

Lindsey Ozbolt

From: ELST Master Plan <ELST@kingcounty.gov>
Sent: Thursday, January 26, 2017 10:29 AM
To: reddy@benefits-consulting.com
Cc: Lindsey Ozbolt; MikeSch@msn.com
Subject: 170126 ELST South Samm B - Reddy - ROW
Attachments: 170126 ELST South Samm B - Reddy - ROW.pdf

Dear Ms. Reddy,

Thank you for your interest in the East Lake Sammamish Trail Project. Please see the attached regarding your email from January 22, 2017. Please let me know if you have any questions.

Regards,

Kelly Donahue
Community Engagement

King County Department of Natural Resources
201 South Jackson Street, Suite 700
Seattle, WA 98104-3854
Project Hotline: [1-888-668-4886](tel:1-888-668-4886)



King County

Parks and Recreation Division

Department of Natural Resources and Parks

east lake sammamish trail

January 26, 2017

Dear Ms. Reddy,

Thank you for your interest in the East Lake Sammamish Trail. Please see your comment, as well as the King County response below. Let me know if you have any questions.

Comment: Dear Ms. Kelly Donahue and Ms. Lindsey Ozbolt: I had an opportunity today to review King County's "tree preservation plan" (page 12 of 28) and the 135-page 60% review plan (page 52). I'm truly mortified and deeply distressed that according to the County's "plan" the County plans to move the trail off the current "as built" trail further west to align from the true trail centerline which is virtually on the current split rail fence. This action is completely unnecessary and would take over and destroy literally thousands of dollars of landscaping and wildlife habitat for birds, eagles, animals, deer, ducks, bees, and much more! Come see the eagles in our neighborhood! This property has been maintained by me since 1997 – for 20 years. Twenty years! Some of the Rhododendrons and Azaleas were here before I purchased my home in August, 1997 and they are very grand and old. The plans indicate that the County is going to replace my landscaping and the fragile and rare wildlife habitat with "clearing and grubbing" based on the County's survey notes. What does this term mean? It is puzzling to me that the County would intentionally and deliberately destroy the beautiful landscaping and wildlife habitat that exists now when the County can easily stay on the currently "as built" current location or meander to the other side rather than swerving unnecessarily onto my 20-year old landscaping only to swerve back to the existing "as built" trail. This is an extremely wasteful move of property, landscaping, and the wildlife habitat. Can you consider another plan – like staying on the current "as built" location. I am otherwise fully supportive of the surfaced trail.

Further, I see that the County's plan is to put up a chain link fence. This is also alarming. There is nothing uglier and awful to look at than such a fence.

I am copying Mike Schmidt who is planning to discuss with you other concerns of our neighbors. Unfortunately, I am travelling and cannot meet to explain my concerns personally with you. Please help us and please consider the logic of keeping the trail in the "as built" location, the savings in expense to both the County and to me by avoiding destroying property and moving my utilities and attempting to relocate 20-year-old vegetation, and the saving of the wildlife habitat that I've spent 20 years nurturing! Thank you!

Respectfully, A very distressed Sammamish Homeowner! Peggy Reddy

King County Response: Thank you for your email and thank you for taking the time to meet for a clarification session on Tuesday, January 24. I believe we discussed the concerns you raised in this email during our meeting, and we provided you with additional plan information to supplement any additional comments you might make on the project plans to the City of Sammamish. Additionally, we provided you with the contact for the U.S. Army Corps of Engineers (USACE) staff person leading the review of the



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wetland delineations along the trail. Please let us know if you have any additional questions or concerns. As a reminder, all comments need to be sent to Lindsey Ozbolt at the City of Sammamish by 5pm on January 27.

Lindsey can be reached at:

425.295.0527

LOzbolt@sammamish.us

If you have any other questions or concerns regarding this trail, please feel free to contact the project hotline at 1-888-668-4886 or ELST@kingcounty.gov. You may also visit the project [website](#), King County Park's [blog](#), and our [Twitter](#) page for up-to-date information on this and other projects.

Sincerely,

Kelly Donahue
Community Engagement

King County Department of Natural Resources
201 South Jackson Street, Suite 700
Seattle, WA 98104-3854
Project Hotline: 1-888-668-4886

Lindsey Ozbolt

From: ELST Master Plan <ELST@kingcounty.gov>
Sent: Thursday, January 26, 2017 9:06 AM
To: arul_menezes@hotmail.com
Cc: Lindsey Ozbolt
Subject: 170126 ELST South Samm B - Menezes - Trees
Attachments: 170126 ELST South Samm B - Menezes - Trees.pdf

Dear Mr. Menezes,

Thank you for your interest in the East Lake Sammamish Trail Project. Please see the attached regarding your comment. Please let me know if you have any questions.

Regards,

Kelly Donahue
Community Engagement

King County Department of Natural Resources
201 South Jackson Street, Suite 700
Seattle, WA 98104-3854
Project Hotline: [1-888-668-4886](tel:1-888-668-4886)



King County

Parks and Recreation Division

Department of Natural Resources and Parks



January 26, 2017

Dear Mr. Menezes,

Thank you for your interest in the East Lake Sammamish Trail. Please see your comments, as well as the King County response below. Let me know if you have any questions.

Comment: You commented that you have a 50-year-old dogwood tree at Station 295 that is significant and does not show up on our plans.

King County Response: Thank you for your email. Any comments that you would like to make sure are submitted as part of the permit process should be submitted by 5:00 pm on January 27 to:

Lindsey Ozbolt, Associate Planner
P: 425-295-0527
E: lozbolt@sammamish.us.
Address: City of Sammamish City Hall
801 228th Avenue S.E.
Sammamish, Washington 98075

In the future, please contact the hotline if you have any questions or concerns instead of contacting the project team directly. You can reach the project team at 1-888-668-4886 or FLST@kingcounty.gov. You may also visit the project [website](#), King County Park's [blog](#), and our [Twitter](#) page for up-to-date information on this and other projects.

Sincerely,

Kelly Donahue
Community Engagement

King County Department of Natural Resources
201 South Jackson Street, Suite 700
Seattle, WA 98104-3854
Project Hotline: 1-888-668-4886

Lindsey Ozbolt

From: ELST Master Plan <ELST@kingcounty.gov>
Sent: Thursday, January 26, 2017 8:56 AM
To: daynesampson@hotmail.com
Cc: Lindsey Ozbolt
Subject: 170126 ELST South Samm B - Sampson - Comments
Attachments: 170126 ELST South Samm B - Sampson - Comments.pdf

Dear Mr. Sampson,

Thank you for your interest in the East Lake Sammamish Trail Project. Please see the attached regarding your call to the project hotline on January 25, 2017. Please let me know if you have any questions.

Regards,

Kelly Donahue
Community Engagement

King County Department of Natural Resources
201 South Jackson Street, Suite 700
Seattle, WA 98104-3854
Project Hotline: [1-888-668-4886](tel:1-888-668-4886)



King County

Parks and Recreation Division

Department of Natural Resources and Parks

east lake sammamish trail

January 26, 2017

Dear Mr. Sampson,

Thank you for your interest in the East Lake Sammamish Trail. Please see your comments, as well as the King County response below. Let me know if you have any questions.

Comment: You requested information on where you can submit comments to the City before the deadline.

King County Response: Thank you for your call. Any comments, questions, or concerns that you have regarding the South Sammamish B construction project should be directed to Lindsey Ozbolt with the City of Sammamish by 5:00 pm on January 27. Lindsey can be reached at:

425.295.0527

LOzbolt@sammamish.us

If you have any other questions or concerns regarding this trail, please feel free to contact the project hotline at 1-888-668-4886 or ELST@kingcounty.gov. You may also visit the project [website](#), King County Park's [blog](#), and our [Twitter](#) page for up-to-date information on this and other projects.

Sincerely,

Kelly Donahue
Community Engagement

King County Department of Natural Resources
201 South Jackson Street, Suite 700
Seattle, WA 98104-3854
Project Hotline: 1-888-668-4886

Auto Response: RE: Please Approve the Permit for Segment 2B of the ELST

Sean Ardussi <sardussi@yahoo.com>

Fri 1/27/2017 10:32 AM

To:Lindsey Ozbolt <LOzbolt@sammamish.us>;

I'm changing from my Yahoo mail to using my new one. I will no longer be checking this email after the beginning of the year. Please update my contact information. Thank you.
ardussis at gmail dot com

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:32 AM
To: 'sardussi@yahoo.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Sean,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Sean Ardussi [mailto:sardussi@yahoo.com]
Sent: Thursday, January 26, 2017 12:51 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

I grew up in Issaquah and have been riding a bicycle through this corridor for many years. Completion of this trail is an important investment in the future for not only residents from Sammamish, but Issaquah, Redmond, and communities throughout King County. A completed paved path for bikes and pedestrians helps to open access to the lake for all, while providing a safe transportation corridor that is separate from the parkway.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,
Sean Ardussi

Sean Ardussi
2621 B Marine Ave SW
Seattle, WA 98116
2063977155

Lindsey Ozbolt

From: Jenny Devlin <jenadevlin@gmail.com>
Sent: Friday, January 27, 2017 1:45 PM
To: Lindsey Ozbolt
Subject: Re: Please Approve the Permit for Segment 2B of the ELST

Of course my letter includes autocorrect typos from my phone. :/

Bummmmer. Since I've never typed Sammamish on my phone, evidently:
Adam Amish = Sammamish

Poop de doop.

> On Jan 27, 2017, at 10:12 AM, Lindsey Ozbolt <LOzbolt@sammamish.us> wrote:

>

> Dear Jennifer,

>

> Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

>

> Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

>

> Regards,

>

> Lindsey Ozbolt

> Associate Planner | City of Sammamish | Department of Community Development

> 425.295.0527

>

>

> -----Original Message-----

> From: Jennifer Devlin [mailto:jenadevlin@gmail.com]

> Sent: Thursday, January 26, 2017 6:39 AM

> To: Lindsey Ozbolt <LOzbolt@sammamish.us>

> Subject: Please Approve the Permit for Segment 2B of the ELST

>

>

> Dear

>

> Dear city of Sammamish,

>

> I am writing to express my support for completing the ELST and approving permit SSDP2016-00415.

>

> Please approve the permit, as submitted.

>

> Request 1: Approve the permit: Complete this regional trail and local amenity Request 2: Follow AASHTO national standards: Allow for all users (people on bikes, people walking) of all ages and abilities.

> Request 3: Give crossing priority to the trail at roads and driveways: Ensure safety and predictability

>

> The Adam Amish property owners do NOT own the railroad ROW and have encroached on it long enough to feel entitled to it. It's not theirs! It belongs to The People.

>

> Please approve the permit, as proposed, with expediency.

>

> Sincerely,

> Jennifer Devlin

>

> Jennifer Devlin

> 4200 NE 105 st

> Seattle, WA 98135

> 3605099536

Lindsey Ozbolt

From: Patricia Harrell <Pat_Harrell@msn.com>
Sent: Friday, January 27, 2017 11:42 AM
To: Lindsey Ozbolt
Subject: Re: East Lake Sammamish Trail-South Sammamish Segment B section-60% Design Plan comments

Thanks Lindsey! Have a great weekend.
Pat

From: Lindsey Ozbolt <LOzbolt@sammamish.us>
Sent: Friday, January 27, 2017 11:18 AM
To: Patricia Harrell
Subject: RE: East Lake Sammamish Trail-South Sammamish Segment B section-60% Design Plan comments

Dear Pat,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Patricia Harrell [mailto:Pat_Harrell@msn.com]
Sent: Thursday, January 26, 2017 6:58 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: East Lake Sammamish Trail-South Sammamish Segment B section-60% Design Plan comments

Hello Lindsey,
Attached are my comments. If you have a minute please confirm your receipt and no issue opening the document.
Best Regards,
Pat Harrell

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:18 AM
To: 'Patricia Harrell'
Subject: RE: East Lake Sammamish Trail-South Sammamish Segment B section-60% Design Plan comments

Dear Pat,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Patricia Harrell [mailto:Pat_Harrell@msn.com]
Sent: Thursday, January 26, 2017 6:58 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: East Lake Sammamish Trail-South Sammamish Segment B section-60% Design Plan comments

Hello Lindsey,

Attached are my comments. If you have a minute please confirm your receipt and no issue opening the document.

Best Regards,
Pat Harrell

Emailed 1/26/2017 lozbolt@sammamish.us

Hand Delivered 1/27/2017

Lindsey Ozbolt, Associate Planner
City of Sammamish City Hall
801 228th Avenue SE
Sammamish, Washington 98075

RE: King County SSDP Permit-- South Sammamish Segment B
Homeowner comments regarding 60% Design Plan
Survey Station 332+00
2221 East Lake Sammamish PL SE

Dear Lindsey,

I am a Sammamish lakeside property owner with two properties located within the South Sammamish Segment B. I have reviewed the 60% Master Plan Designs in detail that relate to my property and the properties in the near vicinity and met with the County representative on January 17. I have identified several issues regarding safety, property access and landscaping which must be addressed, as discussed below.

The improved trail is a significant asset to our community and the issues I have identified can be easily resolved. I would greatly appreciate the opportunity to discuss them with the appropriate person(s). These issues may simply not have been addressed in the 60% plan, but prudence dictates that I document my concerns with King County, and reach mutual resolution before the SSDP Permit is issued and the design finalized. Thank you for your review and support with this matter.

My primary residence is located between Survey Station 331+00 and 333+00, primarily at 332+00. In this area, the current trail is very close to the lake-edge. The current trail divides homeowners' properties, such that our lakefront property is separated from our residences. This area is challenging to improve, due to this division and the walls that must be built in order to support the width of the improved trail. A long straight wall must be built to support the eastern side of the improved trail, because the natural land is significantly below the trail elevation.

SAFETY: The first issue pertains to the safety of the trail users. As noted above, in this area, the trail is very close to the lakeshore. From approximately Survey 327+00 to 334+00, the trail has a steep drop-off to the lake. My shoreline currently has huge boulders that reinforce the shoreline bank. Consequently, my dock is my only true use of the waterfront. Currently, my property and all properties in the area, have fencing with gates that protect the current trail users, as well as the private property.

The plan noted at AL 11 appears to remove the fence, because it is located within the CG lines. However, the plan does not provide a replacement of the fence with access gates for the homeowners, as evident in the LA7 plan. The improved trail will increase the traffic on the trail, particularly bicyclists.

Safety mandates for trail-users, that the fence be replaced with a fence adequate to withstand an accident. My property currently has a split-rail fence, which is not adequate for the improved trail. I have been involved in two bicycle accidents on the unimproved trail at low speeds. Without a proper fence in this area, and due to the increased use with the improved trail, inadequate fencing can result in serious injury. Access for emergency vehicles is limited, because neither public, nor private roads, exist in the area to allow access to the trail and to the lakefront. The gates will be required for emergency access, and enable the homeowners' access to their docks and lakefront property.

- 1) Does the County agree that a fence is necessary for the safety of the trail users?
- 2) Does the City agree that a fence is necessary for the safety of trail users?
- 3) Will the County retain the existing fencing along the lakeshore or actually replace with new fencing?

ACCESS: My property has a 70-foot long wooden bridge that leads across a gully in the Railroad Right of Way, to the eastside of the existing trail. Nearby is one other similar bridge. The plan at AL11 indicates removal of the bridge to the R/W line (70 feet) during construction, but does not indicate it will be replaced. The bridge need not be removed completely, given less than 10 feet of it interferes with trail construction. The bridge has been in place for over 40 years and is built on telephone poles. Removing it will disrupt the entire area (including a steep hillside) and likely destroy the bridge. I have engaged a Geotechnical Engineering firm to perform periodic studies to ensure the stability of the hillside and existing terraces which would also be compromised with removal of the bridge. I understand the need to remove a small part of the bridge permanently due to the improved trail, but removing the entire bridge seems unreasonable and unnecessary. Furthermore, without the bridge, my property has no access to the trail or to my lakefront property—an unacceptable result. This issue is further magnified by no designated gate in the fence to access the trail and my lakefront. As the plans are currently drafted, residents and trail-users appear to have access to my lakefront and dock, but I do not have such access which is not an acceptable situation. Several other nearby properties have a similar situation.

- 4) Why is the County removing such a significant private property structure but not providing for its replacement?
- 5) What does the County plan to do to ensure the stability of the hillside of my property if the bridge is removed?
- 6) Is the County going to adjust the plan to provide my access to the trail as well as my lakefront property as it currently exists? This requires a gate in the proposed fencing as well as the bridge or other means to reach the elevated trail.

Currently, electrical service runs along the bridge, and proceeds under the existing trail to my dock. This electrical service must be retained under the improved trail for safety as well as for dock use and maintenance. Unfortunately, this service was installed before my ownership of the property, so I am not aware of the depth of the electrical lines under the existing trail bed.

- 7) Will the County provide for retention of the existing utilities under the improved Trail?

LANDSCAPE: The Landscape Plans (LA 6 and LA 7) indicate the property located at 331+00, owned by Theresa East, has been identified as Wetland 18C. This designation is likely based on prior weather patterns. This designation should be reassessed to determine whether or not this area is actually currently a wetland. The plans should correctly reflect the true size of any wetland, assuming wetland still exists. The plans further provide for a significant portion of my property, and the adjacent two properties to the south, to be stripped of their current plants and grass and replanted as a wetland buffer area. This is beyond the needs of the improved trail and appears to be an unreasonable infringement on property rights to restrict the use of property in this regard. In addition, these areas are actually very dry and it is questionable as to whether or not any plants would flourish without irrigation. I have installed artificial turf, rather than grass, in this area due to the absence of irrigation. Furthermore, the designation appears to include the steep hillside on my property, which have been terraced, planted and maintained to prevent erosion and to ensure stability. Prudence requires reassessment of the wetland designation and mapping, to ensure any remaining wetlands are protected, and any non-wetland areas are not negatively impacted. In addition, the plans should be corrected to reflect the true wetlands, and reduce the wetland buffer area currently indicated in the plans. I believe if we address this together we can resolve the wetland buffer area to the satisfaction of all parties.

- 8) Has the existence of a wetland been confirmed and documented?
- 9) Why has the County chosen this area to establish a large wetland buffer and why is it so expansive?
- 10) Will the County provide ongoing maintenance for the wetland buffer or will I as the property owner be required to maintain the wetland buffer?

PROPERTY RIGHTS:

I understand that the County owns the former railroad right of way through a quit claim it received. Various portions of the right of way have different legal origins. Some portions are based on a specific grant by the Federal Government; including my property. While the scope of what the County acquired may be somewhat uncertain, the United States Supreme Court has recently held in *Marvin M. Brandt Revocable Trust v. United States*, 134 S.Ct. 1257 (2014), that federal grants of property to railroads were grants easements, and not fee ownership. Additionally, the federal Surface Transportation Board is only allowing King County to use the railroad corridor for trail purposes and for an interim period of time. These too are indicative of an easement.

Because the County only has an easement in this section of the right of way, I am entitled to use my property in any way that does not interfere with the County's trail easement. It seems like I have the right to retain my bridge, my yard and other landscaping provided they do not interfere with trail use. Nevertheless, as noted above, I am supportive of the trail as a community asset and may be willing to give up some of these rights if the County recognizes my concerns. The City should not allow the County to exceed its property rights in this particular area where the most it acquired was an easement without addressing my concerns.

Attached are two pictures of the shoreline and one of the bridge and terraces. Please let me know if you have any questions, or I can clarify any of the above issues or provide additional facts. I can be contacted at (425) 765-2267 or at pat_harrell@msn.com. It would be very helpful for the County and

City to arrange to walk the Trail in our area as well as meet with the homeowners to resolve the issues and concerns presented by us individually as well as in the joint community letter sent this week.

Thank you very much for your assistance with the above matters, and for working with the County to make the necessary changes in the plans. Our community sincerely appreciates your time and support in making the trail enjoyable to everyone.

Very Truly Yours,
Patricia Harrell

Patricia Harrell
2221 East Lake Sammamish Place SE
Sammamish, WA 98075



Lindsey Ozbolt

From: Dayne Sampson <daynesampson@hotmail.com>
Sent: Friday, January 27, 2017 11:40 AM
To: Lindsey Ozbolt
Subject: RE: Lake Sammamish Trail Concerns

Thank you Lindsey. Have a great day.

Best Regards,

Dayne

From: Lindsey Ozbolt [mailto:LOzbolt@sammamish.us]
Sent: Friday, January 27, 2017 10:51 AM
To: Dayne Sampson <daynesampson@hotmail.com>
Subject: RE: Lake Sammamish Trail Concerns

Dear Dayne,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Dayne Sampson [mailto:daynesampson@hotmail.com]
Sent: Thursday, January 26, 2017 2:36 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Dayne Sampson <daynesampson@hotmail.com>; Julie Sampson <julieasampson@hotmail.com>
Subject: Lake Sammamish Trail Concerns

From:
Dayne Sampson
1809 Eastlake Sammamish Place SE

Sammamish WA 98075

To:

City of Sammamish

Lindsey Ozbolt

425 295-0527

lozbolt@sammamish.us

Re: Concerns about the East Lake Sammamish Trail Project construction, South Segment 2B

Hello Ms. Ozbolt,

Our home is located on Station 348. The trail runs through our backyard. It bisects our lot, as it does many of our neighbors. Please find below my list of concerns regarding the construction project.

- 1) Security – we need lockable gates as part of the lakeside fence. The current plan doesn't include gates, but rather only openings in the fence. Our kids play on our lower lot. They need protection. Imagine random strangers wandering through your backyard when your kids are outside playing. How safe would you feel? We also have boats and many personal items on our lower lots which need to be protected.
- 2) Privacy – we need the right to plant vegetation along the lakeside fence. There are numerous areas along the lake (e.g. Marymoor, Sammamish Landing, etc.) which provides access to the general public.
- 3) The lots should not have shared gates. Each lot should have a dedicated gate, as they do now.
- 4) The lots should not have shared stairs. Each lot should have dedicated stairs, as they do now.
- 5) The replacement stairs to our lots should not be parallel to the trail. They should follow the path of the stairs removed for construction, which in most cases are perpendicular. It's more difficult, in some cases impossible (e.g. carrying a kayak), to navigate stairs with 90 degree turns.
- 6) Homeowners should be given the option to install our own replacement stairs, at our expense.
- 7) Access – we need access to our lower lots during construction. Nothing in the plans indicate access to our property during construction.
- 8) Wetland Mitigation – the construction plans do not indicate any intention of mitigating the impact to the wetland on my property. As part of a code enforcement issue with the City and County, I'm being required to mitigate the impact to the wetland on my property, and to maintain such mitigation for a period of 5 years. This will be impossible due to the construction and its impact on my property.
- 9) Wetland Impact – due to the construction of an impermeable surface and the required draining. The new trail will eliminate the wetland on my property. This needs to be addressed. Either the wetland designation needs to be entirely removed, or it should be appropriately maintained.

The City should place the SSDP on-hold until the 90% plans are completed/released and all the homeowner concerns are addressed.

Best Regards,

Dayne Sampson

Lindsey Ozbolt

From: Tyson Goodwin <tysongoodwin@hotmail.com>
Sent: Friday, January 27, 2017 11:01 AM
To: Lindsey Ozbolt
Subject: RE: subject: South lake Sammamish trail section 2b, markers 470-473 comments

Thanks Lindsey!

Tyson Goodwin

From: Lindsey Ozbolt [mailto:LOzbolt@sammamish.us]
Sent: Friday, January 27, 2017 10:52 AM
To: Tyson Goodwin <tysongoodwin@hotmail.com>
Subject: RE: subject: South lake Sammamish trail section 2b, markers 470-473 comments

Dear Tyson,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Tyson Goodwin [mailto:tysongoodwin@hotmail.com]
Sent: Thursday, January 26, 2017 2:39 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: subject: South lake Sammamish trail section 2b, markers 470-473 comments

Please review the attached letter regarding South lake Sammamish trail section 2b, markers 470-473 comments.

Thank you!

Tyson Goodwin

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:52 AM
To: 'Tyson Goodwin'
Subject: RE: subject: South lake Sammamish trail section 2b, markers 470-473 comments

Dear Tyson,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Tyson Goodwin [mailto:tysongoodwin@hotmail.com]
Sent: Thursday, January 26, 2017 2:39 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: subject: South lake Sammamish trail section 2b, markers 470-473 comments

Please review the attached letter regarding South lake Sammamish trail section 2b, markers 470-473 comments.

Thank you!

Tyson Goodwin

To who it may concern,

I am writing to you regarding your proposed changes to the trail from marker 470 to 473. I do not live on the properties that are being affected by the changes but I am regular visitor of the properties. I am a good friend of the owners and I enjoy property with my son. The property in it's as is condition is a great place for kids to play. My son learned how to ride his bike on the large paved area between 1533 and 1537. It's also an easy area for me and my son to access the lake.

I would like to point out that the trail is not a safe place for kids to learn to ride bikes and play. The bikers on the trail are usually going very fast and are rude if you or your children get in their way. I've been verbally accosted on several occasions by bikers speeding by without regard for anyone but their own heart rates and timed races.

By removing the driveway, you are putting another busy street right next to the safe area that me and my son enjoy regularly during the summer. I hope that you can find some empathy for the property owners and meet with them to come up with a plan that satisfies your desire to improve the trail for the public and accommodate the existing properties nuance and safety.

Sincerely

Tyson Goodwin

A handwritten signature in blue ink, appearing to read 'Tyson Goodwin', with a stylized, cursive script.

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 1:00 PM
To: 'Jeff and Julie Gelfuso'
Subject: RE: East Lake Sammamish Trail Questions and Comments - Gelfuso, Jeff and Julie

Dear Jeff and Julie,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Jeff and Julie Gelfuso [mailto:jeffandjulie@live.com]
Sent: Thursday, January 26, 2017 11:28 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Hettich, Christi <hettich7@comcast.net>; Lindquist, Vern <vernindquist@msn.com>; Tsilas, Nick <ntsilas@microsoft.com>; Jane Tsilas <janetsi@microsoft.com>; Doug & Lori Birrell <dgb18@comcast.net>; George <gbreuel@msn.com>; Jeff and Julie Gelfuso <jeffandjulie@live.com>
Subject: East Lake Sammamish Trail Questions and Comments - Gelfuso, Jeff and Julie

Dear Ms Ozbolt

As instructed following the the Sammamish City Council public meeting on January 10th 2017, Julie and I are submitting the following attached PDF documenting our questions, concerns, and requests regarding the proposed 60% East Lake Sammamish Trail Improvement Plan. Thank you for taking the time to review it, provide detailed responses to each of our questions, and include it in the city public record filing for the King County of trail permit application.

If you have any issues opening or reading the attached pdf, please let us know. We want to ensure that you've received it from us successfully in time to be reviewed and submitted.

Thank you.

Jeff and Julie Gelfuso
1423 E Lake Sammamish Shore Lane SE
Sammamish, WA 98075
jeffandjulie@live.com
(425)736-5682

To: Ms. Lindsey Osbolt, City of Sammamish.

Subject: East Lake Sammamish Trail Expansion and Impact Questions regarding the proposed 60% plan for South Sammamish B Segment. To be included in the public record as documented concerns against the King County trial permit application.

Date: January 26, 2017

From: Jeff and Julie Gelfuso
1423 E Lake Sammamish Shore Lane SE
Sammamish, WA 98075
jeffandjulie@live.com
(425) 736-5682

Background information: Per the King County plans, our property and residence is located on, page 49 of 135 (still listed incorrectly under Ittes, Robert and Marylyn), Plan ID 362+00, Driveway #9.

Dear Ms. Osbolt,

This letter is a request for response to each of the questions regarding King County's 60% plan to expand the East Lake Sammamish Trail in the South Sammamish B Segment.

We attended the Sammamish City Counsel public meeting on Tuesday Jan 10th, 2017 to voice our concerns with the proposed plan and express our frustration with the overall process, the lack of transparency and communication, and disregard for the serious concerns of the residents of Mint Grove that this plan imposes. As a result, we are submitting this letter to officially document our concerns and the impacts of the proposed plan with regards to safety, access, environment, and property.

We respectfully request formal written acknowledgement of receipt from King County as well as written responses to each of the questions and concerns contained in this letter. We believe that there are alternative solutions that should be considered and implemented that will be acceptable comprises that will both improve the trail for all citizens, maintain minimum safety access for residents, and lower the impact on the environment and community. After careful consideration, we'd ask that you provide a written response for each item.

1) Trail Usage Statistics, Analysis, and Plan

Construction of a trail this size comes at considerable expense to King County tax payers. Because the process has been completely opaque, it's unclear to residents what are the desired objectives (for both homeowners and trail users) the County is working to achieve, what analysis has been done to inform the best solution to meet the desired objectives, and how/when those results are communicated to residents and the public. Simply stated, without knowing what objectives you're trying to achieve, how can you ensure you've done the right analysis to create a proposed plan to achieve them? Improving the trial, making it more safe, providing better views are not specific enough.

- 1.1 What studies have been conducted and where are the results of the studies showing trail usage, benefits to the community, etc.? Please provide access to any/all studies.
- 1.2 What is the rationale or justification for widening the trail versus paving the existing trail?
- 1.3 Are there safety concerns, incidents, or other records that show there are hazards to residents and trail users? If so, please share this data.
- 1.4 Has there been studies or data quantitative data showing an increase in trail usage due to the increased width? If so, please share this data.
- 1.5 What is the total cost of the trail? Is there federal funding being applied to the trail improvement project? If so, in what amount?
- 1.6 Without federal money, thus removing the requirement for the proposed width, would King County make the trail narrower?
- 1.7 What costs are being being paid by King County/Sammamish city residents?
- 1.8 Is there additional funding being obtained by making the trail a minimum width?
- 1.9 What is the cost of trail maintenance on an annual basis and how is this funded?
- 1.10 When will a plan be published that describes in detail the phases, milestones, timelines, approvals, etc for each portion of the proposed plan?
- 1.11 How and when will this plan be shared with residents and the public?

