QGET Baseline Scenario

Overview

The Quality Growth Efficiency Tools (QGET) Work Group, whose mission it is to improve the quality of information available about Utah's future, authored the *2003 Baseline Growth Scenario* to provide a comprehensive depiction of what current projections indicate regarding the demographic, economic, air quality, water, transportation, and land use future of the Greater Wasatch Area. The Greater Wasatch Area includes a 10-county region along the front and back of the Wasatch Mountain Range and can reasonably be considered the commutershed for the Salt Lake-Ogden and Provo-Orem metropolitan areas. The area includes 10 counties, about 100 cities and 160 special service districts. These multiple jurisdictions, along with state government and the Utah Transit Authority, share responsibility for providing infrastructure and services to two million people. The steady and rapid population growth within the region places increasing demands on these entities. The growth also places a strain on the environment because of the unique geographical layout of the area, which is bounded by mountain ranges and water bodies and includes land that is essentially arid. This chapter highlights the findings of the *2003 Baseline Growth Scenario* including projections to the year 2030 based on current trends and policies.

Demographics and Economics

The Greater Wasatch is projected to increase from 1.9 million people in 2000--a population slightly larger than the Sacramento metro area--to 3.1 million by 2030--a population slightly smaller than the current Phoenix metro area. The projections to 2030 indicate a population growth rate approximately twice the national average. Two-thirds of the new growth is projected to originate from residents' own children and grandchildren. The population is projected to increase by an average of 42,000 residents a year--a population about the current size of Logan. Throughout the projection period, the economy is projected to create enough jobs for residents.

Air Quality

In sharp contrast to the 1997 Baseline, during the next three decades emissions of all five of the major monitored pollutants are not projected to increase. Because of more stringent federal standards for auto emissions and better controls on industrial sources, the air is expected to improve somewhat over the next two decades. During the 2020s, however, projected population growth is expected to outweigh auto and industrial controls, so that, without technical or regulatory changes, air quality returns to its present state by 2030. Federal air standards should be attained throughout the period to 2030, and air quality should not be a constraint to growth.

Water

Water is not a constraint to growth in the Greater Wasatch as long as residents are willing to pay for additional water development and water providers are willing to work together to deliver adequate supplies. Residents are expected to decrease per capita water consumption because of a continuation of current trends in the use of low flow plumbing, xeriscaping, and rate increases. Reflecting the difficulty of developing new supplies, water rates, after adjusting for inflation, are projected to more than double between 2000 and 2030. Water infrastructure development is projected to cost almost $8 billion between 2000 and 2030 (2003 dollars). This is $2,500 per person and $7,200 per household.

Infrastructure Costs

Infrastructure spending between 2000 and 2030 is projected to be $28.9 billion (2003 dollars); $21.0 billion for transportation and $7.9 billion for water. After peaking at over $1 billion in 2000 during the height of I-15 reconstruction in Salt Lake County, total infrastructure spending is not projected to exceed $1 billion until 2019.

The estimated timing of spending is based on funding availability and need. If several large projects are undertaken at once with bond financing, total spending in any given year could exceed $2 billion. As a percent of Greater Wasatch gross domestic product (GDP), the Governor's Office of Planning and Budget (GOPB) forecasts infrastructure spending to decline from a peak above 1.6% during 2000, to a range of 0.6% during the 2020s. Spending averages 0.8% of GDP from 2000 to 2030. If GDP grows as forecast, the Greater Wasatch will be able to finance planned infrastructure over the next three decades. With less federal participation, the effort required from residents may be somewhat higher than in the past.

Housing

Housing construction is driven by new household formation. The number of households is projected to increase 90% from 2000 to 2030, a faster rate of increase than for population. Following household growth, the housing stock is projected to increase from 621,000 units to 1.2 million. In other words, almost 600,000 new housing units will be constructed, an average of almost 20,000 per year. Over the next three decades, housing prices should increase somewhat more than the historical long-term trend of 4.5% annually. This higher rate of increase results from the growing scarcity of developable land in Salt Lake County.

