

**From:** Esther Day <Dayesther214@outlook.com>  
**Sent:** Wednesday, February 15, 2023 11:49 AM  
**To:** Planning; Pauli, Elizabeth; Kingsolver, Kurtis  
**Cc:** City Clerk's Office  
**Subject:** STGWPD

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Planning Department, City Manager, and Assistant City Manager,

When I listened to the water department do a report on the South Tacoma Groundwater Protection District, I was taken aback by the person's ignorance.

First, he is NOT a hydrologist. I don't believe Tacoma has a hydrologist on staff at TPU.

Secondly, when Councilwoman Walker asked a question regarding comments made that if a persistent drought continued in Eastern Washington as it did last year before the 4 day heat wave, would we be sending water over to Eastern Washington to help people. (not precise wording).

The TPU representative said that the river water could not flow over the mountains. This was so disgusting and ignorant on the speaker's part.

Water is shipped in tanker trucks. It has been done in other areas and around the world. Water is loaded up in tanker trucks and delivered.

**One other point of fact and a critical one.**

When I was on the Planning Commission, TPU came to our planning meeting to see what the commission thought the water company should do. Should they recharge the aquifers or put the pipeline to Green River. I suggested that both be done and I received an astonishing look – like – where did this woman come from? Seriously.

This points to the fact that Tacoma was using these rechargeable water aquifers then to provide much needed water to the citizens of Tacoma BEFORE GREEN RIVER.

This points to the fact that CLIMATE CHANGE is here. We need to PROTECT every single aquifer we can for the future of our city and it's citizens. You have an important decision to make. Will you pander to warehouse developers – never mind we have tons of vacant warehouses – also, are we going to permit this warehouse that will bring NOT 5,000 trucks per day, but 12,000 per day into that already traffic congested area? Adding more pollution to the air while simultaneously destroying drinking water?

Stop this insanity.

Also, for a city attorney and mayor to tell the public not to raise the issue of the warehouse because it is in the permitting process – is disgusting and WRONG.

You have time to make these changes to stop this insanity.

You don't have a hydrologist at TPU. The person that testified is NOT qualified to make any comments regarding hydrology.

Protect that water aquifer and as many others as we can. We will need to protect them for our future lives.

Regards,  
Esther Day

**From:** Michelle Mood <moodm@kenyon.edu>  
**Sent:** Monday, February 20, 2023 12:23 PM  
**To:** City Clerk's Office  
**Subject:** Comment on ORD 28872

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

I am writing to comment on ORD 28872 about the South Tacoma Groundwater Protection District Moratorium under consideration today. Please pass an amended moratorium that includes the residents' original intention to pause the increase of impermeable surfaces.

City Council appears to have deferred to recommendations that relied on no expert assessment of what comprises a risk to the South Tacoma Groundwater Protection District. The City Council adopted Amended Substitute Resolution No. 40985 on June 28, 2022, initiating the consideration as to whether a moratorium on industrial uses and hazardous substances within the South Tacoma Groundwater Protection District is warranted.

The residents had specifically asked for a moratorium on impervious ground surface coverage, yet that seemed completely ignored by both this Council and the Planning Commission. Meetings seem to suggest this was at the direction of the Planning Department, but you are an independent, rule-making institution that should uphold your sacred duty to the residents of Tacoma.

Why are you as the City Council so passively accepting of decision that will have negative impacts on the public? That's opposite of everything you say about equity and environment.

You are elected to serve the interests of the public, but instead what I see in City Council meetings is rapid-fire acceptance of the plans made by non-elected non-expert city staff. Neither the Planning Department nor Commission have specific experts who have addressed and satisfied the concerns of the people.

Again, the original request by the people of Tacoma was to pause increase of impermeable surface until the Groundwater Code was updated. Is that too much to ask of our Council members? Where is your pushback to protect the interests of your constituents?

Please act now to strengthen the Moratorium with Council amendments more in line with cautions from the one expert hydrologist the residents have supplied to actually protect our groundwater while the woefully overdue code update is completed. Use the hydrologist's findings, use the power you are invested with, and act responsibly and transparently, remaining accountable to us, your constituents.

Dr. Michelle S. Mood (she, her, hers)  
(c) 740-233-6333  
3719 South Gunnison St  
Tacoma, WA 98409

*A boomer, not a zoomer.*

**From:** Bill Baarsma <wbaarsma@outlook.com>  
**Sent:** Monday, February 20, 2023 3:55 PM  
**To:** City Clerk's Office  
**Subject:** Ordinance 28872

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

City Clerk: Attached are written comments regarding ordinance 28872. Bill Baarsma

**From:** Heidi S. <heidigs@hotmail.com>  
**Sent:** Monday, February 20, 2023 4:39 PM  
**To:** City Clerk's Office  
**Subject:** Public Comments RE: ORD 28872 STGPD  
**Attachments:** Moratorium comments for 2-21-23.pdf; Malach Consulting Moratorium Letter.pdf; South Tacoma Plan, City of Tacoma WA 1985.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Please see the three attachments as written public comment submissions regarding:

Ordinance 28872 / Moratorium, South Tacoma Groundwater Protection District

Thank you,  
Heidi Stephens

## Written Public Comments

**RE: ORD 28872** / Moratorium within South Tacoma Groundwater Protection District  
For the February 21, 2023 City Council First Reading

Mayor Woodards and City Council,

Please add an amendment to this ordinance, pausing permitting on impervious pavement over 10,000 square feet of ground surface coverage within the South Tacoma Groundwater Protection District.

The purpose, for this resident-driven moratorium, was to pause potentially damaging actions until modern-day evidentiary best science has been reviewed and incorporated which, as of yet, has not been done. The information provided to this Council by city staff is still inaccurate and incomplete.

