



December 10, 2015

Ms. Natalie McClendon, Chair
Whatcom County Planning Commission
ATTN: Ms. Becky Boxx
5280 Northwest Drive
Bellingham, Washington 98226

Dear Chair McClendon and Planning Commissioners:

Subject: Comments for the Planning Commission public hearing on the periodic update of the Whatcom County Comprehensive Plan and the Urban Growth Area (UGA) review.

Sent via email to: PDS_Planning_commission@co.whatcom.wa.us

Thank you for the opportunity to comment on the Whatcom County Comprehensive Plan Update. Futurewise is working throughout Washington State to create livable communities, protect our working farmlands, forests, and waterways, and ensure a better quality of life for present and future generations. We work with communities to implement effective land use planning and policies that prevent waste and stop sprawl, provide efficient transportation choices, create affordable housing and strong local businesses, and ensure healthy natural systems. We are creating a better quality of life in Washington State together. We have members across Washington State including Whatcom County.

Futurewise strongly supports the comprehensive plan and urban growth area update. We particularly appreciate that Whatcom County prepared a well done environmental impact statement on the update. We do have recommendations to improve the update which are discussed below.

Summary of Recommendations

- We support the *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* recommendation to increase the allowed densities and intensities in the few urban growth area (UGAs) that do not have enough capacity for future growth.¹ We recommend the UGAs not be expanded. Please see page 6 of this letter for more information.

¹ *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* Table 2.4-3. Population Growth Allocation and Capacity by Alternative: 2013-2036 p. 3-6 (Nov. 2015).

- We are particularly concerned about the tentative Planning Commission recommendation to add the Yew Street area and the south Caitac area to the Bellingham UGA. According to the *FEIS*, the Bellingham UGA capacity exceeds its 20-year growth allocation by 4,242 people, an over capacity of 16 percent.² So there is no need to expand the Bellingham UGA at this time. Increasing the capacity of the Bellingham UGA will undercut the benefits of compact UGAs, such as saving taxpayers money. It will also violate the Washington State Supreme Courts' holding in the *Thurston County* decision which only allows UGA expansions when needed to accommodate the adopted population projection.³ We urge the Planning Commission to not recommend including the Yew Street area and the south Caitac area in the Bellingham UGA. Please see page 6 of this letter for more information.
- We recommend that the Nooksack Urban Growth Area (UGA) Reserve, the Nooksack Suitability Analysis Area West, and the Nooksack Suitability Analysis Area North all be designated as agricultural lands of long-term commercial significance and not be included in the Nooksack UGA. The *FEIS* documents they all meet the definition of agricultural lands of long-term commercial significance.⁴ The GMA prohibits including agricultural lands of long-term commercial significance in UGAs unless the jurisdiction has a purchase or transfer of development rights program and will protect those lands for agriculture.⁵ Please see page 7 of this letter for more information.
- We recommend that Goal 2P encourage more affordable and transit-supportive densities in the UGAs. This will help make public facilities and services more affordable, reducing costs for taxpayers. Please see page 8 of this letter for more information.
- We recommend that the update should not weaken Policy 2DD-1 on page 2-81 of Chapter Two: Land Use. This policy is required to encourage urban growth in existing cities and towns as the Growth Management Act requires. Please see page 9 of this letter for more information.
- We urge the Planning Commission not to recommend the deletion of: "Uses and densities within the Rural designation should reflect established rural character" from Policy 2GG-3 in Chapter Two: Land Use. This is necessary for the comprehensive plan to remain in compliance with the GMA. Please see page 10 of this letter for more information.

² *Id.*

³ *Thurston Cnty. v. W. Washington Growth Mgmt. Hearings Bd.*, 164 Wn. 2d 329, 352, 190 P.3d 38, 49 (2008).

⁴ *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* Table 3.6-4, Agricultural Land Criteria Evaluation – Nooksack Suitability Analysis Study Areas pp. 3-7 – 3-11 (Nov. 2015).

⁵ *Clark Cnty. Washington v. W. Washington Growth Mgmt. Hearings Review Bd.*, 161 Wn. App. 204, 238, 254 P.3d 862, 878 (2011) *vacated in part Clark Cnty. v. W. Washington Growth Mgmt. Hearings Review Bd.*, 177 Wn.2d 136, 298 P.3d 704 (2013).

- The updated comprehensive plan on pages 8-3 – 8-4 of Chapter Eight: Resource Lands includes a definition of long-term commercial significance, but not the full definition of agricultural lands of long-term commercial significance. We recommend that the entire definition be included. Please see page 11 of this letter for more information.
- Do not change Policy 8A-2, in Chapter Eight: Resource Lands, from “should” to “may” and retain the provisions calling for buffers and for the maintenance of a sufficient quantity of agricultural land to support a healthy agricultural industry on pages 8-8 – 8-9. This will help protect the agricultural industry. Please see page 12 of this letter for more information.
- Update the designation criteria for agricultural land of long-term commercial significance consistent with the Washington State Supreme Court’s *Lewis County* decision and the Washington State Department of Commerce’s minimum guidelines for designating agricultural land of long-term commercial significance. Please see page 12 of this letter for more information.
- We recommend amending Policy 11A-4, of Chapter Eleven: Environment, so it is consistent with the Growth Management Act. Please see page 15 of this letter for more information.
- We urge the Planning Commission to not recommend approval of the new lahar language on page 11- 16 of Chapter Eleven: Environment as it puts people and property at risk of a loss of life and property. Lahars such as those that have occurred at Mount Baker are very dangerous⁶ and reasonable measures should be adopted and implemented to protect people and property from catastrophic damage. It is just basic consumer protection that lot and home buyers be protected from significant natural hazards that the buyers have no control over.

Urban Growth Areas (UGA) Update

Why the Growth Management Act requires Urban Growth Areas (UGAs)

To save taxpayers and ratepayers money

The Growth Management Act (GMA) requires urban growth areas (UGAs) and limits their size for many reasons. One of the most important is that compact UGAs save taxpayers and ratepayers money. In a study published in a peer-reviewed journal, John Carruthers and Gudmaundur Ulfarsson analyzed urban areas throughout the United States including Benton, Clark, Franklin, King, Pierce, Snohomish, Spokane,

⁶ Cynthia A. Gardner, Kevin M. Scott, C. Dan Miller, Bobbie Myers, Wes Hildreth, and Patrick T. Pringle, *Potential Volcanic Hazards from Future Activity of Mount Baker, Washington* p. 15 (U. S. Geological Survey Open-File Report 95-498: 1995) accessed on Dec. 9, 2015 at:

http://pubs.usgs.gov/of/1995/0498/pdf/of95-498_text.pdf; U. S. Geological Survey, *Volcanic Hazards at Mount Baker* webpage accessed on Dec. 9, 2015 at:
http://volcanoes.usgs.gov/volcanoes/baker/baker_hazard_82.html

Thurston, Whatcom, and Yakima counties.⁷ They found that the per capita costs of most public services declined with density and increased where urban areas were large.⁸ Compact UGAs save taxpayers and ratepayers money.

