



November 4, 2011

The Honorable Sam Crawford, Council Chairperson  
Whatcom County Council  
311 Grand Avenue Suite 105  
Bellingham, WA 98225

Dear Council Chairperson Crawford and members of the Whatcom County Council:

**SUBJECT: Comments on the Ordinance Amending Ordinance 2011-013 relating to rural development regulations (AB2011-348)**

Sent by email to: [council@co.whatcom.wa.us](mailto:council@co.whatcom.wa.us) and US Mail

Futurewise Whatcom is the local chapter of statewide land-use advocacy organization, Futurewise, whose mission is to promote healthy communities and cities while protecting working farms, working forests, and shorelines today and for future generations. We focus our local efforts on protecting rural and resource lands and promoting compact, livable cities, so as to prevent poorly planned sprawl in Whatcom County. Our Whatcom Chapter has over 600 local supporters, and is funded entirely by Whatcom County donations.

We appreciate the opportunity to comment on the Ordinance Amending Ordinance 2011-013 relating to rural development regulations (AB2011-348) and appreciate the proposal to decrease the density allowed through the Rural Residential Density Overlay and the proposed clarifications where various zones can be located. However, we continue to have the concerns discussed in this letter. We are concerned that during this time of very limited federal, state, and local resources it does not make sense to dig the hole deeper by authorizing more higher density rural development which costs the county more than it generates in taxes, as we document in the next section. Higher density rural development is also inconsistent with the vision Whatcom County residents have for their county as we document in the second section. Densities of one dwelling unit per two and five acres do not prohibit urban development and do not protect the county's rural character as we document in the third section. Finally, we are concerned that the adequate opportunities for public involvement have not been provided and the requirements of the county's public participation program have not been met.

It is well recognized that Whatcom County has serious problem with a lack of available water for new development and even existing uses.<sup>1</sup> We also recognize that the county is working cooperatively identify solutions, which we support. However, until the county is able to identify sufficient water sources, it is unwise to allow the continued expansion of small rural lots and their attendant water demand as the Rural Residential Density Overlay will continue to allow.

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<sup>1</sup> *Whatcom County Comprehensive Water Resource Plan* p. 8 (Feb. 9, 1999). Accessed on Nov. 17, 2009 at: <http://www.co.whatcom.wa.us/publicworks/pdf/water/watrplan.pdf> and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "watrplan.pdf."

## Rural development costs counties more to serve than it generates in taxes

Densities of one dwelling unit per two to five acres increase costs to taxpayers by allowing land development that will require services that are expensive for the county and special districts to provide.<sup>2</sup> On average, rural residential development costs county's more than it generates in revenues.<sup>3</sup> In contrast, working farms and forests require county and special district services that cost less than the taxes these uses pay. "For every dollar of revenue from farm and open land, 51 cents was required to cover associated services."<sup>4</sup> So Whatcom County can save its taxpayers money by reducing rural densities and maintaining working farms and working forests in the rural area. It will also reduce pressures on the county budget.

## Whatcom County residents support the wise management of growth and the protection of the county's rural character

The Whatcom County Values and Beliefs Survey, prepared for the Whatcom Legacy Project, found that 69 percent of county residents want to protect working farms and forested foothills and focus growth into our existing cities.<sup>5</sup> Fifty-eight percent of the respondents to the Rural Element Update survey agreed that rural Whatcom County had grown "too much" in the last ten years.<sup>6</sup> Sixty-five percent of the survey respondents agreed that more residential development threatened the rural values of Whatcom County that we all agree need to be protected, such as clean water, agriculture, and forest lands. Fifty-two percent agreed that more commercial development threatened these important rural values. In short, Whatcom County residents support the wise management of the county's rural areas.

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<sup>2</sup> 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. 50 – 52 (Transit Cooperative Research Program Report 39, Transportation Research Board, National Research Council 1998), hereinafter *The Costs of Sprawl—Revisited*. Available at: [http://gulliver.trb.org/publications/tcrp/tcrp\\_rpt\\_39-a.pdf](http://gulliver.trb.org/publications/tcrp/tcrp_rpt_39-a.pdf) [http://gulliver.trb.org/publications/tcrp/tcrp\\_rpt\\_39-b.pdf](http://gulliver.trb.org/publications/tcrp/tcrp_rpt_39-b.pdf) [http://gulliver.trb.org/publications/tcrp/tcrp\\_rpt\\_39-c.pdf](http://gulliver.trb.org/publications/tcrp/tcrp_rpt_39-c.pdf) [http://gulliver.trb.org/publications/tcrp/tcrp\\_rpt\\_39-d.pdf](http://gulliver.trb.org/publications/tcrp/tcrp_rpt_39-d.pdf) [http://gulliver.trb.org/publications/tcrp/tcrp\\_rpt\\_39-e.pdf](http://gulliver.trb.org/publications/tcrp/tcrp_rpt_39-e.pdf) [http://gulliver.trb.org/publications/tcrp/tcrp\\_rpt\\_39-f.pdf](http://gulliver.trb.org/publications/tcrp/tcrp_rpt_39-f.pdf) and included on the data CD enclosed with the paper original of this letter in the "Costs of Sprawl Reports" directory with the following filenames: "tcrp\_rpt\_39-a.pdf," "tcrp\_rpt\_39-b.pdf," "tcrp\_rpt\_39-c.pdf," "tcrp\_rpt\_39-d.pdf," "tcrp\_rpt\_39-e.pdf," and "tcrp\_rpt\_39-f.pdf."

