

To: Burien City Council

400 SW 152nd St
Suite 300
Burien, WA 98166

RECEIVED

MAY 03 2016

CITY OF BURIEN

Subject: proposed Shoreline Master Program update

I am sending this to insist that the City Council facilitate public comment for at least 180 days, conduct at least three public hearings on, and support changes to the current Shoreline Master Program update.

I strongly disagree with the non-conforming designation that has been placed on my home and wish to avoid the significant problems caused by this designation regarding increases in restrictions and costs for renovations and repair, the loss of property value, and difficulty of sale.

I insist that you leave existing structures in their current designation of "conforming" and that you do not introduce any new setbacks or buffer zones.

Signed

Frederick & Janis Finn

Handwritten signatures of Frederick and Janis Finn. The top signature is in cursive and appears to be 'Frederick Finn'. The bottom signature is also in cursive and appears to be 'Janis Finn'.

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Signed

Milo & Audrey Peterson

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Diane M. Patteran

[Handwritten signature]

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MAY 11 2011

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Signed

Roger Patterson
Roger & Merle Patterson

Merle J. Patterson

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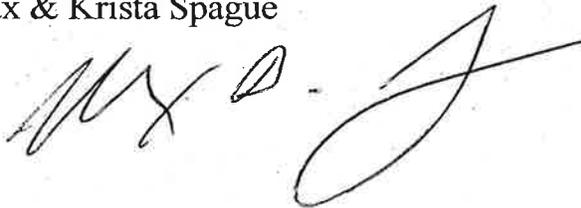
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Signed

Max & Krista Spague

A handwritten signature in black ink, appearing to read 'Max & Krista Spague', written in a cursive style.

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Signed

Martin & Beth Barrett

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Signed

Arthur Greef

David Johanson

From: Ron Hall [ronh@swssd.com]
Sent: Monday, May 03, 2010 12:30 PM
To: David Johanson
Subject: shoreline plan

Mr. Johanson,

My name is Ron Hall and I am the General Manager for Southwest Suburban Sewer District here in Burien. In the next 2 to 3 years, we intend to update one of our sewage lift stations that is in the beach line at Three Tree Point. The lift station has been there in service for approximately 35 years and is in need of upgrades and modifications.

In reading through the newly proposed Shoreline Master Plan, I'm having a hard time figuring out how it will affect the District's 2 beach lift stations and several thousand feet of beach line sewer lines. Furthermore, as you are probably aware, we are currently in the works of installing an additional sewage lift station at Seahurst Beach, which also includes approximately 4800 feet of lining old sewer line.

Are we part of the utility exemption?
Will we be able to upgrade our lift station?

Thank you in advance for your time.

Ron Hall
General Manager, Southwest Suburban Sewer District
431 SW Ambaum Blvd, Burien, WA 98166
Office 206-244-9575 Direct 206-432-3512 Fax 206-433-8546
ronh@swssd.com
www.SWSSD.com

Dedicated to Preserve the Purity of Your Environment.

Lisa Clausen

From: Public Council Inbox
Sent: Tuesday, May 04, 2010 4:38 PM
To: 'ericdenton@comcast.net'
Subject: RE: Shoreline Management Plan

Thank you for your message to the Burien City Council. It will be included in the Correspondence for the Record for an upcoming Council meeting.

L. Clausen
City Manager's Office

From: ericdenton@comcast.net [mailto:ericdenton@comcast.net]
Sent: Tuesday, May 04, 2010 12:30 PM
To: Public Council Inbox
Subject: Shoreline Management Plan

I want to thank the Council for the opportunity that you gave me last evening to present my views on this subject. I hope that you can find time to read the two-page letter that I left with you that does a far better job than my talk.

On another note, I am looking for someone in the 'Puget Sound Partnership' that might be an expert witness for you on the real problems with the health of the Sound. I will advise, when and if I locate that person. Eric Denton

c. please to City Manager Mike Martin

AFTR : 05/10/10

From: Eric Denton

May 3, 2010

An Appeal to the Burien City Council in Regard to Shoreline Management

My wife and I live at 2423 S.W. 172nd Street and own 55 feet of waterfront property. We have lived there for exactly fifty years. We consider its' value to be a huge percentage of our net worth and to be the resource that will see us through the declining years of our retirement. We see the Shoreline Management Plan to be a drastic threat to the value of our property. We see it as a plan to change the rules, without proper consideration of the rights of those who already live there.

We both recognize that as times change, there are actions that need to be taken along the way to protect the environment or to allow increased public access to the beaches. **We have no problem with those broad objectives.** But, this Shoreline Plan is a 'shotgun' approach to solving the perceived problems. People that were probably well meaning, but also misinformed, must have written it.

First, the people who live right on the beaches are the ones who **protect** the environment and who act a WARDENS to assure that protection. We are prepared to present evidence to prove that that is the case. Also, it is our **strong belief** that most of the problems with Puget Sound are caused by the introduction of nutrients from sewage outfalls. The elimination of septic tanks just passed the problem downstream. This nutrient buildup is where the focus must be to save Puget Sound.

Second, when more public access is needed, and we agree that it is needed, then the Municipalities should play by the rules. They must use their rights of Eminent Domain to purchase waterfront property at fair market value, not values that have been downgraded by changing the rules.

On our 200 feet of upland we have nurtured a green belt, with a half dozen large Redwood trees along with large Fir, Hemlock and Madrona. Our house is down within twelve feet of our bulkhead. To prevent slides we maintain large Rhododendrons and other shrubs along the top of the forty-foot high bank behind the house. On the waterside we, along with many of our neighbors, have been outstanding wardens of the beach

ecology. We protect all forms of wildlife, from resident birds and animals to migrating ones. We maintain a raft year-round as a sanctuary for birds and young mammals. I very recently found out that my testimony in year 2002 to the Department of Ecology was instrumental in forcing the Port of Seattle to spend almost seven million dollars to build a treatment facility to protect Millar Creek from run-off due to the 3rd runway construction.

Back to the Real Issue: It appears to us that the Shoreline Plan has originated at the STATE level and needs to be corrected at that level by the Municipalities acting together. Instead of allowing the State of Washington to impose their will on each City separately, why can't the City of Burien join with Des Moines, Normandy Park and others to solve the problem where the problem exists? It is certainly not fair to our City Council to be caught 'between a rock and a hard place' - - with displeased citizens on one side and the State on the other!

In their zealous efforts to protect life, it is a matter of record that the good intentions of organizations like OSHA and the DOE have caused great economic harm along with the good. A balance must be struck and very often is not, and certainly it has not been the case with this Shoreline Plan under consideration.

Lets work together to protect life and property as well as the economy.

Sincerely,

Eric Denton, P.E. & Chem. E.

Phone: 206-242-8073

E-mail: ericdenton@comcast.net



The above comments are entirely our own and do not represent any organization. We did however, recently join the Waterfront Owners Trust group in order to improve our understanding of the situation.

To: Burien City Council

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MAY 11 7:00

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Signed

Boyd & Susan Watkins



Lisa Clausen

From: Public Council Inbox
Sent: Thursday, May 06, 2010 2:26 PM
To: 'Clark Mounsey'
Subject: RE: Deputy Mayor Clark's Comment at May 3rd's Council Meeting.

Thank you for your message to the Burien City Council. It will be included in the Correspondence for the Record for an upcoming Council meeting.

L. Clausen
City Manager's Office

From: Clark Mounsey [mailto:clark@preferredpackagingllc.com]
Sent: Thursday, May 06, 2010 11:59 AM
To: Public Council Inbox
Subject: Deputy Mayor Clark's Comment at May 3rd's Council Meeting.

Dear Burien City Council Members,

I would like to thank all of you for what I thought was a good discussion on how to proceed in understanding the proposed Shoreline Management Plan. Deputy Mayor Clark made an interesting comment that she felt that the property owners group may look at the City Council as the enemy. When one "sees fire in another's eyes" it sure would be only natural for Deputy Clark to feel that way. However I really think that is no longer the case, especially after Monday night. The frustrations from dealing with the Planning Commission built a great deal of mistrust towards the City. Many homeowners have judged an entire entity (the City) based on dealing with a few of their representatives. (the Commission). Concluding, Deputy Clark also noted we all live in the same city, so it is in all of our interest to work together. Amen. Again thanks.

Best regards,

Clark Mounsey
3721 SW 171st St.
Burien, WA
206-940-6520
clark@preferredpackagingllc.com

CFTR: 05/24/10

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MAY 06 2018

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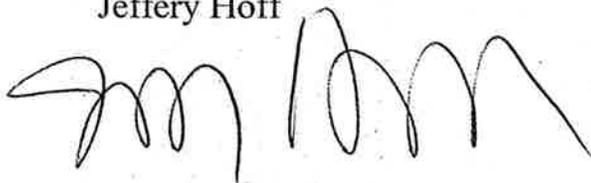
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Signed

Jeffery Hoff

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Signed
(Mrs) Charlotte E. Mahlik
William Mahlik

*To rush this without full
hearings because 2 Planning
Council members are leaving is not
good government. You are well paid
through our high taxes. Do it right!*

Lisa Clausen

From: Public Council Inbox
t: Monday, May 10, 2010 9:37 AM
Subject: 'Cyndi Upthegrove'
RE: Shoreline Master Plan matrix

Thank you for writing to the Burien City Council. Your message will be included in the Correspondence for the Record for an upcoming Council meeting.

L. Clausen
City Manager's Office

From: Cyndi Upthegrove [mailto:cyndiu@comcast.net]
Sent: Sunday, May 09, 2010 8:53 PM
To: Public Council Inbox
Subject: Shoreline Master Plan matrix

Dear Council Members,

As you all know, I have followed the SMP development from its beginning and with a personal interest. It has come to my attention that new items have been added to the SMP matrix since it left the Planning Commission. Some of these items are significant.

As a newly appointed member of the Planning Commission, I am aware that the Commission acts only in an advisory capacity. However it seems as though items of significance should have been presented and discussed at the Planning Commission level.

Who added these items?

And why do we bother having a Planning Commission if it is bypassed and left out of the public discussion?

I look forward to your response.

Sincerely,

John Upthegrove
1808 SW 156th St
Burien, WA 98166

JFR:05/24/10

The Burien Marine Homeowners Association
PO Box 300
Seahurst, WA 98062

May 10, 2010

Members of the City Council,

We listened with great care on April 5 as you spent nearly an hour working to establish a process for refining the draft of the Shoreline Master Program (SMP) update. The complexity of the conversation reflected the challenge of this undertaking. Although there was some diversity of opinion, and a number of details were left unanswered, we believe we heard two important goals:

- 1) A proposal for two meetings to help educate the community on the Shoreline Management Act (SMA), the SMP update guidelines, Burien's SMP update draft, and the conditions of our shoreline. An introductory meeting would occur on May 3 and a subsequent meeting, which would include a number of domain experts, would occur some time later.
- 2) There was a strong desire for meaningful dialog with Shoreline residents but you recognized the need to define an effective structure.

We were disappointed that it was not possible to hold the introductory meeting last week but we were pleased that much of the continued conversation about the review process was consistent with what we had heard on April 5. However we still did not hear specific recommendations for the meetings or how the shoreline property owners could make a meaningful contribution.

We offer the outline of a proposal to address this. We would like to see a series of three meetings; one in the spirit of the introductory meeting that was requested on April 5, a forum dedicated to the topics of buffers, structures, and non-conformance, and a second forum on bulkheads, public access, and any other concerns. The introductory meeting would be organized by City Staff.

The forums are to be collaboration by three major stakeholders; City Staff, the Marine Shoreline homeowners, and the Lake Burien homeowners. The shoreline groups would consist of a principal, a small number of additional residents, and a small number of domain experts as appropriate.

The forums will begin with a series of three 20 minute presentations, and then three 10 minute follow ups. Any number of people can speak from each group at the discretion of the group's principal representative.

Next will be a significant moderated Q/A period. Questions must be provided in advance so that the moderator can review and organize them according to the popularity of the topic. Logically a question is fielded by the principal representative of the group but he/she may choose to delegate the question to anyone within their group. The moderator will use their discretion to manage the order in which groups respond to particular questions.

Finally there might be a small period set aside for "free form" questions from the audience but questions must be asked one at a time and each group should be given the opportunity to respond.

Although additional detail is required, we believe this proposal to be responsive to the goals you outlined on April 5 and we hope it receives favorable consideration.

Respectfully,

Michael D. Noakes

Michael D. Noakes

President of Burien Marine Homeowners Association.

CFTR: 05/24/10

May 10, 2010

Dear Madam Mayor, City Council Members and City Staff,

I moved to Burien in August 2008 after being a resident of West Seattle for the previous 11 years. What attracted me to Burien was the small town atmosphere and the possibility to live on Puget Sound. For years, I had ridden my bicycle through the Three Tree Point neighborhood and thought if I was ever in a position to purchase a home there, then I would make it happen. Since moving to Burien, I have been part of a community, both in my neighborhood and the town. My fiancé moved in this past summer, The restaurants and stores are where we shop. There is little need to head up to Seattle or even over to Southcenter.

But lately I've observed things around the town that concern me. I was one of those in the dark about the SMP, though I can claim some ignorance by not being here when the process started. Until January this year, I did not know that the city had a website and actually did not think it necessary to care. All that has since changed. Now from what I have heard, our home is considered a nonconforming structure. A home that has been there since the early 1900's and remodeled in the 80's. To us, this does not make sense. A concern is that we have a huge hill behind us and a street in front of us. In the event of a catastrophe, for example a fire or hillslide, we might not be able to rebuild without meeting the requirements set forth in the proposed document. Should there really be restrictions on rebuilding a home that has been in its remodeled state for over 25 years? Having setbacks to the degree in the documents makes no sense to me. Burien's SMP should be easy. There are no marina or business interests to consider, only residential and parks. No problems, right? Except the residents of the shoreline have a lot of concern about the direction the city seems to be taking in its program.

As I see it the city council has two options with the SMP. As the mayor stated last week, you are the decision makers. The first would be to get the SMP to the state on time and have it approved. I can only see this happening with the cooperation of the residents of the shoreline. Does the city really want to divide itself from its citizens? I know that I don't want to see that happen. The other option would be to wait and join up with other cities and see what the state really wants and will approve. It truly is your choice.

You have the opportunity to be the city that can be a model of how to work with its citizens on its Shoreline Master Program or can be one of what not to do. Please listen to your residents and allow our input. You have the template for a plan, let the residents of Lake Burien and the Burien Marine Homeowners Association assist in the final documents. We have spent a lot of time reviewing what is proposed and can make the final documents something of which the city of Burien can be proud.

On a final note, since moving to SW 172nd, I have listened to stories on how over the years both the county and the city have had ideas claiming the property on the street right of way. The final version of the SMP can be the time to set this issue to rest. Wording in the final document could ease the mind of all the residents of SW 172nd St once and for

CFTR: 05/24/10

all. With no net loss as the main idea behind the revised SMP, there will likely never be a time when changing the roadway from its current dimensions, outside of occasional resurfacing, ever be an option. Please consider allowing our neighborhood to remain the unique community that it is.