To protect the environment

Bowen and Valiela studied the impact of urban sprawl on marine watersheds. They wrote: “Land-use changes prompted by urban sprawl can therefore be linked to marked changes in water quality and eutrophication of receiving waters.”⁹ Eutrophication is the process through which a water body is enriched with dissolved nutrients that stimulate the growth of aquatic plants which die and decompose, depleting the oxygen dissolved in the water and harming fish and shellfish. By focusing growth in existing cities and towns, the adverse impacts of sprawl on aquatic areas are reduced.

Compact UGAs also help conserve water

Whatcom County contains significant limitations on available water.¹⁰ Large lots and low densities increase water demand, increase leaks from water systems, and increase costs to water system customers.¹¹ So accommodating the same population in the existing or a smaller UGA can reduce future water demands and costs.¹²

UGAs encourage housing growth in cities and protect rural and resource lands

To examine the effect of King County, Washington’s UGAs on the timing of land development, Cunningham looked at real property data, property sales data, and geographic information systems (GIS) data. These records include 500,000 home sales

⁷ John Carruthers and Gudmaundur Ulfarsson, *Urban Sprawl and the Cost of Public Services* 30 ENVIRONMENT AND PLANNING B: PLANNING AND DESIGN 503, 511 (2003) enclosed in a separate email. Environment and Planning B: Planning and Design is a peer reviewed or refereed journal, see the ENVIRONMENT AND PLANNING B “Guidelines for authors: EPB” webpage accessed on Nov. 12, 2014 at: <http://www.envplan.com/bauthors.html>.

⁸ *Id.* at 518.

⁹ Jennifer L. Bowen and Ivan Valiela, *The ecological effects of urbanization of coastal watersheds: historical increases in nitrogen loads and eutrophication of Waquoit Bay estuaries* 58 CAN. J. FISH. AQUAT. SCI. 1489 p. 1489 (2001) accessed on Oct. 28, 2015 at: http://portal.nceas.ucsb.edu/working_group/valuation-of-coastal-habitats/meta-analysis/papers-for-meta-analysis-database/seagrass-articles-chris/newseagrass/bowen2001cjfas.pdf. The Canadian Journal of Fisheries and Aquatic Sciences is a peer-reviewed scientific journal. See the “Instructions to Authors” webpage accessed on Oct. 28, 2015 at: <http://www.nrcresearchpress.com/page/cjfas/authors#peer>

¹⁰ Washington State Department of Ecology Water Resources Program, *Focus on Water Availability Nooksack Watershed, WRIA 1* pp. 1 – 5 (Publication Number: 11-11-006 August 2012) accessed on Nov. 12, 2014 at: <https://fortress.wa.gov/ecy/publications/summarypages/1111006.html> enclosed with this letter.

¹¹ United States Environmental Protection Agency, *Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies* pp. 3 – 5 (EPA 230-R-06-001: January 2006). Accessed on Nov. 12, 2014 at: http://www.epa.gov/smartgrowth/pdf/growing_water_use_efficiency.pdf.

¹² *Id.* at p. 8.

and 163,000 parcels that had the potential to be developed from 1984 through 2001.¹³ Cunningham concluded that “[t]his paper presents compelling evidence that the enactment of a growth boundary reduced development in designated rural areas and increased construction in urban areas, which suggests that the Growth Management Act is achieving its intended effect of concentrating housing growth.”¹⁴ He also concluded that by removing uncertainty as to the highest and best use of the land that it accelerated housing development in King County.¹⁵ This study was published in a peer-reviewed journal.¹⁶

Reducing development in rural areas and natural resource lands can also have significant environmental benefits, such as protecting water quality and working farms and forests. For example, Lin Robinson, Joshua P. Newell, and John M. Marzluff of the University of Washington compared geo-referenced aerial photos and building permit data to determine land use changes on the fringe of the King County urban growth along I-90 east of Seattle. This area includes suburban cities, rural areas, and natural resource lands.¹⁷ They concluded that King County’s UGAs were accommodating growth and the designated agricultural lands and forest lands of long-term commercial significance were being maintained as farm and forest land.¹⁸

One of the most controversial issues related to UGAs is whether the restricted land supply causes increases in housing costs. Carruthers, in another peer reviewed study, examined the evidence for the Portland UGA and concluded that it was not increasing housing costs because the city’s high density zoning allowed the construction of an abundant housing supply.¹⁹

¹³ Christopher R. Cunningham, *Growth Controls, Real Options, and Land Development*, 89 THE REVIEW OF ECONOMICS AND STATISTICS 343, 343 (2007).

¹⁴ *Id.* at 356.

¹⁵ *Id.* at 356 – 57.

¹⁶ Thomson Reuters, *Top Peer Reviewed Journals – Economics & Business* p. *3.

¹⁷ Lin Robinson, Joshua P. Newell, & John M. Marzluff, *Twenty-five years of sprawl in the Seattle Region: growth management responses and implications for conservation*, 71 LANDSCAPE AND URBAN PLANNING 51, 54 (2005). LANDSCAPE AND URBAN PLANNING is a peer reviewed journal. See the Landscape and Urban Planning Guide for Authors webpage accessed on Oct. 28, 2015 at: <http://www.elsevier.com/journals/landscape-and-urban-planning/0169-2046/guide-for-authors>.

¹⁸ Lin Robinson, Joshua P. Newell, & John M. Marzluff, *Twenty-five years of sprawl in the Seattle Region: growth management responses and implications for conservation*, 71 LANDSCAPE AND URBAN PLANNING 51, 67 – 69 (2005).

¹⁹ John I. Carruthers, *The Impacts of State Growth Management Programmes: A Comparative Analysis* 39 URBAN STUDIES 1959, 1976 (2002). Carruthers included Washington’s GMA in his analysis, but concluded that it was too early to tell if it was successful since it had only been in place for seven years in the data he analyzed, but he believed the GMA had promise if “consistently enforced.” *Id.* at 1977. Urban Studies is a peer-reviewed journal. See the “Manuscript Submission Process” p. *2 accessed on Oct. 28, 2015 at: <http://www.uk.sagepub.com/repository/binaries/pdf/usj-msgprocess.pdf>.

UGAs help keep our existing cities and towns vibrant and economically desirable

In a peer-reviewed study, Dawkins and Nelson found that the city of Yakima's share of the metropolitan housing market increased after adoption of the GMA.²⁰ This and other measures showed that center cities in states with growth management laws attract greater shares of the metropolitan area's housing market than center cities in states without growth management aiding center city revitalization.²¹

UGAs promote healthy lifestyles

Aytur, Rodriguez, Evenson, and Catellier conducted a statistical analysis of leisure and transportation-related physical activity in 63 large metropolitan statistical areas, including Seattle, Tacoma, and Spokane from 1990 to 2002.²² Their peer reviewed study found a positive association between residents' leisure time physical activity and walking and bicycling to work and "strong" urban containment policies such as those in Washington State.²³ This article was published in a peer-reviewed scientific journal.²⁴

We recommend the County not expand the Urban Growth Areas (UGAs) as there is no need to do that at this time

In the *Thurston County* decision the Washington State Supreme Court held "a county's UGA designation cannot exceed the amount of land necessary to accommodate the urban growth projected by the [State of Washington Office of Financial Management] OFM, plus a reasonable land market supply factor."²⁵ The *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* documents that the UGAs as a whole have a substantial overcapacity.²⁶ If the county expands any UGAs, it will need to downsize the oversized UGAs to comply with the *Thurston County* holding. We support the FEIS recommendation to increase the allowed densities and intensities in

²⁰ Casey J. Dawkins & Arthur C. Nelson, *State Growth Management Programs and Central-City Revitalization*, 69 JOURNAL OF THE AMERICAN PLANNING ASSOCIATION 381, 386 (2003). The Journal of American Planning Association is peer-reviewed. Journal of American Planning Association "Instructions for Authors" webpage accessed on Oct. 28, 2015 at: <http://www.tandfonline.com/action/authorSubmission?journalCode=rjpa20&page=instructions#.VjGXqU2FOUk>

²¹ Casey J. Dawkins & Arthur C. Nelson, *State Growth Management Programs and Central-City Revitalization*, 69 JOURNAL OF THE AMERICAN PLANNING ASSOCIATION 381, 392 – 93 (2003).

