

**From:** [WENDY](#)  
**To:** [PDS Planning Commission](#)  
**Cc:** [PDS](#); [Council](#); [Boscolo, Anthony](#)  
**Subject:** Significant problems with the CARA provisions  
**Date:** Monday, March 07, 2016 5:19:21 AM  
**Attachments:** [CARA Concerns for CAO update.docx](#)

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After our the last Planning Commission meeting, I was left confused, with many questions regarding the CARA provisions. As I began to do some review, I was increasingly troubled by what I found. A number of glaring gaps exist between the legal requirements and the county's CARA provisions. It does not appear that the administrative staff has been very forthcoming to the PC, the public, or the two advisory committees about the nature and extent of the problems with its CARA section. It fails to address issues regarding water quantity. It fails to properly address one of the two components used to rate CARAs and what it does use is outdated and should be revised to current standards. Every attempt is made to avoid even the mention of what is clearly established as the primary source of the problem.. agricultural activities. Recommendations to fix these problems were addressed in the 2005 Best Available Science Report but were ignored. The county is applying an inappropriate legal standard for development within CARAs that will not protect groundwater quality or quantity or public health. The county has failed to engage in efforts to mitigate the damage and prevent additional contamination. There was no substantive review or incorporation of BAS when reviewing the CARA provisions. And beyond the numerous problems with GMA compliance problems, it is likely that the county's failure to meet its legal obligation has resulted in harm to in stream flows in violation of tribal treaty rights.

Attached is my written analysis for your consideration. Based on the problems that I have uncovered, I am asking the Planning Commission to send the CARA provisions back to the planning staff to revise in conformity with the law. I believe it would be extremely unwise to move these provisions forward to the county council. I hope after reviewing my analysis, you share my concerns.

Thank you for considering my comments. I would appreciate it if you could include the attached analysis as part of the public record.

Sincerely  
Wendy Harris

March 7, 2016

After the last Planning Commission meeting, I had as many questions as the Planning Commission and I went back and completed a more thorough review of the CARA provisions. It is now clear to me that the staff's work product is not compliant with GMA requirements. It fails to acknowledge existing problems with nitrate contamination; it fails to reflect an updated and accurate vulnerability analysis; it fails to address water quantity; it fails to acknowledge that the primary source of the problem is agricultural practices, it imposes an improper legal standard for development, the provisions are not founded on a substantive review of Best Available Science, and the county staff continues to ignore the recommendations of the consultant who prepared the 2005 Best Available Science Report. Most importantly, it fails to reflect plans and requirements to mitigate and prevent on-going damage to groundwater quality and quantity.

As a result, proposed CARA provisions fail to meet the goal of preventing groundwater contamination, protecting human health, maintaining stream flows and protecting fish and wildlife habitat. **I am asking the Planning Commission to send this important critical area provision back to the staff** for a redraft that conforms to the requirements of RCW 36.70A.060; RCW 36.70.030(5); RCW 36.70.172; WAC 365-196-830; WAC 365-190-100, DOE Guidelines for Establishing Critical Aquifer Recharge Areas (2005); the recommendations of the 2005 BAS report and other legal references cited herein. Let's not wait until someone's child dies of blue baby syndrome from nitrate contamination of well water.

### **CARAs**

Critical Aquifer Recharge Areas (CARAs) have a critical recharging effect on ground water aquifers used as potable water. Critical recharge areas function to protect human health from contaminated drinking water, maintain stream flows and moderate temperatures for fish and wildlife habitat. The goal is to prevent contamination before it happens to avoid exorbitant costs, hardships, and physical harm to people that occurs after contamination. This requirement applies to both the quality and quantity of groundwater. WAC 365-190-100(2).

Agriculture was identified as a primary contamination source in the 2005 BAS Report and it affected both water quality and water quantity. Recommendations to address these problems were ignored by the county then and despite a growing problem, they continue to be ignored today.

### **Water Quality (Classification)**

Counties and cities must classify recharge areas for aquifers according to the aquifer vulnerability. Vulnerability is the combined effect of two factors; 1) hydrogeologic susceptibility

to contamination and 2) the contamination loading potential. WAC 356-190-100(3)(a) and (b). <http://app.leg.wa.gov/wac/default.aspx?cite=365-190-100>.

The proposed CARA provisions only address one of the factors used to rate vulnerability, hydrogeologic susceptibility. Proposed WWC Sec. 16.16.510. But it excludes any reference to or discussion of the second factor of contamination loading potential. This brings into question the validity of the vulnerability determinations that have been made and are reflected on the county CAO map. <http://www.whatcomcounty.us/DocumentCenter/View/1834> Staff needs to clarify how its rating was done without consideration of contamination loading potential. This could be a GMA compliance problem, and at a minimum, the CARA provisions need to be corrected to reflect the correct classification system.