Below were notes taken, on the above topic, following the 2/14/23 Study Session and 2/8/23 IPS Meeting:

I take serious issue with the statement that the Planning Commission did not find impervious surfaces/infiltration recharge warranted to include in this moratorium. Despite the Planning Department (and one Council Member) continually repeating that, it is frankly deceptive.

In actuality, there was nearly no information provided to the Commission on the topic. Besides the fact that nearly all information came mostly from city staff (no outside independent input or other appropriate agencies'), this core group of city/county staff are not experts and were strangely addressing stormwater run-off instead of infiltration/recharge, among numerous other inaccuracies.

I listened to each of those Planning Commission meetings -- the Commission did not determine surface coverage wasn't warranted, instead that's what was simply told to them by city staff.

If there was any in-depth "discussion" about it (per Stephen Atkinson's reply to Council Member Hines) it was not done during public meetings.

In fact, when the public pushed the matter (of surface coverage/infiltration recharge), the topic was said not to be within the scope of what the City Council had put forward (even though it had been clearly reconfirmed, in a previous City Council meeting, that the Planning Commission could consider other areas in addition to what the City Council had put forward). So, this subject has still actually never been fully reviewed by the Planning Commission.

TPU-Water is also presenting incomplete information, such as Glen George referring to the 2018 IRP (Integrated Resource Plan) but oddly never mentioning that this very IRP estimates needing up to 70% of Tacoma's water from groundwater by 2050 - and - nowhere are they yet calculating for 50+ football fields of impervious pavement over an area which has been left naturally open for the last 30 years, yet may no longer be part of the equation.

Mr. George also referred to outdated testing from the 90s, and of the upcoming 2023 USGS Model and Report. Both of these references actually support the decision to pause all impervious groundcover until updated information has been provided.

Similarly, regarding statements on PFAS, it was noted of the 2018 detections being lower than state levels (at that time), but it not made clear that those levels are now known to be higher than more recent EPA standards.

Yet, during Councilmember Bushnell's questions, Mr. George said odds of contamination are "low" -- that was a strange thing to state, when current contamination had just been discussed and the PowerPoint slide had shown South Tacoma having some of the highest recharge rates (thus vulnerable to contaminants, but needing to stay open green space for best infiltration).

Contamination has indeed continued to occur under present policy -and- we must keep the high recharge areas open and operating in the most natural state possible (undeveloped) for best infiltrating volume with fewest contaminants, which is the whole point of this moratorium and code update but is confusingly being sidelined.

It has also been concerning to watch meeting after meeting when Council Members ask questions, but the answers appear to be about something else yet get accepted and moved along. For example, when Councilmember Bushnell asked a question about recharge, he seemed to be asking about current rates at present impervious pavement coverage, but it appeared Mr. George answered regarding soils' recharge ability -- those are two different issues (both of which still need to more fully addressed)... and, again, none of the city's figures are yet including the plan to possibly cover-over 50 football fields within this aquifer's the highest recharge area.

I question a number of other items brought forth at both that Study Session and previous IPS meeting when Councilmember Hines (once again) brought up his fallback misinterpretation of the 180-mile recharge zone, missing the point that those outlying areas (not within the City of Tacoma's control and despite Pierce County actually having an impervious pavement policy) are also being paved-over at an alarming rate, are contaminated from sources like JBLM, and subjected to many others' water-rights drawing from the source before reaching Tacoma. We should be very concerned that far-traveling water may be just as unsustainable as the Green River, with no control over contaminants or recharge impacts which, again, actually supports further protections of the STGPD within city limits where recharge soils are most effective.

Instead, the Tacoma Planning Department has repeatedly made permitting exception after exception to allow for polluting businesses and inappropriate paving within an area needing better protection from both.

As Peter Huffman stated in the Study Session, Sutter Metals in an example of a business the city has allowed for, with "mitigations"... we see how well that's working out.

The City has to change its attitude from attempting to approve nearly every permit... some things cannot be mitigated and are simply too consequential to have in this sensitive groundwater area.

To that point in the same meeting, Mr. Huffman, himself, admitted that "enforcement is a challenge"... well, then best to stop approving situations we can't enforce and especially which come with such terrible risks.

So, "trade offs", as he referred to, can no longer be the status quo -- that's what's got this city into these bad situations; with impending climate change we cannot afford to continue as such.

After all, climate change and increasing drought are real and we must change this city's codes to wake up to and reflect that fact. This is needing to be done now but this City Council appears being lead-along by avoidance which will only add to the problem instead of proactively correcting it.

Please instead be the council to start updating and improving these Planning policies, by no longer using the Planning Department as your sole source of information. That's lopsided leadership to have a city department telling the Council what to do, keeping this city trapped in outdated policy.

The Planning Department's "findings of facts" appear to have been compiled to support a predetermined outcome while not including what the public had requested nor what the City Council needs. Of note, although the agenda's attached memorandum mentions public meetings and public input, it is revealing that it doesn't address, at all, the actual issues which the public has repeatedly brought forward.

Impervious surface/infiltration recharge is a topic this Council is being continually misinformed of, despite the seriousness of this issue having been known by the Planning Department since at least 1985, as I had previously quoted in my Public Hearing comments and attached, here.

I have appreciated Councilmember Rumbaugh's recent questioning, and share my correspondence with her as part of these public comments:

From: Heidi S. <heidigs@hotmail.com>  
Sent: Tuesday, February 14, 2023 11:00 PM

Thank you for your questions during the Study Session.

I wasn't able to view the entire meeting, but plan to listen to the remainder later; however, for now wanted to note:

To your question of how a business like Sutter Metals could have possibly been allowed within such an environmentally sensitive area? Well, the city should never have zoned for industry there in the first place -and- should have then removed the archaic industrial zoning, long ago, but simply hasn't.

