



**CITY OF BLACK DIAMOND**  
**February 19, 2015 Special Meeting Agenda**  
25510 Lawson St., Black Diamond, Washington

**6:00 P.M. – CALL TO ORDER, FLAG SALUTE, ROLL CALL**

**1) Work Session** – Comprehensive Plan Update - Mr. Nix

**ADJOURNMENT:**



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## DRAFT MEMORANDUM

**DATE:** January 3, 2015

**TO:** City of Black Diamond

**FROM:** Meagan Powers and Reah Fliskowski, DKS Associates

**SUBJECT:** City of Black Diamond Travel Demand Model Update  
Methods and Assumptions

P#14218-000

### Project Description

This memorandum documents the methods and assumptions that will be used in updating the City of Black Diamond's travel demand model to support the update of the City's comprehensive plan. DKS Associates (as a sub to BergerABAM) will update the City of Black Diamond's existing travel demand model to reflect the current and future level of development that is programmed to be in place by 2035 within the City of Black Diamond. To support this work, DKS will coordinate with the Puget Sound Regional Council (PSRC) to update the regional travel demand model to reflect the programmed development within the City of Black Diamond. DKS will then utilize the trip tables produced by PSRC to update the City's travel demand model and assign vehicular trips to the surrounding street network and assess traffic operations with respect to adopted concurrency standards. This forecasting methodology was developed in conjunction with input from PSRC, which is the governing Metropolitan Planning Organization (MPO) of which the City of Black Diamond is a member jurisdiction.

### Operations Analysis Tools

The following tools will be used in this project:

- **EMME:** PSRC will modify the regional travel demand model to reflect the City of Black Diamond traffic analysis zones (TAZ). DKS will work with the City to provide PSRC with the level of development (in terms of households and employment) within each Black Diamond TAZ for existing and 2035 conditions, and PSRC will program those land use assumptions into the regional model and provide DKS with trip tables for the City of Black Diamond TAZs.
- **VISUM:** The City of Black Diamond's existing Visum travel demand model will be updated to reflect current conditions within the City with respect to vehicular trips and current roadway and intersection geometry. The Visum model will be used to assign future traffic volumes to the City of Black Diamond roadways that reflect the planned growth in number of households and jobs within the City and surrounding areas.
- **Synchro:** The City of Black Diamond's existing Synchro models will be updated to reflect 2015 turning movement counts and signal timing data for all of the signalized intersections within the City of Black

Diamond. The Synchro model will be used to evaluate intersection operations for both the existing and future conditions against the City's adopted level of service standards.

## Study Area

Figure 1 shows the extents of the City of Black Diamonds travel demand model (shaded in green) that will be updated as a part of this project. Each of the City's 56 TAZs is shown by its representative number in Figure 1.