<sup>3</sup> Roger Coupal, Donald M. McLeod, & David T. Taylor, *The Fiscal Impacts of Rural Residential Development: An Economic Analysis of the Cost of Community Services*, Planning & Markets, University of Southern California, Vol. 5, Number 1 (2002). Downloaded from <http://www-pam.usc.edu/volume5/v5i1a3s1.html> on June 9, 2006 and included on the data CD enclosed with the paper original of this letter in the "Costs of Sprawl Reports" directory with the filename: "Planning and Markets\_Coupal, McLeod, and Taylor.pdf."

<sup>4</sup> American Farmland Trust, *Cost of Community Services: Skagit County, Washington* p. 17 (1999). Available at [http://www.skagitonians.org/upload\\_pubs/aft=spf.pdf](http://www.skagitonians.org/upload_pubs/aft=spf.pdf) and included on the data CD enclosed with the paper original of this letter in the "Costs of Sprawl Reports" directory with the filename: "Skagit\_County\_COCS.pdf."

<sup>5</sup> Davis, Hibbitts, & Midghall Inc., *Memorandum to Whatcom Legacy Project Steering Committee Re: Whatcom County Values and Beliefs Survey* p. 9 (February 3, 2009). Accessed on November 12, 2010 at: <http://www.co.whatcom.wa.us/executive/news/2009/03/introduction.pdf> and enclosed with data CD enclosed with the paper original of this letter with the filename "introduction.pdf."

<sup>6</sup> Makers, *Whatcom County Rural Element Update: First Phase Public Participation Summary Questionnaire Results* - December 2008 p. 3 (Draft February 17, 2009). Accessed on November 12, 2010 at: <http://www.co.whatcom.wa.us/pds/pdf/whatcomruralelement-publicparticipation-02-17-09.pdf> and enclosed with data CD enclosed with the paper original of this letter with the filename "whatcomruralelement-publicparticipation-02-17-09.pdf"

## **Densities of one dwelling unit per two acres and five acres are characterized by urban growth and are inconsistent with rural character**

While we appreciate the proposal to reduce the maximum allowed density in the Rural Residential Density Overlay to one dwelling unit per two acres, this density still fails to wisely manage the county's rural areas. As the above survey documents, this density is also not favored by Whatcom County residents and will violate the Growth Management Act as we explain in the section.

The Washington State Supreme Court has held that a Growth Management Act (GMA) complaint "rural density is 'not characterized by urban growth' and is 'consistent with rural character.'"<sup>7</sup> We will consider each element of the definition in turn, but as this part of the letter will show, densities of one dwelling unit per two and five acres violate both elements of the definition.

### ***Densities of one dwelling unit per two acres and five acres allow urban growth in the rural area***

The GMA, in RCW 36.70A.030(17), defines urban growth as "... growth that makes intensive use of land for the location of buildings, structures, and impermeable surfaces to such a degree as to be incompatible with the primary use of land for the production of food, other agricultural products, or fiber, or the extraction of mineral resources, rural uses, rural development, and natural resource lands designated pursuant to RCW 36.70A.170.... When allowed to spread over wide areas, urban growth typically requires urban governmental services."

Almost five acres is the minimum amount of land that can support even a small farm in Whatcom County. The Census of Agriculture shows that the average Whatcom County farm in 2007 totaled 69 acres.<sup>8</sup> The smallest category of farm reported by the Census of Agriculture is farms from one to nine acres in size. In Whatcom County in 2007 there were 393 farms in that category and they totaled 1,906 acres.<sup>9</sup> So the average size of these, the county's smallest, farms was 4.85 acres.

To effectively manage forest land requires larger minimum lot sizes. Parcels smaller than 40 acres have much lower timber harvest rates and are more likely to be converted to residential land uses.<sup>10</sup> Parcels

<sup>7</sup> *Thurston County v. Western Washington Growth Management Hearings Bd.*, 164 Wn.2d 329, 359, 190 P.3d 38, 52 – 53 (2008) (footnoted omitted).

<sup>8</sup> United States Department of Agriculture National Agricultural Statistics Service, *2007 Census of Agriculture, Washington State and County Data Volume 1 Geographic Area Series • Part 47* Volume 1, Chapter 2: County Level Data Table 8. Farms, Land in Farms, Value of Land and Buildings, and Land Use: 2007 and 2002 p. 294 (February 2009). Accessed on November 12, 2010 at:

[http://www.agcensus.usda.gov/Publications/2007/Full\\_Report/Volume\\_1,\\_Chapter\\_2\\_County\\_Level/Washington/st53\\_2\\_008\\_008.pdf](http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_2_County_Level/Washington/st53_2_008_008.pdf) and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "st53\_2\_008\_008.pdf."

