

Rebuttal Population Distribution For Sensitivity Analysis

Exhibit Prepared by Dr. Stephen Sheppard. Dated: June 29, 2012.

TABLE 1: This spreadsheet shows Entergy’s population increase of 729,521 persons, an increase of approximately 3.79%, distributed proportionately by grid element. Each cell in the spreadsheet shows the number of individuals that should be added to the existing population estimate for each grid element. To get each number, I multiplied the pre-existing population estimate for each grid element by 3.79%. Since the percentage was rounded to 3.79%, some minor adjustments were necessary to make the increase equal 729,521 persons.

Scenario 1: Same population increase spread proportional to existing population

	0.20	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	20.00	30.00	40.00	50.00
	0.3219	1.6093	3.2187	4.828	6.4374	8.0467	9.6561	11.2654	12.8748	14.4841	16.0935	32.1869	48.2804	64.3739	80.4674
N	0	0	10	78	95	34	35	46	53	57	64	871	1163	1503	1937
NNE	1	0	6	74	110	78	45	53	60	68	73	1068	1514	2133	2550
NE	1	7	34	81	112	146	148	116	93	76	73	1116	2037	2373	1565
ENE	1	14	48	81	113	131	171	200	233	264	276	2840	4518	5773	6690
E	1	15	46	81	111	144	168	209	212	273	306	4490	5946	7610	7906
ESE	1	16	48	81	113	136	140	146	218	257	281	4610	5473	2056	1304
SE	1	16	48	81	109	144	172	200	238	273	306	4247	3329	8970	14417
SSE	1	14	48	62	33	19	1	55	36	73	122	3730	18275	52365	46216
S	1	15	27	9	5	24	58	123	157	169	195	5130	44184	141602	120051
SSW	1	14	21	19	64	109	134	159	185	209	234	7687	15001	35005	39247
SW	1	8	7	59	86	111	136	159	165	203	233	6957	10505	7488	9336
WSW	0	0	24	62	83	111	135	152	159	161	164	2444	7937	4139	3257
W	0	0	32	61	86	107	90	68	54	67	77	1215	1934	2329	2177
WNW	0	0	36	62	85	51	43	54	57	67	79	1234	2071	2200	1128
NW	0	2	37	60	73	37	43	51	58	68	79	1236	2070	912	847
NNW	0	2	31	40	60	28	46	53	61	68	77	1201	1236	1047	1304
	10	123	503	991	1338	1410	1565	1844	2039	2353	2639	50076	127193	277505	259932

Total
 Population: 729521

TABLE 2: This spreadsheet shows the population increases from Table 1 added to the pre-existing 2035 population estimate for each grid element. Although my opinion is that the population increases proposed by Entergy are too low, this is the proper distribution of those increases. As such, this is how Entergy should have entered the increases into the MACCS2 code to run its sensitivity analysis.

Scenario 1: Same population increase spread proportional to existing population

	0.20	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	20.00	30.00	40.00	50.00
	0.3219	1.6093	3.2187	4.828	6.4374	8.0467	9.6561	11.2654	12.8748	14.4841	16.0935	32.1869	48.2804	64.3739	80.4674
N	6	0	281	2137	2596	943	966	1269	1442	1560	1760	23826	31817	41123	52994
NNE	17	7	176	2017	3022	2129	1222	1441	1637	1866	1986	29208	41431	58359	69763
NE	18	200	917	2212	3076	3989	4058	3175	2557	2074	1988	30535	55729	64932	42826
ENE	18	378	1323	2213	3090	3584	4678	5482	6373	7224	7555	77696	123591	157948	183028
E	18	405	1264	2219	3045	3936	4592	5722	5799	7474	8382	122825	162666	208191	216300
ESE	18	425	1304	2217	3083	3728	3838	4003	5952	7040	7690	126125	149740	56236	35665
SE	18	426	1322	2219	2981	3952	4709	5479	6522	7467	8366	116193	91064	245396	394407
SSE	18	374	1316	1707	915	514	16	1497	984	1984	3336	102056	499978	1432614	1264386
S	18	415	728	255	129	644	1596	3376	4286	4624	5333	140341	1208780	3873941	3284357
SSW	18	391	583	519	1764	2991	3678	4346	5058	5726	6393	210292	410390	957654	1073714
SW	18	225	194	1625	2360	3027	3710	4347	4526	5561	6371	190329	287407	204850	255412
WSW	9	0	644	1685	2280	3035	3685	4166	4355	4416	4499	66872	217134	113241	89106
W	3	0	887	1663	2353	2922	2458	1855	1477	1842	2107	33241	52908	63709	59561
WNW	2	0	974	1686	2330	1392	1178	1473	1562	1823	2150	33762	56648	60177	30847
NW	2	47	1011	1649	2006	1009	1183	1402	1599	1849	2172	33808	56627	24958	23164
NNW	3	52	840	1091	1647	768	1250	1460	1681	1855	2105	32861	33805	28646	35678
Total	204	3345	13764	27114	36677	38563	42817	50493	55810	64385	72193	1369970	3479715	7591975	7111208

TABLE 3: This spreadsheet shows my population increase of 1,227,410 persons, an increase of approximately 6.38%, distributed proportionately by grid element. Each cell in the spreadsheet shows the number of individuals that should be added to the pre-existing 2035 population estimate for each grid element. To get each number, I multiplied the pre-existing population estimate for each grid element by 6.38%. Since the percentage was rounded to 6.38%, some minor adjustments were necessary to make the increase equal 1,227,410 persons.

