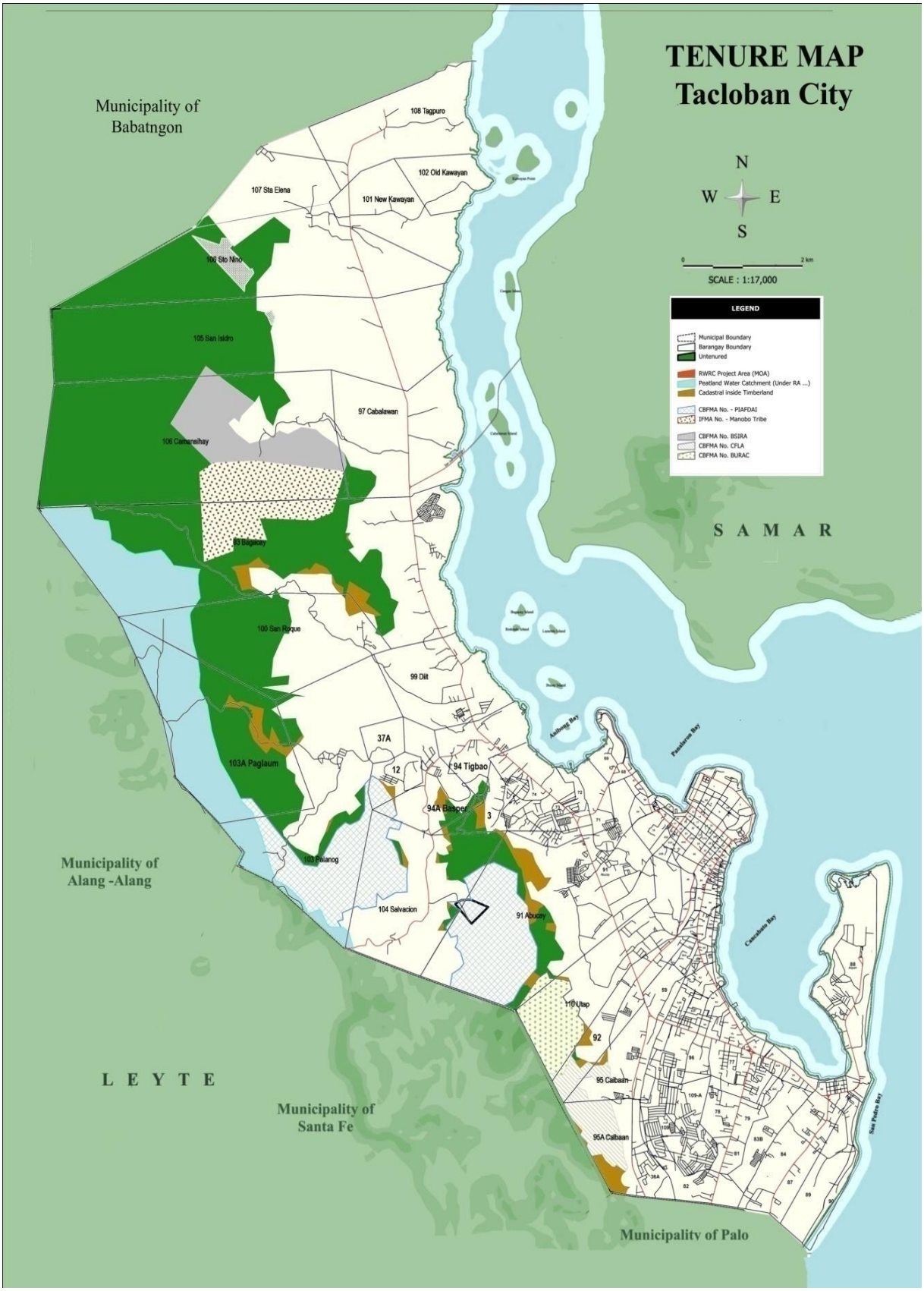
The balance of untenured forestlands is technically subjected to future development strategies that are stakeholder and climate–responsive. Currently, bamboo plantation project is on the stage of site development through a financing agreement with Samaritans Purse. These are located in the areas of Barangays Camansihay, Bagacay, San Isidro and Sto. Nino.

Agrarian Reform Councils (ARC) also form distinct communities along the watershed transect, where agricultural activities are distinctive. These are found in Palanog, Salvacion, San Roque, Bagacay, Cabalawan, Abucay. Informal

settlers occupy residential spaces including agricultural plots in the forestland area. *(See Table 7.4 and Tenure Map below)*

Table 7.4 Social-Institutional Analysis and Implications to FFL Management, Tacloban City

LAND USE	NON-MARKET INFORMATION	REGULATORY ISSUES	LOCAL ENVIRONMENTAL IMPACT	PROPERTY RIGHTS	EQUITY BIASES	STAKEHOLDER PARTICIPATION
CBFM / CSCs	constrained (low R&D input)	constrained (timber poaching, land claims)	possible constraint (largely due to harvesting of trees in landslide prone areas	constrained(entitlements limited to PO members; selling of CSC)	constrained (products and services for only PO members)	sharing of property rights and entitlement
Small holder Agro-forestry	Constrained; highly random village models	constrained (need to clarify existing tenure arrangement)	No constraint (conservation-compliant)	constrained (property rights informal-tax declarations)	possible constraint	possible constraint
Plantation forest	Constrained (limited tree crop options)	constrained (harvesting of forest products not regulated)	possible constraint, linked with flooding downstream	constrained ; with adverse claims	possible constraint (POs unable to tap on joint venture partners	possible constraint (harvesting rights?)
Root crops/ vegetables	Constrained (subsistence-level)	No constraint (but maximum tillage can accelerate erosion)	possible constraint (production incompatible with land resources	possible constraint in common property areas	no constraint	constrained (open access areas
Fallow Agriculture /Swiddens (Kaingin)	Highly constrained (unsustainable swiddens)	Constrained (not subject to regulatory controls)	accelerate erosion, forest cover loss	highly informal, tenuous	responsive at individual level	likely to be constrained w/o tenure



Map 100. Tenure Map

Table 7.5A Existing Tenure-Holders, Tacloban City

SWS	BARANGAYS	NAME OF ORGANIZED UPLAND COMMUNITIES	NUMBER OF MEMBERS/ HOLDERS
CBFM	Caibaan	CFLA	45
	Utap	BURAC	31
	Sta. Elena	SEFSA	36
	Salvacion-	PIAFDAI	23
	Basper-Palanog	PIAFDAI	15
	San Isidro	BSIRA	41
IFMA	Bagacay	Manobo	50
CSC	Nula Tula	None	21
	Abucay	None	62
	San Roque	None	125
	Camansihay	None	145
FLMA	Palanog	None	19

Table 7.5B Summary of Barangays with Certificate of Stewardship Contract (CSC) Holders, Tacloban City

NAME OF BARANGAYS	NO. OF BENEFICIARIES	AREA (HAS.)	DATE ISSUED
Abucay	62	148.86	1984 - 1986
Camansihay	145	430.07	1988 - 1993
Nula-tula	21	124.22	1983
San Roque	125	303.27	1985 - 1997
Total	**353**	**1,006.44**	

Livelihood in Forestlands

Small-holder production occurs in limited areas along the slopes of a number of barangays like vegetable crop production in Sta. Elena, agroforestry in Caibaan. Coconuts, pineapple and root crops are grown mostly in Barangays Salvacion, Palanog, San Roque and Camansihay areas in less than a hectare per farm lot using unsustainable farming system (kaingin-making). Means of farming are all small scale in terms of the farm equipment and inputs employed. Firewood gathering and selling activities are prevalent in most upland areas as a major source of income among the poorest of the poor. (*See Table 7.6)*

Table 7.6 Livelihood Activities (Including harvesting of forest products), Tacloban City

BARANGAYS	TYPE OF LIVELIHOOD ACTIVITIES	NO. OF HH INVOLVED	PRACTICES USED
Sta. Elena	Vegetable crop production	75	Small-holder production
Caibaan	Agroforestry (Coffee Production and other agri crops)	25	Small-scale intercropping
Caibaan	timber harvesting (based on RUP)	25	Selective harvesting
Palanog, San Roque	Cash crop production (Corn, vegetables, root crops)	300	without land care practices (contour cropping, etc.)
Salvacion	Cash crop production (Corn, vegetables, root crops)	94	without land care practices (contour cropping, etc.)

Table 7.7 Forest Based Livelihood Activities and the Number of Households, Tacloban City

BARANGAYS	NO. OF HOUSEHOLD INVOLVED				TOTAL
	FARMING / KAINGIN	AGRO FORESTRY	FUELWOOD GATHERING	RATTAN GATHERING	
Brgy. 3 Upper Nula-Tula		4	21		25
Brgy. 12 GE Palanog	10		15		25
Brgy. 37-A P. Resettlement	13		10		23

BARANGAYS	NO. OF HOUSEHOLD INVOLVED				TOTAL
	FARMING / KAINGIN	AGRO FORESTRY	FUELWOOD GATHERING	RATTAN GATHERING	
Brgy. 91 Abucay		62	11		73
Brgy. 92 Apitong	5	76	9		90
Brgy. 93 Bagacay	25	50	20		95
Brgy. 94 Tigbao	2	13	8		23
Brgy. 94-A Basper	16		18		34
Brgy. 98 Camansihay	40	145	34		219
Brgy. 100 San Roque	35	125	26		186
Brgy. 103 Palanog	31	32	33	2	98
Brgy. 103-A Paglaum	21		10		31
Brgy. 104 Salvacion	43	13	51	3	110
Brgy. 105 San Isidro	23	41	18		82
Brgy. 106 Sto. Niño	18		14		32
Brgy. 107 Sta Elena	33	36	8		77
Brgy. 110 Utap	10		15		25

Issues, Threats and Opportunities in the Protection and Management of Forest and Forestland

Limited Effective Spread of On-site Management of Allocated FFL

The institutional capacity to provide real-time on-site management remains a key concern for the City. This can only be designed and systematically installed, if a thorough appraisal or characterization on natural resources is completed to form more accurate information on forest and forestland demographics, resource use and control patterns. On-site effective management suggests that areas that require full rehabilitation and strict protection shall be studied carefully following a thorough inventory of claims, against open access areas.

A co-management agreement between the City Government and the DENR, its terms and conditions, should be reviewed to further substantiate and strengthened considering climate change adaptation and mitigation measures.

Table 7.8 Summary of Problems/ Issues/ Threats and Conflicts

SWS	BARANGAYS	PROBLEMS/ISSUES/THREATS AND CONFLICTS	ENTITIES RESPONSIBLE FOR RESOLVING THE CONFLICTS
TIGBAO-DIIT	Salvacion	Swidden (Fallow) cultivation upstream of Balugo Falls; Timber Poaching	DENR, City ENRO ,LGU Barangay
CAIBAAN-UTAP	Caibaan	Adverse claim within CBFM area; poaching of plantation trees; landslides	DENR, Barangay
BAR-SUHI	Camansihay	Timber poaching; landslides; Swidden	DENR, City ENRO
NAG-NULA	Upper Nula-tula	Timber poaching; landslides	DENR, LGU City and Barangay

Degradation of Forests and Forestlands

The scrambling forest degradation continues and largely attributed by “kaingin” cultivation and rampant firewood gathering which also aggravates landslides occurrence during extreme climatic condition like prolonged heavy rainfall. Before CY 2013, the rate of degradation has been reversed from the last ten years, with the gradual recovery of erstwhile forest areas. Natural succession of brushland and early secondary vegetation communities and reforestation measures, have altogether contributed to restoring forest cover to fair conditions (30-40%). The farm lots dynamics also suggest that smallholder

cultivators, mostly utilizes the same forest plots, limiting the number of new openings. The quality of the forest structure however will require a longer time to develop, as the current forest cover, are still mostly in early secondary, open canopy conditions as being heavily damaged during the onslaught of super typhoon Haiyan.

Limited Sustained Enforcement of Forestry Laws, Rules and Regulations

The current wood demand for the City is estimated at 121,482.67 cubic meters and this is expected to escalate to 138,933.72 cubic meters in the next 5 years. There is reason to suspect that most of the local wood requirements (fuelwood, charcoal, sawnwood) come from the Ctiy's watersheds. More than timber /fuelwood poaching, it is the conversion of forests for agriculture that should acquire greater attention on enforcement (all law enforcement agencies concerned).

Table 7.9 Existing Industries Requiring Raw Materials from the Uplands, Tacloban City

SWS	BARANGAYS	TYPES OF INDUSTRIES
From all sources*	San Roque,	Food Business (Lechon, bakery)
	Salvacion,	Furniture
	Camansihay, Palanog	Lumber
	San Jose, Cabalawan	Boat Building

Note: From all sources includes sub-watersheds of Tigbao-Diit, Caibaan-Utap, Barugwan-Suhi, Naganaga-Nulatula, Bagacay and Lukay-Paglaum-Picas.

Barangays Salvacion, Palanog, Camansihay and San Roque were placed in the hot list as major sources of firewood and charcoal. Naga-Nula SW also serves as key source of fuelwood and polewood from the remaining natural forest (RNF). The Caibaan-Utap area was tagged as a major transit point for illegally harvested products (mostly, firewood and small polewood), while Baruguan-Suhi and Lukay-Paglaum-Picas are hotspots for poached timber products.

Conflicts in the Use and Allocation of FFL

Most claims within the forestland area are specious and "ownership" changes hands with selling of rights. As an indication, In San Roque, at least seven (7) hectares are reportedly claimed by a private person. Expired and soon-to expire stewardship certificates have largely changed hands and no visible developments are undertaken. The prospective development of a major water resource development project in the Tigbao-Diit sub-watershed can spin out into a conflict with forestland occupants, because of the requirements for source-water protection. This implies zoning-in the needed land allocation for restoring watershed cover, which in most likelihood are currently settled or farmed.

Table 7.10 Inventory of Claimed Areas within Forest Lands, Tacloban City

NAME OF CLAIMANT	BASIS OF CLAIM	LOCATION	ESTIMATED AREA COVERED	ESTIMATED NO. OF CLAIMANTS	REMARKS (INDICATE IF IN CONFLICT WITH OTHER CLAIMANTS
Various claimants	Informal or Undocumented Claims	San Roque, Palanog, Camansihay, Salvacion	7 hectares >1 hectare	2 1	current and expired CSCs sold,acquired from (with or without) tax declarations
	Informal	Caibaan	1hectare	1	Undocumented Claims; conflict with CBFM

Conflicts in the use and allocation of FFLs in the City are of significant scale, to cause serious concerns. However, the prospect of Mining in the City is raising some concerns too, as exploration permits extends progressively to the entire City. Spot areas of fallow plots, are also blamed for some clearings emanating from the Palo side of the City's forestlands.

Table 7.11 Activities in other LGUs/NGAs with Impacts in the City

NAME OF LGU/ NGA/ GOCCS	TYPE OF ACTIVITY	POTENTIAL IMPACTS
MGB	Mining exploration, Quarrying	clearing of vegetation, competition for water
TELCOs	Communication and Cell sites (SMART, GLOBE, SUN, ABS-CBN, GMA-7, COMEL)	clearing of vegetation
Palo	"Kaingin"	loss of vegetation

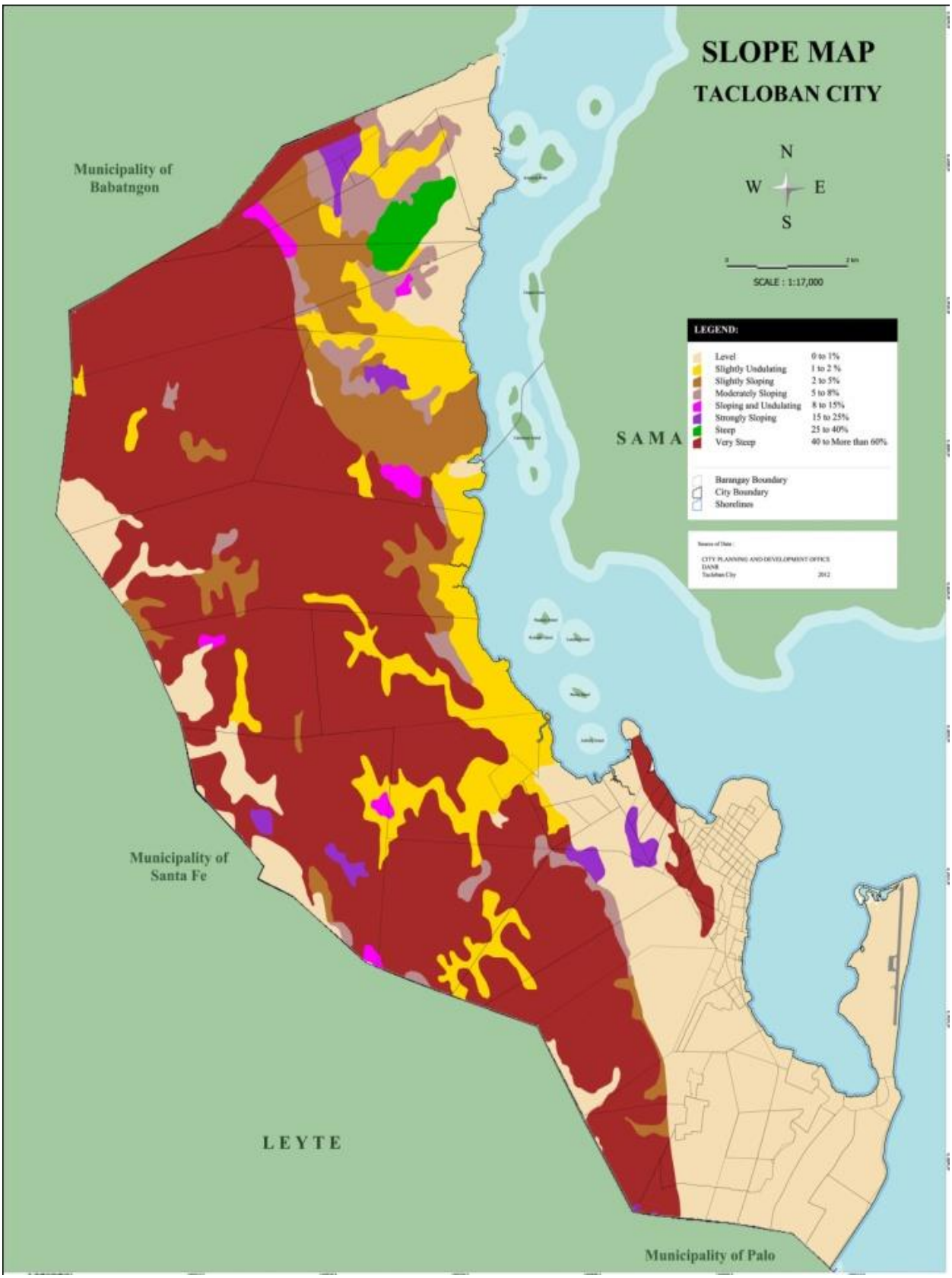
7.1.4 Other Bio-Physical Status in FFL

- **Elevation**

The highest point or elevation of about 575 meters above sea level is situated in Mt.Bagahupi of Barangay Sto. Nino and where the peak extends to the north in Barangay Sta. Elena and in the Municipal jurisdiction of Babatngon, Leyte.