<sup>9</sup> *Id.*

<sup>10</sup> Eric J. Gustafson & Craig Loehle, *Effects of Parcelization and Land Divestiture on Forest Sustainability in Simulated Forest Landscapes*, 236 FOREST ECOLOGY and MANAGEMENT 305, 313 (2006). Downloaded on November 26, 2008 from: [http://nrs.fs.fed.us/pubs/jrnl/2006/nrs\\_2006\\_gustafson\\_001.pdf](http://nrs.fs.fed.us/pubs/jrnl/2006/nrs_2006_gustafson_001.pdf). Included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "nrs\_2006\_gustafson\_001.pdf." Forest Ecology and Management is a refereed scientific journal, see the Forest Ecology and Management webpage included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "Forest Ecology and Management Peer Review Webpage.pdf" and available at: [http://www.elsevier.com/wps/find/journaldescription.cws\\_home/503310/description#description](http://www.elsevier.com/wps/find/journaldescription.cws_home/503310/description#description)

smaller than 50 acres have higher than average costs for preparing timber sales, harvesting trees, and reforesting the site.<sup>11</sup>

So a farm of just under five acres is the smallest size that supports agriculture and 40 to 50 acres is the smallest lot size that supports fiber production. Lots that are too small to support agriculture and fiber production are defined as urban growth. Therefore, rural densities greater than one house per 40 acres violate the Growth Management Act.

***Densities of one dwelling unit per acres and five acres are inconsistent with Whatcom County's rural character***

As we have seen, legal rural densities must both be not characterized by urban growth and must also be consistent with rural character. We have just seen that densities of one dwelling unit per two acres and five acres are characterized by urban growth. We will now see that these densities are inconsistent with the Growth Management Act's definition of rural character.

“Rural character” includes lands:

(a) In which open space, the natural landscape, and vegetation predominate over the built environment;

(b) That foster traditional rural lifestyles, rural-based economies, and opportunities to both live and work in rural areas;

(c) That provide visual landscapes that are traditionally found in rural areas and communities;

(d) That are compatible with the use of the land by wildlife and for fish and wildlife habitat;

(e) That reduce the inappropriate conversion of undeveloped land into sprawling, low-density development;

(f) That generally do not require the extension of urban governmental services; and

(g) That are consistent with the protection of natural surface water flows and ground water and surface water recharge and discharge areas.<sup>12</sup>

Let's consider each element of the definition of rural character. We will see densities of one dwelling unit per two and five acres do not conform to any of the elements of rural character.

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<sup>11</sup> R. Neil Sampson, *Implication for Forest Production in Responses to “America's Family Forest Owners”* 102 JOURNAL OF FORESTRY 4, 12 (October/November 2004). Included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “America's Family Forest Owners.pdf.” The Journal of Forestry is a peer reviewed scientific journal. See the Journal of Forestry Guide for Authors webpage available at:

<http://www.safnet.org/periodicals/jof/guideforauthors.cfm> and included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “Journal of Forestry Guide for Authors.pdf.”

<sup>12</sup> RCW 36.70A.030(15); *Thurston County v. Western Washington Growth Management Hearings Bd.*, 164 Wn.2d 329, 360, 190 P.3d 38, 53 (2008) fn. 23.

**(a) In which open space, the natural landscape, and vegetation predominate over the built environment;**

Enclosed with this letter are color 2009 aerial images from Google Earth showing two, five, and nine acre lots in Whatcom County north of Bellingham and east of Ferndale.<sup>13</sup> As you can see in the aerial images, the two and, in some cases, almost five acre lots are dominated by buildings, driveways, and lawns.<sup>14</sup> These small lots along roads and driveways have a tendency to create walls of buildings, typically houses and garages; blocking off the natural landscape.<sup>15</sup> So open space and the natural landscape and natural vegetation do not predominate over the built environment as is typical of Whatcom County's rural area.<sup>16</sup> The built environment predominates, in violation of this element of the Growth Management Act's definition of rural character.

**(b) That foster traditional rural lifestyles, rural-based economies, and opportunities to both live and work in rural areas;**

In Whatcom County, traditional rural lifestyles include farming, forestry, animal keeping, and low intensity rural businesses. As we documented above, one, two, and three acre lots are too small to farm unless part of a larger operation that has several lots in a common ownership. As we documented above, one, two, three, and five acre lots are too small to grow trees on unless part of a larger operation that has several lots in a common ownership. So dividing some or all of this area into one, two, three, and five acre lots will not foster traditional rural lifestyles or provide for rural based economies. Again, this violates the Growth Management Act definition of rural character.

**(c) That provide visual landscapes that are traditionally found in rural areas and communities;**

A comparison of the one, two, and in some cases almost five acre lots dominated by buildings, driveways, and lawns with the fields and treed areas that can be seen on the aerial images shows the dramatic change to the visual landscapes traditionally found in Whatcom County caused by these lots small lots.<sup>17</sup> The larger almost ten acres and much larger lots have retained most of the trees and fields characteristic of Whatcom county.<sup>18</sup> When the lots are divided into one, two, and five acre lots they are dominated by homes, driveways, lawns, and outbuildings. The one, two, and five acre lots also show that a pattern of

<sup>13</sup> The aerial images are included on the data CD enclosed with the paper original of this letter in the "Whatcom County Aerial Images" directory.

