

Memo



To: Melanie Needle, CCRPC and Regina Mahoney, CCRPC
CC: Charlie Baker, CCRPC and Jonathan Slason, RSG
From: John M. Dellipriscoli and Robert A. Chase, *Economic & Policy Resources*
Date: February 8, 2017
Re: Initial Total Employment Forecast – County and Municipal Breakout

The spreadsheet file provided to you on February 3, 2017 summarizes the results of our initial employment forecast for Chittenden County and its respective municipalities. These results reflect the forecasted total employment (full-time and part-time jobs) in each area from 2020 through 2040, consisting of both wage and salary employment and proprietors' employment. It is important to note, as this forecast will be viewed alongside the population forecast that employment in this case refers to the *location* of employer and not the *residence* of the employee/proprietor. From 2015 through 2040, total employment in Chittenden County is forecasted to grow at an annual average rate of 0.90%. Table 1 below summarizes the results sent in the spreadsheet on February 3, 2017:

Table 1: Initial Total Employment (Jobs) Forecast – February 3, 2017

Area	Year					
	2015	2020	2025	2030	2035	2040
Chittenden County	135,511	146,589	151,475	156,567	162,560	169,671
Bolton	221	247	260	277	297	321
Buels gore	0	0	0	0	0	0
Burlington	46,046	49,488	50,936	52,433	54,195	56,286
Charlotte	695	755	790	827	871	922
Colchester	12,882	14,500	15,090	15,732	16,483	17,375
Essex (Town and Junction)	15,842	16,423	16,629	16,839	17,085	17,377
Hinesburg	1,489	1,593	1,608	1,622	1,638	1,657
Huntington	221	219	220	220	221	221
Jericho	1,013	1,088	1,120	1,154	1,193	1,240
Milton	3,548	4,036	4,230	4,432	4,669	4,951
Richmond	1,894	1,998	2,083	2,172	2,276	2,400
Shelburne	4,713	4,940	5,095	5,256	5,445	5,669
So. Burlington	24,940	26,642	27,306	27,993	28,801	29,759
St. George	54	66	71	77	83	90
Underhill	340	372	384	396	410	427
Westford	242	258	272	288	306	327
Williston	17,405	19,599	20,716	21,877	23,245	24,870
Winooski	3,967	4,366	4,664	4,976	5,343	5,779

Table 1 is the product of two different forecasts: a county-level forecast and a municipal-level forecast. The municipal-level forecast utilized historical data from the Quarterly Census of Employment and Wages (“QCEW”) published by the United States Bureau of Labor Statistics in conjunction with the Vermont Department of Labor. The QCEW historical employment data (2010 through 2015) for each municipality consist of only “covered” employment (salary and wage employment). The QCEW does not include any proprietors, whether farm and/or nonfarm. Additionally, the QCEW under reports farm employment and excludes military employment. We regressed and forecasted each municipality’s historical employment against the forecasted payroll employment for Chittenden County from the June 2016 Vermont Statewide Population Consensus Forecast—Legislative Joint Fiscal Office—Shumlin Administration. Table 2 below shows how the share of each municipality changes throughout the forecasted time horizon:

Table 2: Municipal Covered Employment as a Percentage Share of County Covered Employment

