

WHATCOM COUNTY ALLOCATIONS OF FUTURE GROWTH TO PLANNING AREAS: Methodology and Phase I Allocations February 3, 2009

In an earlier phase of the Whatcom County Comprehensive Plan update process, Berk & Associates provided county decision makers with data and analysis to inform their identification of countywide population and employment growth forecasts through 2031. Once initial countywide growth forecasts were determined, the next step in the process was to allocate this projected growth to planning areas within the County.

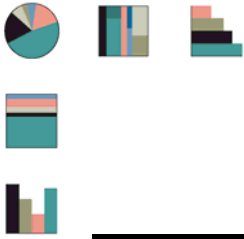
Attached to this cover sheet are two memos addressing the allocation process: one outlining the methodology to be used for determining population and employment growth allocations to planning areas within Whatcom County, and another presenting Phase I allocations of population and employment to planning areas. A brief description of the two memos and how they were developed is included below.

Memo #1: Allocating Countywide Forecasts – Proposed Methods (November 25, 2008)

- This memo outlines the methodology to be used in allocating countywide population and employment forecasts to planning areas.
- The proposed methodology was presented and approved at the December 3, 2008 Growth Management Coordinating Council (GMCC) meeting.
- The methodology calls for a two-phased approach to the allocation process. By design, Phase I is a simplistic mathematical allocation of growth based largely on historic trends. Phase II uses Phase I allocations as a starting point, but opens up the allocation process for discussion and negotiation among the affected jurisdictions (i.e. the County and the cities). In Phase II, constraints like land supply, policy choices, and other special circumstances are taken into consideration, and the Phase I allocations are adjusted as necessary.

Memo #2: Phase I Allocations of 2031 Growth to Planning Areas (January 13, 2009)

- This memo presents the initial Phase I allocations of 2031 population and employment growth to planning areas.
- The memo was presented at the January 21, 2009 GMCC meeting.
- These Phase I allocations are not the final allocations in this process. They are a starting point for Phase II allocation discussions, which will take into account available land supply, special circumstances, and policy choices.



MEMORANDUM

DATE: November 25, 2008

TO: Whatcom County Comprehensive Planning Team

FROM: Brett Sheckler and Kapena Pflum

RE: ALLOCATING COUNTYWIDE FORECASTS – Proposed Methods

BACKGROUND AND PURPOSE

Whatcom County is embarking on a multi-year process to review and update the Whatcom County Comprehensive Plan. As the County develops plans for accommodating future growth, the County commissioned Berk & Associates to perform a series of tasks. These tasks include:

- Provide County decision makers with data and analyses that will inform their identification of countywide forecasts of population and employment growth through 2031.
- Work with technical staff and decision makers to develop methods for:
 - Allocating countywide forecasts to planning areas within the county;
 - Translating anticipated growth into demand for housing, commercial, industrial, retail, and institutional space, and ultimately, to demand for developable land;
 - Assessing the existing capacity within cities and urban growth areas to accommodate anticipated 20-year demand; and
 - Ongoing monitoring of how the County Comprehensive Plan compares with the reality of growth.

This memorandum focuses on the development of methods for allocating countywide forecasts to planning areas within the county. These planning areas include Whatcom County's seven existing cities and their associated urban growth areas, the unaffiliated Columbia Valley and Birch Bay UGAs, Cherry Point, the Point Roberts Rural Area, and the remaining rural areas of Whatcom County.

The goal of this memorandum is to lay out, with a great deal of specificity, future actions that will be carried out to allocate anticipated 20-year growth. Implementation of these methods will occur in the upcoming phase of the Comp Plan Update process, which will begin in January of 2009.

STARTING POINT – EXPECTATIONS FOR COUNTYWIDE GROWTH

Based on discussions of historical trends, existing forecasts, and an assessment of existing conditions, Whatcom County's Growth Management Coordinating Council (GMCC) has recommended that, as a starting point, county planners should anticipate that Whatcom County will have 251,490 residents in the year 2031. The GMCC also recommends that planners anticipate 123,230 jobs in the same year.

These figures translate into expected growth of 60,490 new residents and 19,430 new jobs (from 2008 to 2031).

PROPOSED FRAMEWORK FOR ALLOCATIONS

Berk & Associates proposes a two-step process for developing 2031 allocations of growth:

1. Perform a Phase I, algorithm-based allocation of growth based on historical trends and economic theory. This allocation might be viewed as *unconstrained demand*. In effect, this algorithm-based analysis answers the question: Where might population and commerce go in the absence of potential constraints like limitations in land supply or public policies that encourage or discourage development.
2. Using the Phase I allocation as a starting point, open up the allocation process for discussion and negotiation among the affected jurisdictions (i.e. the County and cities). In this Phase II Policy-based Allocation Adjustment constraints like land supply (a set of analyses that will need to be completed prior to negotiations), policy choices, and other special circumstances will be taken into consideration. Presumably, with these factors on the table, the algorithm-based allocations will be adjusted to reflect policy choices and real-world constraints.

The following two sections discuss methods and principles that Berk & Associates believes should guide these two steps.

PHASE I ALLOCATION

For the Phase I Allocation, Berk & Associates recommends a three-phase mechanistic allocation of population and employment:

1. Identify and allocate new “regional” employment (i.e. employment in industries that seek to serve the entire region, like Western Washington University or regional retailers). This regional employment will be allocated to areas of Whatcom County that best suit such businesses: the county’s existing and emerging regional centers.
2. Recognizing (1) allocations of regional employment and (2) historic patterns of development, allocate expected population growth.
3. Based on the allocation of population growth and expected patterns of commerce, allocate non-regional employment to all study areas.

The following discussion spells out underlying principles and proposed methods for an algorithm-based allocation of population and employment growth.

Employment Allocations

Location Theory

When businesses make location decisions, they select a site by balancing three primary factors:

1. Access to markets for their goods and services;
2. Access to factors of production, including access to labor pools and production supplies; and
3. The cost of their physical plant (primarily reflecting costs of land and construction).

How these factors are weighed depends on the industry in question. For brick-and-mortar retailers, geographic access to markets is key. Regional retailers who rely on drawing from a very large population of potential shoppers are looking for centrally-located sites, and most often, they look for areas that offer a critical mass of retail attractions—hence the emergence of regional retail centers. Community and convenience retailers, who look to capture retail sales from customers in more concentrated areas, look for sites that afford proximity and ease of access to a sufficient pool of residents.

On the opposite end of the spectrum, a high-tech software-development firm cares very little about picking a site that is accessible to potential buyers. For them, the key siting considerations may be (1) access to a pool of high-skill employees and (2) a campus that is located in an area with amenities that will enable them to compete for (and retain) employees that have options regarding where they live and work.

Different location criteria for different types of business underlie Berk's recommendation to distinguish between regional and local businesses, allocating employment associated with regional businesses to regional centers and allocating local employment based on expectations about where people will live.

Data Collection

In its 2002 study, ECONorthwest used Washington State Employment Security Department (ESD) ES202 data (counts of employees who are covered by unemployment insurance, as tracked by ESD) to describe the distribution of covered employment by study area. The report summarized employment by major category (commercial, industrial, and retail) by study area. In addition to using these data, we recommend that analysts contact ESD and request a breakout of covered employment by study area for 2001 and 2008.¹ The requested breakout should focus on covered employment by 2-digit NAICS classification (with data for *Accommodations and Food Service* broken out into the 3-digit level [codes 721 - *Accommodations* and 722 - *Food Service and Drinking Places*]).