So, how to avoid those problems in the future? Change the zoning now and strengthen the protection code.

After years of our asking the city to make those changes, though to no avail, our neighborhood council finally submitted it as an Annual Amendment request in 2021, but the Planning Department has delayed and diluted the intent and process, while (in the meantime) their permitting has been faster and faster.

It was interesting, then, that Stephen tried answering your question by talking about our community's proposal for a Green Zone, but (at the rate the Planning Department has delayed that possibility) any Green Zone will come long after the possible mega-warehouse might already be approved and even built.

I can see why Peter Huffman jumped-in, then, but his claim about having "standards" in place was even less convincing since obviously those "standards" did not stop Sutter Metals... that's because the Planning Department made every exception to allow for that business when it never should have been permitted to be there.

That's why one of our requests, in the STNC code amendment application, is for no more exceptions to the groundwater protection code. Yet the Planning Department did not move our requests forward (as had been done with other applications submitted at that same time) but instead only presented the vague "work plan"... so now the Planning Department can still continue to make exceptions without the City Council even hearing about them much less ever coming to your vote.

That's why (under current policy) that permit for Sutter Metals never came before the Council... just like the mega-warehouse won't either (current policy gives that approval power solely to the Planning Department, which is preposterous for something which will impact so much and for decades to come).

What the City Council can do, is start changing those bad policies which are presently allowing for these repeatedly bad outcomes. Don't expect that the Planning Department will suggest these changes, though -- you will need to bring them forward, yourself, since it certainly won't ever be done by city staff.

You can also delay/defer the street vacation when it comes before you again (as could and should have been done the first time).

To your last question:



Yes, we're also very concerned about what businesses will actually end up occupying the mega-warehouse.

By the way, "just trucking" is bad enough (thousands of trucks, alone, are extremely damaging with all the petrochemical leaks, diesel emissions and toxic tire residue known to leach into water and kill salmon which are downstream from this watershed).

However, regardless of what businesses eventually occupy the space, what the independent hydrologist and public have repeatedly tried to tell the city is: even the warehouse itself will be damaging, choking off that exceptionally highly rechargeable ground which has been working to refill the aquifer for decades but might soon be irreversibly altered.

There's so much more info I'd like to share about what the city staff is so strangely withholding (such as their referring to the 2018 IRP but failing to point out that report had already estimated relying on the aquifer for 70% of water by 2050... and that was before climate change predictions) but mostly that TPU-Water is still not using data to show how much the aquifer will be impacted after 50-football fields of impervious pavement will be covering over the last open green space in the most highly infiltrated area of the recharge zone.

None of their estimates will be accurate if leaving that information out.

Bottom line: permitting and development within the STGPD needs to stop until much more appropriate study has been done -- study by independent experts and appropriate state and federal agencies (not the same small local staff you keep hearing from, which are who got us into this bad place).

Thanks again for your good questions. I'll listen to the rest of the Study Session as soon as it posts, and will share more information then.

From: Heidi S. <heidigs@hotmail.com>  
Sent: Tuesday, February 14, 2023 10:20 AM

Hi Sarah,

Regarding the history of South Tacoma, and this particular land...

Much of the area used to be all marsh/wetlands and prairie which the first nation people named after elk hunted there. Indigenous lore tells of gatherings, spring and fall.

Early settlers in the 1800s named this area "Edison" hoping to entice an electrical laboratory (already recognizing the need to move away from polluting oil, wood and coal dust and smoke of that time). They were planning for a city with a layout similar to parts of Philadelphia.

Unfortunately, in the late 1880s, Northern Pacific Railroad chose to build the largest railroad shops on the west coast here, tapping into the groundwater aquifer for abundant steam power (to power metal casting, fabrication/construction of locomotives and maintenance of equipment). That began the legacy of pollution here and, sadly, much filling-in of the marsh.

Shortly after, Tacoma annexed Edison into the city and renamed it South Tacoma. Tacoma also started referring to the wetland as derogatory "swamp" and continued allowing heavy industrial zoning polluting for decades (contamination from the railroad yards plus debris from the Atlas Foundry in Nalley Valley, the former airport, landfill and other sources resulting in the later classified superfund sites), instead of recognizing the area as the important water source that it is and needing appropriate restoration.

Due to Tacoma's poor handling, in the 1980s the EPA stepped-in, requiring better protection for this aquifer/recharge area which began long and costly remediation (such as Well 12A from Time Oil) and other projects.

So, it's preposterous that heavy industrial zone continues to remain there to this day, counteracting remediation work already done. The land Sutter Metals is now on had previously been restored back to "residential standards" (even though the zoning doesn't allow for residences, the land was brought back to that quality)... yet now is being contaminated yet again.

Regrettably, the city seems to only see land for tax potential instead of other vital uses. For 30 years, that land has been stable (toxins contained, and the "best practice" for going forward was to leave that land exactly as-is).

So, yes, some areas of South Tacoma were/are superfund sites but we cannot be misled by that term as if it's a write-off. Just because the city has done a poor job of environmental protection in the past doesn't mean the city should now just give up -- it means it's time to address and correct these problem in earnest, now, while there's still the opportunity before it's too late.

We simply cannot allow for a mega-warehouse project of this scale to dig, stir and disrupt the site, especially with the aquifer's first level only about 35 feet below, already high air pollution in the area and most certainly compromising the watershed to downstream creeks (all of which the current open green space has been protecting -- without it will have untold impacts).

Sutter Metals is the perfect example of what the city repeatedly does wrong. The city foolishly ignored resident concerns and approved that permitting -- since then there have been polluting spills and damaging toxins inappropriately infiltrating into the ground again. Not only were residents correct in their prediction, but residents are also doing the best of monitoring the site and alerting to the violations. City and county protections must be improved.