2) Legal Disputes

Several residents raised concerns at the public city council meeting on Tuesday Jan 10th, 2017 that there are still legal litigation underway regarding clear ownership of property, easement, right of use, etc.

- 2.1 How can planning begin when these legal disputes are still outstanding and ongoing?
- 2.2 What record has been provided that each of these outstanding legal disputes have been resolved? Including outstanding appeals?
- 2.3 If not, what cases still exist and when are these planned to be resolved?
- 2.4 Without resolution of the legal/ownership disputes, under what authority is King County proceeding with construction?
- 2.5 If the decisions from these legal disputes are resolved post construction and overrule King County claims, will the proposed plans be altered, or resulting construction be redone based on the outcome of these plans?

3) Access, Ingress and Egress

The proposed plans move the trail westward toward the lake (current centerline not adopted, and moved to the western edge of current trail), thus reducing residential driveway, parking, and ingress/egress capabilities if this plan is executed. The proposed 60% plans move the trail roughly eleven feet closer to the resident's houses and lake thereby reducing the width of the existing access. The current shared private drive is already very narrow whereby large vehicles cannot access our properties including recycling and yard waste collection and large emergency vehicles such as full fire trucks. In addition, delivery vehicles such as FedEx or UPS, as well as ambulance emergency vehicles are already challenged to navigate the current narrow lane. Mint Grove is unique as it is one of the few neighborhoods with only one entry/exit for 20 residents. Therefore, there is no "pass- through" capabilities and all vehicles must back

up/down the private drive or perform a multi-point U-Turn to exit.

- 3.1 What are the King County, Eastside Fire and Rescue, and City of Sammamish minimum requirements for safe ingress/egress?
- 3.2 Do the proposed plans meet these requirements?
- 3.3 What analysis has been done to ensure the appropriate safety access will be met post construction?
- 3.4 When will Eastside Fire/Rescue and the City of Sammamish have the opportunity test the proposal and provide a review of the proposed reduction to the Mint Grove neighborhood access?
- 3.5 When will this independent review be published to the residents of Mint Grove?
- 3.6 Will King County comply with Eastside Fire/Rescue and/or the City of Sammamish recommendations regarding this topic and as a result revise the proposed plan?

4) Entry/Exit to Mint Grove

As mentioned above, the Mint Grove neighborhood has only one entry/exit location for 20 residents. The existing location is narrow, steep, and close to East Lake Sammamish Parkway (referenced as Driveway #9 in the proposed plan). To allow for proper safe entry and exit from East Lake Sammamish Parkway into the neighborhood and to provide for safety for trail-users, the trail has stop signs requiring trail-users to stop for vehicles.

- 4.1 What is King County's plan or modifying the entry/exit to Mint Grove? The plan is unclear in the existing plans.
- 4.2 Will the same standard be maintained post construction?
- 4.3 Will King County repost appropriate safety signs (including stop signs, trail usage, speed limits, private drive no access, etc) on the trail for trail to ensure the safety of both residents/drivers in vehicles and trail users?
- 4.4 The entrance to Mint Grove is a private driveway owned by the Mint Grove residents (paperwork can be provided if necessary). The Mint Grove driveway is currently marked as a Construction Access. King County does not have resident permission to use this private lane and therefore should not be used as for construction access. It poses a safety risk to residents and trail users based on the limited narrow access Mint Grove owners already have. Will you revise the plan to eliminate the Mint Grove entrance as a Construction Access and provide the residents with updated plans?

5) Wetland Definition and Mitigation (Trail Location)

On the east side of the existing trail near our property is a section that is marked as a Wetland that also contains a manmade ditch. It is our understanding that designated Wetlands have various classifications including ones that are movable as an example. The property approximately 100' south of our location has drain pipe installed in place of a ditch and periodically cleaned with a backhoe. This drain pipe acts as a culvert instead of a ditch and the drain pipe is covered with dirt, trees, and vegetation. The water flow comes from the drain pipe into the manmade ditch flowing northward.

- 5.1 What is the exact classification of the wetland (ditch) at our property location?
- 5.2 Has King County considered a wetland mitigation plan that would continue the drain pipe north past our property thus allowing the trail to be moved eastward? If so,

what factors were considered and what is the justification for moving the center line of the trail westward, widening the trail in that directions, and narrowing driveway access to resident's homes?

- 5.3 Can a wetland mitigation plan be implemented at this location, keeping the current center line or moving the trail east if a wider trail is approved to lessen the safety impact to our neighborhood (as described above)?
- 5.4 What criteria was used to establish the proposed centerline of the Trail? The proposed new centerline does not follow a specific path but instead wanders back and forth along the existing trail, mostly moving randomly westward toward the lake and eastward towards the highway. What criteria was used to determine the proposed centerline? Why wasn't this analysis shared with residents and the public? Please provide such analysis.
- 5.5 It appears that a large amount of the wetland area east of our neighborhood is being graded and redone as a native growth or planting area (i.e. new and expanded wetland). What is the justification for this wetland improvement?
- 5.6 If this large area is going to be graded and disturbed, why isn't the ditch just being relocated five to ten feet to the east and avoid impacting our neighborhood's ingress/egress?

6) Clearing and Grubbing Line/Fence

On the King County plans, a Clearing and Grubbing (CG) line is shown. We were informed by King County employees that this is where temporary fencing will be placed for the entire two year duration of our Segment's project. This will make access to our neighborhood unacceptable, impossible for us to enter and exit our neighborhood and garage, and pose a safety risk to residents (especially access to emergency vehicles). It will also impede any type of regular delivery vehicles from providing regular grocery, package, and large item deliveries. In addition, the Mint Grove neighborhood has no reasonable or walkable off-site parking, so additional safety risk is posed to the residents that will be forced to park on East Lake Sammamish Parkway in the morning/evening or during adverse weather including bus pick up and drop off for children in the neighborhood. Real safety concerns exist due to creating a hazardous condition.

- 6.1 What alternate plans have been considered for accommodating residents in this location during the construction phase?
- 6.2 What are the proposed access and parking accommodations during all phases of the proposed 2 year construction?
- 6.3 When will this info be shared with residents and the public so that appropriate plans can be made for homeowners, services agencies, nannies, etc?

7) Environmental Impact

According to the proposed plan, King County is moving the trail westward toward the lake. The benefit of moving the trail west is not clear, not understood, and to our knowledge not based on data as the analysis has not been provided. In addition, this decision will directly result in the removal of thousands of long living trees. Specifically, in our neighborhood the current plans call out for the removal of approximately 300 trees that are all over 20 feet and have been in place for 20+ years.

- 7.1 The only justification that has been provided is that trail improvements will increase safety and views for trail users. How is that proven? At what cost to the environment?
- 7.2 Has an environmental impact study been completed showing that moving the trail westward and removing hundreds of trees has a positive impact on the environment? If so, where are these results? If not, when will King County perform such a study and provide results?
- 7.3 What is the positive benefit and/or justification for removing hundreds and hundreds of trees?
- 7.4 Has the Core of Engineers review the plans? Have both parties approved moving the trail closer to the lake? If not, are there plans to have them review it?

8) Construction Timeline

The proposed timeline for construction of Section 2B is two years. Large sections of the North and South segments were fenced and closed during the entire construction phase while smaller sub-segments were under construction. As noted above, with regards to access and safety, large-scale closing and installation of the Clearing and Grubbing and construction phases will cause major impact to many residents in Section 2B.

- 8.1 Will the construction zone be segmented into smaller subsections to minimize large-scale impacts to the residents? If not, why?
- 8.2 As previously noted, how will safety concerns be addressed with regard to access for emergency, delivery, and resident vehicles during this long period?

Requests prior to proceeding:

- 1) We request that all information regarding the planning of the proposed plan including detailed analysis and assessment, fire and safety tests, environmental studies and impacts, access during construction, etc be provided to residents and the public prior to continuation of any further execution of the proposed plan.
- 2) We request that the City of Sammamish stop construction until all legal disputes are resolved. Authorizing King County to proceed adds risk to the City of Sammamish and wasted tax payer's dollars in additional litigation.
- 3) We request that the City of Sammamish does not grant the requested permit to King County until all residents questions have been responded to and adequately incorporated into the 90% design review.

Thank you for taking the time to review our concerns and questions. We look forward to your detailed responses.

Regards,

Jeff and Julie Gelfuso

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:59 PM
To: 'marywictor@comcast.net'
Subject: RE: Public Comment (2): K.C. ELSTrail Segment 2B--SSDP2016-00415 ~ Stormwater Issues

Dear Mary,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your additional comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: marywictor@comcast.net [mailto:marywictor@comcast.net]
Sent: Thursday, January 26, 2017 11:16 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Public Comment (2): K.C. ELSTrail Segment 2B--SSDP2016-00415 ~ Stormwater Issues

To: Lindsey Ozbolt / Associate Planner, City of Sammamish
re: Stormwater Issues + design for future built-out capacities

1) Please ensure the Capacity for all culverts, ditches, and passages for storm/surface water runoff and drainage are designed for FULL BUILT-OUT of uphill areas of the Sammamish Plateau so that water will pass as naturally as possible, but with the needed constructed stormwater facilities for control/management, especially to work even under 100-year flood conditions.

In addition the the KCSWDM, Sammamish Addendum, and SMC, the Public Works Standards of the City also relate to Stormwater management.

{See attached .jpg capture from City of Sammamish P.W.S on conveyance and sizing.}

On 60% design cover page by King County/Parametrix dated Sept 2016, it says 9.8AC Disturbed, 5.3AC existing impervious with 8.4AC proposed impervious areas. This means K.C. for the Trail needs to handle Stormwater Quantity and hopefully deal with the Water Quality too (asphalt pollutants, etc.)

2) There are past/present areas with drainage-related issues due to stormwater, surface water, runoff, etc. Some are known, others maybe not?

a) Problem areas should be addressed/solved... it does NOT make sense to do the Trail and not acknowledge or ignore problems/issues! [I strongly suggest that King County and the City of Sammamish both make field visits this spring 2017, summer?, and fall 2017 to watch the water and determine any soggy, saturated, eroding areas etc. that need and deserve timely and effective stormwater management as part of the Trail development.]

-Sammamish public/private lands... are above

-City roads/infrastructure E. Lk. Samm. Parkway... are above

-King County Trail surface and varying R.O.W... are above

-Private lands and homes... which are above

-Lake Sammamish where stormwater will run from natural water courses (lakes, streams), constructed ditches and facilities, and by gravity.

The whole sequence and "water story" system must be considered, with "watershed context" being analyzed for existing plus future cumulative effects. {King County Trail is NOT a standalone project, and water does and will need to run downhill to and through it.}

b) King County design and implementation must ensure additional impervious surface impacts are handled, but also take upgradient flows. For example, I see at Station 436+30 and Station 448+40 where are "new" proposed drainage easements and storm drain pipes. I believe they are intended to be only 12" diameter. To handle existing as well as future requirements from King County, City Parkway, and existing plus development/re-development uphill...are these big enough (or 18", 24" etc.)? For Station 436+30, for example, there is water that flows or infiltrates from Tlingit and many unplatted homes upgrade, plus outflow from Tamarack likely too. Plus, some parcels (large and small) are not developed yet.

c) Open-up the thinking/design to avoid future "unintended consequences" ... What are all the locations where current drainage goes, or could go, and are there other places pipes, culverts, ditches etc should be added? [The City has a no-cuts on roads/asphalt ordinance for something like 5-7 years.] Planning and putting pathways for future stormwater needs is critical to do now with the Trail!

3) WALKWAY at Station 432+00 thru +80 is located on, above, or near where important storm/surface water passage flows. It would be extremely important and prudent to do any needed stormwater work in that area which flows out to Lake Sammamish... BEFORE building the Walkway there. [The location of the walkway is really nice and needed... but under/adjacent work for stormwater... so drainage must be done before or with it.]

a) Landslide Hazard and Erosion Hazard critical areas are intersected by the K.C. ELST from about Louis Thompson Rd NE to north of George Davis Creek crossing. These are Environmentally Critical Areas and deserve protection and mitigation for which there are County/City codes.

b) Presently, EdenView ADD stormpond outflow and Tlingit ADD detention pipe outflow send stormwater directly down to the lake.

c) Tamarack ADD needs drainage improvements to handle past, existing, and future development for stormwater needs. This old, historic neighborhood was recorded by King County as, "Assessor's Plat of Tamarack" in 1964 for all Divisions 1-2-3 (a total of about 210 lots.) King County had not developed nor required drainage provisions for this subdivision which has had significant growth lot-by-lot via in-fill development of vacant lots. Stormwater must be controlled and managed. The City has been

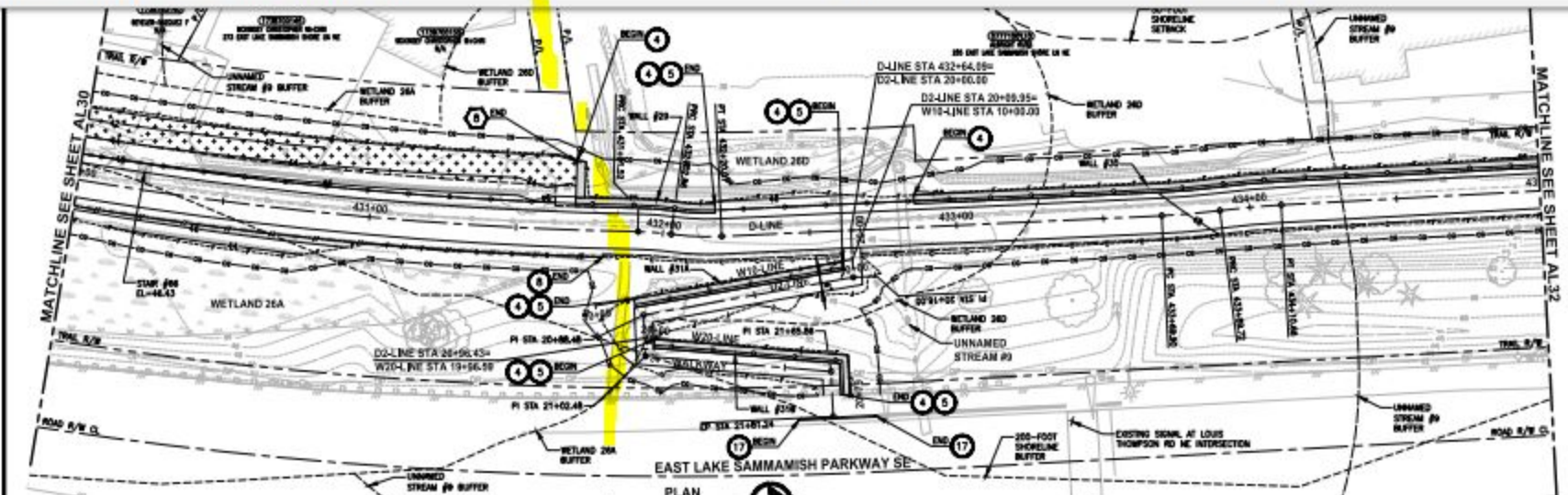
studying this and there is a "Tamarack Downstream Analysis" from 2016 which should be used to ensure adequate and sufficient stormwater facilities and capacity all the way to Lake Sammamish.

Bottom Line: Don't let King County's Trail permit and work "choke" stormwater runoff or capacity by not being big enough for existing and future needs.

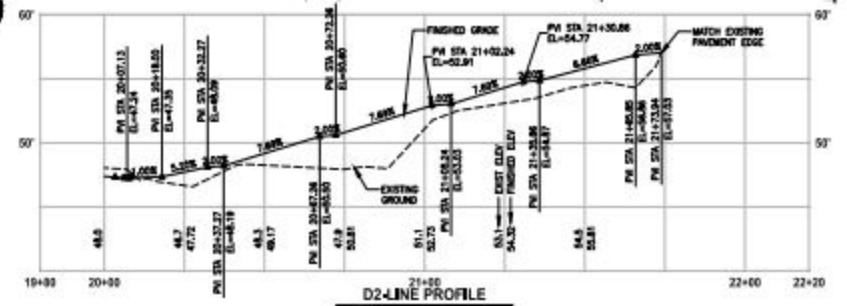
City of Sammamish must ensure that all drainage systems are sized to be able to handle fully developed and built-out conditions, for existing and new impervious surfaces, hopefully to all regulations and code standards and requirements, including pertinent things from newest adoptions as is either required or prudent. King County must do their part as owners of the Trail and full right-of-way.

5 Attachments (.jpg screen captures... PWS, AL32 & AL32, Figure 3 & 1 of Tamarack analyses)

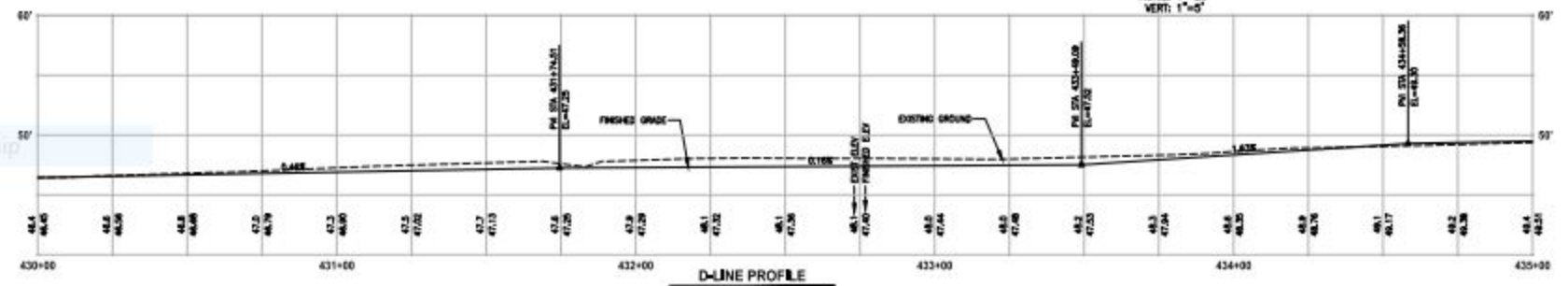
Sincerely, Mary Wictor, Tamarack resident since 6/2000.
425-283-7253 mobile



PLAN
SCALE IN FEET
0 20 40



D2-LINE PROFILE
HORIZ: 1"=20'
VERT: 1"=5'



D-LINE PROFILE
HORIZ: 1"=20'
VERT: 1"=5'

- 1 RESTORE AND INSTALL STAIR. TYPE TO BE DETERMINED.
- 2 RECONSTRUCT PEDESTRIAN BRIDGE.
- 3 INSTALL PRECAST REINFORCED CONCRETE SPLIT BOX CULVERT. SEE FP SHEETS FOR DETAILS.
- 4 INSTALL STRUCTURAL EARTH WALL. SEE WALL DETAILS ON SHEET X. SEE WALL PROFILES ON WP SHEETS.
- 5 INSTALL COATED CHAIN LINK FENCE TYPE 6. FOR GROUND POST INSTALLATION SEE APPENDIX B IN THE SPECIFICATIONS. SEE SHEET X FOR MOUNTING ON TOP OF WALL.
- 6 NEW DRIVEWAY.
- 7 INSTALL WOOD GUARDRAIL. SEE DETAILS ON SHEET 10.
- 8 INSTALL SPLIT RAIL FENCE. SEE DETAILS ON SHEET 10.
- 9 INSTALL GRAVITY BLOCK WALL. SEE WALL DETAILS ON SHEET 10A. SEE WALL PROFILES ON WP SHEETS.
- 10 DRIVEWAY REMOVAL. SEE WP SHEETS FOR PLANTING PLAN.
- 11 INSTALL PATTERNED CONCRETE DRIVEWAY. SEE DETAILS ON SHEET 10.
- 12 INSTALL TYPE 1 REST STOP. SEE DETAILS ON SHEET 10.
- 13 INSTALL TYPE 2 REST STOP. SEE DETAILS ON SHEET 10.
- 14 INSTALL SOLDIER PILE WALL.
- 15 INSTALL GRAVITY BLOCK WALL.
- 16 INSTALL WING WALL. SEE FP SHEETS.
- 17 INSTALL EXTRUDED CURB PER WOODY STD PLAN P-10.42-00.
- 18 REST STOP PULL-OUT.
- 19 STAIRS WILL BE ELIMINATED DURING CONSTRUCTION.
- 20 BRICKS WILL BE REMOVED TO P/W LINE DURING CONSTRUCTION.
- 21 INSTALL ROCK WALL.

STORMWATER CONSTRUCTION NOTES:

- 1 IMPERVIOUS TRENCH. SEE DETAIL 4 ON SHEET 001.
- 2 UNDERDRAIN TRENCH. SEE DETAIL 5 ON SHEET 001.
- 3 ROCK PAD. SEE DETAIL 2 ON SHEET 001 AND WP SHEETS.
- 4 CONNECTION TO DRAINAGE STRUCTURE AND CLEANING EXISTING DRAINAGE STRUCTURE.
- 5 INSTALL UNDERDRAIN TRENCH CLEANOUT. SEE DETAIL 6 ON SHEET 001.
- 6 INSTALL RECTANGULAR SELF-RESISTING SOLID METAL COVER PER WOODY STD DETAIL 8-35.25-02.
- 7 CONCRETE HEADWALL. SEE DETAIL 1 ON SHEET 001.
- 8 BRICK DISPERSION. SEE SHEET 003.
- 9 QUARRY SPALL OUTFALL PROTECTION. SEE DETAIL 3 ON SHEET 001.
- 10 ADAPT CATCH BASIN.

LEGEND:



CITY OF SAMMAMISH APPROVAL

City Engineer	DATE
Community Development	DATE

60 % REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

REVISION	DATE	BY	REASON

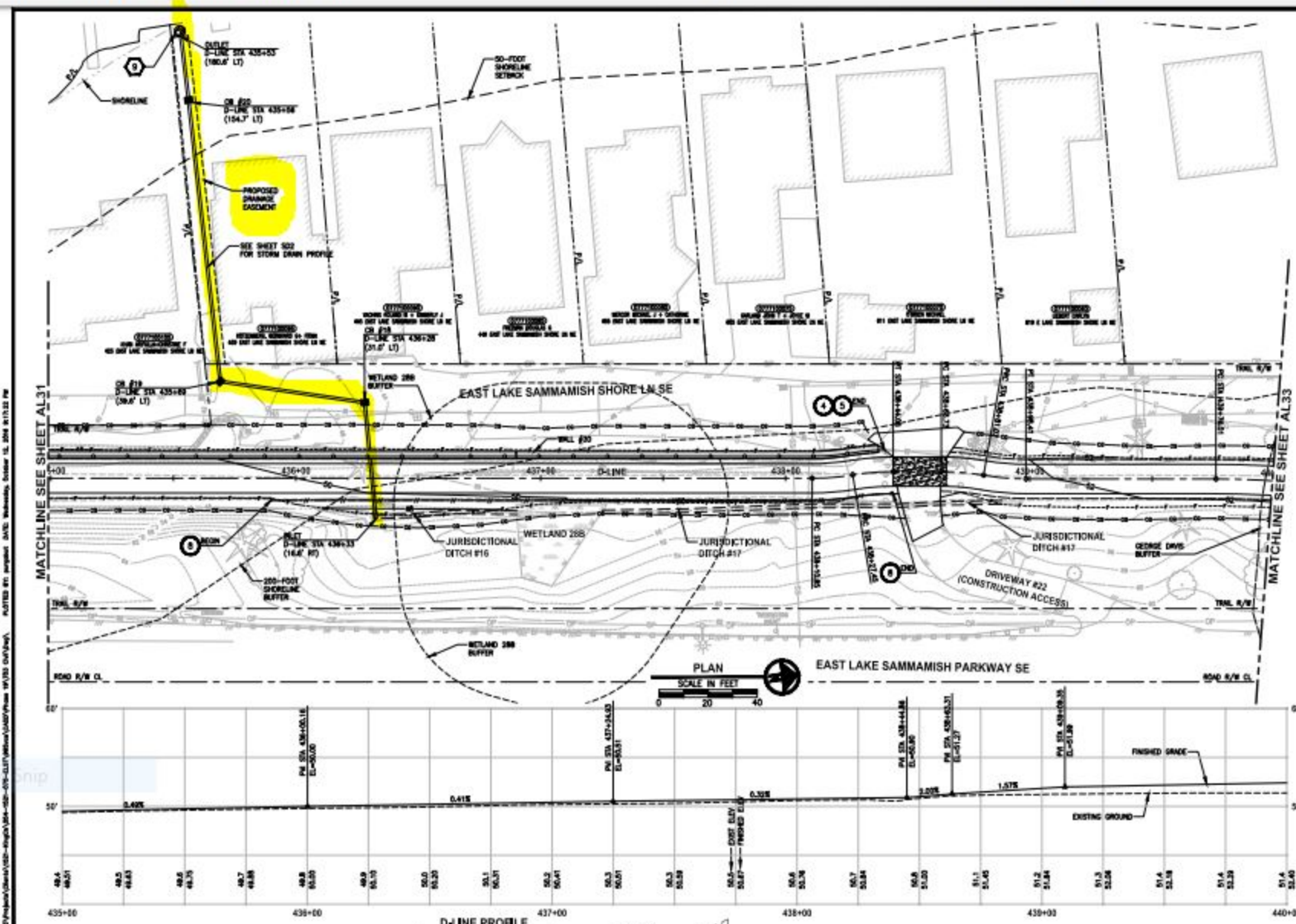
ONE INCH AT FULL SCALE.
ALL OTHER SCALES ACCORDINGLY.
PROJECT: EAST LAKE SAMMAMISH MASTER PLAN TRAIL
SOUTH SAMMAMISH SEGMENT B
DATE: SEPTEMBER 2016

PRELIMINARY

PROJECT NAME
EAST LAKE SAMMAMISH
MASTER PLAN TRAIL
SOUTH SAMMAMISH SEGMENT B
SAMMAMISH, WA

PLAN AND PROFILE

SHEET NO.
03 OF 135
AL31



CIVIL CONSTRUCTION NOTES:

- 1 RESTORE AND INSTALL SOAR, TYPE TO BE DETERMINED.
- 2 RECONSTRUCT PEDESTRIAN BRIDGE.
- 3 INSTALL PRECAST REIN' CONC SPLIT BOX CULVERT. SEE FP SHEETS FOR DETAILS.
- 4 INSTALL STRUCTURAL EARTH WALL. SEE WALL DETAILS ON SHEET 7. SEE WALL PROFILES ON WP SHEETS.
- 5 INSTALL COATED CHAIN LINK FENCE TYPE 6, FOR GROUND POST INSTALLATION SEE APPENDIX B IN THE SPECIFICATIONS. SEE SHEET X FOR MOUNTING ON TOP OF WALL.
- 6 NEW DRIVEWAY.
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- 8 INSTALL SPLIT RAIL FENCE. SEE DETAILS ON SHEET 10.
- 9 INSTALL GRAVITY BLOCK WALL. SEE WALL DETAILS ON SHEET 10.1. SEE WALL PROFILES ON WP SHEETS.
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- 13 INSTALL TYPE 2 REST STOP. SEE DETAILS ON SHEET 10.
- 14 INSTALL SOLDIER PILE WALL.
- 15 INSTALL GRAVITY BLOCK WALL.
- 16 INSTALL WING WALL. SEE FP SHEETS.
- 17 INSTALL EXTRUDED CLUM PER WOODOT STD PLAN F-1640-06.
- 18 REST STOP PULL-OUT.
- 19 STARS WILL BE ELIMINATED DURING CONSTRUCTION.
- 20 BRIDGES WILL BE REMOVED TO R/W LINE DURING CONSTRUCTION.
- 21 INSTALL ROCK WALL.

STORMWATER CONSTRUCTION NOTES:

- 1 INFILTRATION TRENCH. SEE DETAIL 4 ON SHEET 001.
- 2 UNDERDRAN TRENCH. SEE DETAIL 6 ON SHEET 001.
- 3 ROCK PAV. SEE DETAIL 2 ON SHEET 001 AND WP SHEETS.
- 4 CONNECTION TO DRAINAGE STRUCTURE AND CLEANING EXISTING DRAINAGE STRUCTURE.
- 5 INSTALL UNDERDRAN TRENCH CLEANOUT. SEE DETAIL 4 ON SHEET 001.
- 6 INSTALL RECTANGULAR SLIP RESISTANT SOLID METAL COVER PER WOODOT STD DETAIL 8-3530-02.
- 7 CONCRETE HEADWALL. SEE DETAIL 1 ON SHEET 001.
- 8 BRG DISPERSION. SEE SHEET 003.
- 9 QUARRY SPALL OUTFALL PROTECTION. SEE DETAIL 3 ON SHEET 001.
- 10 SQUARE CATCH BASIN.