	0.20	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	20.00	30.00	40.00	50.00
	0.3219	1.6093	3.2187	4.828	6.4374	8.0467	9.6561	11.2654	12.8748	14.4841	16.0935	32.1869	48.2804	64.3739	80.4674
N	0	0	17	131	160	58	59	78	89	96	108	1465	1957	2529	3259
NNE	1	0	11	124	186	131	75	89	101	115	122	1796	2548	3589	4290
NE	1	12	56	136	189	245	250	195	157	128	122	1878	3427	3993	2634
ENE	1	23	81	136	190	220	288	337	392	444	465	4778	7601	9714	11256
E	1	25	78	136	187	242	282	352	357	460	516	7554	10004	12804	13302
ESE	1	26	80	136	190	229	236	246	366	433	473	7757	9209	3458	2193
SE	1	26	81	136	183	243	290	337	401	459	514	7146	5600	15092	24256
SSE	1	23	81	105	56	32	1	92	61	122	205	6276	30748	88104	77758
S	1	26	45	16	8	40	98	208	264	284	328	8631	74339	238243	201985
SSW	1	24	36	32	109	184	226	267	311	352	393	12933	25239	58895	66032
SW	1	14	12	100	145	186	228	267	278	342	392	11705	17675	12598	15708
WSW	1	0	40	104	140	187	227	256	268	272	277	4113	13354	6964	5480
W	0	0	55	102	145	180	151	114	91	113	130	2044	3254	3918	3663
WNW	0	0	60	104	143	86	72	91	96	112	132	2076	3484	3701	1897
NW	0	3	62	101	123	62	73	86	98	114	134	2079	3482	1535	1425
NNW	0	3	52	67	101	47	77	90	103	114	129	2021	2079	1762	2194
	11	205	847	1666	2255	2372	2633	3105	3433	3960	4440	84252	214000	466899	437332

Total
Population: 1227410

TABLE 4: This spreadsheet shows the population increases from Table 3 added to the pre-existing 2035 population estimate for each grid element. This spreadsheet reflects the proper distribution of my full population increase. A proper sensitivity analysis of my proposed population increases would input this population distribution to the MACCS2 code.

	0.20	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	20.00	30.00	40.00	50.00
	0.3219	1.6093	3.2187	4.828	6.4374	8.0467	9.6561	11.2654	12.8748	14.4841	16.0935	32.1869	48.2804	64.3739	80.4674
N	6	0	288	2190	2661	967	990	1301	1478	1599	1804	24420	32611	42149	54316
NNE	17	7	181	2067	3098	2182	1252	1477	1678	1913	2035	29936	42465	59815	71503
NE	18	205	939	2267	3153	4088	4160	3254	2621	2126	2037	31297	57119	66552	43895
ENE	18	387	1356	2268	3167	3673	4795	5619	6532	7404	7744	79634	126674	161889	187594
E	18	415	1296	2274	3121	4034	4706	5865	5944	7661	8592	125889	166724	213385	221696
ESE	18	435	1336	2272	3160	3821	3934	4103	6100	7216	7882	129272	153476	57638	36554
SE	18	436	1355	2274	3055	4051	4827	5616	6685	7653	8574	119092	93335	251518	404246
SSE	18	383	1349	1750	938	527	16	1534	1009	2033	3419	104602	512451	1468353	1295928
S	18	426	746	262	132	660	1636	3461	4393	4739	5466	143842	1238935	3970582	3366291
SSW	18	401	598	532	1809	3066	3770	4454	5184	5869	6552	215538	420628	981544	1100499
SW	18	231	199	1666	2419	3102	3802	4455	4639	5700	6530	195077	294577	209960	261784
WSW	10	0	660	1727	2337	3111	3777	4270	4464	4527	4612	68541	222551	116066	91329
W	3	0	910	1704	2412	2995	2519	1901	1514	1888	2160	34070	54228	65298	61047
WNW	2	0	998	1728	2388	1427	1207	1510	1601	1868	2203	34604	58061	61678	31616
NW	2	48	1036	1690	2056	1034	1213	1437	1639	1895	2227	34651	58039	25581	23742
NNW	3	53	861	1118	1688	787	1281	1497	1723	1901	2157	33681	34648	29361	36568
Total	205	3427	14108	27789	37594	39525	43885	51754	57204	65992	73994	1404146	3566522	7781369	7288608