Transportation

Vehicle miles traveled in the Greater Wasatch Area is projected to increase at a faster rate than population. This is projected to occur as residents continue to increase vehicle ownership, drive farther for work trips, and make more non-work trips. Relative to the 1997 Baseline, 2003 Baseline transportation investment has increased substantially, especially for transit. Because of this increased investment and refinements to travel modeling techniques, the transportation system is projected to perform better in the 2003 Baseline than was the case in the 1997 Baseline.

Over the entire highway network during peak commute times, the current delay averages about two minutes. Of course, many people who use congested facilities experience more delay than two minutes. The average delay is expected to double by 2030 to over four minutes. Average commute speed is expected to drop from about 31 mph now to 28 mph in 2030, while the average time commuting increases from 22 minutes to 24 minutes. One of the major benefits of the massive transit investments that are planned is that people can choose not to drive during peak congestion, which allows the highway network to perform relatively well. Transit share of work trips increases from 3.6% in 2000 to 6.5% in 2030. Transportation infrastructure investment is projected to exceed $20 billion (2003 dollars) between 2000 and 2030. This is $6,700 per person and $19,000 per household in the year 2030.

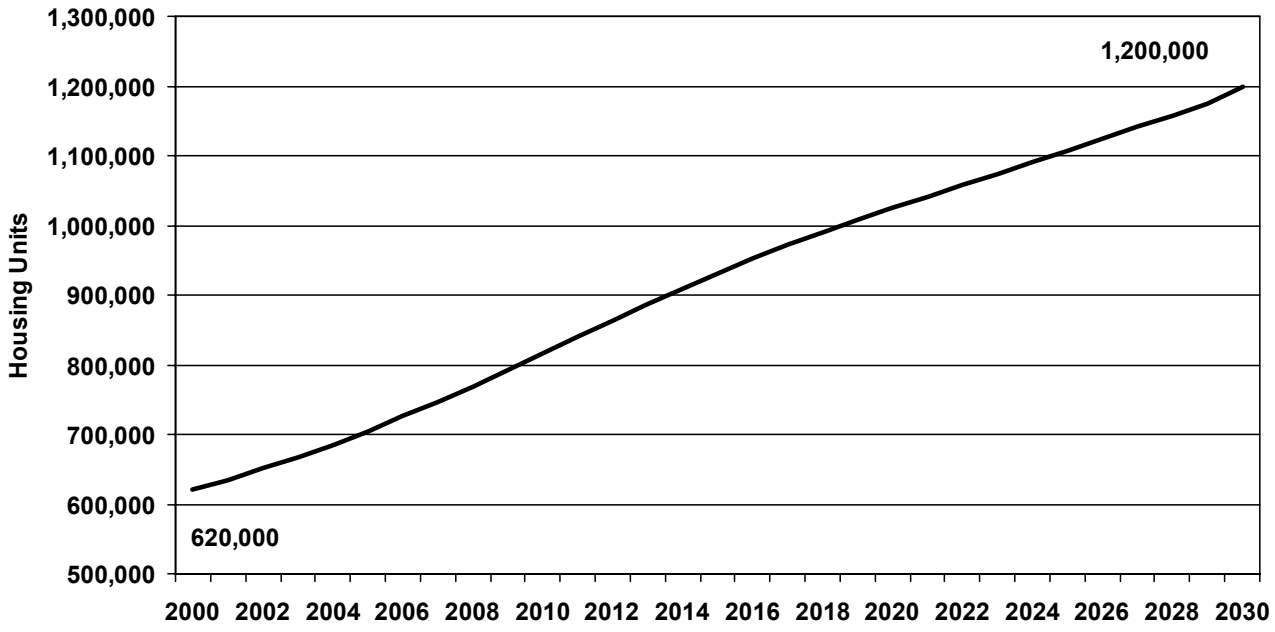
Land Use

Population growth will change land use patterns as new homes and businesses are built. The current urban area occupies an estimated 389 square miles of land and is projected to increase to 615 square miles in 2020 and 697 square miles in 2030. Agricultural and other land uses will be converted to resident use as the demand for new housing continues to increase. Reflecting the current trend of lower density home construction, population density in the urban area will decline from 4,771 people per square mile in 2000 to 4,484 in 2030. Nonetheless, while the 1997 Baseline forecast an urban area of 695 square miles by 2020, the urban area in the 2003 Baseline is not forecast to reach 695 square miles until 2030. Policy changes since the 1997 Baseline, which include a massive expansion in the transit system, more transit oriented development, and aggressive conservation of critical lands, are expected to slow the pace of land consumption by a decade.