LEGEND:

- RETAINING WALL
- SOLDIER PILE WALL
- WOOD GUARDRAIL
- DISPERSION AREA
- DRIVEWAY REMOVAL

CITY OF SAMMAMISH APPROVAL	
City Engineer	DATE
Community Development	DATE

60% REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	BY	REVISION					<p>DESIGNER M. TRUEN</p> <p>DRAWN BY S. PURGANIAN</p> <p>CHECKED BY P. JOHANNESSEN</p> <p>APPROVED</p>	<p>ONE INCH AT FULL SCALE. IF NECESSARY, SCALE ACCORDINGLY.</p> <p>FILE NO. 15107017010A-04</p> <p>PROJECT NO. 15107017010A-04</p> <p>DATE: 10-27-16 P. 103</p>	<p>PRELIMINARY</p>	<p>PROJECT NAME EAST LAKE SAMMAMISH MASTER PLAN TRAIL SOUTH SAMMAMISH SEGMENT B SAMMAMISH, WA</p>	<p>PLAN AND PROFILE</p>	<p>SHEET NO. 04 OF 135</p> <p>AL32</p>
NO.	DATE	BY	REVISION											

V. Inspection of the storm drainage system must be called for before any backfill is placed for the storm drain system.

4/19/00 Ordinance 02000-60

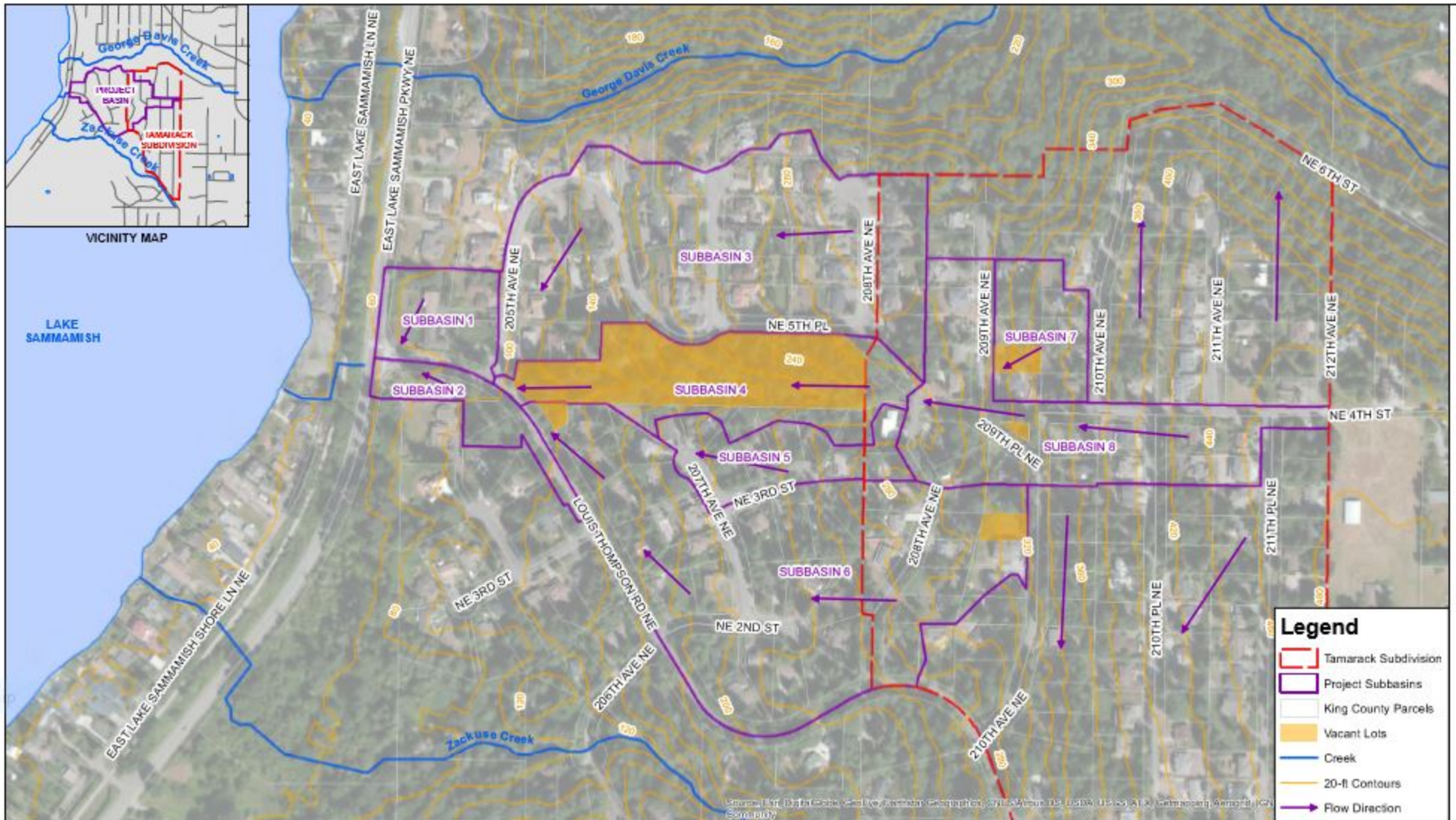
Rectangular Snip

PWS.20.050 Conveyance.

A. Pipe. Storm drain pipe within a public right- of-way or easement shall be sized to carry the maximum anticipated runoff from the possible contributing area.

The minimum main size shall be 12 inches in diameter. Lateral lines may be six inches in diameter. Nothing shall preclude the City from requiring the installation of a larger sized main if the City determines a larger size is needed to serve adjacent areas or for future service.

All pipe for storm mains shall comply with one of the following types:

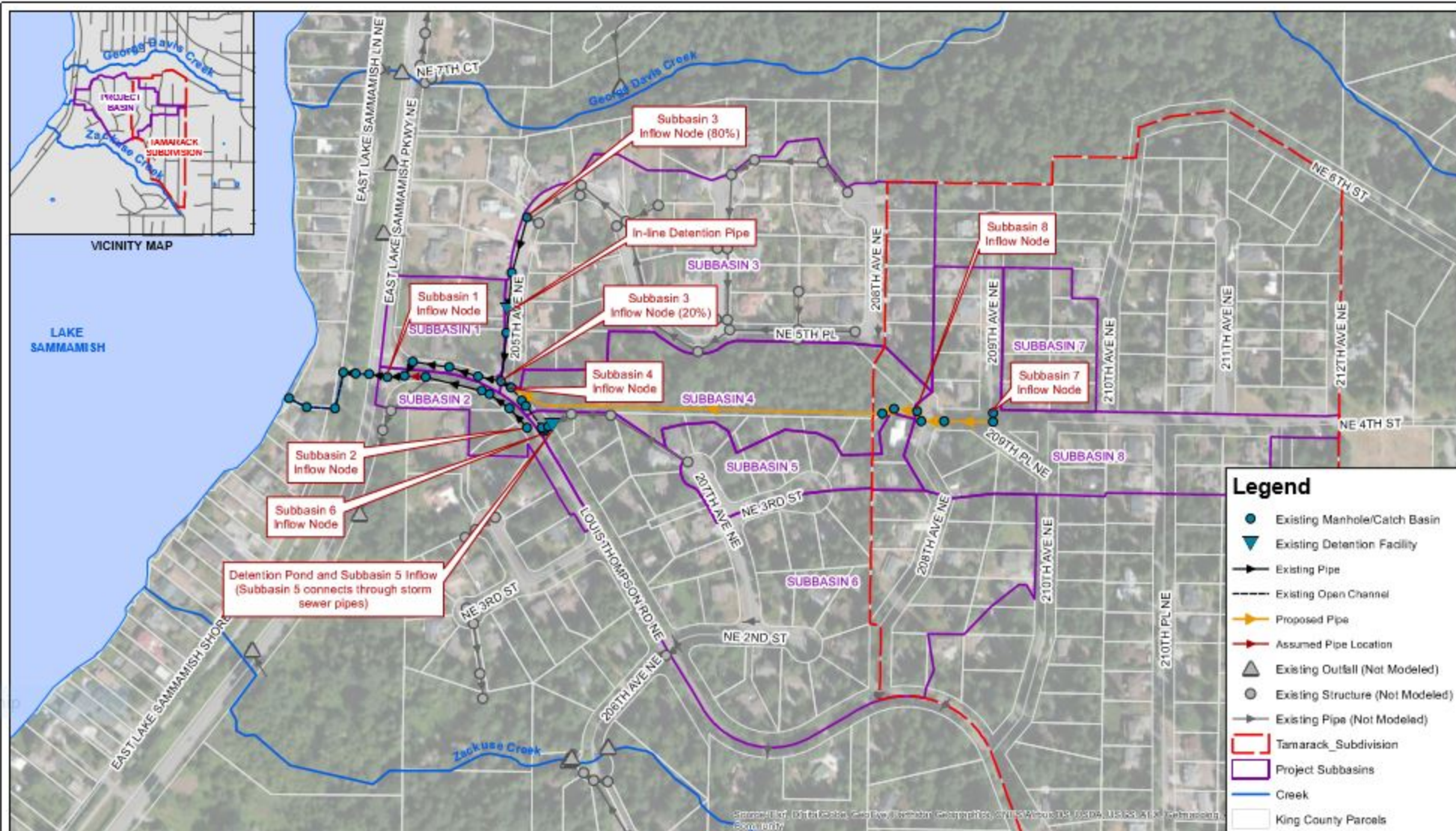


Legend

- Tamarack Subdivision
- Project Subbasins
- King County Parcels
- Vacant Lots
- Creek
- 20-ft Contours
- Flow Direction



Figure 1: Project Basins
Tamarack Drainage Improvement Project
Sammamish, WA



- Legend**
- Existing Manhole/Catch Basin
 - ▼ Existing Detention Facility
 - Existing Pipe
 - - - Existing Open Channel
 - Proposed Pipe
 - - - Assumed Pipe Location
 - ▲ Existing Outfall (Not Modeled)
 - Existing Structure (Not Modeled)
 - Existing Pipe (Not Modeled)
 - ▭ Tamarack_Subdivision
 - ▭ Project Subbasins
 - Creek
 - ▭ King County Parcels

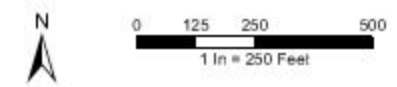


Figure 3: SWMM Model Diagram
Tamarack Drainage Improvement Project
Sammamish, WA

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:55 PM
To: 'Rogalski, Mark E'
Subject: RE: East Lake Sammamish Master Trail Plan 60% review comments

Dear Mark,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Rogalski, Mark E [mailto:mark.e.rogalski@boeing.com]
Sent: Thursday, January 26, 2017 10:11 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Tom Hornish <THornish@sammamish.us>; Carol Rogalski <carol@zebrapartners.net>
Subject: East Lake Sammamish Master Trail Plan 60% review comments

Dear Lindsey,

Please find attached a PDF file of a PowerPoint presentation with text comments and reference documentation as submittal of comments regarding **East Lake Sammamish Master Plan Trail, South Sammamish Segment B**. If you have any questions or cannot open the file please let me know at this E-mail address or call me at the number below or 425-890-4748. I included City Council member Tom Hornish as CC since he is familiar with our property and rights.

Thank you,

Mark E. Rogalski

ATF – Composites

Materials Development

Boeing Commercial Airplanes, Product Development

Office/Mobile: 425-941-8298



Lindsey Ozbolt, Associate Planner

Phone: 425-295-0527

Email: lozbolt@sammamish.us

Mail: City of Sammamish City Hall, 801 228th Avenue SE, Sammamish, Washington 98075.

Dear Lindsey,

Included in this PowerPoint are comments, issues and corrections regarding East Lake Sammamish Master Plan trail South Sammamish Segment B regarding Plan and Profile AL7 (Mark and Carol Rogalski Tax parcel #4065100005.) (see Slide 3)

For background, reference settlement agreement King County Cause No. 97-2-23731-9 SEA that clarifies it is a 20 ft easement as indicated on the 60% plan (Slide 4 and 5) with the centerline not at the centerline of the old tracks but per the Quit Claim Deed settlement. For clarification there is also a right for an overpass bridge (Item 3.3 on slide 6) and access to load and unload large items or emergency vehicles or wheel chairs. I met with the King County personnel on Thursday January 26, 2017 at the City of Sammamish site and shared our concerns identified in this PowerPoint. One key item discussed is that relative to the wall there is a required special meeting for collaboration with the engineering design team for the 60% plan that needs to happen in person to coordinate needs and requirements for future construction of an overpass, a single entry and elevations. Specifically, this will change the plan to achieve requirements in the text and comments of this Power Point and allow discussion of options such that when an overpass is constructed (after the Trial is complete) there is minimal trail interruption when it is installed. The King County people at this meeting could not commit for the design team but thought is would be beneficial. So your support in making this happen is appreciated. This Power Point also contains information and comments that may not be covered in the text on some of the pages.

Key points to be addressed before the City of Sammamish approves the 60% plan.

- 1) Current plan (see slide 7) shows a single entry point for both the Rogalski and Reinhardsen properties. These are separate properties and Easements requiring separate stair cases at entry for top and at bottom for security and retention of land value. The proposed plan ignores the fact that the elevations do not work as indicated in Slide 8 and 9 of this PowerPoint. (Photo and elevations indicate a 8 – 10 ft difference at the point where cars are parked (entry point height). The Reinhardsen lot starts at an elevation of ~64' and the Rogalski lot entrance starts at 74' in the proposed area on slide #9) (Point 9 identifies a height discrepancy for planning)
- 2) Mid level Stair #23 Platform and Wall #6 must be at a height and build to support future 4-6 foot bridge and its attachment. Current plan (13) shows it at 60' only 10 feet above the trail. Hanging support structure will not meet the 10 requirement. Platform should probably be at 12 feet with stairs running down either direction. See slides 18, 19 and 20 for bridge concepts. Coordination on this point with Engineering/planning is required to minimize any future trail interruptions since there are many options to address these issues that can change Plans for the Wall and Stair location and construction and provide cost efficiencies.

Lindsey Ozbolt, Associate Planner

Phone: 425-295-0527

Email: lozbolt@sammamish.us

Mail: City of Sammamish City Hall, 801 228th Avenue SE, Sammamish, Washington 98075.

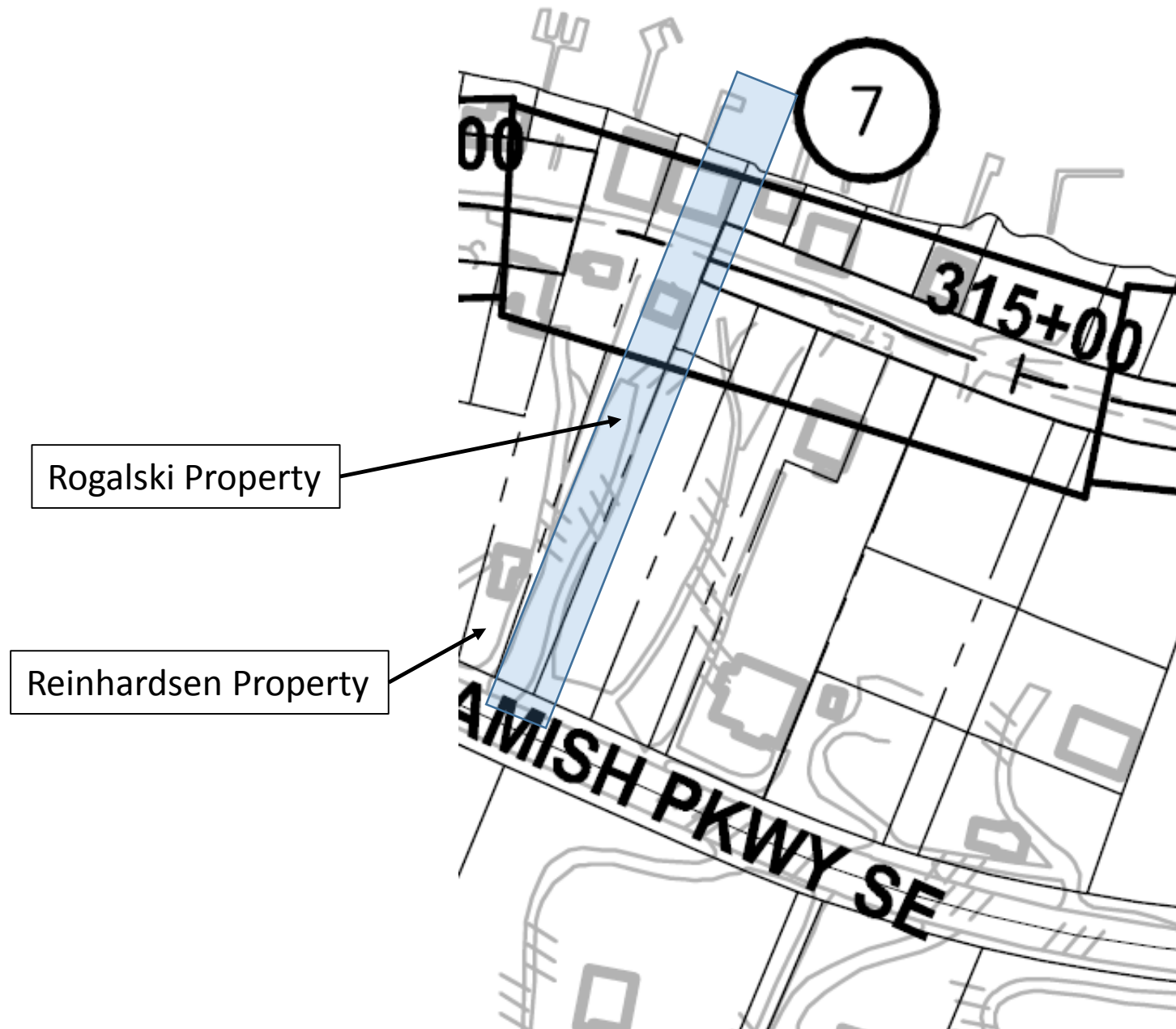
Continuation of comments:

- 3) Entrance is not aligned with garage exit for stair case down or future bridge. (slide #11 and 16) We need to work on how to accommodate a single access point to reach a platform for the overpass.
- 4) Safety and access for our elderly parents who use the Stewarts (lot number) parking to attend gatherings. (See slide #6 for access rights) Expectations are that access can be near by and not at 7-11. Road to the north may be okay with no barriers.
- 5) Drainage on the wall side of the easement. There used to be a ditch that ran along east side of tracks all the way to the creeks to the north. Home owners in areas have filled in the ditch over the years. Your plans show an increase in elevation to create a high area of the trail, is that the plan? See comment # 9 also relative to elevation. Plan needs to show how run off of hillside will be handled also with paved trail runoff. It currently or has never run into the west (house side) due to the track elevation. Also this is hard pack and water currently sits on the trail for days after rain.
- 6) Gate is required at the trails entrance. We do not want people sitting on the stairs or wondering up to our garage. Will need pavers for to cross trail form stairs and house side across the trail. Note, it is expected that for safety there will be 4 feet form both access points (East and West) before the trail. I believe there is a code for this from previous discussions on trail and access points.
- 7) Require working with Planners to create layout plans to address wall construction to support stairs and future bridge before the 60% approval.
- 8) Upper garage power, lighting, sewer and water need better identification and plan to reroute into hill side. Currently sewer is in a different place than the water and electrical. Both are in steel casings but may not run into the hill side very deep. See slide #17 for details.
- 9) Elevations are not consistent with previous Surveys. Easement elevation is at 46- 47 feet and not at 50 feet as shown on these plans. Center line of Easement is at 46.9 Ft. (See slides # 12, 13, 14, 15)
- 10) What is the plan for planting near the wall and west side? No plans for vegetation to reduce noise is in this 60% plan. Trees or shrubs on the west side would help reduce noise. Trail users are noisy from experience.

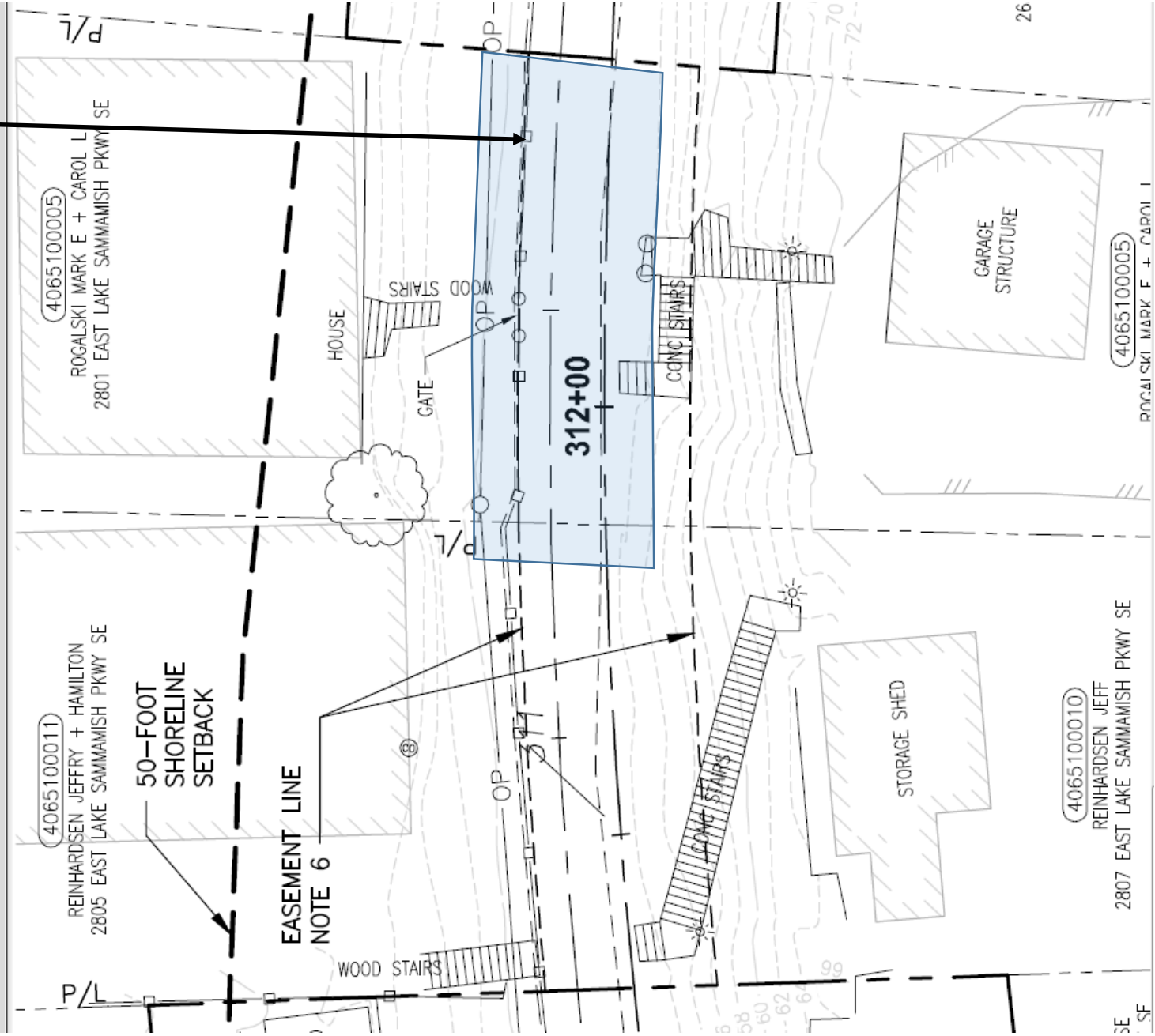
Thank you,

Mark and Carol Rogalski

Thursday, January 26, 2017

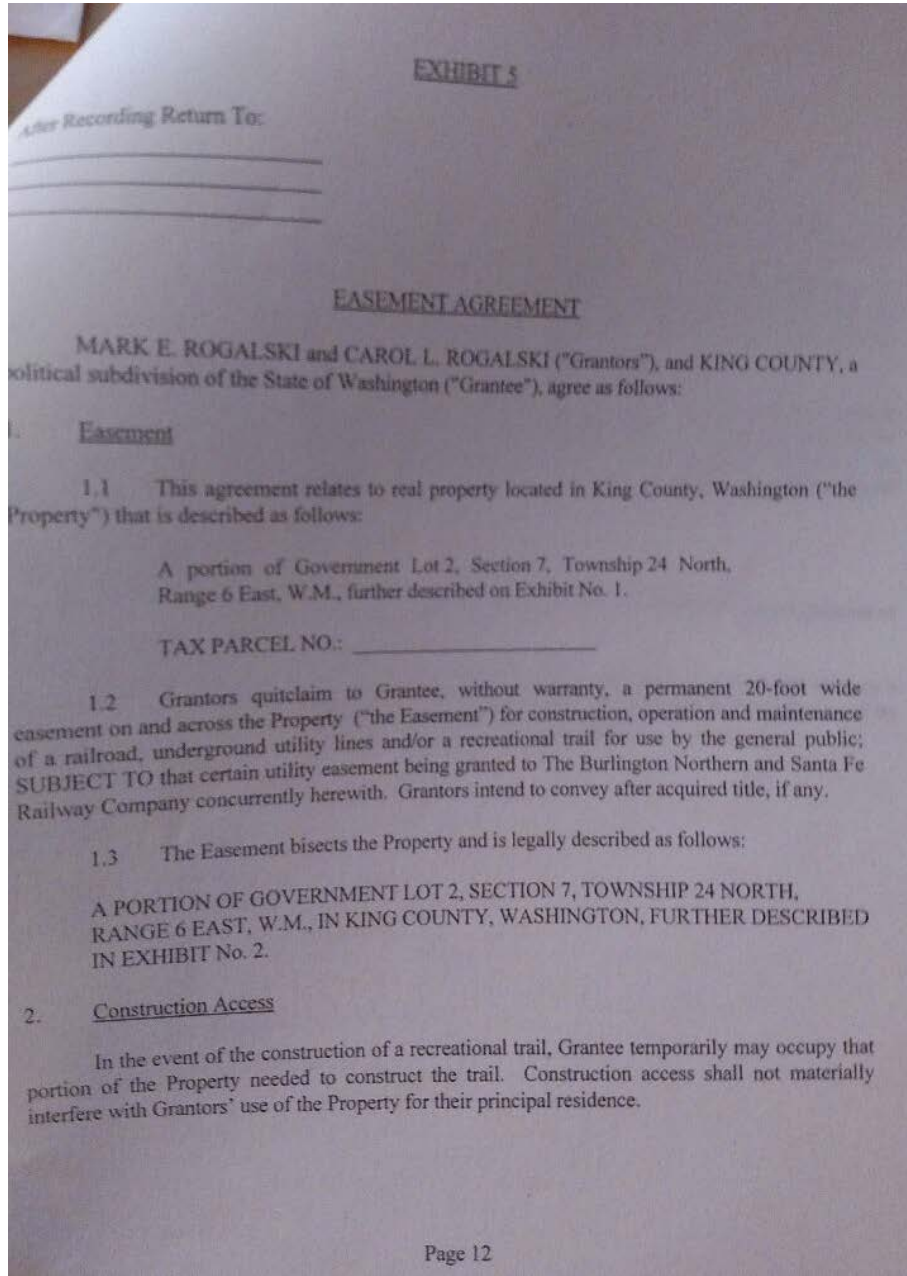


20 ft Easement not at center line of removed tracks.



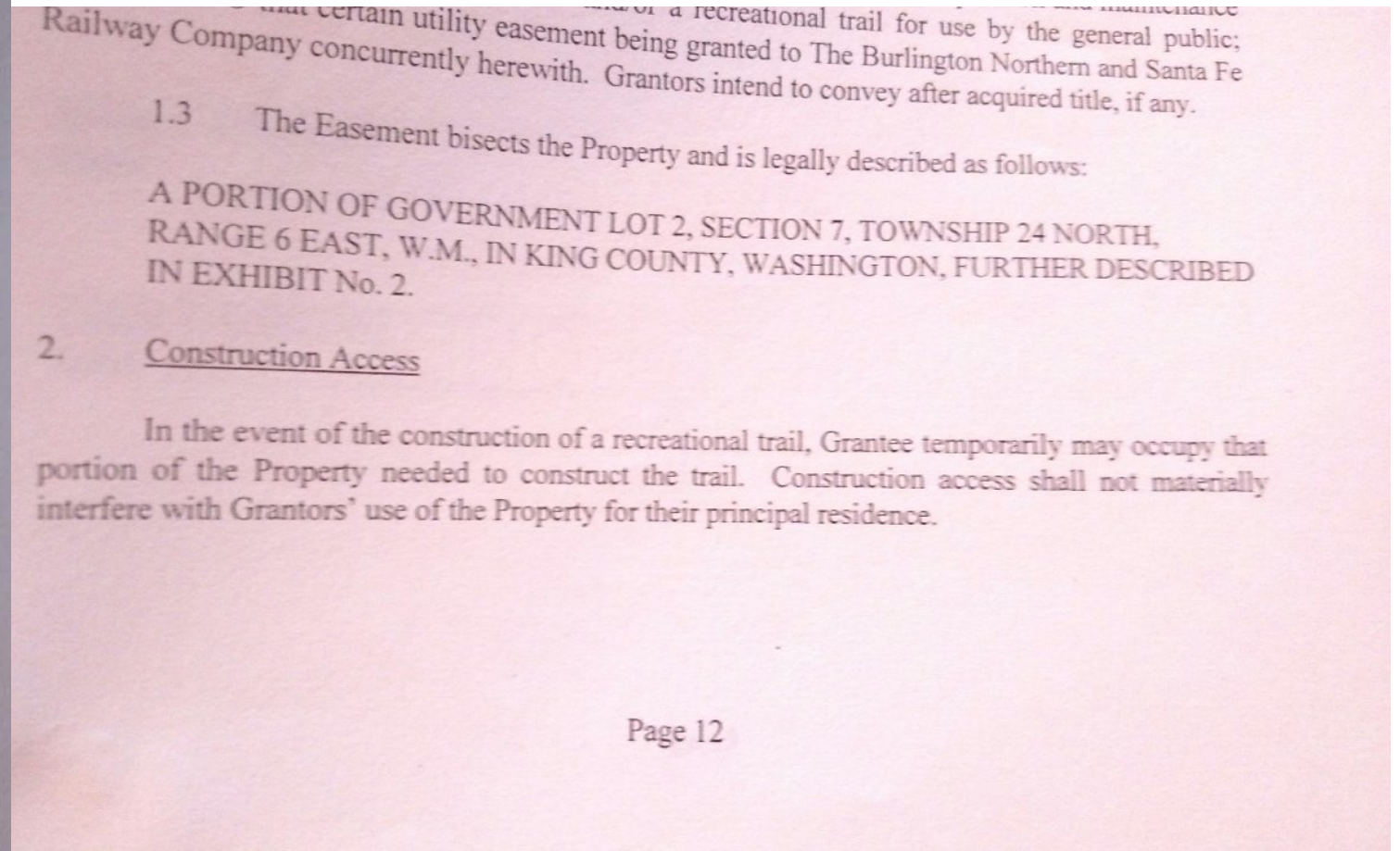
East Lake Sammamish Master Plan trail South Sammamish Segment B 60% review

Garage floor height is at 64 ft and trail is proposed at ~ 51 ft



Excerpts from Quit Claim Deed, March 4, 1999 easement agreement.