Currently there is no known way to mitigate for the damage a mega-warehouse would bring, and permitting must pause until "best science" and appropriate studies have been completed.

I hope this is helpful and that we can connect further when you're available ~ thanks,  
Heidi Stephens

From: Heidi S. <heidigs@hotmail.com>  
Sent: Sunday, February 19, 2023 11:04 PM

Hi Sarah,

I was finally able to listen to the last minutes of the Study Session on this topic, and was disturbed by a number of still unanswered (or skillfully evaded) questions/concerns such as:

I keep hearing the term "experts" tossed around, yet I haven't been provided names and credentials. We're also hearing about "models" in the Pacific Northwest, but not specific studies of this particular aquifer.

Information provided from the 90s is not only outdated, but was suspect even then (I am sending a series of follow-up questions to Glen George, TPU-Water, with input from water professionals) and, again, are these models including paving over 50-football fields on top of the last best recharge area in South Tacoma?

The fact that we're not using the aquifer as much as before (because of current Green River use) doesn't mean that we won't need to be relying on our groundwater much more in the future. The report from

2018 estimated up to 70% by 2050, and that was before having climate change data (much less paving over the top at the highest recharge area).

Is the USGS's hydrologic framework including the possibility of 2.5+ million square feet of impervious ground cover above one of the highest recharge areas?

If the USGS model is not done yet, and the IRP not expected till 2024, then potentially-impacting development must be paused until that information is not only known but is also including those yet-to-be-known impervious pavement impacts. This is not a situation we can risk just seeing about later.

Councilmember Walker referred to all the governmental agencies involved, however that list was provided by the public not the Planning Department. All stakeholder agencies have not been included thus far -- the city has mostly only included their same select few city and county staff.

Councilmember Hines repeatedly referring to the 180-mile recharge area is also seriously uninformed, since so much of that area is being paved over (even with the county's impervious limitation which Tacoma still has not) and also with others' rights to draw on that water before it may ever even reach the Tacoma aquifer.

I take serious issue with the statement regarding the Planning Commission having concluded that impervious surfaces were not warranted, when, in actuality, that was not studied in the Planning Commission's reviews. City staff talked about storm-water run-off (which is not the same thing) but did not adequately address infiltration/recharge with the Planning Commission... in fact, the topic was dismissed as not being part of the City Council's original scope. So, that statement is not only dishonest, it will make makes City Council look bad for accepting it... and, after all, it will be this City Council who will be remembered for this.

We simply must get accurate projections, prior to more permitting. If that is not done, this is the moment and this is the council who will be remembered for as to why.

At least city staff and TPU-Water have started changing their narrative. If you recall, a few months ago they were dismissing the aquifer altogether, saying the Green River would be an endless source of water. Now they're finally admitting how important the aquifer will be on future needs, and that the South Tacoma are has some of the best recharge soils... however, they are still being coy about how much the aquifer will be relied upon, and are not including studies of how paving directly over some of the last open green space, on top the aquifer itself, will impact future volume.

Bottom line, for the sake of caution regarding this precious resource, would you be willing to propose an amendment to include "impervious surface limits -and- no STGPD code exceptions" to this moratorium?

The point of this moratorium was due to the public asking for limits on impervious pavement of ground surface coverage within the aquifer recharge area.

This Council must get accurate projections, prior to more permitting within this sensitive and so critically important aquifer and recharge zone on this topic.

If that is not done, this is the Council which will be remembered for failing to act.

So, please amend the current moratorium language to include limits on impervious surfaces.

Thank you,  
Heidi Stephens



**Steven H. Emerman, Ph.D.**

Specializing in Groundwater and Mining

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785 N 200 W, Spanish Fork, Utah 84660, USA

November 29, 2022

Heidi Stephens  
South Tacoma Economic Green Zone  
E-mail: [heidigs@hotmail.com](mailto:heidigs@hotmail.com)  
Tel: (253) 671-8232

Dear Ms. Stephens,

I am writing to respond to the following question from you: Should the proposed moratorium on heavy industrial uses and storage of hazardous materials within the South Tacoma Groundwater Protection District include a moratorium on the construction of large impervious surfaces (greater than 10,000 square feet)? I understand that the purpose of the moratorium is to pause further development and possible groundwater degradation while awaiting an update of the South Tacoma Groundwater Protection District Code, as well as any new hydrogeologic studies that will form the basis for the update.

My answer is yes. The proposed moratorium should include a pause on the construction of any new large impervious surfaces (greater than 10,000 square feet). Before explaining my reasoning, I will first review my professional background and then the materials I reviewed in order to answer your question.

I have a B.S. in Mathematics from The Ohio State University, M.A. in Geophysics from Princeton University, and Ph.D. in Geophysics from Cornell University. I taught hydrology and geophysics at the university level for 31 years, including teaching as a Fulbright Professor in Ecuador and Nepal, and I have over 70 peer-reviewed publications in these areas. Since 2018 I have been the owner of Malach Consulting, which specializes in evaluating the hydrogeologic impacts of proposed and existing large-scale development, especially urban development, mining, and timber harvesting. I have evaluated proposed and existing large-scale development projects in North America, South America, Europe, Africa, Asia and Oceania, and I have testified on issues of water and large-scale development before the U.S. House of Representatives Subcommittee on Indigenous Peoples of the United States, the European Parliament, the United Nations Permanent Forum on Indigenous Issues, and the United Nations Environment Assembly. I am the Chair of the Body of Knowledge Subcommittee of the U.S. Society on Dams and one of the authors of Safety First: Guidelines for Responsible Mine Tailings Management.



