Moving Toward 2020: Utah Commuting Patterns, 2000 to 2010

Mallory Bateman, Senior Research Analyst
Natalie Young, Research Analyst

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Kem C. Gardner
POLICY INSTITUTE
THE UNIVERSITY OF UTAH
DAVID ECCLES SCHOOL OF BUSINESS

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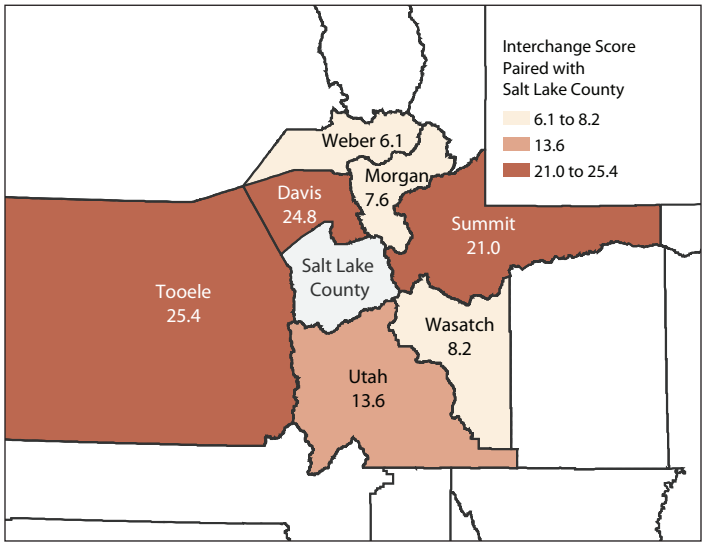
Analysis in Brief

As Utah's population has grown and changed, housing developments, employment opportunities, and communities have expanded, and so have the commuting patterns of the employed workers who call Utah home. Analysis of recent county-to-county commuting data demonstrates that Salt Lake County remains the economic hub for the state, even as employment has expanded elsewhere in Utah. This finding is reinforced by an interchange score analysis which quantifies the strength of commuting relationships between partner counties across the state. The scores reveal that while Salt Lake County has several strong commuting partners, important commuting ties are also present in other parts of the state.

Key Findings

- The share of working Utahns traveling outside their county of residence to work increased from 16.6% in 2000 to 17.9% in 2010.
- Morgan County had the highest share of out-commuting workers of any county (61.3%).
- In each of the four Wasatch Front counties, out-commuting shares increased since 2000. The Wasatch Front counties with the highest shares of out-commuters in 2010 were Davis (46.9%) and Weber (33.6%).
- Davis County had the most out-commuters of any county at over 62,800, followed by over 36,000 in Utah County. These two counties also had the largest increases in total out-commuters since 2000.
- While most out-of-state commuters were from Wasatch Front counties, border counties close to jobs in other states (Daggett, Kane, Rich, and San Juan), had the largest shares of residents commuting out-of-state.
- The just-over 21-minute trip length places Utah's commute time 12th fastest nationally and was below the national one-way travel time of 25.5 minutes.

Top Commuting Relationships with Salt Lake County, 2010



Note: A higher interchange score demonstrates a stronger inter-county commuting relationship.
Source: Kem C. Gardner Policy Institute analysis of Census Transportation Planning Products 2010 (2006-2010 Data)

Highest Interchanges Scores for County Pairs with Total Commuters, 2010

Rank	County Pair	Interchange Score	Total Commuters
1	Davis/Weber	35.5	37,725
2	Salt Lake/Tooele	25.4	11,030
3	Carbon/Emery	25.3	1,525
4	Davis/Salt Lake	24.8	51,415
5	Summit/Wasatch	21.2	2,930

Note: A higher interchange score demonstrates a stronger inter-county commuting relationship.Total commuters includes both directions of travel (the sum of residents of the first county working in the second county and vice versa).
Source: Kem C. Gardner Policy Institute analysis of Census Transportation Planning Package 2010 (2006-2010 Data)

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Introduction

Between 2000 and 2010, Utah added over half a million new residents. These new Utahns reflect an increase of nearly 24%, the third-fastest growth rate in the nation. This population growth was driven in large part by the relative economic strength of the state, which attracted significant in-migration over the decade.[1] Increasing employment and workers fueled residential, commercial, and industrial developments. The Wasatch Front metropolitan area expanded its geographic footprint, absorbing more agricultural and other less developed areas into the urban area. Transportation networks, including roads and transit, expanded to facilitate and accommodate this growth.

As the boundaries of the urban areas and commuter sheds along the Wasatch Front (Davis, Salt Lake, Utah, and Weber counties) expanded significantly, so has the volume of commuting. Commuting for jobs is only a fraction of the total volume of travel. Nationwide, commutes account for about 16% of annual person trips per household.[2] Despite this, commuting data, or journey-to-work data, help reveal the movements and relationships of where Utahns live and work. This analysis focuses on county-level data from 2000 to 2010 and provides key insights into evolving economic relationships between counties throughout Utah and neighboring states.

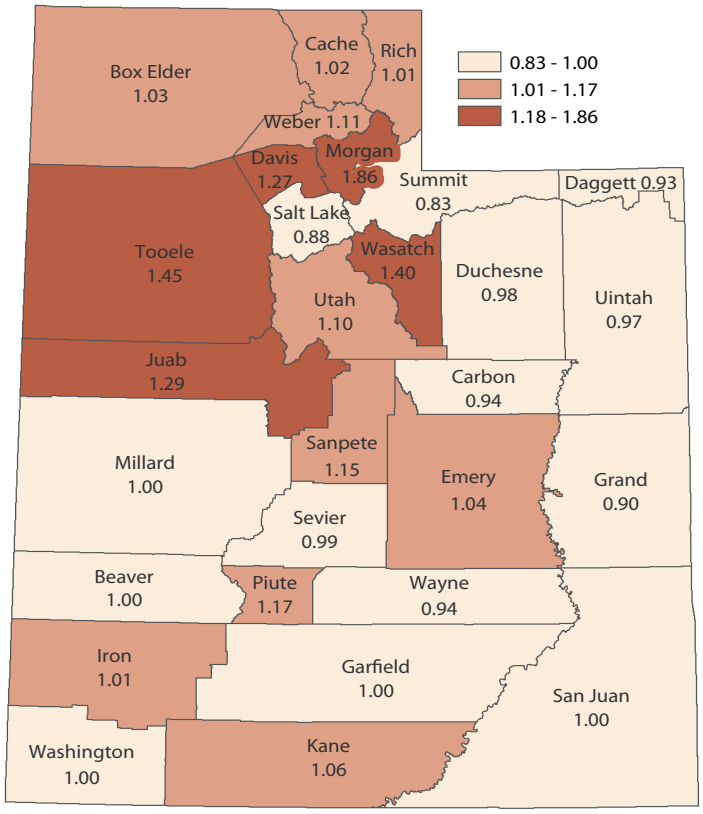
Previous analysis of commuting data from the 1980, 1990, and 2000 censuses highlighted four major findings: An increasing number of cross-county commuters, longer commute times, more workers commuting into Utah than out of the state, and confirmation of Salt Lake County's lead role as the receiving county for commuters statewide.[3] The current 2010 data show that these trends continued, but that commuting patterns have also shifted as the boundaries of urban area commutersheds have extended outward.

Why do people commute?

The key source for commuting to work data is collectively called the Census Transportation Planning Products (CTPP), which are special tabulations of the U.S. Census Bureau's large survey datasets for use in the transportation planning community.[4] This analysis is based on these data products. Additional information on methodology is located in the "How we analyze commuting" section of the Appendix.

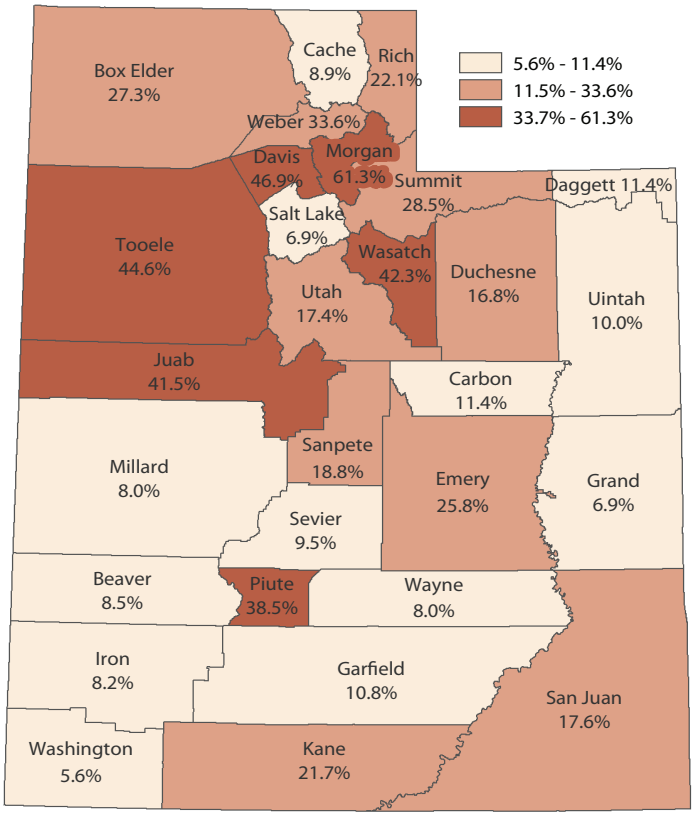
Commuting patterns are ultimately the cumulative result of many individual household decisions. These decisions, and the resulting commuting patterns, depend upon neighborhood characteristics, housing types and costs, locations and

Figure 1: Workers to Jobs Ratio, 2010



Source: Census Transportation Planning Products 2010 (2006-2010 Data)

Figure 2: Out-Commuting Rates of Utah Counties, 2010



Note: In this analysis, out-commuters are county residents who work in another county or out of state.
Source: Census Transportation Planning Products 2010 (2006-2010 Data)

accessibility of employment, types of occupations and compensation offered by employers, skillsets of workers, and other crucial journey-to-work determinants like transportation costs, times, and distances.

Although many forces shape commuting patterns, the number of resident workers and the volume of employment opportunities are two that can be analyzed using CTPP data.[5] High out-commuting rates result when there are more resident workers than jobs in the county. This trend appears in the 2010 data for counties with the highest ratios of resident workers to jobs. Morgan County has both the highest resident workers to jobs ratio (1.86) and the highest out-commuting rate (61.3%). Following Morgan County, Tooele, Wasatch, Juab, and Davis counties all have ratios over 1.2 and out-commuting rates above 41% (Figures 1 and 2). Conversely, we expect low out-commuting rates (and higher in-commuting rates) when job opportunities exceed the number of resident workers in a county. The major exception to this is Summit County, which has a low resident workers to jobs ratio (0.83) yet has a high out-commuting rate (28.5% or 8th in the state).