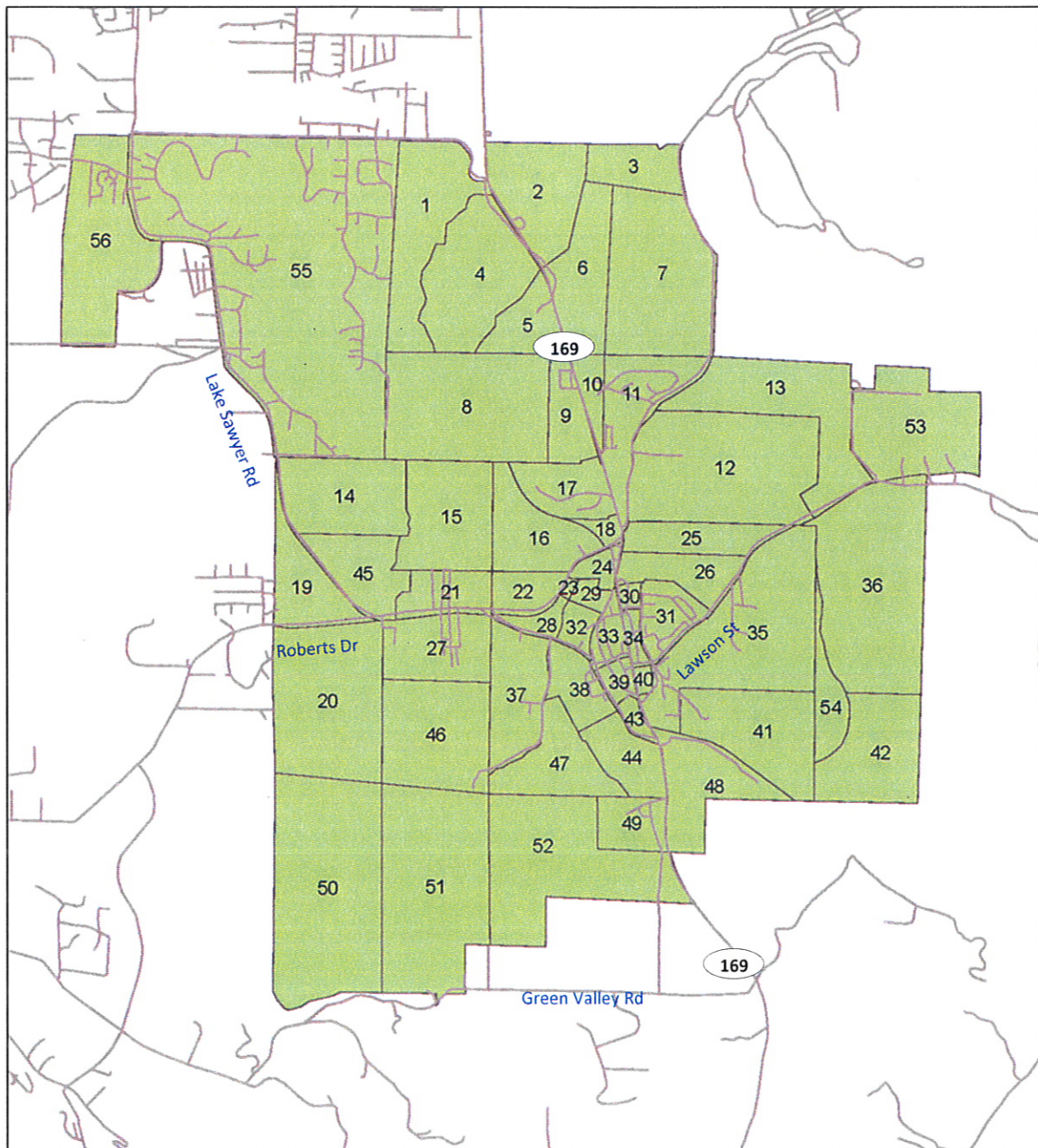


Figure 1: City of Black Diamond Travel Demand Model Update Study Area

## Analysis Years/Periods

Visum models for the PM peak hour will be developed for the following conditions:

- Existing Conditions 2015
- Future Year Baseline 2035
- Future Year with Concurrency Projects 2035

## Data Collection

The data to be collected to update and calibrate the existing year Visum model is summarized below:

- **Land Use Forecasts:** DKS will obtain the 2010 land use data from PSRC and will coordinate with the City and PSRC to refine the existing land use assumptions (number of households and employment) in the PSRC regional model for the areas representing the City of Black Diamond TAZs shown in Figure 1. PSRC will then run the regional model for the existing conditions and provide trip tables corresponding to the City of Black Diamond TAZs for input into the City's model.
- **Roadway Geometric Data:** The City will provide summaries of the roadway facility type, number of lanes, speeds, and type of traffic control at intersections within the City of Black Diamond from the last transportation element plan. The City will also provide DKS with a summary of the changes that have been implemented with respect to the roadway network since the last transportation plan was completed.
- **Traffic Volume Data:** DKS will utilize current intersection turning movement count data provided by the City of Black Diamond for all concurrency intersections within the City.
- **Funded Project Lists:** The City will provide DKS with a list of funded capital improvement projects within the City of Black Diamond based on the City's adopted capital improvement project list. DKS will also utilize a PSRC's *Transportation 2040* constrained project list to identify future projects for state routes and/or regional facilities within the City of Black Diamond.