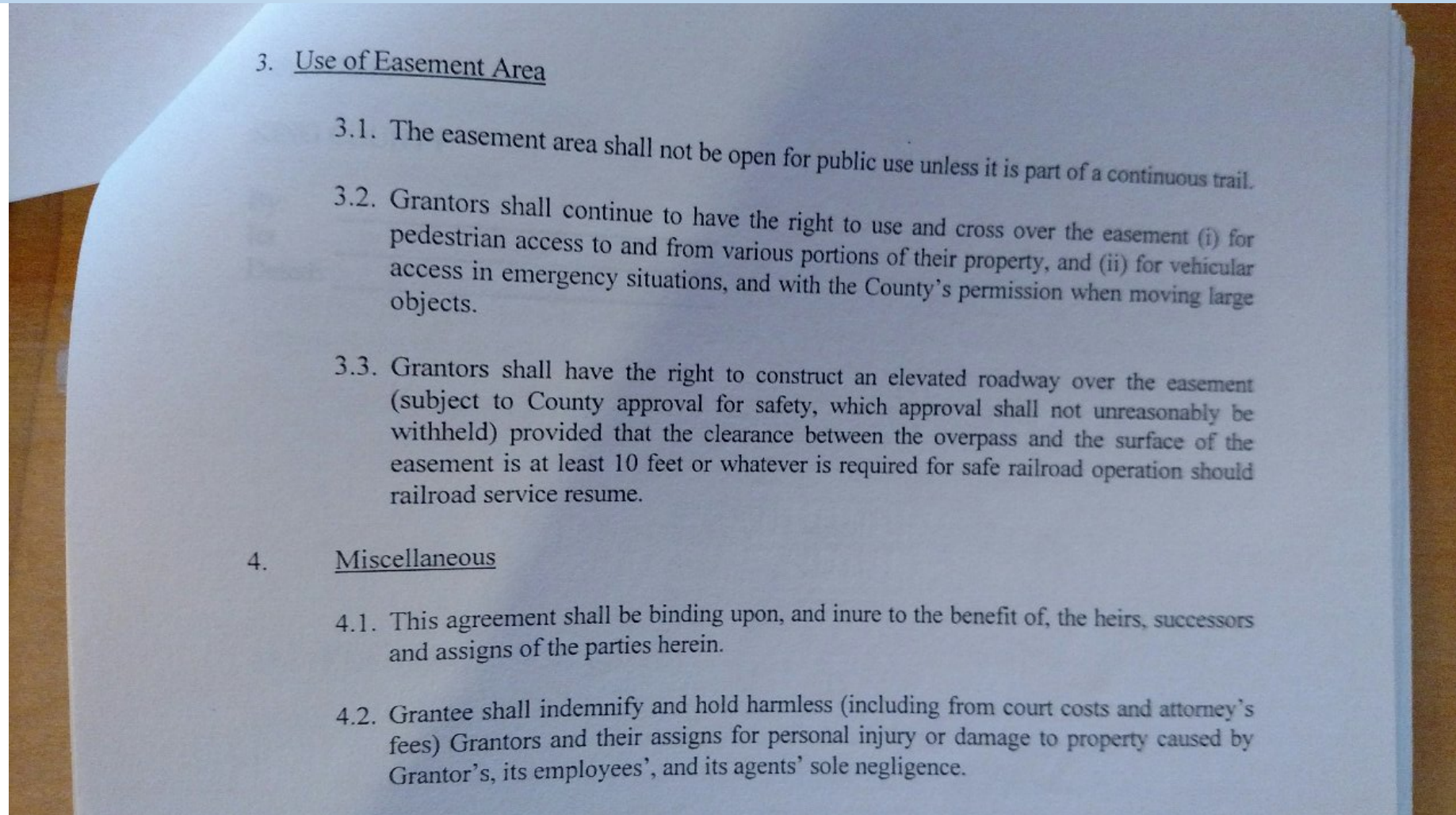
Clarify construction requirements to have access during construction of trail improvements.



Excerpts from Quit Claim Deed, March 4, 1999 easement agreement. Page 13.

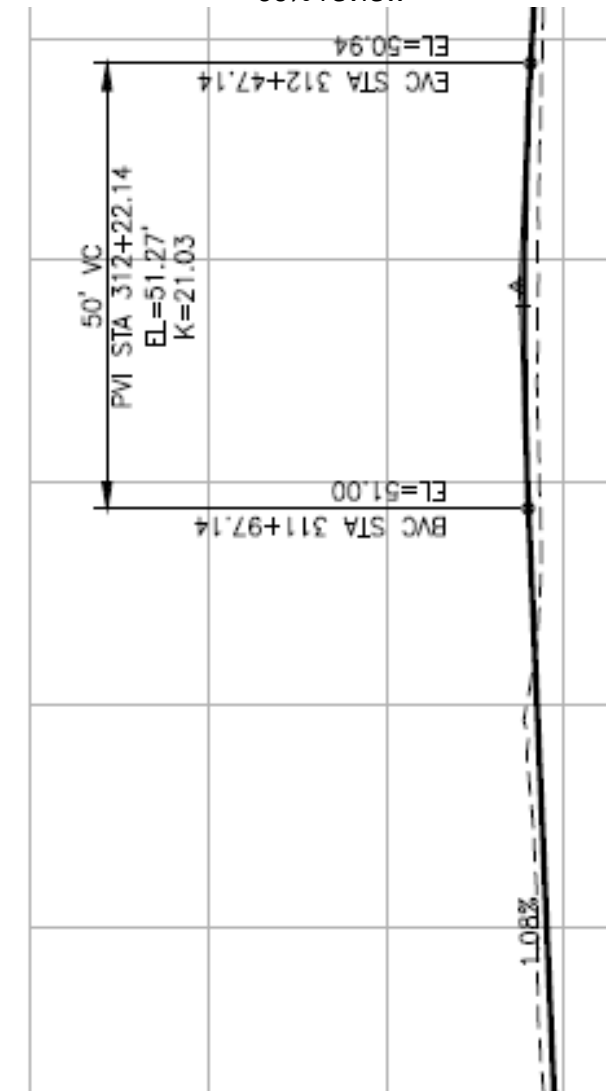
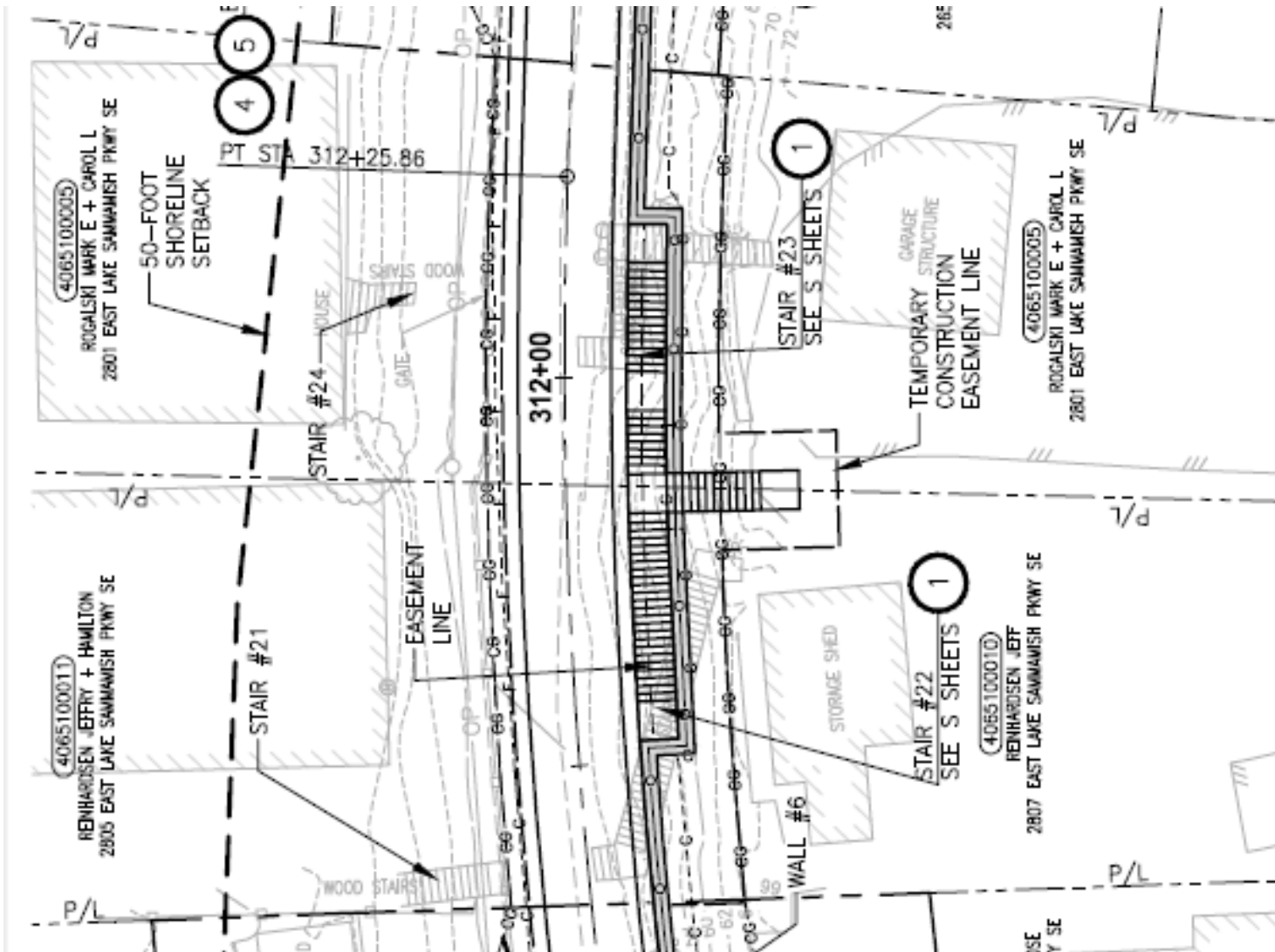
Item 3.2; Clarify homeowners use of easement for emergency access and moving of large objects

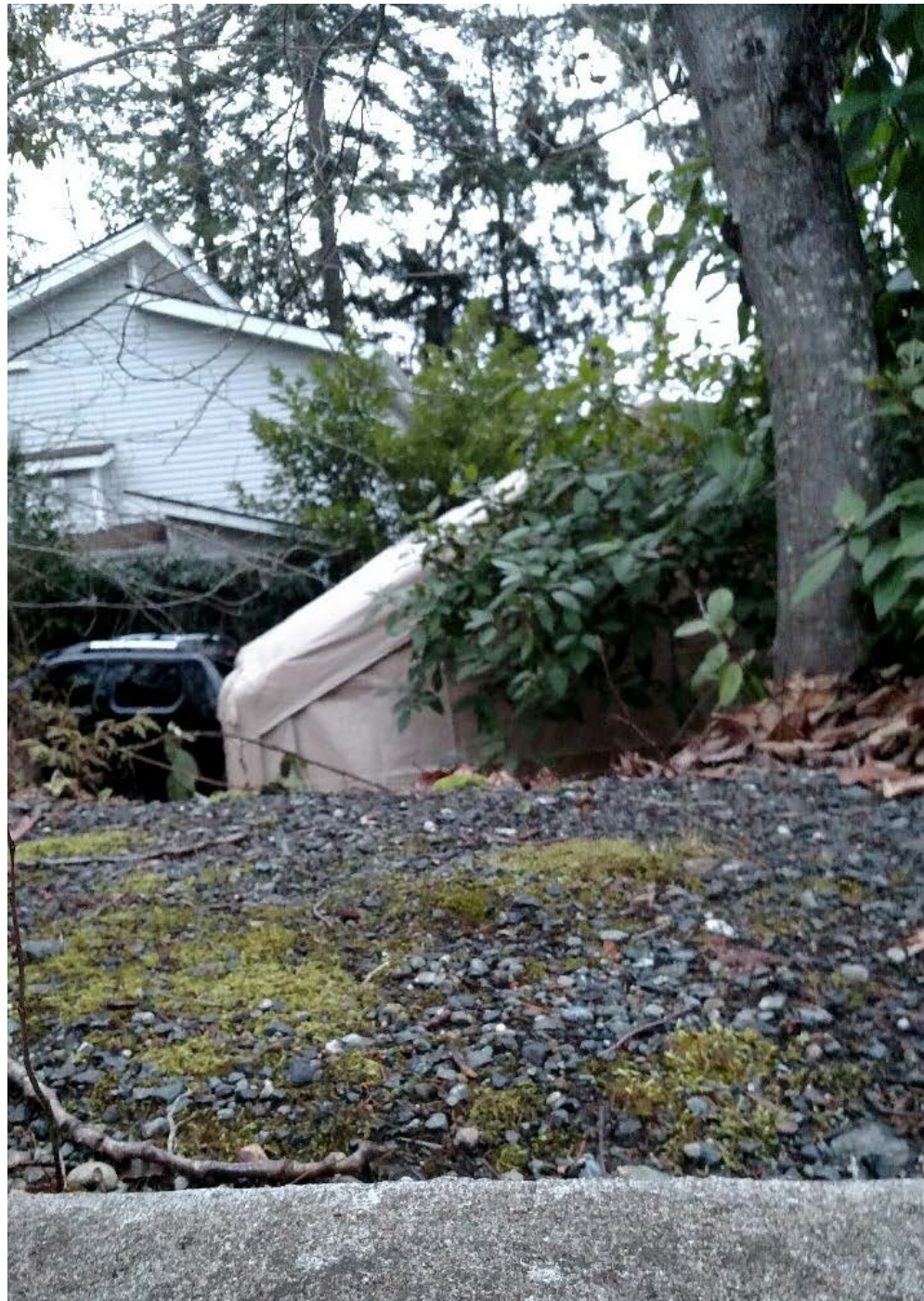
Item 3.3; right to construct an overhead roadway or walkway over the easement at a height of not less than 10 feet. Thus the mid level platform must accommodate at least this height and the weight of the bridge. Planned construction is for a 4 – 6 foot walkway Or there must be room to add in post in front of the wall to support the walkway.



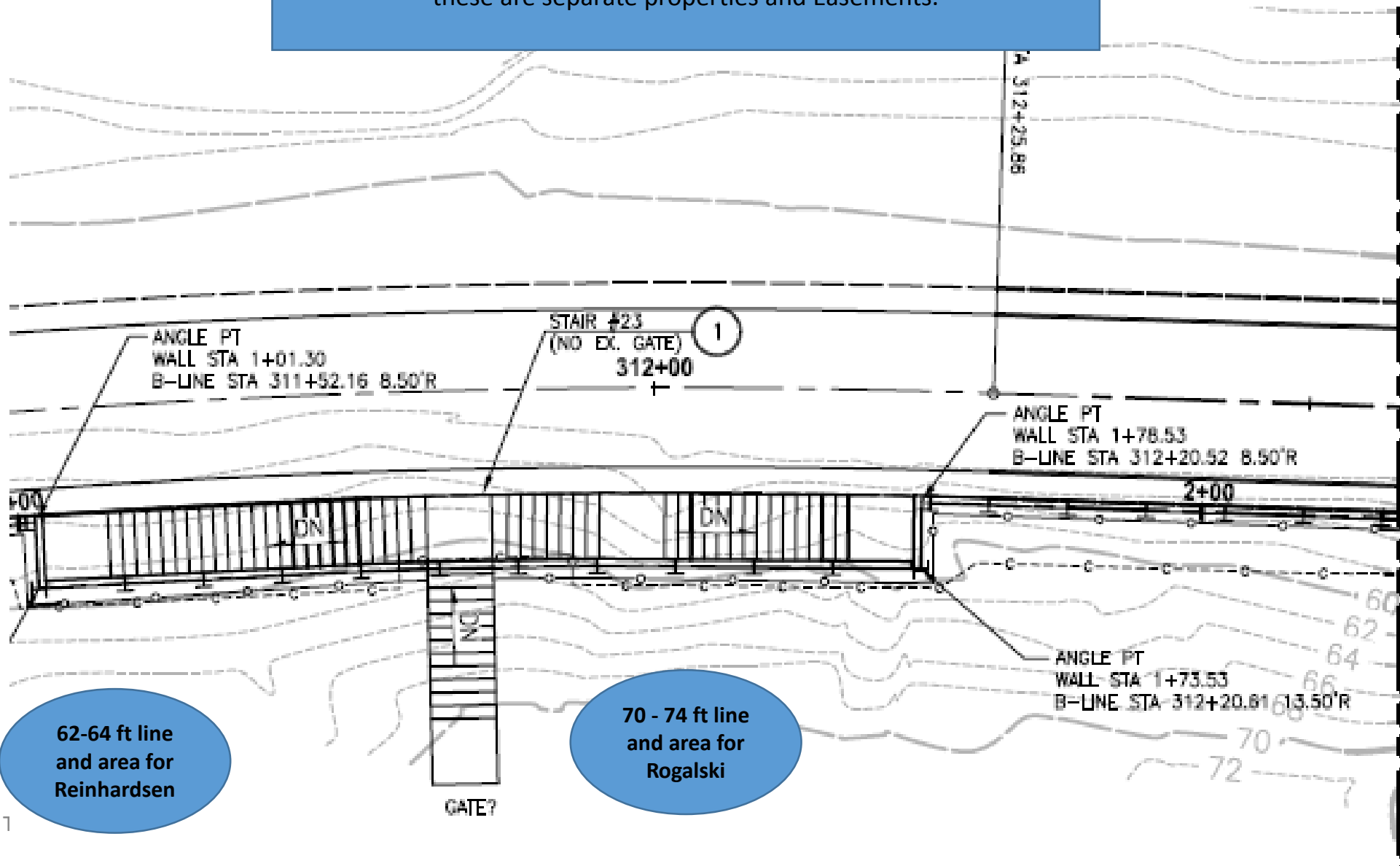
60% Plan showing only a single combined access for top elevation for two properties on property line. These are separate properties. Privacy is an attribute for these properties. Currently there is no easy access from the Reinhardtsen property to our upper garage without going way around for visitors of both households.

Sheet 39 of 135 (East Lake Sammamish Master Plan trail South Sammamish Segment B 60% review





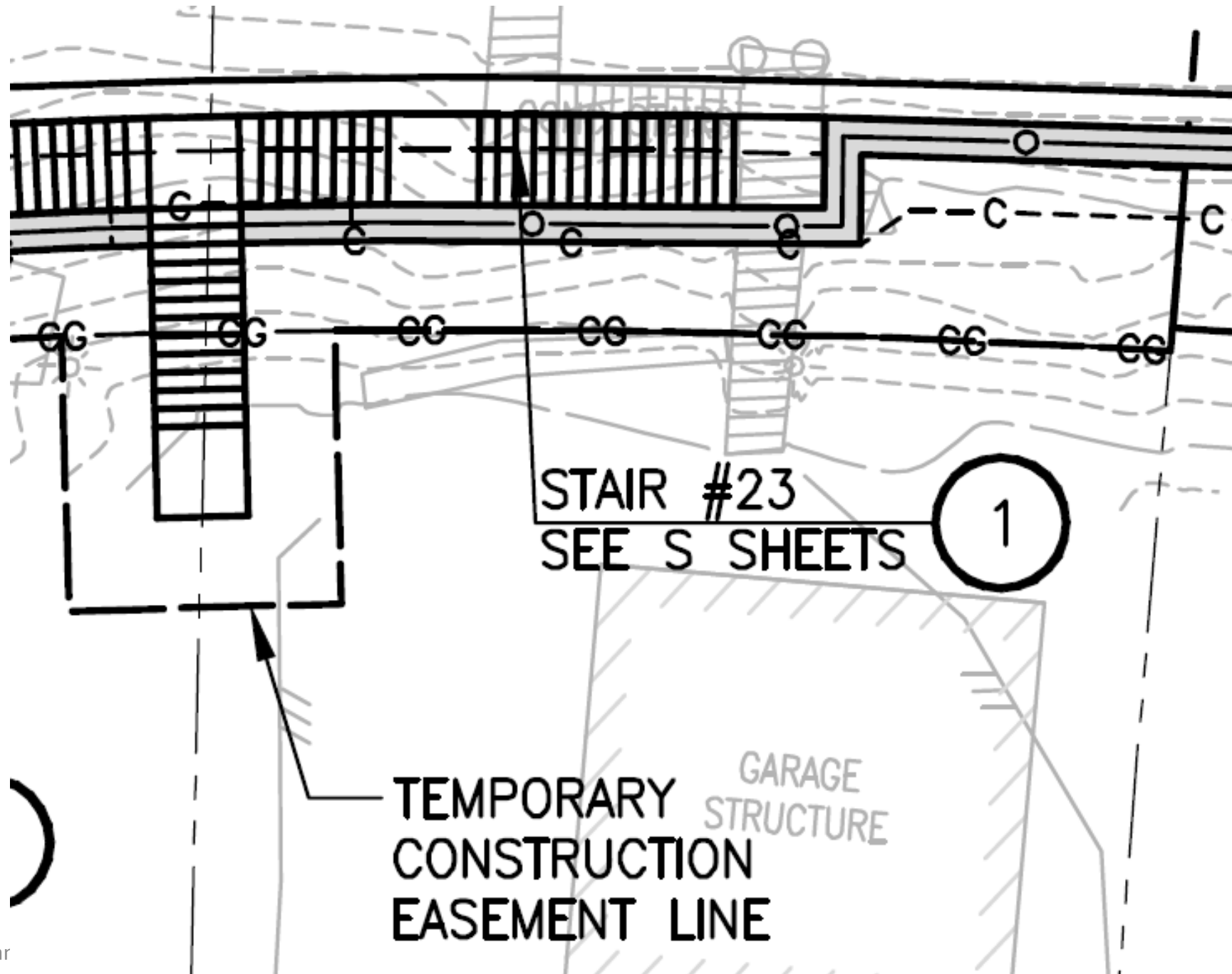
Gate required at trail entrance. Tope entrance needs to be separate as these are separate properties and Easements.

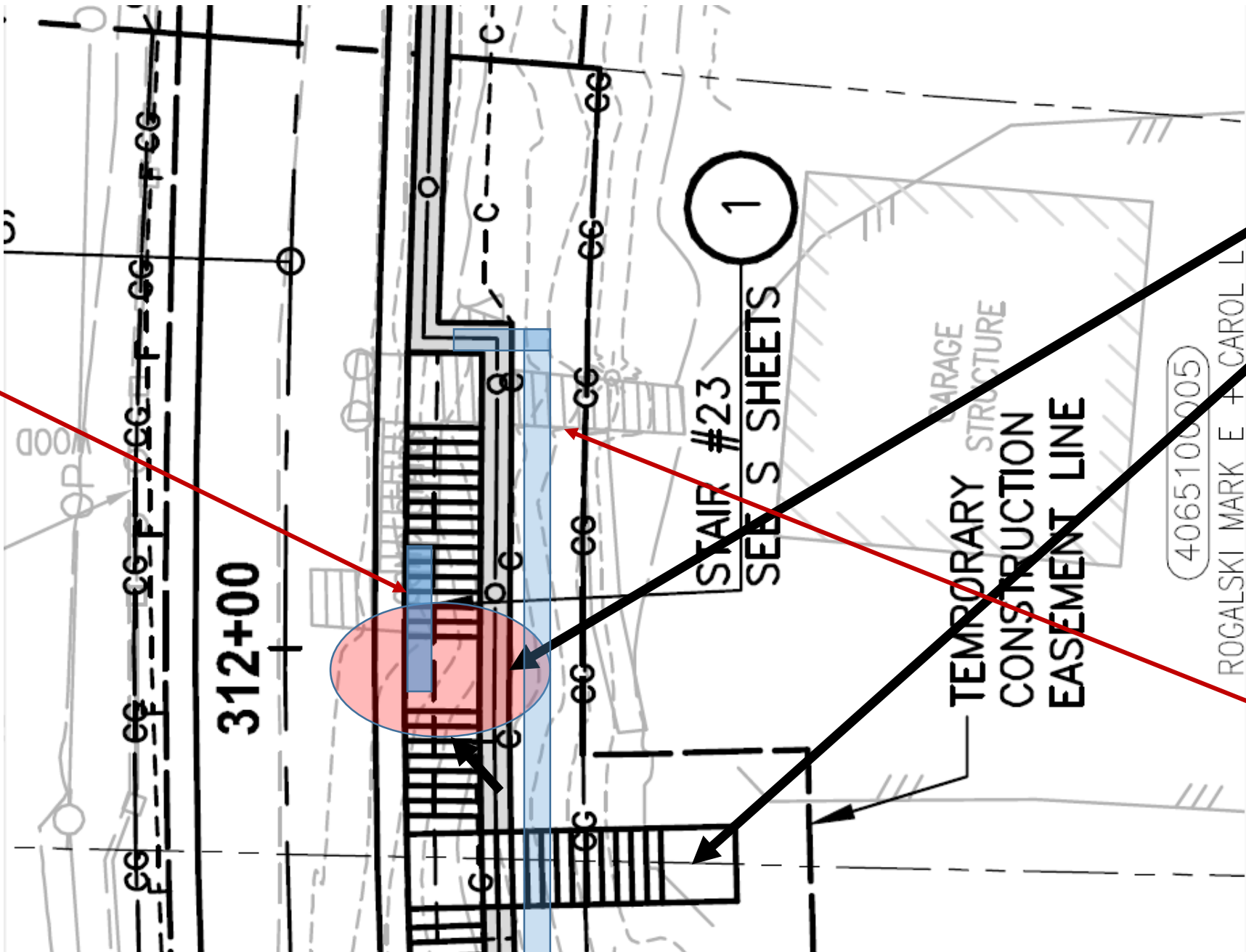


Wall #6 Wall Profile

62-64 ft line and area for Reinhardsen

70 - 74 ft line and area for Rogalski





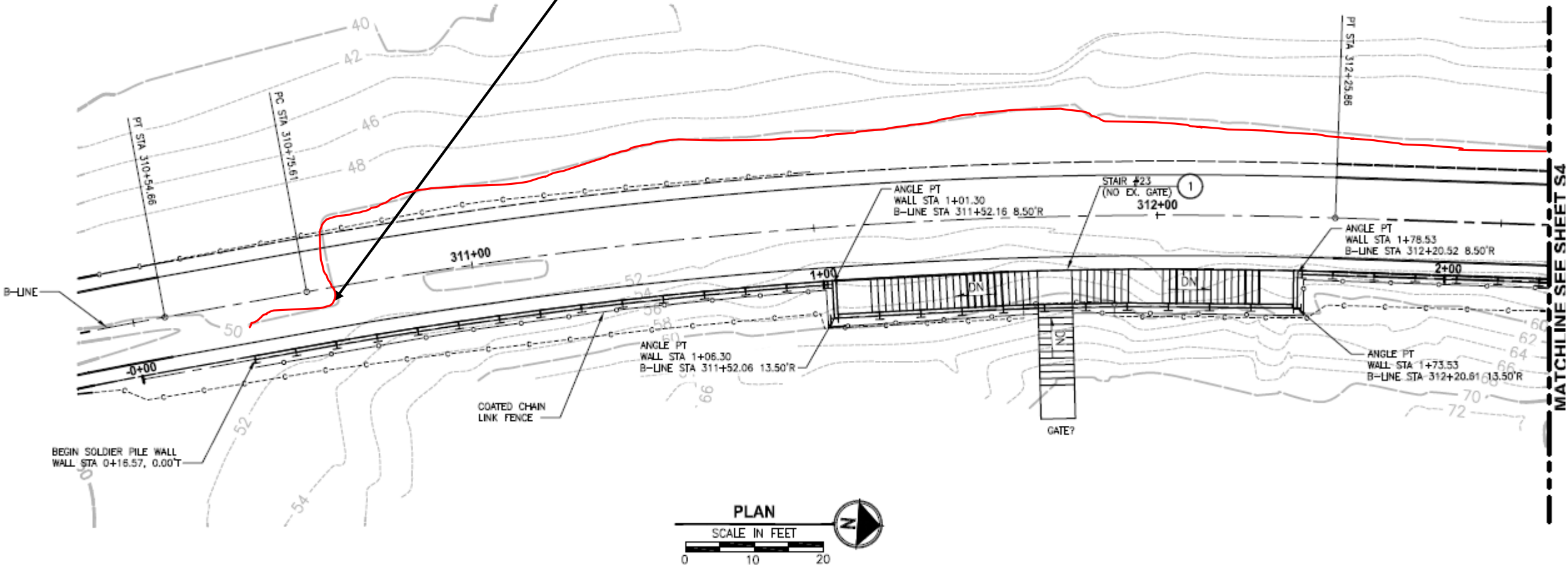
Support footing with pillar attach anchors in front of wall to attach pillars to support overpass. (option concept)

Platform need to at least 10 feet above trail and capable of supporting a bridge or bridge attachment is higher.