Sean Wittmer
Julie Allen
3328 SW 172nd St.

To The Burien Planning Commission
To The Burien City Council
From Chestine Edgar
Re SMP Draft document sent to the City Council
May 10, 2010

One of the things that has been a problem from the start of the SMP process is that the committee and the commission that worked on the draft documents never got to see their finished draft and proof read it before they approved it. As a result the draft documents got passed on with corrections not being made that were promised to be made, new items were inserted that they never worked on and language errors that changed the meaning were put into the drafts.

The document that was passed on to the City Council has errors. Some of these include;

1. additions made to the matrix table that were never discussed or discussed inadequately and items not removed from the table when they were renamed or reclassified- government facility, parks and recreation facilities, schools, wireless service facilities,
- 2.the Appendix 8-C was never added to the document as an Appendix,
- 3.the four technical documents/Appendices were never corrected for errors.

*I am requesting that this be
attached to the SMP file.*

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Signed


Mary Sitterly

To: Burien City Council

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MAY 12 2010

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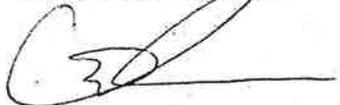
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Signed

Gordon & Debra Buchan



Debra Buchan

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Signed

~~Fanny Peck~~ Gordon Stuart Peck, Ph. D.

The property at 16959 Maplewild SW has been owned and maintained by my family for more than 100 years, and it is outrageous that somebody in Burien will now attempt to revise the terms of the original purchase contract which I still have.

Moreover, I, the present owner, am 85 years old and remember when Burien consisted of a feed store and little else. I do not recall the people of Thurman Point ever urging Burien to take over the area of the Point, and, it is my conviction that the real reason Burien wanted to include the area was because it consisted of some of the most valuable territory to be exploited by Burien as a cash cow for taxing purposes. Certainly any positive benefits of being a part of Burien have never materialized at the Point.

Lisa Clausen

From: Public Council Inbox
Sent: Friday, May 14, 2010 4:36 PM
To: 'Deniece Bleha'
Subject: RE: Letter and attachments to City of Burien City Council

Thank you for your message to the Burien City Council. It will be included in the Correspondence for the Record for an upcoming City Council meeting.

L. Clausen
City Manager's Office

From: Deniece Bleha [mailto:bleha@ekwlaw.com]
Sent: Friday, May 14, 2010 4:07 PM
To: Public Council Inbox
Cc: Peter Eglick; Jane Kiker
Subject: Letter and attachments to City of Burien City Council

Greetings:
Please let me know if you have any difficulty opening any of the attachments.



Deniece Bleha
Legal Assistant
Eglick Kiker Whited
1000 Second Avenue, Suite 3130
Seattle, WA 98104
206.441.1069 ext. 5

This e-mail is for the sole use of the intended recipient(s). It contains information that is confidential and/or legally privileged. If you believe that it has been sent to you in error, please notify the sender by reply e-mail and delete the message. Any disclosure, copying, distribution or use of this information by someone other than the intended recipient is prohibited.

CFTR: 05/24/10



Peter J. Eglick
eglick@ekwlaw.com

May 14, 2010

Via Email (council@burienwa.gov)

City Council
City of Burien
400 SW 152nd Street, Suite 300
Burien, WA 98166

Re: Lake Burien Public Access Should Be Permanently Taken Off the SMP Table In
Light of the Attached Expert Reports and the Scientific Record

Dear Councilmembers:

This office represents the Lake Burien Shore Club ("Club") with respect to the City of Burien's proposed SMP Amendments and their potential effects on Lake Burien. For almost a century, the property owners surrounding Lake Burien have been careful stewards of its shores and water quality, protecting against commercial development and overloading of its carrying capacity.

The Club acknowledges the changes that have been made to earlier SMP drafts which targeted Lake Burien as an ill-advised immediate priority for public access. However, the matter is not yet resolved. Current proposals before you do not acknowledge what is clear in the record: Lake Burien is not an appropriate candidate for public access. This should be acknowledged now.

The Shore Club's comments to the Planning Commission pointed out that the record before the City lacked the science necessary to evaluate suitability of Lake Burien for public access. To remedy that gap, the Shore Club, at its own expense, commissioned expert reports by wetlands scientist Sarah Cooke and limnologist Rob Zisette. These reports, together with the scientists' resumes, are attached to this letter for Councilmembers' convenience. These reports confirm that, largely as a result of the Shore Club's sound stewardship practices, Lake Burien's water quality and habitat functions are currently very good. However, the reports suggest that increase in human access would upset this delicate balance, leading to degradation – a "net loss" in Shoreline Management Act ("SMA") terms – of these ecological functions.

Mr. Zisette's report recognizes that the excellent condition of Lake Burien's aquatic community and its superior water quality (e.g., the absence of toxic blue green algae blooms) is

uncommon when compared with other lakes located within fully developed basins in King County. At the same time, Mr. Zisette notes that the lake is very susceptible to changes in trophic state as well as incursion by invasive non-native plants. His report concludes that opening the lake to public access could seriously harm its ecological health through the introduction of invasive, non-native plants and animal species (resulting in diminution in valuable wildlife habitat), as well as through the potential for water quality degradation from toxic algae blooms. Wetlands scientist Dr. Sarah Cooke similarly reports that the introduction of public access to Lake Burien is contraindicated by available scientific knowledge respecting the lake's critical wetland areas and wildlife habitat.

There is no cognizable scientific analysis in the SMP record contradicting these scientists' conclusions. They are also supported by common sense. That is why, eighty years ago, in Turtle v. Fitchett, 156 Wash. 328, 287 Pac. 7 (1930), the Washington Supreme Court upheld objections to public use on Lake Burien's shoreline, citing testimony of the King County Health Officer that the lake was too small to support it.

It is a misimpression that the Shoreline Management Act requires public access across-the-board. The SMA encourages public access to shorelines, but only where appropriate. Bob Fritzen, the State Department of Ecology representative who has been working with Burien on its SMP amendments, explained to the Planning Commission at its March 9, 2010 meeting that each public access provision in the Ecology's SMP guidelines is accompanied by a list of qualifiers. Factors limiting the appropriateness of public access include compatibility with existing uses and protection of the shoreline environment, as well as maintaining public safety and respecting private property rights. See, e.g., WAC 173-26-221(4). As Mr. Fritzen cautioned the Planning Commission:

Public access can be visual, it can be physical, and it may be inappropriate in some situations. The other thing to keep in mind is public access and protection of the environment are not always compatible so you have to bring that into consideration when you're doing your planning for public access.

Clearly, where activities encompassed by public access would likely harm the water body's ecological functions in addition to interfering with pre-existing private residential uses and jeopardizing public safety, it is appropriate for a city to decide that public access is off the table. That should be the City Council's decision here. The Council should therefore modify the SMP language so that it does not reflect a deferral of Lake Burien public access to yet another public process that is expensive and burdensome for the City and stakeholders alike. Instead, the Council should state in plain terms in the SMP that, for the reasons stated and based on the record, public access to Lake Burien would not be appropriate.

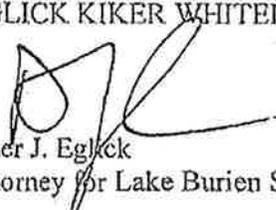
May 14, 2010

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The Shore Club and its counsel appreciate the time the Council has and will spend on this matter. We would be happy to answer Council questions and provide assistance as needed as the Council proceeds through the SMP process.

Respectfully,

EGLICK KIKER WHITED PLLC


Peter J. Eglck
Attorney for Lake Burien Shore Club

cc: Client

Attachments



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March 23, 2010

Attn: Don Warren, President & Lake Steward
Lake Burien Shore Club
Burien, WA

RE: Review of the City of Burien's Draft Shoreline Master Plan (SMP) as it applies to Public Access for Lake Burien

Dear Mr. Warren:

The Lake Burien Shore Club is concerned that the Draft Shoreline Master Program (SMP) adopts a policy of public access for Lake Burien without an investigation into the impacts it might have on the Lake ecosystem and water quality. The Shore Club asked me, in my capacity as a professional wetlands scientist, to review the portions of the Draft SMP amendments pertaining to Lake Burien, and to determine what data, if any, exists to support the City's proposed public access policies. As detailed below, my review and analysis of the existing data and my own field investigation lead me to the conclusion that there is insufficient information to support adoption of these policies and that such adoption would likely be inconsistent with the level of protection required to maintain the sensitive lake, its adjacent wetlands, streams, and associated wildlife, in sound ecological health.

Findings Summary

It is apparent that the Burien Shoreline Master Program Update relies on the following reports generated by City's Consultants:

- * Shoreline Inventory (Grette Associates 2008)
- * Shoreline Analysis and Characterization (Grette Associates 2008)
- * Cumulative impacts Analysis (Grette Associates 2009)
- * Shoreline Restoration Plan (Grette Associates 2009)

These documents do not reflect analysis of existing data and conditions with respect to Lake Burien as is required under the Shoreline Management Act (SMA) and outlined in the Shoreline Management Plan Guidelines adopted by the Department of Ecology (WAC 173-26-201, Comprehensive Process to Prepare or Amend Shoreline Master Programs, Section 3C and D).

The City is proposing public physical access to the Lake without studying the impacts to the Lake functions that could result, and therefore, without addressing measures necessary to mitigate such impacts. The Draft SMP is therefore, not in

compliance with the Shoreline Management Act (SMA) (RCW 890.58), and SMP Guidelines (WAC 173-26, Part III). The SMA and SMP Guidelines require current scientific-based or a "Best Available Science" (BAS) -based characterization of shoreline ecological functions, adoption of a no-net-loss policy with respect to these ecological functions, recognition of potential consequences from proposed management actions, and adoption of appropriate mitigation measures.

Focusing primarily on the Lake's wetland functions. I have reviewed all the documents and web-based resources listed in the reference section at the end of this document in addition to undertaking the personal communications listed there. I also conducted reconnaissance field research at the Lake and its wetlands on March 3, 2010. Most of the wetlands information I have reviewed (and gathered) is notably not referenced in the City's or its consultant's characterization and resultant analysis. The Lake's aquatic resources, and potential impacts to them from the proposed public access, were finally addressed in a report by limnologist Rob Zisette of Herrera Environmental Consultants, which was submitted to the Planning Commission by the Shore Club on March 17, 2010. This report concluded that providing public access to Lake Burien could have adverse and unintended impacts on its ecological well-being in terms of the introduction of invasive, non-native plant and animal species, and the potential for water quality degradation.

Analysis

1. **Proposed SMP Policies are not based on current and best available science.** In reading the four reports listed above which formed the basis for the Draft SMP Update, it is apparent that very little attempt was made to find the available data for the Lake, let alone do additional studies required by the SMA and SMP guidelines. Rather, the City's consultant team stated that they only needed to comply with the characterization of the Lake found in the City's Municipal Code and Comprehensive Plan. In my own discussions with Department of Ecology scientists, (Pers. Comm. With Eric Stockdale, March 2010), it has been made clear that an SMP developed without analysis of current lake conditions and functions (e.g., water quality, hydrology, and wildlife habitat) would be unlikely to survive Ecology's mandatory SMP review process.

There is little evidence that Grette staff reviewed existing Lake data or coordinated their recommendations with any other scientists with expertise of the Lake. The SMP guidelines specifically identify this collaboration as being essential to the characterization and impact assessment for developing the SMP. King County has an on-line a report that covers ten years of study data and analysis of the Lake. There is only one apparent reference to other studies in the Grette reports and this is regarding phosphorus concentrations in the Lake. This data likely comes from the King County Lake Report, although it is not listed in the bibliography. The Coastal Atlas (Wa. DOE Web resource 2010) similarly is not referenced and it shows the quality of Lake Burien to be excellent, in stark

contrast to all other lakes in the urban corridor. The Lake shore is completely surrounded by private property and no residents report seeing Grette staff on their properties to collect data.

As part of the impact analysis, it is important to know what wildlife currently exists on the lake. No wildlife censuses were done as part of the lake characterization and there was no attempt to collect existing data from King County and/or local residents regarding the Lake's resident birds, migratory birds, mammals, fish, amphibians, reptiles or insects. The residents and a local fish expert, Richard Streater, have identified trout, bass, sunfish and perch, yet the City in their Municipal Code, Comprehensive Plan, and Draft SMP state there are no fish in the Lake. As discussed below, shore residents regularly observe eagles, hawks, and heron preying on fish in the Lake. The Lake Steward has not been contacted by anyone from the City's consultant team, despite the fact that he has a significant amount of data after years of monitoring the Lake.

- 2. Lake Reconnaissance and other data discoveries.** In addition to reviewing and analyzing existing data respecting Lake Burien, I visited the Lake on March 3, 2010; met with shore residents and circumnavigated the shoreline in a boat. I took photographs, recorded vegetation types, shoreline characteristics, water visibility, the presence of invasive plant species: aquatic, wetland, and upland plant and animal taxa. I ran the wetland data through the Wetland Rating form for Western Washington (Hruby 2004) and I took notes on birds and fish and reptiles: A neighbor showed me photos of the painted turtles that lay eggs on her beach, and there are reports that red slider turtles may also be present. There are bullfrogs and Cascade frogs, and crayfish in the Lake. None of this information is included in Grette's Shoreline Inventory or Shoreline Analysis and Characterization. One wonders how Grette developed the Impact Analysis without being aware of the wildlife and water quality of the Lake.

For more than 60 years, shore residents have tracked wildlife use of the lake and environs and recently have been taking bird census data, some using Audubon Guidelines. Priority species, including bald eagles, osprey, and blue heron use this lake for perching and feeding. These species are observed regularly. Although not documented in the City's record, the residents give first hand reports of this. I saw both blue heron and bald eagles the day I visited. Lake residents have identified over 80 different species of birds. Long-term residents report bird sightings have increased since the development of the third runway and filling of many of the wetlands at SeaTac. An animal inventory was compiled by the residents and included bats, mice, rats, voles, shrews, raccoons, weasels, opossums, squirrels (grey), and a historic sighting of otter in the 90's.

There are existing patches of undisturbed wetlands scattered around the Lake, especially in the northeast corner in front of the Ruth Dykeman Center. This area has a large aquatic plant community dominated by hardstem bulrush (a native plant), with an associated riparian corridor that leads to the outlet and Burien Creek which has both upland and wetland components. The other lakeshore vegetation patches are both herb and shrub dominated, ranging from 1/5 to 1/2 of

the lakeshore frontage of a particular lot. The herbaceous patches are dominated by soft rush and yellow-flag iris, but native rushes, grasses and sedges can also be found. There are scattered sandy beaches around the Lake and resident reports indicate that turtles nest on most.