It also appears that any standards relied upon by the county are outdated, and this should have been addressed as part of the current update. A review of the critical area map for CARAs indicated that "Aquifer Susceptibility was mapped in support of Whatcom County's Critical Areas update. The methods used were set out in the Dept. of Ecology's "Guidelines for Establishing Critical Aquifer Recharge Areas, (Cook 2002)."

These guidelines were replaced in 2005 with new guidelines that "reflects more recent information and reference materials, and provides clarification where needed." <https://fortress.wa.gov/ecy/publications/SummaryPages/0510028.html>. The new guidelines discuss the need for consideration of contamination. Accordingly, it does not appear that the classification system used by the staff conforms to either GMA requirements or current DOE standards. Staff needs to update its CARA classification based on updated DOE standards, revise its CAO map for CARAs and reflect all of this in its 2016 BAS report.

### **Contamination From Agriculture**

Perhaps it would also be appropriate for the staff to attempt to reconcile its CARA map with the map produced by DOE as part of a 2012 study of the Sumas aquifer, discussed in Publication No. 12-03-005, <https://fortress.wa.gov/ecy/publications/documents/1203005.pdf>. The Sumas-Blaine Aquifer is particularly vulnerable to nitrate contamination due to its shallow depth (mostly less than 10 feet to the top of the water table), limited thickness, and the area's heavy rainfall from October through March. DOE determined that "within the agriculture category, about 66% of the nitrogen applied to the land is from manure applied to crops, while 27% is from inorganic fertilizer." This publication contains a map of the Sumas aquifer that reflects the "Maximum nitrate concentrations (mg/L-N) in drinking water wells sampled by Ecology and the USGS from 1981 to 2010."

In sum, an abundance of information makes it clear that the primary source of groundwater contamination is agricultural activities. The potential harm from agricultural activities was

specifically referenced in WAC 365-190-100(3)(b)(iii), and in the DOE Guidelines. The actual harm is highlighted in the 2005 BAS Report, which stated that

*Completed and ongoing contamination studies in Whatcom County have identified a number of impacts to ground water, the largest of which are due to agricultural chemicals, fertilizers, and animal wastes (Erickson 1991, 1992, 1994, and 1998).” (2005 BAS Report, Sec. 4.3.2) Non-point sources of ground water contamination included runoff from agricultural areas, field application of fertilizers and manure at greater than agronomic rates, and concentrated agricultural feeding operations. Principle chemicals of concern were identified as nitrates from fertilizer applications, animal feedlots, and animal waste lagoons, and fumigants used as pesticides, such as ethylene dibromide and dibromo chloropropane.*

### **Failure To Prevent Groundwater Contamination and Protect Public Health**

Although the county is on notice that dangerous levels of nitrate contamination exist in many north county wells as a result of agricultural activities, it not only fails to mention agriculture in its CARA provisions, it fails to acknowledge that groundwater has already been contaminated, and it fails to take action to address the contamination. In fact, agricultural activities are not even subjected to the critical area review process proposed under WCC 16.16.525.

It is hard not to be shocked by the county’s abdication of its responsibilities in such a serious matter, and this is made all the worse by the county’s refusal to adopt the recommendation that was made in the 2005 BAS Report. Finding #5 of the 2005 BAS Report recommended that, “In consideration of documented ground water quality problems from agricultural chemicals, commercial and organic fertilizers, and seasonal declines in ground water levels from excessive pumpage and drainage activity, consider a petition to form a ground-water management area under WAC 173-200.”

Critical aquifer recharge area ordinances may take into consideration existing ground water protection programs under unrelated state and federal law as a means to address ground water problems, which includes the federal Safe Drinking Water Act and special ground water protection areas under the state ground water management program, found in Chapters 90.44, 90.48, and 90.54 RCW, and Chapters 173-100 and 173-200 WAC .

The proposed CARA provisions, at 16.16.510(D) state “If special groundwater management areas or susceptible groundwater management areas are established in Whatcom County in accordance with WAC 173-200-090 or 173-100-010, respectively, then these areas shall be incorporated into the highly susceptible aquifer designation.”

The county needs to actually establish a special groundwater management area or take some other actions to “preclude further degradation.” WAC 365-190-100(4)(a). This is also a requirement under RCW and WAC provisions. “Development regulations may not allow a net loss of the functions and values of the ecosystem that includes the impacted or lost critical areas.” Protection of groundwater also means to “safeguard the public from hazards to health and safety.” WAC 365-196-830. The county has made no attempt to meet its legal obligations under the CARA provisions and is not in compliance with GMA requirements.

### **Water Quantity**

The CARA provisions apply to groundwater quality and quantity. The county has ignored the requirements to protect water quantity. Withdrawal of ground water at rates and/or volumes exceeding natural recharge causes depletion of ground-water storage in aquifers. Natural ground water recharge rates can be reduced by changes in land use. One example of this is agricultural drainage systems, which are specifically designed and constructed to intercept water that would, in an unaltered state, discharge from the site and recharge aquifers. Although storm water requirements do attempt to mitigate for some of this, agricultural drainage systems reduce the amount of ground water available to support baseflow in streams. Decreased recharge can lower ground water levels and in appropriate circumstances, cause reversal of ground water flow directions and gradients. The aquifer is then recharged by the stream (i.e., stream flow depletions are increased), rather than discharging to the stream to augment baseflow.