²² Semra A. Aytur, Daniel A. Rodriguez, Kelly R. Evenson, & Diane J. Catellier, *Urban Containment Policies and Physical Activity: A Time-Series Analysis of Metropolitan Areas, 1990–2002* 34 AMERICAN JOURNAL OF PREVENTIVE MEDICINE 320, 325 (2008).

²³ *Id.* at 330.

²⁴ American Journal of Preventive "Reviewer Information" webpage p. 1 accessed on Oct. 29, 2015 at: http://cdn.elsevier.com/promis_misc/AMEPRE_reviewer_info_oct2014.pdf.

²⁵ *Thurston Cnty. v. W. Washington Growth Mgmt. Hearings Bd.*, 164 Wn. 2d 329, 352, 190 P.3d 38, 49 (2008).

²⁶ *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* Table 2.4-3. Population Growth Allocation and Capacity by Alternative: 2013-2036 p. 2-12 (Nov. 2015).

the few UGAs that do not have enough capacity for the next 20 years.²⁷ We recommend the UGAs not be expanded.

We are particularly concerned about the tentative Planning Commission recommendation to add the Yew Street area and the south Caitac area to the Bellingham UGA. According to the *FEIS*, the Bellingham UGA capacity exceeds its 20-year growth allocation by 4,242 people, an over capacity of 16 percent.²⁸ So there is no need to expand the Bellingham UGA at this time. Increasing the capacity of the Bellingham UGA will undercut the benefits of compact UGAs documented above, such as saving taxpayers money. It will also violate the Washington State Supreme Courts' holding in the *Thurston County* decision and the Growth Management Act.²⁹ We urge the Planning Commission to not recommend including the Yew Street area and the south Caitac area in the Bellingham UGA.

We recommend the County not Expand UGAs onto Agricultural Lands of Long-term Commercial Significance

Agricultural lands of long-term commercial significance cannot be included in UGAs if the purpose is to convert the land to urban growth.³⁰ As the *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* documents, the Nooksack Urban Growth Area (UGA) Reserve, the Nooksack Suitability Analysis Area West, and the Nooksack Suitability Analysis Area North all qualify as agricultural lands of long-term commercial significance.³¹ These areas are used for agriculture, they have Land Capability 1 through 4 soils, and are also prime farmland soils.³² Land Capability 1 though 4 soils are agriculturally productive soils.³³ So is prime farmland.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be

²⁷ *Id.* at p. 3-6.

²⁸ *Id.*

²⁹ *Thurston Cnty. v. W. Washington Growth Mgmt. Hearings Bd.*, 164 Wn. 2d 329, 352, 190 P.3d 38, 49 (2008).

³⁰ *Clark Cnty. Washington v. W. Washington Growth Mgmt. Hearings Review Bd.*, 161 Wn. App. 204, 238, 254 P.3d 862, 878 (2011) *vacated in part Clark Cnty. v. W. Washington Growth Mgmt. Hearings Review Bd.*, 177 Wn.2d 136, 298 P.3d 704 (2013). "The Growth Board properly determined that the County erred in 2007 when it dedesignated parcels LB-1, LB-2, and LE from [agricultural lands of long-term commercial significance] ALLTCS status and incorporated them into the La Center UGA." This part of the decision was not vacated.

³¹ *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* Table 3.6-4, Agricultural Land Criteria Evaluation – Nooksack Suitability Analysis Study Areas pp. 3-7 – 3-11 (Nov. 2015).

³² *Id.* at p. 3-7.

³³ USDA Natural Resources Conservation Service Minnesota, *Land Capability Classes* webpage p. 1 accessed on Dec. 9, 2015 at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/technical/dma/nri/?cid=nrcs142p2_023556 and enclosed with the this letter.

cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.³⁴

So we recommend that the Nooksack Urban Growth Area (UGA) Reserve, the Nooksack Suitability Analysis Area West, and the Nooksack Suitability Analysis Area North all be designated as agricultural lands of long-term commercial significance and not be included in the Nooksack UGA. This is consistent with County policies to protect working farms.

Recommendations on the Comprehensive Plan Update

We support the WRIA 1 Environmental Caucus recommendations for Comprehensive Plan Chapter 2: Land Use and Chapter 11: Environment. The Environmental Caucus recommendations will better protect people and property from natural hazards, reduce the potential that rural overdevelopment will dry up the wells of farmers and other senior water rights holders, protect water quality, and help conserve working farms.

Specific Comments on Chapter Two: Land Use, Planning Commission Recommended Draft November 25, 2015

Encourage more affordable and transit-supportive densities in the UGAs

Density can help bring important benefits to a community. Higher densities are cheaper to serve with public facilities, saving taxpayers money.³⁵ To provide transit supportive densities, at least seven homes per acre is necessary.³⁶ In most communities, to provide housing affordable for working families also requires higher housing densities. We are concerned that the densities in Goal 2P are so low that

³⁴ 7 CFR § 657.5(a)(1) accessed on Dec. 9, 2015 at:

<https://www.gpo.gov/fdsys/browse/collectionCfr.action?selectedYearFrom=2013&go=Go>

³⁵ Robert W. Burchell, Naveed A. Shad, David Listokin, Hilary Phillips, Anthony Downs, Samuel Seskin, Judy S. Davis, Terry Moore, David Helton, and Michelle Gall, *The Costs of Sprawl—Revisited* pp. 46 – 52 (Transit Cooperative Research Program Report 39, Transportation Research Board, National Research Council: 1998) accessed on Dec. 9, 2015 at: <http://www.trb.org/Main/Blurbs/153808.aspx> see “Part B.”

³⁶ Boris Pushkarev & Jeffrey Zupan, *Public Transportation and Land Use Policy* p. 30 (Indiana University Press, Bloomington, Indiana, 1977) (public transit use is minimal below a net residential density of seven dwelling units an acre) cited page enclosed with this letter.

public facilities and services will not be able to be efficiently provided and that much of the UGA will suffer from inefficient transit service or lack transportation choices. So we recommend that Goal 2P on page 2-23 be updated to call for a minimum density of seven dwelling units per acre and to increase the densities encouraged in Bellingham. Our additions are double underlined and our deletions are double struck through.

