

# OWTS Stakeholder Meeting 11/30/20 9:00-12:00

## **JCPH Attendance:**

Mitch Brown

Madison Pitts

Audra DeVault

Roy Laws

Mary Sloan

Tracy Volkman

Aly Dressler

## **Other Attendees:**

Nathan Seymour

Russell Clayschulte?

Tim Petz

Kate Carney

Michael Broom

Mike Johnson

Chuck Cousino

Drew Schneider?

Erin Dodge

Joe Kordziel

John Wallack

Charlotte Hampson

Peter E Barkman

Steve Hosie

Jennifer Migliorato

Lindsey Wire

Michael Cunningham

Chris Schauder

Daniel Hall

Erik Hamilton

Jessica Weirsma

Chris Arnold

Mike Schrivner

## **Agenda:**

9:15-10:30 Minimum lot size requirements & HLT presentation and discussion

10:30-10:40 Break

10:50-11:20 Repairs- requirements during Use Permit inspections for seepage pits

11:20- 11:50 Repairs- non-record repairs and updates

11:50-12:00 Wrap up and next steps

## **Minimum Lot Size Requirements & HLT Presentation:**

Mitch:

Reason why we've started revising the regulations was about 2 years ago, our Board of Health wanted to move towards a science based regulation. We were tasked to explore 5 directives and incorporate them into our regs.

Presented 5 BOH Directives

- a. Review property size requirements- this was the main basis for the revision and review the science behind Table 4-1.
- b. Review minimum setback from well- this ties into #1 but we reviewed available data whether or not this should be changed.
- c. Evaluate opportunities to obtain groundwater water quality data- we have added a requirement for well testing during use permits, but we are trying to collect data to help better our understanding of the status of the groundwater
- d. Evaluate use permit compliance- our use permit program is an ideal time to address malfunctions and needed repairs, we are analyzing how effective the use permit program has been.
- e. Evaluate training opportunities for OWTS professionals- in alignment with CPOW, Boulder County, and Tri-County Health, we were looking into requiring continual education for the industry to increase/maintain competency amongst the professionals.

## **Roy's Property Size and HLT Presentation:**

We have been directed to come up with science-based regulation. This presentation is a summary of our findings on the requirement of lot size and treatment level.

Environmental Health: protect human health and protect water quality

Presentation put together with Information received from Indian Hills and Conifer water committees

Presented to BOH in November 2019

Is Table 4-1 based on science and carrying capacity? Water quality data indicates higher density area of OWTS show higher nitrate levels. There were several high density, pre-1977 plats.

There are a lot of issues to consider with carrying capacity of land

Findings: Board of Health records date back to 1959. Science doesn't support date of platting, but questions of taxes, takings, or landowner entitlement are affected by date platting. We estimate 2/3 of Jeffco is in the fractured rock aquifer (different than plains). This tends to be more vulnerable to contamination; depends on intensity and size of fractures. Wells are drilled into fractured rock, the primary source of drinking water in the Mountain Groundwater Overlay District. There are several nitrogen groundwater loading models.

Roy's emphasis, all models are wrong, how do we know which are useful?

TL3N is highest level of treatment approved by CDPHE

***State Engineer Model 1985***

Model put together after 5 acres required

What kind of septic system density should there be? Highly variable with fractured rock, precipitation can be variable. Impact on models. Need 0.18 acres needed for each person. In 1985 they thought 5 acres was needed for well and septic.

***Herzog Model 2016***

Indian Hills Watershed. Conclusions: use only HLT with Nitrogen reduction for all new development in Prohibition zone or draining into Parmalee Gulch on lots less than 2 acres. Keep lots above 2 acres as much as possible.

JCPH: HLT for all new and certain repairs on property <5 acres in Parmalee Gulch areas

***Hansen Allen & Luce 2016 Model:***

Risk Analysis Criteria: How to predict dispersion of contaminants in groundwater, potential for pollutants to travel vertically and impacts to drinking water supply.

Dilution model.

If average effluent 60-80 mg/l of Nitrogen. Divide 70/ property size, serves as basis for the model.

***Roy's Nitrogen Mixing Model 2004 and 2019:***

Goal is to put together Technical Advisory Committee; have it peer reviewed.

Recommendations presented BOH: Wants interior lot lines dissolved in parcels platted before Nov 10, 1073. IS MR3 Zoning appropriate for the mountains?