The seasonal and tourism-driven economy explains the pattern in Summit County. A quick interstate-freeway connection allows areas of Summit County to be bedroom communities to Salt Lake County, the largest receiving county of Summit County workers (72% of the county's workers work in Salt Lake County). Over 60% of the private, primary jobs, many in fields supporting hospitality or the seasonal ski industry (retail, accommodations, restaurants, arts and entertainment), were filled by those who lived outside Summit County.[6]

An important factor not highlighted in this county-to-county analysis is populations moving to an area for work. Duchesne and Uintah counties provide an excellent example of this movement. Throughout the ACS estimate period, Duchesne and Uintah counties significantly grew in numbers of workers, accompanying the expansion of the oil and gas industry during this period. As energy sector employment increased within the counties, out-commuting rates for both counties fell from 2000 to 2010: Duchesne from 21% to 17% and Uintah from 12% to 10% (Table 5).

Context for Commuting in Utah, 2000 to 2010

Population growth expanded urban areas throughout the decade

Just over half of Utah's population growth between 2000 and 2010 was concentrated in Salt Lake and Utah counties. Densification, infill, and redevelopment were major factors in the population growth of the largest cities in Salt Lake and Utah counties. Areas in southern Salt Lake County, northern Utah County, and the northern Wasatch Front with access to employment centers and ample open, developable land experienced rapid development.[7] Some of the most dramatic population changes in the decade took place in cities like Saratoga Springs, Herriman, Eagle Mountain, Cedar Hills, Syracuse, West Haven, and Lehi. The remainder of the Wasatch Front region (Davis and Weber counties) and Washington County contributed another 30% of the state's population growth over this decade.

Although their contributions to statewide growth were smaller, the populations of Wasatch, Tooele, Iron, and Morgan counties all grew by more than 30% between 2000 and 2010. This population growth created development pressure that expanded the perimeter of the urban areas of the Wasatch Front and Washington County to continue to move farther out from the urban centers. Some of the drivers for this outward development include rising home costs and decreasing opportunities for greenfield development, rather than infill, in the urban core. Duchesne and Uintah counties both grew by 29%, driven largely by booms in oil and gas mining.[8]

New additions to transportation system

Population growth along the Wasatch Front was facilitated and directed by expanding transportation options and networks throughout the decade. While the majority of Utah commuters continue to travel by car, major investments in infrastructure from 2000 to 2010 provided expanded networks of new travel options and locations for Utahns along the Wasatch Front. With the 2002 Winter Olympic Games, a desire for increased mobility, fewer opportunities for roadway expansion, and considerations for future population growth, transit development moved forward at a fast pace in the Wasatch Front.[9]

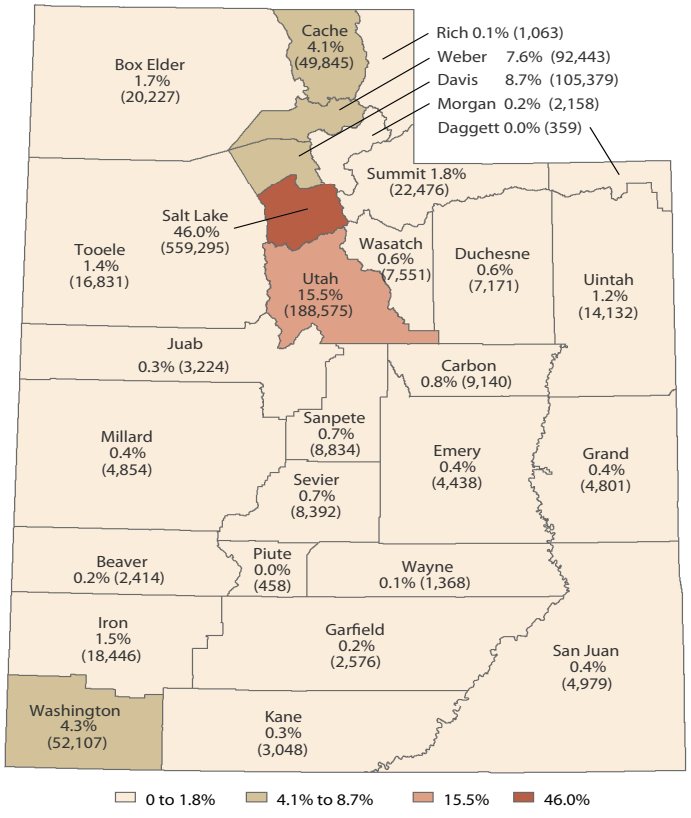
The initial TRAX Blue line, a north-south light rail system, was opened in Salt Lake County in December 1999.[10] The TRAX Red Line, an east-west connection, was opened in 2001. FrontRunner, a commuter rail system that initially connected Salt Lake City to Ogden with high-capacity transit service, began operation in the spring of 2008. In the interim, additional transit systems across the state increased service ranges. The 3500 MAX bus rapid transit system opened in the summer of 2008, providing east-west connections in Salt Lake County.[11] While the share of commuters utilizing transit did not change across the study period, the number of people using transit increased.

Utah's economic picture

The 2000-2010 decade began with the dot-com crash, adverse economic impacts of the September 11 attacks, and the post-Olympic slowdown. Recovery was relatively rapid as the economic boom that peaked in 2007 saw Utah's job growth outperforming the nation from 2004 through 2007.[12] The construction and business and professional services sectors experienced the most significant growth during this period. Utah's unemployment rate was one of the lowest in the nation throughout the latter half of the decade. The global financial crisis and the onset of the Great Recession reversed this expansion. The downturn bottomed in 2009 with high unemployment and residential foreclosures.

Early in the decade, Utah's economy was positively affected by preparations for the 2002 Winter Olympic Games. This global event created significant demographic and economic impacts along the Wasatch Front and Wasatch Back, most directly through construction jobs and population growth from net in-migration. The Olympic impacts, combined with a diversifying economy and a growing technology sector, fueled economic growth in Utah that created new employment centers. Outside the Wasatch Front, the significant growth of oil and gas industries in the 2006 to 2010 period brought new people and expanded employment opportunities to Uintah and Duchesne counties.[13]

Figure 3: County Share of State Jobs and Job Totals, 2010



Source: Census Transportation Planning Products 2010 (2006-2010 Data)

The expanding commuter shed further solidified Salt Lake County's dominance as the economic core of Utah. Salt Lake County supplied employment for over half a million workers, and the total employment in the county rose by nearly 70,000 jobs since 2000. In 2010, the CTPP data indicate the county was home to almost half of Utah's jobs (46%). Much like the share of Utah's total population, the jobs along the Wasatch Front employed three of every four people working in Utah (78%). This high job density influenced commuting across the state, particularly in the adjacent counties that surround the Wasatch Front. Though jobs increased at high rates between 2000 and 2010 in many ring counties, the landscape of sheer employment demonstrates that Wasatch Front counties remained the dominant commuter destinations. However, the distribution of jobs is changing, as seen by the fact that Salt Lake County's share of the state's total jobs fell 1.4 percentage points from 2000 to 2010.[14]

Increasing options for commutes

The newly constructed light rail, commuter rail, and bus rapid transit that came on-line along the Wasatch Front provided new options for regional travel. While the share of overall commuters using transit has remained stable since the 1990s (2.3%), the number of journey-to-work riders increased from nearly 17,000 in 1990 to over 27,600 in the 2010 data. The counties connected by Utah Transit Authority services (Davis, Weber, Salt Lake, and Utah) represent the most significant portion of these riders.

Another shift occurring both nationally and in Utah was an increasing share of people working from home.[15] In 1990, 3.6% of Utah employees were working from home. By 2000, that share had increased to 4.2%. The 2010 data shows that 4.8%, or over 58,000 Utahns, worked from home. Improved internet connectivity, more businesses offering flexible work arrangements, and efforts by Utah employers to improve air quality all likely impacted these shifts in where people work.

Mean commute times decreased since 2000

The mean travel time to work for Utahns who worked outside of home remained fairly similar between 2000 and 2010, from 21.3 minutes to 21.2 (Margin of Error: 0.2). The just-over 21-minute trip length placed Utah's commute time 12th fastest nationally and was below the national one-way travel time of 25.5 minutes.[16] While very close to the 2000 mean travel time of 21.3, it was an increase from 1990 (18.9 minutes).[17]

Over 53% of Utah commuters had drive times of less than 20 minutes. Commuters with a less than 5 minute commute grew the fastest between 2000 and 2010, with a 21% increase to over 53,000 people. The largest population, over 30% of all commuting workers, had a 5-14 minute commute. About 9% of Utah commuters had commutes of 45 minutes or longer.

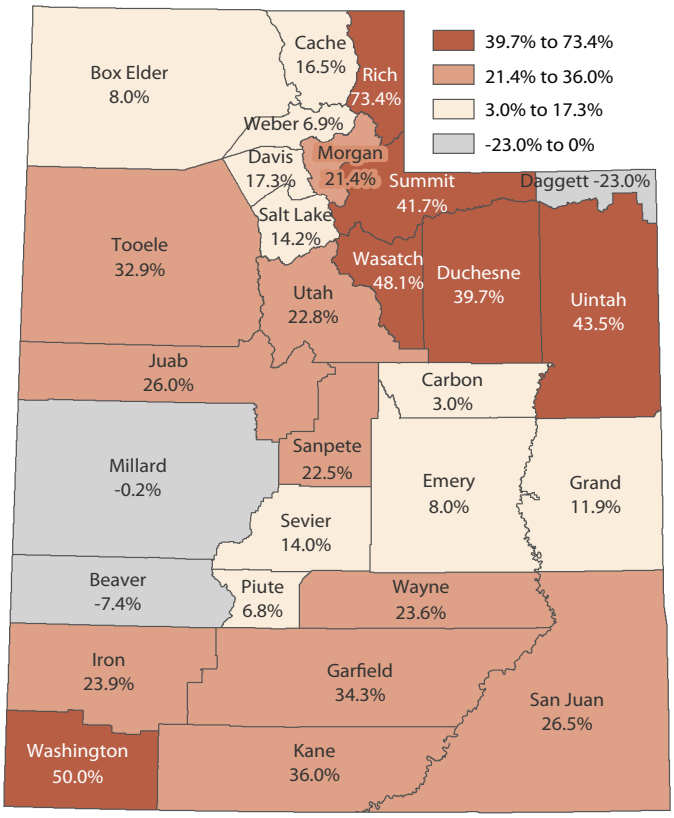
Table 1: Share of Commuters and Mean Travel Time by Mode, Utah

Means of Transportation	Share of Total Commuters	Mean Travel Time (minutes)	
		Estimate	Margin of Error
Total		21.2	0.2
Car, truck, or van (drove alone)	75.7%	19.9	0.2
Car, truck, or van (carpooled)	12.4%	26.6	0.5
Public Transportation	2.4%	42.3	1.3
Bicycle or walked	3.6%	12.7	0.6
Taxicab, motorcycle or other method	1.1%	30.3	2.8

Source: U.S. Census Bureau, CTPP Tables B106202C2 and A102106

Those driving themselves experienced the largest reduction in commute times, with other modes remaining near their 2000 levels. Drive times for drivers commuting alone decreased from 20.1 minutes in 2000 to 19.9 (Margin of Error 0.2). The number of workers without a commute, those working from home, increased by over 15,000 people between 2000 and 2010. In 2000, 4.2% (43,335) of Utah workers worked from home. By 2010, this share had increased to 4.8% (58,725).