On the Web

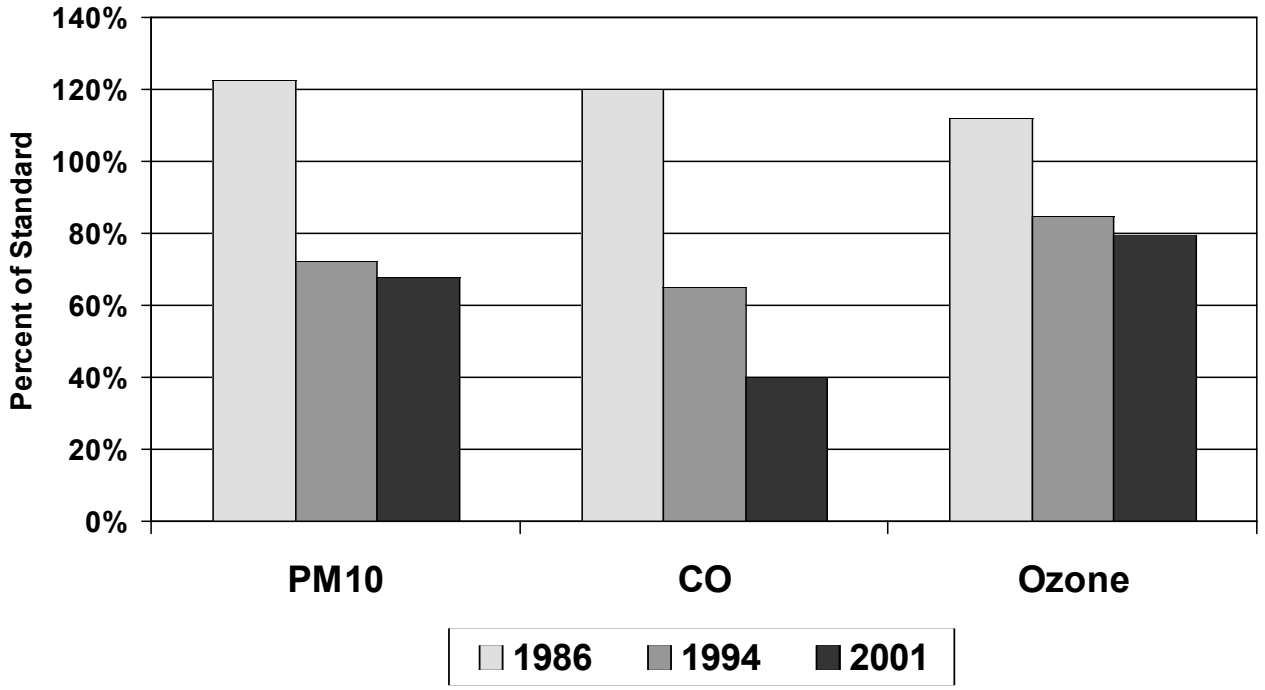
The *2003 Baseline Scenario* is viewable on the web in its entirety at http://www.governor.utah.gov/dea/2003BaselineWEB.pdf.