TL1 for 5 acres and larger

TL2N for property 2 acres to less than 5

TL3N for property 1 acre to less than 2 acres

For Property 0.5 acres to less than 1 acre: Highest HLT possible! Not advocating for 0.5 acres, but there are properties 0.5 acres on public water, water districts serving these are also stakeholders to be involved. Wanted to provide basis for why 0.5 acre is still in list of recommendations. Many counties still dealing with pre-1973 plats, old townsites.

***Spreadsheet Model:***

Understanding of treatment level

TL2N- reduces N by 50%

TL3N- reduces N by 71%

5 acres ok with TL1, TL2N would 2.5 acres, TL3N would be 1.4 acres- based on % of N reduction

All models are wrong. Which one is useful?

***Roy's Spreadsheet:***

Summary of usage of Roy's spreadsheet to calculate nitrogen loading to the land. There are 5 inputs to consider.

Groundwater N goal is 10 mg/L or less, the EPA MCL.

If % of Precipitation to Groundwater Mixing Zone is 20%; GW Mixing Zone is shallow compared to water wells. Look at all water entering mixing zone to provide dilution.

Nitrate put out to groundwater/person/year: 2.7 Kg of nitrate/person/year goes to groundwater.

TL3N reduces by 71%, N remaining is 29%. Not looking at any other form of N reduction. Not taking any other removal method into consideration (i.e., plants). Deeper you go, less attenuation you find. Most N due to biological methods.

Water Use/Person/Day: 35 GPD

For 1 person, how much land is needed to dilute N to 10 mg/L: Need almost 0.4 acres. Linear relationship with precipitation. Per person, how much land do you need to supply water and reduce N. For a family of 3, need about 2.3 acres (based on precip)

Model will be available to everyone.

**Discussion:**

Chris Arnold:

Based on data creation, assuming public water district will clean up. Neighboring properties not on public water are at risk

Removing groundwater contaminant very expensive after the fact.

Fatal flaw is in relying on local water district; already overwhelming and exceeding capacity to clean water. Nitrate is so high, overwhelmed district ability to reduce it. Water rates are doubling, things are already expensive.

Builder sense of entitlement- Supreme Ct ruled Property owner NOT entitled

1985 Model: only half is available for pumping due to fractured rock, water number is off.

2 acres based on assumption occupation of 2.25 persons per dwelling. "McMansions" are not considered.

NGLC models, consistent with Herzog model. Thinks this is a good start

Steve Hosie:

Delayed presenting to public, wanted peer feedback. Has the model received peer to peer feedback? Does the public need a CORA request to see that feedback? How does public give feedback? Current

proposed regulations, community very vocal with no action (from JCPH), it is nice to finally see action. Proposed regs fail to take into consideration science with 0.5 acre. Table 4-1 is still in regulations and still sees build build build. JCPH hasn't adopted this and this has been delayed long enough. Thinks JCPH is not following Science, needs more scientific approach. Wants peer comments on this to move forward. Looks forward to Task Force.

Mike Cunningham:

Indian Hills basin. See a lot of change, effects of build out of area. Wells have been high in nitrate and cost of removing nitrates is expensive for water district. Water rates changing, doubling. Water district has been absorbing costs. Due to lack of groundwater, water district hauling water in for supply. With scope and amount this will affect every property owner, difficult to present in this type of form. We need to work through and present to public in more open format after Covid. A lot of effort from all sides, this is the beginning, need to work through and make public aware of changes. Going to affect every property owner.

Mike Johnson:

Looking for clarification on the figures in the model. Is acreage based on 29% N remaining?

Roy: Correct.

Mike: Where do parcels with a water district tap come in? No rationale behind it, but from groundwater perspective nitrogen load is there. We don't need to worry because of public water supply, but that went back to 1972. From groundwater perspective, just passes it on to public water district. Does not uphold protection of groundwater quality. May protect customer of water district, but not everyone.

Mike: Based on changes, what is rational of proposed 0.5 acre minimum?

Roy: No rationale to defend, there are some public water systems (e.g. Homestead) developed based on concept that every house is on public water. Roy wants a list of those. They are stakeholders. They developed buildout model based on this.

Mike: regs seem to focus on individual property, parcel. Water doesn't work like that. Indian Hills has nitrate levels going up in drainages. Regs favor individual, not whole area. Regs are not holistic.

