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MEMORANDUM

DATE: **October 29, 2008**

TO: **Whatcom County Comprehensive Planning Team**

FROM: **Brett Sheckler and Kapena Pflum, Berk & Associates**

RE: **SUMMARY OF PROPOSED METHODS: DEMAND ALLOCATION AND LAND CAPACITY ANALYSES**

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 (1) allocating countywide forecasts to planning areas within the county, (2) translating allocated forecasts to demand for developable land, and (3) calculating current land capacity in each of Whatcom County's planning areas. 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.

This memorandum is a high-level executive summary of the proposed methodologies for population and employment allocation, land demand, and land capacity analyses. More detailed descriptions of the methodologies and technical analysis can be found in the two memoranda included in your meeting packets entitled *Allocating Countywide Forecasts – Proposed Methods* and *Land Capacity Analysis – Proposed Methods*.

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ALLOCATION OF ANTICIPATED GROWTH TO PLANNING AREAS

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

1. Perform a technical, 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 technical 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 latter step 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 goal of the technical allocation will be to capture and reflect historic trends in study area growth and to model a world in which those trends were to continue. The analysis will focus on trends in population growth, trends in regional employment growth, and the potential for local-serving commercial activity to seek locations that coincide with where people are expected to live.

In broad terms, the goal of the algorithm-based growth allocation process is to reflect the connections that exist between where people work and where they live, and to recognize the factors that businesses consider when making location decisions:

- Access to markets for their goods and services;
- Access to factors of production, including access to labor pools and production supplies; and
- The suitability of potential sites, including the cost of their physical plant.

LAND CAPACITY ANALYSIS

The objective of Whatcom County's land capacity analysis is to quantify the amount of land available to accommodate future development over the 20-year planning period. The proposed methodology includes the following major elements, which are also outlined graphically in the schematic handout titled *Land Demand and Land Capacity Analysis Methodology*.

Land Supply Analysis

1. **Determine Gross Buildable Land Inventory.** The first step in calculating land supply is to identify the parcels within each jurisdiction that have the potential to accommodate future residential or commercial/industrial development. This process will be conducted using a geographic information systems (GIS) based approach and thresholds agreed upon by the Technical Advisory Group (TAG). Listed below are the three types of parcels that will be considered buildable:
   - Vacant parcels – Parcels with little or no buildings or improvements on them.
   - Partially-used parcels – A partially-used parcel is one that is large enough that it is possible to further subdivide the lot to allow for additional development. For single-family residential parcels, these are parcels with lot sizes two to three times larger than the minimum lot size allowed under zoning. Partially-used commercial/industrial parcels have a different floor-area-ratio (FAR) based threshold.
   - Under-utilized multifamily and commercial/industrial parcels – Under-utilized parcels are those with sub-optimal existing uses that have the potential to be replaced during the planning period with higher quality and higher density development. Two types of parcels can be considered under-utilized: 1) multifamily and commercial/industrial parcels currently occupied by single-family uses and 2) parcels where the ratio between improvement value and land value is less than 1.0.
2. **Make Deductions for Critical Areas, Public Uses, and a Market Factor.** The next step is to remove all unbuildable land from the gross buildable land inventory. A series of deductions are taken for the following types of unbuildable land:
   - Sensitive Environmental Areas – Wetlands, steep slopes, and floodplains. The deductions will be made using GIS and sensitive areas data from the County and local jurisdictions.
   - Rights-of-way (ROW) – A deduction for future rights-of-way based on average ROW area observed in the analysis of recent development history (described in the next section).
   - Future Public Uses – Stormwater infrastructure, future schools, fire and police stations, other municipal uses. Deduction to be based on a combination of manual parcel removal of acreage purchased or master planned for public uses, and an average percentage deduction on the entire inventory.
   - Market Factor – The market factor is a deduction meant to account for the amount of land not expected to be available for development over the planning period. This deduction will be taken as an assumed percentage deduction. The factor will be lower for vacant parcels, which are most likely to experience development pressure, and higher for partially-used

and under-utilized parcels. Different market factors will also be used for residential and commercial/industrial parcels. Variation in market factors will remain within reasonable ranges similar to those used in other Washington counties.

3. **Convert Land Inventory into Population and Employment Capacity.** The final step in the land supply analysis is to convert the buildable land inventory (in acres) into population and employment capacity. A series of conversion factors are used to make these calculations including: net assumed densities of future development (described below), average household size, and non-resident vacancy rates. The final product is an estimate of the number of people and employees that can be accommodated in each UGA on buildable land.

Development Density Assumptions

1. **Analysis of Recent Development History.** The past five years of development activity (both plats and permits) is used to determine actual net achieved densities of development on both residential and commercial/industrial land. These densities, expressed as dwelling units (DUs) per acre or floor area ratios provide one input in determining assumed densities for future development. Ongoing tracking (monitoring) of achieved densities, will provide useful performance measures of jurisdictions' implementation of GMA and comprehensive planning policies.

   The analysis of recent development will also yield important information on average amounts of land required for ROWs, stormwater infrastructure, and other public uses. These averages will be used in the deductions step of the Land Supply Analysis described above.