- **Slope**

A large fraction of land of falls in 0-18 per cent slope and classified as A & D is situated mostly in Tigbao and Diit micro-watersheds. Areas within slope range 18-50 % or more has been categorized as forestland and timberland except for some parcel of land that bears land titles within the slope. See Table 7.12



Map 101. Slope Map

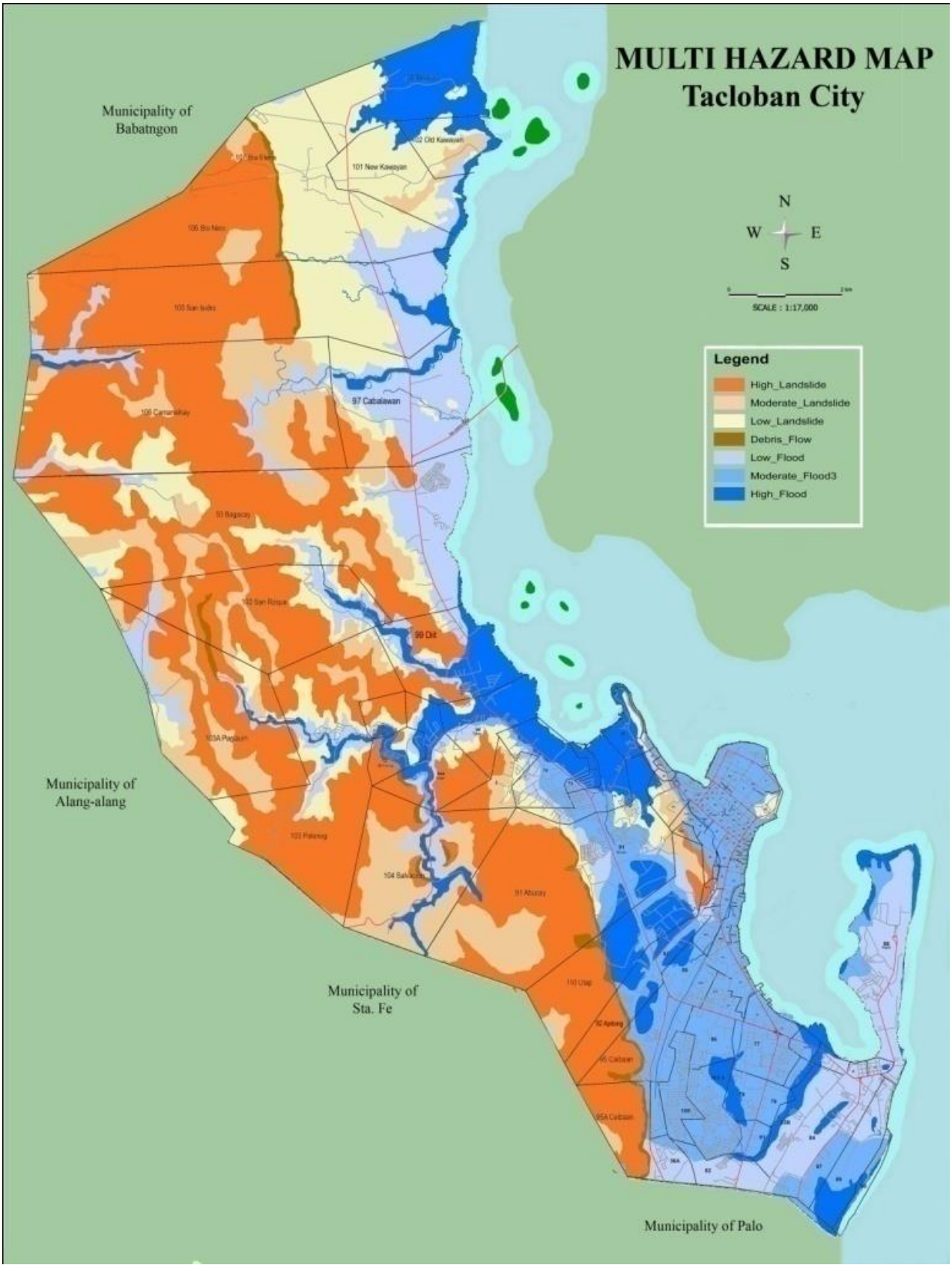
Table 7.12 Watershed Area per Slope Category, Tacloban City

SUB-WATERSHED	TOTAL AREA	AREA PER SLOPE CATEGORY			
		< 18%	18-30%	30-50%	>50%
TIGBAO-DIIT	2633.246	2344.666	285.500	3.075	
CAIBAAN-UTAP	251.682	122.352	121.617	7.713	
BAR-SUHI	1691.453	1389.102	274.545	27.806	
NAG-NULA	179.040	78.037	92.518	8.484	
BAGACAY	386.165	356.713	29.444		
LUKAY-PAGLAUM-PICAS	1102.125	820.414	258.540	23.165	
Total	**6243.711**	**5111.284**	**1062.164**	**70.243**	

- **Geological Hazards:**

The forestland areas in upland barangays which are embedded in different sub-watersheds are susceptible to landslides as it is aggravated by intense rainfall and storm. Such conclusion is based on the result of the landslide vulnerability assessment conducted by the Mines and Geo Sciences Bureau (MGB) in CY 2011 and CY 2012. Experiences on the incidence of prolonged and extreme rainfall that creates huge soil movement in Upper Nula-tula stretching to adjacent watersheds and deadly landslide in Barangay Cabalawan increases the interest of the residents and local disaster risk management council to create proactive measures in responding possible hazards. Furthermore, computer-based models tell significant fact on the effect of climate change on the intensity of precipitation.

Accordingly, in low lying sections of Tigbao catch basin are prone to flooding from Barangay Palanog down to Basper and Tigbao proper. Also, the same situation is always observed in Caibaan, Apitong, Utap and Abucay micro-watersheds. *(See Table 7.13)*



Map 102. Multihazard Map

Table 7.13 Watershed Landslide & Flood Prone Area, Tacloban City

WATERSHED	AREA	
	LANDSLIDE PRONE	FLOOD PRONE
Bagacay Watershed	397.37	-
Barugwan Watershed	1,080.04	-
Suhi Watershed	619.05	-
Picas Watershed	474.23	-
Lukay Watershed	362.48	-
Paglaum Watershed	266.08	-
Tigbao Watershed	1,958.43	67.92
Diit Watershed	648.85	-
Abucay Watershed	179.03	-
Caibaan Watershed	251.68	-

- **Existing Vegetative Cover/ Land Uses:**

The forest landscape consists mainly of open grasslands, brushlands, annual crops, perennial crops and early secondary forests in the steeper slopes. Except for some areas in the sub-watersheds of Baruguan and Suhi where approximately 109.95 hectares open canopy natural forest can still be found.

An aggregate forest area of 3,903.54 hectares categorized as production forest and protection forest. Production Forest represent about 48.93% (1,910.11 has.) of the total forest area and the remaining part 51.07% (1,993.43 has.) is categorized as Protected Area consisting of mangroves, non-nipas and the watershed-embedded areas in a cluster of six barangays.

The residual forest vegetation are mostly of low commercial value but have sturdy regeneration capabilities and these occur in sparse and discontinuous fragments located in gullies. The regeneration guild consists mostly of young dispersed individuals of mostly successional forest tree species belonging to the Moraceae, Euphorbiaceae and Rubiaceae families. The old reforestation project started in 1972 in Barangay Salvacion covers a source water protection area as the Balugo falls emanate from it. Currently, the City has begun efforts to provide

on-site forest restoration and development in the 10-hectares heavily damaged parcel of tree plantation area for a purpose.

- **Natural Forest Cover**

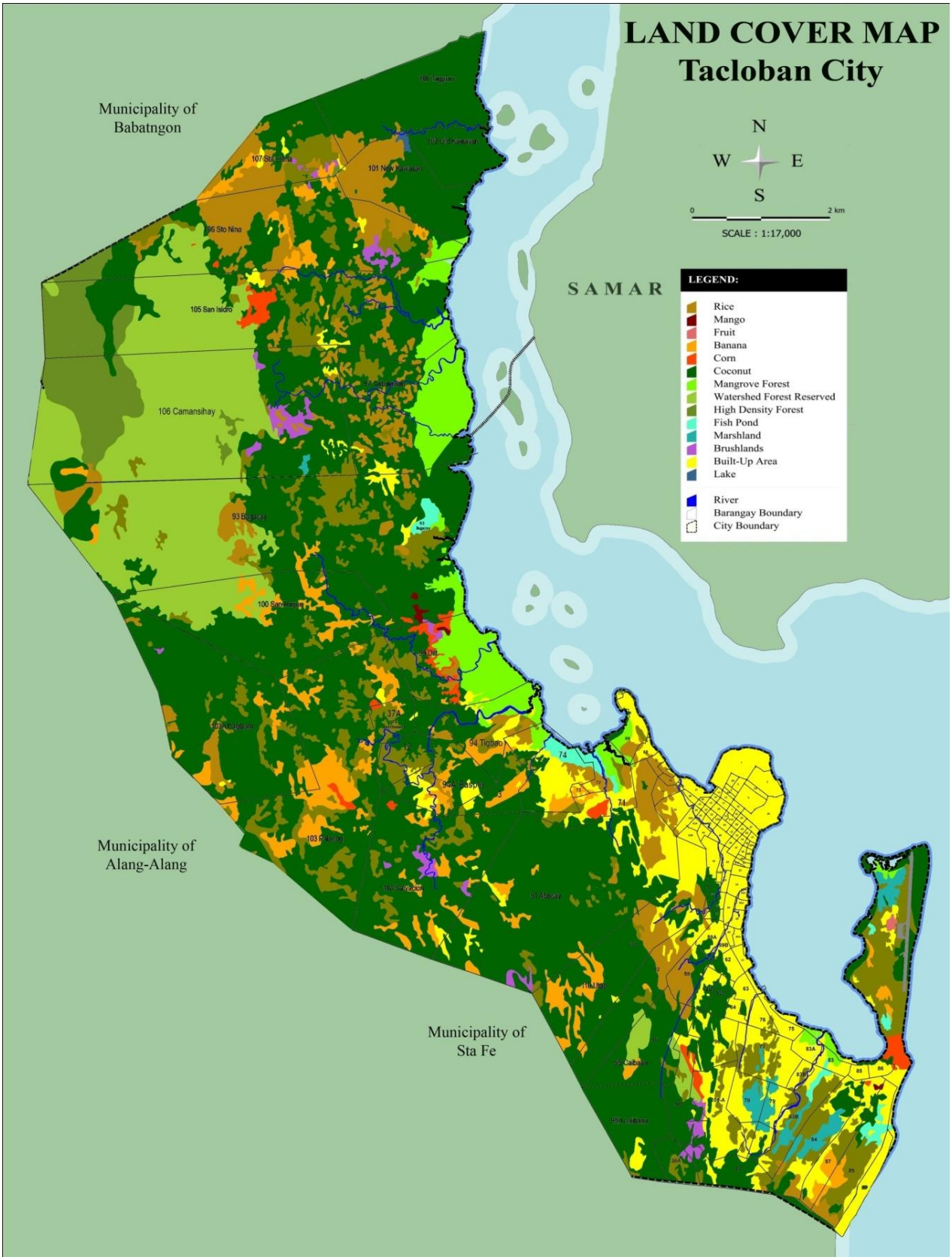
The Baruguan–Suhi sub-watershed comprises the upland barangays of Bagacay, Camansihay and Cabalawan. It is in this cluster of barangays that residual fragments of early to late secondary natural forests can still be found. Approximately, 109.95 hectares of forestland are found in this sub-watershed, which supports the water supply needs of Robinsons, San Juanico Golf Course and other barangays of Tacloban City.

The forest cover is rated as generally, fair characterized by remnants, consisting of scattered groups of mature trees (indigenous species), shrubs and other perennial crops. This includes patchy areas of bare/sparsely vegetated ground make-up between 20-50% of forest area. The biodiversity(floral) have largely fragmentized into small pockets, with over half have been lost due to disturbance of the natural habitat, e.g. forest and natural grasslands converted to mono-crop agriculture and timber plantations, built-up areas and mangroves converted to built-up and fishponds. *(See Table 7.14)*

Table 7.14 Forest and Forest Land Use Types, by Category and Area, Tacloban City

CATEGORY	LOCATION	AREAS (HECTARES)	PERCENTAGE (%)
A. Production Forest		**3,606.20**	
1. Timber production (natural)	Camansihay	109.95	2.82
2. Timber production (plantation)			-
2.1 Community-Based Forest Management Areas	Utap, San Isidro, Caibaan, Salvacion,	935.12	23.96
2.2 Integrated Forest Mgt. Areas (IFMA)	Bagacay (Manobo Settlement)	241.78	6.19
2.3 Co-Management	San Roque, Palanog	440.00	11.27
2.4 FLMA	Palanog	54.00	1.38
2.5 CSC	San Roque, Camansihay, Abucay	1,006.44	25.78
3. Agro-forest		184.64	4.73

CATEGORY	LOCATION	AREAS (HECTARES)	PERCENTAGE (%)
4. Coconut, pasture/grazing land		629.65	16.13
5. Mineral Areas	(Mineral Exploration Permit covers entire Tacloban)		-
6. Special Land Use Permits (Communication Sites)	Mt. Naga-naga, Utap and Nula-tula, Abucay	4.62	0.12
B. Protection Forest		**297.34**	7.62
1. NIPAS Area			-
2. Non-NIPAS Area (Mangrove Rehab. Project)- City Government	Diit, Tigbao, Dio Island, San Jose, Tagpuro, San Isidro, Old Kawayan, Burayan, Nulatula, Naga-naga.	69.05	1.77
3. Non-Nipas Area (Remaining Mangrove Area per 2002 UP Study)	All coastal brgy's except with mangrove planation projects	41.30	1.06
4. Watershed protection areas (slopes >30%)	Tigbao, Diit, San Roque, Palanog, Camansihay, Paglaum (sab-a river basin).	186.99	4.79
TOTAL		**3,903.54**	**100.00**



Source: GIZ/CPDO

Map 103. Land Cover Map

In terms of hydrologic properties, the general conditions of the sub-watersheds are considered as moderate. This is marked by significant rise in peak flood flows and corresponding reduction in volume during low flow periods, a few small streams and springs no longer flow all year round or dry up slightly earlier. Water logging is experienced in low-lying sites such as in Caibaan and Apitong. Although there has been no water quality monitoring conducted, the upstream to midstream areas are believed to carry low levels of chemical contaminants, which are still within the EMB safety limits including moderate to low biological contamination leading to moderate increase in the incidence of water-borne diseases.

- **Tree Farms/ Plantations**

There are no registered plantations, of significant size in the City, except for those planted in the CBFM areas, the Manobo IFMA in Bagacay and the Two- year old even age plantation supported by GIZ, covering 390 hectares. With proper management, an optimum density of 1,000 trees per hectare, the plantation should contain at rotation age (16 years), a total of 390,000 trees with a stand- stock volume of 117,000 cubic meters. Despite the potentially large urban market for wood and wood products, tree plantations still has to draw interests from serious small holder tree farmers. The potential production area for tree plantation can reach 1,062.164 hectares. Most of which can be found in the Tigbao-Diit and Barugwan-Suhi watersheds.

- **Grasslands and Cultivated Areas**

Grasslands and agricultural production plots represent a major land use type in the key sub-watersheds. These land use category, represent 49.34% of total land area and 42.16% of the forest and forestland area. The Tigbao-Diit sub-watershed has the most extensive grassland cover and agricultural production. Considering the degree of economic and environmental values that it brings to the City, the Tigbao-Diit sub-watershed requires the greatest attention in terms of development and conservation efforts. Coconuts plantations claim 629.65 hectares of the City's total land area and most often these occur in mosaics with secondary forest and brushlands in some of the barangays. The sizes are comparatively

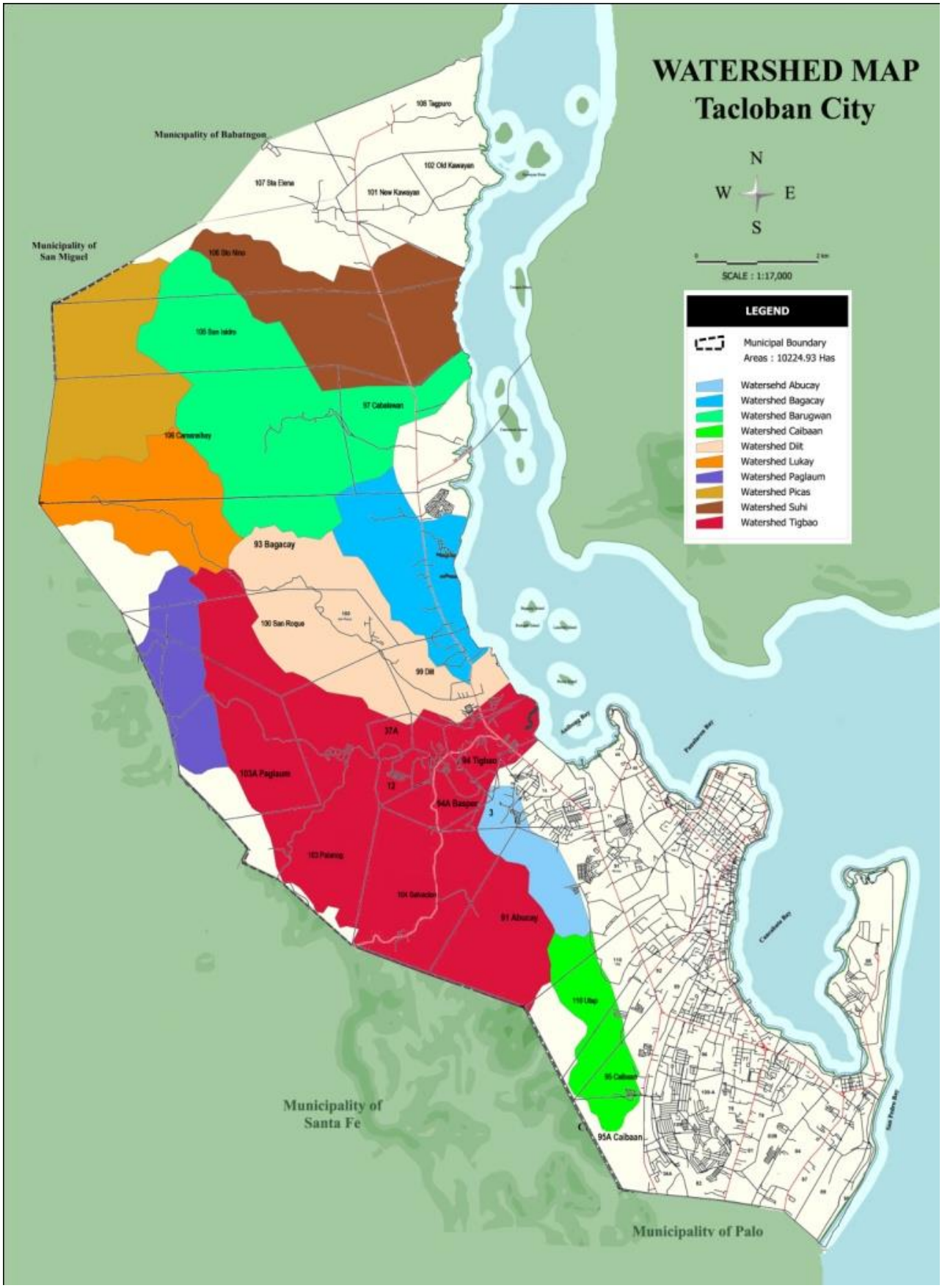
smaller as would normally be seen in neighbouring municipalities, which are less urbanized.

- **Biodiversity**

In terms of biodiversity values, the Baruguan-Suhi sub-watershed has the highest index score, because of its relatively high natural forest cover. For all values (hydrologic, economic and ecotourism), the paired Tigbao and Diit sub-watersheds ranks with the highest consolidated index score. Said sub-watershed hosted the 440.0 hectares upland watershed development project (CY 2011 – 2013) supported through a financing agreement with GIZ. Unluckily, it was damaged by super typhoon Yolanda. The active restoration of forest cover by the DENR through the National Greening Projects (NGP) augurs well for plans to tap on the sub-watersheds river systems for the development of a water supply system to augment the current supply provided by the Leyte Metro Water District (LMWD) particularly in the North resettlement areas of Tacloban. Further forest restoration activities and tough enforcement of Forestry laws is needed to realize the sustainable watershed management objective.

- **Watersheds**

The stakeholder profile of the City's forest and forestland areas, offers an understanding of the current realities in watershed management. From a forest planning standpoint, decision support systems can be developed to respond to the peculiarities of the City's watershed landscape which is dissected into different watershed management units. Each of these sub-watersheds covers a cluster of barangays suggesting spatial and functional connectivity relationships, in terms of demography and land use. There are ten (10) sub-watershed units that had been delineated based on topographical orientation.