The Lake water quality is remarkably good, according to the Department of Ecology Coastal Atlas and King County Lake Monitoring Data, as well as the analysis recently prepared by Rob Zisette at Herrera Environmental Consultants. The only motors allowed in the Lake are electric. The lake residents do not move their boats from Lake Burien to outside lakes and back. This means that there are few to no opportunities for invasive weeds to be introduced into the Lake. Mr. Zisette's limnology report addresses the ecosystem effects of introduction of invasive species, plant and animal.

The Lake residences are on sewer so there is no septic effluent leaching into the Lake, a common occurrence in other lakes throughout the County. There were no algal blooms, and I could see the bottom in areas where the depth is reported to be at least 10 feet (King County Web site bathymetry). There appear to be only a few patches of pond lily (as seen on aerial photographs from the summer). I saw no algae, milfoil or elodea (common noxious aquatic weeds in urban lakes)

The Lake is currently entirely developed with residences, with the exception of the Ruth Dykeman parcel in the northeast corner. The dominant activity on the Lake is by personal boats, most using electric motors. Electric motors make very little wake as they tend to move very slowly through the water. Additionally, the local residents and Lake Steward monitor the Lake for any irregular activity. Residents for the most part, keep their dogs from the Lake, so there is no dog fecal matter entering the lake and according to residents there is relatively little disturbance of the birds by dogs or cats.

3. SMP Public Access provisions should not be adopted in absence of required scientific support and analysis

Based on my research and observations, I find Lake Burien to be in surprisingly good condition for an urban lake and the water quality, habitat, and the number of species of wildlife present are not matched in the urban setting. In a case such as this, public access would result in (potentially irreparable) impacts to the ecosystem. It would be unwise to introduce public access which could upset the current balance, especially without investigating what the potential impacts might be.

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Personal communications

Erik Stockdale, Washington State Department of Ecology, Bellevue staff. Staff assigned to review the Burien SMP. March 3 and 11.

Richard Streater, fishing lures author and fish expert. March 2010



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Sarah Spear Cooke, Ph.D.

Wetlands Ecologist, Soil Scientist, Plant Ecologist and Taxonomist

Expertise

- Wetlands creation, restoration, and enhancement , CAD design and implementation
- Wetlands delineation and delineation methodology instruction
- Invasive weed identification and development of control strategies, control manuals, and field oversight of control efforts
- Ordinary High Water Mark (OHWM) determinations and instruction.
- Regulatory and Permitting Assistance, on local, state and national levels
- Wetland Functional Evaluation, including the "SAM" method and a botanical expert on the development of the State wetland manual
- Masters in Botanical taxonomy, Doctorate in Botany and soils, specializing in wetland plants
- Author *A Field Guide to the Common Wetland Plants of Western Washington & Northwestern Oregon*, published by the Seattle Audubon Society
- Certified soil scientist (hydric soils), soils mapping and classification
- Watershed Analysis
- Rare plant surveys and mapping
- Mine reclamation ecology and uplands restoration

Dr. Cooke has 24 years of experience in wetlands ecological research and environmental consulting, and 27 years of experience in ecological and geological research, in the Pacific Northwest. She specializes in habitat creation, restoration and enhancement projects, both in design and implementation. She excels in permitting assistance on the local, state, and national level. She was a co-senior investigator for the Puget Sound Wetland and Stormwater Management Research Program, a 10-year systematic wetland ecosystem study conducted under the auspices of the Environmental protection Agency, The US Geological Survey, Washington State, and King County in Washington State. Dr. Cooke's areas of expertise include: wetland and stream inventories, delineation, restoration/mitigation designs, baseline studies, permitting, and monitoring programs; weed identification and control; rare plant surveys and vegetation mapping; soil assessments; watershed analysis; and environmental assessments in the region. She has more experience in developing assessment methodologies than any other private wetlands consultant in the PNW. She has extensive experience in classroom instruction of wetlands ecology, restoration ecology and implementation, delineation protocols, functional assessment, weed identification and control, hydric soils, and wetland plant identification. She has 16 years experience in managing multidisciplinary teams, supervising subcontractors, and generating reports, and marketing from a consulting perspective. She currently teaches restoration ecology and implementation, wetland botany, and weed ecology and control at Portland State University. She is a former instructor for the Wetland Certification Program at the University of Washington and Wetland Ecology and Science for the graduate program at the Evergreen State College. She has been teaching classes for the Coastal Training Program through the

Washington State Department of Ecology for eight years and has taught wetland Delineation for the US Army Corps of Engineers. She is also the senior author/editor of the *A Field Guide to the Common Wetland Plants of Western Washington & Northwestern Oregon*. And the Semi Quantitative Wetlands and Buffer Functional Assessment Method used since 2001 by most wetland practitioners.

Education

Ph.D., University of Washington, Dissertation title: The Edaphic Ecology of Two Northwest American Composite Species. Major: Botany, Geology, and Soils; minor Statistics, Plant Physiology, and Genetics
M.S., Plant Taxonomy, University of Washington, 1987.
Honors Degree, Geobotany, McGill University, 1979.
B.S., Biology and Geology, McGill University, 1979.
Undergraduate studies in Biology and Geology at Purdue University 1974-76.

Experience

- Self-employed, Cooke Scientific. Seattle Washington. Projects include wetland mitigation (restoration, enhancement, and creation), wetland delineations, weed identification and control, wetland inventories, wetland functional assessments, wetland and sensitive areas permitting (federal, state and local jurisdictions), rare plant surveys, vegetation and soil mapping, environmental evaluations, environmental impact statements, watershed analysis, and mine reclamation, third party regulatory review for various small jurisdictions. 1998-present.
- Western Washington Representative, Washington State Noxious Weed Board. 2005 to present. Chair, Standards committee. Developed a methodology for inventorying weeds used by County Weed boards in Wa.
- Instructor, Habitat Restoration, and Mitigation. Wetland Training Institute. Syllabus development, classroom instruction, and field trips. Spring 2010.
- Instructor, PNW Winter Twig ID. Coastal Training Program, Washington State Department of Ecology, classroom instruction, and field trips. 2007-present
- Instructor, Grass, Sedge and Rush ID in PNW. Coastal Training Program, Washington State Department of Ecology, classroom instruction, and field trips. 6-class contract, 2004-present.
- Instructor, Washington State Wetland Rating System in Western Washington. Coastal Training Program, Washington State Department of Ecology, classroom instruction, and field trips. 6-class contract, 2005-2006.
- Instructor, Weeds of the Pacific Northwest. Portland State University, Portland, Oregon. Syllabus development, classroom instruction, and field trips. Summer 2004.
- Development Advisory Team. Washington State Wetland Rating for Western Washington. Washington State Department of Ecology. 2002-2004.
- President Pacific Northwest Chapter Society of Wetland Scientists. May 1999- May 2000. Executive Vice President SWS PNW Chapter 1998-1999.
- Development Advisory Team. Washington State Functional Assessment Method. Washington State Department of Ecology. 1996-1998.
- Instructor, WNPS Native Plant Stewardship program, King, Snohomish, Pierce Counties, Washington Native Plant Society, Syllabus development, classroom instruction, Fall 1996- present.
- Instructor, Hydric soils class, University of Washington, College of Forest Resources, Center for Urban Horticulture. 1998, 2006.
- Instructor, Habitat Restoration, and Mitigation. Portland State University, Portland, Oregon. Syllabus development, classroom instruction, and field trips. Fall 1998- 2008.

- Owner, Cooke Scientific Services, Inc. Seattle, Washington. Principal Scientist and President of company. Projects include wetland mitigation (restoration, enhancement, and creation), wetland delineations, wetland inventories, wetland functional assessments, wetland and sensitive areas permitting (federal, state and local jurisdictions), rare plant surveys, vegetation and soil mapping, environmental evaluations, environmental impact statements, watershed analysis, and mine reclamation in upland and wetland areas. 1995-2003.
- Instructor, Wetland Plants of the Pacific Northwest; Winter trees and shrubs; and Grasses, Sedges, and Rushes. Portland State University, Portland, Oregon. Syllabus development, classroom instruction, and field trips. Spring 1998- present.
- Principal Scientist, wetlands Group, Pentec Environmental Inc., Edmonds, Washington. Started, marketed, and managed the wetlands group. Projects included wetland mitigations (restorations, enhancements and creations), wetland delineations, wetland inventories, wetland functional assessments, wetland and sensitive areas permitting (federal, state and local jurisdictions), rare plant surveys, vegetation and soil mapping, environmental evaluations, environmental impact statements, watershed analysis, mine reclamation in upland and wetland areas. 1990 – 1995.
- Instructor, University of Washington, Extension Services, Wetland Certification Program. Wetland Science and Ecological Processes. . Syllabus development, classroom instruction, and field trips. 1994-1996.
- Instructor, University of Washington, Extension Services, Wetlands Flora of Western Washington. Syllabus development, classroom instruction, and field trip. 1990-1996.
- Long-term Research Co-manager, Puget Sound Wetlands and Stormwater Management Research Program. Experimental design, implementation, and coordination of a five-year total ecosystem survey and monitoring study. 1987-1996.
- Project Coordinator, Senior Editor and Author. US Environmental Protection Agency/Washington Native Plant Society. A Field Guide to the Wetland Flora of Pacific Northwest Project. Grant writing, project management, technical coordination, and writing the grass, sedge, and rush sections of book. 1992-1997.
- Instructor, Washington State Department of Ecology, Wetland and Riparian Restoration, a workshop for agency staff and consultants. Co-development of syllabus, text, class instruction for the vegetation portion of the workshop. 1993.
- Co-instructor, Hydric Soils workshop. University of Washington Center for Urban Horticulture, College of Forest Resources. 1992.
- Instructor, Hydric Soils, Processes and Characteristics. University of Washington Extension Services. Development of syllabus, text, classroom instruction, and class field trip. 1992.
- Co-instructor, Wetlands Ecology. The Evergreen State College, Masters of Environmental Science. Co-development of syllabus and co-instructor for wetlands ecology, management, and regulatory policy class. 1991.
- Instructor, Interagency Wetlands Delineation Agency Training/USACOE, EPA, SCS, Fish, and Wildlife Service. Taught vegetation and soils methodology (1987 and 1989 methodologies).
- Field Biologist/Soil Scientist, King County Wetlands Inventory. Paper inventory, development of field assessment protocol, manager field-inventory. 1990.
- Professional Botanist, Washington Native Plant Society. Research, teaching workshops related to the native flora, establishment, and curator of the plant species distribution library. 1989.
- Senior Wetlands Ecologist, Shapiro and Associates. Wetland delineation, plant identification, vegetation analysis, soils assessment, aerial photo

interpretation, and report writing, with emphasis on wetlands problems, and toxic waste. 1988.

- Botany and Soils Consultant and Subcontractor, Raedeke Associates. Plant identification, vegetation analysis, soils assessment, and aerial interpretation with emphasis on wetlands problems. 1986-1987.
- Team Member, Cedar River Watershed Long-term Wetlands Monitoring Project, Seattle City Light. Design and implementation of vegetation and soils aspects of the study, and air photo interpretation. 1988.

Awards

- International fellow. Society of Wetland Scientists. Dr. Cooke was one of three internationally scientists recognized by the SWS for our contributions to Wetland Science. 2003.
- Elected President, Society of Wetland Scientists, Pacific Northwest Chapter. 1999-2000.
- Best Paper Award. International Serpentine Conference, Society of Serpentine Ecology. 1999.
- Sigma Xi, Forestry Society. Elected to be a member of the Washington State Chapter of Sigma Xi, the professional Foresters Society. 1994.

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- Member of Society of Wetland Scientists
- Member Society for Ecological Restoration
- Member Association of State Wetland Managers
- Member Sigma Xi
- Member Ecological Society of America
- Member Consulting Soils Scientists of America

DATA ANALYSIS REPORT

Lake Burien, Washington

Prepared for

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MAR 17 2010

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March 16, 2010

Note:

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Introduction

The Lake Burien Shore Club has for many decades taken an active role in protecting water quality and ecological functions of Lake Burien. The Draft Shoreline Master Program (Reid Middleton 2009) currently before the Burien Planning Commission includes policy and regulation provisions for establishment of public access to Lake Burien. However, it did not identify existing lake conditions or address potential impacts to those conditions from physical access to the lake by the general public.

The Lake Burien Shore Club (Shore Club) requested that Rob Zisette of Herrera Environmental Consultants (Herrera) summarize existing information on conditions of the lake and identify potential impacts to those conditions as a result of public access to the lake. This report summarizes the existing physical, water quality, aquatic plant, and fish and wildlife conditions in Lake Burien. Based on these conditions, potential impacts to the lake from establishing public access are then addressed.

Information presented in this report is based on review of readily available data and reports. Additional information was obtained by Rob Zisette during a site visit on March 13, 2010. This report was prepared by Rob Zisette, who is a limnologist with 30 years of lake research experience.

Per the detailed discussion below, Lake Burien presents several contraindications for adding public access to the burdens it must carry. One is the increased potential for the introduction and facilitation through public access of non-native, invasive aquatic plants and animals, which could severely impair habitat, water quality, aesthetics, and recreational activities in the lake. Another is the presence of the bluegreen algae *Anabaena* and *Aphanizomenon*, which account for the vast majority of bluegreen blooms in Washington lakes, and can produce the toxins microcystin and anatoxin-a.

Physical Characteristics

According to historical reports by King County (2010), Lake Burien is 44 acres in size with a mean depth of 13 feet (4.0 meters) and a maximum depth of 29 feet (8.8 meters). Features listed for Lake Burien in Lakes of Washington (Wolcott 1973) include an area of 43.7 acres, a maximum depth of 33 feet (10.0 meters), and a lake surface elevation of 320 feet mean sea level. Bathymetric (water depth) contours are shown in Figure 1 (Messick 2010).

The lake watershed is approximately 250 acres in size (King County 2010) as shown in Figure 2 (Messick 2010). The watershed boundary shown as the yellow line in Figure 2 reasonably agrees with the storm drain maps prepared by the City of Burien (Burien 2010). Thus, the watershed area is approximately six times the lake area. The watershed consists entirely of urban land use and no streams currently drain into the lake. The City of Burien (2010) has located 11 stormwater outfalls in the lake (see Figure 7E in Grette 2008).

Lake Burien drains to an outlet channel located at the northeast corner of the lake (see blue line in Figure 2). Lake water flows from this short channel over a weir that was installed in the 1960s to reduce the lake level drawdown during the dry summer months (Warren 2010). Flow from the weir enters a culvert that drains southeast to Miller Creek. Recent observations indicate that there has been no surface outflow from the lake from approximately late April to early November (Warren 2010).

The lake level typically decreases approximately 2 feet during the summer. During the wet winter months, the lake level is generally maintained within 0.2 feet of the weir elevation, which is approximately equivalent to the ordinary high water mark. No flooding of shoreline properties has been observed (Warren 2010). Based on 1 year of lake level data from October 1994 through September 1995 (King County 2010), the lake level increased from to a minimum elevation of 69 centimeters (2.3 feet) below the weir in October 1994 to a maximum elevation of 5 centimeters (0.2 feet) above weir in January 1995, and then decreased to a minimum elevation of 58 centimeters (1.9 feet) below the weir by the end of September 1995.