Figure 68
Housing Stock -- Greater Wasatch



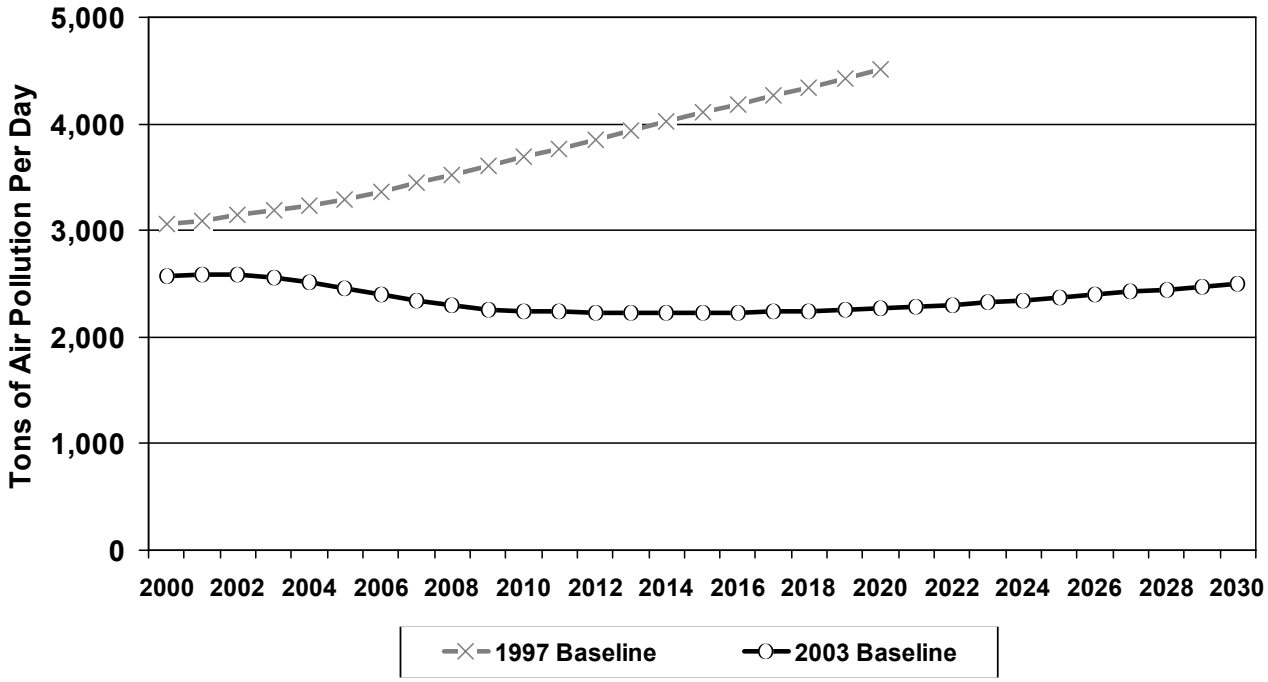
Source: Bureau of Economic and Business Research