Staircase is not aligned with garage door for future bridge. A separate stairs allows this and avoids other conflicts of height and property separation.

Engineering options for discussion. Stairs could be brought into the hillside more than indicated and a base footing at trail height Footing could be inserted in front of the wall to accommodate supporting pillars to support a bridge as a option or the platform cold be made larger with capability to support the bridge structure at the correct height. Stairs can go either direction to accommodate single property access. Platform size will also need to be discussed.

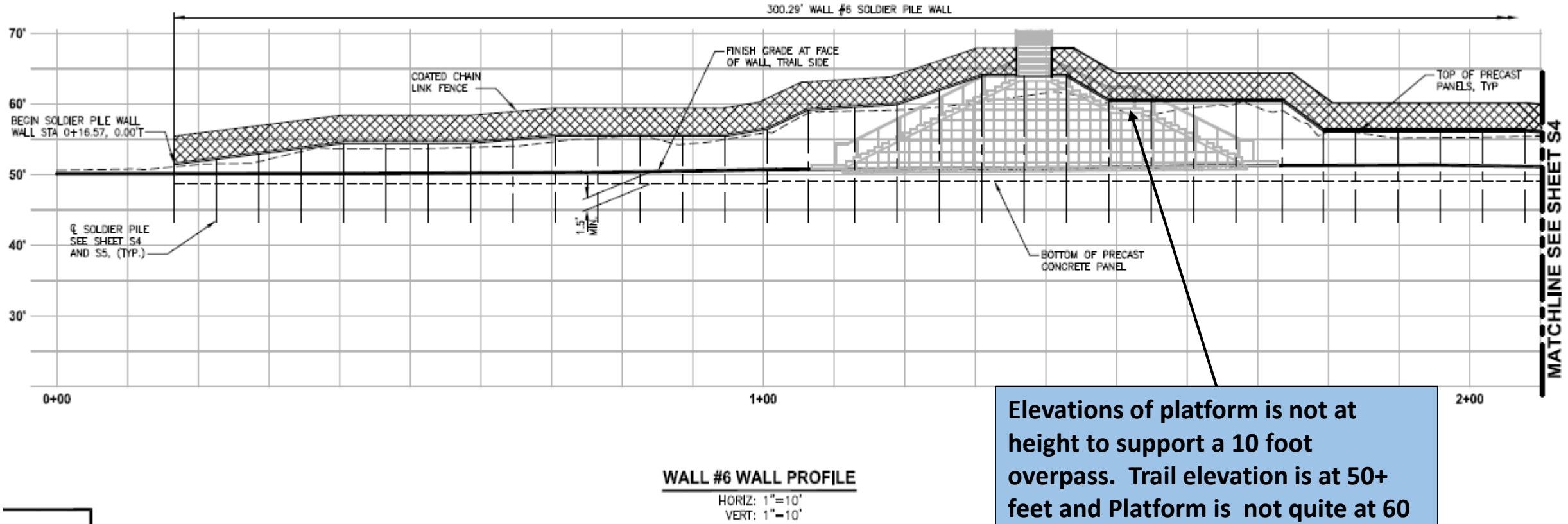
Elevations are not consistent with previous Surveys. Easement elevation is at 46- 47 feet and not at 50 feet as shown on these plans. Center line of Easement is at 46.9 Ft.



Elevations are not consistent with previous Surveys. Easement elevation is at 46- 47 feet and not at 50 feet as shown on these plans. Center line of Easement is at 46.9 Ft. Needs correction to assure elevations are consistent with current grade within reason of conversion to a trail. Plans for bridge are relative to existing trail/Grade height. Correct/reconcile elevations and provide drainage plan.

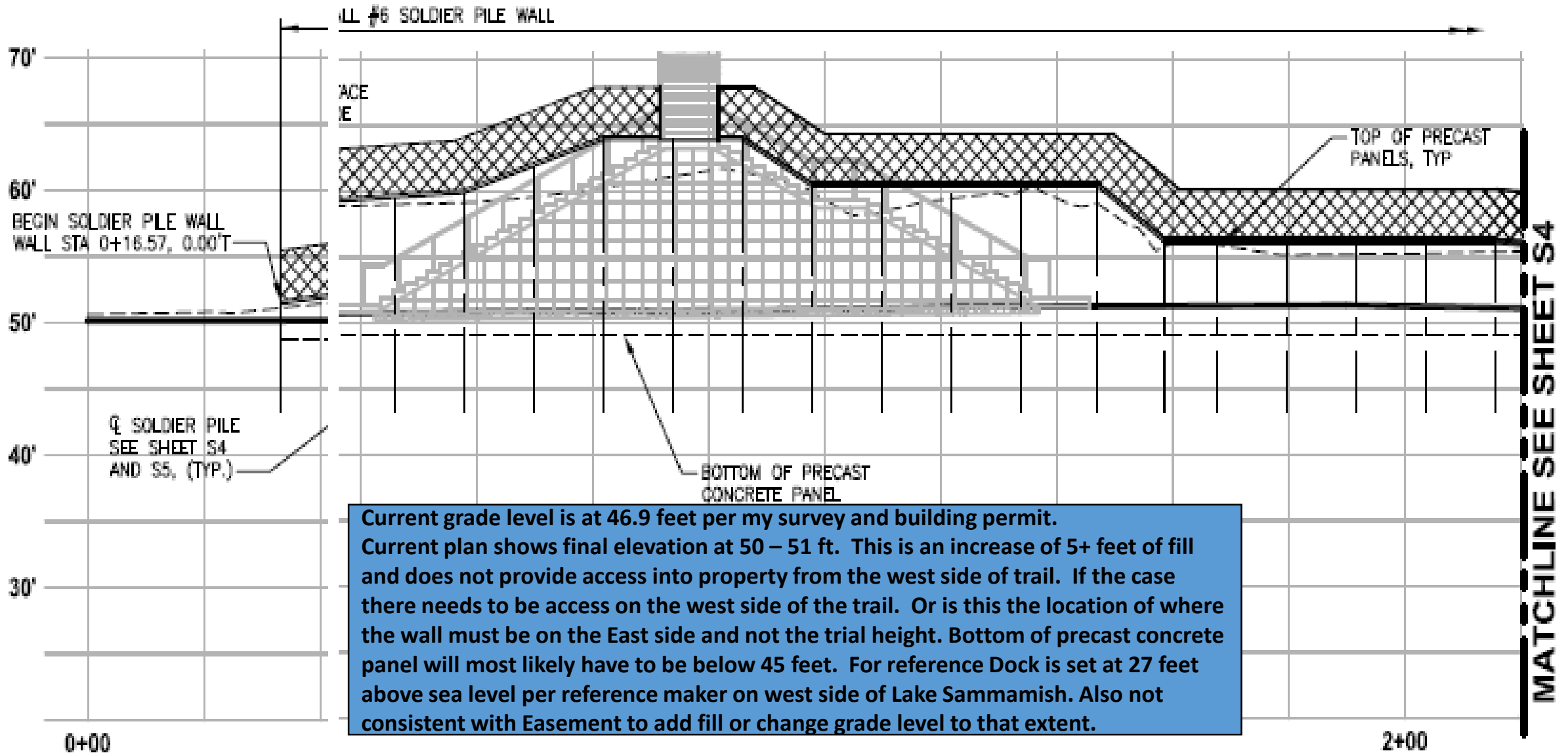
Sheet 108 of 135 (East Lake Sammamish Master Plan trail South Sammamish Segment B 60% review

Wall #6 Wall Profile

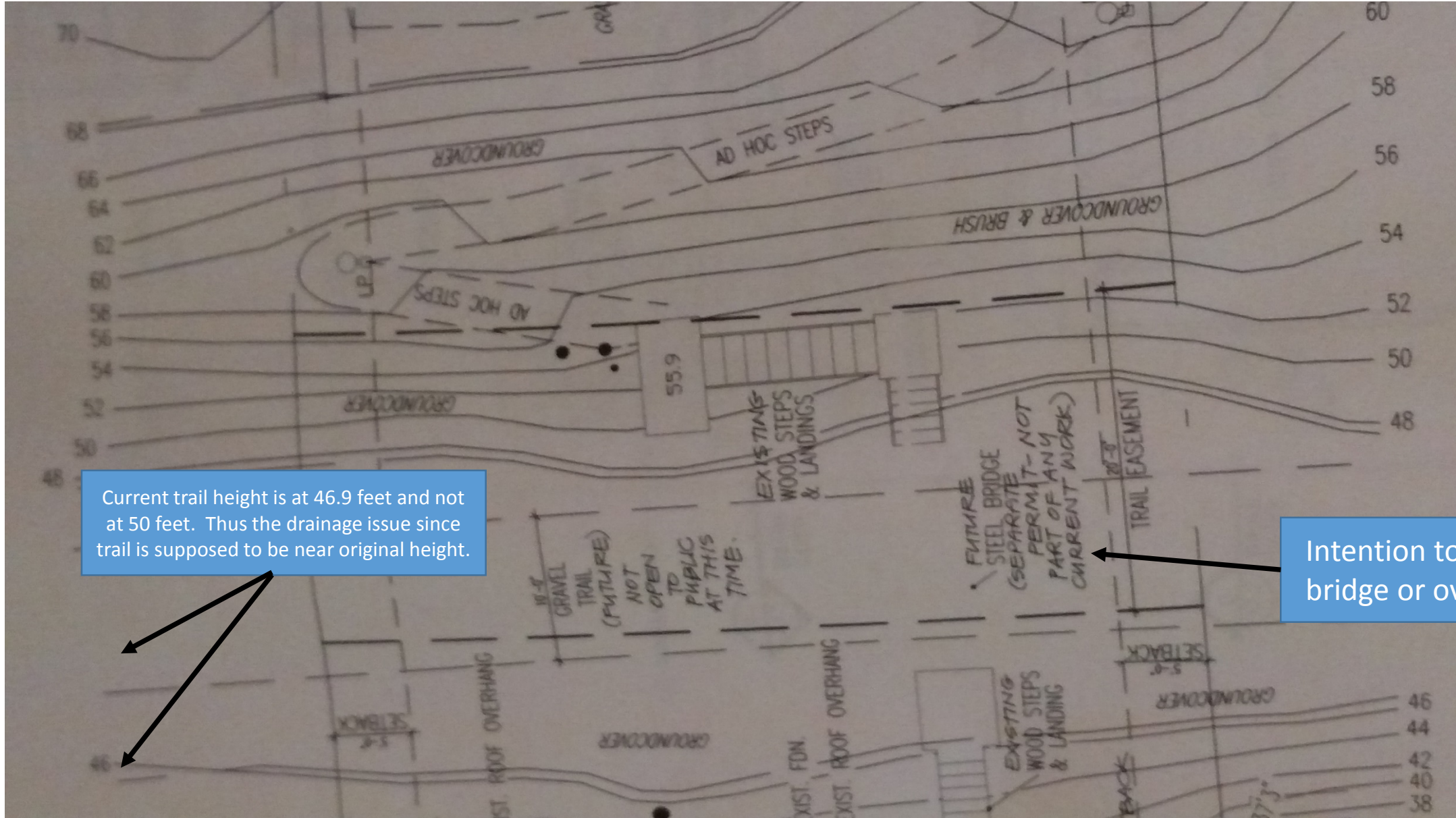


Elevations of platform is not at height to support a 10 foot overpass. Trail elevation is at 50+ feet and Platform is not quite at 60 feet. See commends on bridge requirement's and concept on slides 18, 19 and 20.

Wall #6 Wall Profile



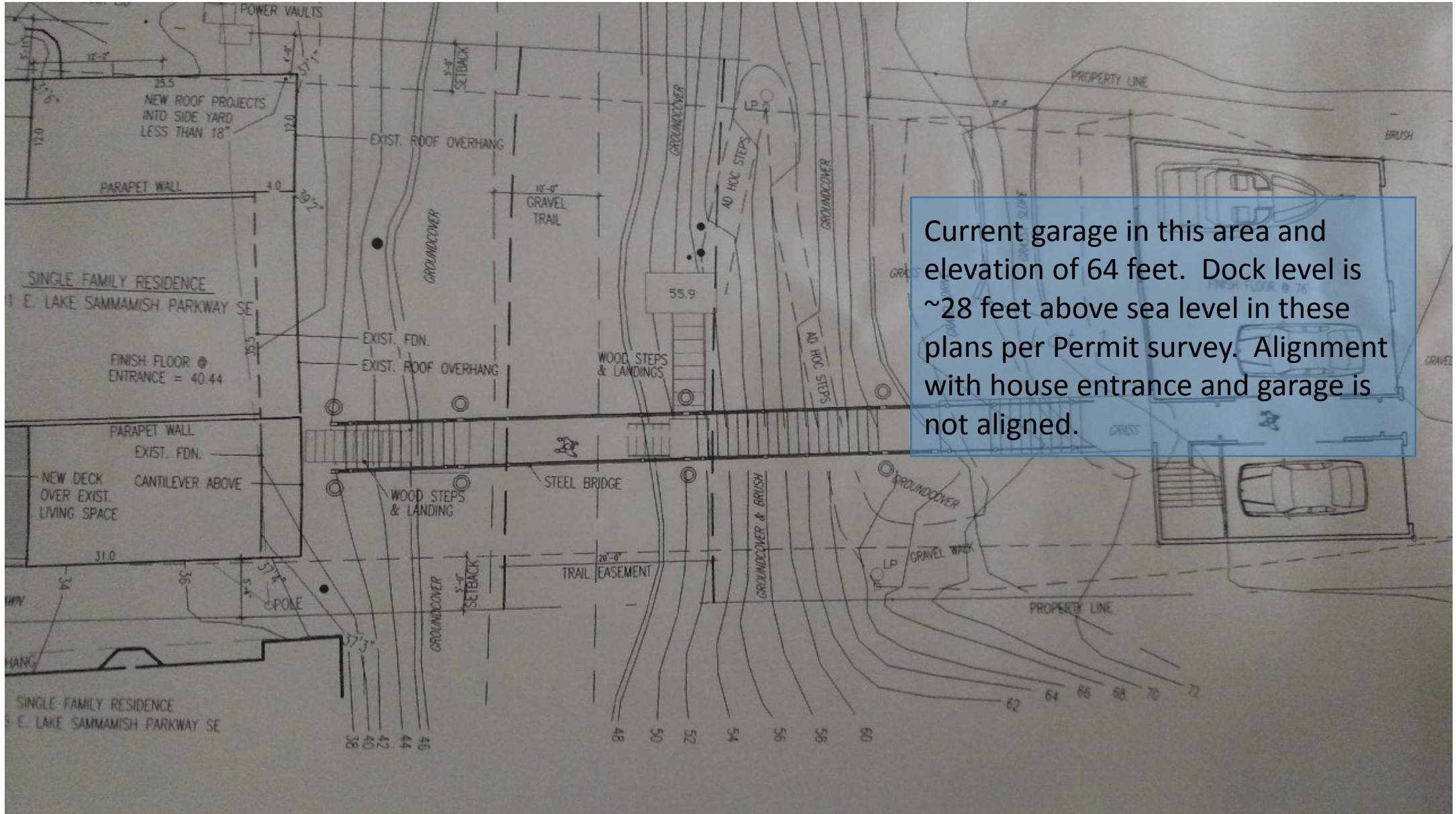
Building plans from 1999 showing land layout and the intention for a bridge over the trail.



Current trail height is at 46.9 feet and not at 50 feet. Thus the drainage issue since trail is supposed to be near original height.

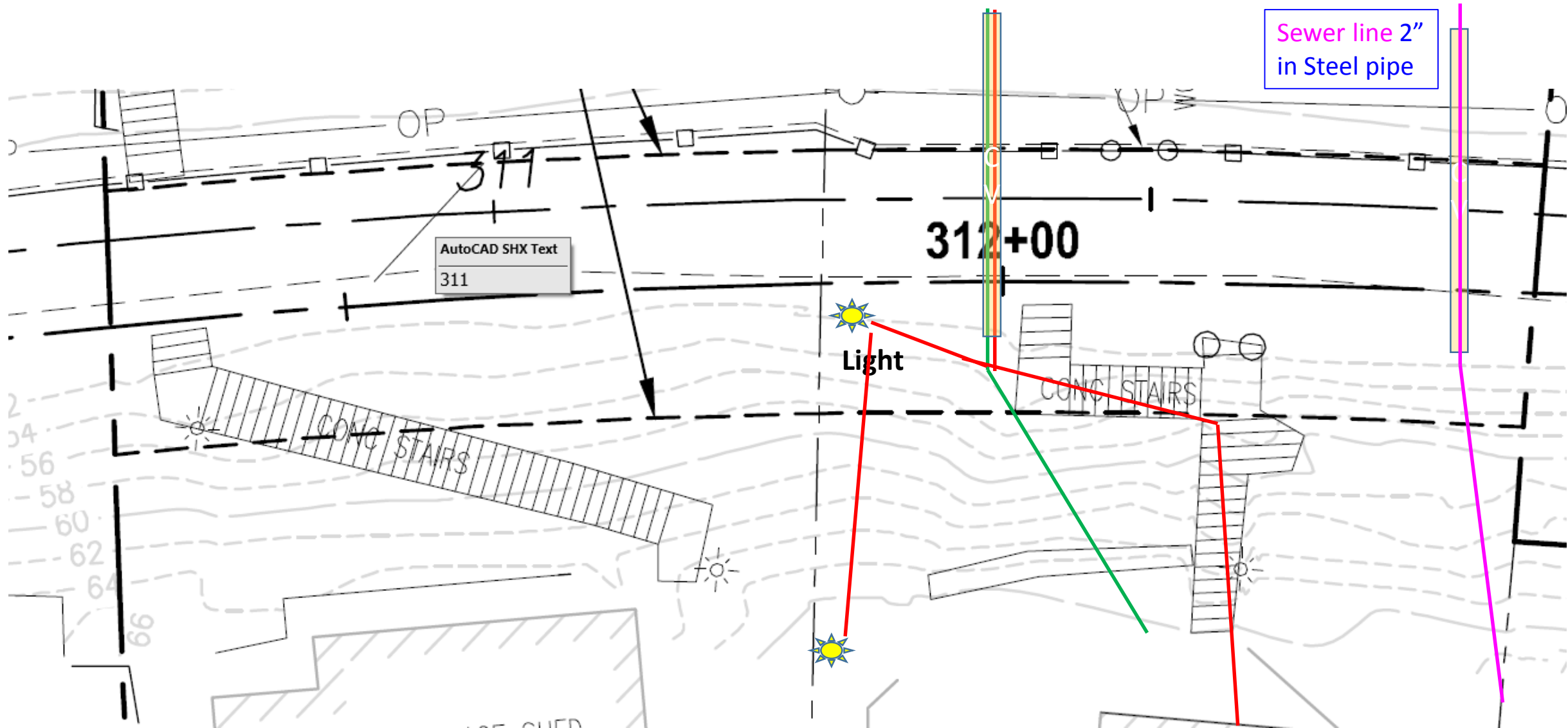
Intention to build a bridge or overpass.

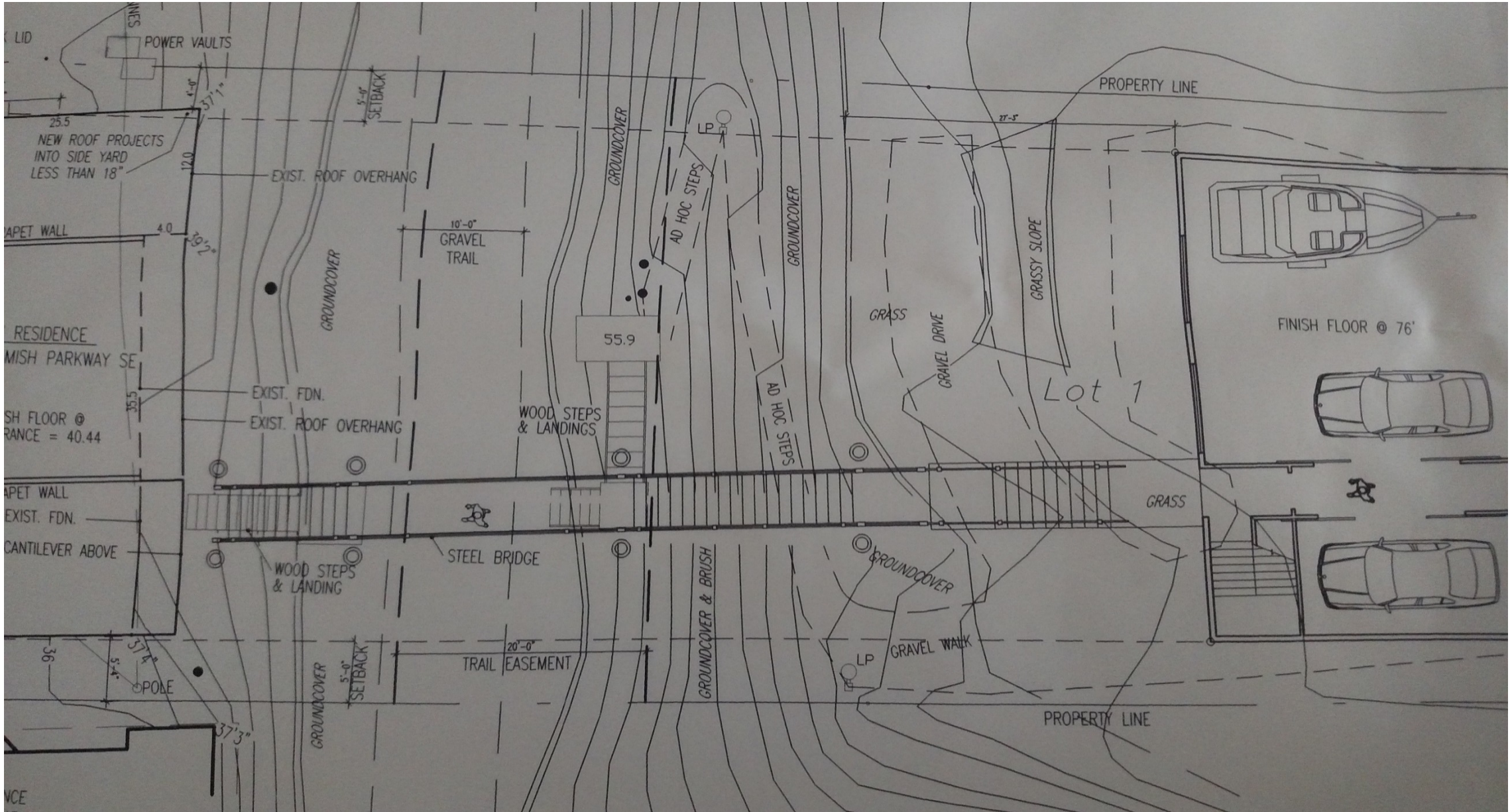
Building plans from 1999 showing land layout and the intention for a bridge over the trail. Garage ended up being at the lower elevation of 64 ft. and not 70 feet as indicated in plans.



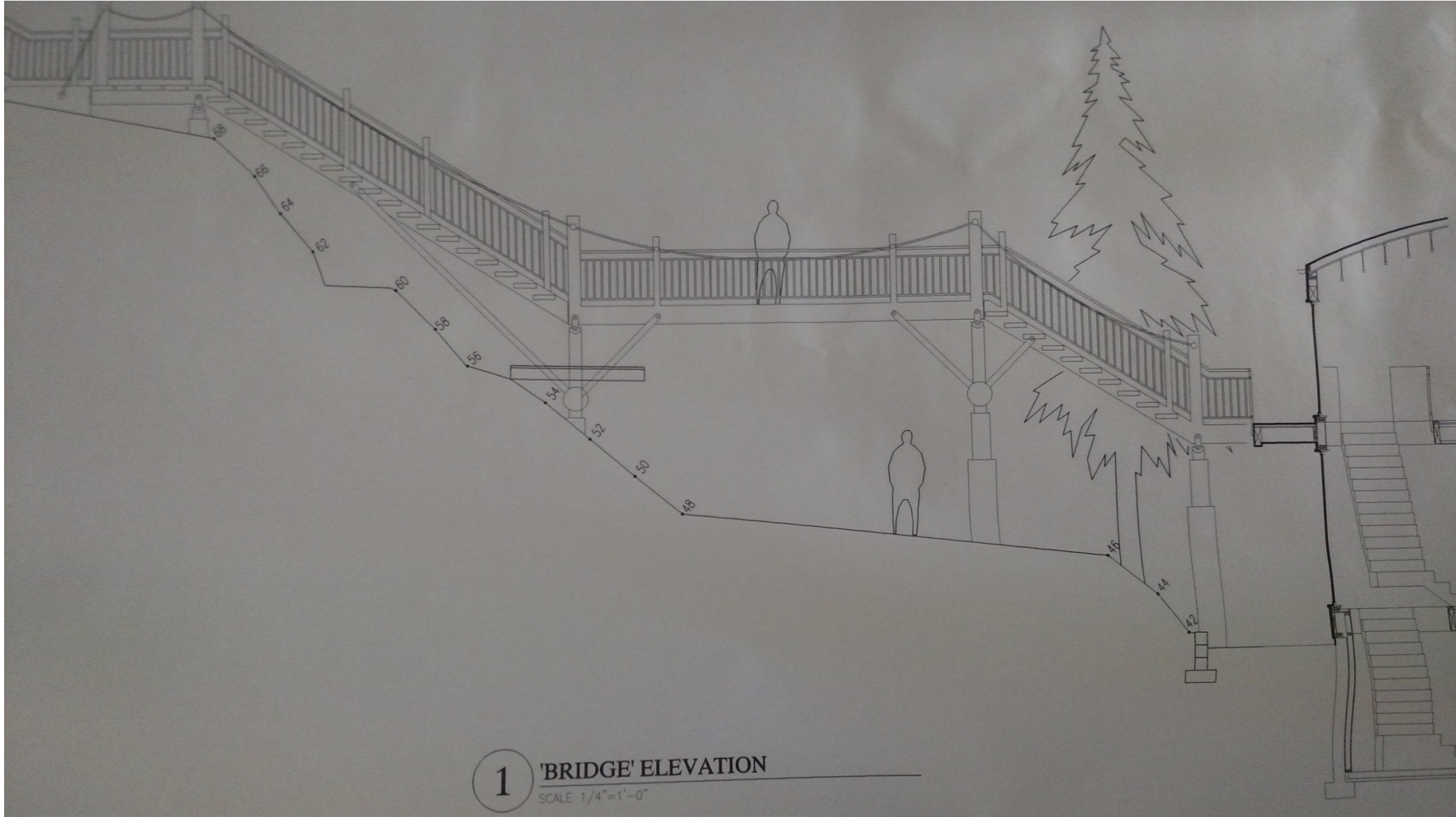
Steel pipe and electrical and water

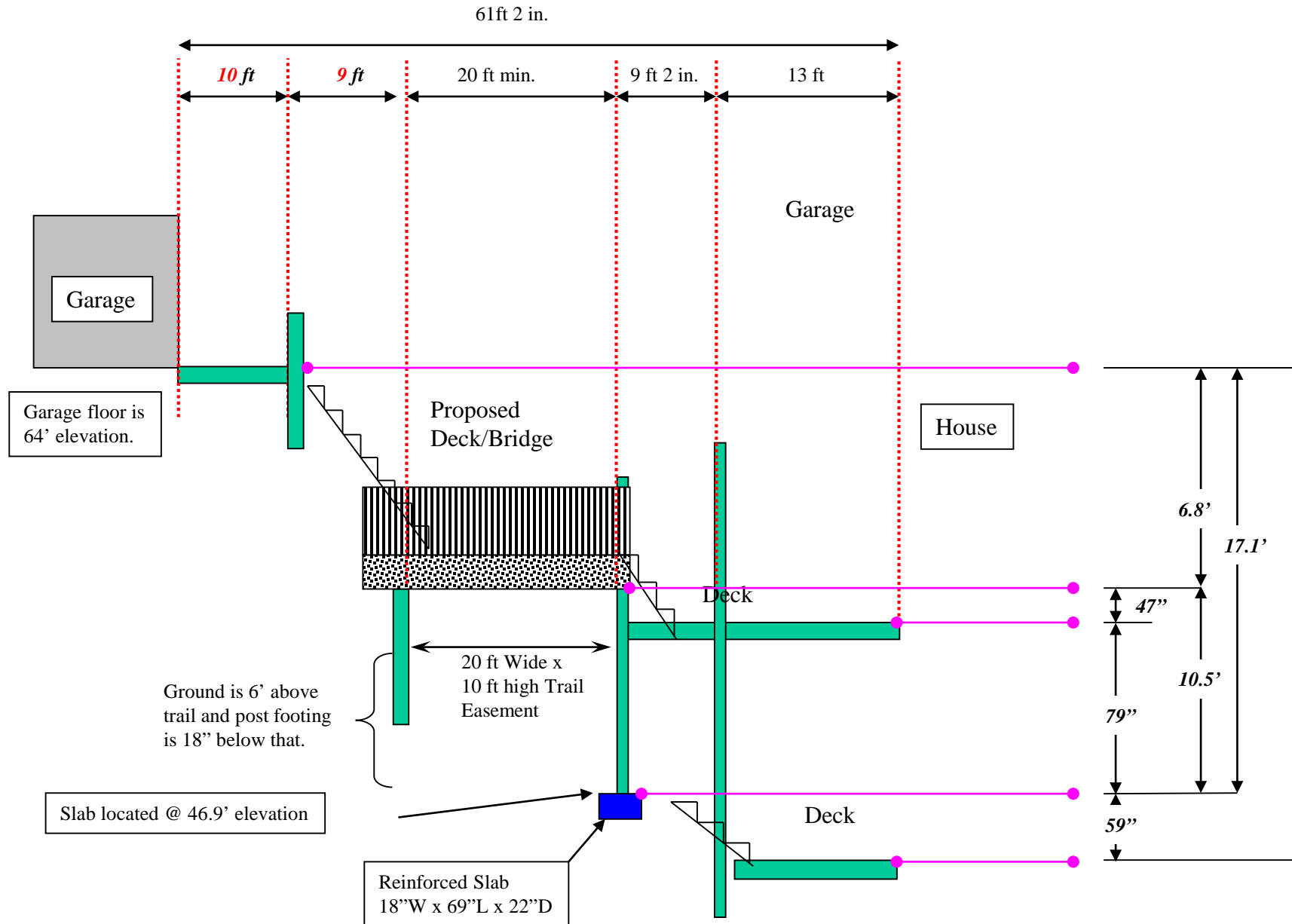
Sewer line 2"
in Steel pipe





Artist rendition of potential walkway over easement (1999)





Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:53 PM
To: 'saeed abtahi'
Subject: RE: ESLT segment 2B design

Dear Saeed,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your additional comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: saeed abtahi [mailto:msabtahi@gmail.com]
Sent: Thursday, January 26, 2017 9:59 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: RE: ESLT segment 2B design
Importance: High

Hi Lindsey,

I had an opportunity to examine the plans at the City today. I have some more questions and concerns as listed below. I have sent these to Lindsey Ozbolt too. My comments concern Section 337 to 342 and Wall 12B

- The trail alignment from section 339-342 requires clearing and grading of very steep slopes on the west side of proposed trail. This work can significantly erode the slopes and harm shorelines of Lake Sammamish. There is no apparent reason why the alignment cannot be shifted to the east through this area. The right of way east of trail is very flat and makes much more accommodating to place the trail there. It will be a lot more cost effective with a lot less impact to the environment.
- Wall 12B for rest area is designed to be about 6' tall and on the steep slopes west of trail. Construction of such tall wall will require additional deeper excavation and possibly shoring of slopes or driving deep pin piles which are significantly costly and could further erode the slopes and impact the shorelines. There is no apparent reason why the bike stop cannot be located on the east side of the trail and in the same vicinity or further north or south? It will not require massive fill and retaining walls PLUS it will save a lot of tax payer dollars.
- The plans DO NOT show any fencing on the west side of trail from section 337 to section 342. However, fencing is shown north of 342 and south of 337. Why is that? This area has been a community beach for residents of this neighborhood. Why is the existing fence being removed without replacement just like the other sections of the trail?