Exhibit 1 offers a suggested structure for sorting industries (2-digit NAICS titles) into major land-use classifications.

¹ Lisa Norberg at ESD has indicated that she will summarize covered employment by industry classification (NAICS major sector) for each of the study areas. Analysts will need to contact Lisa and arrange to send her GIS polygons in NAD83 State Plane South projection, and she will summarize current employment by industry. Depending on the number and size of employers, ESD figures may be suppressed for a given NAICS major sector. Depending on the specifics, analysts may be able to work around the suppression issue by generating independent estimates of suppressed data based on other sources. It may be useful, however, to request the data in two forms: (1) at the NAICS major sector level, for each subarea; and (2) at the broadest industry classification used for determining land demand (i.e. commercial, industrial, and retail [see Exhibit 1]). With these more general classifications, issues of suppressed data are likely to be diminished.

Exhibit 1

Suggested Components of Major Industry Classification by 2-Digit NAICS Title

Commercial	Industrial	Retail
Information	Utilities	Retail Trade
Finance and Insurance	Construction	Food Service and Drinking Places (3-digit NAICS - 722)
Real Estate and Rental and Leasing	Manufacturing	
Arts, Entertainment, and Recreation	Wholesale Trade	
Professional, Scientific, and Technical Services	Transportation and Warehousing	
Management of Companies and Enterprises		
Administrative and Support and Waste Management and Remediation Services		
Health Care and Social Assistance		
Educational Services		
Accommodations (3-digit NAICS - 721)		
Other Services (except Public Administration)		
Public Administration		

Source: Berk & Associates

Note: For comparisons of major industry classification figures with ECONorthwest figures, note that ECONorthwest excluded government (Public Administration) and Education jobs from their commercial classification.

Proposed Allocation Steps - Employment

Develop Base Data	
<p>Step 1: Generate estimates of new countywide jobs to be accommodated, by industry.</p>	<p>Using overall estimate of job growth through 2031, allocate new jobs to major industry classification based on relative shares as they are summarized in the ECONorthwest forecasts.</p> <p>ECONorthwest forecasts and allocations were based on SIC industry classifications, so the allocations of forecasted employment will need to use the same classification scheme. Once forecasts have been generated by industry, the industries can be aggregated to major classifications as follows:</p> <p>Commercial → Finance, Government, and Services</p> <p>Industrial → Construction, Manufacturing, Wholesale Trade, Transportation, and Utilities</p> <p>Retail → Retail</p>

Step 2:
Distinguish
Regional and
Local
Employment

The goal of this task is to distinguish the relative shares of commercial, industrial, and retail employment that should be treated as *regional*, and the remainder of employment that will be treated as local.

In the allocation process, regional employment will be allocated to study areas that have historically served as regional centers.

If the analysis team desires, designation of regional shares can be based on subjective estimates (for an example of such estimates see the table below) or they can be based on analysis of covered employment data the County will be receiving from ESD.

2007 NAICS US Code	2007 NAICS US Title	Regional Share	Local Share	Category
22	Utilities	50%	50%	Industrial
23	Construction	50%	50%	Industrial
31-33	Manufacturing	70%	30%	Industrial
42	Wholesale Trade	80%	20%	Industrial
44-45	Retail	60%	40%	Retail
48-49	Transportation and Warehousing	90%	10%	Industrial
51	Information	80%	20%	Commercial
52	Finance and Insurance	50%	50%	Commercial
53	Real Estate and Rental and Leasing	40%	60%	Commercial
54	Professional, Scientific, and Technical Services	90%	10%	Commercial
55	Management of Companies and Enterprises	90%	10%	Commercial
56	Administrative and Support and Waste Management and Remediation Services	80%	20%	Commercial
61	Educational Services	30%	70%	Commercial
62	Health Care and Social Assistance	60%	40%	Commercial
71	Arts, Entertainment, and Recreation	40%	60%	Commercial
721	Accommodation	80%	20%	Commercial
722	Food Services and Drinking Places	30%	70%	Retail
81	Other Services (except Public Administration)	50%	50%	Commercial
92	Public Administration	40%	60%	Commercial

If the analysis team chooses the latter course, the analysis would probably involve:

1. Identifying a single study area (perhaps Bellingham and its UGA) or a cluster of study areas (perhaps Bellingham, Ferndale, and their respective UGAs) as the regional center.
2. Run an ordinary least squares regression analysis of employment for each sector, with the dependent variable being employment by study area and the explanatory variables being (1) study area population and (2) designation as a regional center. (The analyst may want also want to test a regression with a third variable that identifies communities of less than, say, 5,000 residents to capture potential threshold effects.) The regression analysis should give an indication of share of employment that is regional in nature.

These relative shares could then be used to fill out a version of the table listed above. The final step would be to aggregate regional employment by category to arrive at the share of regional employment for each of the three major employment categories.

Allocate Projected Employment Growth	
Step 3: Allocate regional employment to regional centers	<p>The county's regional employment for the <i>commercial</i>, <i>industrial</i>, and <i>retail</i> categories should be allocated to the study area (or study areas) that have been designated as regional centers.</p> <p>If the analysts so desire, as they look to the future, they might designate more areas as emerging regional centers, assigning each identified area a relative share of regional employment. Such a step might also be introduced as part of the Phase II of the allocation process: policy-based allocation adjustments.</p>
Step 4: Allocate population growth to study areas	See Following Section on Population Allocations
Step 5: Calculate historical changes in employment by study area	Using ESD 2008 and 2001 data (or using 2001 data from the 2002 ECONorthwest study, calculate the change in employment experienced in each of the study areas over recent years, for each major category of employment (commercial, industrial, and retail).
Step 6: Allocate local employment to study areas	<p>After allocating population growth to all study areas, the last step in the process is to allocate local employment to each of the study areas. In general, local-serving employers will locate in urban nodes that are positioned to attract significant numbers of residents.</p> <p>The algorithm-based allocations of local employment should first exclude study areas that do not include commercial land. Local employment growth should be allocated to remaining study areas based on projected increases in resident and, in the case of retail and commercial categories, non-resident population.</p> <p>Local-serving retail and local-serving commercial employment should be allocated to non-excluded study areas, on a pro-rata basis, based on each area's sum of resident population (weighted by a factor of one) and non-resident population (weighted by a factor of, perhaps, 0.5).</p> <p>Each non-excluded study area will receive a share of local retail and local commercial equal to the study area's weighted population factor divided by the sum of all non-excluded study area's weighted population factors.</p>

Population Allocations

Location Theory

When households make decisions about where to live, they balance a range of considerations. Some of the most important of these include:

1. Access to employment opportunities;
2. Access to amenities;
3. Presence of strong public services—particularly schools;
4. Availability and characteristics of housing stock; and
5. Relative costs of homes.

In Whatcom County, the location choices that households will make in coming years are likely to reflect the manner in which choices have been made in recent years. Given Whatcom County's geography and transportation structure, Bellingham can be expected to remain the principal regional center in the county. With most new regional jobs continuing to locate in the Bellingham/Ferndale corridor; with similar commuting patterns; and with similar trade-offs between amenities, levels of public services, and relative costs, new households will face similar choices when they consider where they want to live.