<sup>14</sup> See the aerial images on the data CD enclosed with the paper original of this letter in the "Whatcom County Aerial Images" directory with the filenames "1 acre lot off Northwest Drive.png," "1 acre lot off of Kale Ln.png," "1.1 acres north of Bellingham.png," "1.69 acre lot off Northwest Drive.png," "2.1 acre lot off Whisper Way.png," and "4.83 acres north of Bellingham.png." All of the images referred to in this discussion are in the rural area as is documented by the Whatcom County – Title 20 Zoning Designations for Township 39 North, Range 2 East on the data CD enclosed with the paper original of this letter in the "Whatcom County Aerial Images" directory with the filename "t20zon11.pdf."

<sup>15</sup> See the aerial images on the data CD enclosed with the paper original of this letter in the "Whatcom County Aerial Images" directory with the filenames "1.1 acres north of Bellingham.png" and "833 Whisper Way Close Up.png."

<sup>16</sup> See the aerial images on the data CD enclosed with the paper original of this letter in the "Whatcom County Aerial Images" directory with the filename "953 West Axton Road Picture.pdf."

<sup>17</sup> See the aerial images on the data CD enclosed with the paper original of this letter in the "Whatcom County Aerial Images" directory with the filenames "1 acre lot off Northwest Drive.png," "1 acre lot off of Kale Ln.png," "1.1 acres north of Bellingham.png," "1.69 acre lot off Northwest Drive.png," "2.1 acre lot off Whisper Way.png," and "4.83 acres north of Bellingham.png."

<sup>18</sup> See the aerial images on the data CD enclosed with the paper original of this letter in the "Whatcom County Aerial Images" directory with the filenames "9 plus acres north of Bellingham east of Ferndale.png," "953 West Axton Road Picture.pdf," taken in front of the file "36 acre field.png," and "28.9 acre field adjacent to Whisper Way Whatcom Co.png."

these small lots will not provide a visual landscape that is traditionally found in rural areas. Again, this violates the Growth Management Act definition of rural character.

**(d) That are compatible with the use of the land by wildlife and for fish and wildlife habitat;**

Rural residential development has significant adverse impacts on fish and wildlife habitat and those impacts increase with density.<sup>19</sup> Even at densities of one dwelling unit per five acres, wildlife habitat within a quarter section of the house can be disturbed.<sup>20</sup> These impacts can be reduced with lower densities, clustering, and the careful location of residential subdivisions can reduce these adverse effects.<sup>21</sup> A Washington State Department of Fish and Wildlife Report shows that maintaining the state's native wildlife species requires densities no greater than one dwelling unit per 20 acres and wildlife conservation planning measures.<sup>22</sup> Without wildlife conservation planning measures, approximately a quarter of Washington's native bird, mammal, amphibian, and reptile species will be lost at densities of one dwelling unit per 20 acres. At densities of one dwelling unit per ten acres, about half of the species will be lost. At densities of one dwelling unit per five acres over 60 percent of the species will be lost. At densities of one dwelling unit per 2.5 acres over 70 percent of the species will be lost. Even with conservation planning implemented, just over half of the state's wildlife species will survive at densities of one dwelling unit per 2.5 acres. Wiping out a quarter to over 70 percent of the state's wildlife is certainly not compatible with the use of the land by wildlife which the Growth Management Act requires as part of its definition of rural character.

Research by the University of Washington in the Puget Sound lowlands has shown that when total impervious surfaces exceed five to 10 percent and forest cover declines below 65 percent of the basin, then salmon habitat in streams and rivers is adversely affected.<sup>23</sup> Impervious surfaces also affect

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<sup>19</sup> Andrew J. Hansen, Richard L. Knight, John M. Marzluff, Scott Powell, Kathryn Brown, Patricia H. Gude, and Kingsford Jones, *Effects of Exurban Development on Biodiversity: Patterns, Mechanisms, and Research Needs* 15(6) ECOLOGICAL APPLICATIONS 1893, 1899 (2005). Included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "hansenetal2005\_2.pdf." Ecological Applications is a peer reviewed scientific journal. See the Ecological Applications webpage at: <http://esapubs.org/esapubs/journals/applications.htm> and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "Ecological Applications webpage.pdf."

<sup>20</sup> David M. Theobald, James R. Miller, and N. Thompson Hobbs, *Estimating the Cumulative Effects of Development on Wildlife Habitats*, 39 LANDSCAPE AND URBAN PLANNING 25, 34 (1997). Included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "theobald\_etal1997.pdf." Landscape and Urban Planning is a peer reviewed scientific journal. See the Landscape and Urban Planning Guide for Authors webpage accessed on October 29, 2010 at: [http://www.elsevier.com/wps/find/journaldescription.cws\\_home/503347/authorinstructions](http://www.elsevier.com/wps/find/journaldescription.cws_home/503347/authorinstructions) and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "Landscape and Urban Planning Guide for Authors.pdf."

<sup>21</sup> David M. Theobald, James R. Miller, and N. Thompson Hobbs, *Estimating the Cumulative Effects of Development on Wildlife Habitats*, 39 LANDSCAPE AND URBAN PLANNING 25, 35 (1997).