Figure 4: Percent Change in County Jobs, 2000 to 2010



Source: Census Transportation Planning Products 2010 (2006-2010 Data), 2000

Commuting Rates and Destinations

Highest and lowest out-commuting by county and changes from 2000 to 2010

Most Utahns work in their county of residence. However, this share of the population has decreased in past decades and continued to decrease between 2000 and 2010. In 1980, 86.5% of Utahns worked in their county of residence.[18] By 2000, this share decreased to 83.4% and 82.1% in 2010. Though the absolute number of people working in their home counties increased 16% between 2000 and 2010, the rate of increase was greater for out-commuters—workers who travel outside their home county to work, whether in other counties or out of state. These out-commuters increased 27.2% during the decade.[19]

Counties with the highest shares of residents working outside their county of residence in 2010 are Morgan County (61.3%), Davis County (46.9%), Tooele County (44.6%), Wasatch County (42.3%), and Juab County (41.5%) (Figure 2). Nearly half (43.5%) of Morgan County out-commuters work in Davis or Weber County. Most Davis County and Tooele County out-commuters work in Salt Lake County. Wasatch County sends its workers to Summit County, and Juab County residents commute heavily to Utah County. Refer to Appendix 6 for the size of commuting-to-work flows for any county in the state.

The lowest out-commuting rates are in Washington County (5.6%), Salt Lake County and Grand County (each 6.9%), and Wayne and Millard Counties (each 8.0%). Conditions leading to low out-commuting rates vary by county. Washington, Grand, Wayne, and Millard have geographically isolated population centers, which leads to their labor markets being self-contained regions. As discussed previously, since Salt Lake County is the economic core of the greater metropolitan region, employment draws in far more workers to the county than are exported to work outside the county.

The counties with the largest increases to their out-commuting rates since 2000 are Weber County (4.4 percentage points, for 33.6% in 2010) and Utah County (3.5 percentage points, for 17.4% in 2010) (Table 2, full data available in Appendix 1).[20] These increased commuting rates are explained by worker and job dynamics. In both counties, employment growth was robust, but not sufficient to keep pace with the increase of resident workers.

Utah County's working resident population increased by 27%, while the number of jobs increased by 23%. In Weber, this growth was 13% for the working population and only 7% for jobs.[21]

Table 2: Outcommuting Rates in Utah Counties, 2000-2010

Name	2010 Rank	Share of Residents Out-Commuting		Difference
		2000	2010	
Beaver	23	8.2%	8.5%	0.3pp *
Box Elder	9	24.7%	27.3%	2.5pp
Cache	22	10.3%	8.9%	-1.4pp *
Carbon	17	11.5%	11.4%	-0.1pp *
Daggett	18	21.2%	11.4%	-9.8pp *
Davis	2	45.7%	46.9%	1.3pp
Duchesne	16	20.7%	16.8%	-3.9pp
Emery	10	24.9%	25.8%	0.9pp
Garfield	19	10.4%	10.8%	0.4pp
Grand	27	6.5%	6.9%	0.3pp *
Iron	24	9.0%	8.2%	-0.8pp
Juab	5	40.3%	41.5%	1.2pp
Kane	12	28.8%	21.7%	-7.0pp *
Millard	25	7.5%	8.0%	0.5pp *
Morgan	1	61.6%	61.3%	-0.2pp
Piute	6	30.8%	38.5%	7.8pp *
Rich	11	35.3%	22.1%	-13.2pp *
Salt Lake	28	6.2%	6.9%	0.7pp
San Juan	14	20.3%	17.6%	-2.7pp *
Sanpete	13	20.3%	18.8%	-1.5pp
Sevier	21	9.8%	9.5%	-0.3pp
Summit	8	35.5%	28.5%	-7.0pp
Tooele	3	45.5%	44.6%	-0.9pp
Uintah	20	11.8%	10.0%	-1.8pp
Utah	15	13.9%	17.4%	3.5pp
Wasatch	4	43.7%	42.3%	-1.4pp
Washington	29	6.7%	5.6%	-1.1pp
Wayne	26	12.4%	8.0%	-4.5pp *
Weber	7	29.2%	33.6%	4.4pp
State Total		**16.6%**	**17.9%**	**1.3pp**

Notes: pp =percentage points. Refer to Appendix 1 for numbers of out-commuters and resident workers. Out-commuters are residents who live in Utah and work in a different county than their residence, or out of state. Those who work abroad are not included in this tabulation.
*County change in out-commuting was less than 50 residents
Source: Census Transportation Planning Products 2010 (2006-2010 Data); Census 2000

Table 3: Top Five Counties by Total Out-Commuters with Share of State Out-Commuters, 2010

Rank	Name	Out-Commuters 2010	Share of State Out-of-County Commuters, 2010
1	Davis	62,818	28.9%
2	Utah	36,076	16.6%
3	Weber	34,544	15.9%
4	Salt Lake	33,577	15.5%
5	Tooele	10,893	5.0%
Total of Top 5		177,908	81.9%

Note: In this analysis, out-commuters are county residents who work in another county or out of state.
Data Source: Census Transportation Planning Products 2010 (2006-2010 Data)

The largest relative decline in out-commuting rates took place in Summit County, with out-commuting declining by seven percentage points (from 35.5% to 28.5%). Between 2000 and 2010, the number of jobs in Summit County increased by 42%. Over this same period, the resident labor force increased by only 15%.[22] The rapid job increase implies that more people could work in the county rather than out-commute. The next largest decline in out-commuting was in Duchesne County, which fell 3.9 percentage points. As mentioned previously, this decline resulted from the production boom in oil and gas in the second half of the 2000s, which led to a significant increase in population and jobs within the county.[23]

In terms of sheer numbers of out-commuters rather than rates, in 2010, 62,818 Davis County residents worked in other counties—the largest amount of any county and greater than the combined populations of Bountiful and Farmington.[24] Utah County has the second-largest out-commuting population with 36,076, and Weber County third with 34,544. Utah County and Davis County added the most out-commuters since 2000. Davis, Utah, and Weber respectively account for 28.9%, 16.6%, and 15.9% of all out-of-county commuters in the state in 2010 (Table 3; Appendix 1).

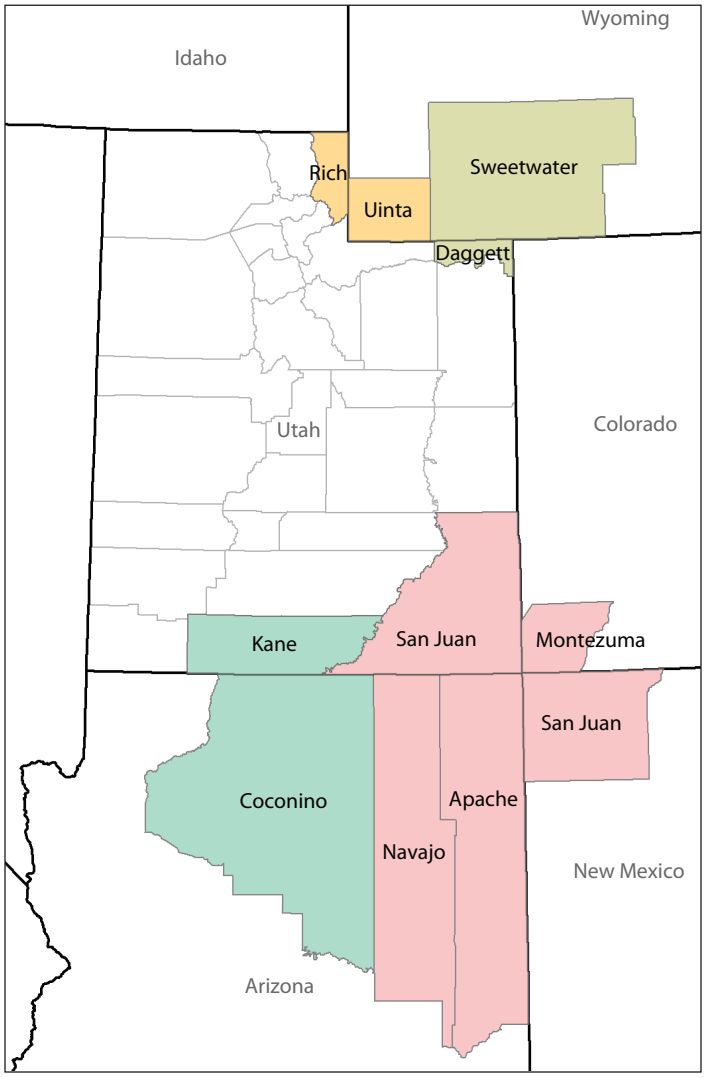
Salt Lake County is the in-commuting Leader

Salt Lake County is the top receiving county for commuters by far. Non-residents hold over 100,000 jobs in Salt Lake County, or 18.4% of the county's jobs (Appendix 4). Salt Lake County also has the highest net gain of commuters (in-commuters minus out-commuters), gaining 67,091. Refer to Appendix 6 for the numbers of residents of all Utah counties who work in Salt Lake County.

Most commuters to Salt Lake County come from Davis County (42,635), Utah County (29,020), Tooele County (9,085), Weber County (8,520), out of state (5,835), and Summit County (3,745). Each of these areas sends more commuters to Salt Lake County than it did in 2000, except Summit County, which sent about 750 fewer commuters than it did in 2000. Utah County added 10,861 more commuters to Salt Lake County than in 2000, and Davis added 8,784.

The decline in commuters from Summit County to Salt Lake County from 2000 to 2010 corresponds with a decrease of 429 total out-commuters from Summit County. Interestingly, Salt Lake County had a net gain of workers from Summit County in 2000 (1,823 people) but has a net loss, and is the only county with net out-commuting from Salt Lake County, in 2010 (-830

Figure 5: Commuting Destinations for Counties with Largest Shares of Out-of-State Commuting, 2010



Source: Census Transportation Planning Products 2010 (2006-2010 Data) for identification of counties.

people).[25] Summit County's trends involve many factors: increases in employment opportunities, shifts in the county's industrial composition, the impact of the Winter Olympic Games, and the seasonality of commuting data collection.[26] The trends defy a simple explanation using CTPP data.

Border counties have the highest shares of out-of-state commuting

An estimated 14,669 Utah residents reported working outside the state in the 2010 data (1.2% of all residents who work). This amount increased by 3,100 residents since 2000. The ACS asks for the location at which a person worked "last week." This framing means that the data include both temporary business trips and regular workplace commutes.

The counties with the highest shares of residents working outside the state are the border counties of Rich County (15.3%), Kane County (13.2%), San Juan County (9.7%), and Daggett County (7.2%). These counties also had the greatest shares of residents working out of the state in 2000, but the shares have all decreased from their 2000 levels (Appendix 3). For Daggett, Kane, and Rich counties, larger employment centers exist in neighboring states than within the counties themselves. The largest receiving counties for each are: Daggett to Sweetwater County (WY), home to Rock Springs and Green River; Kane to Coconino County (AZ), home to Page and Flagstaff; and Rich to Uinta County (WY), home to Evanston. San Juan County, which includes part of the Navajo Nation reservation, has multiple commuting partner counties. Its ties are with counties in neighboring states that also have significant tribal reservation areas, including Navajo County, AZ, Montezuma County, CO, San Juan County, NM, and Apache County, AZ.