Lake Burien is located in an aquifer recharge area (Burien 2009). The lake may not receive much groundwater inflow because of the shallow surrounding topography. It is likely that stormwater drainage is the primary hydrologic input to Lake Burien, with additional input from direct precipitation.

Water Quality

Eutrophication and Phosphorus Cycling

The principal water quality concern for lakes is eutrophication. Eutrophication is a process of nutrient enrichment and increased productivity that can occur naturally, and is commonly accelerated in urban lakes. Phosphorus is the primary nutrient controlling eutrophication of lakes because it is typically the nutrient that limits algae growth, since large pools of carbon and nitrogen are available in the atmosphere. Stormwater runoff is the primary source of phosphorus in most urban lakes, including Lake Burien. Other external sources of phosphorus in Lake Burien include direct precipitation and shallow ground water, which enters the lake via storm drain outfalls and may also enter the lake via seeps in the nearshore zone of the lake. An additional external source of phosphorus is waterfowl feces, which can be a significant source for small shallow lakes.

Internal loading is also a common source of phosphorus to urban lakes. Internal loading refers to processes inside the lake that contribute phosphorus to the water and includes various components in the lake phosphorus cycle. Typically, the primary source of internal loading is the release of iron-bound phosphorus from anoxic (i.e., low or no oxygen) sediments. Anoxic sediment release of phosphorus typically occurs in deep portions of the lake where oxygen is consumed by decomposing microorganisms, but can also occur in shallow sediments that are highly enriched with organic matter or located under aquatic plant canopies. Other sources of internal phosphorus loading include shallow (oxygenated) sediment release during algae blooms

that create high pH conditions (greater than 9), vertical migration of bluegreen algae (cyanobacteria) from the sediments up into the water column, and decay of algae and aquatic plants in the water column.

In the Puget Sound lowlands, most of the external phosphorus loading to lakes occurs during the wet winter months. Most of that external load settles to the lake bottom and then recycles back into the water column as internal loading during the dry summer months when lakes are thermally stratified. Lakes of sufficient depth, such as Lake Burien, become thermally stratified in the late spring when the surface waters warm and become less dense than the cooler deep waters. As water temperature and density differences increase in the water column during the summer, a thermocline becomes established that separates the epilimnion (surface layer) and hypolimnion (bottom layer). A strong thermocline (high thermal gradient) dramatically reduces the transport of phosphorus from deep sediments in the hypolimnion to algae growing in the epilimnion. A weak thermocline can temporarily degrade during cool, windy periods of the summer, causing the movement of the phosphorus-rich hypolimnion waters into the epilimnion. Ultimately, the thermocline breaks down in the fall when the lake temperature cools, and the lake becomes completely mixed in November. Many lakes experience rapid growth (blooms) of algae in the fall in response to both internal (mixing) and external (stormwater) phosphorus sources.

Insufficient amounts of temperature profile data are available from King County (2010) to evaluate the location or strength of the thermocline in Lake Burien. Temperature was measured in the surface (1 meter depth) and the bottom (8 meter depth) water samples on two occasions per year during the summer of 2000 through 2004. Surface water temperatures ranged from 16 to 23°C and bottom water temperatures ranged from 10 to 18°C, and there was typically a 5°C difference between the surface and bottom water sample. Based on these data, it is unknown whether the 5°C change is abrupt or gradual and represents a strong or weak thermocline, respectively.

Trophic State

Lakes are classified into the following three categories of trophic state that represent increasing amounts of eutrophication:

- Oligotrophic (not enriched)
- Mesotrophic (moderately enriched)
- Eutrophic (highly enriched)

Trophic state is determined using summer (June through September) mean values of three parameters:

- Total phosphorus concentration in the epilimnion (surface layer)
- Chlorophyll *a* concentration in the epilimnion (phytoplankton pigment in the surface layer)

- Secchi depth (water transparency measured by lowering an 8-inch Secchi disk in the water until it disappears from view)

A trophic state index (TSI) is calculated for each of these parameters where values less than 40 represent an oligotrophic lake, values between 40 and 50 represent a mesotrophic lake, and values greater than 50 represent a eutrophic lake.

Trophic state parameters were measured in Lake Burien during the summers of 1998, 2000, 2001, 2002, 2003, and 2004 as part of the King County Lake Stewardship Program. Water samples were collected by lake stewards (residents) and analyzed by the King County Environmental Laboratory. Data quality is reviewed and posted on the stewardship program website (King County 2010). The Lake Burien data are presented for surface (1 meter) total phosphorus concentration in Figure 3, surface (1 meter) chlorophyll *a* concentration in Figure 4, Secchi depth in Figure 5, and trophic state index (TSI) in Figure 6.

Total Phosphorus

Surface (1-meter depth) phosphorus concentrations in Lake Burien typically ranged from 10 to 15 micrograms per liter (ug/L) in April through July, and typically increased to a range of 15 to 20 ug/L in September and October (see Figure 3). A minimum concentration of 7 ug/L was observed in May 2002 and a maximum concentration of 29 ug/L observed in October 2001.

Bottom (8-meter depth) water samples were also analyzed for total phosphorus on two occasions each year and exhibited a much higher mean concentration (33 ug/L) than the surface water samples (14 ug/L) collected concurrently. Higher concentrations of phosphorus are typically observed in bottom water samples due to the decay of settled organic matter. Much higher total phosphorus concentrations likely would have been observed in bottom water samples if the hypolimnion had become anoxic during the summer. In addition, mean total phosphorus concentrations were the same (33 ug/L) for bottom water samples collected in May and June compared to those collected in August and September. These results suggest that internal loading from anoxic sediment release may not have been a significant source of phosphorus in Lake Burien.

Chlorophyll a

Chlorophyll *a* is the primary photosynthetic pigment present in all species of algae. Concentrations of chlorophyll *a* are used as a measure of phytoplankton (free-floating algae) biomass. Surface (1-meter depth) chlorophyll *a* concentrations in Lake Burien typically ranged from 2 to 4 micrograms per liter (ug/L) in May through August, and typically increased to a range of 4 to 8 ug/L in September and October (see Figure 4). Surface chlorophyll *a* concentrations exceeded 8 ug/L on one occasion in October 2000 (12.8 ug/L) and October 2003 (12.2 ug/L).

Bottom (8-meter depth) water samples were also analyzed for chlorophyll *a* on two occasions in each of 3 years (2002-2004). The mean summer (August/September) chlorophyll *a*

concentrations were much higher in the bottom water samples (18.5 ug/L) than in the surface water samples (3.4 ug/L) collected concurrently. Higher concentrations of chlorophyll *a* may be observed in bottom water samples due to settling of phytoplankton, but this large of a difference suggests that phytoplankton may have been growing at the low light levels and high phosphorus concentrations near the bottom of the lake.

Phytoplankton

Water samples were also analyzed for phytoplankton composition by King County. Phytoplankton analysis results are presented in reports but not in the online database (King County 2010). A list of observed phytoplankton species has been compiled by lake resident Christine Edgar (Edgar 2010). Phytoplankton identified in Lake Burien include common genera in the following groups:

- Diatoms: *Fragilaria*, *Asterionella*, *Cyclotella*
- Chlorophytes (greens): *Botryococcus*, *Crucigenia*
- Cryptophytes: *Cryptomonas*
- Dinoflagellates: *Peridinium*, *Ceratium*
- Chrysophytes: *Dinobryon*
- Bluegreens (cyanobacteria): *Anabaena*, *Aphanizomenon*, *Aphanothece*, *Anacystis*

Phytoplankton succession in Lake Burien appears to generally follow the following pattern of dominance common to mesotrophic lakes: diatoms in the spring, dinoflagellates and greens in the summer, and bluegreens in the fall. There have been no reports of bluegreen algae blooms in Lake Burien.

Observations of the bluegreens *Anabaena* and *Aphanizomenon* in Lake Burien are of particular interest. These two genera (along with *Microcystis*, which has not been reported in Lake Burien) account for the vast majority of bluegreen blooms in Washington lakes, and both genera can produce the toxins microcystin and anatoxin-a (Ecology 2010b). Toxic algae blooms have been documented at an increasing rate in Washington lakes over the past 25 years and are an emerging public health issue. Although most blooms are not toxic, pets and wildlife have died after exposure to toxic bluegreens in Washington lakes, and people have become ill after swimming in lakes with blooms of toxic bluegreens (Ecology 2010b).

Secchi Depth

Secchi depth is a measure of water transparency or clarity that is primarily affected by phytoplankton concentrations, but it can also be affected by water color (tannins), bacteria, inorganic colloidal matter, and suspended fines (silt and clay). Typically, Secchi depth decreases as chlorophyll *a* increases when water transparency is primarily affected by phytoplankton, but the effects of phytoplankton biomass on Secchi depth can vary widely depending on the size the dominant phytoplankton cells or colonies.

Secchi depths in Lake Burien are shown on an inverse scale in Figure 5 for comparison with temporal patterns in total phosphorus and chlorophyll *a*. Secchi depths showed a general pattern of decreasing from 4 to 6 meters in May to 2 to 3 meters in October. However, the temporal pattern in Secchi depth is not as consistent as it is for total phosphorus and chlorophyll *a*. Unusual observations include a particularly low Secchi depth of 2.0 meters in May 2000 and a particularly high Secchi depth of 6.0 meters in October 2004.

Trophic State Index

Trophic state indices (TSIs) are presented for total phosphorus, chlorophyll *a*, Secchi depth, and the mean value for these three TSIs in Figure 6. Trophic state indices ranged from 39 to 43, which is in the lower range of mesotrophic status (40 to 50). Overall, the mean summer TSI did not exhibit a substantial increasing or decreasing trend between 1998 and 2004. The lower mesotrophic status of Lake Burien is rather unusual considering it is located in a totally developed basin within King County.

King County (2001) evaluated the trophic status and water quality trends in 49 small lakes that participated in volunteer lake monitoring activities. Ratings included 14 oligotrophic lakes, 20 mesotrophic lakes (including Lake Burien), 13 eutrophic lakes, and 2 hypereutrophic lakes (TSI greater than 60). Trend analysis of data for 1996 through 2000 identified a statistically significant increase in the mean TSI for four lakes and a significant decrease for one lake. Although more than 5 years of data may be needed to detect a change in the TSI, mesotrophic lakes such as Lake Burien are much more susceptible to changes in trophic state than are eutrophic lakes.

Aquatic Plants

Aquatic plants are an important component of lakes because they provide habitat for invertebrates and fish, supply food for waterfowl, and can affect the phosphorus cycle and algae growth in lakes. Excessive growth of aquatic plants can severely impair habitat, water quality, aesthetics, and recreational activities. For example, many lakes in King County and throughout Washington have been infested with the non-native, invasive plant Eurasian watermilfoil (*Myriophyllum spicatum*), which typically grows in large monotypic (single species) stands that form a dense canopy. In addition, another non-native plant Brazilian elodea (*Egeria densa*) has more recently invaded local lakes where jurisdictions have undertaken a substantial effort at eradication. Information on invasive plant species identification, occurrence, impacts, and control methods are provided on websites maintained by King County (2010) and the Washington Department of Ecology (2010a).

King County (1999) conducted an aquatic plant survey of Lake Burien on August 12, 1999. The aquatic plant map is presented in Figure 7. Eighteen plant species were identified including 5 submergent types, 2 floating-leaved types, and 10 emergent types. The submergent types included a dwarf spike rush (*Eleocharis*), one pondweed species (*Potamogeton pusillus*), common waterweed (*Elodea canadensis*), and two genera of macroalgae (*Nitella* and *Chara*).

These native submergent plants were present to a maximum depth of 6 meters and covered a total of 30.8 acres, representing 70 percent of the lake area. Although the number of submergent plant species was relatively low, the high coverage of submergent plants and absence of a non-native species are indicative of high habitat quality.

The floating leaved types included a native water lily (*Nuphar lutea*) and the non-native white water lily (*Nymphaea odorata*) covering a total of only 0.3 acres. The low coverage of white water lily indicates that this non-native species does not impair habitat or recreational activities in the lake.

Three non-native plants designated as noxious weeds were observed among the emergent types. Purple loosestrife (*Lythrum salicaria*) and garden loosestrife (*Lysimachia vulgaris*) were observed along much of the north and south shores (see Figure 7). Reed canarygrass (*Phalaris arundinacea*) was also observed at one location on the north shore and one location on the east shore. Lake Burien residents have recently been working with Katie Messick of King County to map and control these noxious weeds. A map of the most recent survey conducted in July and September 2009 by King County is presented in Figure 8 (Messick 2010). The number of observed plants was similar, but many plant locations have changed since the 1999 survey.

Overall, the aquatic plant community in Lake Burien provides excellent habitat for fish and wildlife, and does not appear to impair aesthetic or recreational benefits of the lake. The excellent condition of this community is not common for other lakes located within developed basins within King County. The principal reason for its excellent condition is that an invasive submergent plant such as milfoil has not become established in the lake. To prevent and address potential introductions of invasive plants, the Shore Club should continue to educate residents and survey the lake for the presence of invasive species.

Fish and Wildlife

Lake Burien provides habitat for numerous fish and wildlife. An inventory of fish and wildlife observed in the immediate vicinity of Lake Burien has been recently compiled by lake resident Christine Edgar (Edgar 2010). This information is briefly summarized here and is currently being evaluated by Dr. Sarah Cooke, a senior wetland biologist with Cooke Scientific Services located in Seattle, Washington.

Fish species observed in Lake Burien by lake residents include the following types of warm water fish: largemouth bass, perch, crappie, pumpkinseed sunfish, and catfish (Edgar 2010). A bass inventory conducted approximately 12 years ago by R.L. Steater identified only healthy largemouth bass weighing 3 to 8 pounds each. In addition, small numbers of lake trout have been planted on occasion by lake residents (Warren 2010).

Numerous aquatic animals have been observed in the lake, including turtles, frogs, crayfish, otter, waterfowl, and water-dependent birds. Two species of note include the western painted

turtle, which is an endangered species in Washington, and the bull frog, which is a non-native species that impacts native amphibian populations.

Public Access Impacts

Lake Burien is surrounded by private property and currently there is no public property for physical access to the lake by the general public. As noted in the Introduction, the Draft Shoreline Master Program (Reid Middleton 2009) currently before the Burien Planning Commission includes policy and regulation provisions for establishment of public access to Lake Burien. Although public access could increase recreational benefits of the lake, it would threaten the existing habitat for aquatic organisms in the lake.

The primary threat of public access to aquatic habitat would be the increased opportunity for introductions of non-native, nuisance species to the lake. Of primary concern would be the introduction of Eurasian watermilfoil (milfoil). Milfoil is very abundant in nearby lakes and small fragments of this invasive plant are commonly present on watercraft and readily transported to other lakes where viable fragments are released to establish a new population. Introductions of milfoil or other aquatic nuisance species do not occur solely through motorized watercraft or large crowds; it is now recognized that less intensive uses can result in the introduction of harmful species, with harmful results to the water body. As noted above, information about milfoil and other invasive plant species is provided on websites maintained by King County (2010) and the Washington Department of Ecology (2010a).