Goal 2P: **Encourage Bellingham to establish new residential developments at densities averaging seven ~~six~~ to twenty four units per net residential acre or more; encourage Ferndale to establish new residential developments at densities averaging seven ~~five~~ to ten units per net residential acre or more; encourage Lynden to establish new residential developments at densities averaging seven ~~five~~ to ten units per net residential acre; and encourage remaining smaller cities, the Birch Bay UGA and the Columbia Valley UGA and Unincorporated Residential/Recreational Urban Growth Areas, not associated with a City, to establish new residential development at average densities of seven ~~four~~ units per net residential acre, while respecting unique characteristics associated with each city **or community**.**

Do not weaken Policy 2DD-1 on page 2-81

Policy 2DD-1 was adopted to address the Whatcom County Comprehensive Plan's noncompliance with the Growth Management requirement to encourage growth within urban growth areas. We are concerned the current draft will significantly weaken that policy. The current version of Policy 2DD-1 requires the County to take action "[i]f it is apparent that growth occurring outside the urban growth areas is inconsistent with adopted projections ..." The new standard for taking action will be "[i]f the trend over several years indicates that non-urban growth is significantly higher ..." This is a much weaker standard. While we understand the objective of coordinating this report with the report required by Policy 2S-5, that should be not an excuse to weaken Policy 2DD-1, especially given the significant shortage of water in rural Whatcom County. So we recommend that Policy 2DD-1 be modified to read as follows with our additions double underlined and our deletions double struck through. Our changes simply restores the pervious standard for action by the County, while allowing this report to be part of the report called for in Policy 2S-5.

Policy 2DD-1: Concentrate growth in urban areas per the population projections in Chapter 1 of this plan, and recognize rural lands as an important transition area between urban areas and resource areas. As part of the population growth monitoring report required in Policy 2S-5, compare non-urban population growth trends with the adopted non-urban population growth projection. If the trend over several years indicates that non

~~urban growth is significantly higher than~~ By February 1 of each year the department will publish a report that monitors residential development activity outside the urban growth areas during the previous year and compares that data with the adopted population growth projection for those areas. If it is apparent that growth occurring outside the urban growth areas is inconsistent with monitor residential development activity outside the urban growth areas during the previous year and compare that data with the adopted population growth projection for those areas. If it is apparent that growth occurring outside the urban growth areas is inconsistent with adopted projections, the County shall take action to address the discrepancy. Actions may include changing the allocation of the projected population growth during the comprehensive plan update required per RCW 36.70A.130(1), or changing development regulations to limit growth outside the urban growth areas. In addition, as the County and cities review the capacity for growth in the urban growth areas, the county should coordinate with the cities to ensure that policies are in place that are consistent with encouraging growth in the urban areas and reducing demand for development in rural areas.

Do not weaken Policy 2GG-3 on page 2-91

The Growth Management Act requires that the “rural element shall include measures that apply to rural development and protect the rural character of the area ...” among other requirements.³⁷ Policy 2GG-3 was adopted to address a violation of the Growth Management Act. As part of the defense of Policy 2GG-3, the County assured the Growth Management Hearings Board that the uses and densities would reflect the established rural character so that rural areas would not see radical increases in rural densities. We urge the Planning Commission not to recommend the deletion of: “Uses and densities within the Rural designation should reflect established rural character” from Policy 2GG-3. This provision is necessary for the comprehensive plan to continue to comply with the Growth Management Act.

Do not delete the narrative at the bottom of page 2-101

As was documented in the *FEIS*, there is no reason to expand the Bellingham UGA at this time.³⁸ And, as was documented on beginning on page 6 of this letter, such an expansion will violate the Growth Management Act. Further, the Yew Street area is poorly suited to urban development due, in part, to its impacts on Lake Padden. So we recommend that the narrative at the bottom of page 2- 101 be retained and that the

³⁷ RCW 36.70A.070(5)(c).

³⁸ *Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final Environmental Impact Statement (FEIS)* Table 2.4-3. Population Growth Allocation and Capacity by Alternative: 2013-2036 p. 2-12 (Nov. 2015).

Yew Street area be designated “Rural” and the Urban Growth Area Reserve designation be removed from this area.

***Specific Comments on Chapter Eight: Resource Lands, Planning Commission
Recommended Draft***

Overall, we strongly support the improvements to Chapter Eight and believe they will improve the designation and conservation of natural resource lands. We do have suggestions for improving the chapter.

We also strongly support the “water for agriculture” section and agree addressing water availability is an important need for the agricultural industry. In addition to the policies in the “water for agriculture” section, we recommend the adoption of a policy prohibiting the transfer of irrigation water and stock water to non-agricultural uses. This water is needed to maintain the county’s productive agricultural industry.

Include all of the definition of agricultural lands of long-term commercial significance on pages 8-3 – 8-4 of Chapter Eight: Resource Lands

The Washington State Supreme Court has identified a three part test for designating agricultural land of long-term commercial significance.

[W]e hold that agricultural land is land: (a) not already characterized by urban growth (b) that is primarily devoted to the commercial production of agricultural products enumerated in RCW 36.70A.030(2), including land in areas used or capable of being used for production based on land characteristics, *and* (c) that has long-term commercial significance for agricultural production, as indicated by soil, growing capacity, productivity, and whether it is near population areas or vulnerable to more intense uses.³⁹

However, the narrative at the bottom of page 8-3 only includes the GMA definition of the long-term commercial significance. It does not include the other elements of the definition of agricultural lands. So we recommend the narrative include all of the elements. Our recommended additions are double underlined and our recommended deletions are double struck through.

Those lands designated as Agriculture in the comprehensive plan are designated as Agricultural Lands ~~of Long-Term Commercial Significance as defined by GMA.~~ Agricultural lands of long-term commercial significance are land: (a) not already characterized by urban growth (b) that is primarily devoted to the commercial production of agricultural products enumerated in RCW 36.70A.030(2), including land in areas used or capable of being used for production based on land characteristics, and (c) that has long-term

³⁹ *Lewis County v. Western Washington Growth Management Hearings Bd.*, 157 Wn.2d 488, 502, 139 P.3d 1096, 1103 (2006).

commercial significance for agricultural production, as indicated by ~~the~~ "includes the growing capacity, productivity, and soil composition of the land for long-term commercial production, in consideration with the land's proximity to population areas, and the possibility of more intense uses of the land." (RCW 36.70A.030(10)).

Do not change Policy 8A-2 from "should" to "may" and retain the provisions calling for buffers and for the maintenance of a sufficient quantity of agricultural land to support a healthy agricultural industry on pages 8-8 – 8-9 of Chapter Eight: Resource Lands

While we support many of the additions to Policy 8A-2, especially those calling for an adequate and legal supply of water for the agricultural industry, we recommend that the policy not be weakened by changing "should" to "may." Should would require the county to carry out these actions unless there is a good reason not to. May means the county may or may not undertake those actions. We also recommend that the provisions calling for buffers and for the maintenance of a sufficient quantity of agricultural land to support a healthy agricultural industry also be retained.

Update the designation criteria for agricultural land of long-term commercial significance consistent with the Lewis County decision and the Washington State Department of Commerce's minimum guidelines for designating agricultural land, see page 8-9 of Chapter Eight: Resource Lands

Since the criteria in Policy 8A-3 were used, the supreme court has clarified the definition of agricultural lands of long-term commercial significance in the *Lewis County* decision (quoted on page 11 of this letter) and the Washington State Department of Commerce has adopted a new set of minimum guidelines. We recommend that Policy 8A-3 be updated to reflect these changes.