Map 104. Watershed Map

7.1.5 Forestry

- **Status of Forests and Forestlands**

Table 7.15 Forest and ForestLand Use Types, by Category and Area, Tacloban City

CATEGORY	LOCATION	AREAS (HECTARES)	PERCENTAGE (%)
A. Production Forest		**3,606.20**	
1. Timber production (natural)	Camansihay	109.95	2.82
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5. Mineral Areas	(Mineral Exploration Permit covers entire Tacloban)		-
6. Special Land Use Permits (Communication Sites)	Mt. Naga-naga, Utap and Nula-tula, Abucay	4.62	0.12
B. Protection Forest		**297.34**	7.62
1. NIPAS Area			-
2. Non-NIPAS Area (Mangrove Rehab. Project)- City Government	Diit, Tigbao, Dio Island, San Jose, Tagpuro, San Isidro, Old Kawayan, Burayan, Nulatula, Naga-naga.	69.05	1.77
3. Non-Nipas Area (Remaining Mangrove Area per 2002 UP Study)	All coastal brgy's except with mangrove planation projects	41.30	1.06
4. Watershed protection areas (slopes >30%)	Tigbao, Diit, San Roque, Palanog, Camansihay, Paglaum (sab-a river basin).	186.99	4.79
TOTAL		**3,903.54**	**100.00**

Table 7.16 Sub-Watersheds by Category, Tacloban City

SUB-WATERSHEDS (SW)	AREA OF SW	BARANGAYS COVERED	CURRENT LAND USES
1. Barugawan-Suhi	1,709.14	San Isidro	GL, REFO, RNF
		Cabalawan	GL, RNF, AL, Coconuts/Perennials
		Sto.Nino	GL, RNF, Coconut, Tree plantation (CBFMA)
		Bagacay	GL, RNF, AL, REFO (IFMA-Manobo tribe)
		Camansihay	GL, RNF, AL (CSCs), Coconut
2. Tigbao-Diit	2,652.38	Brgy. 37-A	RNF, GL, AL, REFO, A&D
		GE Palanog	GL, Resettlement, A&D
		Basper	GL/BL, REFO, AL, RL, A&D
		Tigbao	GL, AL, RNF, A&D
		Salvacion	GL, AL, RL, Plantation (CBFM), RNF (ANR), A&D
		Abucay	GL, RNF, AL (CSCs), A&D
		San Roque	GL, RNF, AL (CSCs), Coconut, A&D
3. Naganaga-Nulatula	180.15	Upper Nulatula	A&D
		Lower Nulatula	RNF, Coconut, RL, A&D
4. Lukay-Paglaum-Picas	1,105.68	Paglaum	AL, RNF, REFO, Coconut
		San Roque	RNF, AL (CSCs), Coconut
		Palanog	RNF, AL, Coconut, Tree plantation (CBFMA)
5. Bagacay	398.69	Bagacay	GL, Refo (IFMA-Manobo tribe), AL, Coconut, A&D,GL, AL, A&D
		Cabalawan	GL, A&D
		Diit, Camansihay	GL, RNF, AL (CSCs), Coconut, A&D
6. Caibaan-Utap	253.25	Caibaan	RNF, Tree plantations (CBFM), A&D
		Apitong	RNF, Tree plantations (CBFM), A&D
		Utap	RNF, Tree plantations (CBFM), Coconut, A&D

- **Status of Sub-watersheds**

Tacloban's landscape is host to six (6) distinct sub-watershed management units. The sub-watershed with the largest concentration of watershed-embedded barangays is the Tigbao–Diit sub-watershed. This covers key barangays such as Barangays 103-A, 103, 37-A, 12, 94, 94-A, 104, 91 and 110.

Table 7.17 Protection Potential per Sub-Watershed, Tacloban City

SWS	ESTIMATED PROTECTION AREAS (HAS.)			TOTAL	STATUS (PROCLAIMED OR PROPOSED FOR PROCLAMATION)
	OGF	MANGROVE	OTHERS		
Salvacion	3.17		Old Plantation	10 has	RWRC
Palanog			RNF (secondary)	440 has	
Nula-Tula					
Caibaan			Plantation	105 has	CBFM
Camansihay			RNF	109 has	

The areas of significant cover are found in the portions of barangays Camansihay, Bagacay .Sto. Nino and Sta. Elena, which occur in the north-western part of the City transect. The Caibaan-Utap sub-watershed is host to the Caibaan CBFMA which has expanded to 105 hectares in the low relief mountain at the south-western end of the City. The downstream part has been the scene of major flooding in the City, in recent years.

- **Forest Cover Status**

The ratio of forest cover to forestland area (40:60) suggests a low forest per capita. This is well below the threshold set by FAO. The REIS land cover map show that the city has 399.39 hectares of open canopy residual natural forests. These are found in the steeps slopes of Tigbao-Diit and Baruguan-suhi watersheds. These fragments of natural forest occur at elevation ranges 300-500 masl. in the barangays of Camansihay and Bagacay. The 2009 REIS Map identifies several land cover types, namely, annual crops, perennial crops (coconuts), closed forest and shrubs.

Table 7.18 Forest Cover - Indicating Areas of Old Growth Forests, Residuals, Mossy Forests, etc. and Brushlands, Open Areas, Others

SUB-WATERSHED	BRGYS	FORESTED AREA, 2003 (NAMRIA)			
		OGF	RESIDUAL	CULTIVATED)	GRASS LAND
TIGBAO-DIIT	Salvacion, Basper, Palanog, San Roque, Diit		10.39	839.78	284.96
CAIBAAN-UTAP	Caibaan, Utap, Apitong			58.45	55.24
BAR-SUHI	Cabalawan, Camansihay, San Isidro, Sto. Nino	5.44	110.67	431.22	223.98
NAG-NULA	Naga-Naga, Nula-tula, Abucay			23.45	32.21
BAGACAY	Bagacay			166.11	68.44
LUKAY-PAGLAUM-PICAS	San Roque, Paglaum	306.81	268.02	637.81	1.13

- **Settlements in Forestlands**

Dispersed settlements occur in the forestland area, notably in the Tigbao-Diit watershed. The number of most probable untenured settlers in the sub-watershed consists of 66 families. The Palanog, San Roque cluster is especially vulnerable to the encroachment of settlements into the forest zone, since it is close to the resettlement area, where pressure for land is accentuated.

Table 7.19 Number of Direct Stakeholders/Land Users/Residents within the FFL, Tacloban City

RATING	CONCENTRATION OF HH WITHIN THE FFL ASPECT OF THE WATERSHED	SCORE	1	2	3	4	5	6
			BAR-SH	CAI-UTAP	TIG-DIIT	NAG-NULA	PPL	BAG
Very High	Very large	5			5			
High	Large	4					4	

RATING	CONCENTRATION OF HH WITHIN THE FFL ASPECT OF THE WATERSHED	SCORE	1	2	3	4	5	6
			BAR-SH	CAI-UTAP	TIG-DIIT	NAG-NULA	PPL	BAG
Moderate	Moderate	3	3					3
Low	Few	2						
Very Low	None	1		1				
						1		

- **Infrastructure and Private Investments in the FFL**

Except for the extension of the local road system across Palanog towards Sta. Fe town, there are no major infrastructures that carry significant management implications to the forest and forestland area. No major roads and bridges are planned and public infrastructures are mostly limited to road improvement projects. The Wildlife Rescue Center represents one of the modest public sector investments that is forest related. This involved rehabilitation of physical structures for administration building facility and visitor reception.

Table 7.20 Extent of Roads and Bridges, Tacloban City

SUB-WATERSHED	BARANGAY	ALL WEATHER ROADS	DRY SEASON	NO. OF BRIDGES	REMARKS (INDICATE IF THERE ARE ROADS/BRIDGES FOR CONSTRUCTION IN NEXT 5 YEARS
Tigbao-Diit	Brgy 103, 37A,12, 104, 91, 94, 94A,	108.77	5.67	10	3.56 newly established road
Caibaan-Utap	Brgy 95, 110, 92,	7.52			
Barguwan-Suhi	Brgy 97,98, 105,106	22.76		4	
Naganaga-Nulatula	Naga-naga to Nulatula	1.04		1	
Bagacay	Brgy 92, 98	14.63		1	
Lukay-Paglaum-Picas	Brgy 103A, 100, 103	11.60	4.21		

Table 7.21 Agricultural/Domestic Infrastructure Support, Tacloban City

SUB-WATERSHED	BRGYS.	NAME OF DAM, IRRIGATION & WATER SYSTEM	SERVICE AREAS	NO. OF HOUSEHOLD BENIFITED	REMARKS (INDICATE IF THERE ARE PLANNED INVESTMENTS IN NEXT 5 YEARS, WATER QUALITY / QUANTITY)
TIGBAO-DIIT	Brgy 12, 37, 103	LGU Water Facility	Palanog communities and other northern barangays	500	Potential for the establishment of a water supply facility
BAR-SUHI	Brgy 98, 99	Private concessionaire	Malls, Subdivisions	Robinsons, Peerless subdivision, KaselCity	Establishment of bigger water reservoir
		LGU Water Facility	Northern barangays of Tacloban	4,000	

- **Production and Protection Forestland**

The Balance Sheet of Production and Protection Forestlands, based on slope and elevation parameters, suggest a significantly large area (1,910.11 hectares) that can be allocated for production forestry purposes. However, the conservation values placed for source-water protection areas (1,993.43 hectares) and the presence of discontinuous forest cover, combined to create a needed layer of protection for its degraded watersheds. See Map below.

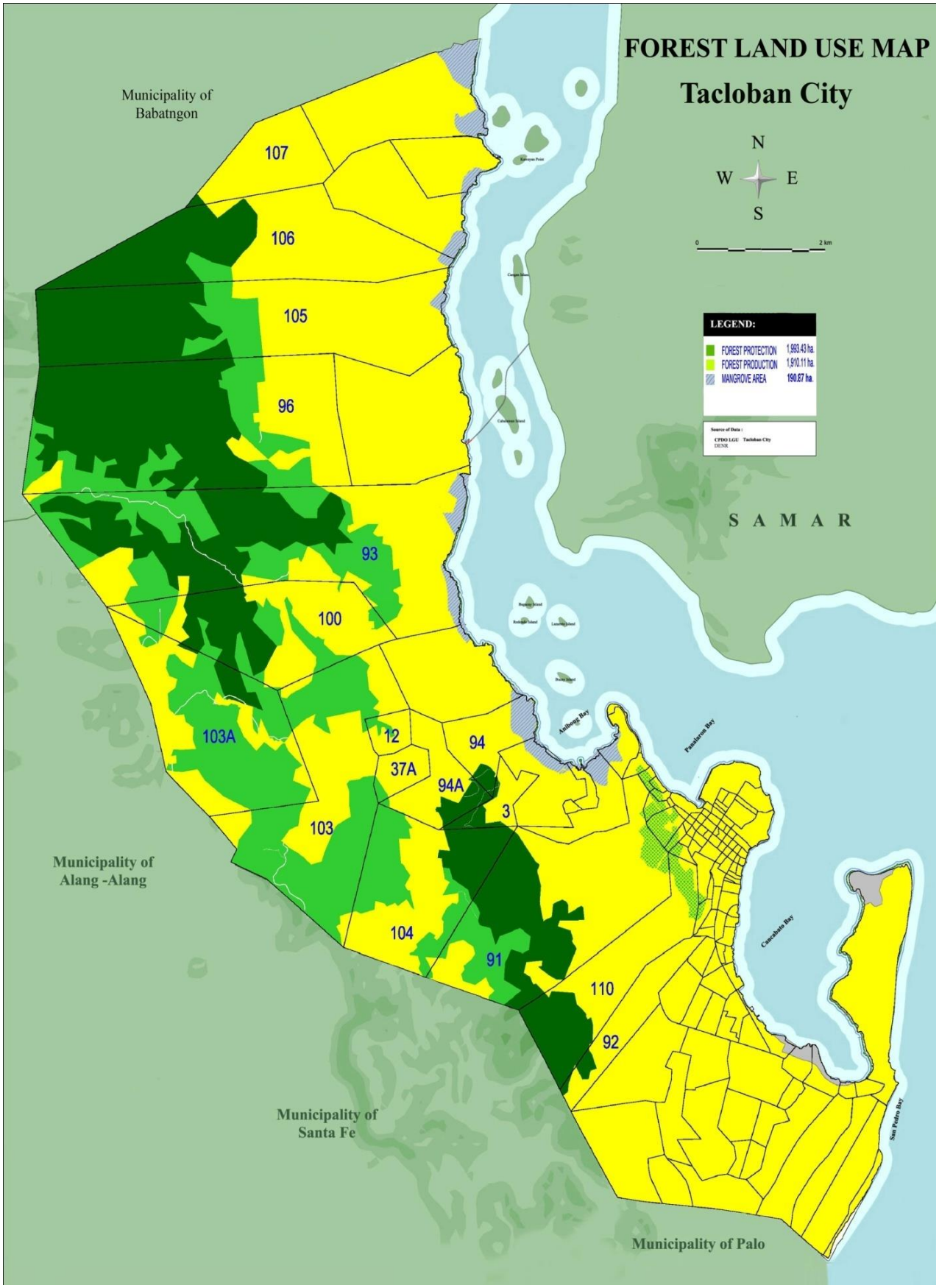
Table 7.22 Slope Category per Sub-Watershed, Tacloban City

SUB-WATERSHED	TOTAL AREA	AREA PER SLOPE CATEGORY		
		< 18%	18-30%	30-50%
TIGBAO-DIIT	2,633.24	2,344.69	285.5	3.07
CAIBAAN-UTAP	251.68	122.35	121.61	7.71
BAR-SUHI	1,691.45	1,389.10	274.54	27.8
NAG-NULA	179.04	78.037	92.51	8.48
BAGACAY	386.16	356.71	29.44	
LUKAY-PAGLAUM	1,102.12	820.41	258.54	23.16
TOTAL	**6,243.71**	**5,111.28**	**1,062.16**	**70.24**

Table 7.23 Elevation Category in every Sub-Watershed, Tacloban City

SUB-WATERSHED	TOTAL AREA	AREA PER ELEVATION CATEGORY		
		<500 masl	>500-1000 masl	>1,000 masl
TIGBAO-DIIT	2,633.25	2,633.25	0	0
CAIBAAN-UTAP	251.68	251.68	0	0
BAR-SUHI	1,691.45	1,681.28	10.17	0
NAG-NULA	179.04	179.04	0	0
BAGACAY	386.16	386.16	0	0
LUKAY-PAGLAUM	1,102.13	1,102.13	0	0
TOTAL	**6,243.71**	**6,233.54**	**10.17**	**0**

This category extends to the 10-hectares Regional Wildlife Rescue Centre (RWRC) at Barangay Salvacion, although the site can be very well be set aside as a protected area. The Production Assets of the City's forestland area covers 3,932.04 hectares while the Protection Lands constitute 205.17 hectares, representing 4.96 per cent of total forestlands area. Using the slope-elevation, technical criteria as basis for determining zones of protection, may be of little consequence, to Tacloban's case. High conservation values placed on water sources (e.g. Brgy. Camansihay) and small pockets of natural forest.



Map 105. Forest Land Use Map

7.1.6 Recommended Components and Strategies for FLUP Implementation

- **Policy Measures**

Clear policy statement of the City in securing the watershed protection zone is an essential policy prescription that will serve as the cornerstone for allocation and zoning. Agricultural plots and settlements within the proposed water reservoir in the Tigbao-Diit sub-watershed may have to be purposively managed, since these carry possible involuntary resettlement issues. Actual land users are to be given preferential option for forest land stewardship. Forestlands claimed by non-residents have to be allocated judiciously for public interest projects, such as for watershed protection. Whenever practicable, forest-based families can be given the option to live and develop the area (1-ha plots) with livelihood support system for conservation farming.

Sound policy fundamentals require that the watershed-embedded barangays be recognized as key institutional stakeholder in the allocation and land management system. The barangay can be engaged in the determination of potential "controlled" forest estates for relocating forest-based dependents. It shall also be the policy and organizational thrust of the City to organize, institutionalize and strengthen the cluster of barangays into watershed management councils.

In the event that major commercial- scale water resource development projects are to take place in any of the City's sub-watersheds, a system for Payment of Environment Service (PES), has to be adopted as a policy prescription. This suggests that conservation fees have to be bundled in the water price, placed in a trust fund and then plowed-back to the watershed-embedded barangays in terms of needed basic services and livelihood programs.

- **Allocation and Closure of Open Access FFL**

The cornerstone of the FLUP is to ensure that the balance of FFL areas not covered by tenure regimes (CBFM, IFMA), will be earmarked for co-management. This implies the operationalizing the provisions of DENR-DILG Joint Memorandum Circular 2003-01 on partnership in the management of forests and forest land areas. The existing co-management agreement will be retrofitted to include discrete allocation models, with the issuance of individual property rights (IPR).

The prototype for this shall apply to the 440 hectares of forest lands currently developed and managed by the City ENRO, with assistance from GIZ. The enhanced Co-Management Model will apply to discrete, open-access areas specific to a particular sub-watershed. In this instance, the Co-management agreement for Tigbao-Diit sub-watershed specifies discrete open-access, production versus protection forestlands. *(See Table 7.24)*

Table 7.24 Summary of Allocated Forest Lands, Tacloban City

SUB-WATERSHEDS COVERED	ALLOCATIONS	WATERSHEDS COVERED	AREA IN HECTARES	STATUS
TIGBAO-DIIT	CBFMA	Basper, Palanog, Salvacion	572.09	Undergoing plantation maintenance and protection
	IFMA	-Palanog	241	Undergoing plantation development- organization inactive
	FLMA	San Roque,	54	Need assessment
	CSC	-Palanog	303	GIZ supported project and WildlifeRescueCenter
	Co-Management	San Roque, Salvacion	450	Information Education Campaign (IEC)
	Peatland	- Paglaum, Palanog	434.54	
CAIBAAN – UTAP	CBFMA	-Caibaan, Utap	283.09	GIZ, NGP-supported Reforestation
	IFMA			
	FLMA			
	CSC			
	Co-Management			
BARUGWAN-SUHI	CBFMA	-Camansihay	40.56	Beneficiary of NGP
	IFMA			
	FLMA			
	CSC		347.38	NGP Beneficiaries
	Co-Management			
BAGACAY	CBFMA			
	IFMA		241	80 has plantation
	FLMA			
	CSC			
	Co-Management			
LUKAY-PAGLAUM-PICAS	CBFMA	San Roque		
	IFMA			

SUB-WATERSHEDS COVERED	ALLOCATIONS	WATERSHEDS COVERED	AREA IN HECTARES	STATUS
	FLMA			
	CSC		8	
	Co-Management		340	GIZ assisted

- **Management of Allocated FFL**

A conclusive feature of the co-management agreement is the assignment of sub-agreements (or cooperative agreements) to farmer-stakeholders who participated in the reforestation and agro-forestation initiatives of the city. The agreements should however conform to the allocation model, where ANR-projects will have to be set aside for protection purposes, while reforestation projects will generally fall into the Forest Production Area (FPA) of the watershed.

Table 7.25 Forestland Allocation, By Category and Criteria, Tacloban City

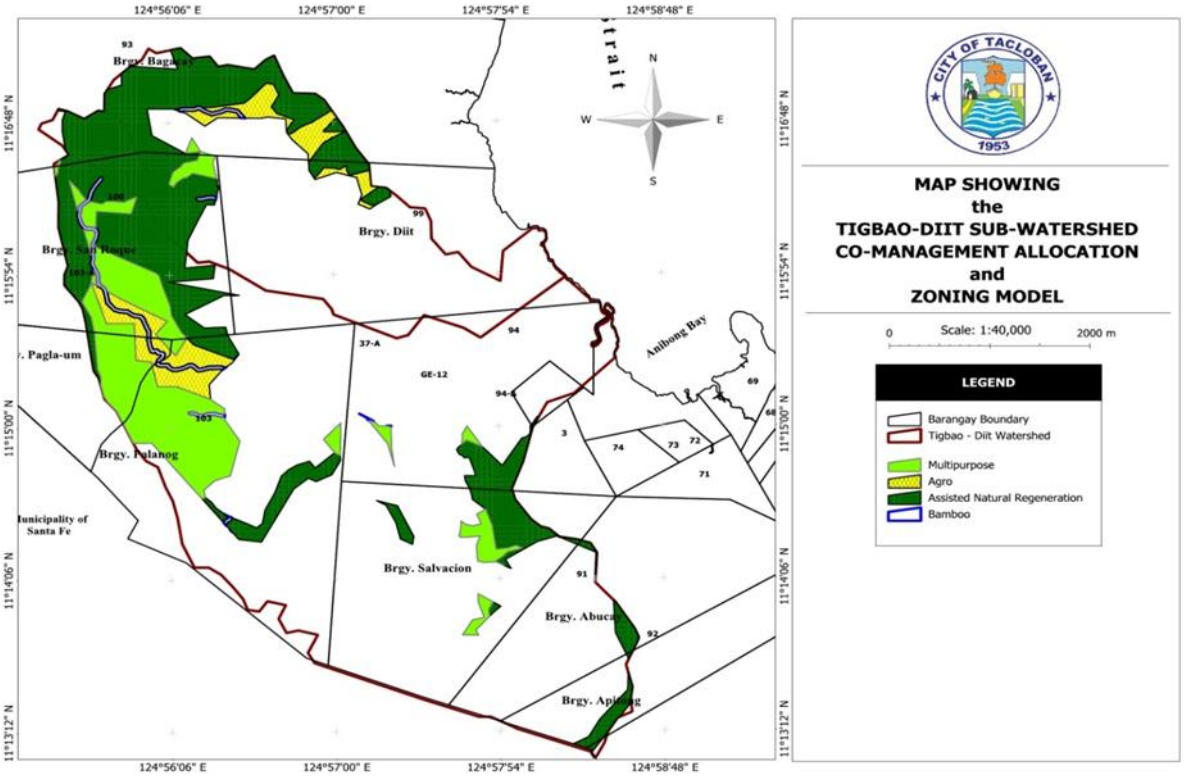
SUBWATERSHED	PRODUCTION FORESTLAND		PROTECTION FORESTLAND	
	TENURED	UNTENURED	TENURED	UNTENURED
Tigbao-Diit	903.23		888.09	3.08
Caibaan-Utap	283.09			7.71
Bar-Suhi	387.94		503.45	27.81
Nagnaga-Nulatula	295.224		-	8.48
Bagacay	241.00		-	
Lukay-Paglaum-Picas	82.7		1,022.98	23.17
Total	**1,532.16**		**2,414.52**	**70.24**

The designation of Tigbao-Diit as Community Watershed in support to the future water supply requirements of the City is a key option. The zoning arrangement will however consider potential Communal Forest Production Areas, within the sub-watershed. This will have to be effected through the cluster of barangays, which can help determine the appropriate area that can be set aside for wood production.

