

To: Ground water advisory committee members

From: Valerie Dantoin

There are four areas in which I'd like to share my preferred choice & rationale.

1. Set back from GPA
2. CFS spring flows 80% of the time
3. CFS volume for springs definition
4. Include other waters in GPA

As with most public policy/resource debates, there are four (at least) groups with an interest in the outcome:

1. Economic (the applicant and the state & local economy)
2. Environment (the surface water ecology (plants & critters) and the public recreational/aesthetic, the aquifer)
3. DNR (ease of regulating, conflicts between interest groups)
4. Future generations

I tried to interpret the pros & cons for each interest group as I chose which option seemed most palatable. Keep in mind that I am a dairy farmer and have run a small business, so I am acutely aware of the impacts of additional costs and regulation on the economy. I am also a land steward and wish to preserve & protect our resources because ultimately a sustainable resource base will enable a robust economy, allow humans to co-exist with other critters, and keep options open for future generations.

1. Set back a standard distance (1200') from a GPA.

Options: 1. Keep 1200' distance. 2. Create a flexible distance. 3. Smaller (ie.600') or 4. Larger (ie.2400').

Original rationale For 1200'	Probably was just a placeholder. May relate to distances that make sense in surface water applications or well head protection. Historically, there has been no setback, so 1200' is a big step toward some protection.
------------------------------	---

Interest group	Impact
Applicant	Setback may cause applicant higher cost if they needlessly consume more land than is necessary. Flexible buffers may increase costs when more site & hydrological data is needed and when a larger the setback becomes required. Smaller setbacks may result when good data is gathered, costs may end up being lower.
Current Public: Economic	Almost every well could still be approved so the effect on the public economy would likely be neutral. A very few wells may not get approval if they cannot meet larger setbacks. This would have a negative effect on the current state & local economy.
Nearby Ecology	After installation, 1200' is probably enough space to protect localized habitat but not a "system" of related wetlands affected by volume of groundwater withdrawn. Sometimes, habitat of only a few hundred feet needs protection. A flexible option would get the fit right.
Public: aesthetic/recreation	Water resources would be more protected with a flexible buffer.
Aquifer impact	Setback size will not affect groundwater unless it changes which aquifer gets tapped. The withdrawal volume will have a greater impact. As long as the well is downflow from a spring it could be quite close without harm.
DNR admin	The bright line makes an approval relatively easy. A flexible setback would require more review. Flexible yet standardized should mitigate conflicts because it should satisfy more interests.
Future generations	Large setbacks will preserve more possibilities/resources/habitat for future generations.

My recommendation on 1200' setback:

Drop 1200' bright line setback. Change to: Decision tree model & DNR professional judgment to determine if further review is necessary and/or to create a hydrologically & biologically appropriate setback from a GPA.

Why change from 1200'? The goal is to protect a GPA or a spring's recharge/ discharge area as well as the immediate ecosystem and recreational resource. The 1200' may protect too much or too little land surface area and groundwater area. Twelve hundred feet is an arbitrary distance originally set as a place-holder. It was originally chosen because it's consistent with well-head protection distances but doesn't make sense in this application.

Why use a decision tree? It can help assure fairness for all applicants. It is not significantly different from what the DNR currently does. It will incorporate a few more pieces of data than what is currently gathered. Applicants can do more data gathering. They currently provide very little information about hydrology. The current well application form (330-250 (R 7/05) asks "Anticipated geological materials and depths that are expected during drilling". The application does not request aquifer information or direction of groundwater flow. Applicants currently supply no springs' information and no surface water area info.

A decision tree approval model can shore up the DNR's "best professional judgment" and avoid conflict. Todd Ambs says DNR is asked to be both flexible and yet firm. I like to think of this as analogous to having a spine. The agency needs to have some portions of the application rather rigid (like vertebrae) and yet be responsive and flexible (like ligaments and nerves) so that good decisions that work for most of the interest groups are made. A written decision tree protocol can help in consistency and speed of processing.

Extra work may be required by the DNR and the applicant. There may be an extra cost to the applicant for the "right" to put in a well. In my opinion, the cost is not unreasonable compared to the benefits. Ken Bradbury has provided a paper which gives assurances that there is reasonable hydrological information available to use as a basis for decision tree choices. Finally, as a landowner I would be willing to bear additional costs in order to continue to be a good steward of the land. I believe that most other farmers & agriculturists in the state will accept additional costs of data collection in order to make a good resourced-based decision on where to sight a well.

Flexible buffers make biological/hydrological sense. A one-size-fits-all buffer really only is a benefit to the applicant & the DNR. It has been demonstrated to the GAC that reasonable data is available in most cases to formulate an appropriate buffer size – which in some cases will be less than the current 1200'. A flexible buffer balances competing interests fairly well.

Six hundred foot (smaller) or 2400' (larger) setbacks are options but were not seriously discussed by the committee. It seems either retaining the 1200' setback or going to a flexible setback were the preferred options.

I could live with a 1200' setback as long as it could be demonstrated that the well was "downstream" from a spring.

2. Drop spring **flow measured “80% of the time”**.

Why? It would require too much applicant /DNR time to gather data and enforce this. It is implied that the measurements would be taken over a 1 year period. However, currently, an applicant could measure the spring flow in, for example, a week in August. They could report the flow rate for 80% of the week.

Recommend: Use flow data from the WWF springs booklet. This is currently the best data source we have. It seems obstructionist to insist that we have perfect springs data before we use any of this information. OR spot check the flow in May, August, December if more information is desired. Report the “typical” flow.

I would also like to recommend that there is a “notification of neighbors” of adjacent property when a hiCap well is proposed. In this way, previously unrecorded springs may be protected. This may also yield more information on “cone of depression effects” if neighbors are aware of groundwater withdrawals.

3. **Define a spring** as having a “**typical flow**” of 0.25 CFS. This is a change from 1 CFS flow 80% of the time.

Why change to “Typical flow”. It is a better descriptor than 80% and better than “average” flow. It places some trust on the applicant to do the right thing and stay within the regulation as it was intended.

Why include smaller springs? They may actually be more heavily impacted by groundwater withdrawal than 1CFS springs. Collectively, they may have more impact on the quality of local trout streams than a 1 CFS spring. They will probably be part of a system of groundwater discharge that would add up to 1 CFS and which could have significant localized habitat that needs protection.

I chose 0.25 CFS because according to the data provided to the committee this may result in further review of well applications for very very few wells per year. Only 185 more springs are added to the protected list. This is only 2% of all springs in the state that are not currently associated with an O/ERW or a trout stream. It also seems as if 0.25 CFS is a simple number to measure.

4. Do not expand the “**scope of protected waters**” at this time. This task is not an original charge of the task force and it may be too complicated to sort out in the given timeframe.

6. Do not change the definition of “**significant environmental impact**”. Current language is acceptable to the committee and by consensus we agreed to leave it alone.