These are significant issues that impact our community and our neighborhood for no apparent reason. They can all be mitigated with minor adjustments to the design while maintaining the integrity of the proposed trail.

Saeed Abtahi

(425) 869-1212 office

(206) 484-0028 Cell

(425) 869-6795 Fax

From: Lindsey Ozbolt [<mailto:LOzbolt@sammamish.us>]

Sent: Wednesday, January 25, 2017 10:45 AM

To: saeed abtahi <msabtahi@gmail.com>

Subject: RE: ESLT segment 2B design

Dear Saeed,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: saeed abtahi [<mailto:msabtahi@gmail.com>]

Sent: Tuesday, January 24, 2017 10:08 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: ESLT segment 2B design

Hi Lindsey,

My property is located at 2033 East Lake Sammamish Place SE, which is next to the trail and part of segment 2B. I have reviewed the 60% plans, in particular sheets 16,17,44,45,87,99 and 112 which relate to area adjacent to my property and my neighbors. I have the following concerns and questions:

- The chain-link fence on the west side of the trail (Sections 339 to 342) will be removed during construction. Why is there is no plan to replace it?
- The wooden fence to the east side of the trail (Section 339) will be removed during construction. Why is there no plan to replace it?
- The Gate to the west of the trail (Section 338 + 50) provides access to private recreation areas. This must not be blocked off during construction.
- The rest area shown on page 45 of the 60% plan (Section 341) appears to be very costly to build due to slopes and potential erosion of steep banks. Why doesn't the County build this rest on the east side of the trail which is fairly flat THUS less impact to environment
- There will be less grading, retaining wall construction, fill, and drainage work on the east side of the trail.

I would appreciate to receive your comments and feedback, especially as it relates to the rest stop design, which is very puzzling. Thank you.

Saeed Abtahi

(425) 869-1212 office

(206) 484-0028 Cell

(425) 869-6795 Fax

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:47 PM
To: 'JudithKeyser@hotmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Judith,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Judith Keyser [mailto:JudithKeyser@hotmail.com]
Sent: Thursday, January 26, 2017 9:04 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

As a mom of three teenagers, I am finally getting back into my hobby of cycling, and the Sammamish trail has been an awesome resource that has allowed me to do that. By completing the trail would allow biking all the way through.

Sincerely,

Judith Keyser
2501 204th Terr NE
Sammamish, WA 98074
425-985-5165

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:48 PM
To: 'JudithKeyser@hotmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Judith,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Judith Keyser [mailto:JudithKeyser@hotmail.com]
Sent: Thursday, January 26, 2017 9:04 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

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When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

As a mom of three teenagers, I am finally getting back into my hobby of cycling, and the Sammamish trail has been an awesome resource that has allowed me to do that. By completing the trail would allow biking all the way through.

Sincerely,

Judith Keyser
2501 204th Terr NE
Sammamish, WA 98074
425-985-5165

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:45 PM
To: 'marywictor@comcast.net'
Subject: RE: Public Comment (1): K.C. ELSTrail Segment 2B--SSDP2016-00415 ~ Stormwater Rules

Dear Mary,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: marywictor@comcast.net [mailto:marywictor@comcast.net]
Sent: Thursday, January 26, 2017 8:06 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Public Comment (1): K.C. ELSTrail Segment 2B--SSDP2016-00415 ~ Stormwater Rules

To: Lindsey Ozbolt / Associate Planner, City of Sammamish
re: **STORMWATER RULES--basically, "What does, and What should apply?" to King County ELST project/permit**

I understand that the Substantial Shoreline Development Permit (SSDP2016-00415) application submitted by King County was "deemed complete" by the City of Sammamish as of December (last month) on the specific date of 12/13/2016. My essential questions/concerns are the following:

a) Does the Permit "vest" to existing codes as of December 2016, or will new codes effective 1-Jan-2017 be required, selected, or elected to apply?

2016 KCSWDM: King County adopted via Ordinance 18257 effective 3-15-2016 after many years of effort and was deemed equivalent to Ecology's.
2016 KCSWDM (Surface Water Design Manual) with Sammamish Addendum was adopted by Sammamish City Council also on 12-13-2016.

Before this, the City of Sammamish adopted 2009 KCSWDM with prior Sammamish Addendum (with bifurcation to 1998 KCSWDM in some cases).

The past year was a BIG one for Storm and Surface water for drainage! The City of Sammamish also updated their SW Comp Plan on 12/13/16. Low Impact Development changes and Code was another (3rd) vital storm/surface water item needing to be updated on/before 12-31-2016.

b) Environmentally "sensitive" Critical Areas must ALL be identified properly, protected, and with past-present-future impacts mitigated:

Since the King County Trail project (final section along East Lake Sammamish Trail--Segment 2B) is voter approved with public funds, it makes sense to try to use the Best Available Science (BAS) and Best Management Practices (BMPs) whenever and wherever possible to ensure that the East Lake Sammamish Trail is

+implemented well and functions for everyone--owners/residents, public, users, visitors, wildlife, etc.
+doesn't have to be redone soon fixing issues not addressed (or known problems, avoiding adverse impacts, and not creating new problems)

+addresses issues and/or mitigates them and their effects--especially related to drainage

+respects infrastructure, private property, public land, ROW & accesses, environment, wildlife, and ensuring improvements/systems work for now and with new development

+properly identifies and protects all Environmentally Critical Areas (ECA)*

*King County has identified environmentally "sensitive" areas and denoted multiple "Sensitive Area Overlay (SAO)" as far back as 1990. These include the following list--ALL which should be reviewed completely for impacts and design considerations with the ELST:

1) wetlands (and bogs)

2) streams (and lakes)

plus "Hazard areas" defined in Code or displayed on Maps (by King County, K.C. iMap, and City of Sammamish Maps/GIS) including...

3) flood hazards (& 100 year floodplain)

4) erosion

5) landslide hazards and landslide hazards drainage areas (soils and slope-based)

6) steep slopes (>15%, >40%, etc)

7) seismic

8) volcanic

and

9) coal mines hazards.

These areas are subject to natural hazards and are lands that support unique, fragile, or valuable natural features. They require buffers, setbacks, etc. to protect them from harmful development impacts. Sammamish has many sensitive/critical areas. {See .jpg screen capture from K.C. iMap}

c) Water Quality is a direct product Storm/Surface Water Management:

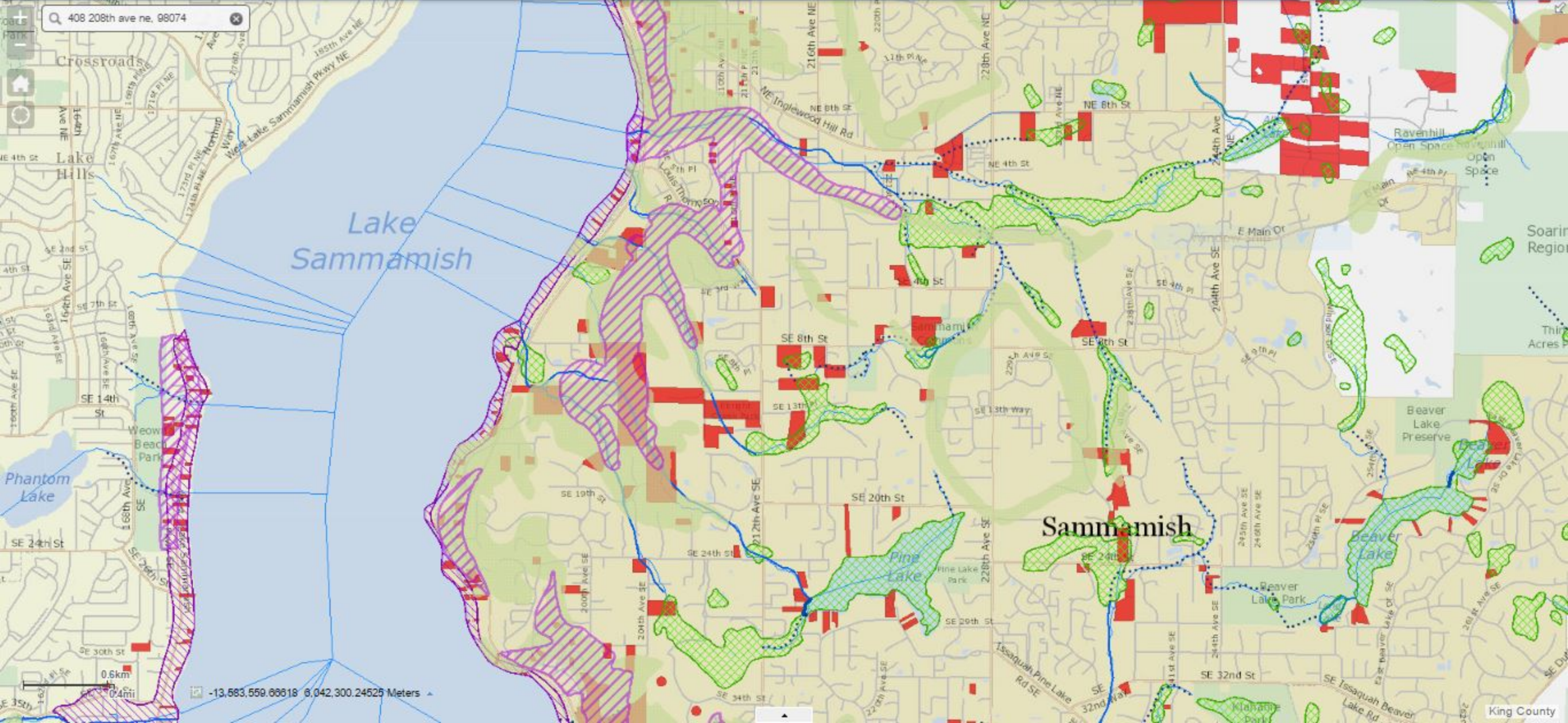
Lake Sammamish is very important and so is protecting it's waters which connect to everyone and everywhere. I believe that NPDES Permit I and II requirements might require Water Quality treatment for the ELST project? But if not, perhaps because the permit application was "complete" just under-the-wire only a couple weeks before 1-Jan-2017, then it should really be done to protect the environment, wildlife and eco-systems, and everyone! Pollutants are better prevented and treated before being released to ground or surface waters... and much less costly than trying to clean them up later. Lake Sammamish is also on the 303(d) list... so water quality should NOT be made worse via pollutants in runoff, but work should be done to make things better via proper controls of the Quantity of Water (flow, velocity, duration) and improving the Water Quality via treatment, etc.

Finally, the new SWDM, Addendum, and Code have many worthy elements too numerous to list here. Some of these include changes such as ditches (linings) and protecting groundwater. City of Sammamish has new code and requirements for stormwater ponds, vaults etc (that might even be applied to wetland area mitigation/protection for more "aesthetics" and better functioning via native

plants.) Landslide and steep slope areas are being updated for stronger protection and to avoid risk or increasing risk of landslides. As this here is only a brief list, any/all new code regulations should be required, or looked and elected to be implemented to make the best of the trail for the region, area, County, City/Cities, and public.

I hope that the newest regulations will be required or selected to be used for storm/surface water, drainage, and other important or related items.

Sincerely, Mary Wictor (Sammamish resident since 6/2000. Redmond/Trail user for 8 years before the millennium too by foot, roller blading, bike, horseback.)
408 208th Ave NE, 98074
425-283-7253 mobile



Details Reports

File #: 2016-0012 Version: 3

Type: Ordinance Status: Passed

File created: 1/11/2016 In control: [Transportation, Economy and Environment Committee](#)

On agenda: Final action: 3/14/2016

Enactment date: 3/15/2016 Enactment #: 18257

Title (Version 3): AN ORDINANCE amending King County stormwater and surface water management requirements to comply with state requirements for stormwater management and improve protection of water quality, aquatic resources, public health, safety and welfare; amending Ordinance 9163, Section 1, as amended, and K.C.C. 9.04.010, Ordinance 9163, Section 2, as amended, and K.C.C. 9.04.020, Ordinance 9163, Section 3, as amended and K.C.C. 9.04.030, Ordinance 2281, Section 5, as amended, and K.C.C. 9.04.050, Ordinance 2281, Section 6, as amended, and K.C.C. 9.04.070, Ordinance 4938, Section 12, as amended, and K.C.C. 9.04.140, Ordinance 10636, Section 2, as amended, and K.C.C. 9.12.005, Ordinance 10636, Section 3, as amended, and K.C.C. 9.12.015, Ordinance 10636, Section 4, as amended, and K.C.C. 9.12.025, Ordinance 10636, Section 5, as amended, and K.C.C. 9.12.035, Ordinance 10636, Section 6, as amended, and K.C.C. 9.12.045, Ordinance 10636, Section 7, as amended, and K.C.C. 9.12.050, Ordinance 10636, Sectio...

Sponsors (Version 3): [Rod Dembowski](#)

Indexes: Surface Water

Code sections: 21A.06 - , 21A.16.085 - *, 21A.24.550 - *, 9.04 - , 9.04.010 - . , 9.04.020 - , 9.04.020 - * , 9.04.030 - , 9.04.050 - , 9.04.070 - , 9.04.140 - , 9.12.005 - . , 9.12.015 - , 9.12.025 - , 9.12.035 - , 9.12.045 - , 9.12.050 - , 9.12.060 - * , 9.12.080 - , 9.20.010 - * , 9.20.030 - * , 9.20.040 - *

Attachments: 1. [Ordinance 18257.pdf](#), 2. [2016-0012 legislative review form.pdf](#), 3. [2016-0012 transmittal letter.docx](#), 4. [2016-0012 Determination of Nonsignificance.doc](#), 5. [2016-0012 Environmental Checklist.docx](#), 6. [2016-0012 fiscal note.xls](#), 7. [2016-0012 KCC 20.18.100 Plain Language Summary.doc](#), 8. [2016-0012 Regulatory Note.docx](#), 9. [2016-0012 Department of Commerce Letter Dated January 13, 2016 to Lisa Verner.pdf](#), 10. [2016-0012 AckLetter Expedited Review.pdf](#), 11. [2016-0012 hearing notice - publish Seattle Times 1-27-16](#), 12. [Affidavit of Pub Seattle Times 1-27-16.pdf](#), 13. [2016-0012 SR StormwaterCode 01-19-16.docx](#), 14. [2016-0012 SR StormwaterCode 03-01-16.docx](#), 15. [2016-0012 Amendment S1.docx](#), 16. [2016-0012 Amendment T1.docx](#), 17. [2016-0012 RevisedSR StormwaterCode 03-01-16.docx](#), 18. [18257 Amendment package 3-14-16.pdf](#), 19. [18257 Adoption Notice - publish Seattle Times 3-30-16.doc](#), 20. [Affidavit of pub for adoption notice - pub Seattle Times 3-30-16.pdf](#)

Staff: Auzins, Erin

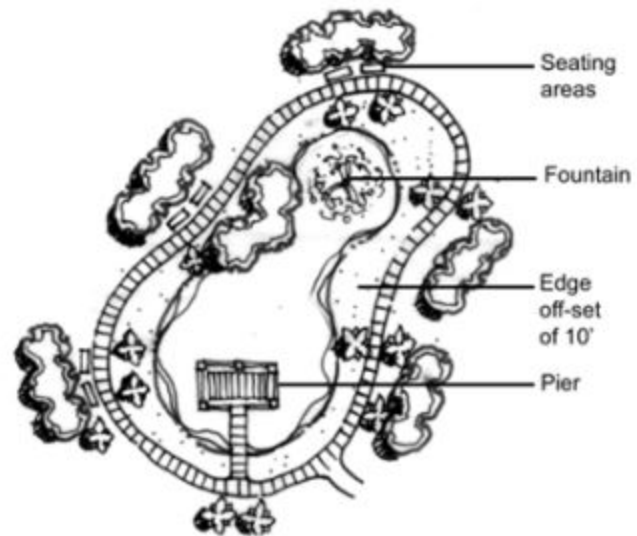
History (8) Text (Version 3)

8 records Group Export

Date	Ver.	Action By	Action	Result	Action Details	Meeting Details	Video
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POOR POND DESIGN



GOOD POND DESIGN

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:27 AM
To: 'Hettich Family'
Subject: RE: East Lake Sammamish Trail Questions and Comments - Hettich

Dear Mike and Christi,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Hettich Family [mailto:hettich7@comcast.net]
Sent: Thursday, January 26, 2017 7:16 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Hettich, Christi <hettich7@comcast.net>; Lindquist, Vern <vern.lindquist@msn.com>; Tsilas, Nick <ntsilas@microsoft.com>; Doug & Lori Birrell <dgb18@comcast.net>; Jeff and Julie Gelfuso <jeffandjulie@live.com>; George <gbreuel@msn.com>
Subject: East Lake Sammamish Trail Questions and Comments - Hettich

Dear Ms. Osbolt,

Attached is a PDF file with questions and comments regarding the proposed expansion of the East Lake Sammamish Trail. Thank you for receiving these comments and we look forward to receiving responses to each question.

If there are any issues opening the file or if you would prefer a Word version to assist in the reply, please let us know and we will forward you a copy.

Best regards,
Mike and Christi Hettich
1419 E Lake Sammamish Shore Lane SE

To: Ms. Lindsey Osbolt
City of Sammamish

January 26, 2017

Subject: East Lake Sammamish Trail Expansion and Impact Questions

From: Michael and Christina Hettich
1419 E. Lake Sammamish Shore Lane SE
Sammamish, WA 98075
(425) 882-1431

Dear Ms. Osbolt,

This letter is a request for response to the below questions regarding King County's plan to expand the East Lake Sammamish Trail in the South Sammamish B Segment.

We respectfully request written responses to the questions contained in this letter. In addition, there are some observations and/or alternate suggestions for lowering the impact of the trail expansion on the environment, community, and residents while providing for successful implementation of the trail changes. After careful consideration of the alternatives suggested, please provide a written response for each item.

Background information: Per the King County plans, our property and residence is located on, page 49 of 135, Driveway #9, Plan ID 363+00.

1. Clearing and Grubbing Line/Fence – During Construction:

On the King County plans, a Clearing and Grubbing (CG) line is show. We were informed by King County employees that this is where temporary fencing will be placed for the entire two year duration of our Segment's project. This will make access to our neighborhood unacceptable, impossible for us to enter and exit our garage, and pose a safety risk to residents and workers. In addition, the Mint Grove neighborhood has no reasonable or walkable off-site parking, so additional safety risk is posed to the residents that will be forced to park off-site and walk on East Lake Sammamish Parkway in the morning/evening while it is dark, wet, icy, and snowing. Real safety concerns exist due to creating a hazardous condition.

- a. What are the ingress/egress requirements for fire and rescue vehicles?
- b. What is the safe width recommended by King County, Eastside Fire, and the City of Sammamish for two vehicles to pass on our roadway? Has this been considered for our location and is it to code?

- c. When will Eastside Fire and Rescue provide their assessment and approval of the proposed Clearing and Grubbing construction fence line? Our understanding is Eastside Fire and Rescue reviews the plans for post-construction egress and ingress, but are unsure if such a review is performed for the construction period (two years). We respectfully request a review of the construction phase ingress and egress and access by emergency vehicles by Eastside Fire and Rescue. When will such a review be performed?
- d. What alternate plans have been considered for accommodating residents in this location during the construction phase? Where are the results of this study?
- e. Is King County and/or the City of Sammamish taking additional insurance policies to cover in the event personal injury or death from creating this hazard?

2. Ingress and Egress – Post Construction:

The proposed plans move the trail westward toward the lake, thus reducing residential driveway, parking, and ingress/egress capabilities post construction. By way of example, the proposed plans move the trail approximately eleven feet closer to the houses and lake thus reducing the width of the existing access. Finally, Mint Grove is unique in the fact that it is one of the few neighborhoods with only one entry/exit. Therefore, there is no “pass-through” capabilities and all vehicles must perform a U-Turn to exit.

- a. What is the King County, Eastside Fire and Rescue, and City of Sammamish requirements for safe ingress/egress? Do the proposed plans meet these requirements?
- b. When will Eastside Fire/Rescue and the City of Sammamish review and comment on the proposed reduction to this neighborhoods access?
- c. Will King County comply with Eastside Fire/Rescue and/or the City of Sammamish recommendations regarding this topic?

3. Wetland Mitigation – Trail Location:

On the east side of the existing trail near our property is a manmade ditch. This ditch is marked as a Wetland. We understand that Wetlands have various “classifications”. This manmade ditch is periodically cleaned with a backhoe. The property approximately 100’ south of our location has drain pipe installed in place of a ditch. This drain pipe acts as a culvert instead of a ditch and the drain pipe is covered with dirt, trees, and vegetation. The water flow comes from the drain pipe into the manmade ditch flowing northward. We further understand that wetland mitigation is allowed.

- a. What is the exact classification of the wetland (ditch) at our property location?
- b. Has King County considered a wetland mitigation plan that would continue the drain pipe north past our property thus allowing the trail to be moved eastward? If so, what factors were considered and what is the justification for moving the trail closer to the lake?
- c. Can a wetland mitigation plan be implemented at this location, thus moving the trail east to lessen the safety impact to our neighborhood?

- d. What criteria was used to establish the proposed centerline of the Trail? The proposed new centerline does not follow a specific path but instead wanders back and forth along the existing trail, mostly moving toward the lake to remove rows of trees. What criteria was used to determine the proposed centerline?
- e. It appears that a large amount of the “wetland” area east of our neighborhood is being graded and redone as a native growth or planting area (i.e. new and expanded wetland). If this large area is going to be graded and disturbed to such a large extent, why isn’t the manmade ditch just being relocated five to ten feet to the east and avoid impacting our neighborhood’s parking and ingress/egress?

4. Construction Timeline

The proposed timeline for construction of Section 2B is two years. During the construction phase:

- a. Will the construction zone be segmented into smaller subsections to minimize large-scale impacts to the residents? If not, why?
- b. As an observation, we noticed that large sections of the North and South segments were fenced and closed during the entire construction phase while smaller sub-segments were under construction. Large-scale closing and installation of the Clearing and Grubbing fencing will cause major impact to many residents in Section 2B. Please consider fencing and constructing in smaller subsections to minimize impact.

5. Adverse Impact Specific to Our Residence:

The house footprint of the above plans is incorrect for our residence. The mailing address is 1419 E Lake Sammamish Shore Lane SE. The house was constructed under approval of King County, so the correct footprint should be available via the county. The footprint of the house is much closer to the trail than what is shown on the above Trail Expansion plans.

- a. Impact: An erroneous or incorrect footprint of our residence may move the trail westward closer to the actual residence than is represented on the plans. This may cause impacts to the residence, ingress/egress, access of emergency vehicles and safety concerns. Please provide a written response that King County will:
 - i. Correct the Trail Expansion plans to properly represent our residence.
- b. After correcting the residence locations, please confirm that you will review for proper clearances and make any trail adjustment required.
- c. **Comment:** It is our belief that the location of our property (specifically access to the garage) will be one of the most adversely impacted properties along this segment of the trail. The house along with the angle of the house to the proposed trail is extremely difficult to maneuver. It is quite possible that the completed trail will render our garage inaccessible. Is this King County’s plan?

6. Specific Impacts to Our Residence:

The proposed completed construction will move the trail/wall approximately eleven feet closer to our property. The specific location of our garage entry/exit (approved by King County) will be impacted. Depending on the final grade, wall location, etc. our garage may be unusable.

- a. King County approved our house construction permit, with that said, what is the King County required distance for a garage to a “wall” for ingress/egress? King County never should have approved our construction permit if there was the potential for our garage to become unusable due to trail construction. It is a reasonable expectation as a homeowner to be able to continue to use our garage to park cars as well as to provide parking in front of our home for the drivers in our household, as it has been done for the past 50+ years?
- b. During the trail planning, what steps did King County take to eliminate impact on personal property such as the one described above?
- c. Will King County send a representative to our residence to review the plans and impact to our location with the goal of reducing the impact? If so, what process do we use to request such a meeting/review?

7. Rainwater Collection and Runoff – Post Construction:

The Mint Grove area, like many others, has drainage concerns.

- a. What steps has King County taken to improve and/or minimize the impact of water runoff from adding an impervious surface to the trail?
- b. Which direction will the trail slope (east, west, or crown)?
- c. What is King County’s plan and process for dealing with post-construction water impacts to personal property?

8. Entry/Exit to Mint Grove:

The Mint Grove neighborhood has only one entry/exit location. The existing location is narrow, steep, and close to East Lake Sammamish Parkway. To allow for proper exit from East Lake Sammamish into the neighborhood and to provide for safety to trail-users, the trail has stop signs requiring trail-users to stop for vehicles.

- a. What is King County’s plan (if any) for modifying the entry/exit to Mint Grove? We ask because it is unclear on the existing plans.
- b. Will King County retain the stop sign on the trail for trail users allowing vehicles to exit East Lake Sammamish without increasing risk to the vehicles? If not, and with the extremely steep grade and narrow driveway, we have safety concerns for both vehicles and trail users.
- c. What speed limit will be posted on the trail for bicycles?
- d. How will King County monitor and enforce trail speed limits?
- e. The entrance to Mint Grove is a private driveway owned by the Mint Grove residents (paperwork can be provided if necessary) The Mint Grove driveway is currently marked as a Construction Access. King County does not have resident permission to use this private lane. Please revise the plans to eliminate the Mint

Grove entrance as a Construction Access and provide the residents with updated plans.

9. Tree Removal

It appears King County is generally moving the trail westward toward the lake. The benefit of moving the trail west is not understood. In addition, this decision will directly result in the removal of thousands of long living trees. Specifically, in our neighborhood the current plans call out for the removal of 297 trees that are all over 20 feet and have been in place for 20+ years.

- a. Why is King County proposing to move the trail west closer to the lake? Has an environmental impact study been completed to show that this is in the best interest of the Lake Sammamish? If so, where are these results? If not, when will King County perform such a study and provide results?
- b. Has the Core of Engineers and the appropriate Tribes review the plans? Have both parties approved moving the trail closer to the lake?
- c. What is the positive benefit or justification for removing thousands of trees?

10. Legal Disputes

We understand that there are some legal disputes regarding ownership, right of use, easement, etc. for the trail location.

- a. Are all legal disputes resolved?
- b. Are all appeals completely resolved?
- c. If not, what cases still exist and when are these planned to be resolved?
- d. Without resolution of the legal/ownership disputes, under what authority is King County proceeding with construction?
- e. Without resolution of the legal/ownership disputes, is King County adding risk of expense to the King County residence should King County be found to not have legal authority to construct the trail?

11. Trail Usage Statistics and Width

Construction of a trail this size comes at considerable expense to King County tax payers.

- a. What studies have been conducted and where are the results of the studies showing trail usage, benefits to the community, etc.?
- b. What is the rationale or justification for widening the trail vs. paving the existing trail?
- c. Is there tangible data showing an increase in trail usage due to the increased width? If so, where is this data located?
- d. What is the total cost of the trail? How much of the cost offset by federal money?
- e. Without federal money, thus removing the requirement for the proposed width, would King County make the trail narrower?
- f. Is there additional funding being obtained by making the trail a minimum width?
- g. What is the cost of trail maintenance on an annual basis and how is this funded?