## Methodology

DKS will update the City's existing travel demand model to reflect 2015 land use and roadway network conditions. The land use forecasts from PSRC are associated with larger traffic analysis zones than are currently reflected within the City of Black Diamond travel demand model. Therefore, DKS will work with the City staff to disaggregate the land use data from PSRC into the areas represented by the smaller City of Black Diamond TAZs based on the City's knowledge of current land use within the City. DKS will also review the roadway network within the existing City of Black Diamond travel demand model and update the roadway network to reflect existing number of lanes, capacities, speeds and intersection control type. The updated travel demand model will be calibrated to the 2015 traffic counts provided by the City.

DKS will also update the City of Black Diamond Synchro model to reflect the current roadway geometry, intersection turning movement counts and signal timing. The Synchro model will be used to evaluate the existing intersection level of service (LOS) for comparison against the future baseline conditions.



Once the 2015 existing conditions model is established, DKS will develop a 2035 Baseline condition model. The 2035 Baseline conditions will be based on the PSRC 2035 Land Use Targets for all areas external to the City of Black Diamond, and will be refined to include all growth identified in the Developer Agreements with Yarrow Bay as well as any other permitted development that would occur within the City of Black Diamond. DKS will summarize the land use changes within the City of Black Diamond and will provide land use assumptions for each Black Diamond TAZ to PSRC. PSRC will program the planned growth within the City of Black Diamond into the regional travel demand model and produce updated trip tables reflecting the vehicular trips associated with the future land use assumptions. The updated trip tables will be provided to DKS, and will be programmed into the City's Visum model. The 2035 Baseline conditions model will also be updated to reflect funded roadway improvement projects that will be constructed by 2035.

Once the 2035 Baseline model is established, DKS will use the model to forecast intersection turning movement counts at each of the City's signalized intersections (per NCHRP 765 methodology). The traffic forecasts will be entered into the Synchro model, which will be used to document the LOS in the future baseline conditions. The LOS will be compared against the City's adopted LOS standard for signalized intersection (LOS D for intersections on SR 169 and LOS C for all other intersections within the City). If all intersections operate at or above the City's adopted LOS standard then no additional work is required per concurrency.

If the future LOS will not meet the City's adopted LOS standards for one or more intersections, then DKS will work with City staff to identify future projects that will result in improved LOS standards. Projects may include, but are not limited to, roadway widening, signal timing changes, and addition of new roadway links that result in diversion away from facilities that are projected to be over capacity in the future. The planned improvement projects will be coded into the travel demand model and new forecasts will then be developed reflecting the inclusion of projects added for concurrency. The forecasts will be entered into Synchro, which will be used to document that the LOS in the future conditions with project improvements results in LOS that meets the City's adopted concurrency requirements.

## **Assumptions**

- Level of Service standards reflected in the City's 2009 Transportation Element will be used for the evaluation of the transportation network. Therefore intersection LOS will be documented for the following ten (10) intersections the 2014, 2035 Baseline and 2035 with Projects conditions:
  - SE 288<sup>th</sup> St/232<sup>nd</sup> Ave SE
  - Covington-Sawyer Rd/216<sup>th</sup> Ave SE
  - 216<sup>th</sup> Ave SE/219 Ave SE
  - Black Diamond Ravensdale Rd/SR 169
  - Roberts Dr/SR 169
  - Baker St/SR 169
  - Baker St/Railroad Ave
  - Lawson St/SR 169
  - Railroad Ave/SR 169
  - SE 288<sup>th</sup> St/216<sup>th</sup> Ave SE

- City of Black Diamond will provide PM peak hour intersection turning movement counts for all ten concurrency intersections within the City.
- City will provide summaries of roadway network improvement that have occurred since last model update.
- City will work with DKS to disaggregate PSRC land use data to City of Black Diamond TAZs based on the City's knowledge of current development.
- DKS will use PSRC Land Use Target as the basis for forecasts for 2035 conditions for all areas outside the City of Black Diamond. DKS will work with PSRC to reflect all planned growth from the Yarrow Bay Developer Agreements as well as permitted projects within the City for all areas internal to the City of Black Diamond.
- City will provide list of funded CIP projects for inclusion in 2035 baseline conditions model. DKS will obtain PSRC *Transportation 2040* constrained project list and reflect those projects within the 2035 travel demand models.