Roy: Amen

Leslie Jordan: Science is 4-5 yrs old already. A lot changed in 5 years. Might look at W.H.O. recommendations as the W.H.O. has lowered the minimum on Nitrates. When is 10 mg/L too high? Might be valuable to commission more recent studies with Task Force.

Steve Hosie: Changes are not going to be voted on right away, is this a work in progress? Will public be very well informed?

Mitch: this is a starting point. Seeing how much comment we have, we are going to put in a 2nd draft. May have another forum, TBD. We have to give to state and go through regulatory process. 20 day notice out for public comment before we can have a hearing.

Chris: The EU dropped Nitrate MCL from 10 to 5. EPA is considering. Wise for us to consider this. Indian Hills moratorium took reduction into account. Included lots between 5-10 MCL in moratorium. If you are already at 5, you have a higher probability of raising nitrates above 10 on yours or another property (1979). We need that forward thinking.

Mike Cunningham: What we do, need to err on caution. Look for nitrates already at 5. Wants to be involved in Task Force.

What is going to happen with this discussion?

Mitch: We are collecting comments, take input, it will be reviewed. Will add input and feedback where it is feasible. Will put together 2<sup>nd</sup> draft, then out for comment.

Leslie: No agenda.

Mitch: Agenda is posted in chat

Mike Cunningham: Is this being recorded.

Mitch: Not recorded, no staff did not have rights to record in Webex. So this will not be available for public record.

Mike: Is end of comments today? Can you extend it to the end of the week?

Mitch will check into it.

Steve Hosie: Written CORA request asking it to be extended. Asked for 2 week period to allow for CORA request be fulfilled and provided to public.

Chris Arnold: Paragraph B, letter from water district. Other section removing requirement for site plan. Putting burden of Will Serve letter on water district is unfair. Does not have same jurisdiction as BOH. If water district says no, they could be sued for takings where they don't have jurisdiction to do so. BOH has jurisdiction. Inappropriate to pass that to water district.

Proposing to not have building or developers present map or site plan. Seems backwards. Can't see neighboring wells, floodplains, gradients. All visualized in site plan. Why get rid of it?

Roy: That is wrong interpretation. That part was only to reduce from 5 to 3.5 acres during a subdivision. Every design, you need site plan. If you want to go from 5 to 3.5 acres, need to

show where everything will be. There is more to an OWTS application and is covered in other regs.

Mitch: Section 11 talks about design documents, it should be covered there.

Mitch: Will serve letter are required by the EH Land Use group from a water district daily. We did not see it as being an issue.

Chris: Context of letter is for property already within water district. Can they have adequate tap permit to get on system? Based on availability of water district, not with public health. If water district says you can't build there because of density, could be in position of takings.

## Repairs and Use Permits

Mitch: Our other objective was to address aging infrastructure, the agenda says in particular issues during Use Permit inspections, seepage pits named specifically. However, want to open discussion to anything requiring repairs to outdated systems. Open discussion

Chris Arnold: Other OWTS problem is existing OWTS and seepage pits. How is it equitably dealt with? Difficult if occupied home. Need reasonable options to upgrade to best possible quality. I think most people agree. For upgrades, new table 4.1. Section that needs to be there is how to address statutory wetlands. Area exceeds US Army Corps of Engineers, water table fluctuates, and if it gets above STA, then effluent can be put directly into groundwater. Indian Hills- discovered where there are seepage pits inundated, clear area was subject to fluctuating high water table. 2 wells have high nitrates in 2 years. Needs to be focused on, hydraulic conductivity is higher, affects neighboring properties. Treats tributary wetland as surface water feature in clean water act. Basic requirements for surface water, no pollutants added to feature. Hydraulic conductivity, treat wetland as a lake as far as pollution. Current allowances with OWTS is same as allowing an STA in a lake. Doesn't make sense. How to do setbacks. Roy discussed drip systems, make it so it's not caught in table. Chris also mentioned other options are berms (think he meant mound systems). If it's not recognized, will see same damage. OWTS flushing effluent into groundwater is damaging, needs to be captured.

Leslie Jordan: Follow up on wetlands, where 6 houses have been put. Needs to be education for landowners. Landowners not aware they are living on wetland, people drive cars across wetlands. Trying to get Army Corps of Engineers to educate. Need program developed to be told what to do with wetlands.

Chris: That would be great to put in OW permit conditions. Document restrictions on what people can do.