As Whatcom County continues to mature, with communities outside of Bellingham becoming more populous and attracting more local community-serving commerce, the relative attractiveness of the county's smaller cities will increase.² At the same time, as the City of Bellingham continues to mature as an urban center, strengthened attractions like restaurants and entertainment venues will also make Bellingham more attractive to a significant slice of the county's population.

Overall, assuming no land or policy constraints, our default assumption would be that future distributions of growth would mirror distributions of growth Whatcom's communities have seen in recent years.

Again, in Phase II of the growth allocation process, when potential constraints on land supply, community vision, policy choices, and special circumstances are included in the allocation adjustments, final allocations will almost certainly depart from the Phase I algorithm-based allocation.

² Smaller, maturing communities will also likely see economies of scale for provision of local services, which will re-enforce the areas' attractiveness.

Proposed Allocation Steps - Population

<p>Step 1: Generate estimates of 2008 population by study area.</p>	<p>In its 2002 study, ECONorthwest generated estimates of population in each study area for the years 1990 and 2000. Unless analysts want to take the time to re-create ECO's analysis (a very involved process), the analyst team will need to use ECO's 2000 estimates as a basis for 2008 population estimates.</p> <p>The most direct path to estimating 2008 population includes:</p> <ol style="list-style-type: none"> 1. Start with ECONorthwest's 2000 population estimates as a base. 2. Add population growth within city boundaries from 2000 to 2008 based on OFM annual estimates (excluding population added through annexation). <table border="1" data-bbox="516 636 1084 856" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">2000 to 2008</th> </tr> <tr> <th colspan="2" style="text-align: center;">Population annexed by City</th> </tr> </thead> <tbody> <tr> <td>Bellingham</td> <td style="text-align: right;">167</td> </tr> <tr> <td>Everson</td> <td style="text-align: right;">13</td> </tr> <tr> <td>Ferndale</td> <td style="text-align: right;">17</td> </tr> <tr> <td>Lynden</td> <td style="text-align: right;">319</td> </tr> <tr> <td>Sumas</td> <td style="text-align: right;">2</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Add population growth in unincorporated areas based on Whatcom County permit data. <ul style="list-style-type: none"> • Generate point-level shapefiles for single family, multifamily, and mobile home permits for all unincorporated areas (and recently annexed areas). • For single family and mobile home permits, it is probably safe to assume a high percentage (95%) of permitted houses actually got built within two years of the permit being issued, but the analysts can use the most up-to-date ortho layers (and/or field checks) to check the status of major developments. For permits issued after January 2007, assumed conversion of permits to houses should be more conservative (perhaps 50%) and can also be informed by spot-checks. • Special attention will need to be paid to permitted multifamily developments. Luckily, there should be relatively few multifamily developments permitted in the unincorporated areas, but most if not all such permits should be verified using ortho layers and, if necessary, field checks. • After accumulating counts of new single family houses, multifamily units, and mobile homes, the analyst should estimate new population based on 2000 resident-occupancy rates and household sizes by housing type from the most appropriate census designated place (CDP), or for the most appropriate cluster of one or more census tracts. 	2000 to 2008		Population annexed by City		Bellingham	167	Everson	13	Ferndale	17	Lynden	319	Sumas	2
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<p>Step 2: Calculate shares of population growth by study area.</p>	<p>Using ECONorthwest’s 1990 and 2000 estimates and the calculated 2008 population for each study area, analysts should calculate each study area’s share of 2000 to 2008 countywide population growth. Analysts should also calculate shares of growth from 1990 to 2000 and from 1990 to 2008, to see if shares have seen any marked shifts in recent years.</p>
<p>Step 3: Allocate forecasted population growth</p>	<p>Assuming that 2000 to 2008 shares of growth were relatively consistent with 1990 to 2000 shares, forecasted population growth through 2031 should be allocated to each study area based on their calculated shares of growth from 2000 to 2008. However, in instances where longer-term growth patterns are deemed to offer useful information on distributions of growth, the assumed shares of growth may reflect a mix of 2000 to 2008 and 1990 to 2008 growth distributions.</p> <p>If 1990 to 2000 growth shares were significantly different from 2000 to 2008, analysts may want to generate alternative growth allocations: an allocation that reflects patterns identified from 2000 to 2008 <i>and</i> an allocation that reflects patterns over the longer term. Since the goal of the Phase I Allocation is to inform discussions in the Phase II: Policy-based Allocation Adjustments, presentation of alternative growth distributions should be accompanied by a brief discussion of the differences between the shorter-term and longer-term growth distribution.</p> <p>Another data point that analysts may want to track on is the regional employment allocation. If, for any reason, future regional employment distributions are forecasted to differ from existing distributions, then the shifts in employment distributions could have an impact on location decisions made by households. Again, the analyst team may not want to alter the algorithm-based allocation to reflect this dynamic, but it will be an important consideration to bear in mind in Phase II of the allocations.</p>

PHASE II: POLICY-BASED ALLOCATION ADJUSTMENTS

As noted above, the purpose of Phase II of the allocation process is to fold into the allocation issues like community vision, land capacity constraints, city and County policies, and special circumstances that are difficult to capture in a purely mechanistic allocation.

Phase II will need to look at calculated buildable capacities in each study area; potential options for expanding capacity—whether through geographic expansion or through policies to increase or decrease densities in existing urban growth areas; and Whatcom County’s broader vision of what the county should look like in the future.

Even at this early stage of the Comp Plan update, there has been considerable discussion among members of the community and among policy makers of how the county as a whole should think about expected growth. Should the County and cities use policy levers to try to slow the rate of rate of growth?

We anticipate that this question will be at the heart of much of the discussion and negotiations in Phase II of the growth allocations. Given that, we believe it may be useful to devote some time discussing precisely *how* public policies can affect growth.

How Does Public Policy Affect the Rate of Growth

Like many other systems, the number of people who will live in Whatcom County in 2031 is a determined through the interaction of supply and demand. The only way to change the number of people is by influencing one of these two factors.

On the demand side, policy makers in the county can shift demand by making the county more or less attractive. To the extent that they are successful in making Whatcom County a great place to live, all else being equal, demand for living in Whatcom County will increase.

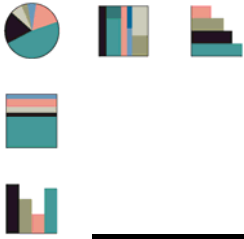
On the supply side, policy makers can (1) physically constrain the amount of land available for development, (2) constrain the intensity of uses that are permissible on available land, and/or (3) increase the cost of development through regulations and fees.

Regarding physical constraints on developable land, it is important to recognize that, in its current form, the Growth Management Act (GMA) makes such constraints very difficult. At any given moment in time, the GMA essentially requires that counties and cities ensure that sufficient land capacity exists to accommodate at least ten years of growth. This is a function of GMA's required planning cycle and time horizon.

Specifically, GMA requires ensuring 20 years of capacity as part of 10-year planning cycle. This means that, assuming compliance with the spirit of the GMA, at no time will a county ever get within 10 years of exhausting land supply. As a result, from a *countywide* perspective, it is very difficult if not impossible to use land-supply constraints to actually slow the pace of growth.