Figure 69
Air Quality Trends for Highest Pollution Days -- Greater Wasatch



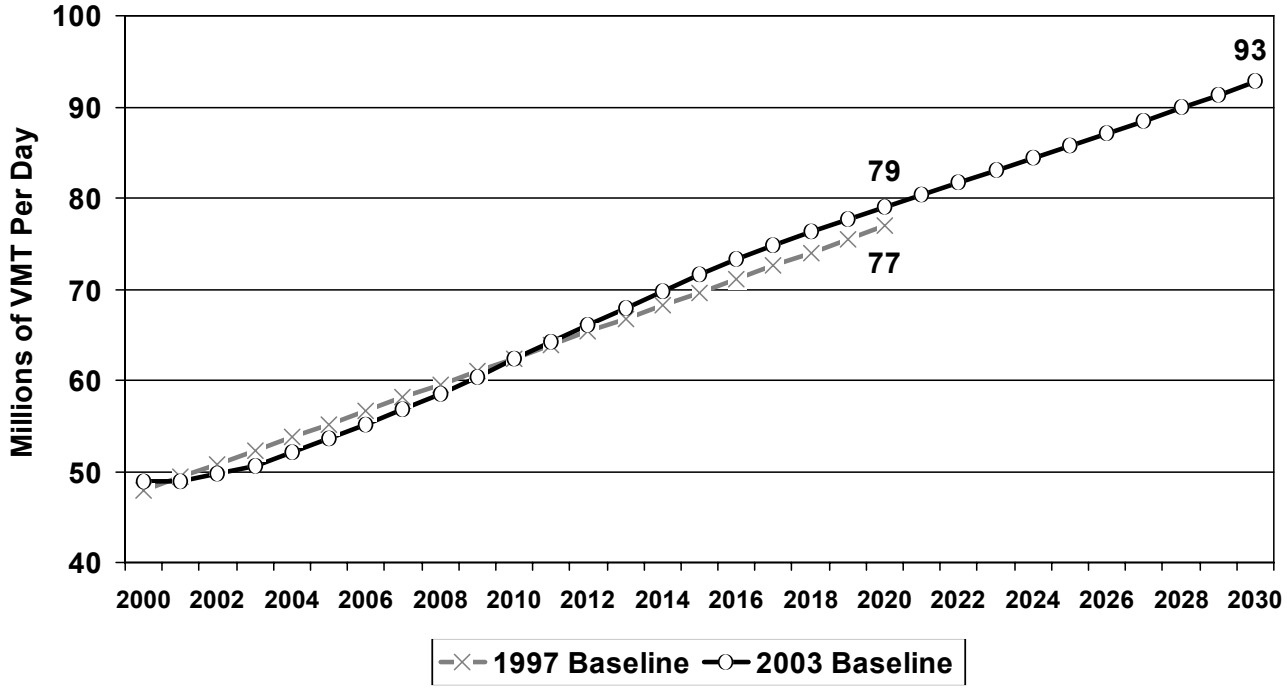
Source: Division of Air Quality

Figure 70
Air Quality: Pollution Emissions -- Greater Wasatch



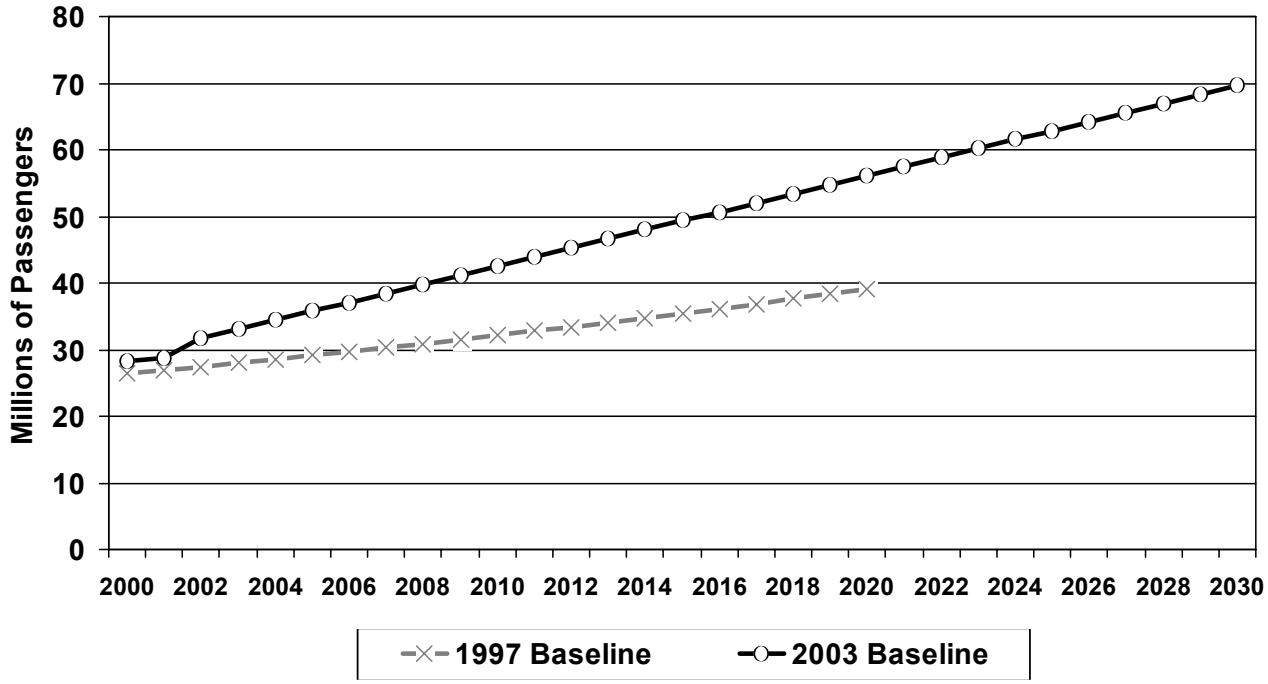
Source: Division of Air Quality

Figure 71
Vehicle Miles Traveled -- Greater Wasatch



Sources: Wasatch Front Regional Council, Utah Department of Transportation, and the Governor's Office of Planning & Budget