Kristin Waters: Water district is in middle of Division of Water Resources and JCPH. Need 2 entities to work together with water district. Only choice we have is to issue tap or not. If not, they get a well permit. Creating a problem because less water available, more contaminant with nitrate. Excited about conversation, will be participating in coming up with solution.

Mike Cunningham: Not against development, but needs to be responsible. Seen effects of irresponsible development in wetlands. Lives at top of Parmalee drainage, has wetlands. Landowners tried to ride 4

wheelers in sections, resources show these areas. Old septics, need to be addressed as property changes hands, and prior if needed. Can't preach to reduce nitrates and not do something about it as a landowner. If you aren't willing to do what it takes to live in the environment, then are you a good stakeholder in the mountains?

Mitch: Vaults have been issues. Way regs are currently, it is confusing as to when they are allowed. A lot of lots are so small, difficult to have approved OWTS to live full time. We don't find vaults as sustainable as they are filled rapidly. Limited occupancy, difficult to get away from. If we open that up, we will see a lot of vaults on 0.1 acre lands. We want to take sustainability and feasibility into account, but people have land they want to live in, housing market is not helping. Trying to think outside the box, looking at HLT. Are there other options? We need to address this, cost is an issue. We can go overboard, but want to balance that.

Mike Cunningham: Property values are high, requirement for housing is high. But to destroy what we have in the charm of area, has a lot to do with being responsible. Safety for health and wellbeing.

Chris: unique case by case basis. What was there before, highlights need for modeling. Existing property, we can't allow more bedrooms, etc. Roy's model says how close to sustainability you are bringing. TL1 to TL3N, reducing by 70%. Better than not reducing it at all, at least bringing N down. Focuses on sustainable development.

#### **Repairs with No records:**

Mitch: We want to update records; we see this when we have repairs for systems because they want to expand. Should this even be allowed for what it has? Have to redo system? Is that feasible and reasonable? Can we allow for sustainable development. How to keep cost in mind? For non-records, we have nothing to go off of. Proposed System evaluation conducted to see what is there.

Chris Arnold: If people upgrade before STA fails, less expensive to upgrade if you don't have to upgrade STA. If they add more bedrooms, then they increase STA. One are to be focused on, if they can upgrade before STA fails. Save money.

Steve Hosie: Makes sense to do thorough evaluation, if they need repairs. Know what is there for tanks and fields. If you only have a tank for 2 bed house, that's a problem. Needs to support bedrooms. What do we do if people ignore rules and put illegal ADUs, extra bedrooms, etc. Different issue than repair of legitimate system. Good time to map what is there. Maybe have as separate procedure? If someone builds detached garage and builds a bathroom, where is that in the regs.? There should be a process for people who want to upgrade bedrooms, and separate process for bringing OWTS up to legal requirement

Mitch: Repair permits. Wants to get away from previous method. If you need to expand or replace failed tank and STA, it should be a whole system replacement. Need to get away from "meet or exceed". If you are just adding a tank or a field, that should fall under smaller repair permit. Major repairs, minor repairs, component permits, whatever we call it. Permits should be more encompassing, looks at type of work being done. Need a new field or tank because adding on, then should be new system. One item can be minor permit, looks at fee schedule.



Chuck: Auxiliary buildings, if users of auxiliary building are homeowner, it doesn't need to be increased. If its additional users then it needs to be sized properly.

Mitch: Sorry I misunderstand what Steve was trying to say. When there is a garage with bathroom, stable, art studio, etc, these are considered accessory building, does not increase usage. Residents of home are still using it. But if it's ADU, with kitchen, intention of housing someone else. Requires expansion of system. Need add component or replacement OWTS.

Steve: Should be 2 processes for that. Process that is broken is where people don't care about OWTS regulations and build ADU and connect to current system. Should be above board, need permit, inspection. Needs to be addressed for future.

Mitch: We do have a policy for expansion. Not perfect, a lot of arbitrary calculations. We haven't looked at that because we were trying to focus more on bigger BOH issues and not doing a complete overhaul of regs.

Chris: Additional criteria to be considered, new and existing development, what is the existing nitrate levels in groundwater? Groundwater nitrates measured at 13+, adding additional system would aggravate problem. Needs to be put into regulation. If already exceeded MCL, then you fall into that statute, should not be allowed. Should apply to upgrades too. Criteria needs to be added.