<sup>22</sup> Washington State Department of Fish and Wildlife, *Landscape Planning for Washington's Wildlife: Managing for Wildlife in Developing Areas* p. 1-1 (Olympia, Washington: December 2009). Accessed on October 29, 2010 at: [http://wdfw.wa.gov/conservation/phs/mgmt\\_recommendations/](http://wdfw.wa.gov/conservation/phs/mgmt_recommendations/) and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "wdfw00023.pdf." Supporting data is included in the files "app\_b\_species\_development\_database.xls," "app\_c\_stressor\_tables.xls," and "app\_d\_metric\_tables.xls" in the "Supporting Documents" directory of the data CD enclosed with the paper original of this letter.

<sup>23</sup> Christopher W. May, Richard R. Horner, James R. Karr, Brian W. Mar, Eugene B. Welch, *The Cumulative Effects of Urbanization on Small Streams in the Puget Sound Lowland Ecoregion* p. 17 (University of Washington, Seattle Washington). Included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "chrisrdp.pdf." This report was identified as best available science in Washington State Office of Community Development. *Citations of Best Available Science for Designating and Protecting Critical Areas* p. 17 (March 2002).

wetlands. “Hicks found a well-defined inverse relationship between freshwater wetland habitat quality and impervious surface area, with wetlands suffering impairment once the imperviousness of their local drainage basin exceeded 10%.”<sup>24</sup> Whatcom County’s own critical areas report acknowledges that when impervious surfaces cover less than ten percent of the area that contributes water to a wetland, adverse impacts occur.<sup>25</sup>

Conventionally designed five-acre lot single-family developments exceed the five percent threshold with impervious surfaces covering 5.4 percent of the lot.<sup>26</sup> Three to five acre lots have impervious surfaces of 8.3 percent and one acre lots 13 percent.<sup>27</sup> On an aerial photograph of the Emerald Lake area we were able to quantify a 1.2 acre lot with 22 percent of the lot used for buildings and driveways.<sup>28</sup> On an aerial photograph of the Guide Meridian Wisner Lake Area we were able to quantify a 1.85 acre lot with 15 percent of the lot used for buildings and driveways.<sup>29</sup> If this lot was 2 acres, the buildings and driveways would cover 15 percent. This amount of impervious surface does not include the county roads and is much higher than the threshold that damages salmon habitat. Stopped. Rural densities of one dwelling unit per one, two, or five acres adversely affect water quality and fish habitat.

This is especially true given that many subbasins will include urban growth areas with much higher percentages of impervious surfaces. Indeed, the Final Environmental Impact Statement for the Ten-Year Urban Growth Area Review discloses that five watersheds that currently have impervious surfaces below five percent

could potentially exceed 10% under full buildout in five discrete watersheds, including: Birch Bay; Campbell River; Lummi Bay; Point Roberts; Silver-Nooksack. In general,

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Accessed on Nov. 17, 2010 at [http://www.commerce.wa.gov/uploads/bas\\_citations\\_final.pdf](http://www.commerce.wa.gov/uploads/bas_citations_final.pdf) and included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “bas\_citations\_final.pdf.” A published version of the May paper was cited in the *Draft Environmental Impact Statement • 10-Year Urban Growth Area Review* • May 2009 Whatcom 2031 p. 5-7. Accessed on Nov. 17, 2010 at

[http://www.co.whatcom.wa.us/pds/2031/pdf/DEIS\\_Combined\\_050509.pdf](http://www.co.whatcom.wa.us/pds/2031/pdf/DEIS_Combined_050509.pdf) and included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “DEIS\_Combined\_050509.pdf”

<sup>24</sup> Chester L. Arnold, Jr. & C. James Gibbons, *Impervious Surface Coverage: The Emergence of a Key Environmental Indicator*, 62 *Journal of the American Planning Association* 243, p. 248 (1996). Included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “9373702.pdf.” The *Journal of the American Planning Association* is a peer reviewed journal, see the file “JAPA Peer Review Process.pdf” in the Supporting Documents directory of the data CD enclosed with the paper original of this letter.

<sup>25</sup> Parametrix, Adolphson Associates, Earth Systems, Coastal Geologic Services, & Jennifer Thomas & Associates, *Whatcom County Critical Areas Ordinance Best Available Science Review and Recommendations for Code Update Final Report* p. 5-18 (May 2005). Accessed on Nov. 19, 2010 at:

[http://www.co.whatcom.wa.us/pds/naturalresources/criticalareas/pdf/bas\\_final\\_20050520.pdf](http://www.co.whatcom.wa.us/pds/naturalresources/criticalareas/pdf/bas_final_20050520.pdf) and included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “bas\_final\_20050520.pdf.”

<sup>26</sup> United States Environmental Protection Agency, *National Management Measures to Control Nonpoint Source Pollution from Urban Areas* p. I-9 (Publication Number EPA 841-B-05-004, November 2005). Downloaded on January 3, 2006: <http://www.epa.gov/owow/nps/urbanmm/> and included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “urban\_guidance[1].pdf.”