Following the “Leaf-Vein” strategy, the apical sections of the sub-watershed including the critical slopes along its margins and the 20-meter riparian setback and buffer along the midrib of the watershed –drainage area shall be designated

as Strict Protection Zone. All other areas can be designated as Agro-forestry and Limited Timber Production Zones (*See Table 7.26*).

Figure 7. 2 Tigbao-Diit Sub-Watershed



Flagging the critical sections on the map however is not enough to make restrictions work. Providing “vegetation-marker” measures (e.g. the African tulip (*Spathodeacampanulata*) with its red inflorescence can help community-based enforcement draw the line with the help of the barangays.

Table 7.26 Tigbao-Diit Sub-Watershed Co-Management Allocation & Zoning Model

BARANGAY	LAND USES AND ZONING			
	MULTIPURPOSE TREE PLANTATION (HAS.)	AGROFORESTRY (HAS.)	ANR (HAS.)	BAMBOO (HAS.)
Bagacay	1.63	27.90	150.89	2.90
San Roque	64.80	14.79	180.37	9.97
Diit		6.38	10.07	
Paglaum	34.40	6.58	2.66	1.63
Palanog	89.39	25.27	32.72	5.02
Basper	4.59		23.19	0.15
Salvacion	16.98		36.21	
Abucay			8.59	
Apitong			10.04	
Total	**211.79**	**80.92**	**454.73**	**19.67**

- **Advocacy, Communication and Social Mobilization**

The City will have to adopt key advocacy points to acquire support from key stakeholders, particularly the watershed-embedded barangays. A "water, trees and life"-type of social marketing should bring the message of securing the productive and protective properties of the sub-watersheds to the barangays who by the very nature of their presence in the area can become effective communication medium. Efforts have to be directed in supporting the barangays in mobilizing its citizens not only in tree planting, but as well as the avoidance of grass, brush and forest fire.

It is envisaged that resource support from private institutions shall be enlisted, as part of the City's drive to tap Corporate Social Responsibility (CSR) commitments to support reforestation/ rainforestation. (e.g. Adopt –A-Forest).

- **Enforcement of Forestry Laws, Rules and Regulation**

The weakest link in the enforcement oftentimes occurs at the level of the community. Proactive participation of the stakeholder-barangays is the key for developing a preventative system, rather than the reactive-punitive system, which demand institutional attention and resources to become sustainably effective. The

strategy calls for anchoring forest management with barangay involvement with the support from the DILG. Incentive mechanisms need to be installed to support barangays involved in forest protection. Organization of Watershed-Management Council of the cluster of barangays sharing the same watershed management unit is a key measure to improve. Common policies and unified actions within the watershed cluster.

- **Forestland Rehabilitation, Development and Management**

Effort to rehabilitate the City's watersheds is a continuing effort by the City Government and the DENR through its National Greening Program. The set of measures shall continue to expand the scale of reforestation activity. At the moment, the City ENRO is helping the PNP and the private sector, negotiate for areas that can be reforested under the aegis of the National Greening Program. A stakeholder and tenure-oriented land use, characterizes the City's approach to forestland management. The Tigbao-Diit sub-watershed serves as the illustrative example of this continuing initiative, where at least 200 families are being tapped to carry out, plantation and agro-forestry development activities.

a) Assisted Natural Regeneration (ANR)

The Source Water protection areas (SWPA) in all the sub-watersheds have to be provided with added ANR-interventions, to ensure sustained re-growth of natural vegetation. ANR is expected to bring back forest cover by as 20% over the next three years. This improvement in cover can potentially reduce peak flows and run-off damage downstream by a meta-equivalent of 15-20% flood discharge.

b) Community Forest Production Areas

The delineation of community forest production areas covering at least 10 hectares per barangay within the sub-watershed cluster can potentially provide fuelwood requirements, in the short term and sawnwood over the longer term rotation period of the plantations. This will also reduce tendencies to extract wood requirements from the remaining natural forests, which traditionally have been the sources of the local people.

c) Soil and Water Conservation Measures

Hillyland cultivation within forest production area is to be directed towards the adoption of conservation (e.g. contour farming)/landcare farming practices. Conservation credits can be given to compliant farmers who can be rewarded with material and funding incentives from the City Agriculture Services.

d) Nursery Establishment

Establishment of network of nurseries at the barangay level and within the schools system to support NGP requirements and tree plantation requirements of private entities will be encouraged. Clonal nurseries can be developed from the actively managed CBFM and Co-managed areas, as source of planting materials. The barangay's annual seedling production can accommodate the DILG's support requirement for barangays (25,000 seedlings/annum) as national convergence initiative commitment to the NGP.

e) Multisectoral Protection and Management of Tacloban's Watersheds

Institutionalization of a Co-Management Steering Structure (CoMSS) involving the City LGU, DENR, Private Sector and Civil Society Organization will be the centrepiece Eco-Governance Structure for the Co-Management platform. The CoMSS shall be responsible for policy review and guidance to the primary implementing units such as the City ENRO and DENR-CENRO. Whenever practicable, it shall however, include a representative from the Private Sector, Civil Society and the academe.

- **Development of Tourism**

The tourism potentials of the Tacloban's forests and forestland areas are relatively understated, in view of the high profile ecotourism destinations in the Leyte Island. Nevertheless, it remains important to highlight in the plan, FFL assets with potential ecotourism values. This includes primarily the Balugo Falls within the Regional Wildlife Rescue Centre (RWRC) and the Tigbao –Diit Rainforest System.

- **Forest Management as Economic Enterprise**

Forest Management can be turned into Economic Enterprises such as, but not limited to timber, fuelwood production and agro-forestry. Even cottage-level nurseries can be encouraged, with technical support from the City ENRO. The nurseries can supply the requirements of the NGP target areas in the City's priority watersheds, and private tree planters as well. The development of livelihood enhancing agro-forestry (LEAF) systems such as Sericulture-based agro-forestry project advocated by the City Agriculture Office can potentially provide both economic and environmental safeguards as well. *(See Table 7.27)*

Table 7.27 Past & On-going Projects or Investments in Forest Rehabilitation, Tacloban City

BRGY.	PAST & ONGOING PROJECTS	PERIOD COVERED STARTED	SPECIES	AREA (HA.)	IMPLEMENTING UNIT	STATUS	SOURCE OF FUND	COST (PHP)
Brgy. 91 Abucay	National Greening Project	2012	Fruit tree spp	30	PO	On-going	DENR	150,000
Brgy. 93 Bagacay	Bamboo Plantation Project	2015-2016	Tangnan, Kayale, Patong, Bagacay	15	Samaritans Purse/PO	On-going	INGO/ DENR	111,000
Brgy. 93 Bagacay	National Greening Project		Indigenous spp, fuelwoodspp	100	PO	Completed	DENR	800,000
Brgy. 98 Camansihay	Bamboo Plantation Project	2015-2016	Tangnan, Kayale, Patong, Bagacay	138	Samaritans Purse	On-going	INGO	1,021,200
Brgy. 98 Camansihay	National Greening Project	2012-2015	Indigenous spp, fuelwoodspp	150	PO	Completed	DENR	1,200,000
Brgy. 100 San Roque	National Greening Project	2012	Fruit tree spp	200	PO	On-going	DENR	1,050,000
Brgy. 105 San Isidro	Bamboo Plantation Project	2015-2016	Tangnan, Kayale, Patong, Bagacay	27	Samaritans Purse	On-going	INGO	199,800

BRGY.	PAST & ONGOING PROJECTS	PERIOD COVERED STARTED	SPECIES	AREA (HA.)	IMPLEMENTING UNIT	STATUS	SOURCE OF FUND	COST (PHP)
Brgy. 106 Sto. Niño	Bamboo Plantation Project	2015-2016	Tangnan, Kayale, Patong, Bagacay	12	Samaritans Purse	On-going	INGO	88,800

Forestry Analysis Matrix

TECHNICAL FINDINGS /ISSUES/ PROBLEMS	EFFECTS/ IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
Forest degradation due to illegal and destructive activities	Low carbon sequestration due to limited vegetation; Contribute to global warming due to increasing concentration of atmospheric pollutants	Forest restoration through assisted natural regeneration (ANR), multi-purpose tree plantation and agroforestry scheme. Land tenure profiling to identify idle land areas subject for tree planting. Planting of indigenous climate resilient species in protection forest and fast growing species with high coppicing ability in production forest. Strengthening the involvement of CBFM POs, stakeholders, communities for the protection and enforcement of forestry laws.
Increasing magnitude of landslide in upland areas and flooding in low lying areas	Soil erosion and siltation, shortage of potable water supply, damage to crops and livelihood, damage to infrastructures, induce geological stress, decrease government revenues	Implement soil and water conservation programs like contour planting, riverbank stabilization project, agroforestry, bamboo planting along riverbanks, fruit orchard establishment, essential oil production and sustainable firewood production. Ground validation of identified landslide prone areas in Tacloban. Establishing landslide vulnerability assessment and monitoring system.
Increasing threat of species extinction of both flora and fauna	Extinction of flora and fauna, genetic loss, unstable ecosystem	Legislation, adoption and enforcement of local and national conservation and protection policies. Enforcement of forestry and related environmental laws. Habitat restoration and protection
Unsustainable farming system in the upland	Decrease soil fertility and productivity. Increase the extent of barren land in the forest. Loss of forest ecosystem	Agro-farming. Enforcement of forestry and related environmental laws. MOA with concerned agencies and organizations in identifying and implementing appropriate alternative livelihood projects.
Technical Findings /Issues/ Problems	Effects/Impacts/Implications	Possible Solutions (Legislations, Policies, Programs, Projects)

TECHNICAL FINDINGS /ISSUES/ PROBLEMS	EFFECTS/ IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
No delineation of production, protection and other areas within the forest land	Encroachment of farming and firewood gathering in critical habitat and protection forest. Affect ecological balance. Degrade forest ecosystem	Delineation and demarcation of forest protection and production zone as initiative in forest land and watershed management. Preparation and approval of Forest Land Use Plan. Establish buffer zones from the edge of the protection forest. Monitoring and implementation of the forest and land use plan.
Low level of awareness on forest ecosystem, watersheds and climate change	Contribute to continuous degradation and increasing risks on disasters. Contribute to ecosystem and ecological imbalance	Information and Education Campaign on Forest Ecosystem and Climate Change awareness, forest and environmental protection.. Collaborative research and development on climate change and forest ecosystem; linkage with academe and other research and science institution. Encourage participation of business sectors, institutions and industries to adopt-a-mountain as part of their corporate responsibility (CSR).
		Review of co-management agreement between DENR and City Government of Tacloban; Create inter-agency council with neighboring municipality besideTacloban; Mainstreaming gender on forest, watershed mgt. and climate change. Climate financing and allocation of funds; Institutionalize functional watershed management council; Barangay resolutions on Forest protection and climate change adaptation.
Decrease water quantity and quality	Low water supply for domestic use and irrigation.	Protection of areas with high ground water recharge. Establish water collection measures like rain water catchment and impounding dikes, irrigation system for domestic and agricultural use. Establish early warning for drought occurrence; crafting of drought mitigation plan,

TECHNICAL FINDINGS /ISSUES/ PROBLEMS	EFFECTS/ IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
		access and use of seasonal information, drafting of proposals for water system improvement; Organizing community-based water system association.

Priority Issues, Possible Solutions and Responsibility Centers

PRIORITY ISSUES, CONCERNS, PROBLEMS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)	RESPONSIBILTY CENTER
Forest degradation due to illegal and destructive activities	Forest restoration through assisted natural regeneration (ANR), multi-purpose tree plantation and agroforestry scheme. Land tenure profiling to identify idle land areas subject for tree planting.	LGU, DENR, DAR, DA and other agencies concerned (local, national and international)
	Planting of indigenous climate resilient species in protection forest and fast growing species with high coppicing ability in production forest.	LGU, DENR, DAR, DA and other agencies concerned (local, national and international)
	Strengthening the involvement of CBFM POs, stakeholders, communities for the protection and enforcement of forestry laws. Enforcement of forestry and related environmental laws.	LGU, DENR, DAR, DA and other agencies concerned (local, national and international)
Low level of linkage network and awareness on forest ecosystem, watersheds and climate change	Information and Education Campaign on Forest Ecosystem and Climate Change. Collaborative research and development on climate change and forest ecosystem; linkage with academe and other research and science institution.	LGUs, DENR, Private Institutions, Academe/Schools and foreign organizations.
	Encourage participation of business sectors, institutions and industries to adopt-a-mountain as part of their corporate responsibility (CSR). Pocket forest on schools; production of IEC materials;.	LGUs, DENR, Private Institutions, Academe/Schools and foreign organizations.
Priority Issues, Concerns, Problems	Possible Solutions (Legislations, Policies, Programs, Projects)	Responsibility center

PRIORITY ISSUES, CONCERNS, PROBLEMS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)	RESPONSIBILTY CENTER
	Integrate International and national campaigns at the local kick-off activities. Creating MOA between City Government, Schools, CSOs, Religious organizations and private sectors on climate change awareness and forest and environmental protection.	LGUs, DENR, Private Institutions, Academe/Schools and foreign organizations.
BIODIVERSITY		
Increasing threat of species extinction of both flora and fauna	Legislation, adoption and enforcement of local and national conservation and protection policies.	DENR, PAWB, LGUs, Private sector, Forest Guard
	Enforcement of forestry and related environmental laws. Habitat restoration and protection	DENR, PAWB, LGUs, Private sector, Forest Guard

7.2 Biodiversity in Tacloban City

Introduction

Sustainability managed forest areas cannot entirely replace protected areas as storehouses for biodiversity, but they can be integral component of conservation strategy that encompasses a larger portion of the landscape to be set aside for strict protection. Within the context of biodiversity conservation, assessment of vegetation with emphasis on biological diversity measurement becomes increasingly important in the sustainable management and conservation of forests particularly those inside protected areas.

Principles and Benefit of Biodiversity

Biodiversity or biological diversity is the variability of life. It is composed of (a) the variety of ecosystem types, (b) the variety of species, and (c) the variety of gene types in each species.

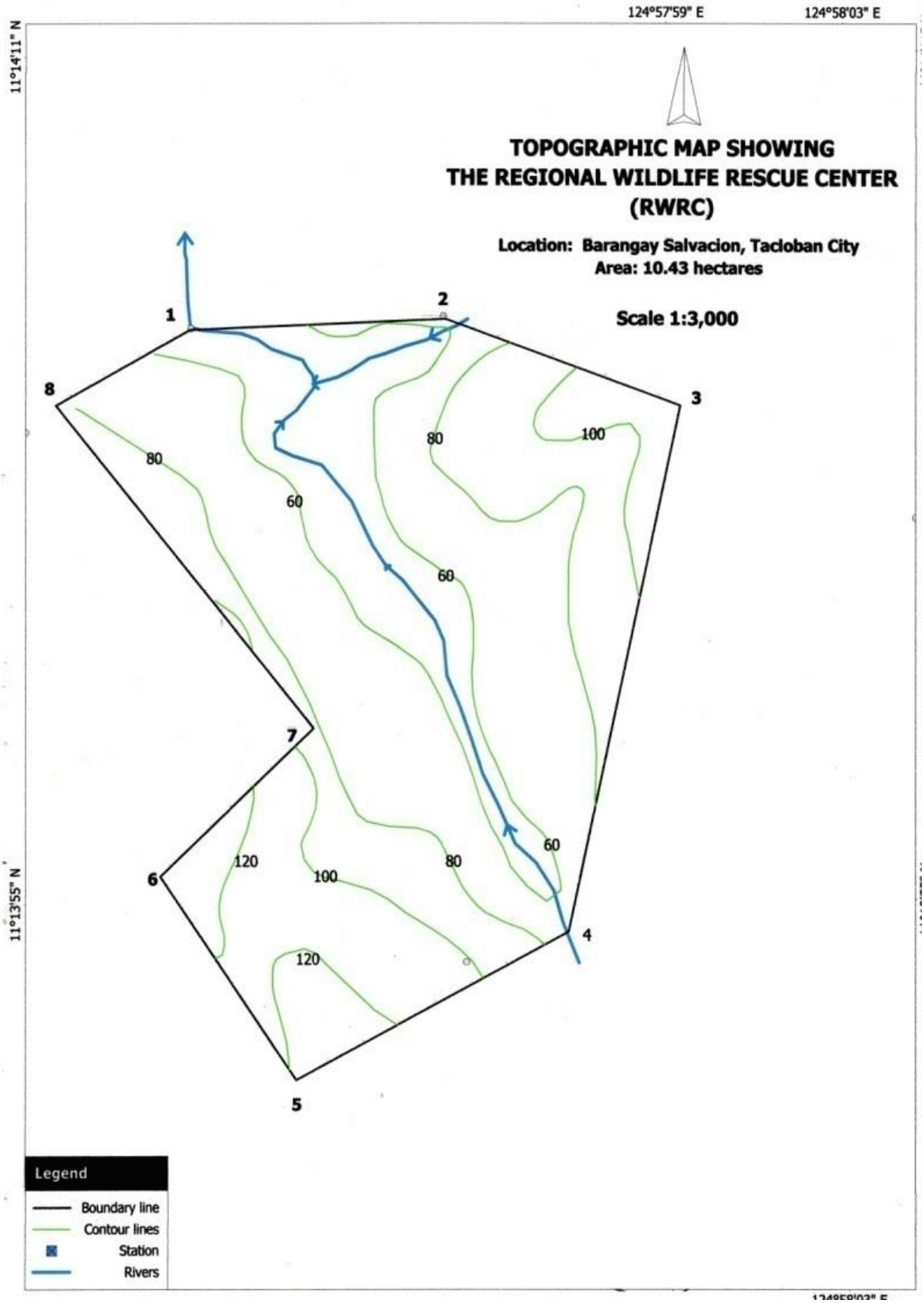
Biodiversity provides options/choices and resilience to natural ecosystems. Thus, it helps sustain the clean air, water, food, safety of and materials for shelter, clothes, materials, medicines, regulated climate, recreation, and other things that people use. Biodiversity helps protect people from hazards such as landslides and

storms and is especially important in this era of rapid climate change. We need biodiversity for our survival but we must be cautioned not to use it beyond its natural ability to regenerate its living-giving functions both for the present and future generations.

Biodiversity resources provide the human population with ecological life support services and economic benefits. Biodiversity has both direct and indirect use values:

- Direct use values of biodiversity refer to harvestable products that include raw materials and extracts with medicinal uses and/or manufactured into pharmaceutical products; agricultural uses that include crops, biological pest control and pollinators; and consumptive uses that include wood, fish, and meat, among other material goods for consumption.

- Indirect values are ecological services that provide life support systems benefitting the human population such as biogeochemical cycles, waste disposal, and provision of fresh water, prevention of soil erosion, regulation of climate and provision of ecotourism amenities, among others. The diversity of the biological composition of forest ecosystem and coastal habitats sustains the stability and productivity of their ecological functions, which provide vital life support services and material products that benefit the human population.