Through policies and through setting modest growth targets, individual cities *do* have the ability to limit growth within their boundaries. But in the absence of a mechanism to constrain growth at a county level, constraining growth in one part of the county is likely to be much like squeezing a balloon.

Among the central questions to be resolved through the Comprehensive Planning process are the questions of *where* and *how* the county will accommodate the growth that is coming.



MEMORANDUM

DATE: January 13, 2009
TO: Whatcom County Comprehensive Planning Team
FROM: Kapena Pflum and Brett Sheckler
RE: Phase 1 Allocations of 2031 Growth to Planning Areas

Whatcom County is in the midst of a multi-year process to review and update the Whatcom County Comprehensive Plan. As the County develops plans for accommodating future growth, the County commissioned Berk & Associates to perform a series of tasks. These tasks include:

- Provide County decision makers with data and analyses that will inform their identification of countywide forecasts of population and employment growth through 2031.
- Work with technical staff and decision makers to develop and implement methods for:
 - Allocating countywide forecasts to planning areas within the county;
 - Translating anticipated growth into demand for housing, commercial, industrial, retail, and institutional space, and ultimately, to demand for developable land;
 - Assessing the existing capacity within cities and urban growth areas to accommodate anticipated 20-year demand; and
 - Ongoing monitoring of how the County Comprehensive Plan compares with the reality of growth.

A November 25, 2008 memorandum entitled *ALLOCATING COUNTYWIDE FORECASTS – Proposed Methods* outlined a two-phased approach to allocating countywide forecasts to planning areas. Phase I is designed to be a mathematical allocation of population and employment growth based largely on historic trends. Phase II would use Phase I allocations as a starting point, but would open up the allocation process for discussion and negotiation among the affected jurisdictions (i.e. the County and the cities). In Phase II, constraints like land supply, policy choices, and other special circumstances will be taken into consideration, and presumably, the Phase I allocations will be adjusted, perhaps significantly.

Since final allocations of growth will be determined through the Phase II process, the goal for this memorandum is to provide reference points that will inform the Phase II process.

This memorandum summarizes the outcome of the Phase I allocation. Berk & Associates has followed the allocation methods that were proposed in the November 25 memo—methods which resulted in the following findings.

All Phase I allocations are designed to allocate a countywide forecast for growth that has been identified by policy makers at Whatcom County. Based on direction from the project team, Berk &

Associates has used a 2031 population estimate of 251,490, and an employment estimate of 123,230 jobs.¹

POPULATION ALLOCATIONS

The methods outlined in the November 25th memo called for a Phase I allocation of future population based on analysis of population growth shares observed in study areas between 1990, 2000, and 2008.² For example, if a Study Area accommodated 10% of countywide growth historically, it would be allocated 10% of the countywide growth out to 2031. By design, this is a simplistic methodology to allocate future population—a method designed to present a picture of the path Whatcom County is on—and the 2031 allocations shown later in **Exhibit 4** are not the final allocations in this process. As mentioned in the introduction of this memo, these Phase I allocations are a starting point for Phase II allocations, which will take into account available land supply, special circumstances, and policy choices.

As a point of reference in all the population exhibits, we provide the shares of long-term population growth adopted in the 2004 Whatcom County Comprehensive Plan. The Plan numbers represent the policy-based allocation of population adopted in the previous comprehensive planning process. Even though the Comprehensive Plan allocation is for a different planning period (2002-2022), it is still a useful reference to compare with actual growth trends observed in recent years in the study areas.

¹ The forecast of 251,490 is within the range of OFM population estimates. If one extrapolates the OFM medium forecast for 2030 to 2031, OFM's medium forecasted population would be 264,400.

² Note that the goal of the trend analysis is not to identify overall levels of expected growth. Rather, the trend analyses are simply used to identify patterns of growth—to identify relative shares that each area might get given the assumed overall population in the County in 2031 and the area's share of growth in the past.

Exhibit 1 shows historical population estimates for each UGA/Study Area in 1990, 2000, and 2008, as well as Comprehensive Plan allocations of growth from 2000 to 2022. The Study Areas are the same as those used in the 2002 ECONorthwest *Whatcom County Population and Economic Forecasts* study and 2004 County Comprehensive Plan. Aside from the Unincorporated Rural category, all Study Areas represent UGA boundaries that include both incorporated cities and the unincorporated portion of UGAs. The 1990, 2000, and 2022 estimates are drawn from the County Comprehensive Plan³ with slight adjustments to account for shifts in Study Area boundaries since adoption of the 2004 Plan. The 2008 estimate was developed using OFM estimates for incorporated cities and countywide building permit data between 2000 and 2008 for unincorporated areas, as described in the Berk & Associates November 25, 2008 proposed methodology memorandum. The Berk methodology was modified slightly to incorporate recent population estimates for the Bellingham UGA and the Columbia Valley UGA.⁴

Exhibit 1
Population Estimates by Study Area, 1990, 2000, 2008, and 2022

Study Area	Population Estimates				Population Growth			
	<i>Actual</i>	<i>Actual</i>	<i>Estimate</i>	<i>Policy-based</i>	<i>Actual</i>	<i>Estimate</i>	<i>Estimate</i>	<i>Policy-based</i>
	1990	2000	2008	Comp Plan 2022	1990-2000	2000-2008	1990-2008	Comp Plan 2000-2022
Bellingham	61,149	77,939	89,284	113,055	16,790	11,345	28,135	35,015
Birch Bay	2,254	4,503	5,292	9,619	2,249	789	3,038	5,116
Blaine	3,428	4,669	5,755	7,942	1,241	1,086	2,327	3,163
Columbia Valley	471	2,490	3,924	5,000	2,019	1,434	3,453	2,510
Everson	1,761	2,256	2,382	3,912	495	126	621	1,656
Ferndale	6,986	9,934	12,020	17,322	2,948	2,086	5,034	7,388
Lynden	6,442	9,593	11,613	16,900	3,151	2,020	5,171	7,296
Nooksack	616	895	1,137	1,881	279	242	521	986
Sumas	792	995	1,279	1,669	203	284	487	674
Unincorporated Rural	43,881	53,540	58,315	57,617	9,659	4,775	14,434	4,299
<i>LAMIRD Areas</i>	0	0	0	0	0	0	0	0
<i>Other Unincorporated Rural</i>	43,881	53,540	58,315	57,617	9,659	4,775	14,434	4,299
Total Whatcom County	127,780	166,814	191,000	234,917	39,034	24,186	63,220	68,103

Source: Berk & Associates and Whatcom County Comprehensive Plan, 2008; ECONorthwest *Whatcom County Population and Economic Forecasts*, 2002

Notes:

- 1990, 2000, and 2008 estimates are as of April 1 in each year.
- The LAMIRD Areas row is a placeholder for the Phase II allocation process, which may involve splitting rural population allocations between LAMIRDs and the rest of rural Whatcom County.
- Numbers in the "Policy-based" columns are drawn directly from the 2004 County Comprehensive Plan – subtractions between the 2022 and 2000 totals may not match those in the Comprehensive Plan due to small Study Area boundary adjustments.

³ The Columbia Valley and Birch Bay 1990 and 2000 estimates were drawn from the 2002 ECONorthwest *Whatcom County Population and Economic Forecasts* report because they were not included in the Comprehensive Plan.