Roy: At that point, we need to investigate who is causing the problem. Their pollution is causing the other person to not develop property. Have well testing program available, a lot of participants. People are resistant to participating too. Problem with impoverished landowners, can't afford upgrade. How do we solve this? We need to look at future development. What do we do with existing development that is not sustainable? BOH is taking the timed approach, as they come up for sale. We need holistic approach. Need to correct existing systems. Have had nitrate pollution problems for a long time in Indian Hills. Want sustainable new development, want upgraded repairs, need to take care of old infrastructure. It's a community problem to solve, regulation is only one piece. Take advantage of well testing program.

Michael Cunningham: willing to help with well testing

Steve Hosie: Well testing is good tool. However, there are numerous people who move land without testing. JCPH doesn't believe recommendations. Indian Hills is not the only hot bed, if JCPH would allow us to read documents and access them, then all of Jeffco has numerous hot wells. Private wells testing back to 1960s have hot wells. Evergreen has hot wells. Well testing program is good, but needs to be expanded to all of JCPH.

Roy: It is extended to all of JCPH. We are working with P&Z to require testing at building permit. It needs to be expanded. Other areas in studies that have high nitrates, typically pre 1972. Small lots, developed earlier, a lot of our problem is there.

Steve: JCPH has addresses, got them on CORA request. Why aren't we reaching out to them? Is it political and they have million dollar homes. JCPH needs to look at records. Why are we not pursuing that? JCPH should separate OWTS regs from foothills to plains due to different geology and issues.

Roy: Agree with importance of geologic considerations. Well testing is for all of Jeffco. Need to understand it's for all homeowners with a well.

Steve Hosie: on Indian Hills Water Board for 10 years, Jeffco is not subsidizing cost to treat water. Needs to change on building permits and OWTS. Frustrated, been working on this for 20 yrs. Hopes that this starts to improve regulations and based on science. Water impacts property values

Chris: For water testing, keep hearing people don't want to test because they have to disclose. Realtors will tell people not to test wells. Whose protecting new homeowner? By the county not making groundwater nitrate data public, it's part of the problem. People can't look up data. New people need to know that. For privacy, things that go with the land, well water data is not a personal record. It goes with the land. Not under same protections. Should be made available publicly. Lack of actual data on nitrates is a transparency issue. Indian Hills water district is proactive and has tested, there is research. But we have data available all over that should be available to public. People should know if a hot well is there. Affects people down gradient and adjacent to individual property. Frustrated by protecting present homeowner, very one-sided.

Mitch: Proposed item in use permit is requiring a well test. We don't regulate the wells. We use it as an indicator for policy. Understands frustrations, but wants to focus on the items that are in the regulations. Wants to focus on what is being proposed.

Steve Hosie: Waited on formula for years, or are we punting it down to someone else. Table 4.1 still exists. BOH wants science data. 1 year after formula, 0.5 acre and table 4.1 is still there. Cozy relationship with real estate association. Why do we have regulations that don't affect the plains when the mountains are 2/3?

Mitch: Tried to simplify in regulations. 0.5 acre requirement still there because of remaining subdivisions.

Steve: Formula directive for 0.5 acre, can have 1 bedroom house for 1 person on 0.5 acre, people want profit. No restrictions, allowing to build 6-8 duplexes. They haven't gotten CORA data yet. Why is this not public record? Realtor association should not influence public health.

Mike Cunningham: Small group is speaking, We need to have an open public meeting when we can safely. Effects a lot of people. Need to include property owners. Need responsible development. Obtaining records is impossible. Wants to Recognize Cheryl Touryan. She got Mike involved in 90's and has done a lot. She has a lot of frustrations, has to keep revisiting something we decided in 2002. Mountains are different than the plains, we need to address that. This is a good start, but know there are frustrations among people with a lot of effort, and minimal effect. Keep re-stepping the past. We are at the first step to a better plan.

Chris: To restrict to redline items, we've identified criteria that if they are taking into account, are part of solution. Not fair to only talk about what is in writing today. McMansion is not in redlines. You need to consider what isn't there as much as what is.

Mitch: Thank you, just want to keep on topic. Situation is going on in Indian Hills.

Comments close today, will go through them. Will go for 2<sup>nd</sup> draft. Timeline given doesn't allow us to wait until covid settled. We are looking for other creative venues for comment. We will try to get it out to the public and try to comment. Will do a round 2 on draft. Once we have a version ready for adoption, we will give it to Chuck (CDPHE) to be reviewed. May not be able to

change some things due to reg 43. There will be notifications for public hearing. Then goes to BOH for adoption.