We have the following specific concerns about the designation criteria. The *Lewis County* decision and the Growth Management Act include in definition of agricultural lands of long-term commercial significance "land in areas used or capable of being used for production based on land characteristics ..." ⁴⁰ But Policy 8A-3 3, 4, and 8 require actual use of the land. Further, Policy 8A-3 3 requires "primarily full-time agriculture." But there is little data available documenting what is full-time agriculture. Similarly, Policy 8A-3 4 requires that the area be "composed of agricultural operations that have historically been and continue to be economically viable." But operations change over time. A dairy may sell to a beef operation, an organic farm, or a berry operation all of which may be viable economically. And how will the county determine if the operations in an area are economically viable? Audit the businesses' income taxes? None of these criteria are consistent with the *Lewis*

⁴⁰ *Lewis County v. Western Washington Growth Management Hearings Bd.*, 157 Wn.2d 488, 502, 139 P.3d 1096, 1103 (2006) emphasis added.

County decision nor WAC 365-190-050, the minimum guidelines for designating agricultural lands of long-term commercial significance.⁴¹

WAC 365-190-050(3)(c)(ii) and (iv) do look to the availability of public facilities and public services, but neither of them look to see if “[u]rban utility services including public sewer and water are not planned ...” as Policy 8A-3 6 does. Under the criterion in Policy 8A-3 6, a city could require the conversion of agricultural land of long-term commercial significance simply by planning water and sewer lines for an agricultural area. This is inconsistent with the GMA requirement to conserve agricultural land in RCW 36.70A.060(1) and the minimum guidelines in WAC 365-190-050(3)(c)(ii) and (iv).

Whatcom County Code (WCC) 20.40.251 sets a 40 acre minimum lot size in the Agriculture zone. WCC 20.40.251 also allows the creation of one-, two-, and ten-acre parcels. Policy 8A-3 5, in contrast, requires that “[p]arcel sizes are generally greater than forty acres.” So lots legally created in the Agriculture zone could lead to the dedesignation of agricultural land. Indeed, a farm or ranch could be subdivided into 40-acre lots as the Agriculture zone allows and argue that since the farm or ranch no longer has lots greater 40 acres it should be dedesignated. These inconsistencies violate the GMA requirement to conserve agricultural land in RCW 36.70A.060(1). Further, WAC 365-190-050(3)(c)(vi), one of the minimum guidelines, looks to the “[p]redominant parcel size,” it does not set a minimum parcel size as Policy 8A-3 5 does. And the minimum parcel size in Policy 8A-3 5 is actually larger than the minimum lot sizes in the County’s Agriculture zone.

In addition, certain types of agriculture in certain locations does not drainage or watershed improvement districts. So they should not be a requirement either, but instead should be a factor considered during a proposed dedesignation. But Policy 8A-3 7 is unclear how they should be treated.

Policy 8A-3 also does not take into account the requirements of the minimum guidelines that agricultural designations and de-designations be applied on an area wide basis⁴² and that “[w]hen applying the [minimum guideline] criteria ..., the process should result in designating an amount of agricultural resource lands sufficient to maintain and enhance the economic viability of the agricultural industry in the county over the long term; and to retain supporting agricultural businesses, such as processors, farm suppliers, and equipment maintenance and repair facilities.”⁴³

So Policy 8A-3 must be updated to address these issues. Our recommended revisions are double underlined and our recommended deletions are double struck through.

⁴¹ Accessed on Dec. 10, 2015 at: <http://app.leg.wa.gov/wac/default.aspx?cite=365-190-050>

⁴² WAC 365-190-050(1).

⁴³ WAC 365-190-050(5).

Policy 8A-3: The criteria for designating or de-designating lands under the Agriculture land use designation shall be considered on an area wide basis and are:

1. The majority of the area contains Prime Farmland Soils as determined by the Natural Resource Conservation Service (NRCS).
2. The area may contain 100-year floodplains as delineated by the Federal Emergency Management Agency (FEMA) but this is not a designation requirement.
3. Land use settlement patterns, the intensity of nearby uses, and the history of approved land development permits are generally compatible with agricultural practices.~~History of land development permits issued. Existing land uses are primarily full-time agriculture intermixed with part-time agriculture and woodlots, and minimal commitment to non-farm uses has been made.~~
- ~~4. The area is composed of agricultural operations that have historically been and continue to be economically viable.~~
5. The predominate parcel sizes are generally greater than forty acres or larger. In determining predominate parcel size, parcels created under the Agriculture zone and ten acres or smaller shall not be considered.
6. Urban public facilities and services are not available to serve the agricultural land.~~utility services including public sewer and water are not planned.~~
7. Land served by special purpose districts that are oriented to enhancing agricultural operations exist, including drainage improvement, watershed improvement, and flood control shall not be dedesignated.
8. Areas have a pattern of landowner capital investment in agricultural operations improvements including irrigation, drainage, manure storage, the presence of barns and support buildings, enhanced livestock feeding techniques, agricultural worker housing, etc. shall not be dedesignated.
- ~~1.9. Areas contain a predominance of parcels that have current use tax assessment derived from the Open Space Taxation Act.~~
10. When applying the above criteria, the process should result in designating an amount of agricultural resource lands sufficient to maintain and enhance the economic viability of the agricultural industry in the county over the long term; and to retain supporting agricultural businesses, such as processors, farm suppliers, and equipment maintenance and repair facilities.

We also recommend that the APO Protection Areas be evaluated for effectiveness in protecting agricultural lands. The APO Protection Areas should be updated to better

protect working farms. APO lands meeting the above criteria should be designated as agricultural lands of long-term commercial significance.

Whatcom County should designate of mineral resource lands in advance of their need for mining

Skagit and Snohomish Counties have undertaken studies to identify the best available gravel deposits, designated them, and then protect them from incompatible uses. This will better provides an important economic resource and reduce land use conflicts. So we support Goal 8Q, Policy 8Q-1, and renumbered Policy 8Q-2.

We opposed Policy 8M-4. Surface mining generally results it the conversion of agricultural operations, not their enhancement. Policy 8M-4 is inconsistent with the GMA requirement to conserve agricultural land of long-term commercial significance in RCW 36.70A.060(1).

***Comments on Chapter Eleven: Environment, Planning Commission
Recommendations November 2015***

We strongly support the “Climate Change” provisions. These policies will help minimize the adverse impacts of climate change on Whatcom County, its residents, businesses, and property owners.

***Amend Policy 11A-4, Chapter Eleven: Environment, so it is consistent with the
Growth Management Act***

The Washington State Court of Appeals has concluded that critical areas regulations must protect all critical areas functions and values.⁴⁴ Policy 11A-4 does not meet this standard because it allows minimizing environmental degradation rather than preventing it. So we recommend the following revisions to Policy 11A-4 with our deletion double struck through.

Policy 11A-4: Manage designated ~~Environmentally~~ Critical Areas (ECAs) as needed, to ~~minimize or~~ protect against environmental degradation and reduce the potential for losses to property and human life.