⁴ The City of Bellingham provided a recent estimate of 2007 population in the unincorporated portion of its UGA. A 2006 estimate of population in the Columbia Valley UGA is included in the Draft Foothills Subarea Plan. Both of these estimates were used as inputs and were adjusted using recent building permit data to arrive at a 2008 population estimate.

Exhibit 2 shows the share of countywide population growth that was accommodated by each Study Area during each time period. The largest concentrations of growth within the County are in Bellingham and Rural Whatcom County. In terms of percentage share, Bellingham has seen its share of growth increase from 43.0% in the 1990s to 46.9% between 2000 and 2008. Rural Whatcom has seen the opposite trend, with its share of growth dropping from 24.7% to 19.7%. Other notable shifts in growth share include Birch Bay and Everson, which saw decreasing shares of growth, and Blaine and Ferndale, which saw increasing shares of growth.

In comparison to the final allocations used in the current County Comprehensive Plan, recent growth diverges primarily in the Bellingham and Rural Whatcom Study Areas. The Comprehensive Plan allocates a higher percentage of growth to Bellingham (51.4%) and much lower share to Rural Whatcom (6.3%). In general, the Comprehensive Plan allocates a higher share of population growth to the urban study areas instead of Rural Whatcom. These points of reference will be useful to consider when entering the Phase II allocation adjustment process.

Exhibit 2
Shares of Countywide Growth by Study Area

Study Area	Share of Population Growth			Policy-based Comp Plan 2000-2022
	Actual 1990-2000	Estimate 2000-2008	Estimate 1990-2008	
Bellingham	43.0%	46.9%	44.5%	51.4%
Birch Bay	5.8%	3.3%	4.8%	7.5%
Blaine	3.2%	4.5%	3.7%	4.6%
Columbia Valley	5.2%	5.9%	5.5%	3.7%
Everson	1.3%	0.5%	1.0%	2.4%
Ferndale	7.6%	8.6%	8.0%	10.8%
Lynden	8.1%	8.4%	8.2%	10.7%
Nooksack	0.7%	1.0%	0.8%	1.4%
Sumas	0.5%	1.2%	0.8%	1.0%
Unincorporated Rural	24.7%	19.7%	22.8%	6.3%
<i>LAMIRD Areas</i>	0.0%	0.0%	0.0%	0.0%
<i>Other Unincorporated Rural</i>	24.7%	19.7%	22.8%	6.3%
Total Whatcom County	100.0%	100.0%	100.0%	100.0%

Source: Berk & Associates and Whatcom County Comprehensive Plan, 2008; ECONorthwest *Whatcom County Population and Economic Forecasts*, 2002

Exhibit 3 shows the annual average population growth rate within each time period. With the exception of Sumas, the population in Whatcom County grew at a slower pace in all Study Areas over the past eight years than it did between 1990 and 2000.

Exhibit 3
Annual Average Population Growth Rates by Study Area

Study Area	Annual Average Population Growth Rate			
	<i>Actual</i>	<i>Estimate</i>	<i>Estimate</i>	<i>Policy-based</i>
	1990-2000	2000-2008	1990-2008	Comp Plan 2000-2022
Bellingham	2.5%	1.7%	2.1%	1.7%
Birch Bay	7.2%	2.0%	4.9%	3.5%
Blaine	3.1%	2.6%	2.9%	2.4%
Columbia Valley	18.1%	5.9%	12.5%	3.2%
Everson	2.5%	0.7%	1.7%	2.5%
Ferndale	3.6%	2.4%	3.1%	2.6%
Lynden	4.1%	2.4%	3.3%	2.6%
Nooksack	3.8%	3.0%	3.5%	3.4%
Sumas	2.3%	3.2%	2.7%	2.4%
Unincorporated Rural	2.0%	1.1%	1.6%	0.3%
<i>LAMIRD Areas</i>				
<i>Other Unincorporated Rural</i>	2.0%	1.1%	1.6%	0.3%
Total Whatcom County	2.7%	1.7%	2.3%	1.6%

Source: Berk & Associates and Whatcom County Comprehensive Plan, 2008; ECONorthwest *Whatcom County Population and Economic Forecasts*, 2002

Exhibit 4 shows the Phase I 2031 population estimates for each Study Area based on two different allocation scenarios: (1) the 1990-2008 share of growth (labeled *Historical Share Scenario*); and (2) the 2000-2022 share of growth projected in the 2004 County Comprehensive Plan (labeled *Current Comp Plan Scenario*). The 2031 allocations of population growth correspond to the percentage shares shown earlier in **Exhibit 2**.

Exhibit 4
2031 Population Allocation by Study Area, Under Different Growth Scenarios

Study Area	2008 Population	2031 Population		2008-2031 Pop. Growth	
		Historical Share Scenario	Current Comp Plan Scenario	Historical Share Scenario	Current Comp Plan Scenario
Bellingham	89,284	116,204	120,385	26,920	31,101
Birch Bay	5,292	8,199	9,836	2,907	4,545
Blaine	5,755	7,981	8,564	2,226	2,809
Columbia Valley	3,924	7,228	6,154	3,304	2,229
Everson	2,382	2,977	3,853	594	1,471
Ferndale	12,020	16,836	18,582	4,816	6,562
Lynden	11,613	16,560	18,093	4,948	6,480
Nooksack	1,137	1,635	2,012	498	876
Sumas	1,279	1,745	1,878	466	599
Unincorporated Rural	58,315	72,125	62,133	13,810	3,818
<i>LAMIRD Areas</i>	0	0	0	0	0
<i>Other Unincorp. Rural</i>	58,315	72,125	62,133	13,810	3,818
Total Whatcom County	191,000	251,490	251,490	60,490	60,490

Source: Berk & Associates, 2008

Exhibit 5 takes another look at the 2031 growth allocation scenarios from **Exhibit 4** and compares them to the 2022 growth allocation, as adopted in the 2004 County Comprehensive Plan. The goal of the exhibit is to identify the difference between the 2031 allocation scenarios and the 2022 population allocations already adopted in the Comprehensive Plan.

In cases where the difference between 2031 and 2022 allocations is positive, the Study Area is slated to accommodate additional population. In cases where the difference is negative, the Study Area is actually slated to accommodate less population by 2031 than already planned in 2022. In the Historical Share Scenario, the majority of values are negative because a large share of population is being allocated to Unincorporated Rural Whatcom, while the adopted policy-based 2022 rural allocation is much smaller. In fact, the 2022 rural allocation of 57,617 population has already been exceeded by 698 persons as of 2008 (estimated rural pop. 58,315).