## Memorandum

Date: February 11, 2015

Subject: Methods and Assumptions for Comprehensive Plan Update

From: Don Hardy, Senior Project Manager/Planning Team Lead  
Ethan Spoo, Senior Planner

To: Aaron Nix, City of Black Diamond Community Development and Natural Resources Director

Route to: Reah Flisakowski, Senior Project Manager, DKS Associates  
Meagan Powers, Senior Associate Engineer, DKS Associates  
Dan Shafar, Project Engineer, BergerABAM  
Dan Johnston, Project Engineer, BergerABAM

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### PURPOSE

This memorandum documents the assumptions and methods BergerABAM will use to update the City of Black Diamond's comprehensive plan as required by the Growth Management Act (GMA). A separate memorandum from DKS documenting the methods and assumptions they will use is Attachment A. These two memorandums are intended to help City staff and the BergerABAM team develop a mutual understanding of the basic approach to the project. This understanding will serve as the foundation of subsequent deliverables and tasks. It is key, therefore, for the City to review these two memorandums and confirm the approach before the consulting team drafts the comprehensive plan update.

### BACKGROUND METHODOLOGY AND ASSUMPTIONS

#### Growth Management Act

GMA requires the City to update its comprehensive plan once every seven years; it also requires that the plan and development regulations be internally consistent, including using the same population and employment forecasts for all plan elements. In addition, GMA requires each local comprehensive plan to address the existing and future demand for land use, housing, utilities, capital facilities, transportation, shoreline, and essential public facilities.

### **Puget Sound Regional Council and Vision 2040**

The Puget Sound Regional Council (PSRC) adopted Vision 2040 in April 2008. Vision 2040 is a plan for accommodating an expected population of 5 million residents by the year 2040 in the Puget Sound region. As the region's metropolitan planning organization, PSRC certifies that local comprehensive plans comply with Vision 2040 for purposes of distributing federal transportation funds. Black Diamond will seek PSRC certification of its comprehensive plan in the 2016 update process.

PSRC has two forecast products to assist local jurisdictions in updating their comprehensive plans: (1) the land use targets forecast ("target forecast") and (2) the land use baseline forecast ("baseline forecast"). There are some key differences in these models, which are described in detail in the attached PSRC document (see Attachment B). The target forecast allocates King County growth targets to the transportation analysis zones (TAZs), forecast analysis zone (FAZ), and Census tracts. The target forecast is the only forecast which has a 2035 horizon year – the same horizon year as Black Diamond's comprehensive plan.

**Table 1 . Comparison of PSRC Forecasts, Yarrow Bay Buildout Capacities, and King County Growth Targets**

<b>Forecast</b>	<b>Population</b>	<b>Households</b>	<b>Jobs</b>
PSRC Land Use Targets Forecast 2035	9,159 (5,006 net new)	3,643 (2,096 new new)	2,073 (1,500 net new)
PSRC Land Use Baseline Forecast 2040	17,661 (13,508 net new)	6,991 (5,444 net new)	4,253 (3,680 net new)
Yarrow Bay Development (buildout 2026)	N/A	5,000	1,980
King County 2031 Growth Targets	N/A	1,900 (net new households)	1,050 (net new jobs)

As shown in Table 1, the land use targets forecast significantly underestimates Black Diamond's 2035 population and households. The Yarrow Bay developments, which have an anticipated buildout year of 2026, will add 5,000 households to Black Diamond alone. Local jurisdictions –, including Black Diamond's neighbor, Covington – commonly use the land use targets forecast to update their comprehensive plans. It is important to use the same projection as neighboring jurisdictions to help calibrate adequate public facilities.

As part of the PSRC plan certification process, cities are required to demonstrate compliance with the Regional Growth Strategy, which is a part of Vision 2040. The strategy allocates target



population, households, and jobs to each jurisdiction in the three-county Puget Sound region. The allocations contained in the regional growth strategy are consistent with Washington Office of Financial Management GMA county forecasts, as well as the King County growth targets. However, based on the Yarrow Bay developments as discussed above, the regional growth strategy (which includes the Land Use Targets Forecast) underestimates the likely future population and number of households in Black Diamond.