2. **Determine Assumed Densities.** For each zone and planned land use designation, jurisdictions will develop assumed densities to be used in the Land Supply Analysis. These assumptions are meant be reasonable estimates of densities to expect over the long-term planning period. Assumed densities will only be used for the purposes of the LCA and will not be used to guide or influence other County or local land use policy decisions.

   In determining assumed densities, jurisdictions will consider the following range of inputs: recent achieved densities; County and city land use goals and policies; local knowledge of development plans and pipeline development; and any other local market or policy conditions that are likely to impact future development densities. The County will work with city staff to ensure that reasonable assumed densities are developed.

Final Land Capacity Evaluation

1. **Compare Final Population and Employment Allocation to Land Capacity.** The final step in the process is to take the population and employment capacities in each jurisdiction and compare them to the population and employment allocations. This step should highlight the areas within the County where excess or insufficient buildable land capacity is an issue. These findings will support the growth alternatives discussion and ultimately inform UGA boundary decisions.

Key Methodology Issues

Roles and Responsibilities

A fundamental issue for the Land Capacity Analysis is determining the roles and responsibilities for Whatcom County and local cities and jurisdictions. The proposed methodology has the County taking on a central role in the technical analysis, particularly in the GIS-based tasks of developing the gross buildable land inventory and making critical area and public use deductions. The cities and local jurisdictions will provide development data (plats and permits) to the County and will provide local review of all results throughout the process. Local jurisdictions will also play an important role in developing reasonable assumed density assumptions for different zones, drawing upon their knowledge of local plans, market trends, and recent development patterns.

One of the overarching goals of the proposed split in roles and responsibilities is to ensure consistency in the methodology while still allowing enough flexibility to account for variation in circumstances between local jurisdictions.

Timeline

The land capacity analysis and all local jurisdiction review must be completed by January 2009 under the current project schedule. This is a very aggressive schedule so establishing common understanding and cooperation between the County and local jurisdictions on methodology and assumptions is necessary.

LAND DEMAND AND LAND CAPACITY ANALYSIS METHODOLOGY

Land Demand and Land Capacity Analysis Objectives

- **Allocate countywide forecasts of population and employment to planning subareas within the county**
- **Convert allocations of population and employment into demand for developable land**
- **Estimate available land capacity to accommodate future development**
- **Establish framework to compare future land demand with land supply and provide inputs needed to support UGA boundary and growth alternatives discussions**
- **Assess recent development patterns and create process to allow for ongoing monitoring**

Land Supply Analysis

Determine Gross Buildable Land Inventory

Identify vacant, partially-used, and under-utilized parcels using TAG approved thresholds and a rigorous GIS-based methodology.

(Gross acres by parcel)

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Deduct Critical Areas and Public Uses

- Remove wetlands, steep slopes, and floodplains
- Remove rights of way and other public uses such as stormwater infrastructure, future schools, fire and police stations

(Deduct using GIS, manual removal, and percentage deduction)

→

Market Factor Deduction

Remove a share of inventory to account for land not available for development during planning period. Use reasonable market factors comparable to other counties.

(Deduct using percentage deduction)

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Local Jurisdiction Consultation

Consultation with local jurisdictions to double check buildable parcel designations and deductions.

County will produce maps and tabular data to support discussions

→

Net Buildable Land Inventory

Final inventory of buildable land expected to be available to accommodate development over the planning period.

(Net acres by parcel by zone)

Determine Other Conversion Factors

In addition to density assumptions, use a range of technical analysis and consultation with County and jurisdiction staff to determine other conversion factors such as average household sizes and non-resident vacancy rates.

Observed rights of way and public uses used as input for some deductions

Development Density Assumptions

Net Achieved Densities

Analysis of past five years of plat and permit activity in all jurisdictions.

(DUs per net acre; net Floor Area Ratios)

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Local Jurisdiction Consultation

Consultation with local jurisdictions on reasonable densities to expect over planning period taking into account achieved densities and local plans.

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Net Assumed Densities

Final assumptions about expected densities in each planned land use designation

(DUs per net acre; net Floor Area Ratios; employment per acre)

→

Net Population and Employment Capacity

Use assumed densities and other factors to convert buildable land inventory into population and employment capacity

(persons- and employee-capacity by UGA)

Land supply is one input into constraint discussions

Land Demand Analysis

Countywide Growth Forecast

Initial countywide forecasts of population and employment are a starting input and driver of future land demand.

(Projected countywide population and employment)

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Technical Allocation

Allocate growth based on historic trends, recognizing distinctions between regional and local-serving commercial uses.

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Interjurisdictional Discussions

View and revise technical allocations based on potential land supply constraints, other real-world constraints, community vision, and other extenuating circumstances

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Land Demand Projection

Final land demand estimates for each jurisdiction.

(Final population and employment allocation by UGA)

Compare

Final Evaluation

COMPARE DEMAND TO CAPACITY

Final comparison of allocated demand and land capacity to inform UGA boundary and growth alternatives discussions