<sup>27</sup> *Id.*

<sup>28</sup> Emerald Lake With Representative Lots Identified aerial photograph. Included on the data CD enclosed with the paper original of this letter in the “Whatcom County Aerial Images” directory with the filename “emeraldlake with measurements.pdf.”

<sup>29</sup> Guide Meridian Wisner Lake Area with Representative Lots Identified aerial photograph. Included on the data CD enclosed with the paper original of this letter in the “Whatcom County Aerial Images” directory with the filename “guidemerwisner with measurements June 6 Final.pdf.”

when impervious surface area exceeds 10% of the subbasin area the potential for impacts from flooding, reduced groundwater recharge and contamination from urban run-off is increased. However, this is a general rule of thumb. The effects of impervious surfaces typically manifest themselves before the 10% threshold is reached; impacts become more acute and difficult to mitigate when the 10% threshold is exceeded.”<sup>30</sup>

In addition, some rural uses, such as agricultural product processing plants, may also have higher impervious surfaces. Higher densities of one housing unit per two acres mean that impervious surfaces will exceed this percentage in Whatcom County, resulting in significant adverse environmental impacts and adverse impacts on surface water quality and fish habitat. This violates the GMA element of the definition of rural character that provision that rural character requires compatibility with fish and wildlife habitat.

That lower residential densities are needed to protect fish habitats is supported by the National Marine Fisheries Service’s requirements for development within flood plains to comply with the federal Endangered Species Act. These measures direct local governments to “[r]equire zoning to maintain a low density (e.g., 5-acre lots or greater) of floodplain development to reduce the damage potential within the floodplain to both property and habitat, and help maintain flood storage and conveyance capacity.”<sup>31</sup>

**(e) That reduce the inappropriate conversion of undeveloped land into sprawling, low-density development;**

As the aerial photographs of two and some of the five acre lots enclosed with the paper original of this letter show, these densities does not reduce the inappropriate conversion of land into low-density development, it causes low-density development. This again violates the Growth Management Act definition of rural character.

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<sup>30</sup> *Final Environmental Impact Statement • 10-Year Urban Growth Area Review • October 2009* Whatcom 2031 p. 4-6. Accessed on Nov. 19, 2010 at: [http://www.co.whatcom.wa.us/pds/2031/pdf/20091023\\_ch4.pdf](http://www.co.whatcom.wa.us/pds/2031/pdf/20091023_ch4.pdf) and included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “20091023\_ch4.pdf.”

<sup>31</sup> National Marine Fisheries Service, *Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the on-going National Flood Insurance Program carried out in the Puget Sound area in Washington State, HUC 17110020 Puget Sound* p. 224 (Sept. 22, 2008). Accessed on Nov. 16, 2010 at: [https://pcts.nmfs.noaa.gov/pls/pcts-pub/biop\\_results\\_detail?reg\\_inclause\\_in=\('NWR'\)&idin=29082](https://pcts.nmfs.noaa.gov/pls/pcts-pub/biop_results_detail?reg_inclause_in=('NWR')&idin=29082) Included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “https\_\_pcts.nmfs.noaa.gov\_pls\_pcts-pub\_sxn7.pcts\_upload.download\_p\_file=F3181\_200600472\_fema\_nfip\_09-22-2008.pdsf”

**(f) That generally do not require the extension of urban governmental services;**

Professor Daniels reports that

Rural residential sprawl usually occurs away from existing central sewer and water. Homeowners rely on on-site septic systems and on wells for water. Often, these systems are not properly sited or not properly maintained. For example, a 1998 study in the Indiana reported that between 25 and 70 percent of the on-site septic systems in the state were failing.

When septic systems fail in large numbers, sewer and water lines must be extended into the countryside, often a mile or more. Public sewer is priced according to average cost pricing. This means that when sewer lines are extended, there is a strong incentive to encourage additional hook-ups along the line. So when a sewer line is extended a mile or more, development pressure increases along the line. This usually results in a sprawling pattern, like a hub and spoke from a village to the countryside.<sup>32</sup>

The *Existing Conditions Report* for the Whatcom County Comprehensive Plan states:

The availability of sufficient quantities of potable water is a major concern for future land use in Whatcom County. Many of the county's water suppliers are nearing their legal and physical capacity to supply water to their customers. A few major water supplies have the capability to meet future demands while others do not. Due to the uncertainty over the total water available for human use, the Washington State Department of Ecology recently imposed constraints on the issue of new water rights in the Nooksack Basin, for both ground and surface water withdrawals.<sup>33</sup>

There "is a lack of adequate information regarding water use, water supply systems, and water rights."<sup>34</sup> Ecology has closed nearly all of Whatcom County to new surface and ground water withdrawals.<sup>35</sup>

The water supplies also have water quality problems.<sup>36</sup> "Numerous households rely on bottled water for their domestic water because contaminated sources have made clean water unavailable. Water supplies in Whatcom County are seen as vulnerable to potential contamination, due to the fact that a large majority of

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<sup>32</sup> Professor Tom Daniels, *What to Do About Rural Sprawl?* p. 1 Paper presented at the American Planning Association Conference, Seattle, Washington (April 28, 1999). Accessed on October 29, 2010 at: <http://www.mrsc.org/subjects/planning/rural/daniels.aspx> and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "Daniels What to Do About Rural Sprawl.pdf."