The consulting team had preliminary discussions with PSRC about possible solutions to the underestimates. As a solution, PSRC has agreed to revise its land use targets forecast to include the Yarrow Bay developments by incorporating information on population and households from the Yarrow Bay traffic studies. Multiple parts of the comprehensive plan, including the land use, housing, utilities, and capital facilities chapters, rely on the population and employment forecasts. For this reason, PSRC will need to complete its work on updating its target forecast before the consulting team can update relevant chapters of the comprehensive plan.

### **King County Growth Targets and Countywide Planning Policies**

King County adopted revised countywide planning policies (CWPPs) in 2012, as required by GMA. BergerABAM will develop a statement of consistency with CWPPs for the comprehensive plan.

The CWPPs contain household and population minimum targets for each County jurisdiction (including Black Diamond) for 2031, as shown in Table 1 above.

Because the King County growth targets extend only until 2031, the City will need to use King County's "Technical Memo on Growth Targets Extension" to extend the targets to 2035. This extension is according to conversations with County staff,<sup>1</sup> who state that the King County growth targets are consistent with the PSRC Vision 2040 target forecast and the Washington Office of Financial Management GMA county projections. After the City extends the King County growth targets, BergerABAM will compare them to the revised PSRC land use target forecast.

### **2009 Black Diamond Comprehensive Plan and Vision**

The City last completed a major update to its comprehensive plan in 2009. That update used population projections for the period 2006–2025 and assumed that the City would have 16,980 residents and 3,147 jobs by 2025. Some of the key assumptions in the 2009 plan update were that the Yarrow Bay master plans (The Villages and Lawson Hills) would accommodate 5,000 housing units and 1,980 jobs. At that time, the City had a moratorium in place for subdivisions and master planned developments while the City updated its comprehensive plan and

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<sup>1</sup> Personal communications with King County Demographer Chandler Felt (December 16, 2014) and PSRC Associate Planner Yorik Stevens-Wajda (December 18, 2014).

development regulations to accommodate anticipated growth. The moratorium was lifted on June 18, 2009.<sup>2</sup>

The Yarrow Bay development agreements (Ords. 11-970 and 11-971) approved in 2011, after the 2009 comprehensive plan update, proposed a total of 6,050 new housing units and 1,165,000 square feet of commercial floor area, more than projected in the 2009 update (see Table 1). Therefore, the 2016 comprehensive plan update needs to factor in the additional housing units and commercial floor area approved as part of the 2011 development agreements.

For the reasons stated above, one of the foundational assumptions of the 2016 comprehensive plan update is that the vision expressed in the 2009 update, which takes into account Yarrow Bay development and build-out, will carry forward in the 2016 update with modifications to account for the build-out assumptions captured in the development agreements from 2011.

## **COMPREHENSIVE PLAN UPDATE METHODOLOGY**

### **Early Agency Coordination**

Given the underestimate of population and households in PSRC's target forecast, it will be important to coordinate early with PSRC and the County regarding the population and employment the City should accommodate in its comprehensive plan. In addition, Vision 2040 and GMA both encourage early interagency coordination. BergerABAM suggests updating this memorandum once the revised PSRC target forecasts are received and then sending it to PSRC for review and concurrence; this process is anticipated to be completed in February/March 2015.

### **Document Outline**

BergerABAM developed an outline for a comprehensive plan document. The outline is a blueprint for the comprehensive plan. To prepare the outline, BergerABAM reviewed the Department of Commerce and PSRC comprehensive plan update checklists, identified gaps in the current comprehensive plan document, and inserted new sections and made notes to address the gaps. The City and the consulting team will work together prior to document production to review the outline and make adjustments, as necessary, to reflect the City's preferences for the organization of the comprehensive plan. Once the outline has been finalized, document production can begin.