Exhibit 5 **2031 Population Allocations Compared to 2022 Population Allocations**

Study Area	2022 Population Allocation (Current Comp Plan)	2031 Population		Difference 2031 Minus 2022	
		Historical Share Scenario	Current Comp Plan Scenario	Historical Share Scenario	Current Comp Plan Scenario
Bellingham	113,055	116,204	120,385	3,149	7,330
Birch Bay	9,619	8,199	9,836	-1,420	217
Blaine	7,942	7,981	8,564	39	622
Columbia Valley	5,000	7,228	6,154	2,228	1,154
Everson	3,912	2,977	3,853	-935	-59
Ferndale	17,322	16,836	18,582	-486	1,260
Lynden	16,900	16,560	18,093	-340	1,193
Nooksack	1,881	1,635	2,012	-246	131
Sumas	1,669	1,745	1,878	76	209
Unincorporated Rural	57,617	72,125	62,133	14,508	4,516
<i>LAMIRD Areas</i>	0	0	0	0	0
<i>Other Unincorp. Rural</i>	57,617	72,125	62,133	14,508	4,516
Total Whatcom County	234,917	251,490	251,490	16,573	16,573

Source: Berk & Associates, 2008

Exhibit 6
Annual Average Population Growth, 2008-2031, Under Different Growth Scenarios

Study Area	Annual Avg Population Growth Rate, 2008-2031	
	Historical Share Scenario	Current Comp Plan Scenario
Bellingham	1.2%	1.3%
Birch Bay	1.9%	2.7%
Blaine	1.4%	1.7%
Columbia Valley	2.7%	2.0%
Everson	1.0%	2.1%
Ferndale	1.5%	1.9%
Lynden	1.6%	1.9%
Nooksack	1.6%	2.5%
Sumas	1.4%	1.7%
Unincorporated Rural	0.9%	0.3%
<i>LAMIRD Areas</i>		
<i>Other Unincorporated Rural</i>	0.9%	0.3%
Total Whatcom County	1.2%	1.2%

Source: Berk & Associates, 2008

As a final point of reference, **Exhibit 6** shows the annual average growth rate between 2008 and 2031 projected under each allocation scenario. In general, almost all the growth rates projected in **Exhibit 6** are smaller than those experienced in recent years (shown earlier in **Exhibit 3**). This is due to the selected countywide population target of 251,490 reflecting a slower growth rate (1.2%) than experienced over the last eight years (1.7%) and in the 1990s (2.7%).

Employment Allocations

Allocations of employment growth by study area are based on the methodology outlined in the November 25, 2008 memorandum entitled *ALLOCATING COUNTYWIDE FORECASTS – Proposed Methods*.

The November 25 methods memo outlined an approach for employment allocations that sought to differentiate between regional and local employment. The memo proposed a method for using simple regression analysis to distinguish between regional employment (employment associated with commercial users who seek centralized locations to serve broader markets) and local employment (employment associated with commercial users whose location decisions are based on the distribution of population). This latter category might include local-serving commercial uses, retailers, industrial users, or small business owners who seek to locate their business close to where they live.

To augment the regional/local employment allocation, and to provide a point of comparison for some of the more challenging allocations of employment the method produces (particularly allocations of significant job growth to relatively rural areas like Columbia Valley), Berk & Associates also developed a simple allocation based on existing distributions of jobs among Study Areas. In the following discussion we first present results following this latter, existing-distribution approach, followed by results from the regional/local method.

Context: Thinking About Phase I Allocations as a Starting Point for Phase II Discussions

Ultimately, as is the case with Phase I population growth allocations, neither of the scenarios summarized below are likely to reflect the final numbers that will be determined during Phase II of the allocation process. Rather, these scenarios are intended to serve as context, to inform the Phase II work.

The best way to project commercial development in an area is to follow a three-step process:

1. Distinguish the principal categories of commercial activity (e.g. retail, office, industrial, and lodging);
2. Assess the long-term characteristics of *demand* for built space for each component; and
3. Assess the *supply* of potential sites that would be available to accommodate that demand, with an eye for the competitive position of sites in the planning area.

Uncertainty is inevitable, but a city that has undertaken a robust version of such analyses will have the best possible knowledge about the range of development scenarios that are possible. With this information in hand, it will be up to the city to assess its long-term goals and vision for the community, and ultimately, to form a plan.

Given the important role that commercial development plays in providing jobs, services and amenities, and a strong fiscal footing for the city in question, cities in most instances will formulate a plan that offers the city a chance to realize an optimistic development scenario. It is important to note, however, that many cities will not see their optimistic scenario come to fruition.

To see how this plays out, a simple example may be helpful:

Cities A, B, and C compete in a market that will support 1 million square feet of new retail space in the coming decade. Through their retail analyses, each city calculates that the most likely scenario is that they will capture one-third of that space (333,333 square feet), but under their optimistic scenarios they could capture half of the space (500,000 square feet).

Each city determines that it is in their best interest to capture the 500,000 square feet, so they ensure that plans are on the table to accommodate that amount of retail development.

In the above case, each city has made a decision that is in their best interest, and is perfectly rational, but the end result is that, as a whole, the cities are drawing up plans for more retail development than is likely to happen.

In light of the above discussion about how planning for commercial development often works, a handful of points emerge that are worth bearing in mind as stakeholders review the Phase I allocations summarized below:

- **More robust methods for projecting development are out there.** – Through a detailed analysis of supply and demand conditions, it is possible to develop robust projections of potential development scenarios. Such analyses are resource-intensive and would take much more time and budget than is available for a typical County comprehensive plan. However, if a city *has* invested the resources to develop such market analyses, one would expect that city to rely on those analyses as it approaches the discussions that will be part of Phase II of the allocation process.
- **Incentives exist for jurisdictions to make room for optimistic development scenarios.** – Given inherent uncertainty, and given the benefits that a city enjoys if an optimistic development scenario comes to pass, it is not surprising that cities will have an interest in drawing up plans that allow an optimistic development scenario to come to fruition. Since the countywide comprehensive planning process includes things like market factors, and since it requires that county's plan to accommodate 20 years of development on a 10-year cycle (never allowing the county to get within 10 years of running out of capacity), in effect, the planning process may be "building in" room to accommodate optimistic development scenarios. However, one should not be surprised if the sum of cities' optimistic development scenarios make room for more commercial development than the market is likely to see in any given period.
- **By its nature, a formulaic Phase I allocation seeks to allocate a given number of future jobs.** – Phase I allocations are designed to start with total forecasted employment growth. The goal is to allocate growth among UGAs in a way that ensures the sum of allocated growth. In effect, such allocations attempt to offer a perspective on a "most likely" growth scenario for each Study Area. It would not be surprising, therefore, if the Phase I allocations summarized below conflict with a given city's optimistic development scenarios.

Current Distribution of Jobs

As prescribed in the November 25 memo, at Berk & Associates request the Washington State Department of Employment Security (ESD) estimated 2008 employment levels for each of Whatcom County's Study Areas. In instances where ESD was forced to suppress data to address confidentiality issues, Berk & Associates relied on the U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) datasets to estimate suppressed jobs. **Exhibit 7** summarizes employment figures by Study Area, by major employment category. Note that these data do not add up to ESD's current estimate of non-agriculture wage and salary employment for Whatcom County as a whole (as offered

publicly and as summarized in **Exhibit 8**).⁵ However, job counts presented in **Exhibit 7** provide information about the current distribution of jobs in Whatcom County, offering context for allocations of future growth. These data served as the bases for development of Phase I allocations.