Finding # 7 of the 2005 BAS noted that the county failed to address the issue of water quantity with respect to impacts on critical aquifer recharge areas. **The consultant’s recommendation was to add a new section regarding activities that may diminish groundwater recharge, deplete aquifer storage, reduce ground-water levels, or have other negative impacts on ground-water quantity and require mitigation measures.**

The county again failed to act on professional advice provided 10 years ago and intends on continuing to do so while groundwater problems have increased. At the same time, the administrative staff is advising the public that the CARA provisions are working well. It was this fact that motivated me to address this matter more thoroughly. It is a GMA violation to ignore issues of CARA quality or quantity.

In Whatcom County, where the Sumas aquifer recharges the Nooksack river, as discussed in the 2005 BAS Report, this could have impacts on tribal treaty rights to in stream flows. This is supported by WAC 365-190-100(4)(c), which states, “Some aquifers may also have critical recharging effects on streams, lakes, and wetlands that provide critical fish and wildlife habitat. Protecting adequate recharge of these aquifers may provide additional benefits in maintaining

fish and wildlife habitat conservation areas.” This is another reason for the county to revise this provision to ensure compliance. I would also suggest seeking legal counsel on any legal liabilities the county may have incurred with regard to violation of tribal treaty rights.

### **Additional CARA Problems**

16.16.500: the purpose section, fails to state that the goal is preventing contamination as reflected in WAC 365-190-100. This should be amended.

16.16.520: The county proposes to permit development under the following standard: “The proposed development will not cause contaminants to enter the aquifer and will not significantly adversely affect the recharging of the aquifer.” The Planning Commission wisely tried to remove the qualifier “significant.”

The correct standard for protection of CARA’s, or of any critical area, is preservation of the functions and values of the natural environment under a no net loss standards, and to safeguard the public from hazards to health and safety. WAC 365-196-830. A “significant adverse” standard is inapplicable and does not comply with the GMA because it does not achieve no net loss of the ecosystem in which the critical area is located, and it fails to ensure protection of public health and safety. Moreover, as discussed above, the goal of the CARA provisions is to avoid impacts before they occur and this would not achieve that goal.

In response to Planning Commission inquiries, the Staff drafted a memo that asserts that the “significant adverse impact” standard is required. This is false. There is no requirement in any of materials I reviewed that established such a standard, and as discussed above, the legal references I reviewed indicated just the opposite. Moreover, this was the topic of many discussions on the CAC and I provided legal authority documenting it’s inapplicability, so this issue remains quite clear in my mind. This standard must be removed and replaced with the no net loss standard.

Staff alleges there is no definition of “significantly affects. “ That is not surprising since this is not the appropriate legal standard to apply. But it leaves this determination to the unrestricted discretion of the Planning Director, without any standards or guidelines, which is not a valid exercise of power under the GMA.

Finally, to the extent that the county allowed any impacts under its proposed “significantly adverse” standard, it would be required to mitigate those impacts to achieve no net loss and there are no provisions in this Article that reference the need for required compensatory mitigation. In short, the significantly adverse standard is an attempt to allow activities to cause inappropriate harm to a CARA in violation of state law.

Inadequate Committee Review/Failure to Review BAS: It is important to understand that with both committees, particularly the CAC, this was a staff driven process. The staff would identify the issues and concerns that needed to be addressed. Both committees were advised that that there were no issues or changes that were needed to the CARA provisions, and by chance, these meetings occurred on days when the most outspoken activists were absent. I reviewed the tape for the citizen advisory committee discussion on the CARA provisions from 8/5/15. It starts at about minute 30. It is done after 3.5 minutes.

There is no review of law or science, and therefore, it fails to comply with GMA requirements regarding incorporation of BAS. Planner Cliff Strong failed to advise the committee members regarding the nitrate contamination and the connection to agricultural activities. It was clear from the uninformative discussion led by Mr. Strong that the members were unaware of how the CARA provisions were connected to the county's drinking well problems, or if they did, they remained silent. Subsequently, two members of the TAC met to address CARA provisions and provided BAS and recommended changes to Mr. Strong. He refused to accept these materials claiming it was past a due date (that had never been vocalized). This claim carries little weight since revisions to the CAO are part of an on-going process before the planning commission and the county council.

### **Conclusion**

The above analysis establishes that the CARA provisions fail to comply with the law and fail to protect the public's health and safety. This should not be accepted by the Planning Commission. Instead, please return this for the staff to revise in conformity with the law and the recommendations from the 2005 BAS Report.

Sincerely,

Wendy Harris, CAC member