### **Document Production**

#### **Chapter 1: Framework**

BergerABAM will create a "Framework" chapter that accomplishes the following:

- Vision: lays out the vision for Black Diamond in year 2035. The vision from 2009 for year 2025 is assumed to extend, with minor adjustments, to 2035.
- PSRC/County Consistency: As required, states the consistency of the update with PSRC Vision 2040 and King County CWPPs. The current comprehensive plan is missing a

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<sup>2</sup> Black Diamond Ordinance 09-913.

Vision 2040 consistency statement and the CWPP consistency statement needs to reflect the 2012 update to the CWPPs.

- Comprehensive Plan Overview: Highlights features of the comprehensive plan and provides a brief outline of the remainder of the document.

## **Chapter 2: Urban Growth Area**

This chapter is not included in BergerABAM's scope of work and will be updated by City staff.

## **Chapter 3: Population and Employment Character**

BergerABAM will write the population and employment character chapter using the revised population and employment land use targets forecast provided by PSRC. The chapter will be divided into two major sections: (1) existing conditions and (2) future conditions. BergerABAM will update the following data/sections in this chapter consistent with most recent information from the Census, PSRC, and Washington Employment Security Department:

- Existing Conditions
  - Synopsizes the existing population and employment characteristics of the City
  - Includes updates of the following population characteristics: historic and current population totals, as well as gender, age, education, ethnicity, and income breakdowns
  - Assesses the following employment characteristics: job sectors, jobs/housing balance, and unemployment
- Future Conditions
  - Uses the revised land use targets forecast from PSRC to summarize year 2035 population and employment for Black Diamond. Population and employment forecasts will form the basis for the land use, transportation, utilities, and capital facilities chapters.
  - Population forecast: PSRC will provide a revised year 2035 land use targets forecast for population incorporating the buildout of Yarrow Bay developments.
  - Employment forecast: PSRC will provide a revised year 2035 land use targets forecast for employment incorporating the build out of Yarrow Bay developments.

## **Chapter 4: Natural Environment**

BergerABAM will update the natural environment chapter of the comprehensive plan based on the most current information available regarding the location and mapping of sensitive areas (wetlands, flood hazards, geologically hazardous areas, habitat areas, aquifer recharge areas, coal mine hazards) and other natural features. Please note that changes to the natural environment chapter are expected to be relatively minor and focused on condensing the lengthy descriptions of natural features at the beginning of the chapter. This chapter will include the following components:

- Inventory: Natural features will be inventoried and listed, with short descriptions. BergerABAM assumes that there will be only minor updates to the inventory. Sensitive areas will be distinguished from other natural features. The City will provide updated

maps for the above-noted sensitive areas. BergerABAM will update Appendix A “Wetlands and Streams of Black Diamond and Their Preliminary Classification” to reflect more current Department of Natural Resources information on wetland and stream typing. A new section will be added describing native vegetation areas as required by Vision 2040.

- **Goals and Policies:** Goals and policies in this chapter will be updated to reflect current information on critical areas. Goals and policies will be adjusted to reflect current critical areas mapping, best available science, and public input, but wholesale changes and reorganization of the natural environment chapter are not expected. New policies will be added addressing native vegetation preservation as required by Vision 2040; it will be important to recognize that existing land approvals will need to be factored into the assessment.

## **Chapter 5: Land Use**

The BergerABAM team will update the land use chapter. Updates will include:

- **Condensed Description of Existing Land Uses:** An updated table listing the acreage of land uses by plan and zone category, based on data and mapping provided by the City, including for vacant and underutilized land as required by Vision 2040.
- **Community Design and Character:** Design principles for small towns will be condensed from the existing plan, or deleted entirely, based on the City’s preference. Unless the City plans on using the design principles to create guidelines or a form-based code, BergerABAM recommends deleting these lengthy descriptions and associated policies. Policies that must be kept for Vision 2040/GMA compliance can be moved to the “Overall Policies” section of the chapter.
- **Future Land Use:** BergerABAM assumes that there will be no new plan designations or changes to existing designations and that the City will provide an updated future land use map.
- **Population Densities and Building Intensities:** As required by GMA and using the population and employment projections from Chapter 3, BergerABAM will assess the capacity of land within Black Diamond’s UGA to accommodate 20-year growth forecasts. Population and jobs in the revised land use targets forecast will be converted to housing units and commercial/industrial square footage respectively. Vacancy will be factored into the model. BergerABAM assumes the City will provide us with information on the amount of vacant land by land use category to complete this analysis. BergerABAM will verify that capacity exceeds Vision 2040 and King County targets.
- **Shoreline Master Program:** The City will complete this section by referencing the recently adopted shoreline management program and/or will include goals and policies in this section.
- **Land Use Goals, Objectives, Policies, and Concepts:** This section will be kept, with few changes. Policies will be updated, as necessary, based on public input. BergerABAM