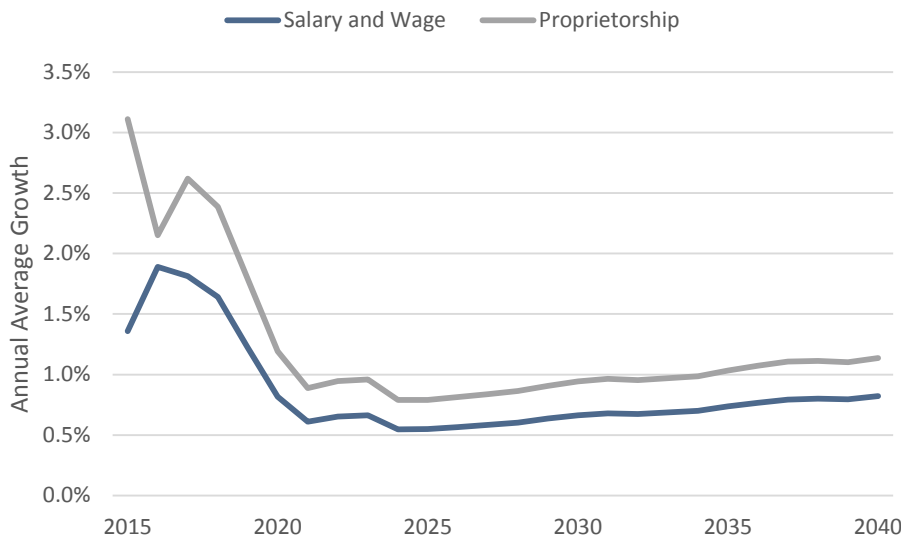
Area	Year					
	2015	2020	2025	2030	2035	2040
Chittenden County	100%	100%	100%	100%	100%	100%
Bolton	0.16%	0.17%	0.17%	0.18%	0.18%	0.19%
Buelsgore	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Burlington	33.98%	33.76%	33.63%	33.49%	33.34%	33.17%
Charlotte	0.51%	0.51%	0.52%	0.53%	0.54%	0.54%
Colchester	9.51%	9.89%	9.96%	10.05%	10.14%	10.24%
Essex (Town and Junction)	11.69%	11.20%	10.98%	10.75%	10.51%	10.24%
Hinesburg	1.10%	1.09%	1.06%	1.04%	1.01%	0.98%
Huntington	0.16%	0.15%	0.15%	0.14%	0.14%	0.13%
Jericho	0.75%	0.74%	0.74%	0.74%	0.73%	0.73%
Milton	2.62%	2.75%	2.79%	2.83%	2.87%	2.92%
Richmond	1.40%	1.36%	1.38%	1.39%	1.40%	1.41%
Shelburne	3.48%	3.37%	3.36%	3.36%	3.35%	3.34%
So. Burlington	18.40%	18.17%	18.03%	17.88%	17.72%	17.54%
St. George	0.04%	0.05%	0.05%	0.05%	0.05%	0.05%
Underhill	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Westford	0.18%	0.18%	0.18%	0.18%	0.19%	0.19%
Williston	12.84%	13.37%	13.68%	13.97%	14.30%	14.66%
Winooski	2.93%	2.98%	3.08%	3.18%	3.29%	3.41%

The municipal-level forecast that only forecasts the change in salary and wage employment is utilized to get specificity on the shares of the county population for each municipality. The assumption moving forward is that the share of county covered employment, as summarized in Table 2, will be the same for total employment. This is an assumption that should be viewed with some skepticism, however due to the lack of total employment (primarily uncovered) data at the

municipal level, this assumption is necessary to provide a share-based breakout of municipal total employment.

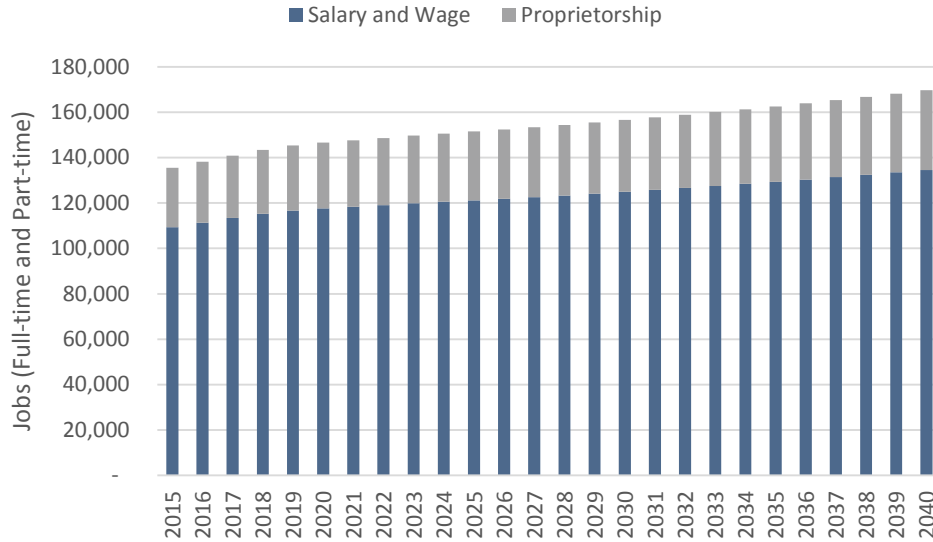
The county-level forecast for total employment takes historical data on both salary and wage employment and proprietors employment from the Bureau of Economic Analysis for Chittenden County and regresses and forecasts it against the forecasted payroll non-farm employment for Chittenden County from the June 2016 Vermont Statewide Population Consensus Forecast—Legislative Joint Fiscal Office–Shumlin Administration. Chart 1 below shows how the two county-level employment forecasts differ with regards to the annual rate of growth:

Chart 1: Chittenden County Forecasted Employment Growth



As seen in Chart 1, proprietorship employment is forecasted to grow at a faster rate than salary and wage employment, although as Chart 2 below shows, the wage and salary employment represents the majority of total employment. The changes in the composition of the covered vs uncovered employment at the county level is an interesting trend to pay attention to and the diversity among municipalities’ job markets would lead us to believe that there will be areas in Chittenden County that expand proprietorship employment at faster or slower rates relative to the rest of the county. For the time being however, we have made the assumption that the growth in total employment for each municipality is similar for covered and non-covered employment.

Chart 2: Chittenden County Forecasted Employment Growth



Each municipality’s share of total employment at any given time period in the forecasted horizon is the same as its share of the salary and wage (covered) employment, as shown in Table 2. Table 1 summarizes those jobs totals for each area, and Table 3 below summarizes the annual average growth at each 5-year interval:

Table 3: 5-Year Average Annual Growth in Total Employment

Area	Year						2015 - 2040 Average
	2015	2020	2025	2030	2035	2040	
Chittenden County	1.69%	1.58%	0.66%	0.66%	0.75%	0.86%	0.90%
Bolton	-1.58%	2.24%	1.10%	1.24%	1.41%	1.57%	1.51%
Buels gore	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Burlington	1.26%	1.45%	0.58%	0.58%	0.66%	0.76%	0.81%
Charlotte	3.34%	1.68%	0.92%	0.92%	1.03%	1.16%	1.14%
Colchester	2.10%	2.39%	0.80%	0.84%	0.94%	1.06%	1.20%
Essex (Town and Junction)	0.72%	0.72%	0.25%	0.25%	0.29%	0.34%	0.37%
Hinesburg	0.01%	1.35%	0.19%	0.17%	0.20%	0.23%	0.43%
Huntington	0.52%	-0.15%	0.04%	0.04%	0.04%	0.05%	0.00%
Jericho	1.82%	1.43%	0.59%	0.59%	0.67%	0.77%	0.81%
Milton	2.51%	2.61%	0.94%	0.93%	1.05%	1.18%	1.34%
Richmond	3.33%	1.08%	0.84%	0.84%	0.94%	1.07%	0.95%
Shelburne	2.32%	0.95%	0.62%	0.62%	0.71%	0.81%	0.74%
So. Burlington	0.63%	1.33%	0.49%	0.50%	0.57%	0.66%	0.71%
St. George	5.26%	4.39%	1.49%	1.44%	1.57%	1.72%	2.12%
Underhill	-0.51%	1.82%	0.62%	0.62%	0.71%	0.81%	0.91%
Westford	2.53%	1.25%	1.11%	1.10%	1.22%	1.36%	1.21%
Williston	4.13%	2.40%	1.11%	1.10%	1.22%	1.36%	1.44%
Winooski	5.31%	1.94%	1.33%	1.30%	1.43%	1.58%	1.52%

We believe that this forecast for total employment in Chittenden County and the respective municipalities is a reasonable forecast based on the data. Please let us know if you have any questions and if it is desired to make any adjustments to the forecast.