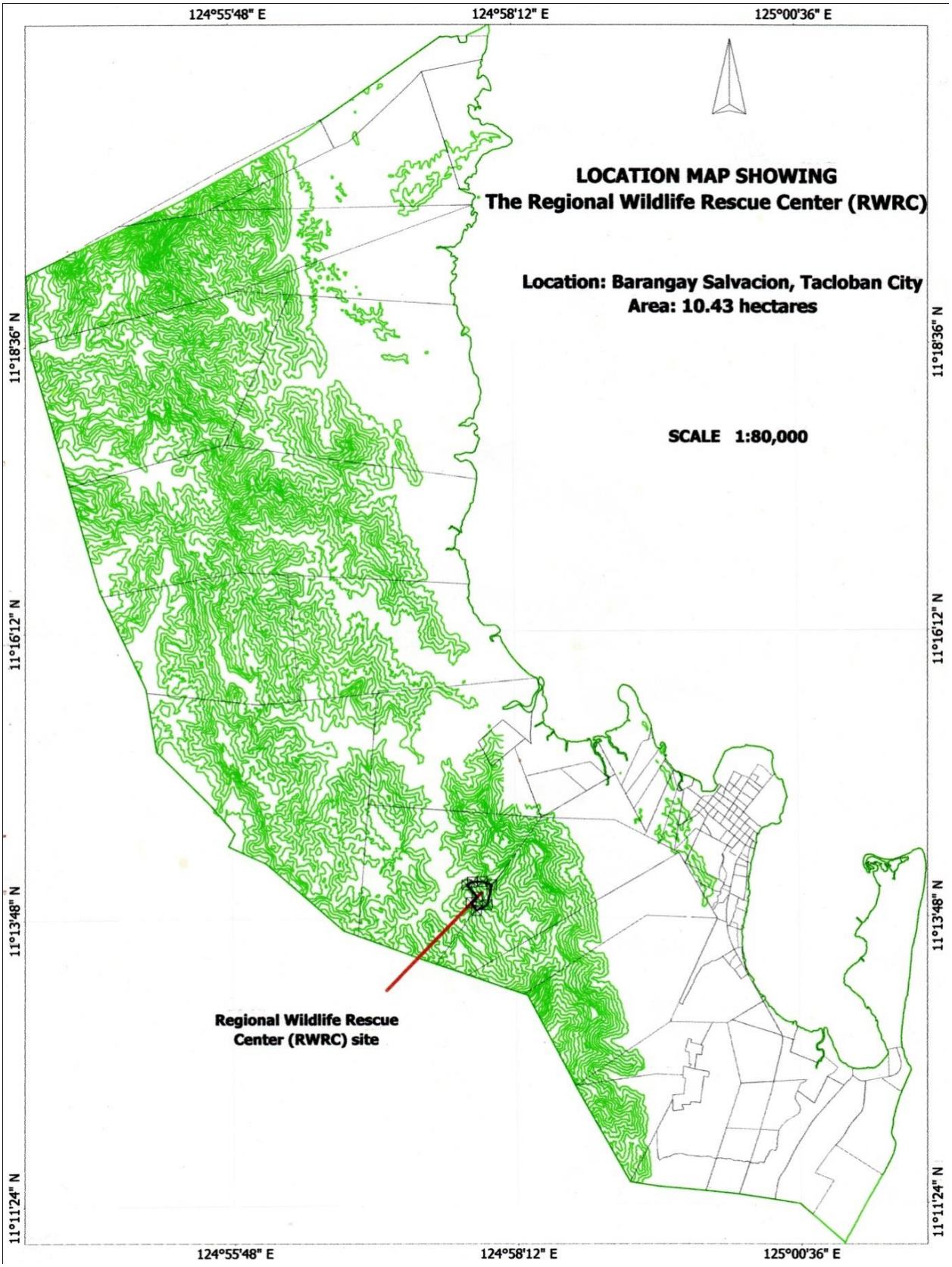

124°57'59" E
124°58'03" E
11°14'11" N
11°13'55" N
TOPOGRAPHIC MAP SHOWING
THE REGIONAL WILDLIFE RESCUE CENTER
(RWRC)
Location: Barangay Salvacion, Tacloban City
Area: 10.43 hectares
Scale 1:3,000
1
2
3
4
5
6
7
8
80
100
60
120
Legend
Boundary line
Contour lines
Station
Rivers

- **Biodiversity in Tacloban City**

The geographic location and diverse habitats of the Philippines make it one of the 18 countries in the world with the most biodiversity or mega-diversity countries. Many of the Philippines' species are endemic meaning they are found nowhere else in the world.

- The Philippines ranks fifth among all countries in terms of diversity in plant species and fourth in terms of bird endemism.
- About 25 genera of plants and 49 percent of the Philippines' wildlife are endemic to the country.
- The Philippines, Malaysia and Indonesia have the highest coral, seagrass and reef fish diversity in the world
- Inland waters host at least 121 endemic freshwater species (BMB, 2009).

In Tacloban City, the wildlife rescue center in Brgy. Salvacion, contains about ten (10.0) hectares of tree plantations and secondary forests. Assessment of current status of the vegetation within the proposed wildlife sanctuary can provide baseline information to researchers, development planners and local government officials for the determination of the kind of intervention needed for rehabilitation conservation and protection programs.



Map 106. Location of The Regional Wildlife Rescue Center

- **Species Composition**

A total of 94 tree species were recorded belonging to 44 families. The most represented family with 11 species was the Moraceae. This is foolowed by Euphorbiaceae with 9 species. The other highly represented families were Apocynaceae (4), Lauraceae (4), Poaceae (4), Anacardiaceae (3) Dipterocarpaceae (3), most species in Moraceae and Euphorbiaceae families are pioneer and are associated with regeneration areas both in the open and partially shaded conditions. For the other most represented families, species were present in regenerations inside reforestations sites.

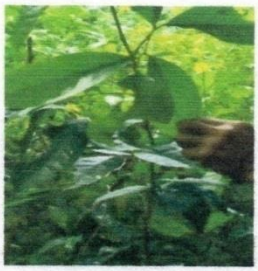
- **Species Distribution**

Seventy-five of the species recorded are found in the intermediate layer, 39 in the ground layer and 22 in the canopy layer. Most of the species are under the stage of regeneration inside reforestation areas. Species occupying the canopy are composed of reforestation species such as mahogany, teak, yemani, almaciga, and dao. Naturally occupying species in advanced regeneration areas like bahai and toog also composed the canopy layer. Species occupying the ground layer include both species adopted in the open such as the grasses and associated species and regeneration species Grass species are abundant in the ground layer when the canopy is relatively open; regeneration species are common in the ground layer under partial shaded conditions.

Sample photos of floral species taken during the conduct of biological resource assessment on March 26-May 31, 2011 at Brgy. Salvacion, Tacloban City.

Shorea contorta

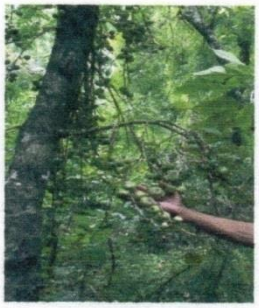
Tectona grandis



Euphoria didyma

Pteris vitatta

Securinega flexuosa



Ficus nota

Costus speciosus

Agathis philippinensis

Piper aduncum

Paspalum conjugatum

Commersonia bartramia

Garcinia binucau


Petersianthus quadrialatus


Imperata cylindrica


Calamus merillii


Trema orientalis


Terminalia microcarpa


Scleria scrobiculata


Swietinia macrophylla


Mimosa pudica


Calopogonium mucunoide


Shorea negrosensis


Alstonia scholaris


Dracontamelon dao


Artocarpus nitidus


Ficus ulmifolia


Leucaena leucocephala

- **Mammalian Fauna**

A total of 11 mammals were recorded in the study site. These belong to 5 orders and families. The most represented order was Chiroptera with 6 species. Of these 11 mammals, three (27%) are endemic to the Philippines and 3 of which 3 (27%) are listed under CITES Appendix II.

Most bat species are known to be abundant in disturbed sites particularly associated with human habitation. The presence of these species indicates that the area is practically open although the vegetation in some areas are still intact. Two murids (Polynesian rat and Oriental House rat) and the Asian House Shrew are present in site. These are commensal species that are common in urban and rural areas in or near human habitation and agricultural areas.

- **Avifaunal Species**

A total of 36 birds species were recorded in the study site (Table 1). These species belong to 11 orders, 24 families and 30 genera. The most represented order is Passeriformes with 18 species belonging to 13 families. The second most represented order is Columbiformes with 5 species. This is followed by orders Coraciliformes with 3 species and Cuculiformes and Psittaciformes with 2 species each.

Columbidae is the most represented family with 5 species of dove and 1 species of pigeon. It is followed by family Pycnonotidae with three species of bulbul. Most Columbidae species are frugivorous and are often encountered in brushlands bordering secondary forest areas. Their ability as good agents for seed dispersal enables them to play vital role in the forest ecosystem. Of the 36 avian species recorded in Brgy. Salvacion, eleven (30%) are endemic to the Philippines. Three species are listed in CITES appendix II.

- **Herpetofaunal Species**

A total of 4 species of amphibians belonging to 2 families were observed in Brgy. Salvation, TaclobanCity (Table 3). Of the 4 species, 2 are resident (Common Ricefield frog and Rock Frog) while the other 2 (and Horned Litter Toad and Giant

Philippine Frog) are endemic. The 3 species of Ranids are associated with relatively clean water bodies.

A total of 11 reptiles belonging to 8 families recorded in the site of which 2 (18%) are endemic to the Philippines. Order Squamata is the most represented with 5 species of lizards.

The Asian Box Turtle is associated to bodies of water from highly disturbed areas near cultivation to the forest interior. All the species of geckos and lizards were seen in or close to human dwellings. All species of skink are common in disturbed habitats. Interviews conducted with local people revealed that most of these of reptile species were of less importance among them, except for the Monitor Lizards.

The presence of Monitor Lizard in the area was confirmed by key informants but they are already declining significantly in number. This species which is hunted for is included in CITES appendix II.

Sample photos of faunal species taken during the conduct of biological resource assessment study on March 26 to May 31, 2011 at Brgy. Salvacion, Tacloban City.

Avian

Collocalia esculenta(seen)*

Phapitreron leucotis(seen)

Hirundo rustica (seen)

Cacomantis merulinus (heard)*

Rattus exulans (caught)

Oriolus chinensis (seen)

Mammalian

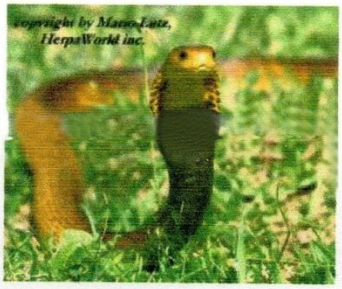
Ptenochirus jagori (caught)

Tarsius syrichta (ethno-bio)*

Cynopterus brachyotis (caught)

Reptiles

Gekko gecko (seen)



Naja samarensis* (ethno-bio)

Dendrelaphis pictus-pictus

Mabuya multifasciata (seen)

Cuora amboinensis (caught)

Varanus salvator (caught)

Amphibians

Rana limnocharis (seen)

Staurois natator (caught)

Limnonectes magna (caught))

Note: * Photos were taken from the internet for a clearer view of the subject (species).

Manner of observation: seen by 2 eyes; caught by hand, net, cage; heard by 2 ears thru sound; ethno-bio-information gathered from the local people

A total of 36 birds, 11 mammals, 4 amphibians and 11 reptiles were recorded in Brgy. Salvation, Tacloban City. Most of them are cosmopolitan and are common in disturbed habitats. A good number of endemic species were observed. Some threatened species listed in CITES Appendix II were still present but population is declining already. Commercially important wildlife species were no longer observed.

- **Threats to Biodiversity**

The most serious threat to wildlife in the area is hunting, Habitat alteration brought about by agricultural cultivation in surrounding areas of the plantation and indiscriminate cleaning of regeneration areas and abandoned cultivation for firewood production in adjoining areas are also great threat to wildlife.

Another serious concern is the illegal occupation and clearing up of biodiversity rich areas by informal settlers for housing and agriculture; and the cutting down of forest and hunting of wildlife for their daily household needs and livelihood. Because of these activities, critical habitats become fragmented and human settlements eventually take over in the use of biodiversity areas.

Diverse forest, inland wetland and marine habitats are also exposed to increasing levels of landslides and storms due to human impacts on the global climate. Over the long-term, climate change poses a big threat to the survival of vulnerable species including those which have low tolerance for temperature and rainfall changes.

Considering the magnitude of the present and foreseeable disturbances in the area, there is therefore an urgent need to implement some conservation measures. Such conservation measures must integrate economically viable and socially acceptable livelihood alternatives for the local communities in order to lessen their dependence on the resources that are otherwise reserved for biodiversity conservation and watershed protection.

Ecological studies on threatened fauna must be carried out before any conservation measures are effectively implemented. More intensive faunal survey

must be done to fully account for other important species that might not have been covered by the present faunal inventory.

The DENR-BMB reports that there are 207 animal and 526 plant species in the Philippines threatened with extinction (DENR-BMB 2013). These species have developed over millions of years and cannot be replaced if lost. The rate at which the country's endemic species of plants and animals are threatened with extinction is a cause for alarm that calls for immediate concerted efforts among various institutions and organizations. The protection and conservation of critical habitats require close coordination among the different national government agencies, LGUs, NGOs, the private sectors, and local community organizations.

Biodiversity is being degraded the fastest due to:

- Destruction and conversion of natural areas to other uses such as logging, agriculture, housing, unregulated mining, unregulated tourism, poorly planned development infrastructure projects, etc.,
- Rapid climate change

Listed below is matrix on the Issues & observations; effects & implications; and possible solution to the problem thru policies & intervention (see Table 7.28); to preserve the biodiversity in Brgy. Salvacion, Tacloban City.

Table 7.28 Biodiversity Matrix of Policy & Interventions, Tacloban City

Technical findings/observations/ Issues and other concerns	Effects, impacts, implications	Policy options/interventions
Climate change hazards	Degradation of natural	Relocation of communities
	ecosystems, decrease in	living and/or working in
	natural species populations	danger/hazard areas
	and decrease in ecosystem	
	goods and services	Protection of “upstream”
		natural habitats (e.g. forests
	Increased disaster	upstream of landslide-prone
	risks/hazards	communities, mangroves and
		coral reefs adjacent to coastal
		communities)
Conversion to other uses	Degradation of natural	Prohibit activities (infrastructure
	ecosystems, decrease in	build-up, agriculture/
	natural species' population	aquaculture, blast fishing,
	and decrease in ecosystem	trawling) that convert or
	goods and services	degrade natural habitats
		activities in areas of high
	Increased disaster, risk, hazards	biodiversity importance
Overexploitation	Decrease in population and	Estimate maximum sustainable
	yield of exploited species	yields and determine desired
	(e.g. fish)	levels of exploited species and
		establish regulations to keep
	Loss of associated (e.g.	exploitation within these levels
	fisheries)	
		Red List threatened NDspecies,
		strictly regulate and slowly
		reduce number of fishing
		licenses issued)

Technical findings/observations/ Issues and other concerns	Effects, impacts, implications	Policy options/interventions
Low compliance with	Degradation of biodiversity	Conduct information
environmental regulations in	resources	campaigns about the
important biodiversity areas or		ecosystem goods and services
proposed protection zones	Decrease in ecosystem goods	provided by biodiversity and
	and services	the need to protect in order to
		protect their sustainability
		Establish and secure local allies
		and informants. Intensify
		preventive monitoring/
		patrolling until compliance
		improves.
Pollution	Degradation of natural	Based upon desired water uses,
	ecosystems, decrease in	estimate maximum allowable
	natural species populations	pollution loads and establish
	and decrease in ecosystem	regulations to keep pollution
	goods and services	within these levels (e.g. no new
		development permits issued
	Health hazards to those using	until pollution is brought within
	water sources	allowed levels)
Invasive alien species	Degradation of natural	Coordinate with DENR to
	ecosystems, decrease in	identify appropriate measures
	natural species populations	
	and decrease in ecosystem	
	goods and services	
	Decrease in food security and	
	increased disaster risk hazards	
	Possible health hazards	

Listed below is matrix of Priority Issues, Possible solutions and Responsibility Centers to preserve the biodiversity in Brgy. Salvacion, Tacloban City. *(See Table 7.29)*

Table 7.29 Priority Issues, Possible Solutions and Responsibility Center Matrix, Tacloban City

Priority Issues, Concerns, Problems	Possible Solutions, Legislation Policies, Programs projects	Responsibility Center
Illegal Logging and poachers	Establish and secure local allies	DENR, LGU, PAWB, NGO's
	and informants. Intensify preventive	Forest Guards
	monitoring until compliance improves	
Damage of river water quality due to pollutants	Massive reforestration and enforcement of law against illegal logging, prohibition of settlements river upstream	DENR, LGU, MGB, other realted Agencies
Degradation of natural habitats	Relocation of communities living in protected areas	DENR, LGU, PAWB, NGO's
Settlement of people in protected areas	Prohibit conversion of protected ares	DENR, LGU, PAWB, NGO's
Settlement of people in production areas	Regulate settlement in production areas	DENR, LGU, DAR,MGB, other realted Agencies
Exposure of species to hazards	Protection of "upstream" natural	DENR, LGU, MGB, other realted Agencies
(biodiversity)	habitats (e.g. forests upstream	
	of landslide-prone communities	
Degradation of biodiversity	Conduct information campaign	DENR, LGU, PAWB, NGO's
resources	about the ecosystem goods and	
	services provided by biodiversity	
Decrease in ecosystem goods	Need to protect in order to protect	DENR, LGU, PAWB, NGO's
and services	their sustainability	

Based on result, it can be concluded that the wildlife sanctuary in Brgy. Salvacion, Tacloban City is within a reforestation area dominated by few exotic reforestation species. Protected regenerations which host some native timber species however are present within its borders. Tree layers inadequately stocked and regenerating native species mostly at sapling stage are present in the intermediate layer of most plantations. Within the context of biodiversity conservation, enrichment planting using native species is necessary and strategies must be designed to protect naturally occurring native vegetation to improve local biodiversity and increase availability of important food materials for wildlife.

7.3 Coastal and Marine Resources

With the presence of mangrove area and an abundant sea grass, corals stretching from the south at San Jose all the way to the north in Tagpuro, the marine life was generally abundant and sustainable before the typhoon in 2013. After typhoon Yolanda, much of Tacloban City has been devastated by the storm surge which had lasting impacts to its coastline as well as coastal and marine resources. The sea has grown closer to the land, shorelines facing San Pedro bay have shrunk, debris and garbage that have flown into Leyte Gulf have sunk in and got concentrated at the bottom of Anibong, Kankabato and San Pedro Bay; and mangrove areas along Diit, Anibong, Burayan and San Jose's airstrip have sustained serious damage during and after the onslaught of the super typhoon.

Facilitating the rehabilitation and recovery of the city's coastal and marine ecosystems continues to be a challenge for the LGU and the locals. Considerable efforts have been exerted by the LGU, some National Government Agencies, Local and International NGOs as well as locals in trying to at bring back or at least bring growth to the remaining resources left of the typhoon.