<sup>33</sup> Whatcom County Planning & Development Services, *Environmental Impact Statement, Existing Conditions Report for the Whatcom County Comprehensive Plan* p. 122 (Sept. 1994). Included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "Existing Conditions Report Excerpts Sept 1994.pdf."

<sup>34</sup> *Id.* at p. 115.

<sup>35</sup> WRIA 1 Planning Unit, *WRIA 1 Watershed Management Plan Phase 1 Section 2 Assessments, Problem Identification, and Findings* p. 58 of 160 (March 25, 2005). Accessed on November 3, 2011 at: [http://wria1project.whatcomcounty.org/uploads/PDF/WMP\\_Section%202\\_final.pdf](http://wria1project.whatcomcounty.org/uploads/PDF/WMP_Section%202_final.pdf) and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "WMP\_Section 2\_final.pdf"

<sup>36</sup> Whatcom County Planning & Development Services, *Environmental Impact Statement, Existing Conditions Report for the Whatcom County Comprehensive Plan* p. 122 (Sept. 1994).

water associations' water sources are less than 50 feet deep and several large purveyors rely on unprotected surface water bodies."<sup>37</sup>

Currently the owners of conventional septic systems are required to submit a report every three years. There are an estimated 30,000 septic systems in Whatcom County, but only 8,351 private septic systems have submitted the required inspection reports required.<sup>38</sup> Of those systems that had been professionally inspected, "just 62 percent of the systems they checked were in satisfactory condition. Thirty-four percent needed maintenance, while four percent had failed."<sup>39</sup>

So failing septic tanks on two or five acre lots could require the extension of water, which is both an urban and rural public facility, as water supplies are likely to be unavailable onsite. If extended at an urban level of service, this would be inconsistent with this element of rural character. Also, these densities may require extending sewer lines, an urban governmental service, which would violate this element of the Growth Management Act definition of rural character.

**(g) That are consistent with the protection of natural surface water flows and ground water and surface water recharge and discharge areas.**

As was documented above, densities of one dwelling unit per two and five acres will adversely affect surface water flows. Septic systems serving rural development are polluting surface waters, including Puget Sound.<sup>40</sup> When the Rural Residential Density Overlay was adopted, the Washington State Department of Ecology staff testified that that the overlay is a mistake because storm water runoff cannot be effectively mitigated under current regulations from lots two-acre in size and smaller.<sup>41</sup> Lots one- and two-acres in size contribute additional phosphorus to Lake Whatcom, polluting the water supply for Bellingham and other residences and businesses.<sup>42</sup>

There is also evidence that the high densities that Whatcom County has allowed in the rural area have harmed ground water recharge and discharge areas. Salt water intrusion has already led to the closure of several of the public water-supply wells on the Lummi Peninsula.<sup>43</sup> Existing water resources on the Lummi Peninsula can only serve an additional 110 homes.<sup>44</sup> Some of the water associations lack the

<sup>37</sup> *Id.* at pp. 115 – 16; *Whatcom County Comprehensive Water Resource Plan* p. 51 (Feb. 9, 1999).

<sup>38</sup> John Stark, *Septic system inspections turn up problems in Whatcom County* The Bellingham Herald (Nov. 08, 2010). Accessed on Nov. 17, 2010 at <http://www.bellinghamherald.com/2010/11/08/1706369/whatcom-county-septic-system-inspections.html> and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "Septic system inspections turn up problems in Whatcom County.pdf."

<sup>39</sup> *Id.*

<sup>40</sup> *Whatcom County Comprehensive Water Resource Plan* p. 34 (February 9, 1999).

<sup>41</sup> Steve Hood Washington State Department of Ecology Testimony p. \*2 (May 10, 2011). Included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "C-001 20110510-doe.pdf."

<sup>42</sup> *Id.* at pp. \*1 – 2; *Whatcom County Comprehensive Water Resource Plan* p. 43 (Feb. 9, 1999).

<sup>43</sup> Water Resources Division, Lummi Natural Resources Department, Lummi Nation Nonpoint-Source Management Program p. 7 (January 2002). Accessed on June 4, 2010 at: [http://www.lummi-nsn.org/NR/Water/WaterResourcesWeb/documents/NonPointSource/4\\_NPSMP.pdf](http://www.lummi-nsn.org/NR/Water/WaterResourcesWeb/documents/NonPointSource/4_NPSMP.pdf) and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "4\_NPSMP.pdf"

<sup>44</sup> Hon. Judge Thomas Zilly United States & Lummi Indian Nation v. State of Washington, Department of Ecology, et al. No. C01-0047Z Order Conditionally Approving Settlement Agreement p. 6 (Nov. 2, 2007). Accessed on June 4, 2010 at: <http://www.lummi-nsn.org/NR/Water/PDF/WaterLitigation/Order%20Approving%20Settlement.pdf> and included on the data CD enclosed with the paper original of this letter in the "Supporting Documents" directory with the filename "Order Approving Settlement.pdf."

water to serve all of the existing lots.<sup>45</sup> So allowing any new lots on the peninsula will adversely affect ground water.