The greatest numbers of Utahns working out-of-state in the 2010 data were residents of Salt Lake County (3,603), Utah County (2,296), Washington County (1,595) and Davis County (1,113). Clark County, Nevada (home to Las Vegas), was a top destination for Washington, Utah, and Salt Lake counties. Los Angeles County, California, drew in workers from Salt Lake, Utah, and Davis counties. Other top employment destinations were: Bonneville County, Idaho for Davis County, Mohave County, Arizona for Washington County, and Uinta and Sublette counties in Wyoming for Salt Lake County.

Utah County had the greatest increase in out-of-state workers since 2000, adding 920 workers for 66.9% growth. This growth shows the broader geographical reach of Utah County working residents - the 2010 data includes an additional 15 United States counties as employment destinations for Utah County residents.[27] Cache County added the second-most out-of-state workers, with 497 workers added for a 2010 total of 1,006. Cache has a strong commuting relationship with neighboring Franklin County, Idaho.

In 1980 and 1990, Utah was a net exporter of labor; the number of residents leaving the state to work exceeded the amount residing out of state and working in Utah.[28] In 2000, the number of non-Utah residents working in the state increased, and Utah became a net importer of labor. In 2010 the state remained a net-importer by 233 people, with 14,669 Utah residents working out of state and 14,902 out-of-state residents coming to work in Utah (1.2% of Utah's workforce). These 2010 out-of-state counts do not account for Utah residents who work out of the country or out-of-country residents who come to work in Utah.[29]

Calculating the Interchange Score

Four interactions between the two counties (County A and County B), measured in commuter flow data, provide the basis for the interchange score. The four interactions are:

1. The percentage of all resident workers in County A who commute to work in County B,
2. The percentage of all employment in County A that is supplied by residents of County B,
3. The percentage of all resident workers in County B who commute to work in County A, and
4. The percentage of all employment in County B that is supplied by residents of County A.

The total interchange score is the result of adding the four percentages together and then averaging that sum by two for county pairs. Each of the percentages has a range of 0 to 100%. When the percentages are summed and averaged by two, the lowest possible score is 0, and the highest possible is 200. The score's final value is reflective of the average of the four exchanges, or shares, listed here.[30] A higher interchange score demonstrates a stronger inter-county commuting relationship.

Scores were calculated for all possible county pairs in Utah, producing 406 scores. Table 4 shares the commuter flow data and scores for the five highest-scoring county pairs (Refer also to Appendix 5). The mean score for county pairs in Utah was 1.2, with a standard deviation of 4.0. Note that 199 pairs had a score of zero, indicating that they share no commuting relationship. A zero score is often due to long distances between the pair of counties.

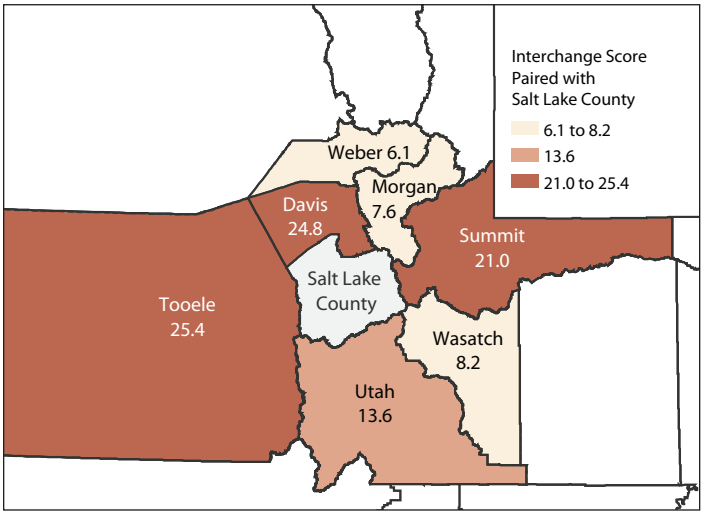
The basis for the design of this interchange score is in techniques used by the Federal Office of Management and Budget (OMB) to define Metropolitan and Micropolitan Statistical Areas (economic and commuting regions). The OMB employs the Census Bureau's county-to-county commuting data to analyze the four interactions listed above and designate the regions.[31]

County-to-County Interchange Scores

Interchange scores analyze the strength of commuting relationships between counties

The final section of this report analyzes commuting interactions between county pairs. For this analysis, an "interchange score" was developed for each pair of counties to quantify and rank the strength of the many county-to-county commuting relationships across the state. This analysis evaluates commuting patterns between pairs of counties by examining shares of a county's workers who commute to a partner county as well as shares of employment (jobs) supplied by the partner county. This interchange score is a single scale for comparing the commuting "connectedness" or relationship of any county pair, rather than comparing only the sheer numbers of commuters between counties. Thus, one of the score's great benefits is that it reveals commuting ties which may involve a relatively small commuter flow, yet are locally important.

Figure 6: Top Commuting Relationships with Salt Lake County using Interchange Score, 2010



Source: Kem C. Gardner Policy Institute analysis of Census Transportation Planning Products 2010 (2006-2010 Data)

Tooele, Davis, and Summit counties have the strongest commuting relationships with Salt Lake County

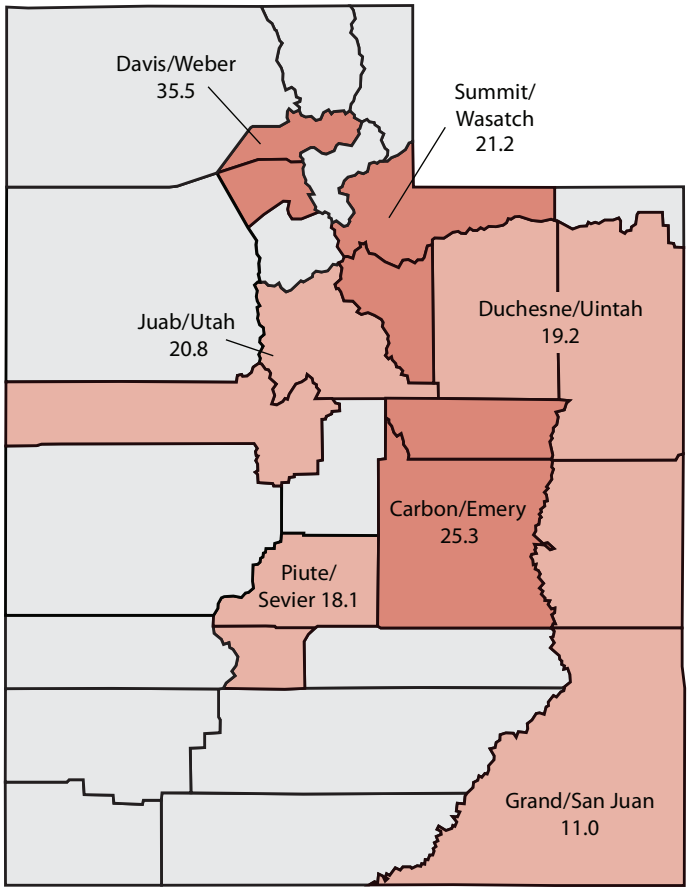
Figure 6 shows the highest interchange scores of counties paired with Salt Lake County, indicating the strongest commuting relationships with the county. The six bordering counties, as well as Weber County, score the highest. The highest scores are the Salt Lake County-Tooele County pair (25.4), Salt Lake County-Davis County (24.8), and Salt Lake County-Summit County (21.0).

In a commuting relationship, one county often benefits more than the other from its partner county's workers and/or employment. A clear example is the Salt Lake County-Tooele County pair: Salt Lake provides jobs for over 37% of Tooele's residents and supplies over 11% of Tooele's employment. In contrast, Tooele provides jobs for only 0.4% of Salt Lake

County residents and supplies only 1.6% of its employment (Appendix 5). In terms of these shares, Tooele benefits more from its commuting ties to Salt Lake than Salt Lake benefits from its ties to Tooele.

When interpreting these scores, it is important to recognize that the interchange score reflects proportion bias by not representing information on the relative size of flows or traffic between two counties (considering the final score alone). Small populations or employment sizes may result in high proportions and a high interchange score, but a high interchange score does not necessarily indicate a larger commuter flow. For example, the Salt Lake County-Tooele County pair has a slightly higher interchange score than the Salt Lake County-Davis County pair, though the total of flows in either direction is only 11,030 between Salt Lake and Tooele, compared to 51,415 between Salt Lake and Davis. This occurs because the larger flows between Salt Lake and Davis are more diluted in the larger population and employment base in Davis vs. in Tooele.

Figure 7: Top Commuting Pairs Using Interchange Score, Excluding Pairs with Salt Lake County, 2010



Note: Three county pairs which scored at least 11.0 are not shown because they interact with Davis or Weber County, and were not as high as the Davis-Weber pair score. They are Morgan-Weber (20.7), Box Elder/Weber (15.3), and Davis/Morgan (12.0). If these four counties are treated as a group, their combined interchange score is 14.8. For details on the size of commuter flows in these pairs, refer to Appendix 5.
Source: Kem C. Gardner Policy Institute analysis of Census Transportation Planning Products 2010 (2006-2010 Data)

Table 4: Top Five County Pairs by Interchange Score vs. Top Five by Total Commuters

Top 5 Pairs by Interchange Score		Interchange Score	Total Commuters
1	Davis/Weber	35.5	37,725
2	Salt Lake/Tooele	25.4	11,030
3	Carbon/Emery	25.3	1,525
4	Davis/Salt Lake	24.8	51,415
5	Summit/Wasatch	21.2	2,930

Top 5 Pairs by Total Commuter Flows		Total Commuters
1	Davis/Salt Lake	51,415
2	Salt Lake/Utah	40,015
3	Davis/Weber	37,725
4	Salt Lake/Tooele	11,030
5	Salt Lake/Weber	10,305

Note: Total commuters includes both directions of travel (the sum of residents of the first county working in the second county and vice versa). Refer to Appendices 5 and 6 for scores and commuter flows of additional county pairs.
Source: Kem C. Gardner Policy Institute analysis of Census Transportation Planning Package 2010 (2006-2010 data)

Davis-Weber, Carbon-Emery, and Summit-Wasatch are also among the strongest commuting relationships in the state

The Davis County-Weber County pair has the highest interchange score of any two Utah counties, with a score of 35.5. Much of the workforce of Hill Air Force Base, located in Weber County, resides in Davis County. Excluding county pairs that include Salt Lake County, the ties between Carbon and Emery counties and Summit and Wasatch counties are the next highest, scoring 25.3 and 21.2. Regional natural resource industries influence strong commuting relationships between Carbon and Emery counties, as well as between Uintah and Duchesne counties, other high-scoring pairs. The map in Figure 7 highlights some of the highest-scoring county pairs that do not include Salt Lake County. For details on the size of commuter flows in these pairs, refer to Appendix 5.

The proportion bias described with Salt Lake County's commuting partners is also evident when considering all commuting relationships across the state. Table 4 shows the top 5 county pairs based on the pairs' interchange scores, compared with the top pairs by total commuters. Three county pairs—Davis-Weber, Salt Lake-Tooele, and Davis-Salt Lake—are present in both lists, showing that they are strong commuting relationships by either measure. The interchange score, however, also highlights Carbon-Emery and Summit-Wasatch as among the strongest commuting relationships in the state. These pairs have commuter flows that are very small when compared to other county pairs, but are key commuting relationships to the involved counties, affecting large shares of their residents.