Do not recommend approval of the new lahar language on page 11- 16 of Chapter Eleven: Environment as it puts people and property at risk of a loss of life and property

As the United States Geological Services (USGS) has documented, the “main hazards at Mount Baker are from debris flows and debris avalanches. These may occur with or

⁴⁴ *Whidbey Environmental Action Network [WEAN] v. Island County*, 122 Wn. App. 156, 174 – 175, 93 P.3d 885, 894 (2004) reconsideration denied July 12, 2004, review denied *Whidbey Environmental Action Network v. Island County*, 153 Wn.2d 1025, 110 P.3d 756 (2005).

without an accompanying eruption.”⁴⁵ These are lahars.⁴⁶ Debris flows that occur without an eruption are especially dangerous because they can occur without warning.⁴⁷ There are other hazards too.⁴⁸ Given the catastrophic consequences of a lahar,⁴⁹ it is unwise to fail to protect the subsequent buyers of subdivision lots and homes as the lahar language on page 11- 16 of Chapter Eleven: Environment seems to do. It is just basic consumer protection that lot and home buyers be protected from significant natural hazards that the buyers have no control over. We urge the Planning Commission to remove that language from their recommendation.

We strongly support the natural hazards policies on pages 11-19 – 11-20 of Chapter Eleven: Environment

The *Whatcom County Natural Hazards Mitigation Plan* documents that natural hazards are common in Whatcom County.⁵⁰ One example is landslides. The plan states that the “primary mitigation strategy to employ in areas at danger of landslides or landslide runout is to limit or eliminate development in any high risk areas. Employing buyouts of especially high risk areas on reoccurring landslides should be considered.”⁵¹ So the natural hazards policies on pages 11-19 – 11-20 of Chapter Eleven: Environment will help implement the measures called for by the *Whatcom County Natural Hazards Mitigation Plan* which we support.

It is important to understand that homeowners insurance does not cover the damage from many natural hazards such as landslides. “Insurance coverage for landslides is uncommon. It is almost never a standard coverage, and is difficult to purchase inexpensively as a policy endorsement.”⁵²

⁴⁵ Cynthia A. Gardner, Kevin M. Scott, C. Dan Miller, Bobbie Myers, Wes Hildreth, and Patrick T. Pringle, *Potential Volcanic Hazards from Future Activity of Mount Baker*, Washington p. 15 (U. S. Geological Survey Open-File Report 95-498: 1995) accessed on Dec. 9, 2015 at: http://pubs.usgs.gov/of/1995/0498/pdf/of95-498_text.pdf

⁴⁶ *Id.* at p. 15.

⁴⁷ *Id.* at p. 1.

⁴⁸ *Id.* at p. 15.

⁴⁹ *Id.* at p. 15; U. S. Geological Survey, *Volcanic Hazards at Mount Baker* webpage accessed on Dec. 9, 2015 at: http://volcanoes.usgs.gov/volcanoes/baker/baker_hazard_82.html

⁵⁰ Whatcom County Division of Emergency Management and Anchor QEA, LLC, *Whatcom County Natural Hazards Mitigation Plan* pp. 23 – 67 (Approved: August 23, 2011) and accessed on Dec. 9, 2015 at: http://www.whatcomready.org/wp-content/uploads/2011/11/NHMP_FINAL-Word-4-17-2012.pdf

⁵¹ *Id.* at p. 66.

⁵² Robert L. Schuster & Lynn M. Highland, *The Third Hans Cloos Lecture: Urban landslides: socioeconomic impacts and overview of mitigative strategies* 66 BULLETIN OF ENGINEERING GEOLOGY AND THE ENVIRONMENT 1, p. 22 (2007) accessed on Dec. 9, 2015 at: ftp://193.134.202.10/pub/TRAMM/Workshop_EWS/Literature/Schuster_and_Highland_2007_Bulletin_of_Engineering_Geology_and_the_Environment.pdf

None of the Oso victims' homes were covered by insurance for landslide hazards.⁵³ And that is common when homes are damaged by landslides.⁵⁴ For example, on March 14, 2011, a landslide damaged the home of Rich and Pat Lord.⁵⁵ This damage required the homeowners to abandon their home on Norma Beach Road near Edmonds, Washington. Because their homeowners insurance did not cover landslides, they lost their home.⁵⁶ This loss of what may be a family's largest financial asset is common when homes are damaged or destroyed by landslides and other geological hazards.

Landslide buyouts are rare and when they occur the property owner often only recovers pennies on the dollar. The property owners bought out after the Aldercrest-Banyon landslide in Kelso, Washington destroyed their homes received 30 cents on the dollar.⁵⁷ This underlines why preventing development in landslide hazards is just plain ordinary consumer protection. That is why we support the updated natural hazards policies.

Thank you for considering our comments. If you require additional information please contact me at telephone (206) 343-0681 Ext. 118 or email tim@futurewise.org

Very Truly Yours,



Tim Trohimovich, AICP
Director of Planning & Law

Enclosures

⁵³ Sanjay Bhatt, *Slide erased their homes, but maybe not their loans* The Seattle Times (April 2, 2014) accessed on Dec. 10, 2015 at:

http://old.seattletimes.com/html/latestnews/2023278858_mudsliddefinancialxml.html

⁵⁴ *Id.*

⁵⁵ Ian Terry, *Abandoned and trashed after mudslide, Edmonds house now for sale* The Herald (Feb. 11, 2015). The house is for sale after the bank who held the Lord's mortgage took ownership of the home. *Id.* accessed on Dec. 10, 2015 at: <http://www.heraldnet.com/article/20150211/NEWS01/150219829>

⁵⁶ *Id.* at p. *6.

⁵⁷ Isabelle Sarikhan, *Sliding Thought Blog, Washington's Landslide Blog* Landslide of the Week – Aldercrest Banyon Landslide July 29, 2009 accessed on Dec. 10, 2015 at: <https://slidingthought.wordpress.com/2009/07/29/landslide-of-the-week-aldercrest-banyon-landslide/>

Nooksack Watershed, WRIA 1

This focus sheet provides information on the availability of water for new uses in the Nooksack Watershed. This information provides a starting point for potential water users in determining the best strategies for securing water for a future project or proposal in this area.

The Nooksack watershed, also known as Water Resource Inventory Area (WRIA 1), comprises the western portion of Whatcom County, as well as small portions of Skagit County and British Columbia, Canada. It is bounded by Bellingham Bay and the Strait of Georgia on the west and its east side includes portions of the Cascade Mountain range, including Mt. Baker. This watershed has a mix of urban, agricultural, rural land uses.

This watershed consists of the Nooksack River, which originates in the Cascade Mountains, and its numerous tributaries. It also includes the Sumas River (tributary to the Fraser River), and coastal drainages including the Lummi River, and Dakota, California, Terrell, Squalicum, Whatcom, Padden, and Chuckanut Creeks.

The Nooksack River is a source of drinking water for the city of Bellingham, and several other cities in Whatcom County.

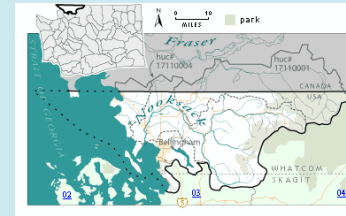
Average precipitation varies between 35 and 70 inches per year in the western portion of the watershed, and increases to maximum average of 140 inches at Mt. Baker. Most of this precipitation arrives during the winter months when water demands are the lowest. Only a fraction of the water becomes available for human and economic uses. During the summer, there is little rain and many streams and rivers are dependent on groundwater inflow. This means that groundwater and surface water are least available when water demands are the highest.