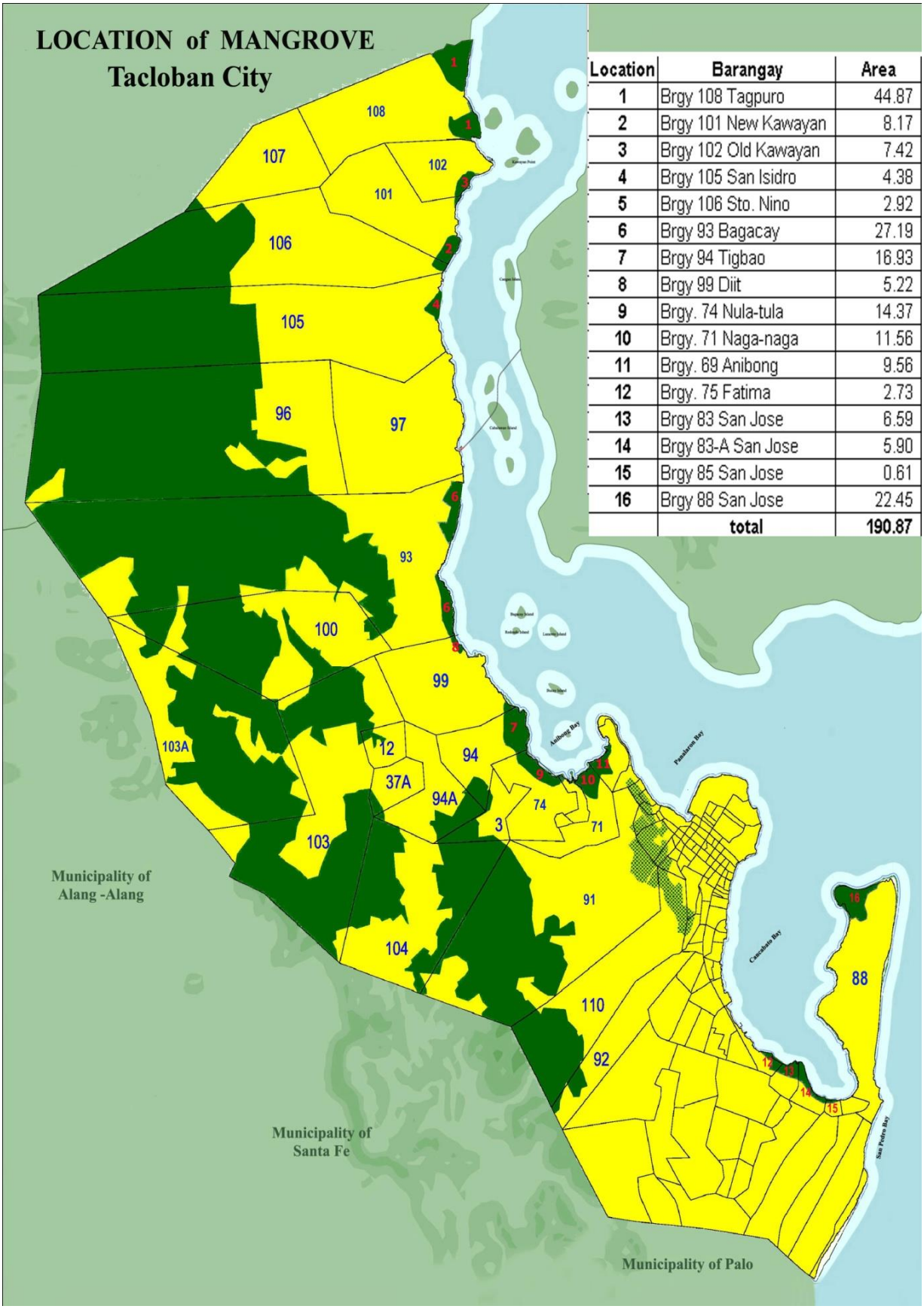
7.3.1 Mangroves

Tacloban officially has 190.87 hectares of mangrove area. The mangrove area within the city coastline was in good condition based on the abundance and type of mangrove species present prior to the typhoon in November 2013. *(See Table 7.31)*

However based on GIZ survey of the damage of mangrove areas after the typhoon were summarized as follows: Brgy 75 San Jose – 70% damage; Brgy 83 San Jose - 90% damage; BrgyBagacay- 80%damage; Brgy Nulatula-80% damage. *(See photo of damaged mangrove taken by GTZ, 2014)*

During the aftermath of Typhoon Yolanda, some agencies, with the support of NGOs have conducted initial damage assessment in Tacloban City's mangrove areas as well as coastal resources. These conducted assessments revealed the extent of damage in these marine ecosystems as well as remaining and resilient species of mangroves, corals and other marine resources. *(See table 7.3.2 below)*

By 2014 up to December 2015, the Leyte Gulf Project and the 1 Billion Trees project, in line with the National Greening Program was enacted by the Department of Environment and National Resources across the coastal areas along Leyte Gulf to restore and replace the mangroves that died and got damaged during and after typhoon Yolanda.



Location	Barangay	Area
1	Brgy 108 Tagpuro	44.87
2	Brgy 101 New Kawayan	8.17
3	Brgy 102 Old Kawayan	7.42
4	Brgy 105 San Isidro	4.38
5	Brgy 106 Sto. Nino	2.92
6	Brgy 93 Bagacay	27.19
7	Brgy 94 Tigbao	16.93
8	Brgy 99 Diit	5.22
9	Brgy. 74 Nula-tula	14.37
10	Brgy. 71 Naga-naga	11.56
11	Brgy. 69 Anibong	9.56
12	Brgy. 75 Fatima	2.73
13	Brgy 83 San Jose	6.59
14	Brgy 83-A San Jose	5.90
15	Brgy 85 San Jose	0.61
16	Brgy 88 San Jose	22.45
	total	190.87

Source: DENR, CPDO

Map 107. Location of Mangrove

Status of Mangroves in Tacloban City

The aftermath of typhoon Yolanda in Brgy. 75, San Jose, Taclobn City: 65-70% damaged

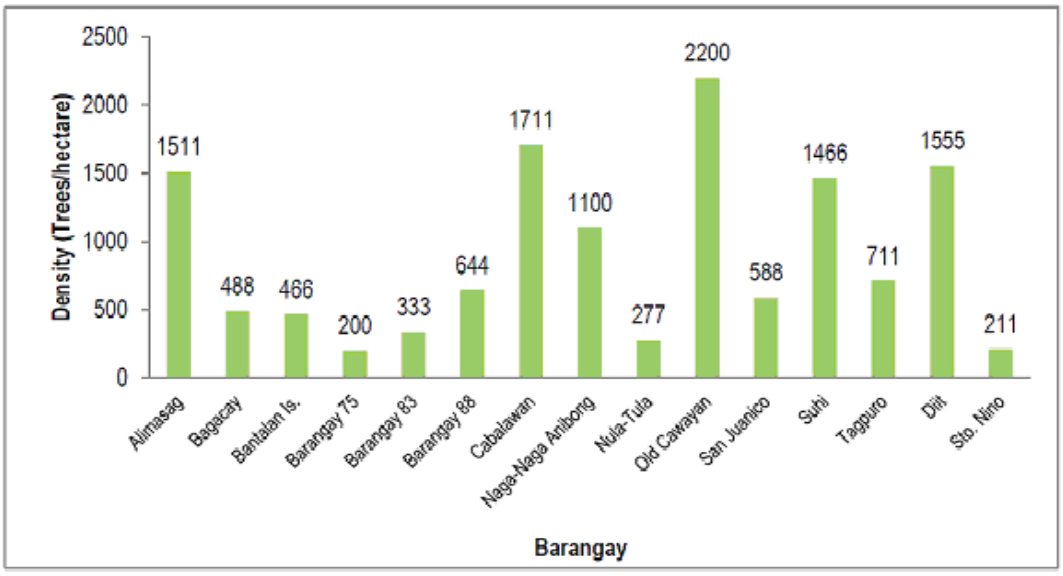
Impact of typhoon Yolanda and rampant extractions and harvesting of mangroves in Barangay 83: 90-92% damage

Scenes after the typhoon in Bagacay and Nula-Tula. Estimated damage 75-80%.

Table Error! No text of specified style in document.**.22 List of Mangrove species present in Tacloban before Typhoon Yolanda**

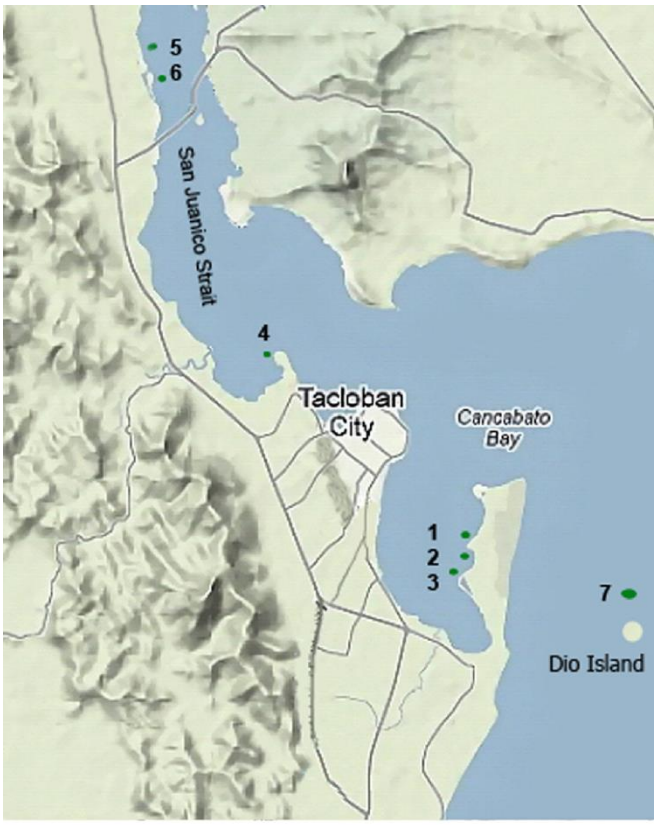
	LOCATION														
Species	Alimasag	Bagacay	Bantalan Is	Barangay 75	Barangay 83	Barangay 88	Cabalawan	Diit	Naga-naga - Anibong	Nula-tula	Old Cawayan	San Juanico	Sto Nino	Suhi	Tagpuro
1 *Aegiceras corniculatum*	x	x					x				x	x	x	x	x
2 *Avicennia alba*												x			
3 *Avicennia marina*	x	x	x	x	x	x	x	x	x	x	x				
4 *Avicennia rumphiana*							x	x		x		x	x	x	
5 *Bruguiera gymnorrhiza*	x														
6 *Ceriops decandra*	x						x					x	x	x	
7 *Excoecaria agallocha*		x				x	x	x			x	x			
8 *Osbornia octodonta*														x	
9 *Pemphis acidula*							x								
10 *Rhizophora apiculata*	x	x	x	x	x	x	x	x	x	x	x	x		x	x
11 *Rhizophora mucronata*	x	x	x	x	x	x	x	x	x		x	x			
12 *Scyphiphora hydrophyllacea*	x	x					x				x	x	x		
13 *Sonneratia alba*	x	x	x	x	x		x	x	x	x	x	x	x	x	x
14 *Xylocarpus granatum*							x	x			x	x			
15 *Nypa fruticans*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Total number of species	9	8	5	5	5	5	12	8	5	5	9	11	6	7	4

Figure 7. 5 Mangrove Density (trees/ha) of the 16 sampling sites (2014), Tacloban City



7.3.2 Seagrass

Taking care of our natural environment is the key to sustainability and for our food security. Unless threats such as pollution, siltation, overpopulation of coastal communities, resources use conflicts, climate change and calamities such as typhoon which disturbs its natural habitat will be dealt with or managed properly, the food supply of our general population is in peril. Seagrass was not abundant in Tacloban City which can be reflected based on study of Seagrass-seaweed sites cover percentage conducted by GTS in 2013 prior to the typhoon. *(See Figure 7.3)*



SEAGRASS STUDY AREAS IN TACLOBAN CITY, LEYTE

According to GTZ study of seagrass condition in Tacloban City in November 2013, the overall, pointed to very poor to poor condition. Results could be attributed to the substrate type of the area which poorly favours the growth of both seagrasses and seaweeds. Cymodocea and Halodule species best thrive on sandy substrate while Thalasia species thrive more on sandy-muddy substrates. Those that grow best on muddy substrate are dominated by Enhalus species (Resquera, 2006). Presence of debris and material remnants from the typhoon could also have bearing on the quality of substrate and impact on the over-all environmental conditions that possibly also affects its growth. *(See Table 7.31)*

After the typhoon, the coastal and marine clean-up, on the other hand took about 2-3 years before its enactment in Cancabato Bay in 2016 while the rest of Leyte Gulf also await debris clean-up and retrieval. While DA-BFAR has conducted a rapid assessment of the stocks remaining in Cancabato bay with the National Stock Assessment Program, no Participatory Coastal Resource Assessment has

been conducted yet. The last PCRA conducted within Tacloban City's waters was done way back in 2003.

Figure 7. 8 Seagrass-seaweed cover (%) of Study Sites in Tacloban City, 2013

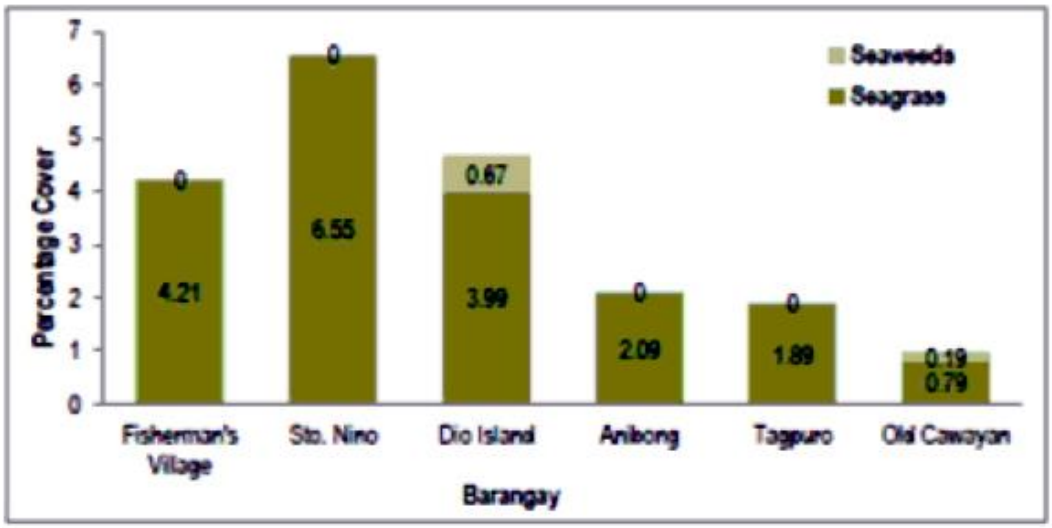


Table 7.31 Seaweed species composition-Tacloban City, 2013

Seagrass – seaweed species composition and distribution of study sites in Tacloban City: (1) Fisherman's Village, (2) Sto. Niño, (3) Dio Island, (4) Anibong, (5) Tagpuro, and (6) Old Kawayan.

Genus	Species	Common Name	LOCATION					
			1	2	3	4	5	6
SEAGRASSES								
Cymodocea	*rotundata*	Round-tipped seagrass	+	+	-	-	-	-
Enhalus	*acoroides*	Tropical eelgrass	+	+	-	+	+	+
Halodule	*uninervis*	Fiber-strand grass	-	+	-	-	-	-
Thalassia	*hemprichii*	Dugong grass	+	-	+	+	-	-
# of Genera			3	3	1	2	1	1
# of Species			3	3	1	2	1	1
SEAWEEDS								
Halimeda	*macroloba*		-	-	-	-	-	+
Halimeda	*opuntia*		-	-	-	-	-	+
Padina	*minor*		-	-	+	-	-	-
Encrusting algae			-	-	+	-	-	-
# of Genera			0	0	2	0	0	1
# of Species			0	0	2	0	0	2
Total # Genera	7		3	3	3	2	1	2
Total # Species	7		3	3	3	2	1	3

Legend: Present (+) Absent (-)

Source: GTZ, 2013

7.3.3 Fishery Resources

NSAP is an agency that aims to determine the trend of seasonal distribution, relative to abundance, size, and species composition of the major marine resources in each fishing ground, provide estimates of population parameters of the major marine resources in each fishing ground.

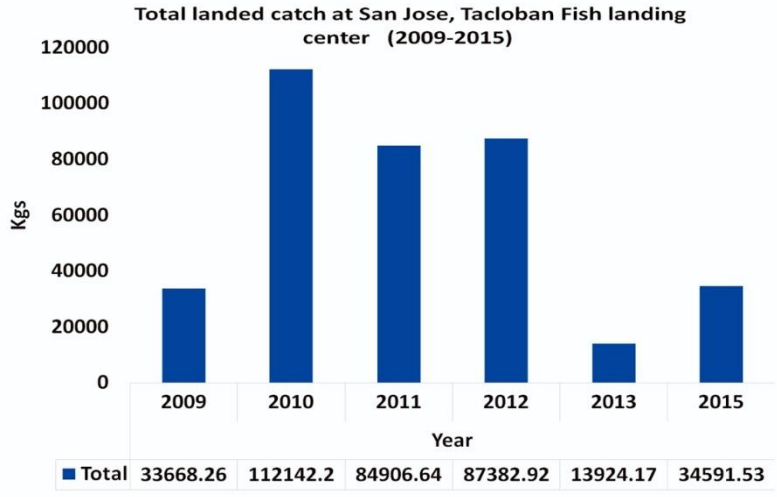
According to NSAP, Tacloban need to manage our fishery resources because the poverty incidence of Fishermen has increased form 35% in 2003 to 42.10% in 2006 or an increase of 17.60% .Tacloban catch at San Jose has steadily declined from 2009-2014. There is a slight rise in fish catch at about 40,000kgs in 2015. The possible reason behind is that the natural habitat has slowly recovered and so with the fisher folks wherein livelihood assistance from NGO's and the government was given after the damage brought by the Typhoon in 2013. *(See Table 7.3.5)*

Based on GTZ study after the typhoon in November 2013, the following physico-chemical parameters obtained in the six barangays of Tacloban City, Leyte varies. Salinity were all within the normal range, however, temperature were lower in Barangays Tagpuro, Old Kawayan and Anibong ranging from 14.47 to 15.17 °C. This could be due to the heavy rains during the assessment in these sites whereas as Fisherman's Village, Sto. Niño and Dio Island had higher temperatures ranging from 30-40 °C which could also be due to the very sunny weather at the time of the assessment in these areas. Dissolve oxygen in the area were generally high as some sites were conducted in shallow and mostly done during low tides. The variation of the type of macroinvertebrates from sponges, corals, echinoderms, crustaceans to gastropods

- **Threats of Natural Habitat Damage**

Unless threats such as pollution, siltation, overpopulation of coastal communities, resources use conflicts, climate change and calamities such as typhoon which disturbs its natural habitat will be dealt with of managed properly, the food supply of our general population is in peril. It must be noted that it takes years for our corals, mangrove, seagrass and other natural habitat of aquatic resources to recover. Taking care of our natural environment is the key to sustainability and for our food security.

Figure 7. 11 Fish Catch in San Jose-Tacloban City, by GTZ 2014



7.3.4 Coral Reef

Dio Island, resembling like a teardrop is located less than a kilometer in the eastern side portion of the Daniel Romualdez Airport. It is under the jurisdiction of barangay San Jose, Tacloban City. The island was declared as a protected area by the city, although have been privately manage by a local resort for a number of years. The area is also being monitored and protected by the City Agriculture Office and regional BFAR and DENR. The island's 2 hectare area is surrounded by a fringing reef known to many locals with having good coral cover and abundance of fish.

In the latest assessment, two (2) stations were established on the area with three (3) transects laid per station. Transect lengths were reduced to 30 meters from the proposed 50 meters due to the area profile of the reef. Transects were laid at an average depth of six (6) meters. Current was light and visibility was estimated at 15 meters.

Among all sites surveyed, only in Dio Island showed good coral cover conditions after Typhoon Yolanda with live hard coral cover of 54%. Rubble was also minimal with about 5% in both stations compared to sand and silt found elsewhere in other sites and in Station 1 with 34%. In terms of dead coral with algae, it was however abundant in Station 2 with nearly 30% cover.

In terms of coral morphologies remaining after typhoon Yolanda, coral massive types of mostly Porites species dominated the reef with 52% in Station 2 and 23% in Station 1. Meanwhile submassive types (mostly Pavonasps.) also showed high percentage cover particularly in Station 2 with 27%. Some branching Acroporid types also showed high percentage cover. Some coral patch outside the transects however showed bleached and upturned corals. These are signs that the area is threatened owing to impact from the typhoon, differing climatic conditions of the late and unsustainable practices of fishing in the area.

- **Reef Fish Assemblage**

A total of 37 fish species belonging to 15 families and 27 genera were recorded in Dio Island, Tacloban City. Of these, eight (8) fish families with 25 species were non-target and seven (7) families with 12 species were target fish species. Between the two (2) stations established, Station 1 registered the highest number of target and non-target species with 23 and 10 species respectively.

- **Macro Invertebrates Composition**

A total of eight (8) macroinvertebrate species were recorded in the recent assessment in Dio Island, Tacloban City (Table 5.15). Coral clam and mix sponges dominated the area in terms of composition and occurrence. Although there were no commercially targeted macroinvertebrates recorded within the transects laid, these type of species still abounds the area and were documented and reported in the previous section under the seagrass heading.