Conclusion

As Utah's population has grown and changed, housing developments, employment opportunities, and communities have expanded, and so have the commuting patterns of the employed workers who call Utah home. Salt Lake County remained the major hub for employment in the state, but new counties gained in their employment base. The Wasatch Front saw an increase in out-of-state commuters. Neighboring counties continued to have strong commuting relationships, with connections seen between more residential counties like Davis and Tooele with more employment-heavy counties like Weber and Salt Lake. These commuting relationships have been used throughout the decade by planners and decision-makers to inform population projections, plan for transportation, and provide insights for future economic development.

But what results will be seen when the newest release of commuting data is analyzed? With the older portion of the Millennial generation entering into the stage of family formation, will more commuting be seen from ring counties with more affordable homes into the urban counties? As increasing shares of the Baby Boomer generation move into retirement, will there be shifts in home and work destinations? As technology has changed options for commuting through options like teleworking, will the number of commuters be reduced? With the significant development of Silicon Slopes and the former prison site, will southern Salt Lake County and northern Utah County attract a significant increase in inbound commuters? The Unified Transportation Plan for the state has indicated a stronger emphasis on multi-modal transportation, including transit and biking – what will that look like once implemented?

A wide range of policy decisions, from local zoning to major regional investments in infrastructure, will create impacts on these commuting outcomes. Concerted planning efforts in the 1990s and 2000s resulted in less urban sprawl and more concentrated development. With continuing concerns about air quality, commute times, and a moderating economy, maintaining the focus on how communities travel to and from work is incredibly important.

This analysis provides a framework for Utahns to ask these questions. Although commuting relationships will continue to grow and change, looking at the trends of the previous decades creates an idea of what we might see moving forward.

Methodology

How do we analyze commuting?

The key source for commuting to work data is collectively called the Census Transportation Planning Products (CTPP), which are special tabulations of the U.S. Census Bureau's large survey datasets for use in the transportation planning community.[32] The tabulated data are from the 2006-2010 5-Year American Community Survey (ACS) estimates, referred to as 2010 data in this analysis. We focus our analysis on the home and work locations of Utah residents, referring to them as Utahns.

The commuting questions from ACS apply to respondents who did any work for pay, even for as little as one hour. Tabulated data include workers age 16 and over. The commuting questions in this period were:[33]

- "At what location did this person work LAST WEEK? *If this person worked at more than one location, print where he or she worked most last week.*"
- "How did this person usually get to work LAST WEEK? *If this person usually used more than one method of transportation during the trip, mark the box of the one used for most of the distance.*"

Because the previous week's work location is requested, some locations may represent a temporary business trip location rather than the respondent's more usual work location. These estimates also vary slightly from the long-form question used in the 2000 Census and prior censuses, which provided a point-in-time estimate. Further discussion of the decennial long-form and the ACS is in the data notes box. Additionally, those who work multiple jobs only count the work location where they worked the most.

Data notes

From 1970 to 2000, the tabulated CTPP data came from responses to the decennial census long form. Since the 2010 Census, the American Community Survey replaced the long-form. The ACS is an ongoing sample-based survey. The CTPP data is available down to small geographies and is an essential component of transportation, real estate, and water planning.

Commuting data from census long forms also asked about commutes in the week prior, and thus refer to the week before the census date of April 1. Ultimately this provided point-in-time data, whereas the ACS-based data come from surveys taken throughout the year.

We do not include data from additional ACS questions that are related to commuting. These include the usual number of people riding together (if traveling by car), the time the commuter usually left home to go to work, and the minutes it usually took the person to get from home to work. All questions refer to "LAST WEEK."

Only people residing in the United States are asked to respond to the American Community Survey. Due to this, there is no employment data for those who reside outside of the country but work in Utah or the United States.

Although additional data is now available from the Bureau of Economic Analysis, Bureau of Labor Statistics, and Census Bureau applications, this analysis relied solely on the CTPP data for employment numbers to maintain consistency with past analysis.

Appendix 1: Resident Workers and Out-Commuters, 2000-2010

	Resident Worker Population				Out-commuters			
Name	2000	2010	Change	Percent Change	2000	2010	Change	Percent Change
Beaver	2,460	2,421	-39	-1.6%	202	206	4	2.0%
Box Elder	18,030	20,747	2,717	15.1%	4,460	5,657	1,197	26.8%
Cache	43,729	50,931	7,202	16.5%	4,494	4,531	37	0.8%
Carbon	8,460	8,608	148	1.7%	971	983	12	1.2%
Daggett	377	333	-44	-11.7%	80	38	-42	-52.5%
Davis	112,681	133,853	21,172	18.8%	51,473	62,818	11,345	22.0%
Duchesne	5,368	7,027	1,659	30.9%	1,113	1,182	69	6.2%
Emery	4,289	4,615	326	7.6%	1,069	1,190	121	11.3%
Garfield	1,983	2,584	601	30.3%	207	279	72	34.8%
Grand	3,958	4,328	370	9.3%	259	298	39	15.1%
Iron	15,249	18,640	3,391	22.2%	1,367	1,525	158	11.6%
Juab	3,369	4,148	779	23.1%	1,358	1,723	365	26.9%
Kane	2,621	3,246	625	23.8%	754	706	-48	-6.4%
Millard	4,820	4,869	49	1.0%	363	389	26	7.2%
Morgan	3,168	4,010	842	26.6%	1,951	2,460	509	26.1%
Piute	523	537	14	2.7%	161	207	46	28.6%
Rich	791	1,072	281	35.5%	279	237	-42	-15.1%
Salt Lake	438,394	489,972	51,578	11.8%	27,111	33,577	6,466	23.9%
San Juan	4,117	4,991	874	21.2%	834	876	42	5.0%
Sanpete	8,411	10,149	1,738	20.7%	1,705	1,904	199	11.7%
Sevier	7,444	8,293	849	11.4%	730	788	58	7.9%
Summit	16,262	18,742	2,480	15.3%	5,776	5,347	-429	-7.4%
Tooele	17,966	24,413	6,447	35.9%	8,182	10,893	2,711	33.1%
Uintah	10,103	13,682	3,579	35.4%	1,193	1,372	179	15.0%
Utah	163,478	207,581	44,103	27.0%	22,644	36,076	13,432	59.3%
Wasatch	6,849	10,535	3,686	53.8%	2,992	4,460	1,468	49.1%
Washington	35,051	51,983	16,932	48.3%	2,343	2,913	570	24.3%
Wayne	1,087	1,282	195	17.9%	135	102	-33	-24.4%
Weber	91,312	102,759	11,447	12.5%	26,641	34,544	7,903	29.7%
State Total	1,032,350	1,216,351	184,001	17.8%	170,847	217,281	46,434	27.2%

Note: Data include county residents working in Utah or the United States (not abroad).
Data Source: Census Transportation Planning Products 2010 (2006-2010 Data); Census 2000

Appendix 2: Residents of County by Workplace (In or Out of County) and County Share of State Workers and Commuters, 2010

Name	Residents who are workers	Residents who work within the county	Residents who out-commute	Share of residents out-commuting, 2010	Share of state workers	Share of state out-of-county commuters
Beaver	2,421	2,215	206	8.5%	0.2%	0.1%
Box Elder	20,747	15,090	5,657	27.3%	1.7%	2.6%
Cache	50,931	46,400	4,531	8.9%	4.2%	2.1%
Carbon	8,608	7,625	983	11.4%	0.7%	0.5%
Daggett	333	295	38	11.4%	0.0%	0.0%
Davis	133,853	71,035	62,818	46.9%	11.0%	28.9%
Duchesne	7,027	5,845	1,182	16.8%	0.6%	0.5%
Emery	4,615	3,425	1,190	25.8%	0.4%	0.5%
Garfield	2,584	2,305	279	10.8%	0.2%	0.1%
Grand	4,328	4,030	298	6.9%	0.4%	0.1%
Iron	18,640	17,115	1,525	8.2%	1.5%	0.7%
Juab	4,148	2,425	1,723	41.5%	0.3%	0.8%
Kane	3,246	2,540	706	21.7%	0.3%	0.3%
Millard	4,869	4,480	389	8.0%	0.4%	0.2%
Morgan	4,010	1,550	2,460	61.3%	0.3%	1.1%
Piute	537	330	207	38.5%	0.0%	0.1%
Rich	1,072	835	237	22.1%	0.1%	0.1%
Salt Lake	489,972	456,395	33,577	6.9%	40.3%	15.5%
San Juan	4,991	4,115	876	17.6%	0.4%	0.4%
Sanpete	10,149	8,245	1,904	18.8%	0.8%	0.9%
Sevier	8,293	7,505	788	9.5%	0.7%	0.4%
Summit	18,742	13,395	5,347	28.5%	1.5%	2.5%
Tooele	24,413	13,520	10,893	44.6%	2.0%	5.0%
Uintah	13,682	12,310	1,372	10.0%	1.1%	0.6%
Utah	207,581	171,505	36,076	17.4%	17.1%	16.6%
Wasatch	10,535	6,075	4,460	42.3%	0.9%	2.1%
Washington	51,983	49,070	2,913	5.6%	4.3%	1.3%
Wayne	1,282	1,180	102	8.0%	0.1%	0.0%
Weber	102,759	68,215	34,544	33.6%	8.4%	15.9%
State Total	1,216,351	999,070	217,281	17.9%	100.0%	100.0%

Note: "Residents who out-commute" includes those working outside their county of residence or out of state.
Data Source: Census Transportation Planning Products 2010 (2006-2010 Data)

Appendix 3: Utah Residents Who Work Out of State, 2000-2010

	Totals					Shares			
Name	2000	2010	County Rank for 2010 Total (High-Low)	Change	Percent Change	2000	2010	County Rank for 2010 Share	Change in Share
Beaver	20	8	28	-12	-60.0%	0.8%	0.3%	28	-0.5pp
Box Elder	130	155	14	25	19.2%	0.7%	0.7%	26	0.0pp
Cache	507	1,006	5	499	98.4%	1.2%	2.0%	13	0.8pp
Carbon	60	105	18	45	75.0%	0.7%	1.2%	17	0.5pp
Daggett	38	24	26	-14	-36.8%	10.1%	7.2%	4	-2.9pp
Davis	908	1,113	4	205	22.6%	0.8%	0.8%	23	0.0pp
Duchesne	59	109	16	50	84.7%	1.1%	1.6%	14	0.5pp
Emery	50	53	23	3	6.0%	1.2%	1.1%	18	0.0pp
Garfield	28	81	20	53	189.3%	1.4%	3.1%	5	1.7pp
Grand	108	63	22	-45	-41.7%	2.7%	1.5%	16	-1.3pp
Iron	274	396	11	122	44.5%	1.8%	2.1%	12	0.3pp
Juab	24	103	19	79	329.2%	0.7%	2.5%	11	1.8pp
Kane	501	428	10	-73	-14.6%	19.1%	13.2%	2	-5.9pp
Millard	54	52	24	-2	-3.7%	1.1%	1.1%	20	-0.1pp
Morgan	21	35	25	14	66.7%	0.7%	0.9%	22	0.2pp
Piute	14	16	27	2	14.3%	2.7%	3.0%	8	0.3pp
Rich	159	164	13	5	3.1%	20.1%	15.3%	1	-4.8pp
Salt Lake	2,922	3,603	1	681	23.3%	0.7%	0.7%	27	0.1pp
San Juan	429	486	9	57	13.3%	10.4%	9.7%	3	-0.7pp
Sanpete	88	154	15	66	75.0%	1.0%	1.5%	15	0.5pp
Sevier	65	67	21	2	3.1%	0.9%	0.8%	25	-0.1pp
Summit	468	577	8	109	23.3%	2.9%	3.1%	6	0.2pp
Tooele	527	684	7	157	29.8%	2.9%	2.8%	9	-0.1pp
Uintah	264	345	12	81	30.7%	2.6%	2.5%	10	-0.1pp
Utah	1,277	2,296	2	1,019	79.8%	0.8%	1.1%	19	0.3pp
Wasatch	24	106	17	82	341.7%	0.4%	1.0%	21	0.7pp
Washington	1,359	1,595	3	236	17.4%	3.9%	3.1%	7	-0.8pp
Wayne	16	0	29	-16	-100.0%	1.5%	0.0%	29	-1.5pp
Weber	667	845	6	178	26.7%	0.7%	0.8%	24	0.1pp
State Total	11,061	14,669	n/a	3,608	32.6%	1.1%	1.2%	n/a	0.1pp