Most water in the Nooksack watershed is already legally spoken for. Increasing demands for water from ongoing population growth, diminishing surface water supplies, declining groundwater levels in some areas during peak use periods, and the impacts of climate change limit Ecology's ability to issue new water rights in this watershed.

Factors affecting water availability

Instream Resources Protection Program rule

An Instream Resources Protection Program rule for the Nooksack watershed ([WAC 173-501](#)) was adopted in 1985. The purpose of the rule is to protect senior water rights, to maintain a healthy ecosystem, and to meet future water



Definitions

Instream flow: A stream flow protected in a rule. These rules specify the amount of water needed in a particular place for a defined time, and typically follow seasonal variations. They are the flow levels needed in the river to protect and preserve instream resources and uses.

Mitigation plan: A scientifically-sound plan intended to avoid impairment to existing water rights or capturing water from a closed source.

Non-consumptive use: A use of water that does not diminish the quantity or quality of water in the water source.

Permit-exempt well: The state Groundwater Code allows for certain uses of small quantities of groundwater without obtaining a permit from Ecology. (RCW 99.44.050)

Seawater intrusion: The movement of salt water into freshwater aquifers.

resource management objectives. Such rules are required by state law (RCW 90.54). The rule establishes minimum instream flows for rivers and creeks in the watershed and requires all lakes and ponds to be retained in their natural condition.

Water rights issued after the date of the rule for surface water or groundwater connected to surface water are subject to these established instream flows. In many instances, this means that Ecology is unable to issue new water rights in the watershed because the new right will either impair a senior water right holder or the established minimum instream flow

Future water diversions or withdrawals that are shown to negatively affect the minimum instream flows or the natural state of the lake or pond cannot be approved without a mitigation plan. As such, it is likely that new water right applicants will need a mitigation plan to secure a new water right.

Watershed Planning under RCW 90.82 (Watershed Planning Act)

In 1998, local and state governments, Indian tribes, and stakeholders representing a variety of local interests began to develop a watershed plan for WRIA 1 under RCW 90.82. The plan was adopted in 2005, after which efforts began to implement it. One fundamental element of the plan is the Instream Flow Action Plan. The Action Plan describes a process to review and quantify instream flow needs in the Nooksack watershed using accepted scientific methods developed since the adoption of the existing instream flow rule. Ecology intends to use this information to determine the availability of water for new consumptive uses.

Coastal areas

Any groundwater withdrawals located in the coastal areas are evaluated for the risk of sea water intrusion into existing fresh groundwater supplies. Applicants for groundwater permits in coastal areas may need to develop an adequate mitigation plan to address this risk.

Closures

The following surface water sources -- and any groundwater connected to them -- are closed year-round by the current rule to further appropriations (unless mitigated). The closures are based on recommendations by the Department of Fish and Wildlife.

Barrett Lake	Fourmile Creek	Saar Creek Saxon
Bells Creek	Green Lake	Creek Squalicum
Bertrand Creek	Johnson Creek	Creek Sumas
California Creek	Kamm Ditch/Stickney Slough	River Tenmile
Chuckanut Creek	Kendall Creek	Creek Whatcom
Colony Creek	Lake Terrell	Creek Wiser
Dakota Creek	Lake Whatcom	Lake
Deer Creek	Oyster Creek	
Fishtrap Creek	Padden Creek	

In addition to year-round closures, certain surface water bodies—and the groundwater connected to them—are closed to new withdrawals during specific times of the year:

Water body	Closure dates
Anderson Creek	May 1 to Oct. 31
Canyon Creek	July 1 to Oct. 31
Cornell Creek	July 1 to Oct. 31
Gallop Creek	July 1 to Oct. 31
Hutchinson Creek	July 1 to Oct. 31
Maple Creek	July 1 to Oct. 31
North Fork Nooksack River	Sept. 1 to Oct. 31
Porter Creek	July 1 to Oct. 31
Racehorse Creek	July 1 to Oct. 31
Silver Creek	May 1 to Oct. 31
Skookum Creek	July 1 to Oct. 31
Smith Creek	May 1 to Oct. 31
South Fork Nooksack River	July 1 to Oct. 31
Terrell Creek	May 1 to Oct. 31
Thompson Creek	July 1 to Oct. 31
Wiser Lake Creek	May 1 to Oct. 31

Though not closed, the Mainstem and the Middle Fork Nooksack River are subject to year-round minimum instream flows. Based on USGS streamflow data, these minimum instream flows are not met an average of 100 days per year, often during the periods when new water rights are desired (late spring through early fall).

Federal Reserved Water Rights and Tribal Involvement

Federally Reserved Water Rights are not quantified at this time and thus the legal availability of water in these areas is undetermined.

The Lummi Nation and the Nooksack Tribe have reservation lands within WRIA 1. The Tribes are very concerned about maintaining flows and fish habitat in the watershed. By request, Ecology notifies the Lummi Nation of all new water right applications and decisions.

Water currently available for new uses

Any applicant for new non-interruptible water may need to hire consultants to carry out technical studies and develop mitigation plans to offset impacts to stream flows. Additionally, applicants may require the services of an attorney to defend the proposed project against appeals by concerned stakeholders and/or existing senior water right holders. *None of these steps will guarantee the application will be approved.*

Water rights for non-consumptive uses in the basin may in most cases be approved by the Department of Ecology.

Note: Applicants are encouraged to connect to an existing public water supply system if available. This is the simplest and fastest option for securing a water supply.

Additional options for processing water right applications

The groundwater permit exemption allows certain users of small quantities of groundwater (most commonly, single residential well owners) to construct wells and develop their water supplies without obtaining a water right permit from Ecology. Such a use is only exempt from the requirement to obtain a water right permit. These water uses are subject to all other provisions of the water code including the seniority system and can be regulated to protect existing water rights. For more information about the groundwater permit exemption, refer to www.ecy.wa.gov/pubs/fwr92104.pdf.

If you cannot hook-up to an existing system, or more water is needed than can be obtained from a permit-exempt well, processing an application through the Cost Reimbursement Program www.ecy.wa.gov/pubs/0511016.pdf may be an option.

For more information on this and other options, refer to “Alternatives for Water Right Application Processing” www.ecy.wa.gov/pubs/1111067.pdf.

Pending water right applications in this watershed

Washington water law is based on the “prior appropriation” system, often called “first in time, first in right.” Applications for water from the same source must be processed in the order they are received. (There are certain exceptions, see “Additional options for processing water right applications” above.)

Ecology asks anyone who needs a water right (new, change, or transfer) to submit the pre-application consultation form and meet with us to review your water supply needs and project proposal.