Figure 72
Transit Use -- Greater Wasatch



Source: Utah Transit Authority

Table 86
Transportation Characteristics for the Greater Wasatch Area: 2000 to 2030
Davis, Salt Lake, Utah, Weber, Box Elder, Juab, Morgan, Summit, Tooele and Wasatch Counties

	2000	2010	2020	2030
Average Weekday VMT (millions)	48.9	62.3	79.0	92.8
VMT Per Capita	25.7	27.0	28.3	29.7
Vehicles Per Capita*	0.58	0.69	0.67	0.67
Peak Period Trip Time (minutes)*	21.8	22.5	23.6	24.0
Average Peak Period Speed (mph)*	31.1	30.6	28.6	28.5
Average Peak Period Delay (vehicle-hours)*	94,000	116,000	199,000	295,000
Peak Period Delay Per Trip (minutes)*	2.1	2.3	3.3	4.4
Transit Passengers (millions)*	28.2	42.5	56.1	69.6
Transit Share of All Trips*	1.2%	1.4%	1.6%	1.8%
Transit Share of Work Trips*	3.6%	4.9%	5.8%	6.5%

	2000-2010	2000-2020	2000-2030
Population Growth From Base Year	407,696	886,134	1,224,207
VMT Growth From Base Year	13,362,369	30,068,081	43,829,986

Notes: * Metro counties only
VMT refers to vehicle miles traveled

Sources: Wasatch Front Regional Council, Mountianland Association of Government, Utah Department of Transportation, and the Governor's Office of Planning & Budget

Table 8
Population and Components of Population Change for the Greater Wasatch Area: 2000 to 2030
Davis, Salt Lake, Utah, Weber, Box Elder, Juab, Morgan, Summit, Tooele and Wasatch Counties