Note: pp=Percentage Points. Totals and share calculations only consider county residents who work in the United States (not abroad). See Appendix 1 for denominators of total resident workers.
Data Source: Census Transportation Planning Products 2010 (2006-2010 Data)

Appendix 4: County Employment (Jobs): Change, 2000-2010 and Workers Identified by Residence In or Out of County, 2010

Place of Work	2000-2010				Share of State Employment, 2010	2010 Employment by Residence			
	Employment		Change	Percent Change		Employment Held by Residents of the County	Employment Held by Nonresidents of the County	Employment Held by Residents of the County (%)	Employment Held by Nonresidents of the County (%)
	2000	2010							
Beaver	2,608	2,414	-194	-7.4%	0.2%	2,215	199	91.8%	8.2%
Box Elder	18,729	20,227	1,498	8.0%	1.7%	15,090	5,137	74.6%	25.4%
Cache	42,779	49,845	7,066	16.5%	4.1%	46,400	3,445	93.1%	6.9%
Carbon	8,874	9,140	266	3.0%	0.8%	7,625	1,515	83.4%	16.6%
Daggett	466	359	-107	-23.0%	0.0%	295	64	82.2%	17.8%
Davis	89,848	105,379	15,531	17.3%	8.7%	71,035	34,344	67.4%	32.6%
Duchesne	5,133	7,171	2,038	39.7%	0.6%	5,845	1,326	81.5%	18.5%
Emery	4,108	4,438	330	8.0%	0.4%	3,425	1,013	77.2%	22.8%
Garfield	1,918	2,576	658	34.3%	0.2%	2,305	271	89.5%	10.5%
Grand	4,292	4,801	509	11.9%	0.4%	4,030	771	83.9%	16.1%
Iron	14,892	18,446	3,554	23.9%	1.5%	17,115	1,331	92.8%	7.2%
Juab	2,559	3,224	665	26.0%	0.3%	2,425	799	75.2%	24.8%
Kane	2,242	3,048	806	36.0%	0.3%	2,540	508	83.3%	16.7%
Millard	4,865	4,854	-11	-0.2%	0.4%	4,480	374	92.3%	7.7%
Morgan	1,777	2,158	381	21.4%	0.2%	1,550	608	71.8%	28.2%
Piute	429	458	29	6.8%	0.0%	330	128	72.1%	27.9%
Rich	613	1,063	450	73.4%	0.1%	835	228	78.6%	21.4%
Salt Lake	489,780	559,295	69,515	14.2%	46.0%	456,395	102,900	81.6%	18.4%
San Juan	3,937	4,979	1,042	26.5%	0.4%	4,115	864	82.6%	17.4%
Sanpete	7,211	8,834	1,623	22.5%	0.7%	8,245	589	93.3%	6.7%
Sevier	7,361	8,392	1,031	14.0%	0.7%	7,505	887	89.4%	10.6%
Summit	15,866	22,476	6,610	41.7%	1.8%	13,395	9,081	59.6%	40.4%
Tooele	12,662	16,831	4,169	32.9%	1.4%	13,520	3,311	80.3%	19.7%
Uintah	9,846	14,132	4,286	43.5%	1.2%	12,310	1,822	87.1%	12.9%
Utah	153,512	188,575	35,063	22.8%	15.5%	171,505	17,070	90.9%	9.1%
Wasatch	5,099	7,551	2,452	48.1%	0.6%	6,075	1,476	80.5%	19.5%
Washington	34,746	52,107	17,361	50.0%	4.3%	49,070	3,037	94.2%	5.8%
Wayne	1,107	1,368	261	23.6%	0.1%	1,180	188	86.3%	13.7%
Weber	86,512	92,443	5,931	6.9%	7.6%	68,215	24,228	73.8%	26.2%
State Total	1,033,771	1,216,584	182,813	17.7%	100.0%	999,070	217,514	82.1%	17.9%

Note: These employment data represent counts of workers who work in Utah and reside in state or elsewhere in the United States. The share of Utah employment held by workers who live out of the state is 1.2% (14,902 of 1,216,584). The 2000 employment data does not correspond to Table 10 in Perlich (2003), a previous commuting analysis frequently referenced in this report, as those 2000 data only include Utah workers who also reside in the state.
Data Source: Census Transportation Planning Products 2000 and 2010 (2006-2010 Data)

Appendix 5: Interchange Score Calculations for County Pairs in Utah Scoring 5 or Above, 2010

Rank	County Pair*		County A Focus							County B Focus							Interchange Score (Average of County A Subscore and County B Subscore)
			Commute to Work in County B			Employment Supplied from County B				Commute to Work in County A			Employment Supplied from County A				
	County A	County B	Outcommuters	Resident Workers (A)	Rate of Commute to County B	Incommuters	Total Employment (A)	Share of Employment from County B	County A Subscore	Outcommuters	Resident Workers (B)	Rate of Commute to County A	Incommuters	Total Employment (B)	Share of Employment from County A	County B Subscore	
1	Davis	**Weber**	16,505	133,853	12.3%	21,220	105,379	20.1%	**32.5**	21,220	102,759	20.7%	16,505	92,443	17.9%	**38.5**	**35.5**
2	Salt Lake	**Tooele**	1,945	489,972	0.4%	9,085	559,295	1.6%	**2.0**	9,085	24,413	37.2%	1,945	16,831	11.6%	**48.8**	**25.4**
3	Carbon	**Emery**	570	8,608	6.6%	955	9,140	10.4%	**17.1**	955	4,615	20.7%	570	4,438	12.8%	**33.5**	**25.3**
4	**Davis**	Salt Lake	42,635	133,853	31.9%	8,780	105,379	8.3%	**40.2**	8,780	489,972	1.8%	42,635	559,295	7.6%	**9.4**	**24.8**
5	Summit	**Wasatch**	330	18,742	1.8%	2,600	22,476	11.6%	**13.3**	2,600	10,535	24.7%	330	7,551	4.4%	**29.0**	**21.2**
6	Salt Lake	**Summit**	4,575	489,972	0.9%	3,745	559,295	0.7%	**1.6**	3,745	18,742	20.0%	4,575	22,476	20.4%	**40.3**	**21.0**
7	**Juab**	Utah	1,135	4,148	27.4%	430	3,224	13.3%	**40.7**	430	207,581	0.2%	1,135	188,575	0.6%	**0.8**	**20.8**
8	**Morgan**	Weber	1,025	4,010	25.6%	310	2,158	14.4%	**39.9**	310	102,759	0.3%	1,025	92,443	1.1%	**1.4**	**20.7**
9	**Duchesne**	Uintah	925	7,027	13.2%	880	7,171	12.3%	**25.4**	880	13,682	6.4%	925	14,132	6.5%	**13.0**	**19.2**
10	**Piute**	Sevier	90	537	16.8%	80	458	17.5%	**34.2**	80	8,293	1.0%	90	8,392	1.1%	**2.0**	**18.1**
11	**Box Elder**	Weber	2,945	20,747	14.2%	2,235	20,227	11.0%	**25.2**	2,235	102,759	2.2%	2,945	92,443	3.2%	**5.4**	**15.3**
12	Salt Lake	**Utah**	10,995	489,972	2.2%	29,020	559,295	5.2%	**7.4**	29,020	207,581	14.0%	10,995	188,575	5.8%	**19.8**	**13.6**
13	Davis	**Morgan**	115	133,853	0.1%	720	105,379	0.7%	**0.8**	720	4,010	18.0%	115	2,158	5.3%	**23.3**	**12.0**
14	**Grand**	San Juan	180	4,328	4.2%	350	4,801	7.3%	**11.4**	350	4,991	7.0%	180	4,979	3.6%	**10.6**	**11.0**
15	**Box Elder**	Cache	910	20,747	4.4%	1,585	20,227	7.8%	**12.2**	1,585	50,931	3.1%	910	49,845	1.8%	**4.9**	**8.6**
16	Sanpete	**Sevier**	415	10,149	4.1%	325	8,834	3.7%	**7.8**	325	8,293	3.9%	415	8,392	4.9%	**8.9**	**8.3**
17	Salt Lake	**Wasatch**	440	489,972	0.1%	1,090	559,295	0.2%	**0.3**	1,090	10,535	10.3%	440	7,551	5.8%	**16.2**	**8.2**
18	**Morgan**	Salt Lake	450	4,010	11.2%	85	2,158	3.9%	**15.2**	85	489,972	0.0%	450	559,295	0.1%	**0.1**	**7.6**
19	Utah	**Wasatch**	505	207,581	0.2%	605	188,575	0.3%	**0.6**	605	10,535	5.7%	505	7,551	6.7%	**12.4**	**6.5**
20	Salt Lake	**Weber**	1,785	489,972	0.4%	8,520	559,295	1.5%	**1.9**	8,520	102,759	8.3%	1,785	92,443	1.9%	**10.2**	**6.1**
21	**Iron**	Washington	750	18,640	4.0%	725	18,446	3.9%	**8.0**	725	51,983	1.4%	750	52,107	1.4%	**2.8**	**5.4**
22	**Juab**	Sanpete	30	4,148	0.7%	235	3,224	7.3%	**8.0**	235	10,149	2.3%	30	8,834	0.3%	**2.7**	**5.3**
23	Garfield	**Piute**	10	2,584	0.4%	35	2,576	1.4%	**1.7**	35	537	6.5%	10	458	2.2%	**8.7**	**5.2**

*The county in bold has the higher subscore, representing that of the two counties, it has the greater proportional benefit from the commuting relationship.
Note: Subscore and interchange score details: The County A subscore = rate of commute to County B + share of employment from County B, disregarding percent signs. The County B subscore calculation is similar. For example, in the Davis County-Weber County pair, the County A subscore is 12.33 + 20.14, which rounds to 32.5. The County B subscore is 20.65 + 17.85, which rounds to 38.5. The interchange score (35.5) is the average of the two subscores. The range of possible interchange scores is 0 to 200.
Data Source: Census Transportation Planning Package 2010 (2006-2010 Data); Interchange score calculations by Kem C. Gardner Policy Institute