Exhibit 7
Estimates of 2008 Non-Ag Wage & Salary Employment by Study Area-
Based on ESD and LEHD Datasets

	Commercial	Retail	Industrial	Total
Bellingham	27,968	13,376	9,809	51,153
Birch Bay	309	91	37	436
Blaine	1,743	287	941	2,971
Cherry Point	200	-	982	1,182
Columbia Valley*	42	23	25	90
Everson	262	121	255	638
Ferndale	1,875	959	2,700	5,534
Lynden	2,289	1,292	1,251	4,832
Nooksack	19	57	131	206
Sumas	27	5	223	254
Unincorporated Rural	5,255	935	3,940	10,130
<i>LAMIRD</i>	NA	NA	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA	NA	NA
Total	39,987	17,145	20,293	77,426

Source: Washington State Employment Security Department estimates of employment by Study Area (suppressed) and U.S. Census Bureau LEHD data.

* Estimates of employment for the Columbia Valley UGA are based on Berk & Associates' analysis of the U.S. Census LEHD datasets. Estimates of Columbia Valley employment generated by the Employment Security Department appeared to be somewhat low (44 jobs), a figure that is below the estimate of UGA employment generated in the 2007 Foothills Subarea Economic Analysis estimate of 2005 employment. The LEHD-based estimate of 90 jobs is more consistent with the 2007 analysis and is consistent with job levels that were forecasted in the 2007 analysis.

⁵ This discrepancy is likely due to jobs for which ESD was unable to assign a specific location when responding to Berk & Associates request.

Allocable Employment

Based on the approach outlined in the November 25th memo, based on a review of ECONorthwest's 2002 *Whatcom County Population and Economic Forecasts*, and based on Berk & Associate's interpolation of Washington State Employment Security Department (ESD) estimated 2007 and forecasted 2009 employment, Berk estimates non-agricultural wage and salary (Non-Ag W&S) job growth of 33,909 jobs from 2008 to 2031 (**Exhibit 8**).⁶

Exhibit 8 Allocable Employment by Category

	Commercial	Retail	Industrial	Total
Forecasted Jobs 2031 (Non-Ag W&S)	61,350	23,953	33,455	118,759
Estimated Jobs 2008 (Non-Ag W&S)	43,828	18,772	22,250	84,850
New Jobs Added by 2031	17,522	5,181	11,205	33,909

Source: ECONorthwest 2002 medium forecasts of Whatcom County's countywide employment growth, Washington State Department of Employment Security estimates of 2007 and projected 2009 non-agricultural wage and salary employment by Major NAICS category, and Berk & Associates analysis.

Note: A difference exists between forecasted growth in Non-Ag W&S jobs in the exhibit above and forecasted *total* employment growth as summarized in previous discussions of countywide growth. This difference reflects differences between what ECONorthwest forecasted for shares of Non-Ag W&S jobs and shares that ESD currently reports.⁷

⁶ Non-agriculture wage and salary employment excludes employees in the agricultural sector and it excludes employees that are not covered by the Washington State Unemployment Insurance Act [self-employed workers, proprietors, CEOs, etc.]. In many instances, employment data that are reported by governmental agencies reflect so-called "covered" or "wage and salary" employment, and in many instances, data exclude agricultural employment as well. For planning purposes, employment discussions typically focus on non-agricultural employment, and they often focus on covered jobs as well under the rationale that the planning focus is based on employees at traditional workplaces.

⁷ ECONorthwest forecasts imply relatively small differences between total employment and Non-Ag W&S employment, while ESD current data suggest that Non-Ag W&S jobs reflect a smaller portion of total employment. Since we are using ESD data to estimate our base-year Non-Ag W&S employment and using extrapolations of ECONorthwest forecasts for 2031, calculated Non-Ag W&S job growth substantially exceeds total job growth in the county.

Allocations Based on Current Employment Patterns

Exhibit 9 summarizes job growth allocations based on the current pattern of job distribution. Again, this allocation reflects what job growth would look like if roughly 34,000 new jobs were distributed in the county in the same pattern as they are currently distributed. Under this allocation scheme, areas that currently have a very small share of jobs would expect to see a similarly small share of the job growth.

Exhibit 9
Job Growth Allocations Using Current Job Distribution

	Commercial	Retail	Industrial	Total
Bellingham	12,255	4,042	5,416	21,714
Birch Bay	135	27	20	183
Blaine	764	87	520	1,370
Cherry Point	88	-	542	630
Columbia Valley	18	7	14	39
Everson	115	37	141	292
Ferndale	822	290	1,491	2,602
Lynden	1,003	390	691	2,084
Nooksack	8	17	72	97
Sumas	12	1	123	136
Unincorporated Rural	2,303	283	2,176	4,761
<i>LAMIRD</i>	NA	NA	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA	NA	NA
Total	17,522	5,181	11,205	33,909

Source: Berk & Associates analysis of Washington State Employment Security Data, ECONorthwest 2002 medium, countywide employment forecasts, and U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) data.

Allocations Based on Distinctions between Regional and Local Employment

The alternative approach to allocating job growth (the approach outlined in the November 25 memo) distinguishes between regional and local employment growth. The regression analysis used two explanatory variables to explain distribution of commercial, retail, and industrial employment among the study areas: (1) area population; and (2) a dummy variable for regional jobs in areas that were candidates for regional centers. In effect, the analyst sought to insert estimates of regional jobs in a manner that produced a good fit between the explanatory variables and the distribution of jobs by category.

Exhibit 10 summarizes the allocations that result from the regional/local method. Compared with the allocation that is based on current-distribution, the regional/local distribution allocates (1) significantly less growth to unincorporated rural areas of Whatcom County; (2) less growth to Bellingham; and (3) somewhat more growth to most of the remaining UGAs.

This allocation method puts significantly more growth in areas like the Columbia Valley and Birch Bay—areas with relatively little commercial activity today but substantial expected population growth under 1990-2008 trend approach. Depending on one's perspective, allocating job growth to a place like Columbia Valley may or may not be appropriate. Presumably, these are the kinds of topics that will be addressed in the Phase II policy-based allocation process.

Note that, because this allocation is driven in part by population growth, if decision makers want to use this allocation approach as a reference for Phase II allocation discussions, the Regional/Local employment allocations should be re-run once final Phase II population allocations are complete.

As a final note, the Regional/Local allocation method generates lower employment allocations for the City of Everson when compared with the historical-share allocation above (151 jobs versus 292). In reality, the residuals in the equations suggest that Everson *could* be added to the list of regional employment centers in each of the regression formulas. Moreover, if one were to treat Everson as a regional employment center, Everson's allocation of jobs under the Regional/Local approach would probably increase to roughly 400.

Exhibit 10
Job Growth Allocations Based on Regional/Local Distinctions

	Commercial	Retail	Industrial	Total
Bellingham	11,897	4,051	5,240	21,188
Birch Bay	362	44	333	739
Blaine	847	94	587	1,527
Cherry Point	-	-	542	542
Columbia Valley	411	50	379	840
Everson	74	9	68	151
Ferndale	928	302	1,532	2,763
Lynden	1,164	410	830	2,404
Nooksack	62	7	57	127
Sumas	58	7	53	118
Unincorporated Rural	1,719	207	1,584	3,510
<i>LAMIRD</i>	NA	NA	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA	NA	NA
Total	17,522	5,181	11,205	33,909

Source: Berk & Associates analysis of Washington State Employment Security Data; Washington State Office of Financial Management; Whatcom County building permit data; ECONorthwest 2002 medium, countywide employment forecasts; and U.S. Census Bureau.