If milfoil or other invasive plant species became established in the lake it would likely have significant, direct impacts on aquatic habitat and indirect impacts on water quality in Lake Burien. Milfoil can grow to a depth of at least 6 meters and would likely occupy most of the lake area within a relatively short period of time (e.g., less than 10 years). The aquatic plant biomass would likely increase in the lake to an excessive amount that could dramatically increase internal phosphorus loading, and ultimately fuel nuisance growths of filamentous algae and blooms of toxic bluegreen algae.

Public access would also increase the potential for introductions of aquatic invertebrates that can have devastating effects on aquatic habitat and water quality. Washington lakes are currently threatened by introductions of the quagga mussel, zebra mussel, New Zealand mudsnail, rusty crayfish, spiny water flea, and others (WDFW 2010). There is no reason to assume that Lake Burien would be immune from effects of these organisms and, due to its relatively small size, it may have less capacity to accommodate them.

A study of aquatic invasive species transport by small-craft boats and trailers was recently conducted in northern Wisconsin and the Upper Peninsula of Michigan (Rothlisberger et al. 2010). This research confirmed the widespread understanding that boats are an important vector in the spread of aquatic invasive species. A total of 13 aquatic plant species and 51 taxa of small-bodied organisms were observed on the tested boats.

In summary, any public access scenario for Lake Burien would entail significant risk of degradation to the lake's ecological functions as described above. And once set in motion the processes resulting in such degradation are not easily reversed.

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Figures

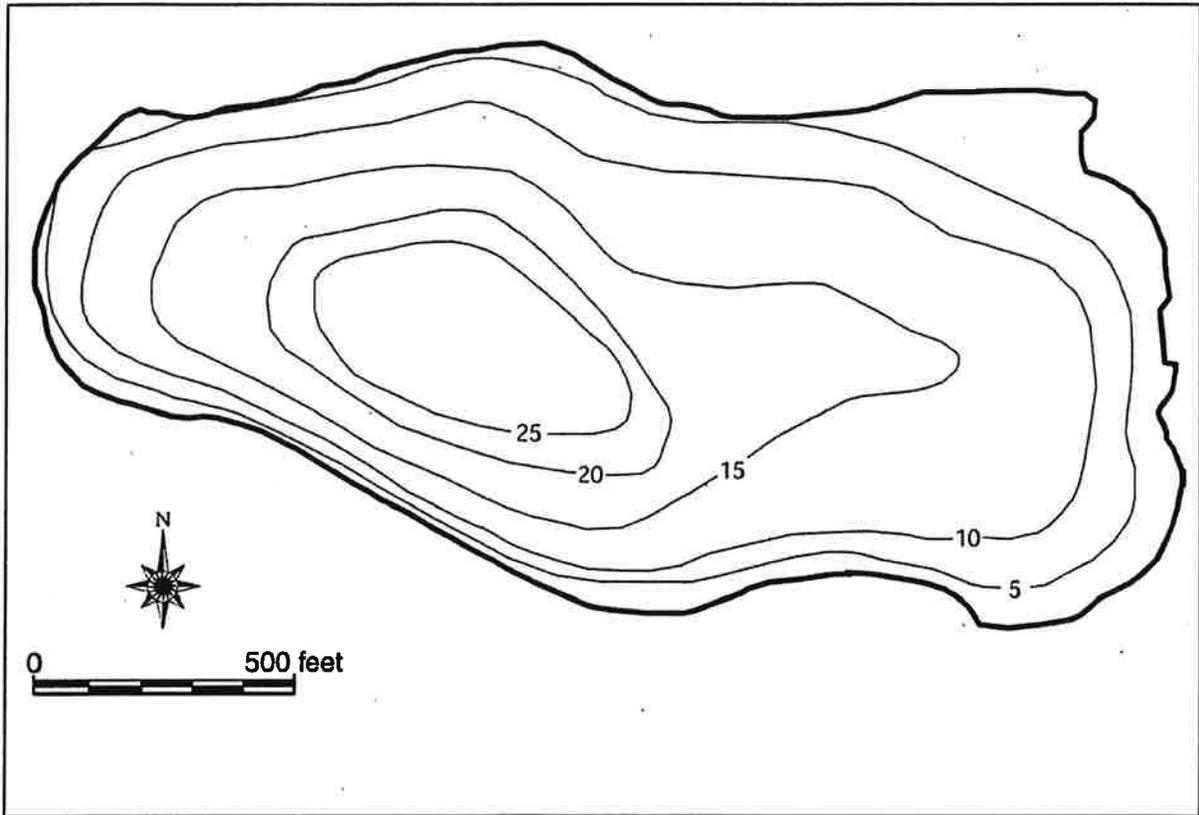


Figure 1. Lake Burien bathymetry showing depth contours in feet (source: Messick 2010).



Figure 2. Lake Burien watershed (source: Messick 2010).

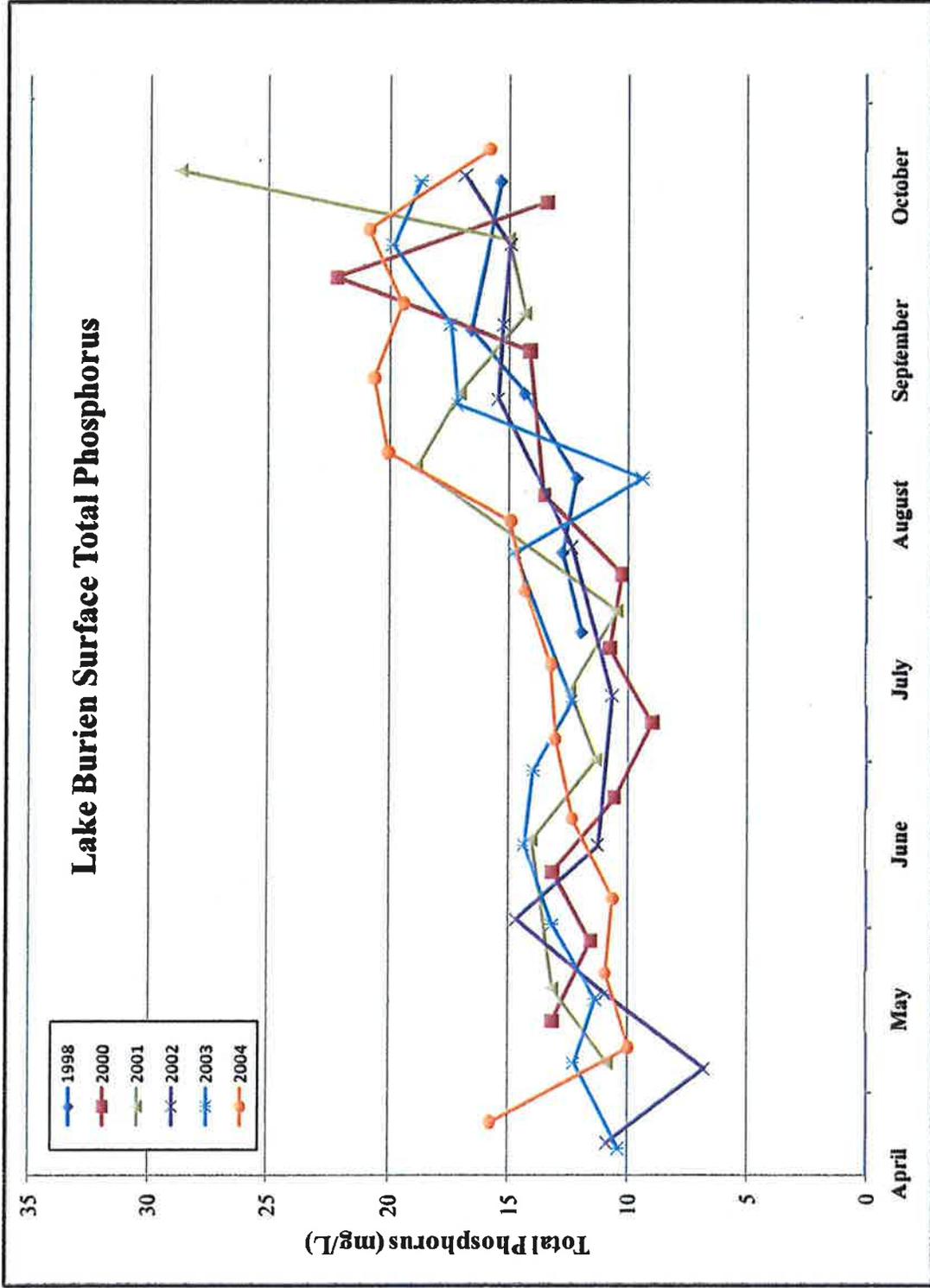


Figure 3. Lake Burien total phosphorus concentrations at 1 meter depth (source: King County 2010).

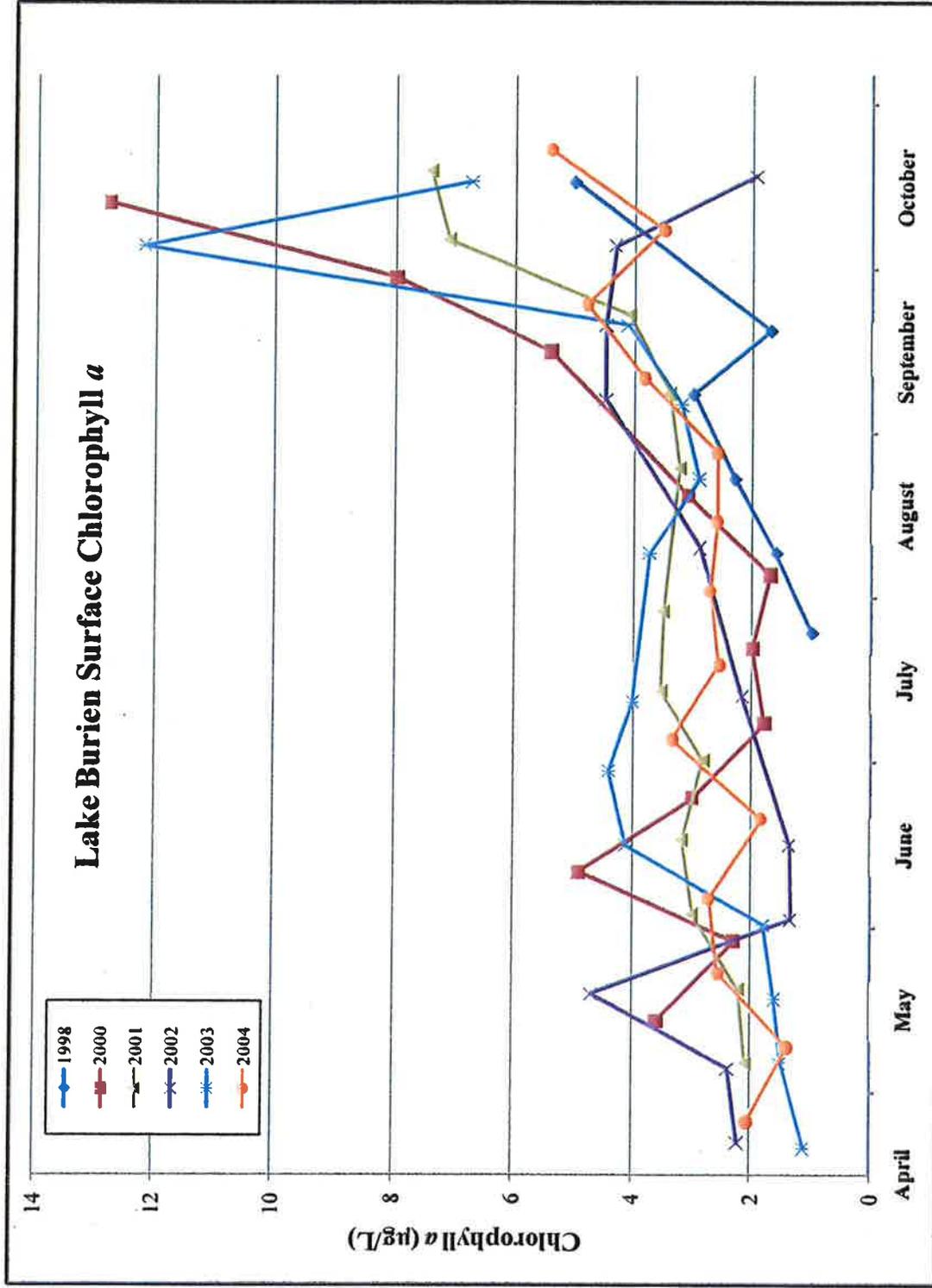


Figure 4. Lake Burien chlorophyll a concentrations at 1 meter depth (source: King County 2010).

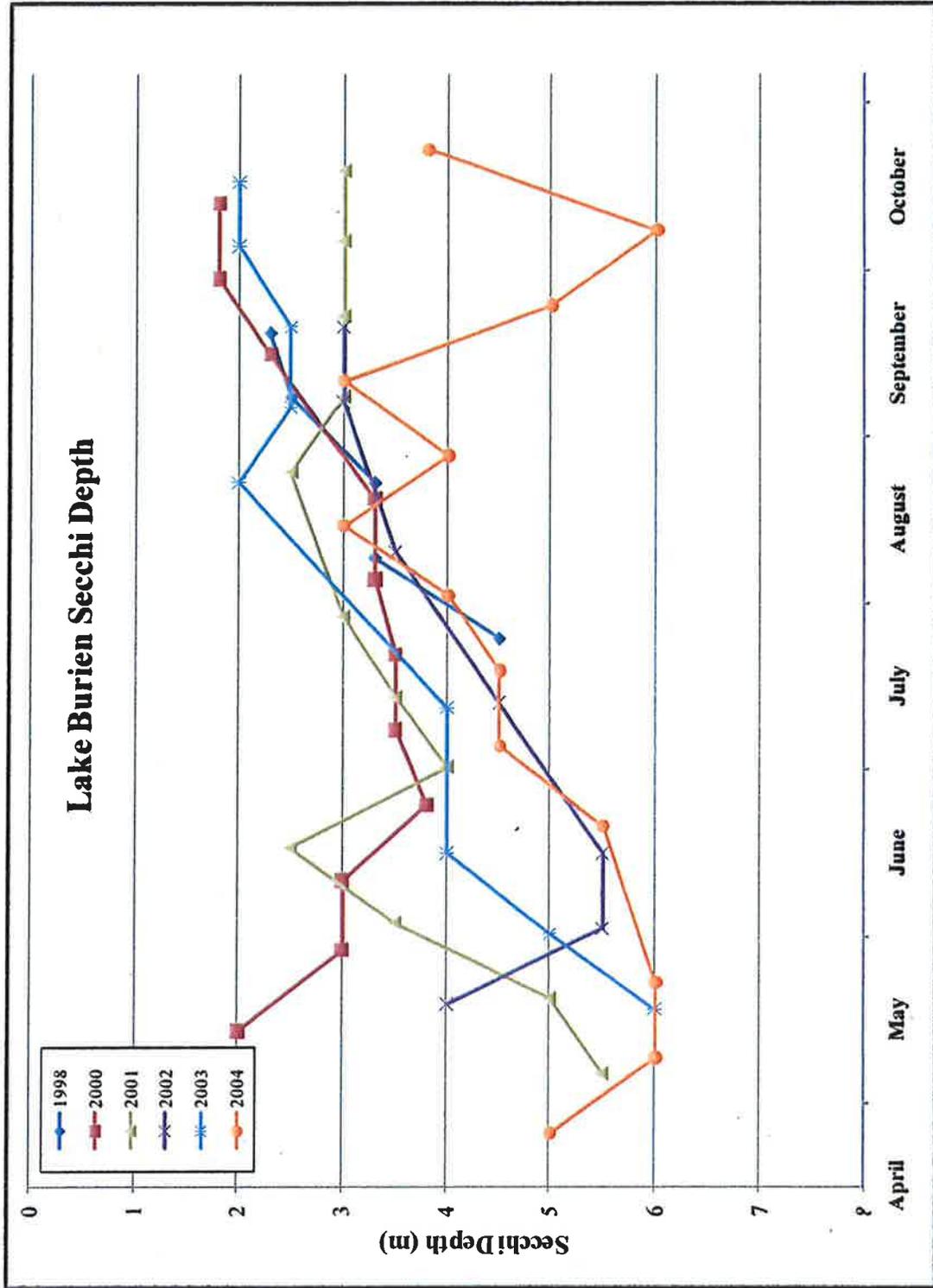


Figure 5. Lake Burien Secchi depths (source: King County 2010).