Appendix 6: Utah County to County Commuting to Work Flows, 2010

	Place of Work														
Place of Residence	**Beaver**	**Box Elder**	**Cache**	**Carbon**	**Daggett**	**Davis**	**Duchesne**	**Emery**	**Garfield**	**Grand**	**Iron**	**Juab**	**Kane**	**Millard**	**Morgan**
Beaver	2,215	0	0	0	0	0	0	20	0	0	85	0	0	4	0
Box Elder	4	15,090	910	0	0	990	0	0	0	0	0	0	0	0	30
Cache	0	1,585	46,400	0	0	415	0	0	0	0	0	0	0	10	0
Carbon	0	0	15	7,625	0	10	15	570	0	25	15	0	0	0	0
Daggett	0	0	0	0	295	0	0	0	0	0	0	0	0	0	0
Davis	10	490	125	0	0	71,035	55	15	0	0	25	10	10	0	115
Duchesne	0	0	0	10	0	0	5,845	0	0	0	4	0	0	0	0
Emery	0	0	0	955	0	0	0	3,425	4	40	0	0	0	0	0
Garfield	4	0	0	15	0	4	0	15	2,305	0	35	0	10	0	0
Grand	0	0	0	0	0	0	0	20	0	4,030	25	0	0	0	0
Iron	70	0	0	0	0	0	0	4	30	10	17,115	0	55	10	0
Juab	0	0	0	0	0	10	0	25	0	0	0	2,425	0	105	0
Kane	0	0	0	0	0	0	0	0	35	0	4	0	2,540	0	0
Millard	25	0	0	20	0	4	10	0	4	0	4	35	0	4,480	0
Morgan	0	30	25	0	0	720	0	0	0	0	0	0	0	0	1,550
Piute	0	0	4	0	0	0	0	0	35	0	4	0	0	0	4
Rich	0	0	30	0	0	20	0	0	0	0	0	0	0	0	4
Salt Lake	35	135	300	100	4	8,780	110	55	15	25	30	45	15	0	85
San Juan	0	0	0	40	0	0	0	0	0	350	0	0	0	0	0
Sanpete	0	0	4	85	0	0	4	90	0	0	0	235	0	0	0
Sevier	4	0	0	0	0	0	0	10	4	4	15	0	4	20	0
Summit	0	20	0	15	0	105	75	0	0	0	65	0	0	0	50
Tooele	15	110	0	10	0	560	0	0	0	0	0	4	0	10	0
Uintah	4	0	0	0	20	0	880	0	0	0	0	0	0	0	0
Utah	10	10	40	215	0	1,040	15	80	10	45	45	430	30	140	10
Wasatch	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	20	0	25	60	10	725	0	65	0	0
Wayne	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0
Weber	0	2,235	295	10	0	21,220	55	0	0	10	0	0	0	0	310
Total: Workers who reside in UT	**2,400**	**19,705**	**48,148**	**9,100**	**319**	**104,937**	**7,064**	**4,354**	**2,506**	**4,549**	**18,196**	**3,184**	**2,729**	**4,779**	**2,158**
Workers who reside outside UT (in U.S.)	**14**	**522**	**1,697**	**40**	**40**	**442**	**107**	**84**	**70**	**252**	**250**	**40**	**319**	**75**	**0**
Total: Workers who live in UT or U.S.	**2,414**	**20,227**	**49,845**	**9,140**	**359**	**105,379**	**7,171**	**4,438**	**2,576**	**4,801**	**18,446**	**3,224**	**3,048**	**4,854**	**2,158**

Data Source: Census Transportation Planning Products 2010 (2006-2010 Data)

= 200 to 999 commuters = 1,000+ commuters

Appendix 6: Utah County to County Commuting to Work Flows, 2010 *(Continued)*

Place of Residence	Place of Work: Piute	Rich	Salt Lake	San Juan	Sanpete	Sevier	Summit	Tooele	Uintah	Utah	Wasatch	Washington	Wayne	Weber	Outside UT	Total: Residents Working in Utah or U.S.
Beaver	0	0	10	0	0	10	0	0	0	4	0	40	25	0	8	**2,421**
Box Elder	0	4	525	0	0	0	0	35	0	55	0	4	0	2,945	155	**20,747**
Cache	0	45	485	0	10	0	30	35	65	110	60	10	0	665	1,006	**50,931**
Carbon	0	0	60	0	0	4	0	0	20	50	4	20	0	70	105	**8,608**
Daggett	0	0	10	0	0	0	0	0	0	4	0	0	0	0	24	**333**
Davis	0	10	42,635	20	10	0	405	205	50	960	25	25	0	16,505	1,113	**133,853**
Duchesne	0	0	30	0	0	0	4	0	925	30	60	0	0	10	109	**7,027**
Emery	0	0	40	10	0	10	15	25	0	30	0	4	4	0	53	**4,615**
Garfield	10	0	20	40	0	20	0	0	15	0	0	0	10	0	81	**2,584**
Grand	0	0	10	180	0	0	0	0	0	0	0	0	0	0	63	**4,328**
Iron	15	0	115	0	0	20	0	0	0	40	0	750	0	10	396	**18,640**
Juab	0	0	195	0	30	25	15	80	0	1,135	0	0	0	0	103	**4,148**
Kane	4	0	15	130	0	15	0	0	0	0	0	75	0	0	428	**3,246**
Millard	0	0	130	0	25	35	0	0	0	20	0	15	0	10	52	**4,869**
Morgan	0	0	450	0	0	0	120	0	0	40	0	15	0	1,025	35	**4,010**
Piute	330	0	20	0	20	90	0	0	0	0	0	10	0	4	16	**537**
Rich	0	835	0	0	0	0	0	4	0	0	0	0	0	15	164	**1,072**
Salt Lake	15	10	456,395	15	15	0	4,575	1,945	240	10,995	440	170	35	1,785	3,603	**489,972**
San Juan	0	0	0	4,115	0	0	0	0	0	0	0	0	0	0	486	**4,991**
Sanpete	0	0	290	4	8,245	415	4	4	0	605	0	10	0	0	154	**10,149**
Sevier	80	0	105	0	325	7,505	0	0	0	90	0	25	25	10	67	**8,293**
Summit	0	0	3,745	0	0	0	13,395	10	0	170	330	0	55	130	577	**18,742**
Tooele	0	0	9,085	0	15	0	150	13,520	10	130	0	0	0	110	684	**24,413**
Uintah	0	0	80	0	4	0	0	20	12,310	15	0	0	4	0	345	**13,682**
Utah	0	0	29,020	15	85	75	655	540	150	171,505	505	65	0	550	2,296	**207,581**
Wasatch	0	0	1,090	0	0	0	2,600	0	0	605	6,075	30	0	25	106	**10,535**
Washington	0	0	325	0	0	4	4	0	0	70	0	49,070	0	10	1,595	**51,983**
Wayne	0	0	55	0	10	25	0	0	0	0	0	4	1,180	0	0	**1,282**
Weber	4	10	8,520	0	30	30	215	95	10	525	20	95	10	68,215	845	**102,759**
Total: Workers who reside in UT	**458**	**914**	**553,460**	**4,529**	**8,824**	**8,283**	**22,187**	**16,518**	**13,795**	**187,188**	**7,519**	**50,437**	**1,348**	**92,094**		
Workers who reside outside UT (in U.S.)	**0**	**149**	**5,835**	**450**	**10**	**109**	**289**	**313**	**337**	**1,387**	**32**	**1,670**	**20**	**349**		
Total: Workers who live in UT or U.S.	**458**	**1,063**	**559,295**	**4,979**	**8,834**	**8,392**	**22,476**	**16,831**	**14,132**	**188,575**	**7,551**	**52,107**	**1,368**	**92,443**		

Data Source: Census Transportation Planning Products 2010 (2006-2010 Data)

= 200 to 999 commuters = 1,000+ commuters

Appendix 7: Net Commuting Flows Between Counties in Utah, 2010

	Place of Work														
Place of Residence	**Beaver**	**Box Elder**	**Cache**	**Carbon**	**Daggett**	**Davis**	**Duchesne**	**Emery**	**Garfield**	**Grand**	**Iron**	**Juab**	**Kane**	**Millard**	**Morgan**
Beaver	0	-4	0	0	0	-10	0	20	-4	0	15	0	0	-21	0
Box Elder	4	0	-675	0	0	500	0	0	0	0	0	0	0	0	0
Cache	0	675	0	-15	0	290	0	0	0	0	0	0	0	10	-25
Carbon	0	0	15	0	0	10	5	-385	-15	25	15	0	0	-20	0
Daggett	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Davis	10	-500	-290	-10	0	0	55	15	-4	0	25	0	10	-4	-605
Duchesne	0	0	0	-5	0	-55	0	0	0	0	4	0	0	-10	0
Emery	-20	0	0	385	0	-15	0	0	-11	20	-4	-25	0	0	0
Garfield	4	0	0	15	0	4	0	11	0	0	5	0	-25	-4	0
Grand	0	0	0	-25	0	0	0	-20	0	0	15	0	0	0	0
Iron	-15	0	0	-15	0	-25	-4	4	-5	-15	0	0	51	6	0
Juab	0	0	0	0	0	0	0	25	0	0	0	0	0	70	0
Kane	0	0	0	0	0	-10	0	0	25	0	-51	0	0	0	0
Millard	21	0	-10	20	0	4	10	0	4	0	-6	-70	0	0	0
Morgan	0	0	25	0	0	605	0	0	0	0	0	0	0	0	0
Piute	0	0	4	0	0	0	0	0	25	0	-11	0	-4	0	4
Rich	0	-4	-15	0	0	10	0	0	0	0	0	0	0	0	4
Salt Lake	25	-390	-185	40	-6	-33,855	80	15	-5	15	-85	-150	0	-130	-365
San Juan	0	0	0	40	0	-20	0	-10	-40	170	0	0	-130	0	0
Sanpete	0	0	-6	85	0	-10	4	90	0	0	0	205	0	-25	0
Sevier	-6	0	0	-4	0	0	0	0	-16	4	-5	-25	-11	-15	0
Summit	0	20	-30	15	0	-300	71	-15	0	0	65	-15	0	0	-70
Tooele	15	75	-35	10	0	355	0	-25	0	0	0	-76	0	10	0
Uintah	4	0	-65	-20	20	-50	-45	0	-15	0	0	0	0	0	0
Utah	6	-45	-70	165	-4	80	-15	50	10	45	5	-705	30	120	-30
Wasatch	0	0	-60	-4	0	-21	-60	0	0	0	0	0	0	0	0
Washington	-40	-4	-10	-20	0	-5	0	21	60	10	-25	0	-10	-15	-15
Wayne	-21	0	0	0	0	0	0	-4	-6	0	0	0	0	0	0
Weber	0	-710	-370	-60	0	4,715	45	0	0	10	-10	0	0	-10	-715
Place of Work: Net Flow from all Counties	-13	-887	-1,777	597	10	-27,803	146	-208	3	284	-48	-861	-89	-38	-1,817

Data Source: Census Transportation Planning Products 2010 (2006-2010 Data). Interpretation example: Davis County sends 33,855 more people to work in Salt Lake County than the reverse (the number of Salt Lake County residents who work in Davis County), producing a positive net flow of workers from the place-of-work perspective. Salt Lake County sends 33,855 fewer people to Davis County to work than the reverse (the number of Davis County residents who work in Salt Lake County), producing a negative net flow of workers from the place-of-work perspective. For the net flow from all counties, bottom line: Davis County has 27,803 fewer workers commuting in to work (from any county) than workers commuting out of the county to work, a negative net flow from the place-of-work perspective.
Note: The net flow from all counties does not account for workers who reside out of state. County flows in and out of state are available in Appendix 6.