Corals at Dio Island, Tacloban City

Figure 1AcanthastreaRegularis

Figure 2 Acropora Rosaria 1

Figure 3 AcroporaSubulata1

Figure 4 AstreoporaMyriophthalma

Figure 6 CyphastreaSerailia

Figure 5 CoscinareaColumna

Figure 7DiploastreaHelicopora

Figure 8 DiploastreaHeliopora

Survey and photos courtesy of Climate Change Commission

Sector Analysis Matrix

TECHNICAL FINDINGS/ ISSUES/ PROBLEMS	EFFECTS/IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
A. Ecosystem, Fisheries and Coastal Resources		
1. Mangrove Forest Denudation along Cancabato Bay, Anibong Bay and San Juanico Strait	Habitat Damage and degradation	Presidential Decree (PD) 705 (Revised Forestry Code) "mangrove or swamplands at least twenty (20) meters wide, along shorelines facing oceans, lakes, and other bodies of water are needed for forest purposes and may not be classified as alienable and disposable land.
	Weakens natural barrier for storm surges and coastal erosion	Assessment, re-surveying and reclassification of titled lands with mangrove growth
		Mainstreaming of existing laws on protection and conservation of mangrove areas
		Implement the Cancabato Mangrove Rehabilitation Project (10 has.)
		-Devolve to the local government unit their establishment, maintenance and protection
		City ENRO should provide technical assistance/guidance and monitor the performance and progress of the work being performed by the developer
		-Barangays shall conduct area delineation, plantation establishment, maintenance, care and protection of each plantation.
Poor implementation of mangrove planting programs	Waste of project funding	Capacity building of barangay level implementers on proper mangrove planting, care and assessment
	No improvements on restoring denuded mangrove areas	Involvement of fisher folk and local experts who are able to monitor the growth of mangrove propagules
2.Increasing liquid and Solid waste	Increased pollution, damage and degradation of coastal resources	Improved and expanded policies on solid waste and waste water management.
- Mariculture at risks of Contamination at threshold level due to increasing level of E.Coli and Coliform	Threat to food security and health of coastal dwellers + consumer of mariculture products	Monitoring of the status of marine waters exposed to effluents
-Seagrass bed degradation due to pollution	Marine habitat damage and degradation	Participatory Coastal Resource assessment
		Mainstreaming of knowledge on the importance of seagrass in coastal and marine ecosystems

TECHNICAL FINDINGS/ ISSUES/ PROBLEMS	EFFECTS/IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
		Improved and expanded policies on solid waste and waste water management.
		Penalties for violators of existing ordinances against illegal dumping of wastes into waterways, creeks and seas and regular coastal clean-ups
-Lack of Support on Clean-up of Post Yolanda Debris along Tacloban coastal areas	Hinders the PCRA from being conducted in affected coastal areas	Utilize LGU funding for cleanup
	Marine habitat damage and degradation	Raise the issue on Marine debris at regional and national government and lobby for prioritization and funding
	Degradation of the quality of city waters	
	Unstable coastal integrity and sedimentation	
3.Violation of Marine Protected Area Policy at Kankabato Bay	Marine habitat damage and degradation	Conduct PCRA to reassess the status of MPAs in the city
	Degradation of the quality of city waters	Review and amend existing ordinances on the declaration and conservation of MPAs based on the findings from the PCRA
	Unstable coastal integrity and sedimentation	A TWG for a fishery management plan is needed. Fishery Management plan needs to be drafted and implemented.
		Integrated Coastal Management
		Mainstreaming of the ordinance on the declaration and conservation of MPAs
Excessive capture and consumption of marine resources in city waters	Damage and degradation of marine ecosystem habitats;	San Pedro Bay Coastal Resources Development Program
	Threat to food security	Conduct PCRA
Some of the marine and coastal resources has been depleted	Low fish catch	A TWG for a fishery management plan is needed. Fishery Management plan needs to be drafted and implemented.
	Occurrence of fish kills due to red tide poisoning	Conduct study and consider the possibility of enforcing a close and open season
	Soil erosion due to lack of mangroves and non-observance of easements	San Pedro Bay Coastal Resources Development Program
Decreasing Fish catch due to damage and degradation of marine ecosystem habitats	Threat to food security	A TWG for a fishery management plan is needed. Fishery Management plan needs to be drafted and implemented.

TECHNICAL FINDINGS/ ISSUES/ PROBLEMS	EFFECTS/IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
		Conduct studies on the feasibility of implementing close and open season for fish species.
		Stricter implementation and penalties for illegal dumping of wastes and septage in coastal areas and barangays
Water use Boundaries and Settlements		
Titled mangrove areas	Mangrove deforestation or degradation	Presidential Decree (PD) 705 (Revised Forestry Code) "mangrove or swamplands at least twenty (20) meters wide, along shorelines facing oceans, lakes, and other bodies of water are needed for forest purposes and may not be classified as alienable and disposable land.
		Assessment, re-surveying and reclassification of titled lands with mangrove growth
		Mainstreaming of existing laws on protection and conservation of mangrove areas
Large extent of coastal areas of LGU (covering several barangays	Difficulty in implementation of ordinances and collection of revenues due to demand for more manpower and wide area of policing coverage	An agreement can be made between the LGU and barangays to divide the revenue from user fees and/or fines and penalties. The revenues shall accrue fines and penalties and to set up a CRM Barangay Fund where CRM revenues shall accrue.
Overcrowding of informal settlement and commercial establishments along critical risk areas	Potential damage to life and property in case of hydrological disasters	Relocation in safer location with provision of access to their workplace/fishing grounds or maybe provision of alternative livelihood.
Policies, Planning and Law Enforcement		
Poorly Regulated use of Fish cages	Degradation of marine resources	A TWG for a fishery management plan is needed. Fishery Management plan needs to be drafted and implemented.
		Review and amend city ordinance regulating the use of Bonoans (Fish cages) at Kankabato Bay
Lack of Fishery Management Plan	Overuse of marine resources leading to further damage and degradation	A TWG for a fishery management plan is needed. Fishery Management plan needs to be drafted and implemented.
Illegal, Unreported and undocumented Fishing	Overuse of marine resources leading to further damage and degradation	Philippine Fisheries Code (RA10654). Majority of its provisions aim to prohibit and penalize destructive and illegal fishing not limited to Dynamite Fishing, Muro-ami, cyanide fishing, trawl fishing and entry of commercial Fishing vessels larger than 3 tons within the 10-15 km radius of the municipal waters.

TECHNICAL FINDINGS/ ISSUES/ PROBLEMS	EFFECTS/IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
		Mainstreaming of RA10654 to FLET, coastal communities and fisherfolk
		Deputization and capacity building of the Fishery Law Enforcement Team
		Enhanced and Stricter enforcement of the RA 10654
Lack of inclusion of foreshore use in land use planning	Foreshore may be used for commercial purposes or be replaced with embankment. This may restrict fisherfolks' access the sea as well as to potential fish landing centers that could be built within the foreshore.	Foreshore areas need to be assessed if fit for establishment of fishlanding/fish drying areas. Include foreshore use in fishery management planning with stake holders.
Lack of funds to implement policies and programs of the local level	Because of lack of funds, people assigned are not able to patrol the Bay regularly, leading to a weak monitoring and enforcement of fishery laws	Ensure a sustainable financing mechanism
	Poor implementation of policies supposed to protect marine ecosystems	Look for POs and NGOs to assist in the funding of the project
Lack of Coastal Resource Management Planning and Insufficient baseline data as basis for development planning fit for rehabilitating city waters and Marine protected Areas	Lack of data and tracking of changes in the city waters and marine biodiversity	LGU to prioritize, allot budget and have the initiative for requesting BFAR or DENR to conduct PCRA in the city waters.
	Coastal resource management cannot be conducted without working on the Participatory Coastal Resource Assessment First (CRM).	Provide accurate, timely and relevant information to improve decision in coastal marine management
		Increase awareness of policymakers about economic valuation
		Enhance knowledge management and information system. A Geographic Information System database may also be established
		Look for local Coastal and Marine biodiversity experts to assist in and take part in the TWG responsible for conducting the PCRA and the Monitoring of CBCRM that may result from the PCRA

TECHNICAL FINDINGS/ ISSUES/ PROBLEMS	EFFECTS/IMPACTS/ IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
Lack of Funding , Technical Expertise and Capacity on Law enforcement of Fishery Law Enforcement Teams	Poor implementation and Law Enforcement of Fishery Law Enforcement Teams	LGU to prioritize and Allot funding for hosting Capacity Building on Law Enforcement, Monitoring and Mainstreaming of RA 10654
		BFAR PFOs are willing to train FLET volunteers, LGU however, needs to allot resources as counterpart for these sessions
Insufficient information as basis for coastal and marine management strategies	Transaction costs are usually unaccounted in the total implementation budget	Provide accurate, timely and relevant information to improve decision in coastal marine management
	More efforts and time are put into the program, the higher the transaction cost of the project becomes the lower is the performance of community organizations	Increase awareness of policymakers about economic valuation
	Poor accountability of stakeholders who are to coordinate and implement such programs	Enhance knowledge management and information system. A Geographic Information System database may also be established
Low participation of the local community	Some fishermen encroach even in the marine reserve	Build local participation and Secure the rights of the local community
		Organize people for more active participation. Capacity and Strengthen People's Organizations and Associations.
Need for Disaster Risk Reduction and Climate Change Adaptation in Coastal and Marine Areas	Destruction of the natural habitat of aquatic resources	Mainstream the importance of DRR-CCA for the protection of Coastal and Marine Ecosystems through information dissemination. Coordinate with Climate Change Commission.
		A TWG (composed of coastal habitat specialists, DA-BFAR, CCC, LGU representative, FARMC Representative and the Academe) should be consulted on adaptation options to better mitigate coastal changes due to climate change.
		Study options for DRR-CCA that can protect both the Marine ecosystems, the coastal areas and the city.

Priority Issues, Possible Solutions, and Responsibility Centers Matrix

PRIORITY ISSUES, CONCERNS, PROBLEMS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)	RESPONSIBILITY CENTER
Settlements of fisherfolks within foreshore area	Strict implementation of an ordinance restricting foreshore use. Foreshore areas need to be assessed if fit for establishment of fishlanding / fish drying areas. Include foreshore use in fishery management planning with stake holders. Construction of Tide Embankment along surge prone coastline	DENR, LGU, FLET, NGO's, & other related agencies
Mangrove Forest Denudation along Cancabato Bay, Anibong Bay and San Juanico Strait because of lack of delineation	Implementation of PD 705 (Revised deforestation or degradation Forestry Code) "mangrove or swamplands at least twenty (20) meters wide, along shorelines facing oceans, lakes, and other bodies of water, are needed for forest purposes and may not be classified as alienable and disposable land.	DENR, LGU, FLET, NGO's, & other related agencies
Marine habitat damage and degradation	Improved and expanded policies on solid waste and waste water management. Review and amend existing ordinances on the declaration and conservation of MPAs based on the findings from the PCRA Construction of Fish Landing at Brgy. Sto. Nio.	DENR, LGU, FLET, NGO's, CEO & other related agencies
Poor implementation and Law Enforcement of Fishery Law Enforcement Teams	LGU to prioritize and Allot funding for hosting Capacity Building on Law Enforcement, Monitoring and Mainstreaming of RA 10654. Enforce protection of Dio Fish Sanctuary	DENR, LGU, FLET, NGO's, & other related agencies
Low fish catch	A TWG for a fishery management plan is needed. Fishery Management plan needs to be drafted and implemented. Enforce Cancabato Marine Protected Area Ensure Tacloban Mariculture Area sustainability Fish cages along Old Kawayan to augment shortage Introduce aqua-silvi culture in mangrove areas as an alternative	DENR, LGU, FLET, NGO's, & other related agencies
Occurrence of fish kills due to red tide poisoning	Conduct study and consider the possibility of enforcing a close and open season River system clean-up	DENR, LGU, FLET, NGO's, & other related agencies

PRIORITY ISSUES, CONCERNS, PROBLEMS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)	RESPONSIBILITY CENTER
Soil erosion due to lack of mangroves and non-observance of easements	Implementation of San Pedro Bay Coastal Resources Development Program Bamboo plantation along riverbanks	DENR, LGU, FLET, NGO's, & other related agencies
Poor implementation of mangrove planting programs	Capacity building of barangay level implementers on proper mangrove planting, care and assessment Implement Mangrove Eco-park along rivers	DENR, LGU, FLET, NGO's, & other related agencies
Seagrass bed degradation due to pollution	Participatory Coastal Resource assessment; Strict implementation of Fishery Laws. Replanting and rehabilitation of seagrassbed being the food supplu of fishes	DENR, LGU, FLET, NGO's, & other related agencies

CHAPTER 8 SPECIAL AREA STUDIES

8.1 Heritage Conservation in Tacloban

As one of the fastest growing urban centers in the country, Tacloban City became highly urbanized in 2008 after it stayed as a component city in the Province of Leyte since 1952. With its humble beginnings as a former small fishing village under Barrio Buscada of Basey, Samar before it turned into a town during the colonial period approximately 1669-1770, Tacloban and the Taclobanons witnessed foreign dominations during Spanish, American and Japanese occupations with the bulk of historicity during the Filipino-American War, World War I (1914-1918) connected to World War II (1939-1945) and the post-liberation period, thus, a very interesting locality with flying colors and fertile ground for cultural, historical and heritage conservation, protection, promotion, research, development and management.

The Spanish colonial era lasting for almost 4 centuries, 333 years more or less, which ended at the outbreak of the Spanish-American War in 1898, greatly influenced the cultural, spiritual, economic, civil and political landscape not only of Tacloban but of the entire Philippine archipelago as well. When Ferdinand Magellan – the first circumnavigator, first saw Homonhon Island at the mouth of Leyte Gulf in March 16, 1521 as the official discovery of the Philippines, followed by similar expeditions where Ruy Lopez de Villalobos in 1543 named Leyte and Samar Islands as “Las Islas Filipinas’ after Prince II of Spain and with the most successful voyage that was of Miguel Lopez de Legazpi in 1564 by discovering “tornaviaje” or return trip to Mexico via Pacific Ocean leading to start of Manila Galleon Trade that lasted two and a half centuries have greatly shaped the Philippines and Tacloban for what they are today.

During the Philippine-American (Fil-Am) War, 1899-1902, Tacloban was the headquarters of the US 6th Separate Brigade commanded by US Army Brigadier General Jacob Smith tasked to suppress insurrection in Samar, “once and for all, as quickly as possible”, led by General Vicente Lucban after the Balangiga Incident

in September 28, 1901, commissioned by US Division of the Philippines Army Commander, Major General Adna Chaffee. Augmented by a Marine Batallion from 1stBrigade, US Marines in Cavite, they heeded to Basey and eastward to Balangiga peripherals led by USMC Major Littleton W.T. Waller who was orally instructed by BGen Smith that "I want no prisoners, I wish you to kill and burn, the more you kill and burn, the better you will please me. I want all persons killed who are capable of bearing arms in actual hostilities against the United States.' Unimaginable atrocities in southern part of Samar ensued prompting MGen Chaffee to order BGen Smith, who made the "howling wilderness" order, together with Maj. Waller be court-martialed, the highest military official on record in all military history to undergo court martial proceedings resulting to their disgraceful forced retirement from US military service.

After serving as Military Governor of the Philippines from 1900-1901 and authorizing an expedition resulting the capture of Gen. Emilio Aguinaldo and latter's taking allegiance to United States, BGen Arthur MacArthur Jr. became the US Commander of the Department of the Pacific paving for his promotion to major general while his son, fresh from graduation as top-rank cadet, 2Lt. Douglas MacArthur was commissioned at the US Army Corps of Engineers' 3rd Engineering Batallion which departed for the Philippines in October 1903. He was sent to Iloilo to supervise a wharf construction and went to conduct surveys at Tacloban City, Calbayog City and Cebu City and was promoted to first lieutenant before he went back to San Francisco after he contracted with malaria and itch during a survey in Bataan. In 1905, he became chief engineer of the Pacific Division and promoted captain in February 1911 heading the Military Engineering Dept. Back to War Department in 1915, he was promoted major and became the army's first press officer.

During World War 1 that originated in Europe starting July 28, 1914 & ending November 11, 1918, Filipino soldiers were enlisted in the US Army as Philippine National Guards contributing to the American Expeditionary Force to join the Allied Forces in France against the Central Powers. In US, Army Colonel Douglas MacArthur as Chief of Staff of the National Guard Bureau, now in infantry, sailed to France with the 42nd Rainbow Division for various offensives and promoted

brigadier general to head the 84th Infantry Brigade for their successes before they boarded back to New York on April 25, 1919. Without direct war participation, the Filipinos were just exciting and expecting the grant of Independence.

The short-lived Japanese Occupation, 1942-1945, started with the invasion of the Philippines in December 8, 1941 10 hours after the attack on Pearl Harbor until it formally surrendered on September 2, 1945. It established a caretaker or puppet republic headed by President Jose P. Laurel with most of the Philippine elites serving the Japanese government.

Liberation of the Philippines during World War 2 (1939-1945) was characterized by the resounding popular phrases "I shall return" and "I have returned'. It is the fulfillment of General Douglas MacArthur's pronouncement in March 11, 1942 saying "The President of the United States (Roosevelt) ordered me to break through the Japanese lines and proceed from Corregidor to Australia for the purpose, as I understand it, of organizing the American offensive against Japan, a primary objective of which is the relief of the Philippines. I came through and **I shall return**" and in October 20, 1944 saying "People of the Philippines: **I have returned**. By the grace of Almighty God our forces stand again on Philippine soil—soil consecrated in the blood of our two peoples. We have come dedicated and committed to the task of destroying every vestige of enemy control over your daily lives, and of restoring upon a foundation of indestructible strength, the liberties of your people". A fulfillment of the same when he set foot on Leyte shores via the Battle of Leyte Gulf – world's largest naval war ever recorded and paving the way for Tacloban as the capital of the Philippines for a brief period October 20, 1944 – February 27, 1945. And the rest, flamboyant war and liberation history.

Based on current heritage/cultural inventory and assessment through transect walk/ride, focused group discussion, site visit, observation, interviews and research by the planning team and other stakeholders, in the following table/matrix are the current locally recognized and potential/proposed additional heritage/cultural properties, resources and sites, to wit:

Table 8.1 Locally Recognized Heritage/Cultural Properties & Sites, Tacloban City

HERITAGE/CULTURAL PROPERTY NAMES	LOCATION	AREA (HAS.)	CULTURAL DESCRIPTION/ HERITAGE VALUE	HAZARD SUSCEPTIBILITY (H/M/L)		
				SURGE	FLOOD	LANDSLIDE
Provincial Capitol Building of Leyte	Capitol grounds	0.26	Site of establishment & seat of Pres.Osmena national civil gov't	H	L	L
Redona Residence	T. Claudio St.	0.03	Official residence of President Osmena in Tacloban	H	L	L
Price Mansion	J. Romualdez St.	0.37	Temporary Osmena gov't seat/Gen.Macarthur WW-2 HQ	H	L	L
TaclobanCity Hall	Kanhuraw Hill	0.10	Seat of government of TaclobanCity	L	L	L
Santo NinoChurch	Real St.cor.ZamoraSts.	0.61	House of worship for Roman Catholics	H	L	L
Boy ScoutMonument	Rotonda, FartimaVill.	0.19	In honor of boy scouts' flag signaling skills during WW-2	H	L	L
WW2 Japanese Pillboxes	Patio Victoria, San Jose	0.26	War memorabilia during WW-2	H	L	L
Madonna of Peace Shrine	Kanhuraw Hill	0.76	Japanese peace memorial after WW-2	H	L	L
Yolanda Memorial 1	Anibong District	0.03	Shipwreck+memorabilia of super typhoon Yolanda storm surge	H	L	L
Yolanda Memorial 2	Astrodome grounds	1.00	Artist sketch memorabilia of super typhoon Yolanda victims	H	L	L
Calvary Hill	Serin, Brgy.39	1.11	Pilgrimage site during Holy Week	L	L	H
Sto. Nino Shrine	Real St.	0.25	Valuable collections of 1st couple Ferdinand & Imelda Marcos	H	L	L
Peoples Center& Library	Real St.	0.31	Peoples activity/event venue & book-reading research center	H	L	L

Table 8.2 Potential and Proposed Additional Heritage/Cultural Properties & Sites – Landmarks and Monuments, Tacloban City