More broadly, “groundwater in Whatcom County is very vulnerable to contamination because much of the County’s groundwater lies within a shallow unconfined aquifer. Activities that occur on the surface of the ground directly affect groundwater quality.”<sup>46</sup> Large areas are mapped as vulnerable to groundwater contamination.<sup>47</sup> “Nitrate contamination is the major concern for groundwater in the County.”<sup>48</sup> For example, the “Blaine Sumas Aquifer has been impacted by agricultural and other activities causing both nitrate and pesticide contamination problems in drinking water supplies. Though there is some variation in study results, approximately 20% of wells have levels of nitrate above the [Maximum Contaminant Level] MCL of 10 ppm, with 40 – 50% of wells with levels that exceed half the MCL.”<sup>49</sup> “The main sources for excess nitrate in drinking water have been determined to include improper application of commercial fertilizers, improper animal manure applications, and improperly designed, installed or maintained septic systems.”<sup>50</sup> A peer reviewed study confirms that septic tanks are the most frequently reported cause of ground water contamination and the most important factor influencing ground water contamination from septic tanks is the density of the systems.<sup>51</sup> Lot sizes associated with ground water contamination ranged from less than a quarter acre to three acres.<sup>52</sup> So allowing more small lots is likely to lead to more contamination by “improperly designed, installed or maintained septic systems.” So again, these lots violate this element of the Growth Management Act definition of rural character.

### **Conclusion on Rural Densities**

In short, the two and five acre zoning is not consistent with any of the elements in the Growth Management Act definition of rural character. Since all elements must be met, these densities violate the Growth Management Act. We urge you to either eliminate the Rural Residential Density Overlay or set a maximum density that meets the requirements of the Growth Management Act and protects Whatcom County and its surface and ground water resources.

### **Failure to Provide for Adequate Public Involvement**

Since these are amendments to Title 20 of the Whatcom County Code, Whatcom County’s *Public Participation Plan* would classify this project as a “Level 1” project.<sup>53</sup> “Level 1” projects typically follow this process:

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<sup>45</sup> *Id.* at 14.

<sup>46</sup> *Whatcom County Comprehensive Water Resource Plan* p. 51 (February 9, 1999).

<sup>47</sup> Whatcom County Planning & Development Services, *Environmental Impact Statement, Existing Conditions Report for the Whatcom County Comprehensive Plan Map #11 Potential Groundwater Vulnerability* (Sept. 1994).

<sup>48</sup> *Whatcom County Comprehensive Water Resource Plan* p. 51 (February 9, 1999).

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> Marylynn V. Yates, *Septic Tank Density and Ground-Water Contamination* 23 *GROUND WATER* 586, p. 590 (1985). *Ground Water* is a peer reviewed scientific journal. *Ground Water* Editorial policies. Both included on the data CD enclosed with the paper original of this letter in the “Supporting Documents” directory with the filename “Yates Septic Tank Density and Ground-Water Contamination.pdf” for the paper and [www.ngwa.org - Ground Water Peer Review Editorial Policies.pdf](http://www.ngwa.org - Ground Water Peer Review Editorial Policies.pdf) for the editorial policies.

<sup>52</sup> *Id.*

<sup>53</sup> *Whatcom County Comprehensive Plan and Development Regulation Amendments Public Participation Plan* p. 4-2 (July 2011), accessed on Nov. 3, 2011 at: <http://www.co.whatcom.wa.us/pds/2031/participation/pdf/20110721-ppp-final.pdf> and included on the data CD enclosed with the paper original of this letter with the filename “20110721-ppp-final.pdf”

- 1) **Proposal:** Staff generates a proposal or a recommendation on an application.
- 2) **Proposal posted:** Proposal is posted to the website and announced through email list. Legal notice will be given as required and applicable. Public may make comment to the Planning Commission via email and/or US mail.
- 3) **Public hearing:** Planning Commission holds public hearing on issue.
- 4) **Work session and recommendation:** Planning Commission conducts work session on issue and recommends action to the County Council. Public may make comment to the County Council via email and/or US mail.
- 5) **County Council:** County Council will review the recommendation of the Planning Commission and hold a work session in committee. The Council will approve the recommendation, modify, or deny. If the Planning Commission recommendation is substantively modified, another hearing will be held on that modification and then the Council will act.<sup>54</sup>

We unaware of any of steps 1 through 4 being done. This has hindered public participation on this process. We respectfully request that the county follow the county's adopted *Public Participation Program* to allow adequate public involvement.

Thank you for considering our comments. If you require additional information please contact Cathy Lehman, Whatcom County Chapter Director, at telephone (360) 224-8877 and e-mail [Cathy@futurewise.org](mailto:Cathy@futurewise.org) or Tim Trohimovich at telephone 206-343-0681 and [tim@futurewise.org](mailto:tim@futurewise.org).

Sincerely,

Cathy Lehman  
**Whatcom County Chapter Director**

Tim Trohimovich, AICP  
**Co-Director of Planning & Law**

cc: Planning and Development Services w/data CD

Enclosure

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<sup>54</sup> *Id.*