	Population						2003 Baseline					
Year	1997 Baseline	2003 Baseline	Percent Change	Numerical Change	Net Migration	Natural Increase	Births	Deaths	Households	Household Percent Change	Household Numerical Change	Persons Per Household
2000	1,779,653	1,857,797	2.55%	46,200	16,334	29,866	39,319	9,453	580,927	NA		3.14
2001	1,814,948	1,900,146	2.28%	42,349	12,116	30,235	40,130	9,895	597,276	2.81%	16,349	3.13
2002	1,869,730	1,918,874	0.99%	18,728	(12,080)	30,804	41,297	10,493	606,249	1.50%	8,973	3.11
2003	1,884,736	1,945,571	1.39%	26,697	(4,237)	30,932	41,454	10,522	617,562	1.87%	11,313	3.10
2004	1,930,907	1,992,130	2.39%	46,559	15,373	31,188	41,802	10,614	635,277	2.87%	17,715	3.08
2005	1,978,319	2,036,991	2.25%	44,861	12,981	31,879	42,672	10,793	653,352	2.85%	18,075	3.07
2006	2,025,380	2,083,657	2.29%	46,666	14,190	32,475	43,451	10,976	673,011	3.01%	19,659	3.05
2007	2,074,203	2,134,130	2.42%	50,473	17,574	32,897	44,089	11,192	692,055	2.83%	19,044	3.03
2008	2,126,262	2,186,101	2.44%	51,971	18,612	33,359	44,797	11,438	711,929	2.87%	19,874	3.02
2009	2,180,279	2,246,515	2.76%	60,414	26,610	33,803	45,475	11,672	734,089	3.11%	22,160	3.01
2010	2,233,488	2,307,842	2.73%	61,327	26,993	34,336	46,289	11,953	756,530	3.06%	22,441	3.00
2011	2,283,506	2,364,846	2.47%	57,004	22,255	34,746	47,014	12,268	777,317	2.75%	20,787	2.99
2012	2,335,273	2,423,952	2.50%	59,106	24,101	35,008	47,550	12,542	799,103	2.80%	21,786	2.99
2013	2,387,200	2,480,860	2.35%	56,908	21,597	35,306	48,135	12,829	820,251	2.65%	21,148	2.98
2014	2,435,529	2,535,672	2.21%	54,812	19,306	35,506	48,618	13,112	841,005	2.53%	20,754	2.97
2015	2,482,455	2,587,089	2.03%	51,417	15,843	35,574	48,991	13,417	861,287	2.41%	20,282	2.96
2016	2,527,998	2,634,239	1.82%	47,150	11,589	35,565	49,289	13,724	881,143	2.31%	19,856	2.94
2017	2,570,538	2,677,521	1.64%	43,282	7,829	35,452	49,475	14,023	899,095	2.04%	17,952	2.93
2018	2,613,739	2,717,444	1.49%	39,923	4,614	35,307	49,622	14,315	916,181	1.90%	17,086	2.92
2019	2,654,792	2,752,547	1.29%	35,103	(60)	35,165	49,770	14,605	931,438	1.67%	15,257	2.91
2020	2,695,278	2,786,280	1.23%	33,733	(1,230)	34,963	49,865	14,902	946,578	1.63%	15,140	2.90
2021		2,821,242	1.25%	34,962	217	34,748	50,004	15,256	961,937	1.62%	15,359	2.89
2022		2,855,743	1.22%	34,501	(216)	34,717	50,335	15,618	977,346	1.60%	15,409	2.87
2023		2,889,232	1.17%	33,489	(1,289)	34,779	50,772	15,993	992,287	1.53%	14,941	2.86
2024		2,921,100	1.10%	31,868	(3,040)	34,910	51,302	16,392	1,006,928	1.48%	14,641	2.85
2025		2,954,725	1.15%	33,625	(1,423)	35,046	51,851	16,805	1,022,303	1.53%	15,375	2.84
2026		2,986,931	1.09%	32,206	(3,074)	35,280	52,534	17,254	1,037,781	1.51%	15,478	2.83
2027		3,020,513	1.12%	33,582	(1,938)	35,524	53,225	17,701	1,053,192	1.48%	15,411	2.82
2028		3,054,911	1.14%	34,398	(1,414)	35,812	54,008	18,196	1,068,597	1.46%	15,405	2.81
2029		3,090,542	1.17%	35,631	(461)	36,094	54,843	18,749	1,083,959	1.44%	15,362	2.80
2030		3,124,353	1.09%	33,811	(2,607)	36,418	55,731	19,313	1,098,578	1.35%	14,619	2.80
AARC	2.10%	1.75%	1.78%	42,347	8,228	34,119	47,862	13,742	2.15%	2.15%	17,255	2.95

Notes: AARC is Average Annual Rate of Change
Persons Per Household excludes the group quarters population
Parentheses signify a negative in-migration (i.e. out-migration)

Source: Governor's Office of Planning and Budget - UPED Model System

Table 88
Air Pollution Emissions for the Greater Wasatch Area: 2000 to 2030
Davis, Salt Lake, Utah, Weber, Box Elder, Juab, Morgan, Summit, Tooele and Wasatch Counties

	2003 Baseline Emissions by Pollutant					Total Emissions	
Year	Particulate Matter (PM10)	Sulfur Dioxide (SO2)	Nitrogen Oxides (NOx)	Volatile Organic Compounds (VOCs)	Carbon Monoxide (CO)	1997 Baseline	2003 Baseline
2000	102	33	270	479	1,691	3,064	2,576
2001	103	34	268	483	1,694	3,095	2,581
2002	103	33	263	479	1,707	3,149	2,586
2003	102	33	255	472	1,656	3,192	2,519
2004	105	32	249	469	1,600	3,238	2,455
2005	105	34	245	466	1,589	3,295	2,439
2006	108	34	241	467	1,618	3,366	2,466
2007	110	34	232	465	1,507	3,444	2,347
2008	112	34	223	463	1,445	3,525	2,277
2009	114	34	217	464	1,434	3,607	2,262
2010	116	34	212	463	1,420	3,695	2,244
2011	117	34	206	464	1,414	3,770	2,236
2012	119	35	200	466	1,407	3,849	2,227
2013	121	35	195	467	1,404	3,933	2,222
2014	123	35	191	469	1,405	4,018	2,223
2015	124	36	187	472	1,409	4,104	2,228
2016	125	36	185	474	1,411	4,183	2,232
2017	127	37	183	476	1,417	4,263	2,239
2018	128	37	181	479	1,420	4,344	2,245
2019	129	38	180	481	1,426	4,427	2,254
2020	131	38	179	483	1,434	4,511	2,265
2021	132	38	179	485	1,449		2,283
2022	133	38	178	487	1,467		2,303
2023	135	37	178	489	1,485		2,324
2024	136	37	178	492	1,504		2,347
2025	138	37	177	495	1,524		2,371
2026	139	37	177	498	1,545		2,396
2027	140	37	177	501	1,567		2,422
2028	141	37	177	504	1,586		2,446
2029	142	38	178	507	1,609		2,473
2030	143	38	178	509	1,631		2,499
AARC	1.11%	0.42%	-1.38%	0.20%	-0.12%	1.95%	-0.10%