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Prior to writing this memo, I reviewed the following materials:

- 1) Power Point presentation from July 27, 2022 entitled “South Tacoma Groundwater Protection District: Consideration of a Moratorium on Heavy Industrial Uses and Storage of Hazardous Materials”
- 2) Video of meeting of South Tacoma Groundwater Protection District on July 27, 2022
- 3) Video of meeting of Infrastructure, Planning and Sustainability Committee on November 9, 2022
- 4) Video of meeting of Tacoma City Council on November 15, 2022
- 5) Video of meeting of Tacoma City Council on November 22, 2022
- 6) Video of City of Tacoma Virtual Forum on November 22, 2022

I am in favor of a moratorium on the construction of large impervious surfaces because the hydrogeologic knowledge that could predict the impact of such construction appears to be non-existent. Thus, there is no basis for excluding large impervious surfaces from the proposed moratorium. The development of such hydrogeologic knowledge should form the basis for the update of the South Tacoma Groundwater Protection District Code.

Therefore, the inclusion of the construction of large impervious surfaces in the moratorium is perfectly in alignment with the purpose of the moratorium, which is to prevent further groundwater degradation while hydrogeologic knowledge is developed and the groundwater protection code is updated.

I understand from the meeting of the Infrastructure, Planning and Sustainability Committee on November 9 that, currently, the only industries that are being considered for inclusion in the moratorium are underground storage tanks, automotive crushing, metal recycling, and automotive service and repair. The first three industries in the list have a long history of groundwater pollution globally, but I am not familiar with their particular history in South Tacoma. The inclusion of automotive service and repair is somewhat surprising since this industry tends to be highly regulated at the local, state and federal levels. In addition, many automotive service and repair businesses are franchises and follow strict franchise regulations. However, I am not familiar with the particular history of groundwater pollution by automotive service and repair businesses in South Tacoma.



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The following is a partial listing of the critical questions that apparently cannot be answered based on existing hydrogeologic knowledge:

- 1) What is the current groundwater recharge rate of the South Tacoma Aquifer through the South Tacoma Groundwater Protection District? Note that this is a very different question than asking about the current groundwater recharge rate through the entire catchment area of the South Tacoma Aquifer, which appears to be reasonably well-known.
- 2) What would be the rate of replenishment of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District if the groundwater recharge through the South Tacoma Groundwater Protection District were significantly restricted?
- 3) What is the functional dependance of the groundwater recharge rate of the South Tacoma Aquifer through the South Tacoma Groundwater Protection District on the quantity of impervious surface within the South Tacoma Groundwater Protection District?
- 4) What is the functional dependance of the water table of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District on the quantity of impervious surface within the South Tacoma Groundwater Protection District?
- 5) What will be the impact of climate change on the recharge rate and water table of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District?
- 6) What will be the combined impacts of climate change and an increase in the quantity of impervious surface in the South Tacoma Groundwater Protection District on the recharge rate and water table of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District?
- 7) What will be the impact of population growth on the recharge rate and water table of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District?
- 8) What will be the combined impacts of population growth, climate change, and an increase in the quantity of impervious surface in the South Tacoma Groundwater Protection District on the recharge rate and water table of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District?



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- 9) How will climate change and population growth affect the availability of water in the Green River?
- 10) How will a change in the availability of water in the Green River affect the demand for groundwater from the South Tacoma Aquifer?
- 11) What will be the combined impacts of a decrease in the availability of water from the Green River, population growth, climate change, and an increase in the quantity of impervious surface in the South Tacoma Groundwater Protection District on the recharge rate and water table of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District?
- 12) How will changes in the groundwater recharge rate or the water table of the South Tacoma Aquifer affect the water quality of the South Tacoma Aquifer beneath the South Tacoma Groundwater Protection District?

In summary, the proposed moratorium should include a prohibition against the construction of large impervious surfaces. In fact, the moratorium will be an ideal opportunity to fill the preceding gaps in hydrogeological knowledge prior to making critical decisions regarding the future of the South Tacoma Aquifer.

Please do not hesitate to contact me if I can answer any further questions.

Sincerely,

*Steven H. Emerman*

Steven H. Emerman



# South Tacoma Plan

City of Tacoma, Washington

This Plan is one of a series of plans being undertaken for neighborhoods within the City which will supplement the Land Use Management Plan.



City Planning Department  
Tacoma, Washington  
September, 1985

The Planning Department does not discriminate on the basis of handicap in any of its programs or services. Upon request, special accommodations will be provided within five (5) business days. Contact 591-5363 (Voice) or 591-5070 (TTY).



## Executive Summary

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General intents are discussed for land use, circulation, and design and amenities. Policies are defined to be used in carrying out the stated intents. Recommendations are then set forth to propose specific actions. More specific intents and recommendations are outlined for specific smaller areas within South Tacoma.

The recommendations range from minor improvements to area-wide redevelopment efforts and involve government actions, private sector efforts and, in some cases, combinations of public and private endeavors. The objective of these recommendations is to help carry out the intent and policies of the plan and to preserve and improve the existing character and amenities of the South Tacoma Area while offering expanded opportunities for economic growth.

### **1. Land Use**

The plan strives to maintain and preserve existing single-family residential areas. In addition, the plan identifies areas where other types of housing, such as duplexes, triplexes, apartments, and condominiums could appropriately occur.

The Plan stresses locating new businesses and offices in existing areas to help maintain the economic health of these areas, best use available space, and maintain compatibility with surrounding areas. Some development of new commercial areas and expansion of existing areas is intended to serve the growing population.

Locating new industrial development within existing industrially zoned areas is encouraged to maintain the viability of these areas and minimize any conflicts between unrelated land uses. Future industrial development is proposed in the Nalley Valley and the South Tacoma industrial areas where large amounts of vacant land are available.