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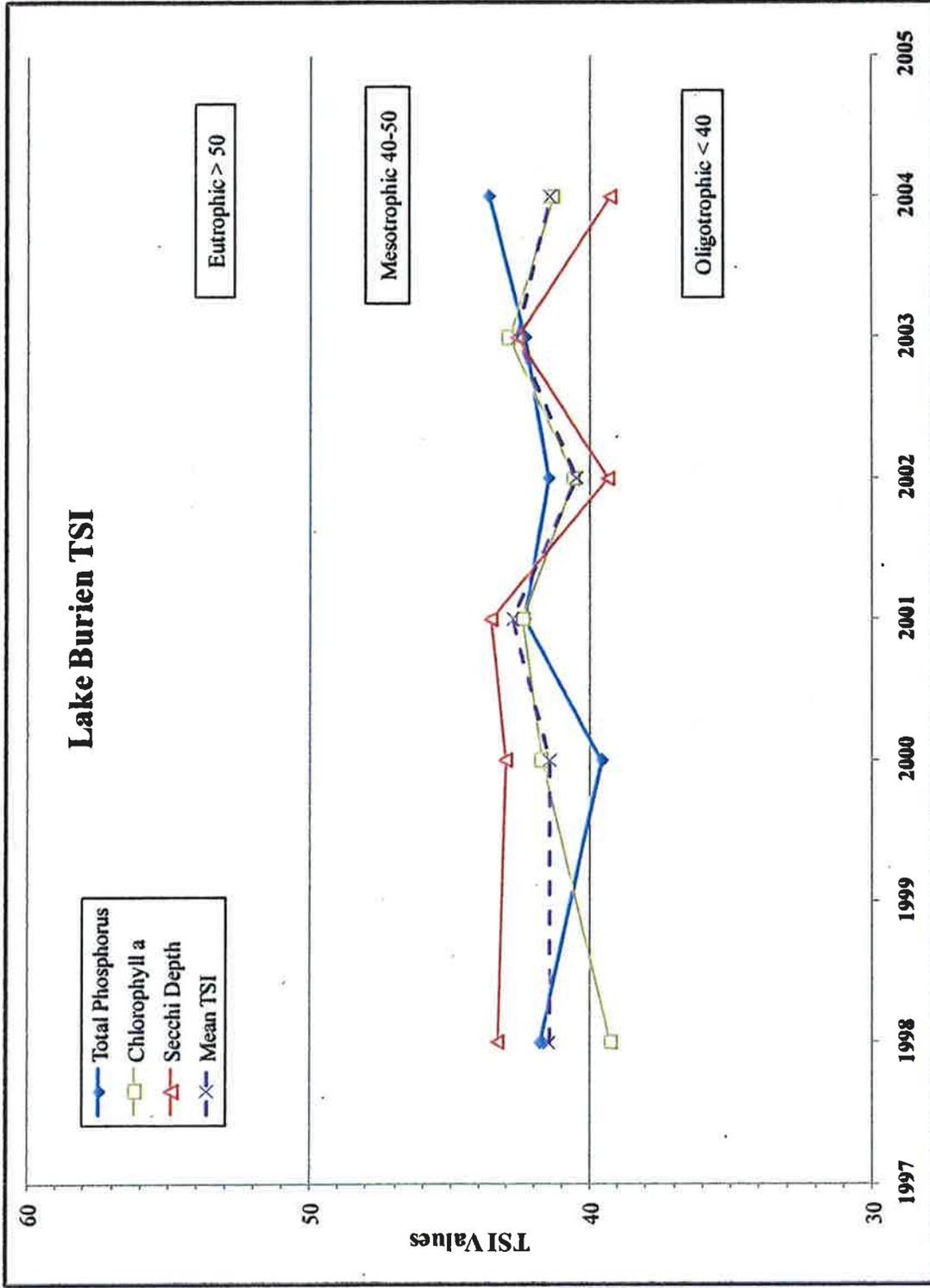


Figure 6. Lake Burien trophic state indices.

Figure 7

Lake Burien Weed Location Map

LEGEND

-  *Lythrum salicaria*
(Purple Loosestrife)
-  *Lysimachia vulgaris*
(Garden Loosestrife)
-  *Phalaris arundinacea*
(Reed Canary Grass)

-  Stream
-  Section boundary
-  Transect line
-  Floating
-  Emergent
-  Submergent
-  No plants or sparse
-  No plants—deep
-  Parcel boundary



0 100 200 300 Feet

October 1999

Produced by:
GIS/Visual Communications Unit, WLR
King County Department of Natural Resources
File Name: 9910 Burien AquaticMap.apx

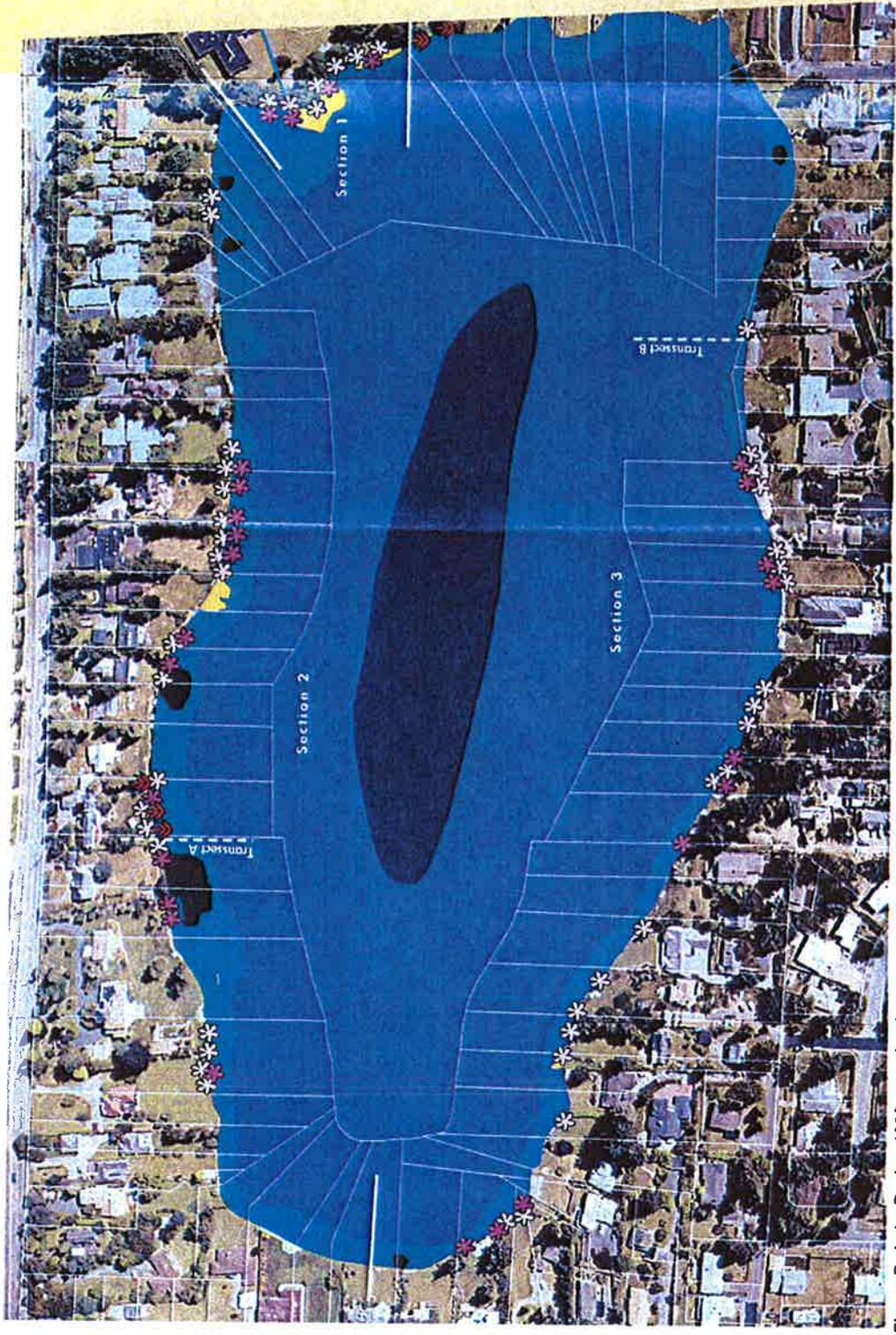


Figure 7. Lake Burien 1999 aquatic plant map (source: King County 1999).



Purple Loosestrife and Garden Loosestrife on Lake Burien

Surveyed July and September 2009

Legend

- garden loosestrife
- purple loosestrife
- parcel boundaries



March 09, 2010

Figure 8. Lake Burien 2009 purple loosestrife and garden loosestrife locations (source: Messick 2010).



Years with HEC: 20

Credentials

M.S. in Water Resource Management, University of Washington, 1980

B.S. in Environmental Biology, University of Calgary, 1978

WSDOT Construction Site Erosion and Spill Control Certification Course, 2001

OSHA 40-Hour Health and Safety Training for Hazardous Waste Sites, since 1988

Scuba Diving Certification, 1979

Specialties

Lake management

Water quality

Stormwater management plans

Marine and freshwater sediment

Monitoring and quality assurance plans

Rob Zisette

Aquatic Science Principal

Rob Zisette, an aquatic science principal, has 28 years of professional experience specializing in surface water management, including lake restoration projects, aquatic plant management studies, stormwater management plans, and environmental impact statements. He has developed and implemented monitoring and quality assurance project plans for various freshwater and marine and water and sediment quality investigations. Mr. Zisette has mapped aquatic plants, evaluated aquatic plant management techniques, developed aquatic nuisance prevention plans, assessed plankton communities, identified nutrient sources, and evaluated lake restoration techniques in lakes and reservoirs. He has assessed benthic invertebrate populations, fish habitat, and riparian conditions in lakes and streams. He has evaluated nonpoint source pollution and the effects of best management practices (BMPs) in urban drainage basins. Additional experience includes water quality impact analysis for solid and hazardous waste management projects, sediment quality characterization and dredge disposal analysis for marine sediment management projects, laboratory analysis of water samples for various chemical and biological parameters, and quality assurance review of field and laboratory data.

Example Lake Projects:

Vancouver Lake Research Plan and Management Alternatives

Vancouver Lake Watershed Partnership, Vancouver, WA

Mr. Zisette provided technical input to the development of a 5-year research plan for Vancouver Lake that included research on water dynamics, nutrients, sediment, food web interactions, toxic contaminants, and fish and wildlife habitat. He also provided technical review of a summary of management action alternatives for the control of cyanobacteria in Vancouver lake.

Lake Steilacoom Calcium Oxide Treatment Study

City of Lakewood, WA

Mr. Zisette developed a quality assurance project plan to monitor a series of calcium oxide treatments in Lake Steilacoom for the City of Lakewood. Mr. Zisette coordinated water quality monitoring conducted twice a month at seven lake stations, and provided technical review of a report that evaluated treatment impacts and effectiveness. He is currently conducting a feasibility study of treating the lake with aluminum sulfate.

Lake Youngs Reservoir Limnological Studies

City of Seattle, WA

Mr. Zisette evaluated the feasibility of techniques for controlling off-flavors produced by periphytic blue-green algae (cyanobacteria) in Lake Youngs Reservoir for Seattle Public Utilities. He presented feasibility findings and a study approach to a workshop comprised of limnologists and stakeholders for the selection of preferred alternatives. Mr. Zisette designed in-reservoir tests and prepared a monitoring and quality assurance project plan for evaluating the effectiveness of four preferred alternatives: chlorine tabs, granulated copper algacide, aluminum sulfate, and sediment capping. He used scuba diving to treat two sets of test plots (shallow and deep) and collect periphyton, water, and sediment samples. He designed a long-term periphyton monitoring program, and conducted 18 periphyton surveys that included underwater videotaping and the collection of replicate periphyton samples along survey transects. Mr. Zisette coordinated the testing of geosmin and MIB production by odor-producing algae cultures, and he prepared a

taste and odor management plan based on results of the study. He also designed a comprehensive, long-term monitoring program for tracking changes in water quality and enhancing current knowledge of ecological relationships in the reservoir. Mr. Zisette assisted with the development of a water and phosphorus budget for this drinking water reservoir to quantify effects of drawdown from changes in ground water inflow and internal phosphorus cycling. He prepared a monitoring plan for evaluating effects of an air diffusion mixing system that was designed to reduce the short-circuiting of inflow through Lake Youngs. He designed and implemented special studies for evaluating the cycling of phosphorus, organic carbon, and copper between sediments and waters in shallow regions of the reservoir. Mr. Zisette prepared an aquatic plant management plan, installed bottom barriers, and successfully employed a hand-pulling technique to eradicate an early infestation of Eurasian watermilfoil. He conducted three aquatic plant surveys using sonar, visual, and sampling techniques for mapping the distribution, density, and biomass of aquatic plant species. Mr. Zisette co-authored an exotic aquatic species prevention program that included fact sheets and equipment decontamination procedures for the control of zebra mussels and invasive plants.