Note: Local employment allocations are based on population growth allocations derived using the 1990 to 2008 distribution of growth within Whatcom County. If the Comp Plan Update team wished to use population growth as an input to job growth allocations as part of Phase II of the allocation process, the team should use final population allocations as the input to job allocation.

Comparison of Allocation Results

Exhibits 11 through 14 provide comparisons of allocations under the two approaches summarized above. **Exhibit 11** compares the allocations of total employment growth while **Exhibits 12, 13, and 14** compare allocations for commercial, retail, and industrial employment, respectively.

Exhibit 11
Comparison of Allocation Results Under Alternative Approaches
Total Employment Growth

	Historical Shares Approach	Regional/Local Approach
Bellingham	21,714	21,188
Birch Bay	183	739
Blaine	1,370	1,527
Cherry Point	630	542
Columbia Valley	39	840
Everson	292	151
Ferndale	2,602	2,763
Lynden	2,084	2,404
Nooksack	97	127
Sumas	136	118
Unincorporated Rural	4,761	3,510
<i>LAMIRD</i>	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA
Total	33,909	33,909

Exhibit 12
Comparison of Allocation Results Under Alternative Approaches
Commercial Employment Growth

	Historical Shares Approach	Regional/Local Approach
Bellingham	12,255	11,897
Birch Bay	135	362
Blaine	764	847
Cherry Point	88	-
Columbia Valley	18	411
Everson	115	74
Ferndale	822	928
Lynden	1,003	1,164
Nooksack	8	62
Sumas	12	58
Unincorporated Rural	2,303	1,719
<i>LAMIRD</i>	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA
Total	17,522	17,522

Exhibit 13
Comparison of Allocation Results Under Alternative Approaches
Retail Employment Growth

	Historical Shares Approach	Regional/Local Approach
Bellingham	4,042	4,051
Birch Bay	27	44
Blaine	87	94
Cherry Point	-	-
Columbia Valley	7	50
Everson	37	9
Ferndale	290	302
Lynden	390	410
Nooksack	17	7
Sumas	1	7
Unincorporated Rural	283	207
<i>LAMIRD</i>	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA
Total	5,181	5,181

Exhibit 14
Comparison of Allocation Results Under Alternative Approaches
Industrial Employment Growth

	Historical Shares Approach	Regional/Local Approach
Bellingham	5,416	5,240
Birch Bay	20	333
Blaine	520	587
Cherry Point	542	542
Columbia Valley	14	379
Everson	141	68
Ferndale	1,491	1,532
Lynden	691	830
Nooksack	72	57
Sumas	123	53
Unincorporated Rural	2,176	1,584
<i>LAMIRD</i>	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA
Total	11,205	11,205

Details on the Regional/Local Share Estimates

This final section provides some additional detail on the regional/local allocation approach for interested readers.

Again, the approach that distinguishes regional and local employment follows methodology that was outlined in the November 25 memo discussing allocation methods. The regression analysis used two

explanatory variables to explain distribution of commercial, retail, and industrial employment among the study areas: (1) area population; and (2) a dummy variable for regional jobs in areas that were candidates for regional centers. In effect, the analyst sought to insert estimates of regional jobs in a manner that produced a good fit between the explanatory variables and the distribution of jobs by category.

If one runs ordinary least squares regression analyses using only population as the explanatory variable, one finds that variations in population “explain” anywhere from 63% to 75% of the variation in employment. Specifically, R-square results were 63% for retail employment and 75% for both industrial and commercial employment. By creating dummy variables for “regional” employment for Bellingham, Blaine, Ferndale, and Lynden, the fit of the regression formulas was improved to the point where more than 99.9% of the variation in retail and commercial employment could be explained by a combination of population and the regional dummy variable.

For industrial employment, getting a good fit proved to require a bit more tweaking. First, as a regional industrial center, Cherry Point was added as a fifth regional center in the industrial regressions. Second, in order to get to a better fit, regional employment dummy variables were added for the Bellingham and Ferndale UGAs. With these additions, the regression formula was improved to the point where 99.8% of industrial employment variation could be explained by the formula generated by the regression.

In each case, the goal was to include regional employment figures for individual study areas that, in effect, spoke for the portion of variation that was not well explained by the variations in population.

Exhibit 15 summarizes the final regional employment figures that were used in the regression analyses. These figures, and the number of regional jobs identified, were used to determine the share of employment in each category that could be characterized as regional in nature.

Exhibit 15
Regional Employment Figures Used in Regression Analyses

	Commercial	Retail	Industrial	Total
Bellingham	19,500	12,050	3,900	35,450
Birch Bay	-	-	-	-
Blaine	1,300	200	600	2,100
Cherry Point	-	-	982	982
Columbia Valley	-	-	-	-
Everson	-	-	-	-
Ferndale	750	760	1,775	3,285
Lynden	1,250	1,110	475	2,835
Nooksack	-	-	-	-
Sumas	-	-	-	-
Unincorporated Rural	-	-	-	-
<i>LAMIRD</i>	NA	NA	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA	NA	NA
Total	22,800	14,120	7,732	44,652

Using the regional/local splits, projected new jobs were allocated to each UGA and to the remaining unincorporated rural area of the county. Regional jobs were allocated based on the relative splits implied in **Exhibit 15**. Local jobs were allocated based on each UGA’s relative share of population

growth (using the 1990-2008 trend allocation scenario). Again, if decision makers wish to use the regional/local allocations to inform Phase II employment allocations, then the allocations should be updated once final Phase II population allocations are complete.

Exhibit 16 and **Exhibit 17** summarize the regional and local components of allocated job growth. Distributions of local employment shares are based on distributions of population (based on the allocation scenario that is driven by growth from 1990 to 2008). The linear relationship between population growth and employment growth in this approach explains why rural areas with very limited commercial activity (like the Columbia Valley area) are allocated significant shares of future job growth.

Exhibit 16
Regional Employment Shares Using Regional/Local Approach

	Commercial	Retail	Industrial	Total
Bellingham	8,545	3,648	2,153	14,346
Birch Bay	-	-	-	-
Blaine	570	61	331	961
Cherry Point	-	-	542	542
Columbia Valley	-	-	-	-
Everson	-	-	-	-
Femdale	329	230	980	1,539
Lynden	548	336	262	1,146
Nooksack	-	-	-	-
Sumas	-	-	-	-
Unincorporated Rural	-	-	-	-
<i>LAMIRD</i>	NA	NA	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA	NA	NA
Total	9,991	4,274	4,269	18,534

Source: Berk & Associates analysis of ESD data and current population estimates by study area as summarized above.

Exhibit 17
Local Employment Shares Using Regional/Local Approach

	Commercial	Retail	Industrial	Total
Bellingham	3,352	404	3,087	6,842
Birch Bay	362	44	333	739
Blaine	277	33	255	566
Cherry Point	-	-	-	-
Columbia Valley	411	50	379	840
Everson	74	9	68	151
Femdale	600	72	552	1,224
Lynden	616	74	567	1,258
Nooksack	62	7	57	127
Sumas	58	7	53	118
Unincorporated Rural	1,719	207	1,584	3,510
<i>LAMIRD</i>	NA	NA	NA	NA
<i>Other Unincorporated Rural</i>	NA	NA	NA	NA
Total	7,531	907	6,936	15,374

Source: Berk & Associates analysis of ESD data and current population estimates by study area as summarized above.