AARC = Average Annual Rate of Change, 2000 to 2030
Note: Data reflects an annual average tons per day
Source: Utah Division of Air Quality

Table 89
Annual Infrastructure Costs in the Greater Wasatch Area: 2000 to 2030
Davis, Salt Lake, Utah, Weber, Box Elder, Juab, Morgan, Summit, Tooele and Wasatch Counties

	Transportation (Millions of 2003 Dollars)						**Water** (Millions of 2003 Dollars)					
Year	Roads	I-15	Legacy/MV	Rail	Bus	Total	Drinking	CUP	BRP	Waste	Total	Total
2000	574	264	0	120	64	758	230	124	0	55	285	1,043
2001	492	141	35	80	17	589	238	122	0	56	293	882
2002	392	85	0	31	16	439	205	107	0	56	261	700
2003	387	0	0	34	18	440	206	107	0	57	263	703
2004	400	0	0	30	48	478	211	109	0	58	269	747
2005	412	0	56	36	19	467	252	148	0	60	311	778
2006	425	57	56	41	22	488	220	114	0	61	281	769
2007	438	86	66	47	25	510	241	133	0	63	304	814
2008	452	114	76	56	30	538	246	135	0	64	310	849
2009	468	143	67	54	86	608	247	133	0	66	313	921
2010	485	171	66	62	33	580	252	135	0	68	320	900
2011	501	198	65	71	38	609	120	0	0	69	190	798
2012	517	196	82	79	42	638	123	0	0	71	194	832
2013	533	198	85	90	48	671	126	0	0	73	199	870
2014	549	200	85	81	43	673	129	0	0	74	203	876
2015	565	199	85	60	161	786	131	0	0	76	207	994
2016	579	197	90	64	34	677	134	0	0	77	211	888
2017	593	195	90	67	36	696	136	0	0	79	215	911
2018	607	193	80	70	38	715	225	0	87	80	304	1,019
2019	619	190	85	94	50	763	226	0	87	81	307	1,071
2020	632	183	99	94	50	776	228	0	87	82	310	1,086
2021	644	178	128	70	113	828	143	0	0	83	226	1,054
2022	657	183	157	47	25	729	145	0	0	84	229	958
2023	670	188	185	31	17	718	147	0	0	85	232	950
2024	687	198	214	16	8	711	148	0	0	86	234	945
2025	703	208	214	30	16	749	150	0	0	87	237	986
2026	707	228	214	44	24	775	152	0	0	88	239	1,014
2027	715	235	185	59	31	805	153	0	0	89	242	1,047
2028	736	251	183	65	35	836	155	0	0	90	245	1,081
2029	753	272	179	72	38	863	157	0	0	91	248	1,110
2030	797	305	174	72	191	1,060	159	0	0	92	250	1,311
Total	17,689	5,256	3,103	1,865	1,419	20,973	5,636	1,369	260	2,298	7,934	28,907

Sources: Governor's Office of Planning and Budget, Utah Department of Transportation, Mountainland Association of Governments, Wasatch Front Regional Council, Utah Transit Authority, Utah Division of Drinking Water, Utah Division of Water Quality, Utah Division of Water Resources, Central Utah Water Conservancy District, Salt Lake City Department of Public Utilities, Granger Hunter Improvement District.