Lake Youngs Limnology Expert Panel Workshop

City of Seattle, WA

Mr. Zisette participated in a workshop with other limnology experts to evaluate observed trends in drinking water quality primarily associated with algae growth in Lake Youngs for Seattle Public Utilities. Mr. Zisette evaluated spatial and temporal trends in key hydrologic and water quality parameters using graphical and statistical analysis of a comprehensive set of limnological data collected over a 15-year period at eight monitoring sites located in Lake Youngs and the Cedar River Watershed. He prepared a report that summarized the observed trends, presented the data analysis findings to the expert panel, participated in discussions among experts at a workshop, and provided recommendations for future data collection and analysis to address water quality concerns.

Union River Reservoir Monitoring and Operation Evaluation

City of Bremerton, WA

Mr. Zisette developed a comprehensive monitoring program for the Union River Reservoir, which is impounded by Casad Dam and is the primary source of the unfiltered, 8-mgd drinking water system operated by the City of Bremerton. Existing monitoring procedures and historical data were reviewed to provide recommendations for changes in sampling station locations/depths, sampling frequency, and sample analysis parameters and methods. Mr. Zisette assisted the City with monitoring levels of cyanobacteria (blue-green algae) and microcystin for comparison to human toxicity criteria established by the World Health Organization. Mr. Zisette investigated the cause of excessive periphyton (attached filamentous algae) growth in the reservoir outlet (Union River) that resulted in filter clogging complaints from customers during the summer of 2002. He established appropriate monitoring procedures for tracking periphyton growth and developed reservoir operating guidelines to prevent nuisance levels of periphyton growth in the future. Mr. Zisette provided action levels for various monitoring parameters, develop outlet gate selection criteria to optimize water quality for various reservoir surface elevations, and provided training of City staff on limnological principles and methods for collecting periphyton samples.

Green Lake Alum Treatment and Integrated Phosphorus Management Plan

Seattle Parks and Recreation, WA

Mr. Zisette managed a project providing planning, engineering, and monitoring services to Seattle Parks and Recreation for the treatment of Green Lake with aluminum sulfate (alum) during the spring of 2004 to reduce the internal loading of phosphorus and resulting toxic algae blooms. He conducted a comprehensive study to determine the optimum approach to treating Green Lake with alum. Mr. Zisette prepared an integrated phosphorus management plan (IPMP) to obtain coverage under the Washington Department of Ecology's aquatic nuisance plant and algae control National Pollutant Discharge Elimination System (NPDES) general permit. He coordinated engineering and monitoring services for the 14-day alum treatment of Green Lake in the spring of 2004 that included preparation of the treatment specifications, drawings, and engineering cost estimate; contractor bid review and selection; and monitoring to assess pre-treatment, treatment, and post treatment water quality conditions. He prepared the alum treatment monitoring report presenting construction oversight and water quality monitoring results, and comparing those results to the project

objectives. Mr. Zisette also conducted stormwater monitoring and evaluated pollutant sources and treatment methods for controlling inputs of phosphorus and fecal coliform bacteria to the lake. He collected and analyzed sediment cores using divers to evaluate the presence of alum in lake sediments, and conducted underwater video surveys of the treated lake bottom to document disturbance by common carp and other benthic fish. He also developed a carp bioturbation model that predicts effects of sediment disturbance by common carp on lake phosphorus concentrations and loadings. Mr. Zisette prepared the post-treatment monitoring report presenting results of water quality monitoring, sediment monitoring, and carp bioturbation modeling. He also mapped aquatic plants in Green Lake using sonar and GPS, and recommended methods for control of Eurasian watermilfoil.

City of Portland Roslyn Lake Alternatives Analysis

City of Portland, OR

Mr. Zisette prepared a water quality modeling report for the City of Portland Water Bureau that evaluated future conditions of Roslyn Lake in Sandy, Oregon resulting from the decommissioning of a power plant on this storage reservoir. He reviewed a previous water quality modeling effort and gathered background hydrology and water quality data. Mr. Zisette developed lake morphometry and hydrology alternatives that were based on protection of beneficial uses, a new source of inflow, and dramatic reduction of inflow rates. Mr. Zisette selected PHOSMOD as an appropriate model and used it to estimate the seasonal and long term water quality effects of the chosen alternatives. He presented modeling and sensitivity analysis results at a lake management conference.

Capitol Lake Water Quality Studies

Washington Department of General Administration, Olympia, WA

Mr. Zisette prepared a monitoring plan and coordinated field activities for evaluating impacts on water quality, benthic invertebrates, and fish from the drawdown of Capitol Lake in Olympia, Washington. He monitored water quality in Capitol Lake and Budd Inlet before, during, and after lake drawdown.

Capitol Lake Adaptive Management Plan

Washington Department of General Administration, Olympia, WA

Mr. Zisette evaluated sediment quality and dredge disposal options to assist the Washington Department of General Administration with the development of a sediment management strategy for Capitol Lake in Olympia, Washington. He reviewed historical sediment characterization studies and identified additional testing requirements for disposal of dredged sediments at either an upland or open-water disposal site. Mr. Zisette prepared a sediment sampling and analysis plan for review by PSDDA agencies. He collected replicate sediment cores from four locations in a proposed dredging site, validated data according to PSDDA procedures, and compared results to criteria established by PSDDA, MTCA, Thurston County, and surface water quality standards. Mr. Zisette identified locations of potential upland disposal sites, evaluated truck and rail transportation alternatives, summarized permitting requirements, and recommended the most cost-effective method for the handling and disposal of dredged lake sediments.

Boundary Reservoir Water Quality Assessment

Seattle City Light, WA

Mr. Zisette assisted with the development and implementation of a water quality monitoring program for evaluating trophic conditions and potential bull trout habitat in a 12-mile long impoundment of the Pend Oreille River. He evaluated spatial and temporal variability of trophic state indicators (secchi depth, total phosphorus, and chlorophyll a) and plankton populations in the reservoir based on data collected for the monitoring program and previous studies.

Green Lake Phase IIC Restoration Project

Seattle Parks and Recreation, WA

Mr. Zisette coordinated monitoring of water quality in Green Lake, Seattle, Washington, for evaluating the effects of alum treatment. Mr. Zisette prepared specifications for the purchase of an aquatic plant harvester and assisted in developing a harvesting plan for the control of Eurasian watermilfoil in the lake. Mr. Zisette prepared and implemented the stormwater quality monitoring plan for sampling five storm events per year at

Rob Zisette

17 locations. He evaluated the potential for internal phosphorus loading from results of diurnal studies. Mr. Zisette coordinated development of the lake's water budget and stormwater phosphorus budget.

Silver Lake Phase II Restoration Project

Cowlitz County, WA

Mr. Zisette coordinated and participated in monitoring water quality and discharge during five storm events at the two largest inflow streams and the outlet of Silver Lake in Cowlitz County, Washington for evaluating the effects of grass carp introduction. He was responsible for development of the lake's water budget over a two-year period, which included compilation of precipitation, evaporation, and lake level data and modeling stream inflow.

Horseshoe Lake Phase II Restoration Project

City of Woodland, WA

Mr. Zisette coordinated monthly water quality sampling and annual benthic invertebrate sampling at Horseshoe Lake in Woodland, Washington for evaluating the effects of lake flushing and alum treatment.

Lake Sacajawea Phase II Restoration Project

City of Longview, WA

Mr. Zisette analyzed water samples for various constituents and evaluated the effects of lake flushing upon plankton communities for the restoration analysis of Lake Sacajawea for the City of Longview.

Lake Ballinger Phase II Restoration Project

City of Mountlake Terrace, WA

Mr. Zisette mapped the distribution and density of aquatic plant species using a combination of sonar, visual, and sampling techniques in Lake Ballinger for the City of Mountlake Terrace. He analyzed water samples and reported on nutrient and plankton interactions in the lake.

Phantom Lake Phase I and II Restoration Projects

City of Bellevue, WA

Mr. Zisette collected water samples from monitoring wells, seepage meters, and lake inlets for the restoration analysis of Phantom Lake for the City of Bellevue. He coordinated development of the lake's water budget and calculation of stormwater nutrient loads using a spreadsheet model.

Lake Lawrence Phase I Restoration Project

Thurston County, WA

Mr. Zisette monitored well points and domestic wells on a quarterly basis for the diagnostic study of Lake Lawrence for Thurston County. He evaluated impacts of existing and future land use on water quality and recreational use of the lake. Mr. Zisette assessed chemical results of lake sediment cores for impacts of historical practices in the watershed on the lake's trophic condition.

Martha Lake Phase I Restoration Project

Snohomish County, WA

Mr. Zisette coordinated the stormwater monitoring program for the diagnostic study of Martha Lake for Snohomish County. He collected water samples and flow measurements on an hourly basis at three stations for four storm events.

Pine Lake Phase I Restoration Project

King County, WA

Mr. Zisette monitored and reported on the lake nutrient budget and trophic state for the diagnostic study of Pine Lake for King County. He identified a wetland as the major external source of phosphorus and primary cause of excessive algal growth in the lake.

To: Burien City Council

400 SW 152nd St
Suite 300
Burien, WA 98166

RECEIVED

MAY 17 2010

CITY OF BURIEN

Subject: proposed Shoreline Master Program update

I am sending this to insist that the City Council facilitate public comment for at least 180 days, conduct at least three public hearings on, and support changes to the current Shoreline Master Program update.

I strongly disagree with the non-conforming designation that has been placed on my home and wish to avoid the significant problems caused by this designation regarding increases in restrictions and costs for renovations and repair, the loss of property value, and difficulty of sale.

I insist that you leave existing structures in their current designation of "conforming" and that you do not introduce any new setbacks or buffer zones.

Signed

Jack & Barbara Saxwold

RECEIVED

MAY 18 2010

CITY OF BURIEN

To: Burien City Council

400 SW 152nd St
Suite 300
Burien, WA 98166

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Signed



Randy & Debra Olson

Lisa Clausen

From: Public Council Inbox
it: Thursday, May 20, 2010 10:55 AM
Subject: 'Erwin Eykel'
RE: An open letter regarding your agenda.

Hello,

Your message to the Burien City Council will be included in the Correspondence for the Record for an upcoming Council meeting.

Thank you-

L. Clausen
City Manager's Office

From: Erwin Eykel [mailto:erwin@togawa-insurance.com]
Sent: Wednesday, May 19, 2010 12:08 PM
To: Public Council Inbox
Subject: An open letter regarding your agenda.

Dear Council members,

I am a current resident of Burien and have been most of my life. I have been watching the debate regarding the adoption of the Shoreline Act from a distance and I'm really dismayed and disgusted at your actions toward my fellow citizens who on the shoreline. Just as you greedily spend their property tax revenue you will disenfranchise 150 of these APAYERS for what reason again? Saving fish? Controlling pollution? What!! These residents are not the ones who are the problem. They are stewards of the environment. They care deeply for the health of Puget Sound because their way of life revolves around it. You are being misguided by a panel of Environmental Activists masquerading as "experts" who frankly want us to live our lives as THEY see fit. Most of these homes were built prior to the City of Burien's existence. You have no right to do this to the very constituency you pledged to serve. Now about Lake Burien! Lake Burien is clean and exclusive because it is privately owned. All this talk that it belongs to the "people" is crap. It belongs to the successful people who earned and saved enough money to buy a property on the lake. Angle Lake is a great comparison. The "people" are wonderful stewards of the public access to Angle Lake. They descend on Angle Lake Park like a swarm of locusts. Leaving trash everywhere, vandalizing the facilities, drug use. etc. I'm so sick of the sense of entitlement that is being perpetrated by our political leadership. Ask yourself a simple question when making a decision. Is what you are doing benefiting a stakeholder in the city of Burien? (Business owner, Property owner). If it's not you should resign. Do not use your authority as means to implement your collective belief system at the expense of someone else's property rights. It's immoral and wrong.

Erwin Eykel
Christopher Togawa Insurance Agency
222 Etruria Street # 110
Seattle, WA. 98109
Phone (206)838-5551
Fax (206)838-8190
Mail to: erwin@togawa-insurance.com
Hours 930am - 200pm Mon-Fri

PS. Referrals from you mean the world to us!

CATR: 05/24/10

May 24, 2010

Honorable Mayor and Council Members

Our names are Robert and Robbie Howell
We live at 15240 20th Ave SW
Burien, WA. 98166

The Burien City Planning staff incorrectly put together their 2003 Critical Areas Ordinance. The process they used was extremely flawed. And now the CAO No. 394 that the staff put into effect has been perpetuating the errors into all of the City documents and codes including the 2010 SMP to the detriment of the ecology of Lake Burien. It appears staff has their own agenda and they are not interested in preserving the ecology of Lake Burien.

RCW 36.70A.172 requires revisions to critical area codes to incorporate Best Available Science to protect the values of critical areas. When they wrote their codes they said they did this, but they did not incorporate Best Available Science for Lake Burien.

One of the 2003 Planning Commission members told me how they handled Lake Burien. He said they separated it from the other critical areas in Burien and worked with the reaches along Puget Sound. They had very little discussion about the lake except staff told them that it is almost fully developed. **Well so is most of the land along Puget Sound.** In doing this they chose to consider Lake Burien as a seriously degraded critical area that needed very little protection under the CAO the city adopted. This decision, by the city, was not based on current or best known science about the lake.

Adolfson Associates, Inc was contracted by the city to comply with the Best Available Science Rule and the Growth Management

CFTR: aa/07/10

Act RCW 36.70A.172 requiring counties and cities in Washington State to include Best Available Science (BAS) when developing policies and development regulations to protect the functions and values of critical areas. But the city paid them for good advise and then went on to put their own agenda in the 2003 CAO regarding the lake.

The Growth Management Act (WAC 365-190-080) **lists critical areas as wetlands which includes lakes, fish and wildlife conservation areas, aquifer recharge areas**, frequently flooded areas and geologically hazardous areas.

The lake is a critical area because it is a lake! The lake is a critical area because the wetlands it contributes to insure the survival of endangered, threatened, and sensitive species such as Bald Eagles, Osprey and Great Blue Heron. The lake is a critical area because it located less than 200 Ft. above a major aquifer. None of these items were completely implemented in the 2003 CAO when the discussions went on at the Planning Commission and City Council levels.

When the staff was guiding this process, they had five hearings and there was no discussions regarding looking into the items listed above except for aquifers. However, the city never followed up completely on aquifers. No resident on Lake Burien, nor was the Lake Burien Shore Club mailed to about these public hearings regarding the CAO provisions regarding the lake. The city staff told residents who lived near Critical Areas that the buffers around all of these areas would increase and so they could expect no adverse effects to these critical areas, in fact there would be increased protections to critical areas as a result of the new Critical Areas Ordinance. As a result of this statement from the city staff, almost no residents attended the hearings. That statement was incorrect for Lake Burien.

The wetland status of Lake Burien was downgraded and the buffer was reduced based on hear say from the city staff rather than science. They stated that the lake was so degraded that it needed little protection. The decision for the 30'buffer was based on where the sewer pipe was not on science. A new wetland class was created for Lake Burien that was based on no science but simply its name-if it has anything to do with Lake Burien it automatically becomes a class 4.