= 200 to 999 commuters
= -200 to -999 commuters
= 1,000+ commuters
= -1,000+ commuters

Appendix 7: Net Commuting Flows Between Counties in Utah, 2010 *(Continued)*

	Place of Work													
Place of Residence	**Piute**	**Rich**	**Salt Lake**	**San Juan**	**Sanpete**	**Sevier**	**Summit**	**Tooele**	**Uintah**	**Utah**	**Wasatch**	**Washington**	**Wayne**	**Weber**
Beaver	0	0	-25	0	0	6	0	-15	-4	-6	0	40	21	0
Box Elder	0	4	390	0	0	0	-20	-75	0	45	0	4	0	710
Cache	-4	15	185	0	6	0	30	35	65	70	60	10	0	370
Carbon	0	0	-40	-40	-85	4	-15	-10	20	-165	4	20	0	60
Daggett	0	0	6	0	0	0	0	0	-20	4	0	0	0	0
Davis	0	-10	33,855	20	10	0	300	-355	50	-80	21	5	0	-4,715
Duchesne	0	0	-80	0	-4	0	-71	0	45	15	60	0	0	-45
Emery	0	0	-15	10	-90	0	15	25	0	-50	0	-21	4	0
Garfield	-25	0	5	40	0	16	0	0	15	-10	0	-60	6	0
Grand	0	0	-15	-170	0	-4	0	0	0	-45	0	-10	0	-10
Iron	11	0	85	0	0	5	-65	0	0	-5	0	25	0	10
Juab	0	0	150	0	-205	25	15	76	0	705	0	0	0	0
Kane	4	0	0	130	0	11	0	0	0	-30	0	10	0	0
Millard	0	0	130	0	25	15	0	-10	0	-120	0	15	0	10
Morgan	-4	-4	365	0	0	0	70	0	0	30	0	15	0	715
Piute	0	0	5	0	20	10	0	0	0	0	0	10	0	0
Rich	0	0	-10	0	0	0	0	4	0	0	0	0	0	5
Salt Lake	-5	10	0	15	-275	-105	830	-7,140	160	-18,025	-650	-155	-20	-6,735
San Juan	0	0	-15	0	-4	0	0	0	0	-15	0	0	0	0
Sanpete	-20	0	275	4	0	90	4	-11	-4	520	0	10	-10	-30
Sevier	-10	0	105	0	-90	0	0	0	0	15	0	21	0	-20
Summit	0	0	-830	0	-4	0	0	-140	0	-485	-2,270	-4	55	-85
Tooele	0	-4	7,140	0	11	0	140	0	-10	-410	0	0	0	15
Uintah	0	0	-160	0	4	0	0	10	0	-135	0	0	4	-10
Utah	0	0	18,025	15	-520	-15	485	410	135	0	-100	-5	0	25
Wasatch	0	0	650	0	0	0	2,270	0	0	100	0	30	0	5
Washington	-10	0	155	0	-10	-21	4	0	0	5	-30	0	-4	-85
Wayne	0	0	20	0	10	0	-55	0	-4	0	0	4	0	-10
Weber	0	-5	6,735	0	30	20	85	-15	10	-25	-5	85	10	0
Place of Work: Net Flow from all Counties	-63	6	67,091	24	-1,171	57	4,022	-7,211	458	-18,097	-2,910	49	66	-9,820

Data Source: Census Transportation Planning Products 2010 (2006-2010 Data). Interpretation example: Davis County sends 33,855 more people to work in Salt Lake County than the reverse (the number of Salt Lake County residents who work in Davis County), producing a positive net flow of workers from the place-of-work perspective. Salt Lake County sends 33,855 fewer people to Davis County to work than the reverse (the number of Davis County residents who work in Salt Lake County), producing a negative net flow of workers from the place-of-work perspective. For the net flow from all counties, bottom line: Davis County has 27,803 fewer workers commuting in to work (from any county) than workers commuting out of the county to work, a negative net flow from the place-of-work perspective.
Note: The net flow from all counties does not account for workers who reside out of state. County flows in and out of state are available in Appendix 6.

= 200 to 999 commuters
= 1,000+ commuters
= -200 to -999 commuters
= -1,000+ commuters

Appendix 8: Commuter Flows of at Least 100 People Between County Pairs in Utah, 2010

Rank	County A	County B	Total Commuters in Flow (A residents working in B + B residents working in A)	Total Interchange Score
1	Davis	Salt Lake	51,415	24.8
2	Salt Lake	Utah	40,015	13.6
3	Davis	Weber	37,725	35.5
4	Salt Lake	Tooele	11,030	25.4
5	Salt Lake	Weber	10,305	6.1
6	Salt Lake	Summit	8,320	21.0
7	Box Elder	Weber	5,180	15.3
8	Summit	Wasatch	2,930	21.2
9	Box Elder	Cache	2,495	8.6
10	Davis	Utah	2,000	1.4
11	Duchesne	Uintah	1,805	19.2
12	Juab	Utah	1,565	20.8
13	Salt Lake	Wasatch	1,530	8.2
14	Carbon	Emery	1,525	25.3
15	Box Elder	Davis	1,480	4.2
16	Iron	Washington	1,475	5.4
17	Morgan	Weber	1,335	20.7
18	Utah	Wasatch	1,110	6.5
19	Utah	Weber	1,075	0.8
20	Cache	Weber	960	1.5
21	Davis	Morgan	835	12.0
22	Summit	Utah	825	2.1
23	Cache	Salt Lake	785	0.9
24	Davis	Tooele	765	2.1
25	Sanpete	Sevier	740	8.3
26	Sanpete	Utah	690	3.6
27	Tooele	Utah	670	2.0
28	Box Elder	Salt Lake	660	1.7
29	Cache	Davis	540	0.8
30	Morgan	Salt Lake	535	7.6
31	Grand	San Juan	530	11.0
32	Davis	Summit	510	1.4
33	Salt Lake	Washington	495	0.5
34	Summit	Weber	345	1.0
35	Salt Lake	Uintah	320	1.2
36	Salt Lake	Sanpete	305	1.5
37	Carbon	Utah	265	1.5
38	Juab	Sanpete	265	5.3
39	Juab	Salt Lake	240	3.1
40	Tooele	Weber	205	0.6
41	Morgan	Summit	170	3.1
42	Piute	Sevier	170	18.1
43	Sevier	Utah	165	1.0
44	Uintah	Utah	165	0.6
45	Carbon	Salt Lake	160	0.9
46	Millard	Utah	160	1.7
47	Summit	Tooele	160	0.7
48	Beaver	Iron	155	3.6
49	Cache	Utah	150	0.2
50	Box Elder	Tooele	145	0.7
51	Iron	Salt Lake	145	0.4
52	Duchesne	Salt Lake	140	1.0
53	Juab	Millard	140	3.2
54	Kane	Washington	140	2.4
55	Utah	Washington	135	0.2
56	Kane	San Juan	130	3.3
57	Millard	Salt Lake	130	1.3
58	Emery	Utah	110	1.3
59	Salt Lake	Sevier	105	0.6
60	Washington	Weber	105	0.2

Data Source: Census Transportation Planning Package 2010 (2006-2010 Data); Interchange score calculations by Kem C. Gardner Policy Institute

Endnotes

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5. Note that both counts of resident workers and counts of jobs are sourced from the Census Transportation Planning Package (CTPP) data. "Employment" and "jobs" each refer to these job counts.
6. Data from OnTheMap, Bureau of the Census, analysis by Kem C. Gardner Policy Institute
7. In terms of rate of growth. Analysis of 2000 and 2010 Census, total population for Utah cities, by Kem C. Gardner Policy Institute.
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14. Salt Lake County held 47.4% of jobs in 2000 and 46.0% in 2010 (for input data, see Appendix 5).
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18. Perlich, P. S. (2003). Commuting Patterns in Utah: County Trends for 1980, 1990, and 2000. *Bureau of Economic and Business Research; David Eccles School of Business*.
19. Refer to Appendix 1 (resident labor force/workers counts).
20. Discussion of highest and lowest changes excludes counties where out-commuting changed by less than 50 people from 2000 to 2010 (Table 2 identifies these counties).
21. Refer to Appendix 1 (resident labor force/workers counts).
22. Refer to Appendix 1 (resident labor force/workers counts).
23. The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry, Bureau of Economic and Business Research, University of Utah
24. The Census 2010 populations were 42,552 (Bountiful) and 18,275 (Farmington)
25 Refer to Appendix Tables 6 and 7 for 2010 data. For 2000 county-to-county flow data, refer to Perlich, P.S. (2003). Commuting Patterns in Utah: County Trends for 1980, 1990, and 2000. *Bureau of Economic and Business Research; David Eccles School of Business*.
26 Jobs increased 41.7 percent in Summit County from 2000 to 2010 (Refer to Appendix 4). In reference to the seasonality of data collection, the 2000 data refer to the last week of March 2000, while the 2006-2010 data were collected in all seasons (see Data Notes).
27. Comparison of 2000 and 2010 county-to-county flows from CTPP, with Utah County as place of residence.
28. Perlich, P. S. (2003). Commuting Patterns in Utah: County Trends for 1980, 1990, and 2000. *Bureau of Economic and Business Research; David Eccles School of Business*.
29. Small numbers of Utahns work outside the country. There were 508 Utah residents who worked abroad in 2000 (0.05% of the state's resident workers) and 779 in 2010 (0.06% of state workers). Census Transportation Planning Package 2010; Census 2000.
30. The score can also be calculated for a grouping of three or more counties by examining the six (or more, for over three counties) interactions between the counties and averaging by the total number of counties involved. The score will still range from 0 to 200.
31. 2010 Standards for Delineating Metropolitan and Micropolitan Statistical Areas; Notice, 75 Fed. Reg. 123 (June 28, 2010). *Federal Register: The Daily Journal of the United States*. (Refer to Section D). In the OMB process (as of 2017), each metro or micro area consists of one or more counties, which are grouped together based on the presence and population of core urban areas, as well as commuting ties to the core. Population requirements determine which county or counties act as the central counties. Once central counties are established, commuting data are examined to see whether surrounding counties qualify to be part of the designated area. A county qualifies if a) at least 25% of the workers in the county work in the central county or counties of the metro area; or b) at least 25% of the employment in the county is accounted for by workers who reside in the central county or counties of the metro area. The same principle is used to merge two metro areas together.
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