- Apply for a New Water Right
<http://www.ecy.wa.gov/programs/wr/rights/newrights.html>
- Apply to Change or Transfer a Water Right or Claim
http://www.ecy.wa.gov/programs/wr/rights/change_transfer_use.html

The map in this document shows some of the factors that will be considered when evaluating water right permit applications. Here are some information sources to assist you with your research:

- Locate and research water rights on land parcels anywhere in the state (Water Resource Explorer)
<http://www.ecy.wa.gov/programs/wr/info/webmap.html>
- Pending Water Right Applications by County
<http://www.ecy.wa.gov/programs/wr/rights/tracking-apps.html>
- Subscribe to a water right application RSS feed for a county or WRIA
http://www.ecy.wa.gov/programs/wr/rights/wr_app_rss.html
- WRIA map showing the total number of water right claims, certificates, permits and applications
<http://www.ecy.wa.gov/programs/wr/rights/Images/pdf/waterright-wria-maps.pdf>
- Search and view well reports using a variety of search tools
<https://fortress.wa.gov/ecy/waterresources/map/WCLWebMap/default.aspx>



For more information

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Water Resources Program
3190 160th Ave. SE
Bellevue WA 98008
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Bellingham Field Office
1440 10th St, #102
Bellingham WA 98225
360-715-5200



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Public Transportation and Land Use Policy

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pay for (which are reported as having been made), while other passengers assignable to suburban service are often reported as intercity. These data deficiencies, however, do not change the broad orders of magnitude shown in Exhibit 2.3, which relates the combined rapid transit and commuter rail ridership in urban areas to the square feet of office space in their major downtown. The office space scale is the same as in the preceding exhibit.

On a logarithmic scale, ridership by rail and rapid transit is shown to be closely related to the amount of downtown office floorspace in Cleveland, Boston, Philadelphia, Chicago, and New York. The two urban areas which fall substantially below the line of averages are San Francisco, where BART was only in partial operation during the year shown, and Newark, for which only trips to the downtown area are listed. Toronto and Montreal show above average rail transit use. On the basis of the relationship shown one can estimate that most U.S. cities building or contemplating new rapid transit systems—cities that have 10 to 30 million square feet of downtown office floorspace—can expect a rapid transit ridership on the order of 15 to 70 million annually under current conditions of auto ownership and use. Only the Washington system can, upon completion, expect to come close to Chicago with some 150 million annual trips, about one eighth of the New York Region's trips.

Ridership by commuter rail has held up quite well over the past decade and a half, and has experienced a significant increase in Philadelphia. Rapid transit ridership has fallen somewhat, with the greatest percentage drop occurring on the smallest system, in Cleveland. In Chicago, ridership losses were offset in part by gains resulting from major system extensions, and the opening of the Lindenwold line in the Philadelphia area more than offset areawide rapid transit losses over the preceding decade. Thus the position of the line of averages in Exhibit 2.3 is subject to change through long-term secular trends, and also depends on the extent of the individual systems.

Returning now to the analysis of Census Journey to Work data, and looking for reasons why the average density of urbanized areas does not say much about transit use, we may note that apart from the different degrees of downtown concentration, and the presence or absence of rail services on exclusive rights of way, there is a third reason. Except for the extremes of the New York portion of the New York-Northeastern New Jersey Urbanized Area and the overbounded urbanized area of Nashville, 103 of the 105 larger urbanized areas investigated fall into the density range of between 1,500 and 5,300 persons per square mile. Referring to the fourth curve in Exhibit 7.1 in the Appendix, we can estimate that this is equivalent to an average areawide residential density of 2.5 to 6.5 dwellings per net acre, certainly not a very wide range. The suburban spread of the last three decades has homogenized American urban areas a great deal, and conceals internal differences in density such as those between Philadelphia and Los Angeles. Had we followed the Census in treating the two parts of the New York-Northeastern New Jersey Urbanized Area as one (which for other purposes they are), the average density of this agglomeration would not have been much above the others—some 6,700 persons per square mile. To find a wider range of densities which can be related to transit use, we must look inside urban areas.

DENSITY WITHIN URBAN AREAS AND THE USE OF TRANSIT

The Area Transportation Studies undertaken in the U.S. mostly in the early 'sixties provide a wealth of data on travel behavior within urban areas. Unfortunately, the rich ex-

perience of these studies has not been sufficiently summarized on a national basis, nor are its lessons widely appreciated. Selected data—condensed for readability—from one of the few studies synthesizing this experience¹ are presented in Exhibit 2.4, along with data based on the Home Interview Survey conducted by the Tri-State Regional Planning Commission in 1963 in the New York Region.

In the exhibit, both total weekday trips per person by all vehicular modes and weekday trips per person by public transportation are plotted against the density of the residential area in which the person making the trips lives. In contrast to the small variation in density presented earlier, the variation here is very large—from 0.8 dwellings per acre all the way to 200 dwellings per acre. The differences in travel demand are, accordingly, also very dramatic.

The average individual living on a 1-acre lot in one of the six urban areas shown—ranging in size from Springfield, Mass. (population 531,000), to the New York Region (population 16,300,000 within the survey area)—made anywhere from 2.0 to 2.6 trips by all vehicular modes on an average weekday. His or her propensity for making trips did not change much if the density increased to 3 dwellings per acre. However, as the density increased from 3 to 30 dwellings per acre, the number of trips per person was reduced anywhere from 50 percent in Springfield and Milwaukee to 16 percent in Seattle, with the New York Region about in the middle with a 30 percent reduction in total trips, very similar to Boston. This reduction in total travel demand was due to a reduction of trips by auto. Transit trips, by contrast, increased even more dramatically with rising density.

At a density of around 1 dwelling per acre, the transit demand in any one of the six urban agglomerations was minimal—anywhere from 0.01 to 0.14 trips by public transportation per person per day. This demand did not increase much up to a density of 7 dwellings per acre, where it amounted to 0.03 to 0.22 trips by public transportation per day. However, with a density increase from 7 to 30 dwellings per acre, transit demand roughly tripled in the New York Region, in Philadelphia, and in Boston, to around 0.6 trips per person per day. In the three smaller urban areas, the absolute number of trips per person by public transportation at a density of 30 dwellings per acre was not as high, but the relative increase compared to the lower density was even greater.

Densities above 30 dwellings per acre are not frequent in American cities; in the three larger urban areas shown, transit trips per person continue to increase in this high density range, but at a declining rate. At a density of roughly 50 dwellings per acre, transit trips become more numerous than auto trips in the New York Region and Philadelphia; at a density of 85 dwellings per acre or more in New York, reductions in total travel demand by mechanical means appear to cease, even though transit travel continues to increase.

Summarizing, we find that *densities in the 2 to 7 dwellings per acre range produced only marginal use of public transportation* within major urban areas of the United States in the early 'sixties. We have seen that the average areawide densities of virtually all urbanized areas in the nation fall into this density range. *Densities of 7 to 30 dwellings per acre were necessary to sustain significant transit use—in the range of 5 to 40 percent of all trips.* Moreover, an increase in density from about 7 to 30 dwellings per acre produced not only a very dramatic increase in transit use, but also a sharp reduction in auto travel.

The general consistency of these patterns notwithstanding, there is still a fair amount

EXHIBIT 2.4 continued

Note: Densities listed represent midpoints of class intervals for which data were available

Source: Wilbur Smith and Associates. *Patterns of Car Ownership, Trip Generation and Trip Sharing in Urbanized Areas.* Prepared for the Bureau of Public Roads, New Haven, Conn., June 1968, p. 107-110, and Tri-State Regional Planning Commission.

* Considering multi-mode trips as one trip by the dominant mode.