recommends pairing down the community design and character concept into defined policies.

### **Chapter 6: Housing**

BergerABAM will update the housing chapter. Our updates will include:

- Regional and County Policy Overview: We will describe the regional affordable housing policy context, including reference to relevant Vision 2040 and King County policies.
- Existing Housing: This will include updated demographic data describing the existing housing stock (value, persons per household, vacancy rates) consistent with most recent data available from the Census, PSRC, and OFM as applicable.
- Needs Analysis: This new section will incorporate information from the existing “Affordable Housing” section. The needs analysis section will assess the housing needs for Black Diamond now and in 2035 for market segments as required by GMA. These include affordable (very low, low, moderate income segments), senior, disabled, and group housing. Needs will be compared to land supply and regional/County targets.
- Assumptions: We assume that housing goals and policies will remain essentially unchanged and that changes based on input at the open house, Planning Commission meetings and City Council meeting will be minor.

### **Chapter 7: Transportation**

Please see the memorandum in Attachment A from DKS.

### **Chapter 8: Utilities**

Unlike the existing comprehensive plan, BergerABAM is proposing that the existing comprehensive plan have two chapters for utilities and capital facilities. The utilities chapter will discuss City utilities (water, sewer, storm) and utilities provided by others (electricity, natural gas, telecommunications, solid waste) to include the following:

- Update of the criteria and assumptions with regard to population growth projections.
- Update of the existing system inventories with new information as provided by the City or contained within utility master plan updates.
- Update of the future needs sections with information contained within the utility master plans provided.
- Identity of any data gaps between the planned development and recently completed utility master plans and recommend any analysis if necessary.
- Incorporate comprehensive plan information provided from non-municipally managed utilities as provided by the City.
- Analyze and summarize 6-year funding for City utilities as required by GMA. BergerABAM assumes the City will provide information on fund amounts for the various utilities as necessary for this analysis.

### **Chapter 9: Capital Facilities Chapter**

BergerABAM will complete descriptions, service levels, and future needs components of the capital facilities chapter for the non-utility facilities (parks, schools, fire/EMS, and essential



public facilities) based upon the analysis provided in the forthcoming government facilities plan that is being completed by the City and is targeted for completion in second quarter 2015. A 6-year facilities funding analysis will be included in the capital facilities chapter, as required by GMA.

#### **Chapter 10: Economic Development**

PSRC Vision 2040 requires that local comprehensive plans include an economic development element that addresses businesses, people, and places. This work is not within BergerABAM's scope and can be completed by the City.

This discussion of the comprehensive plan update assumes that any maps and figures necessary for the update will be provided by the City.

#### **Additional Agency Coordination**

Consistent with direction from PSRC to provide draft documents for their review prior to local adoption, BergerABAM is suggesting that the draft updated comprehensive plan be sent to PSRC after the first review by City staff and revision by BergerABAM and prior to the draft being sent to the Planning Commission. The draft plan would be sent to PSRC along with a draft copy of the PSRC checklist to facilitate the agency's initial review.

#### **Draft Comprehensive Plan Revision and Adoption**

As outlined in the scope of work, BergerABAM will revise the draft updated comprehensive plan up to six times to accommodate City staff, Planning Commission, and City Council comments. The PSRC review and comments noted above will be rolled into the second draft (staff review). BergerABAM also will assist staff with the adoption process by peer-reviewing four staff reports.

#### **ATTACHMENTS**

- Attachment A: City of Black Diamond Travel Demand Model Update, Methods and Assumptions Memorandum, DKS Associates, January 3, 2015