The Plan also allows for limited future industrial expansion in areas adjacent to existing industrial areas. This would most likely occur in areas just north of the Lincoln Heights neighborhood, south of the South Tacoma industrial area, south of South 74th Street and adjacent to the City's sanitary landfill.

Special precautions will be applied to any future industrial development to afford adequate protection for the City's groundwater supply.

### **2. Circulation**

Strong emphasis is placed on development of an efficient transportation and circulation system as a necessary element of the South Tacoma area. Pedestrian and vehicular circulation, public transit use, and parking are all viewed as integral parts of this system.

As the population of South Tacoma increases, improvements to the area's streets will be needed. Many streets in the South Tacoma area are currently unpaved or in poor condition. Improving the quality of these streets is important to efficiently handle expected traffic increases and to increase the area's livability.

As areas surrounding South Tacoma, such as University Place and Lakewood, continue to grow, streets connecting these areas with the freeway and the Tacoma Mall will become important future elements of the circulation system. Such connections are encouraged at such time as demand arises.

### **3. Design and Amenities**

The Plan encourages maintaining and improving existing residential areas, creating a positive image for commercial and industrial areas, and retaining as many as possible special existing natural areas. Quality new construction, and the provision of coordinated amenities such as signs, streetlights, and benches are proposed to create positive effects.

The reduction and loss of natural areas, such as steep slope areas, is addressed in the plan. Future development will be encouraged to protect these areas wherever appropriate and feasible.

The plan also recommends improvements to existing recreation facilities and for development of a limited number of new recreation facilities to serve the area.

#### **4. Groundwater Protection**

The Clover/Chambers Creek Basin aquifer system is a large area of groundwater which encompasses central Pierce County south and west of the City of Tacoma and extends into the City boundaries, most notably in the South Tacoma area. The aquifer provides a significant amount of drinking water for Tacoma, supplying as much as 40 percent of the total water demand during periods of peak summer use. Therefore, protection of both the quantity and quality of this groundwater aquifer is imperative.

The City has more than a dozen wells into the aquifer in the South Tacoma area. Many of these wells are located in a long established, extensively developed area - much of which is developed and/or zoned for industrial or commercial uses.

Because of the high permeability of the soils in the South Tacoma area, the groundwater is extremely vulnerable to contamination from the numerous residences, industries, businesses and transportation routes located above it.

The plan outlines a long term effort to adopt a groundwater protection program and to carry out its provisions over time. Long term protection of the aquifer is thought to depend to a significant degree upon control of certain types of surface land use activities. Zoning controls are considered appropriate measures for South Tacoma because they can be applied in a geographically specific manner and can include provisions to control specific uses or activities which are potential sources of contamination.

Due to the vulnerability and sensitivity of the South Tacoma aquifer to contamination, it is intended that a zoning district be developed that incorporates land use development regulations to safeguard the groundwater resources from toxic or hazardous materials pollution by controlling or abating pollution from existing commercial and industrial sources and by preventing future pollution from new or different land uses or activities.

The City is committed to protecting its groundwater supply. Because of the complexity of potential contamination, development of zoning regulations is considered only one step in a long term groundwater management effort. Other efforts include public education and awareness as well as a stepped up monitoring program.

Capital improvements (i.e. land acquisition around public water supply wells' area of influence) and the development of recharge areas may also be considered.

#### **Implementation**

The implementation of the policies and recommendations of the plan involve the legislative and administrative branches of city government and must involve citizens, citizen groups and the private business community.

##### **1. Implementation Methods**

Utilization of the land use policies is an integral part of plan implementation. In addition, it is important that land use intensity and land use regulations be considered for consistency purposes. The City's Capital Improvement Program guides the funding and implementation of public improvements such as parks, sewers, or streets. Other funding sources such as federal monies through



## Executive Summary

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Community Development Block Grants, state resources (i.e., the Inter-Agency Committee for Outdoor Recreation Monies), Local Improvement Districts, bond monies, City government General Fund monies, or private foundation monies, may become available from time to time. In many cases the private sector must be willing to share the costs of public improvements and to support revitalization of the South Tacoma area. Finally, it is important that awareness of issues and concerns continue at the neighborhood level and that the city's neighborhood groups and individual citizens continue to work cooperatively to attain the goals of the plan.

### **2. Summary Recommendations**

The recommendations in the plan range from general to very specific, and from those that should be accomplished in the near future to those that are long-range in scope. The following summary recommendations are proposed in the plan.

- a. Development of performance and development regulations for industrial zoning districts.
- b. Implementation regulations to assist in regulating the use, handling and storage of toxic materials.
- c. Establishment of new sign regulations to minimize clutter and improved overall visual and design qualities within commercial and industrial districts.
- d. Development of new arterial streets.
- e. Improvements to existing arterial streets.
- f. Improvements to the pedestrian and bicycle circulation system.
- g. Initiation of Local Improvement Districts to undertake street paving, sidewalks, curbs, and gutters, streetlighting, and landscaping.
- h. Development of tree-planting, lighting, and signage to establish the city "entrances" and creation of a coordinated beautification program.
- i. Land use intensity change.
- j. Zoning change.
- k. Acquisition and development of open space and recreational properties.

These recommendations are explained in greater detail in the Plan Implementation and Recommendations portion of the plan. Also included is a chart which summarizes recommendations contained in the plan which relate to specific areas within South Tacoma. Use of the chart will at a glance indicate what kinds of recommendations may be considered for each of these areas. It shows involvement of the public sector through regulatory review and capital improvement projects. Involvement of the public and private sectors could occur through local improvement districts, landscaping and beautification. The recommendations are not prioritized.

Certain classes of industry and some businesses which represent a clear threat to the aquifer system due to the nature of the materials stored, utilized or processed at the facility could be restricted or prohibited, however. A phased elimination of existing potential pollution-generating businesses may be sought. Inspection and monitoring during their phase out would be necessary. It will be important to control existing development through strict hazardous material regulations. It will also be necessary to develop the capacity to take remedial action when contamination is detected.