We are requesting that this misinformation about Lake Burien be corrected in the Shoreline Master Plan. We are asking that the Shoreline Inventory and the Shoreline Characterization for Lake Burien be corrected. Additionally, we are asking that the lake be recognized for the important Critical Area that it is ecologically and be protected as such.

May 24, 2010

Bob Edgar, 12674 Shorewood Dr SW, Burien

Subject: Public Access from Public Lands

As the City Council familiarizes itself with the draft Shoreline Master Program Document, I would like to correct a discrepancy which you may already have uncovered.

The Washington State Shoreline Management Act specifically lists seven ^{preventions} ~~purposes~~, in descending order, of the Shoreline Management Act. Towards the end of the list is the topic of Public Access to the waters of the State. The state specifically makes the statement that public access should be from publicly owned lands. *Shorelines.*

This statement was in the draft document that city staff presented to the Shoreline Advisory Committee. This same statement was in the draft document forwarded to the Planning Commission. The Planning Commission removed the "public" stipulation from statement which changes the intent of the SMA and implies that public access, either visual or physical, can be on or through private lands.

Shorelines

The City Council should reinstate the concept of “public lands” wherever references are made to public access in the SMP. This will then align the city’s SMP with the language of the Washington State Shoreline Management Act.

Thank you.

May 24, 2010

Dear Burien City Council Members,

I would like to ask that the Burien City Council add the new "Species and Habitats of Local Importance" Section E-487 to the Shoreline Master Plan. This was adopted in October, 2008 as part of the King County Comprehensive Plan. This would replace the information included in your draft which is from 1994. It is important that the Shoreline Master Plan reflects the latest information and is in compliance with the latest King County Comprehensive Plan.

Additionally, I request that the Lake Burien habitat portion of the Shoreline Master Plan have the same language regarding the Bald Eagle as Seahurst Park and Eagle's Landing now has. It is my understanding that the members of the Burien City Council have been given a CD from Robbie Howell containing photos of some of these "Species of Local Importance" that live in the Lake Burien habitat.

Thank you in advance for your time that will be required to effect the change in the Shoreline Management Plan ensuring the City of Burien's compliance with the updated "Species and Habitats of Local Importance" section included in the King County Comprehensive Plan referenced above.


Sandy Gledhill

CFTR: 06/07/10

Species of Local Importance-Birds- Lake Burien (denoted by an asterisk *)

1. Western Grebe *
2. Great Blue Heron *
3. Hooded Merganser *
4. Barrow's Goldeneye *
5. Common Goldeneye *
6. Osprey *
7. Band-Tailed Pigeon *
8. Belted Kingfisher *
9. Hairy Woodpecker *
10. Purple Finch *
11. American Bittern
12. Brant
13. Harlequin Duck
14. Wood Duck
15. Cinnamon Teal
16. Blue-Winged Teal
17. Surf Scoter
18. White-Winged Scoter
19. Black Scoter
20. Red-Tailed Hawk
21. Sooty Grouse
22. Ruffed Grouse
23. American Three-Toed Woodpecker
24. Olive-Sided Flycatcher
25. Mountain Chickadee
26. Western Meadowlark
27. Cassin's Finch

Mr. and Mrs. Robert H. McLaughlin
Post Office Box 264
Seahurst, Washington 98062-0264
(206) 246-3062
tideline@mindspring.com

May 24th, 2010

Honorable Mayor McGilton and members of the City Council,

We live at the lower end of 149th Place which drains surface water from approximately 16 square blocks of Seahurst. It is collected in catch basins and then piped down to the beach and discharged adjacent to Eagle Landing Park. This park, as we all know, was set aside by the city to preserve the wildlife and natural vegetation of a very significant section of our shoreline.

The catch basins and interconnects were re-worked by the City a number of years ago. Although there is a structure on the beach to absorb the impact of the descending water, and dispersal pipes to pass it to the beach, to our knowledge no oil/water separator or any other filtering device was included in the design and construction.

All this was brought to mind by an article in last Wednesday's Seattle Times, co-authored by David Dicks, executive director of the Puget Sound Partnership, and entitled Puget Sound's Slow Oil Spill (attached). In it the authors state that, "75 percent of the toxic chemicals entering the Sound are carried by storm water runoff." They also point to our rain "which washes our homes, driveways, roads and parking lots, picks up oil from car leaks, toxins, pesticides, fertilizers, and bacteria from pet waste..." and so on.

Questions we have for the City are;

1. How many other locations along the Burien shoreline divert surface water runoff directly into Puget Sound or into creeks that flow into the Sound?
2. What protections are provided on each of them to prevent or reduce the discharge of oil and other toxic materials into the Sound?
3. If toxic materials are not being separated from these outfalls now, what plans does the City have to make future improvements to do so?
4. If upgrades and maintenance are required, what sources of funding can the City call upon?

As residents of the shoreline we are willing to continue to do our part in protecting our environment and only ask that a suitably proportional amount of attention be given within the SMP to this important issue of surface water management and protection of the marine environment.

Sincerely,



CFTR: 06/07/10

Puget Sound's slow oil spill

BY KEVIN RANKER AND DAVID DICKS
Special to The Times

As the worst environmental disaster in U.S. history unfolds in the Gulf of Mexico, it's tempting to rest comfortably on our success avoiding a similar calamity here in Puget Sound.

Our success, so far, is not the result of good luck. The state has vigorously worked to prevent oil spills, providing a rapid-response system, stringent oversight of oil companies, and a tugboat dedicated to rescuing distressed ships before they crash and spill hazardous cargoes.

The bad news is, even though its glistening waters look pristine, Puget Sound is in a crisis most of us don't see: a slow-moving spill of millions of gallons of petroleum and chemicals carried by stormwater.

Our famed Northwest rain, which washes our homes, driveways, roads and parking lots, picks up oil from car leaks, toxins, pesticides, fertilizers and bacteria from pet waste and livestock.

This toxic wash water flows down ditches and storm drains into our streams, rivers and, eventually, into Puget Sound. Scientists estimate that 75 percent of the toxic chemicals entering the Sound are carried by stormwater runoff.

The days are past when we could point to a pipe coming from a factory as the source of our problems. The problem now comes from our own backyards and neighborhoods — roughly 140,000 pounds of toxic chemicals each day.

The Gulf of Mexico oil spill is the equivalent of an environmental stroke. Our own personal oil spill is the equivalent of an environmental cancer slowly eating away at the health of our precious Puget Sound.

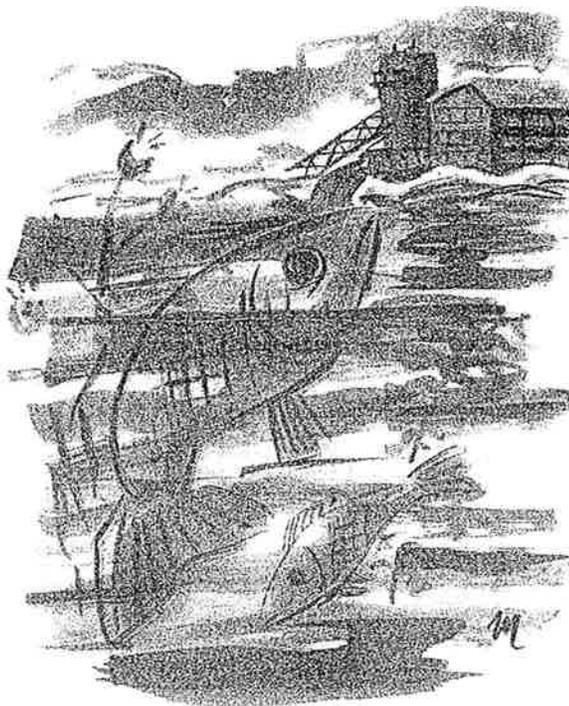
Our oil spill doesn't produce 24-hour news headlines or dramatic images of oil-soaked wildlife. Instead, it produces the slow and chronic destruction of one of our nation's most valuable ecological resources.

As a result, we have 21 species listed as threatened or endangered, more than 500 Puget Sound rivers, streams and lakes that exceed water-quality standards, and dozens of beaches closed due to pollution.

The time to attack this problem is now.

The Puget Sound Partnership has provided a game plan, an Action Agenda for Puget Sound. Through a coordinated, regional approach that challenges each of us to make small but important changes in how we live, work and use the land, we can drive this problem into remission.

The Agenda has already gone a long way to align government action. Fixing this problem means retrofitting municipal drainage systems. It means different



MARK WEBER / OP ART

development standards. It means a fundamentally different approach to managing our water.

Our local communities cannot be expected to bear this burden alone. This year in Olympia, while significant steps were taken, much was left unresolved. We must find a way to fund these critical investments.

Cleaning up and protecting Puget Sound will take time, money and commitment. The current recession may reduce funding in the short term, but it will not diminish our determination or the urgency of our task.

Progress is being made, but this is just a beginning. Puget Sound is too important to us and to our children.

We can be the generation that perpetuated the problem or we can be the generation that solved the problem. The choice is up to us.

Sen. Kevin Ranker, D-San Juan, left, represents the 40th Legislative District in the state Senate, is a senior fellow at The Ocean Foundation and a senior adviser for the Joint Ocean Commission Initiative. David Dicks is the executive director of Puget Sound Partnership.



Lisa Clausen

n: Public Council Inbox
t: Tuesday, May 25, 2010 4:47 PM
To: 'Ryan, Andrew F'
Subject: RE: May 24 City Council reconstruction.doc

Thank you for your comments to the Burien City Council. They will be included in the Correspondence for the Record for an upcoming Council meeting.

L. Clausen
City Manager's Office

-----Original Message-----

From: Ryan, Andrew F [mailto:andrew.f.ryan@boeing.com]
Sent: Tuesday, May 25, 2010 8:03 AM
To: Public Council Inbox
Subject: May 24 City Council reconstruction.doc

Hard copy of my comments from last night's council meeting.
Thank you
Andy Ryan

CFTR: 06/07/10

5/24/2010 Comments to City Council Re limitations on residential reconstruction

**Andrew Ryan
16525 Maplewild Ave SW**

One of the reasons I stand before you so often lately is because I've had some 1st hand experience in some of the areas that the SMP would drastically affect.

Section 20.35.045 addresses reconstruction of nonconforming structures that are destroyed or damaged more than 75% of the assessed value of the structure's value

In 2001, the Nisqually earthquake damaged my house more than 75% of its structural value. Due to the house above me, it was over a year before I could get a permit, and then took another year to re-engineer and repair it. I was out for two years. We had minimal changes to the footprint and City planning and building staff were very accommodating. Essentially nothing changed except I got a new foundation.

Now let's look at that same situation under the new SMP recommendations, - and Staff, if I say anything wrong, please correct me after my three minutes are up.

Staff has said in a number of different forums that there is nothing in the new regs that stop a property owner from rebuilding, and I think I believe with that.

However let's look at all the new limitations that will impact the property owner in this situation that don't get mentioned:

75% of assessed structure value is approximately the equivalent of 35% to 50% replacement cost based on \$200 to \$300 / sq ft construction cost. Given that a large number of the structures in the area are higher end homes, with difficult access, I believe the higher cost/sq ft is more appropriate. So for effectively 1/3 to half of replacement value, the following impacts apply

20.35.045 (b) states the area between the nonconforming structure and the OHWM shall meet the vegetation conservation standards

Which is section 20.30.040 Shoreline Vegetation Conservation:
Part (j) states-vegetation plan shall include a monitoring and maintenance program that at a minimum shall require annual progress reports submitted to shoreline administrator for not less than 5 years.

Section 20.30.055 goes further in stating a potential requirement for a performance bond to guarantee the vegetation mitigation.

20.30.040 (c)ii states 75% of the buffer needs to be re-vegetated, where degraded, to mimic natural conditions, with a mix of native trees, shrubs, and groundcover

Section v provides special emphasis on the 20 foot wide area parallel and adjacent to the shoreline

Section vi outlaws grass

20.30.45 Water Quality - states that construction materials that come in continuous contact w/ surface water must be untreated wood or precast concrete. Not sure how I would have rebuilt my foundation w/ either of those.

Proposed BMC 20.30.095 Residential Development addresses new construction and exterior modifications and part (j) states that accessory structures and appurtenances are not permitted waterward of the primary structure.

This means I would have had to remove my boat house in order to rebuild my primary structure. The people on SW 172nd, in a similar situation, would have to remove their carports and cabanas. The configuration of our properties makes this requirement particularly onerous. I would say a significant number of our properties have the primary structure at the opposite end of the lot from the water.

While I would contend a boathouse is a water dependent use for recreational purposes, which is allowed, it doesn't fit the description given in the proposed code.

This is a taking of my right to use my property, and provides the opportunity for my kayaks and other boating paraphernalia to disappear w/ o my approval as did my neighbor's car the other night

So in summary, yes, I can rebuild my primary structure. But in order to do that, I have to essentially rip up my lawn (if I had one) give up use of the 20 feet along the beach, which is the only level area on my whole property, where I currently have my picnic table, fire pit, and the opportunity to sit and enjoy one of the primary benefits of living along the water.

I get to remove my boathouse, store my water toys somewhere else away from the water, plant the shoreline area w/ native plants in densities to mimic natural conditions which I'm not allowed to prune, pay for 5 years monitoring and

perhaps a performance bond. As the new native trees grow, I also lose the water views I currently enjoy.

Bottom line, I would lose all the advantages of living along the water except the right to pay higher taxes.

I find it extremely difficult to believe that a reasonable person would consider this appropriate.

Thank you

RECEIVED

MAY 26 2010

CITY OF BURIEN

To: Burien City Council
From: Jim Sudduth, 2419 SW 172nd Street (residence)
Subject: Shoreline Master Program
Date: May 23, 2010

Dear Council Members:

I have been a resident of the Three Tree Point neighborhood since 1964 and purchased the above property in 1972. Over the following 38 years I have paid \$154,147 in property taxes (not adjusted for inflation). The house was 30-40 years old when I first moved in, and like my aging body, requires continuous maintenance. The house is about ten feet (horizontally) from the high water mark, with the narrow deck extending to within about three feet.

The Shoreline Master Program appears to unleash a bureaucratic nightmare of ecological studies, permits, public hearings and appeals whenever maintenance or minor improvements are needed. Apparently I would need a Substantial Development Permit to plant a non-native rose bush.

The entire tone of the SMP implies that the goal is to restore waterfront property to its pre 1492 configuration. If this a desirable goal for waterfront property, then I believe it would be equally desirable for Town Square. One of the stated goals is to promote "...no net loss of ecological functions and processes." (Whatever that means.) Does a rose bush result in such a loss? What is the ecological function of my home?

I believe that we can avoid a nightmare of lunacy and litigation by making a **clear and specific** exemption for property that has already been developed and occupied. I urge the council members to consider how they would react if faced with such vague, Kafkaesque regulations imposed on their homes.

Sincerely,



Jim Sudduth

224 SW 153rd St., Suite 139, Burien, WA 98166

206-244-7443

jimmmm@comcast.net

CFTR: 06/07/10