HISTORICAL LANDMARKS	LOCATION	AREA (HAS.)	CULTURAL DESCRIPTION/ HERITAGE VALUE	HAZARD SUSCEPTIBILITY (L/M/H)		
				SURGE	FLOOD	LANDSLIDE
San Juanico Bridge	Cabalawan	2.16 km.	Connect country's north and south/longest in Phils/Asia	L	L	L
Plaza Rizal	Fronting Sto.Nino Church	0.67	In honor of national hero Jose Rizal	H	L	L
Plaza Libertad	Capitol grounds	2.05	In honor of the American Statue of Liberty	H	L	L
RTR Plaza	City Hall grounds	1.46	In honor of Remedios Trinidad Romualdez-FL Imelda R.M.mother	H	L	L
Redemptorist Church	Real St., Sagkahan	0.35	House of worship for Roman Catholics	H	L	L
Protestant Church	Zamora cor.Paterno Sts.	0.07	House of worship for Protestants	H	L	L
Bukid Fatima	Brgy.75, Nula-tula	1.50	Pilgrimage site during Holy Week	L	L	H
San Juanico Strait	Brgy. Cabalawan	823.00	Narrowest strait of the world	H	L	L
San Pedro-San Pablo Bay	w/in Leyte Gulf	8,025.00	Part of the Leyte Gulf's world largest naval battle	H	L	L
Cancabato Bay	w/in San Pedro Bay	562.00	A bay by the bay by the gulf (San Pedro-Pablo Bay & Leyte Gulf) Waterfront	H	L	L
Panalaron Bay	w/in San Pedro Bay	101.00	A bay by the bay by the gulf (San Pedro-Pablo Bay & Leyte Gulf) Waterfront	H	L	L
Anibong Bay	w/in San Pedro Bay	100.00	A bay by the bay by the gulf (San Pedro-Pablo Bay & Leyte Gulf) Waterfront	H	L	L
Cataisan Point	Cataisan peninsula	13.83	6 US battleships landing in 10/20/44 recapturing Tacloban airstrip	H	L	L
Balyuan Park	City hall grounds	0.62	Exchange site of Sto. Nino images of Tacloban & Basey	H	L	L

HISTORICAL LANDMARKS	LOCATION	AREA (HAS.)	CULTURAL DESCRIPTION/ HERITAGE VALUE	HAZARD SUSCEPTIBILITY (L/M/H)		
				SURGE	FLOOD	LANDSLIDE
Papal Mass Site of Pope Francis	DZR Airport area	4.00	Post-Yolanda papal mass site on 01/17/2015 by Pope Francis	H	L	L

Table 8.3 Potential and Proposed Additional Heritage/Cultural Properties & Sites – Existing Historical Street Names & Districts, Tacloban City

(30 Yrs-Above)

HISTORICAL STREET NAMES & DISTRICTS	LOCATION	CULTURAL DESCRIPTION/ HERITAGE VALUE	HAZARD SUSCEPTIBILITY (H/M/L)		
			SURGE	FLOOD	LANDSLIDE
Real St.	South of inner city	Main city road leading to city's southeast	H	L	L
Avenida Veteranos	West of inner city	In honor of WW-2 Veterans	H	L	L
Avenida Rizal	North of inner city	In honor of national hero Jose Rizal	H	L	L
Justice Romualdez St.	East of inner city	In honor of 10th House Speaker Daniel Z. Romualdez-Phil.HOR	H	L	L
Zamora St.	Downtown area	In honor of 3-martyr priests, Fr. Zamora	H	L	L
Gomez St.	Downtown area	In honor of 3-martyr priests, Fr. Gomez	H	L	L
Burgos St.	Downtown area	In honor of 3-martyr priests, Fr. Burgos	H	L	L
Salazar St.	Downtown area	In honor of 1stTaclobanon public teacher – Capitan Lodo	H	L	L
M.H. Del Pilar St.	Downtown area	In honor of Filipino hero Gen. Marcelo H. Del Pilar	H	L	L
Sto. Nino St.	Downtown area	In honor of patron saint Senor Santo Nino	H	L	L
Paterno St.	Downtown area	In honor of Filipino hero Fr. Pedro Paterno	H	L	L
Juan Luna St.	Downtown area	In honor of Filipino hero Gen. Juna Luna	H	L	L
Sen. Enage St.	North of downtown area	In honor of Senate-Pres.Pro Tempore Francisco Enage	H	L	L
T. Claudio St.	North of downtown area	In honor of Tomas M.Claudio-1st France WW2 Filipino casualty	H	L	L
Independencia St.	South of downtown area	In honor of June 12 Independence Day	H	L	L
Magsaysay Blvd.	North of downtown area	In honor of President Ramon Magsaysay	H	L	L
Paseo De Legazpi	West of downtown area	In honor of tornaviajedor Miguel Lopez de Legazpi	H	L	L

HISTORICAL STREET NAMES & DISTRICTS	LOCATION	CULTURAL DESCRIPTION/ HERITAGE VALUE	HAZARD SUSCEPTIBILITY (H/M/L)		
			SURGE	FLOOD	LANDSLIDE
Magallanes St.	SE of downtown area	In honor of 1st circumnavigator Ferdinand Magellan	H	L	L
Trece Martires St.	North of downtown area	In honor of 13 Filipino martyrs executed by Spanish Gov't	H	L	L
Gen. Lukban St.	San Fernando district	In honor of Gen. Vicente Lukban, Fil-Am War Filipino leader	H	L	L
Tarcela St.	West of downtown area	In honor of Catalino Tarcela-1st Leyte Provincial Governor	H	L	L

Table 8.4 Potential and Proposed Additional Heritage/Cultural Properties & Sites – Heritage Houses & Structures, Tacloban City

PROPOSED ADDITIONAL HERITAGE HOUSES & STRUCTURES	LOCATION	AREA (HAS.)	CULTURAL DESCRIPTION/HERITAGE VALUE	HAZARD SUSCEPTIBILITY (H/M/L)		
				SURGE	FLOOD	LANDSLIDE
Nena Yu Ancestral House	Salazar cor. Burgos St.	0.04	Spanish type architecture w/steel sheets roofing	H	L	L
Cuatro Casas	Gomez cor. Juan Luna St.	0.04	Stilt houses compound	H	L	L
Cinco Ancestral House	Gomez cor.Paterno St.	0.06	Spanish type architecture	H	L	L
Rosvenil Ancestral House	P. Burgos St.	0.05	Ancestral house	H	L	L
Alejandro Montejo Ancestral House	Paterno St.	0.01	Ancestral house of Montejos	H	L	L
Ambassador Mansion	Real St.	0.05	Ancestral mansion	H	L	L
La Azotea Ancestral House	Zamora cor. Del Pilar Sts.	0.02	Centennial house with azotea	H	L	L
Villa/Casa Ruiz	Independencia St.	0.02	Ancestral house with yard	H	L	L
Esperas Ancestral House	Real St.	0.01	Spanish-type architecture w/shell window	H	L	L
LNHS Gabaldon School Bldg.	LNHS Campus	0.02	Heritage schoolhouses built 1917-1946 by Arch.Parsons design	H	L	L
EVSU Gabaldon School Bldg.	EVSU Campus	0.09	Heritage schoolhouses built 1917-1946 by Arch.Parsons design	H	L	L
LNU Principal's Office Bldg.	LNU Campus	0.05	Spanish school building architecture	H	L	L
Diaz Ancestral House	Serin District	0.03	Wooden stilt house	H	L	L

Table 8.5 Potential and Proposed Additional Heritage/Cultural Properties & Sites – Historical Street Names, Tacloban City

PROPOSED ADDITIONAL HISTORICAL STREET NAMES	LOCATION	CULTURAL DESCRIPTION/ HERITAGE VALUE
Leon Rojas Sr. St.	To be designated	Fil-Am War Filipino leader last to surrender to Americans/COP
Gen. Mojica St.	To be designated	Fil-Am War (FAW) Filipino leader to fight Americans in Leyte
Capitan Lodovico Basilio St.	To be designated	Trained in self-governance & led Tacloban progress & dev't
Capitan Martin Hidalgo St.	To be designated	Trained in self-governance & led Tacloban progress & dev't
Dona Eulalia Rubillos St.	To be designated	1st Filipino to flutter flag on Philippine Revolutionary Gov't onset
Ferdinand E. Marcos St/Avenue	To be designated	10th Philippine President who loved Tacloban much
Gen. Douglas MacArthur Road	To be designated	WW2 Liberator of the Philippines

Table 8.6 Potential and Proposed Additional Heritage/Cultural Properties & Sites – Historical Landmarks & Ruins, Tacloban City

PROPOSED ADDITIONAL HISTORICAL LANDMARKS & RUINS	LOCATION	AREA	CULTURAL DESCRIPTION/ HERITAGE VALUE	HAZARD SUSCEPTIBILITY (H/M/L)		
				SURGE	FLOOD	LANDSLIDE
Puerto de Tacloban	Port Area	3.76	Funded during American Occupation-Commonwealth	H	L	L
Camp Bampus	Magsaysay Boulevard	7.00	US Army 1Lt. Edward A. Bampus – casualty at Balangiga	L	L	H
Old Leyte Park	Magsaysay Boulevard	7.00	Biggest Agro-Industrial Fair Site – June 30, 1943	L	L	H
Baluarte Ruins	Baluarte, San Jose	0.70	Watchtower for invasions	H	L	L
Children's Park	Along Port Area	1.19	Playground & picnic area for children	H	L	L
Coast Guard Patrol Port	Near old Children's Park	0.02	In memory of past port/coastal security	H	L	L
Tacloban Garrison	Leyte Capitol Grounds	0.03	American Architecture-Inspired building	H	L	L
Casas de Companas de Maritima	Near Tacloban Port	0.03	Old Spanish Architecture	H	L	L

PROPOSED ADDITIONAL HISTORICAL LANDMARKS & RUINS	LOCATION	AREA	CULTURAL DESCRIPTION/ HERITAGE VALUE	HAZARD SUSCEPTIBILITY (H/M/L)		
				SURGE	FLOOD	LANDSLIDE
Casa Real	Prov'l. Capitol/City Hall	0.03.	Old Spanish Architecture	H	L	L
Casa Aduana	Trece Martirez St.	0.03	Old Spanish Architecture	H	L	L
Heritage Trees	Along Independencia St. & Plaza Rizal		Century-old trees			
Heritage Wells	For inventory		Century-old wells			
Shipwrecks	For inventory		War relics			
Muelle de Tacloban	Seawall area		Founded during Americal Occupation-Commonwealth			
1st Liberation Mass Site	To be located on ground		1st Holy Mass after Philippine liberation			
Kamikaze/Dog Fight Marks/Ruins	To be located on ground		In memory of Japanese suicide pilot-bombers			

Source:
Note: Since other said potential heritage site location has not been identified, its hazard susceptibility cannot be determined in the meantime.

8.1.1 Problems & Development Needs/ Requirements

The presence and potentiality of the multitude and richness of the heritage properties and other cultural assets of the city, both currently recognized and those for proposed additional resources, requires their appropriate, relevant, timely, efficient and effective handling, care, conservation, protection and management and that in failing so, would distance and/or further deteriorate their physical, aesthetic, engineering/architectural and heritage integrity, value and sustainability.

When done and if anchored on the Filipino belief that "ang taong hindi marunong lumingon sa pinanggalingan ay hindi makakarating sa paroroonan", would increase the cultural awareness and consciousness of the Taclobanons as individuals and as a community boosting their local identity and pride towards their desired progress and development molded by inter-generational cultural diversity, patriotism and nationalism.

Not that cultural, heritage and artistic dimensions in the city were ignored, by-passed, isolated nor absconded, but what is more wanting is a systematic, synergized, harmonized, structured, inclusive and institutionalized heritage and cultural development and management.

8.1.2 Issues on Hazards at the Heritage Sites

Except for some heritage sites that are in elevated areas such as Camp Bampus (Leyte Park), Tacloban City Hall or Calvary Hill in Nula-tula most of our heritage within the downtown area and therefore prone to storm surge hazard susceptibility. As a counter measure these structures should be retrofitted or even elevated to counter the damage that was brought to these structures during typhoon Yolanda in 2013.

Most of the downtown area are less prone to flooding and therefore not at risk since the city is very near the coastline wherein the water cannot stay for a longer period of time. The landslide problem on the other hand is at risk in highly sloping area such as the Calvary Hill. The only counter-measure in these area is to ensure forest protection through tree planting and enforcement of law against illegal loggers.

8.1.3 Conclusion, Recommendations and/or Alternative Actions

In sum, it is concluded that heritage conservation and cultural development programs, plans, projects, activities and policies in the city should be given emphasis and be enshrined in local, inter-local, regional and national governance with transparency, participation and inclusivity through, but not limited to, the following approaches, strategies, options and recommendations:

1. Establishment of a local Heritage, Culture & Arts Council or its equivalent;
2. Continuing inventory, assessment, mapping, data-banking & management of the city's heritage, cultural & artistic resources;
3. Policy formulation and adoption of heritage conservation, protection & management measures (e.g. ordinances, resolutions, executive/administrative orders, etc.);

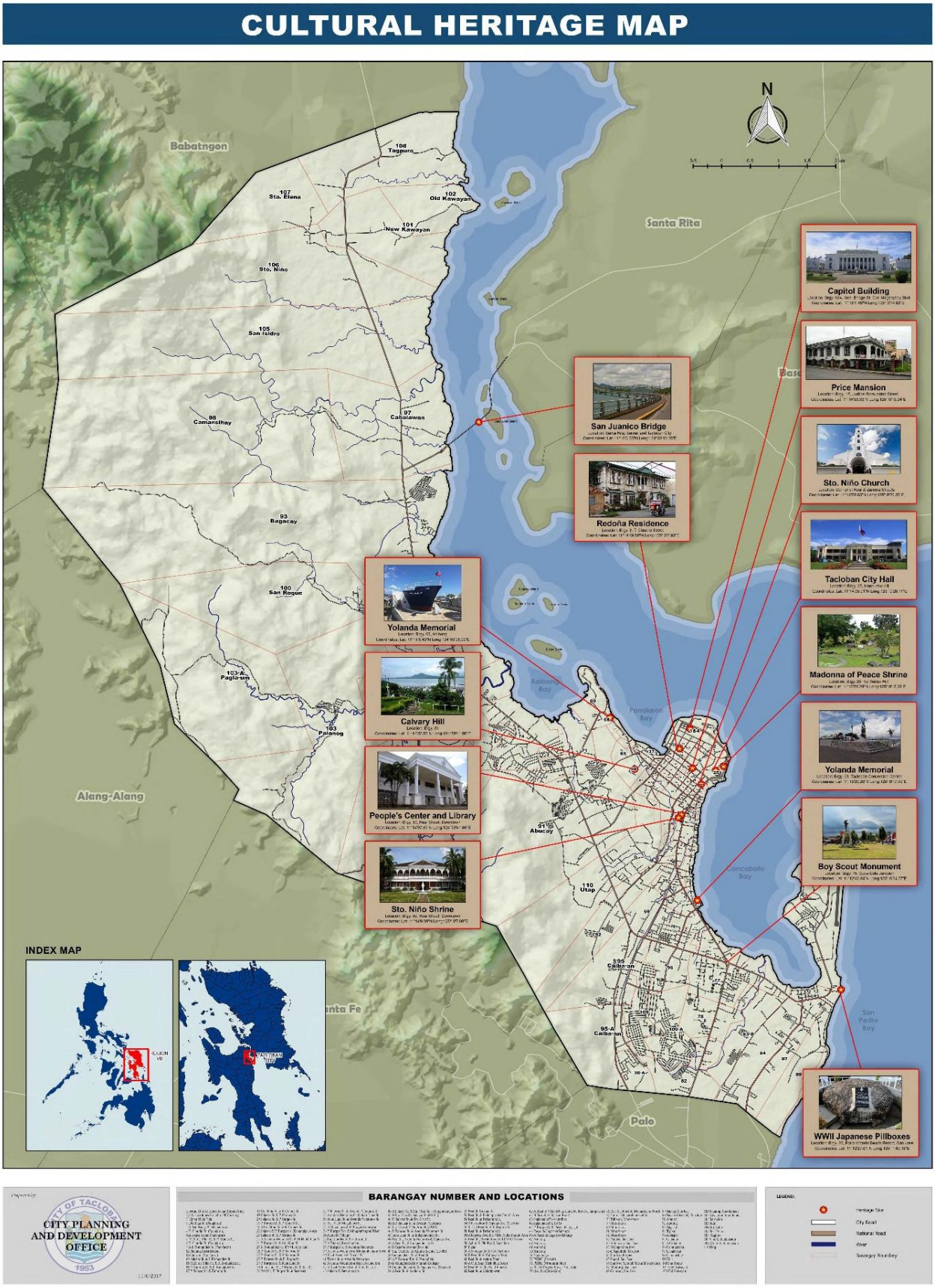
4. Fuller multi-sectoral & cross-sectional coordination & cooperation among stakeholders;
5. Maximize support/assistance/coordination/cooperation from/with NCCA, NHCP, NLP, NAP, NMP, UNESCO, and the like;
6. Initiate steps/processes to declare Tacloban as a "heritage city' and/or designate significant portion/s as "heritage zone';
7. Advocacy/Inclusion of local history/heritage in basic education curriculum;
8. Initiate to and continually install historical markers or heritage signages on all duly recognized heritage/cultural resources;
9. Establishment of a local museum, library and archives;
10. Revival, restoration, revitalization & retrofitting of under-utilized, idle, abandoned heritage assets;
11. Incentivize and/or sanction private owners of heritage assets and other cultural resources;
12. Collect heritage fee in a reasonable rate among business permit/license applicants as a heritage trust fund;
13. Strengthen intra-city and inter-city cultural & artistic festivals, competitions and related activities;
14. Classify and/or sub-categorize heritage/cultural properties as cultural treasures, cultural property, world heritage sites, historical shrine, historical monument and historical landmark, either locally and/or nationally.

Heritage Conservation Analysis Matrix

TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
• Absence of local Heritage, Culture & Arts Council	• We will not have "identity" as Taclobanons.	• Establishment of a local Heritage, Culture & Arts Council or its equivalent
• Lack of inventory and management of the city's heritage, cultural & artistic resources	• Failure to project the needs of tourist because of absence of database of cultural and heritage resources.	• Continuing inventory, assessment, mapping, databanking and management of the city's heritage, cultural and artistic resources

TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
• Inadequate or lack of ordinances regarding heritage conservation, protection and management measures	• No control of preservation of heritage site due to lack of ordinances	• Policy formulation and doption of heritage conservation, protection and management measures (e.g. ordinances, resolutions, executive orders)
• Poor coordination and cooperation among stakeholders regarding multi-sector related to tourism	• No standards and tariff that can be imposed on potential tourist. Security is also a t risk in the tourism industry.	• Fuller multi-sectoral and cross-sectoral coordination and cooperation among stakeholders.
• Need support and coordination from NCCA, NHCP, NLP, NAP, NMP, UNESCO regarding heritage conservation	• Tacloban will not maximize its potential as tourist destination for lack of national awareness	• Maximize support assistance coordination, cooperation with NCCA, NHCP, NLP, NAP, NMP, UNESCO and the like
• Need to designate significant portions as “heritage zone or declare the whole Tacloban as a “heritage city”	• Heritage sites will not be preserved	• Initiate steps processes to declare Tacloban as a “heritage city’ and/or designate significant portion/s as “heritage zone”
• Lack of information about our cultural heritage	• Lack of “identity” as Taclobanon’s due to disinformation	• Advocacy of inclusion of local history heritage in basic education curriculum
• Absence or not maintained historical markers or heritage signages on all duly recognized heritage/cultural resources	• Revenue from tourism will be at a minimum due to absence of historical markets. Walk-in tourist will be disoriented to its destination	• Initiate toand continually install historical markers or heritage signages on all duly recognized heritage/cultural resources
• No local library, archives, museum	• Due to lack of knowledge, local and foreign tourist will be ignorant of our heritage and our potential	• Establishment of a local museum, library and archives
• Idle and neglected heritage assets	• Lack of revenue and miss the opportunity to exploit our heritage assets	• Revival, restoration, revitalization and retrofitting og under-utilized, idle, abandoned heritage assets;
• Lack of incentive on utilizing heritage assts and other cultural resources	• Some remote heritage site will be neglected or not maximized as additional revenue due to	• Incentivize or sanction private owners of

TECHNICAL FINDINGS/ISSUES/PROBLEMS	EFFECTS/IMPACTS/IMPLICATIONS	POSSIBLE SOLUTIONS (LEGISLATIONS, POLICIES, PROGRAMS, PROJECTS)
	transportation, security and other amenities	heritage assets and other cultural resources
• Need to collect heritage fee permit, license applicants a heritage trust fund	• Increase the local revenue and uplift the local economy	• Collect heritage fee in a reasonable rate among business permit/license applicants as a heritage trust fund
• Need to encourage cultural & artistic festivals, competitions and related activities	• Our "identity" as Taclobanon's will be known to the country and will help boost our local economy due to festivals	• Strengthen intra-city and inter-city cultural & artistic festivals, competitions and related activities;
• Need to categorize heritage cultural properties and historical landmarks, either locally or nationally	• Amenities, transportation, security and other tourist related services will not be planned due to lack of information	• Classify and/or sub-categorize heritage/cultural properties as cultural treasures, cultural property, world heritage sites historical shrine, historical monument and historical landmark, either locally and nationally.



Map 108. Location of Cultural Heritage Sites