Rainfall replenishes the aquifer in a process known as recharge. Land developed with impervious surfaces (areas which water can not penetrate to reach the groundwater) can impact the quantity of groundwater. Preserving as much natural area to recharge the aquifer as is feasible is also desirable to ensure an adequate supply of water.

To further protect the aquifer, it is also intended that the South Tacoma groundwater area be designated as an environmentally sensitive area. The principal advantage in this designation is that development, previously considered exempt, will be subject to the environmental review process mandated by the State.

The City is committed to protecting its groundwater supply. Because of the complexity of potential contamination, development of zoning regulations is considered only one step in a long term groundwater management effort. Other efforts include public education and awareness as well as a stepped up monitoring program.

Capital improvements (i.e. land acquisition around public water supply wells' area of influence) and the development of recharge areas may also be considered. These measures will assist in protecting the public health and safety through preservation and maintenance of the existing groundwater supply and quality, and in protecting the City of Tacoma from costs which may be incurred if either the quality or quantity of this important public water supply source were adversely affected.

As technology advances and more information is made available, other actions may be necessary. It is intended that the City continue to strenuously pursue all possible methods to have a safe and pure water supply. In particular, it may be necessary to consider restrictions or controls regarding the household storage, use, handling and disposal of toxic or hazardous materials.

Protection of groundwater is a complex subject. Efforts to determine the extent of groundwater pollution and the sources of such pollution are continuing. It appears that the eventual solution to the present situation will require the combined efforts of a number of governmental departments and agencies.

It is extremely important that any new regulations be carefully developed - recognizing the fact that a majority of the area above the South Tacoma aquifer is already developed. It also needs to be recognized that large vacant areas exist that are zoned for industrial or commercial uses and are considered prime areas for such development.

It is intended that groundwater protection measures do not inhibit desirable development but rather be used to attract clean business and industry and to safeguard one of the City's vital assets - its plentiful and safe water supply.

### **3. Policies and Recommendations**

The following policies support and strengthen the City's intent with regard to the Clover/Chamber's Creek Aquifer system.



## Goals, Policies, Intents and Recommendations

Groundwater Protection	a. Protect and preserve the quantity and quality of Tacoma's groundwater supply.
Natural Area Retention	b. Encourage the retention of sufficient natural areas to maintain a balance between development and the need for adequate recharge of the aquifer in order to assure a continued adequate groundwater supply.
Management Techniques	c. Encourage the development and use of alternative mechanisms for preventing and reducing the risk of groundwater contamination (e.g., by process or product changes) and disposal (e.g., through resource recovery and recycling).
Performance Criteria	d. Encourage the development of performance criteria and guidelines which address siting, design, construction and operation of commercial and industrial structures and activities to prevent groundwater contamination.
Economic Benefit	e. Coordinate with the Chamber of Commerce and the Economic Development Board to ensure that the groundwater protection program is used as a positive factor in attracting new business and industry to the area.
Groundwater Protection Program	f. Support a coordinated effort of City, County, State and Federal departments and agencies to develop a comprehensive program that will ensure incorporation of groundwater protection measures into all potentially disruptive development activities.
Public Awareness Education	g. Support a public awareness/education program for users and handlers of toxic and hazardous materials and the general public concerning groundwater pollution problems and necessary remedial actions.
Monitoring	h. Support an ongoing effort to monitor groundwater quality in order to determine the effectiveness of the groundwater program over time.
Economic Development	i. Encourage all practical methods and procedures for protecting groundwater which do not discourage appropriate commercial and industrial uses from locating or conducting business within the South Tacoma channel area.

The following recommendations are specific action steps which will carry out the foregoing intent and policies. Each will be subject to further review and will be carried out over time. Implementing the recommendations may require the efforts of other governmental agencies and will be affected by funding constraints.

To further the policies and intent, the following actions are recommended:

**RECOMMENDATION:** Undertake a long-range comprehensive groundwater protection program which includes provisions for capital improvements, public education, land use regulations, monitoring, enforcement, remedial action and further study.

**RECOMMENDATION:** Develop land use regulations specific to the South Tacoma area for business and industrial uses that handle hazardous and toxic materials and wastes which establish the following for storage and handling facilities.

- a. appropriate engineering specifications
- b. best management practices
- c. performance standards

RECOMMENDATION: Since groundwater protection is a public health concern and the aquifer underlies several jurisdictions, designate the Tacoma-Pierce County Health Department as the lead agency in enforcing groundwater protection measures which are in keeping with their responsibility for ensuring public health and safety. Such a designation would avoid duplication of efforts, centralize enforcement and provide for intergovernmental coordination between the different units of City and County governments.

RECOMMENDATION: Designate the South Tacoma groundwater area as an environmentally (geohydrologically) sensitive area in accordance with the State Environmental Policy Act.

RECOMMENDATION: Consider an impervious surface ratio for different categories of land use to preserve as much natural recharge to the aquifer as possible.

RECOMMENDATION: Develop, to the extent possible, regulations which can be imposed retroactively, which would allow the Health Department to deal with both existing and future pollution threats.

**From:** DeeBee Cooper <mr\_tjsmith@hotmail.com>  
**Sent:** Monday, February 20, 2023 4:55 PM  
**To:** City Clerk's Office  
**Subject:** Comment regarding Manitou Green Infrastructure Project and STGWPD for the record.

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Please include these in the Council review packets for tomorrow's Council meeting.

I support the Manitou Green infrastructure as well as the moratorium. The moratorium should be amended to show the extensive input from residents over the last year thru all the various forums, meetings, and comment period regarding impervious surfaces. Amend the moratorium to at least require compliance with existing Pierce County mandates for impervious surfaces.

Nothing shows the disconnect and lack of synergy, fusion, and overall management of Tacoma Environmental policies than these two items on tonight's agenda. The Manitou project is correct to BUILD pervious surfaces. As stated in the supporting document:

"The use of pervious pavement will divert flow from the City's stormwater collection system and infiltrate it to the groundwater table as would naturally occur in undeveloped conditions and prevent flooding. Additionally, replacement of existing wastewater and water pipes will reduce the risk of failure, thereby reducing the potential for discharge of untreated wastewater in the Puget Sound and maintaining potable water supply to the neighborhood, all resulting in a positive environmental impact."

The moratorium should include the exact same provisions and you should have been told that THAT is what the residents wanted. All the "restrictions" you think you are adding restrict nothing that isn't already covered by the existing code and laws.

**From:** Cathie Raine <cjrRD@hotmail.com>  
**Sent:** Monday, February 20, 2023 4:59 PM  
**To:** City Clerk's Office  
**Subject:** Moratorium Comments for the 2/21/2023 City Council meeting

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

I support passing an ordinance for a moratorium for the South Tacoma Groundwater Protection District(STGPD). To be truly effective, a stronger-worded moratorium, however, needs to be enacted that would include infiltration/recharge surface coverage limits and no exceptions being made by the Planning and Development Services Department staff.

This moratorium is necessary at this time:

1. Ongoing concerns with the current outdated (non-science-based) system being used for monitoring of a business' compliance with protecting the water quality. Continued accidental pollution of our aquifer will likely occur without a moratorium.
2. The water quantity and quality issues in the City of Tacoma have a direct impact on the health of the Puget Sound. Recently (on 12/23/2023), President Biden signed the 'Puget SOS Act' new law into effect "to enhance the federal government's role and investment in the Puget Sound...the nation's largest estuary by volume and the heart of Washington state's identity and economic engine". Protection of the STGPD also extends to the protection of the Puget Sound as well.

This one year moratorium would provide time for a STGPD comprehensive update that would include:

- \*best scientific recommendations from independent, nationally recognized hydrologists
- \*input from ALL stakeholders
- \*consideration of long-term planning with land use with the 'environmental health' of STGPD and Puget Sound waters as a priority.

A moratorium is a crucial first step with this process.

Respectfully submitted,

Cathie Urwin  
5002 S. Wapato Street  
Tacoma, WA. 98409  
Phone #: (253) 431-6689



**From:** Emery, Nicole  
**Sent:** Tuesday, February 21, 2023 8:21 AM  
**To:** City Clerk's Office  
**Subject:** FW: Ordinance 28872  
**Attachments:** Ordinance 28872.docx

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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**From:** Bill Baarsma <wbaarsma@outlook.com>  
**Sent:** Monday, February 20, 2023 4:00 PM  
**To:** City Manager <CityManager@cityoftacoma.org>  
**Cc:** Woodards, Victoria <vwoodards@cityoftacoma.org>  
**Subject:** Ordinance 28872

City Manager Pauli: I have attached comments for the record for ordinance 28872. For some reason, my email to the city clerk bounced back. Please include my comments as required. Thank you. Bill Baarsma

February 20, 2023

The Honorable Mayor Victoria Woodards  
And Members of the Tacoma City Council  
Tacoma, Washington

Dear Mayor Woodards and Members of the Tacoma City Council:

The comments below are in reference to Ordinance 28872 dealing with the enactment of a moratorium on certain uses within the South Tacoma Groundwater Protection District.

In 2007 in the council chambers, I hosted with former Port Commissioner Clare Petrich and then Park Commissioner Ryan Mello, a community conversation on climate change. At that meeting, scientist Gary Lagerloef made an important point regarding the issue at hand. He said that with climate change, we will see diminishing snow packs and receding glaciers that will impact river flows and fish runs. It will inevitably impact this city's primary source of water—the Green River. In a side comment to me, Dr. Lagerloef noted that because of this, the city needed to take direct and sustained action to protect its already threatened secondary water resource—the South Tacoma Aquifer.

The current serious threat to the South Tacoma Aquifer is evidenced by the five air stripping towers employed by Tacoma's Water Division located at South 36<sup>th</sup> and Cedar Streets. Those towers were placed under the direction of the Environmental Protection Agency to control and mitigate a voluminous plume of toxins impinging upon the aquifer and emanating from the designated South Tacoma Channel Superfund site. In sum, the Tacoma's secondary water supply is seriously at risk.

In regard to the risk as noted, I would like to cite the importance of Dr. Steven Emerman's letter to Tacoma resident Ms. Heidi Stephens—which I believe has been entered as a part of the record. Dr. Emerman is an internationally acclaimed geophysicist with degrees from Princeton and Cornell. He poses twelve important policy questions regarding the South Tacoma Aquifer that apparently have not

been addressed based on current hydrogeologic knowledge. I would submit that his 11<sup>th</sup> point is perhaps the most salient. He poses the following query:

“What will the combined impacts of a decrease in the availability of water from the Green River, population growth, climate change, and an increase in the quantity of impervious surface in the South Tacoma Groundwater Protection District be on the recharge rate and water table of the South Tacoma Groundwater Protection District.”

I am pleased to see that the city’s policy makers are beginning to address the very real threats to our water supply. I am hopeful that the Mayor and Council Members will broaden their analysis to seriously consider and take direct action to address all of the major issues identified by Dr. Emerman. As he so forcibly argues, the long-term viability of the South Tacoma Aquifer and the city’s water supply itself is at stake given climate change.

Thank you for your consideration.

Bill Baarsma  
3709 North Madison Street  
Tacoma, Washington 98407