12. Comment to the City of Sammamish

Below are some general comments, observations, and questions:

- a. Approval and permitting of the proposed plan and impact to the local residents prior to resolution of the legal disputes (ownership, easement, etc.) could result in legal action against the City of Sammamish. We request that the City of Sammamish stop construction until all legal disputes are resolved. Authorizing King County to proceed adds risk of culpability to the City of Sammamish.
- b. If any accidents result from the lack of parking and ingress/egress issues during or post-construction in our neighborhood, we will specifically hold the City of Sammamish and King County liable as they have been adequately notified of our concerns regarding safety, expectation of reasonable access, and ingress/egress of emergency vehicles.
- c. We specifically request that the City of Sammamish does not grant the requested permit to King County until all homeowners questions have been responded to and adequately incorporated into the 90% design review.

We look forward to your responses.

Regards,
Michael and Christina Hettich

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:44 PM
To: 'Kristin Landry'
Subject: RE: East Lake Sammamish Trail - 2B Comments

Dear John and Kristin,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Kristin Landry [mailto:kristinlandry@yahoo.com]
Sent: Thursday, January 26, 2017 7:57 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: John Landry <johnlandry@southernwine.com>
Subject: East Lake Sammamish Trail - 2B Comments

Ms. Ozbolt,

Please see the attached letter with our comments regarding the 60% plans for the East Lake Sammamish Trail - Section 2B, specifically how it relates to our property at 1225 East Lake Sammamish Shore Ln SE and the community of Mint Grove.

Regards,
John and Kristin Landry

January 26, 2017

City of Sammamish

Sent via Email

Attn: Ms. Lindsey Ozbolt

RE: ELST Segment 2B – Mint Grove

Dear Ms. Ozbolt,

We have a few comments and concerns that we would like to get on record and receive some feedback on relating to sections 369 + 50 and 370 + 00. All of these questions were posed to the County representatives at a meeting at Sammamish City Hall on January 25th at 12pm, but they were unable to provide definitive answers.

1. **Fire Hydrant** – There is a Fire Hydrant that falls in section 370 + 00 that would service the homes on the north side of the lane. The County representatives could not tell us if there was a plan to relocate or remove that Hydrant. Our concern is access to the hydrant during the clearing and grading phase because it falls into the clearing and grading line. Will the Fire Department have access during the construction phase?
2. **Retaining Wall** – There is a retaining wall that runs east to west that is in the clearing and grading line that is between 369 + 50 and 370 +00. There is an approximate 18-24” elevation change from one side of the trees to the other. On the plans it doesn’t appear there is a clear plan to regrade or rebuild the retaining wall. Because the clearing and grading fence (C&G) will go approximately half way through the wall, it appears that some of the trees will be left. For safety reasons and potential property damage we believe that the wall and some type of physical barrier will need to be in place to prevent people or vehicles from dropping off the edge.

View from South Side of wall:



View from North Side of wall:



3. **Replace / Repair aggregate concrete between the clearing and grading area and new wall.** It is not clear if the concrete will be dug up between the C&G fence and the eventual permanent wall or just slightly altered near the permanent wall. What is the plan to repair / replace the concrete that gets damaged in the process?



4. **Drainage plan** – Is there going to be impact on the amount of water that drains towards the house? We have heard several accounts where during and after construction there has been flooding because of increased run off.
5. **Stop sign for trail vs driveway** – There is currently a stop sign at the trail that halts biker traffic. Is that going to stay?
6. **Construction time** – We are hearing that the C&G fence is potentially going to be in place for 2 years. That seems like an unnecessary and egregious interruption. Can you please clarify?

Sincerely,

John and Kristin Landry
1225 East Lake Sammamish Shore Lane SE
Sammamish, WA 98075
203-803-8615
johnlandry@southernwine.com

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:42 PM
To: 'Gene Morel'
Subject: RE: Gene Morel East Lake Sammamish Trail Section 2B Comments

Dear Gene,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Gene Morel [mailto:gene.morel@gmail.com]
Sent: Thursday, January 26, 2017 7:37 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Lyman Howard <lhoward@sammamish.us>
Subject: Gene Morel East Lake Sammamish Trail Section 2B Comments

Via Electronic Mail

January 26, 2017

Lindsey Ozbolt

Associate Planner

City of Sammamish

Department of Community Development

City of Sammamish City Hall

801 – 228th Avenue SE

Sammamish, Washington 98075

Email: lozbolt@sammamish.us

RE: Opposition to Issuance of SSDP2016-00415 Permit

Dear Ms. Ozbolt:

I live at 2933 E Lake Sammamish Pkwy SE. My family has owned our parcel on Lake Sammamish for over 70 years. My wife and I built our existing home in 2000.

The construction of our house was originally permitted by the City of Sammamish. In fact, we received one of the first building permits issued by the City of Sammamish. This permit application included all necessary documentation including title reports, a site plan, and permits to allow me to cross the railroad easement and access my house by car.

The 60% plans issued by King County Parks for the development of the East Lake Sammamish Trail Section 2B eliminates vehicle access to my house. Instead, the plan details that I can cross the easement by car but cannot enter our garage. Instead, after crossing the easement, we must park on my neighbors lot to the south and walk about 150 feet to my residence front door. We cannot get to our garage by car.

Needless to say, this is unacceptable and the City of Sammamish should not approve this permit request until proper vehicle access to my house is detailed in the construction plan.

In 2000, Sammamish City issued my building permit which included all necessary documentation required for vehicle access. I will hold the City liable for damages if the City grants King County this permit as currently presented in the 60% plans.

Please call me with any questions.

Best regards,

Gene Morel

425-591-6182

Via Electronic Mail

January 26, 2017

Lindsey Ozbolt
Associate Planner
City of Sammamish
Department of Community Development
City of Sammamish City Hall
801 – 228th Avenue SE
Sammamish, Washington 98075
Email: lozbolt@sammamish.us

RE: Opposition to Issuance of SSDP2016-00415 Permit

Dear Ms. Ozbolt:

I live at 2933 E Lake Sammamish Pkwy SE. My family has owned our parcel on Lake Sammamish for over 70 years. My wife and I built our existing home in 2000.

The construction of our house was originally permitted by the City of Sammamish. In fact, we received one of the first building permits issued by the City of Sammamish. This permit application included all necessary documentation including title reports, a site plan, and permits to allow me to cross the railroad easement and access my house by car.

The 60% plans issued by King County Parks for the development of the East Lake Sammamish Trail Section 2B eliminates vehicle access to my house. Instead, the plan details that I can cross the easement by car but cannot enter our garage. Instead, after crossing the easement, we must park on my neighbors lot to the south and walk about 150 feet to my residence front door. We cannot get to our garage by car.

Needless to say, this is unacceptable and the City of Sammamish should not approve this permit request until proper vehicle access to my house is detailed in the construction plan.

In 2000, Sammamish City issued my building permit which included all necessary documentation required for vehicle access. I will hold the City liable for damages if the City grants King County this permit as currently presented in the 60% plans.

Please call me with any questions.

Best regards,
Gene Morel
425-591-6182

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 12:40 PM
To: 'brad@bradniemeyer.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Brad,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Brad Niemeyer [mailto:brad@bradniemeyer.com]
Sent: Thursday, January 26, 2017 7:27 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

City of Sammamish:

I ride my bicycle on the East Lake Sammamish trail weekly. I frequently ride with my 12 yo son. I support completing the ELST and approving permit SSDP2016-00415. Trails are the safest way to exercise and commute by bicycle. Trails bring revenue to businesses in suburban cities. The ELST provides public access to East Lake Sammamish views and a safe link from Redmond to Issaquah. The ELST should be a mirror of what we have with the Burke- Gilman trail.

Please approve the trail permit. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

Priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

Please complete the trail. It links Sammamish and Issaquah to the greater Seattle trail system and just makes sense.

Sincerely,

Brad Niemeyer

15360 NE 201st Street
Woodinville, WA 98072
425- 402-1661

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:16 AM
To: 'Mark and Dee Ann'
Subject: RE: Comments on East Lake Sammamish Trail Section B

Dear Mark,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Mark and Dee Ann [mailto:mdkaus@comcast.net]
Sent: Thursday, January 26, 2017 6:36 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Mark Kaushagen <mdkaus@comcast.net>
Subject: Comments on East Lake Sammamish Trail Section B
Importance: High

Ms. Ozbolt:

Please find attached for submittal and your use our comment letter and attachments on the East Lake Sammamish Trail Section B. If you would, please confirm receipt of our comments prior to the expiration of the comment period.

Best Regards:

Mark Kaushagen
425-260-5866
mdkaus@comcast.net

January 25, 2017

VIA EMAIL

Ms. Lindsey Ozbolt
Associate Planner
City of Sammamish
801 228th Ave SE
Sammamish, WA 98075

Re: Lake Sammamish Trail Segment B
Shoreline Substantial Development Permit Comments and Concerns
457 E. Lake Sammamish Pkwy SE
Mark and Dee Ann Kaushagen

Dear Ms. Ozbolt:

Below you will find our Comments and Concerns regarding the Shoreline Substantial Development Permit for the area on and adjacent to our property at 457 E. Lake Sammamish Pkwy SE, as identified within the "South Sammamish B Segment" for which King County Parks is the Applicant.

Removal of Driveway #14 at Approximately Sta. 393+40:

1. We are opposed to the removal of the area identified as driveway #14 at approximately Sta. 393+40. We believe that this removal creates a substantial access, health, and safety issue for us as well as our adjacent neighbors. Additionally, this would preclude us from utilizing our parking areas on the east side of the trail. Both this access point and the parking areas located on the east side of the trail have been in use for at least 50 years, which can be verified through a review of the King County Aerial photos cataloged through 1965. These photos indicate a definitive prescriptive right by our neighbors and ourselves through the open and continuous utilization of the parking areas, paved areas and access driveway.
2. Additionally, we have had the title company research, confirm with King County, and subsequently provide an access endorsement in regard to the crossings. Attached you will find correspondence from King County confirming to the title company that the crossing was permitted and would be renewed in perpetuity.

No Additional Tree Removal:

1. The submitted tree preservation plan indicates that none of the trees in front of our house will be removed, and that all will be retained. That is acceptable to us, should this change in any way, we would be adamantly opposed and would ask that the process be halted and reconsidered.

Lack of Adequate Evaluation of Noise and Appropriate Mitigation:

1. Trees and vegetation are shown on the plans to be removed north of our property and as such, we are opposed to moving forward in the process without an appropriate review and approval of any required mitigation regarding noise impacts. In reviewing the documents, we could not find anything where the impact of increased noise has been adequately addressed. It appears that the noise impact from East Lake Sammamish Pkwy as a result of the removal of the vegetation, trees, and any re-grading of berms, in concert with the increased traffic on the trail has not been evaluated, modeling done, or a mitigation plan put in place to address this serious health issue. Because the vegetation removal was not identified during the process, but only now, we would not have known how to comment on it at that time, and therefore it is unfair to proceed without an evaluation and subsequent hearing. Before any additional work is approved, there should be a thorough noise impact study completed, with a mitigation plan created and approved by the impacted residents. Increased noise is a serious health impact and livability issue that needs to be identified and resolved.

Lack of Appropriate Drainage Design and Mitigation:

1. The plans do not include any detailed design or conclusive hydraulic modeling regarding the drainage impacts to our property. From the cross section provided, it appears that the intent is to direct flows towards our property without mitigation. Our concern is that without a detailed drainage strategy and design being provided prior to approval, our homes may be put at risk. The type of strategy utilized, be it detention or infiltration needs to be reviewed prior to approval. Of primary concern is that we can be assured through appropriate studies and hearings that water “percolated or infiltrated” as a result of the increased impact of the trail development along with the subsequent concentration of the flows will not flood our crawl spaces and basements if that methodology is chosen. If detention is selected, it is not realistic to call the existing gravel trail to be “existing impervious area” for calculation purposes and not provide an appropriate design to mitigate and transfer the additional flows created through development.

Lack of Detailed Maintenance and Safety Program:

1. No additional permits for trail improvements should be issued until a Maintenance, Safety, Warranty, and Patrolling Memorandum of Understanding, is put in place with the County that includes a direct budget allocation for the trail. Maintenance is currently poor at best, and security and patrolling is nonexistent. As an example, currently, none of the bollards are locked, there is minimal maintenance, and we are not aware of any patrol schedule being put in place, nor have we seen anyone patrol the trail in our area. With the increased size of the trail now making access by truck for theft easy, traffic and speed anticipated to be high through the greater width and increased design speed to 20 mph over the previously given 15 mph, safety will become a primary consideration. With this type of mixed use and the increased width of the trail, many metropolitan Cities have

seen significant safety issues come into play without regular patrolling. I would cite the City of Sacramento, as one example that has been in the news with a situation similar to the one being created with this design. It would not be prudent to proceed with approval until an agreement is put in place to assure that the City of Sammamish or its residents do not incur any additional costs as a result of the County's lack of attention.

In closing, we believe that it is imperative, and quite frankly the right thing to do, to continue the hearing until the comments are reviewed with the property owners from the 60% plans, those items are then clarified and agreed to in writing; and the plans are at a 90% stage so that an informed decision can be made. It is plain to see from the limited number of appointments that were available considering the number of property owners effected and the lack of available engaged King County personnel to discuss the 60% plans, that King County's strategy is to push this through over the rights of the people. King County has a history of not living up to their commitments and in believing that the end justifies the means. We are looking to our City Council and fellow neighbors to help protect our rights and quality of life.

Should you have any questions, please feel free to contact me by email at <mailto:mdkaus@comcast.net> or on my Cell at 425-260-5866.

Very truly yours,

A handwritten signature in black ink, appearing to read 'MEK' followed by a stylized flourish.

Mark E. Kaushagen

Cc: Brad Bastian
Alan Hau

Subject: FW: Can you tell me how long the crossing permit is valid from the Railroad on E. Lake Sammamish Parkway?

Date: Thursday, January 26, 2017 at 6:26:23 PM Pacific Standard Time

From: Mark and Dee Ann

To: Mark Kaushagen

From: Berlanga, Amelia [<mailto:Amelia.Berlanga@fnf.com>]

Sent: Tuesday, April 23, 2013 4:22 PM

To: Mark Kaushagen

Subject: FW: Can you tell me how long the crossing permit is valid from the Railroad on E. Lake Sammamish Parkway?

Hi Mark,

Here is the answer to your question below. 10 year permit, renew as necessary until the end of time.

Hope this answers your question.

Thanks so much!



Fidelity National Title

Amelia Berlanga, LPO | Branch Manager

Fidelity National Title

10655 NE 4th Street, Suite 200 | Bellevue, WA 98004

P- 425-289-2414 | F- 425.453.0136 | E-Fax- 425.671.0066

Email: Amelia.Berlanga@fnf.com

Email for docs: Fnt04@fnf.com

From: Nunnenkamp, Robert [<mailto:Robert.Nunnenkamp@kingcounty.gov>]

Sent: Tuesday, April 23, 2013 4:17 PM

To: Berlanga, Amelia

Subject: RE: Can you tell me how long the crossing permit is valid from the Railroad on E. Lake Sammamish Parkway?

If you're specifically referring to a permit issued by BNSF, then it's technically expired. When we purchased the corridor in 1998 the old railroad permits were assigned to us and we've generally honored the terms until we get to a point of 'buy, build or sell', which is where the property is being sold or needs a permit to build on. This was a logistics choice made back then since we don't have staffing levels to accommodate 700 permits at once. If a property is in the buy, build or sell mode a new King County permit would be needed at that point. Our permits have a ten-year term that we renew as necessary until the end of time.

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:59 PM

To:judykraemer50@gmail.com <judykraemer50@gmail.com>;

Dear Judy,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Judy Kraemer [<mailto:judykraemer50@gmail.com>]

Sent: Thursday, January 26, 2017 11:28 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Judy Kraemer
5440 Leary Ave. NW, Unit 203
Seattle, WA 98107
2065265255

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:58 PM

To: graham.siebe@gmail.com <graham.siebe@gmail.com>;

Dear Graham,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Graham Siebe [<mailto:graham.siebe@gmail.com>]

Sent: Thursday, January 26, 2017 11:06 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415. Please approve the permit, as submitted.

I have cycled this unfinished section several times. In it's current state it is uninviting, and not particularly safe. As an experienced rider, I was willing to do it, but I would never recommend it to a child, inexperienced rider, pedestrian, or someone with any level of physical disability.

As you approach this, I would encourage you to think about the possibilities associated with doing this project well. For example, biking to Woodinville is a popular activity for people all over the region that supports the local businesses. Or, if you look at any real estate listing near the Burke Gillman trail in Seattle, you are sure to see that asset prominently listed.

In closing, let me just say that I hope one day to excitedly tell my kids "let's bike to Sammamish!"

Sincerely,

-Graham Siebe

Graham Siebe
149 149th Ave NE Apt C
Bellevue, WA 98007
2062285863

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:58 PM

To:julesbologna@hotmail.com <julesbologna@hotmail.com>;

Dear Julianne,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Julianne Drogin [<mailto:julesbologna@hotmail.com>]

Sent: Thursday, January 26, 2017 11:04 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

My husband and I enjoy doing the Lake Sammamish loop, but we don't like to ride on the road on the east of the lake because of the fast moving traffic. It seems so dangerous, as there isn't a shoulder where the traffic and traffic speed is the worse.

Julianne Drogin
12832 71st Ave NE
Kirkland, WA 98034
4252421268

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:56 PM

To: jazzign@hotmail.com <jazzign@hotmail.com>;

Dear Holly,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Holly Green [<mailto:jazzign@hotmail.com>]

Sent: Thursday, January 26, 2017 10:26 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Our family has been looking forward to the completion of this trail for years because it will enable us to do long distance bike rides with our young children without the concerns of vehicle traffic. Our children are ready for long distances, but with the heavy road traffic in the Issaquah-Sammamish-Redmond area, it is not safe for elementary students to be out riding on the roads. I am not aware of any other route in this area that will be able to provide what this long, flat trail can with respect to a safe path.

Please don't let this be another failed transportation project in this area. This is actually a trail that can be a viable alternative to driving between cities.

Holly Green

2410 NE Davis Loop

Issaquah, WA 98029
4256778782

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:55 PM

To: Aprilgreenwalt@hotmail.com <Aprilgreenwalt@hotmail.com>;

Dear April,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: April Greenwalt [<mailto:Aprilgreenwalt@hotmail.com>]

Sent: Thursday, January 26, 2017 10:26 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

East Lake Sammamish Trail was the first trail I walked along when I moved out here. I have loved every week that I have gone walking on the trail with friends. It is such a beautiful path that when I'm on a bike ride I like to get off my bike and enjoy the view before I can get back on my bike and continue my ride. This is such a beautiful place that everyone deserves to enjoy.

Please approve the permit, as proposed, with expediency.

Sincerely,

April Greenwalt
4219 212th Ave NE
Sammamish, WA 98074
8014272594

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:55 PM

To:tnkasper@gmail.com <tnkasper@gmail.com>;

Dear Troy,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Troy Kasper [<mailto:tnkasper@gmail.com>]

Sent: Thursday, January 26, 2017 10:22 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish Council Members,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

My wife and I regularly ride from Bothell to Sammamish. We often stop in at Uncle Si's Pizza for lunch. We would love it if you let the trail be completed per the permit. My wife isn't crazy about riding on the gravel and this would make the ride much more enjoyable for both of us.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Troy Kasper
9110 NE 179th PL
Bothell, WA 98011
206-316-0909

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:55 PM

To: jbroadus@gmail.com <jbroadus@gmail.com>;

Dear Jim,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Jim Broadus [<mailto:jbroadus@gmail.com>]

Sent: Thursday, January 26, 2017 10:17 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Jim Broadus
412 N 39th St
Seattle, WA 98103
206-634-3699

RE: Support for Trail Permit SSDP2016-00415

Lindsey Ozbolt

Fri 1/27/2017 12:54 PM

To: Heller and Fox <heller-fox@msn.com>;

Dear Robert,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Heller and Fox [<mailto:heller-fox@msn.com>]

Sent: Thursday, January 26, 2017 10:13 PM

To: City Council <citycouncil@sammamish.us>; Lindsey Ozbolt <LOzbolt@sammamish.us>

Cc: Kelly.Donahue@kingcounty.gov

Subject: Support for Trail Permit SSDP2016-00415

Dear Council Members,

I am writing to urge you to approve this permit for important trail improvements.

The proposed project will comply with trail standards that will allow safe use by multiple trail users, including the disabled. The proposed crossing priorities are consistent with common sense and driver/trail user intuitive behaviors, and thus safest for all.

I know that some adjoining property owners are opposed, but other trail improvement projects have shown that within a short time adjacent property owners are advertising their immediate proximity to the trail as an important property amenity and a contributor to property value.

Many communities in our region have supported trail improvements, and they contribute substantially to the quality of life we all enjoy.

I hope that the City of Sammamish will approve this important trail improvement project.

Thank you,

Robert Heller
736 17th Ave East

Seattle WA 98112
heller-fox@msn.com

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:54 PM

To: Lasbeck@gmail.com <Lasbeck@gmail.com>;

Dear Lynn,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Lynn Quanstrom [<mailto:Lasbeck@gmail.com>]

Sent: Thursday, January 26, 2017 10:12 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who travel to and through Sammamish.

The City of Sammamish and Lake Sammamich are two jewels of the East Side. Running, walking, bicycling, and taking the kids out on Saturday afternoons on a safe, comfortable multi-use trail is nothing short of idyllic. This is the opportunity that every city in the country wants for their town. Sammamich has the chance to actually get it done.

I have biked along the east and west sides of Lake Sammamich on roads that would not be safe to take my children on. I look forward to the day when they are old enough to accompany my husband and me on a safe ride through one of Washington's most beautiful communities on this safe trail.

Best wishes, and please seize this opportunity to complete the trail as planned.

Sincerely,

Lynn Quanstrom
7706 11th ace NW
Seattle, WA 98117
858-442-1236

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:53 PM

To: Jenniferwoodward@msn.com <Jenniferwoodward@msn.com>;

Dear Jennifer,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Jennifer Woodward [<mailto:Jenniferwoodward@msn.com>]

Sent: Thursday, January 26, 2017 10:01 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Jennifer Woodward

Jennifer Woodward
4335 209th Ave NE
SAMMAMISH, WA 98074
(425) 898-1405

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:52 PM

To: wardkeitha@gmail.com <wardkeitha@gmail.com>;

Dear Keith,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Keith Ward [<mailto:wardkeitha@gmail.com>]

Sent: Thursday, January 26, 2017 9:59 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415. Please approve the permit, as submitted.

I am an avid bike ride and really enjoy biking along beautiful Lake Sammamish. I find biking on East Lake Sammamish Parkway to be very dangerous and completing the East Lake Sammamish Trail would be much safer for me and my family and allow us to better enjoy the lake.

Please approve the permit, as proposed, with expediency.

Keith Ward

148 NE 53rd St.

Seattle, WA 98105

2063343298

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:51 PM

To: joiner.family1@frontier.com <joiner.family1@frontier.com>;

Dear David,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: David Joiner [<mailto:joiner.family1@frontier.com>]

Sent: Thursday, January 26, 2017 9:49 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I have personally biked the new paved segment and love it! Please complete the trail to standards for bikers and hikers all the way into Issaquah.

I have also had to use the paved road above the uncompleted sections for rides into Issaquah, and know having a paved trail would be much safer to ride on.

This section, once completed, will allow bikers and hikers a safe trail that will meet the standards of the extremely popular Sammamish river trail and the Burke along with the already completed section and the Marymoor connector trail.

This is a big plus to the community!

Sincerely,

David Joiner
Avid Cyclist

David Joiner
22325 17th Pl W
Bothell, WA 98021
425-870-9392

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:51 PM

To:kderbyshire@gmail.com <kderbyshire@gmail.com>;

Dear Katherine,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Katherine Derbyshire [<mailto:kderbyshire@gmail.com>]

Sent: Thursday, January 26, 2017 9:45 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Having lived (and cycled) in places from Boston to Southern California before ending up here, I can tell you that the King County trail system is a tremendous asset to the region. As a relatively new resident, I've used it to explore the Lake Sammamish/Sammamish River corridor at a much more leisurely pace than is possible for the car-borne. It takes cars off the roads and provides recreation for all ages and multiple species. The gravel section along Lake Sammamish is a significant gap in an otherwise excellent resource. It needs to be closed.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

Sincerely,

Katherine Derbyshire
19422 77th Place NE
Kenmore, WA 98028
4254837309

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:50 PM

To: Rick@thesurvivalkit.com <Rick@thesurvivalkit.com>;

Dear Rick,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Rick Giesa [<mailto:Rick@thesurvivalkit.com>]

Sent: Thursday, January 26, 2017 9:40 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

Rick Giesa
20566 NE 33rd Court
Sammamish, WA 98074
425-898-8853

RE: Open Comment Period

Lindsey Ozbolt

Fri 1/27/2017 12:50 PM

To: Eric Loper <ericlo@microsoft.com>;

Dear Eric,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Eric Loper [mailto:ericlo@microsoft.com]
Sent: Thursday, January 26, 2017 9:37 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Loper, Marisa (loperfamily@live.com) <loperfamily@live.com>
Subject: Open Comment Period

Hi Lindsey,

I wanted to provide comment related to the development of the trail and ask that approval be put on hold until the 90% plans are released and the concerns below can be addressed. My wife and I are not opposed to the development of the trail but feel that the current approach by the county is overreaching and aggressive and in contrast to the property rights of the community they should be serving.

Address: 19314 SE 24th Way Sammamish WA 98075

Parcel: #302

Concerns

- **No Gate:** There is no gate on the plan from the trail to enter my property
- **No Planned Access To My Property:** There is a retaining wall on the plans but no planned stairs from the trail down to my beachfront
- **Unnecessary Encroachment:** The current plan encroaches on our precious waterfront vs. the hillside that's not landscaped on the other side of the trail.
- **Loss In City Tax Revenue:** This overaggressive action on behalf of the county is illegal and overreaching. If the City of Sammamish approves this project it will be validation of King County's claim to of a property line that runs through living rooms and deep into property lines. Even if the

county “chooses” not to take all that they have laid claim to the outstanding ownership issue will devalue everyone’s property. City approval will valid unfounded claims and create a toxic corridor of disputed property with deteriorating values and lower tax contributions.

Eric

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:50 PM

To: aevansromano@gmail.com <aevansromano@gmail.com>;

Dear Allison,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Allison Romano [<mailto:aevansromano@gmail.com>]

Sent: Thursday, January 26, 2017 9:36 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Allison Romano
13585 Adair Creek Way NE
Redmond, WA 98053
425-242-0613

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:49 PM

To: donjb11@me.com <donjb11@me.com>;

Dear DJ,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: DJ Blanchard [<mailto:donjb11@me.com>]

Sent: Thursday, January 26, 2017 9:31 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I moved into my home on the Sammamish Plateau in 1998 and my real estate agent at the time mentioned the new trail that was planning stages would be a great asset for me and my two young children at the time. My kids are now off to college and no longer live at home. We never did the chance to walk to trail together as it has been contested and incomplete for almost 20 years now. There is a long history of rail to trail and I feel it is very unfortunate the city has take such an adversarial position with the county. Yes homeowners along the trail had concerns with the plans but please understand that this project is in the entire regions best interest. This was never about saving some trees as is clearly visible at any of the major projects going in which were approved by the city. I feel it is really unfortunate and short sighted of the city to not realize the benefit to our community.

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

DJ Blanchard
3319 Sahalee drive west
Sammamish, WA 98074
425-444-8880

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:49 PM

To: jm.justin@gmail.com <jm.justin@gmail.com>;

Dear Justin,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Justin Martin [<mailto:jm.justin@gmail.com>]

Sent: Thursday, January 26, 2017 9:30 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

I have a 6-year-old and a 3-year-old, and we ride our bikes almost every day. We love getting out and enjoying nature, and in particular taking a ride on a safe and pleasant path or trail. I'd really like to see more trails like East Lake Sammamish Trail completed in our region that provide a safe environment for families - people of all ages and abilities - to get outdoors, get exercise and experience nature.

I also believe that these trails should serve as an alternative transportation infrastructure, for those who - like myself, after I bike with my first-grader to her elementary school - choose to bike (or jog, or walk!) to work. East Lake Sammamish Trail can and should be constructed to provide a safe option for commuters, and with dimensions wide enough to accommodate multiple users at once - such as commuters and recreational users.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (12 ft, plus 2 ft gravel shoulders) will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. I feel much more comfortable biking with my family, including my two young children, when we can ride on a trail that has safe roadway crossings. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

Sincerely,

Justin Martin
8715 Evanston Ave N
Seattle, WA 98103
206-753-8744

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:49 PM

To: nealefamily5@msn.com <nealefamily5@msn.com>;

Dear Karina,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: karina neale [<mailto:nealefamily5@msn.com>]

Sent: Thursday, January 26, 2017 9:29 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

When we first moved to Sammamish, 17 years ago, we didn't even have north end access to our gorgeous local lake. I am urging you to continue the fight to complete the trail for the greater good of our community.

Sincerely,
Karina V. Neale

karina neale
3831 204th ave ne
sammamish, WA 98074
425-891-0647

RE: Comments for the East lake Sammamish Trail from Homeowner January 26, 2017

Lindsey Ozbolt

Fri 1/27/2017 12:49 PM

To: Ada Loving <Adaloving@outlook.com>;

Dear Ada,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Ada Loving [mailto:Adaloving@outlook.com]

Sent: Thursday, January 26, 2017 9:21 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Comments for the East lake Sammamish Trail from Homeowner January 26, 2017

TAX PARCEL 0624069106

1. RETAINING WALL = Stair No. 48 is within close proximity or in front of retaining wall consequently any removal of Stair 48 due to widening of trail could jeopardize the structure of the retaining wall for the house.
2. Stair No. 47 which is set to be eliminated during construction = Construction crew needs to be careful of sprinkler system when removing stairs towards the lake. Homeowner will place markers or supply blueprints to indicate where sprinkler system is located.
3. Stair No. 45 = Homeowner suggests installing a gate leading towards lake for the safety of personal property which includes boats, jet ski, and ski equipment.
4. Signage = signs should be installed at the entrance with rules of the usage of trail. Homeowner has witnessed a biker riding after dark. He uses a bright light that illuminates into the kitchen. Homeowner will photograph the biker for proof.
5. Usage of Trail by Public = Please do not allow motorcycles or horses. Horses will deposit manure of which

will pose a health hazard. Motorized vehicles pose a threat to safety.

6. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION = Please abide by the national guidelines outlined in AASHTO which call for a 12 foot trail with 2 foot gravel shoulders.

Comments

I enjoy living on the lake participating in various water activities and look forward to working with the county to create a safe trail to use with my children for many years to come.

Ada McKee

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:48 PM

To: chhandaa@outlook.com <chhandaa@outlook.com>;

Dear Gayatri,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Gayatri Choudhari [<mailto:chhandaa@outlook.com>]

Sent: Thursday, January 26, 2017 9:19 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

The people living alongside the trail deserve the right of privacy and safety , but not getting the trail paved isn't a justifiable solution of this concern. The trail a a vital resource of health goals and recreation for several residents of all ages of the cities it traverses through.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

Gayatri Choudhari
158th Ave NE
Redmond, WA 98052
4257851065

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:48 PM

To: statesofgrace@yahoo.com <statesofgrace@yahoo.com>;

Dear Grace,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Grace Huang [<mailto:statesofgrace@yahoo.com>]

Sent: Thursday, January 26, 2017 9:17 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I'm writing to express my support for completing the East Lake Sammamish Trail and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Grace Huang
po box 99568
seattle, WA 98139
2062857648

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:47 PM

To: dnrrahn@earthlink.net <dnrrahn@earthlink.net>;

Dear Dorota and Richard,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Dorota and Richard Rahn [<mailto:dnrrahn@earthlink.net>]

Sent: Thursday, January 26, 2017 9:14 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

My family enjoys riding on the trail. As long as segment 2B remains too gravelly for safe biking, we prefer riding toward (and stopping for refreshment in) Redmond/Kirkland/Bellevue.

Please approve the permit, as proposed, with expediency.

Sincerely,

Dorota and Richard Rahn
21130 ne 43rd place
Sammamish, WA 98074
4258363371

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:46 PM

To:joe_goeke@hotmail.com <joe_goeke@hotmail.com>;

Dear Joe,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: joe goeke [mailto:joe_goeke@hotmail.com]

Sent: Thursday, January 26, 2017 9:01 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Let's get this done!

Sincerely,

joe goeke
10410 132nd Ave NE
Kirkland, WA 98033
4254424617

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:46 PM

To: mcdonald_dave@msn.com <mcdonald_dave@msn.com>;

Dear David,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: David McDonald [mailto:mcdonald_dave@msn.com]

Sent: Thursday, January 26, 2017 8:57 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

When riding a road bike, it will also be safer because there won't be a need to ride on east lake Sammamish road.

Sincerely,

Dave McDonald

David McDonald
20533 NE 150th St
Woodinville, WA 98077
425-882-0529

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:46 PM

To: nealek@uw.edu <nealek@uw.edu>;

Dear Kylie,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Kylie Neale [<mailto:nealek@uw.edu>]

Sent: Thursday, January 26, 2017 8:57 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

PLEASE complete the trail. The people opposed to the trail are using concern for the environment as poorly veiled pretext for their desires to not have the trail finished. They are being selfish, as many people would benefit from the completion of this historic trail. I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in its interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,
Kylie

Kylie Neale
3831 204th AVE NE
Sammamish, WA 98074
4258910640

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:46 PM

To:shopdad808@msn.com <shopdad808@msn.com>;

Dear Mark,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Mark Boles [<mailto:shopdad808@msn.com>]

Sent: Thursday, January 26, 2017 8:36 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I ride around the lake 3-4 times a month and must use East Lake Sammamish during part of my ride along the east side of the lake. There have been MULTIPLE times that I have nearly gotten hit with passenger side rear view mirrors from drivers that do not give me a wider berth because of oncoming traffic. It is also very busy, especially on the weekends and in late afternoon. It is a

real shame and obvious embarrassment that the city and county can't figure out how to work together to get this stretch of trail completed. Please do what you can to make this a safer and more effective trail for us all.

Sincerely,
Mark Boles

Mark Boles
4120 181st Ave SE
Bellevue, WA 98008
425 643-3982

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:45 PM

To: nmenk@earthlink.net <nmenk@earthlink.net>;

Dear Nancy,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Nancy Encke [<mailto:nmenk@earthlink.net>]

Sent: Thursday, January 26, 2017 8:34 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

I am 62 yrs old and ride my bicycle for recreation and fitness. I do not feel safe riding on the roads and so use the Sammamish River Trail and ELST extensively. In 2015-16 I rode 1,950 miles on those trails, riding 15-20 miles/day whenever weather permitted. Up to Woodinville, across to Bothell, down to Issaquah. Finishing the ELST will make it so much safer to ride as I worry about sliding on the gravel portion of the trail. When the weather is too wet for riding, I often will walk a portion of the trail. Please finish the unpaved portion of the trail, and provide access points for all to use.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people

riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Nancy Encke
5820 224th Ave NE
Redmond, WA 98053
4258688144

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:45 PM

To: Pd3signs@yahoo.com <Pd3signs@yahoo.com>;

Dear Paul,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Paul Kunz [<mailto:Pd3signs@yahoo.com>]

Sent: Thursday, January 26, 2017 8:24 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

Using the trail to ride from Snohomish to Issaquah is great fun and I ride it almost every week. Hopping up to the road for the 3.5 is dangerous for a number of reasons and look forward to a smooth ride once completed.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Paul Kunz
207th st se
Snohomish, WA 98296
3608632632

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:45 PM

To: vsahney@umich.edu <vsahney@umich.edu>;

Dear Vik,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Vikram Sahney [<mailto:vsahney@umich.edu>]

Sent: Thursday, January 26, 2017 8:23 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

This trail will enable greater safety for bicycle commuters as well as ample recreation opportunities. I love the Burke Gilman, Interurban, Green River Trail, and the Sammamish River Trail. The more trails we have the less road traffic, the less road rage, the less bike/car accidents. It is a win-win. Properties along such recreation corridors are also highly desirable.

Please approve the permit, as proposed, with expediency.

Sincerely,

Vik Sahney
Seattle Resident and frequent Sammamish cyclist

Vikram Sahney
1301 Spring St. APT 21J
Seattle, WA 98104
2066974098

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:45 PM

To: e.tolkova@gmail.com <e.tolkova@gmail.com>;

Dear Elena,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Elena Tolkova [<mailto:e.tolkova@gmail.com>]

Sent: Thursday, January 26, 2017 8:19 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

As number of residents in the area grows, the trail is needed more and more. With more trails, more people are using them. The East Lake Sammamish trail in particular will be a busy one, with bike commuters in both directions, joggers, pedestrians all day long, including after dark. It's dark after 5 pm already, in winter. It's not safe, if the trail is narrow or not meeting other standards.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,
Elena Tolkova

live in Kirkland
bike commuter to Redmond and Issaquash

Elena Tolkova
13016 NE 98th Place
Kirkland, WA 98033
4258895991

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:44 PM

To: dankirkd@comcast.net <dankirkd@comcast.net>;

Dear Daniel,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Daniel Kirkdorffer [<mailto:dankirkd@comcast.net>]

Sent: Thursday, January 26, 2017 8:17 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

This trail has gone through every process up until now and it is finally time to complete it.

Please complete the trail.

Sincerely,

Daniel Kirkdorffer

Daniel Kirkdorffer
18568 NE 57th Street
Redmond, WA 98052

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:42 PM

To: ajancola@gmail.com <ajancola@gmail.com>;

Dear Alicia,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Alicia Jancola [<mailto:ajancola@gmail.com>]

Sent: Thursday, January 26, 2017 7:56 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Safe biking trails are a necessity in our beautiful county. As an avid biker, I depend on these trails for training purposes and recreation. Without the trail on East Lake Sammamish, riders are forced to ride on the road with the traffic. That stretch of road is almost always busy with traffic, traffic that isn't always aware of bikers, making it very dangerous. It is also a benefit to your community to have a safe biking trail, because bikers are then more likely to shop at your business and restaurants. I love to stop for lunch in the middle of a long ride! Safe trails will bring more bikers.

Please approve the permit, as proposed, with expediency.

Thank you.

Alicia Jancola
8314 JONES AVE NW
SEATTLE, WA 98117

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:42 PM

To: jardussi@hotmail.com <jardussi@hotmail.com>;

Dear John,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: John Ardussi [<mailto:jardussi@hotmail.com>]

Sent: Thursday, January 26, 2017 7:53 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Our story: We moved to Issaquah decades ago, when the train still ran along E. Lk Sammamish. There were no houses except in the widest areas with sufficient RoW. The railroad owned the land and only granted easements.

Now some of the property owners resent this easement being re-purposed for a broader public transportation use.

We fully support this trail, as designed. I am sorry for owner discomfort, but they knew what they were purchasing. In time, they or future owners will also benefit.

Some owners have talked about property theft.

As a biker for decades, I have never heard of a biker who steals property on a ride, nor any who would "case" a property for future theft. This is a "scare" argument, with no evidence. It could be easily mitigated with a few security cameras placed at the trail entry and crossing points. On the other hand, there is massive evidence to support the community benefit of completion of the trail to the AASHTO standards for safety for trail width and margins.

I served on the Issaquah City Council in 1986-92 when the original recreational trail plan was adopted, and in 2003 I helped to write the non-motorized policies adopted into the Comp Plan update. Those plans and resources have long since proven their detractors wrong, and their lasting value to the community. The same will happen with the ELST.

Sincerely,

John Ardussi

John Ardussi
255 Almak Court NW
Issaquah, WA 98027
4254270740

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:42 PM

To: birdmarymoor@frontier.com <birdmarymoor@frontier.com>;

Dear Michael,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Michael Hobbs [<mailto:birdmarymoor@frontier.com>]

Sent: Thursday, January 26, 2017 7:53 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

The Friends of Marymoor Park has long supported the ELST, and the various events that start, end, or pass through Marymoor and which continue down the ELST. The East Lake Sammamish Trail is an important leg in the trail system that runs through Marymoor Park.

It is very important that the whole trail conforms to equivalent standards of a 12ft trail with 2ft shoulders, so that trail events will run safely. These events, as well as regular trail users, need crossing priority for safety.

It would be dangerous if the path narrowed, and events such as the various half-marathons (both running and bicycling) could not be safely accommodated.

A too-narrow, or otherwise unsafe, trail might mean the large events would need to be rerouted onto East Lake Sammamish

Parkway, which would be an inconvenience for all Sammamish residents.

Please approve the permit with the trail widths as proposed, and with crossing priority for trail users.

- Michael Hobbs
- Secretary, Friends of Marymoor Park

Michael Hobbs
13506 NE 66th St
Kirkland, WA 98033
4253011032

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:42 PM

To: williamalanphoto@gmail.com <williamalanphoto@gmail.com>;

Dear Will,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Will Alan [<mailto:williamalanphoto@gmail.com>]

Sent: Thursday, January 26, 2017 7:42 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Will

Will Alan
12025 215th PL SE
Snohomish, WA 98296
2069338853

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:40 PM

To: rcc@blarg.net <rcc@blarg.net>;

Dear Patrick,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Patrick Marek [<mailto:rcc@blarg.net>]

Sent: Thursday, January 26, 2017 7:29 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

I frequently cycle around Lake Sammamish, and have used both the on-road bike lanes and the East Lake Sammamish Trail. However, many bicyclists in your community and adjacent ones will not ride on roadway bike lanes, no matter how well designed they are. That means that many recreational and commuting cyclists who want to travel between Issaquah and Redmond will only use the East Lake Sammamish Trail. In order to make Segment 2B as safe and welcoming for all trail users as the rest of the trail is, it must be brought up to AASHTO standards. Leaving it in its current state will only increase the likelihood of accidents, and increased liability for the City of Sammamish.

Please approve the permit, as proposed.

Sincerely,

Patrick Marek

Patrick Marek
2814 NE 177th Place
Lake Forest Park, WA 98155
2063615064

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:40 PM

To: mjct_hobbs@msn.com <mjct_hobbs@msn.com>;

Dear Jana,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Jana Hobbs [mailto:mjct_hobbs@msn.com]

Sent: Thursday, January 26, 2017 7:29 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

As a resident of Kirkland, I enjoy riding my bike to Marymoor park and beyond. The circuit around Lake Sammamish, or a ride to Issaquah makes a fine day trip. Unfortunately, the gap in the East Lake Sammamish trail forces bicyclists and pedestrians onto the roadway, which is significantly less pleasant and less safe. I cannot in good faith invite my friend's teenage daughter to ride the whole trail with me until the trail is whole.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Jana Hobbs
13506 NE 66th St
Kirkland, WA 98033
4258692370

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 12:40 PM

To: stevel427@yahoo.com <stevel427@yahoo.com>;

Dear Steve,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Steve Leach [<mailto:stevel427@yahoo.com>]

Sent: Thursday, January 26, 2017 7:24 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I would love to use the ELST to ride my bike between Redmond, Sammamish & Issaquah. As it now stands I have to detour to riding on the shoulder of the street. Doing so is dangerous, the shoulder is not swept often enough on a regular basis. Causing flats, and risky repairs on the side of the road.

Cars that pass even if they provide 3 feet of space, still kick rocks and debris towards the shoulder, once having just missing me. I do not wish to be injured by flying debris.

Sincerely,

Steve Leach
9126 170th Ave NE
Redmond, WA 98052
4258690120

RE: Lake Sammamish Trail

Lindsey Ozbolt

Fri 1/27/2017 11:28 AM

To: Msp482@gmail.com <Msp482@gmail.com>;

Dear Jeff,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415) and Inglewood Hill Parking Lot (SSDP2016-00414).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Jeff Goldsmith [<mailto:Msp482@gmail.com>]
Sent: Thursday, January 26, 2017 7:23 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Lake Sammamish Trail

Dear

Dear Review Group,

Please allow the trail to be a full width state standard width trail.

The construction of the trail should be the full width to allow the most safe design.

By trying to shrink the trail down it will only cause dangerous congestion and increase the change for accidents.

Sammamishn has the chance to leave a legacy gift to the whole area by having the widest trail.

I have ridden the trail before, and seen the areas where it is compressed down. It needs to be expanded to include the widest design through all areas.

Thank you

Jeff Goldsmith
145th

Bothell, WA 98011
Unlisted

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:27 AM

To:kc7adk@yahoo.com <kc7adk@yahoo.com>;

Dear Constance,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Constance Winter [<mailto:kc7adk@yahoo.com>]

Sent: Thursday, January 26, 2017 7:20 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

My husband and I enjoy riding our bikes in the Sammamish Valley, from Kenmore to Issaquah. Right now we don't venture too often beyond the mid-point of the east side of Lake Sammamish, due to the lack of a safe paved trail. The gravel surface of the interim trail is often unstable for the skinny tires on our road bikes. We prefer the safety of riding on the trail away from vehicular traffic. What has been constructed so far along east Lake Sammamish is beautiful and highly functional. We are looking forward to the completion of the paved trail surface on this trail.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in its interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Constance L Winter

Constance Winter
8436 NE 143rd ST
Kirkland, WA 98034
4258238927

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:18 AM

To: dsmyth@signett.com <dsmyth@signett.com>;

Dear Donald,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Donald Smyth [<mailto:dsmyth@signett.com>]

Sent: Thursday, January 26, 2017 7:14 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I use trails throughout the greater Seattle area, and they provide an important infrastructure resource for all citizens. Please allow this project to be completed!

As the President of Cyclists of Greater Seattle, I believe that safe trails go a long way towards encouraging people to get out of their cars for shorter trips.

Sincerely, Don Smyth

Donald Smyth
1530 27th Ave
Seattle, WA 98122
206-245-7625

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:18 AM

To: Politics@lampi.us <Politics@lampi.us>;

Dear Lampi,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Michael Lampi [<mailto:Politics@lampi.us>]

Sent: Thursday, January 26, 2017 7:08 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk, run and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in its interim state, and will provide a safe option for people who walk, run or bike to travel to and through Sammamish. Please complete the trail.

I frequently ride around Lake Sammamish, and this trail is a welcome change from having to ride on the Parkway with its typically high volume of high speed traffic.

Sincerely,

Michael Lampi
2667 170th Ave SE
Bellevue, WA 98008
4256413941

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:18 AM

To: Roddpemble@hotmail.com <Roddpemble@hotmail.com>;

Dear Rodd,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Rodd and Janie Pemble [<mailto:Roddpemble@hotmail.com>]

Sent: Thursday, January 26, 2017 7:07 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

We are writing to express our support for completing the ELST and approving permit SSDP2016-00415.

My wife and I (55 and 57 years old, both career professionals) and numerous friends from Whatcom County who bicycle tour and hike want to spend several weekends on YOUR trail each year, bringing thousands more tourism dollars and local economic activity to your towns and cities, benefitting all involved.

You almost have a very rare thing, an off road multi use trail that has food and board options along the trail, so visitors can spend more than one day, exploring crafts and antique stores, wineries and gardens, B&B's and restaurants.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in its interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Rodd and Janie Pemble
2915 Cedarwood
Bellingham, WA 98225
3607342441

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:18 AM

To: srijan55@gmail.com <srijan55@gmail.com>;

Dear Manish,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Manish Gupta [<mailto:srijan55@gmail.com>]

Sent: Thursday, January 26, 2017 7:03 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Manish Gupta
11500 158th Ave NE
Redmond, WA 98052
4257850133

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:17 AM

To: sraudebaugh@hotmail.com <sraudebaugh@hotmail.com>;

Dear Scott,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: scott raudebaugh [<mailto:sraudebaugh@hotmail.com>]

Sent: Thursday, January 26, 2017 6:58 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

scott raudebaugh
6020 204th pl ne
redmond, WA 98053
2069307544

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:17 AM

To: Klimandmoran@msn.com <Klimandmoran@msn.com>;

Dear Dave,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Dave Klim [<mailto:Klimandmoran@msn.com>]

Sent: Thursday, January 26, 2017 6:58 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Dave Klim
8910 12th Ave Ne
Seattle, WA 98115
2067356432

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:17 AM

To:timothy.durham86@gmail.com <timothy.durham86@gmail.com>;

Dear Timothy,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Timothy Durham [<mailto:timothy.durham86@gmail.com>]

Sent: Thursday, January 26, 2017 6:54 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415. I am an avid cyclist. The finished portion of the trail is a joy to ride on, and having a complete trail from Marymoor to Issaquah will make transiting the East side of Lake Sammamish safer and more pleasant for everyone. The gravel section of the trail is not very suitable for road bikes, and there is no clear entry or exit to the trail near where the paved section of the trail currently ends -- only signs prohibiting trail users from exiting or entering on driveways. Furthermore, once one does find a way to exit the trail, he is on the East Lake Sammamish Parkway, which has a high speed limit and no bike lane (although it does have a shoulder for much of the way). The situation is even worse going from South to North because cyclists that want to rejoin the bike trail at the northern paved section have to make a left turn through traffic on East Lake Sammamish Parkway, which can be dangerous considering the speed at which cars drive there.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Timothy Durham
6214 9th Ave NE Apt 201
Seattle, WA 98115
2036058635

RE: Please Complete the East Lake Sammamish Trail (Segment 2B)

Lindsey Ozbolt

Fri 1/27/2017 11:17 AM

To: Amy Reiss <amyreiss2u@gmail.com>;

Dear Amy,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

[Lindsey Ozbolt](#)

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Amy Reiss [mailto:amyreiss2u@gmail.com]

Sent: Thursday, January 26, 2017 6:51 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>; Kelly.donahue@kingcounty.gov

Subject: Please Complete the East Lake Sammamish Trail (Segment 2B)

Dear Ms. Ozbolt and Ms. Donahue,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

My Dad first taught me to ride a bike in the 1960s and today I ride to protect the environment as well as my own health. I co-founded a charity bike team to raise money to fight Multiple Sclerosis, and we frequently use roads around East Lake Sammamish for our east-side team members to train for the ride. We have raised over \$130,000 since 2004. I also enjoy visiting friends around Sammamish and walking on the trail with my friend and her pre-teen daughter. The ELST is an important link in our regional trail network, especially as population increases put additional pressure on our transportation infrastructure.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

RE: Support for Segment 2B, East Lake Sammamish Trail

Lindsey Ozbolt

Fri 1/27/2017 11:16 AM

To: David Minaglia <dminaglia@gmail.com>;

Dear David,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

[Lindsey Ozbolt](#)

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: David Minaglia [mailto:dminaglia@gmail.com]

Sent: Thursday, January 26, 2017 6:48 PM

To: City Council <citycouncil@sammamish.us>; Lindsey Ozbolt <LOzbolt@sammamish.us>; Kelly.donahue@kingcounty.gov

Subject: Support for Segment 2B, East Lake Sammamish Trail

Hello,

I am writing in support of the permit to complete the East Lake Sammamish Trail. Completing this trail will bring world class recreation, healthy activities, and connectivity of trails that benefit the entire region. I do believe more people will use the path if paved, providing for safer transit and recreation. Cars will appreciate having the bicycles and runners off the road as well - a win-win for all (I hope).

Thanks,
David Minaglia

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:16 AM

To: razelg@gmail.com <razelg@gmail.com>;

Dear Carey,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Carey Gersten [<mailto:razelg@gmail.com>]

Sent: Thursday, January 26, 2017 6:42 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I ride along this route frequently.

Please support completing the ELST. Approve permit SSDP2016-00415. And approve the trail permit as submitted. This helps ensure users of all ages and abilities can safely use the trail, a trail built to national standards (AASHTO) with a 12 ft width plus 2 ft gravel shoulders. There will be adequate room for all users concurrently.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community asset and amenity, providing safe travel for people who bike to and through Sammamish. Please complete the trail.

Sincerely,

Carey Gersten

9430 15th Avenue SW Unit B
Seattle, WA 98106
206-792-9044

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:16 AM

To: lippytan@hotmail.com <lippytan@hotmail.com>;

Dear Moe,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Moe Moosavi [<mailto:lippytan@hotmail.com>]

Sent: Thursday, January 26, 2017 6:36 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

I have been riding my bicycle all around the Seattle area for over 40 years. I frequently ride my bike to Marymoor Park and around East Lake Sammamish, including a loop around the south end of the lake near Lake Sammamish Park. Completing the last 3.6 miles of the trail would be a huge improvement in safety for trail users and motorists alike.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Moe Moosavi
4203 - 2nd Ave NW
Seattle, WA 98107
206-794-2781

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:15 AM

To: kolb_dl@yahoo.com <kolb_dl@yahoo.com>;

Dear Daniel,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Dr. Daniel L. Kolb [mailto:kolb_dl@yahoo.com]

Sent: Thursday, January 26, 2017 6:36 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I personally ride the current trail 2-3 times each week. As it is currently not paved, I must use my old mountain bike with 1.75 inch tires to safely navigate it. It is narrow in many places and I regularly need to alert fellow trail users (i.e. runners, dog walkers, fellow cyclists, etc.) of my passing.

I ride from Shoreline and will continue to use the trail, whether paved or not. But I and my fellow trail users would greatly appreciate the ease of use of a newly paved trail. Everyone I see is respectful of the properties of the well-to-do homeowners in the area. That would certainly continue....

Sincerely,

Dr. Daniel L. Kolb
1745 NE 150th Street
Shoreline, WA 98155
206.403.3256

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:15 AM

To: jang7403@hotmail.com <jang7403@hotmail.com>;

Dear Jaechul,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Jaechul Chang [<mailto:jang7403@hotmail.com>]

Sent: Thursday, January 26, 2017 6:29 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Jaechul Chang
138 Cougar Ridge RD NW
Issaquah, WA 98027
4257484253

RE: Please Approve the Permit for Segment 2B of the ELST

Lindsey Ozbolt

Fri 1/27/2017 11:14 AM

To:Linda Tarte <t.cycle@frontier.com>;

Dear Linda,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development

425.295.0527

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

From: Linda Tarte [<mailto:t.cycle@frontier.com>]

Sent: Thursday, January 26, 2017 6:26 PM

To: Lindsey Ozbolt <LOzbolt@sammamish.us>

Subject: Please Approve the Permit for Segment 2B of the ELST

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415. It is a gem of a pedestrian/biking trail with fabulous Northwest views and I use it often.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Linda Tarte
Kirkland, WA

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:15 AM
To: 'tomofwashington@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Tom,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Tom Lang [mailto:tomofwashington@gmail.com]
Sent: Thursday, January 26, 2017 6:25 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Tom Lang
5530 E Greenlake Way N
Seattle, WA 98103
2069140673

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:14 AM
To: 'Alan Hua'
Subject: RE: a letter for Ms Ozbolt page 1

Dear Alan,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Alan Hua [mailto:alanhua467@gmail.com]
Sent: Thursday, January 26, 2017 5:54 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: a letter for Ms Ozbolt page 1

January 25, 2017

Mr. Alan Hau
467 E. Lake Sammamish Pkwy SE
Sammamish, WA 98074

Ms. Lindsey Ozbolt
Associate Planner
City of Sammamish
801 228th Ave SE
Sammamish, WA 98075

Re: Lake Sammamish Trail Segment B
Shoreline Substantial Development Permit Comments and Concerns
467 E. Lake Sammamish Pkwy SE
Mr. Alan Hau

Dear Ms. Ozbolt:

I am very disappointed that after having owned my property since 1993, that there has not been more interaction and discussion with us by King County to understand our needs and concerns. We are looking to the City of Sammamish and its officials to provide us protection from these unwarranted impacts and to see that our interests are protected. Please find below our Comments and concerns regarding the Shoreline Substantial Development Permit.

1. We are opposed to the removal of driveway #14 or any modifications to our access. We are very concerned with the removal impacting our access, as well creating safety concerns for emergency vehicles being able to arrive at our house or our neighbors.
2. As I indicated above, we have owned the property since 1993, and prior to that going back into the 1960's, both accesses have been being used as well as all of the property currently paved or cleared that is being used for parking as well. We believe that we have significant property rights that have been created that we need to have preserved and protected.
3. The submitted tree preservation plan does not address the existing trees in front of our house being preserved. Since the plan indicates that none of the trees in front of our house will be removed, we want confirmation that they will be retained, regardless of the location of the clear and grub line shown on the plans. To remove existing trees without identifying them in advance would be extremely disingenuous. Only full preservation is acceptable to us, should this change in any way, we would be adamantly opposed.

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:14 AM
To: 'Alan Hua'
Subject: RE: A letter for Ms Ozbolt

Dear Alan,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your additional comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Alan Hua [mailto:alanhua467@gmail.com]
Sent: Thursday, January 26, 2017 5:57 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: A letter for Ms Ozbolt

January 25, 2017

Mr. Alan Hau
467 E. Lake Sammamish Pkwy SE
Sammamish, WA 98074

Ms. Lindsey Ozbolt
Associate Planner
City of Sammamish
801 228th Ave SE
Sammamish, WA 98075

Re: Lake Sammamish Trail Segment B
Shoreline Substantial Development Permit Comments and Concerns
467 E. Lake Sammamish Pkwy SE
Mr. Alan Hau

Dear Ms. Ozbolt:

I am very disappointed that after having owned my property since 1993, that there has not been more interaction and discussion with us by King County to understand our needs and concerns. We are looking to the City of Sammamish and its officials to provide us protection from these unwarranted impacts and to see that our interests are protected. Please find below our Comments and concerns regarding the Shoreline Substantial Development Permit.

1. We are opposed to the removal of driveway #14 or any modifications to our access. We are very concerned with the removal impacting our access, as well creating safety concerns for emergency vehicles being able to arrive at our house or our neighbors.
2. As I indicated above, we have owned the property since 1993, and prior to that going back into the 1960's, both accesses have been being used as well as all of the property currently paved or cleared that is being used for parking as well. We believe that we have significant property rights that have been created that we need to have preserved and protected.
3. The submitted tree preservation plan does not address the existing trees in front of our house being preserved. Since the plan indicates that none of the trees in front of our house will be removed, we want confirmation that they will be retained, regardless of the location of the clear and grub line shown on the plans. To remove existing trees without identifying them in advance would be extremely disingenuous. Only full preservation is acceptable to us, should this change in any way, we would be adamantly opposed.

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:14 AM
To: 'Alan Hua'
Subject: RE: Letter page 2

Dear Alan,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your additional comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Alan Hua [mailto:alanhua467@gmail.com]
Sent: Thursday, January 26, 2017 6:00 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Letter page 2

4. Please provide more details of the proposed wooden guardrail. A guardrail does not provide appropriate privacy and noise protection for our lot without all trees being retained. Please provide a detailed noise mitigation plan. We should not move forward until the noise issues are fully evaluated and mitigation is agreed to, and measures put in place to protect our privacy.
5. Safety and security issues have not been addressed, and a formal plan with identified funding mechanisms has not been provided to the residents or the City Council. This should not proceed until this is identified and resolved. Additionally, there has been nothing on ongoing maintenance addressed with the appropriate funding to deal with it. Once they build it, how do we know it will be safe and secure in the future? This should be resolved with agreements in place prior to the project being allowed to move forward.

Should you have any questions, please feel free to contact me by email at <mailto:alanhau467@gmail.com>.

Very truly yours,

Alan H 

Cc: Brad Bastian
Mark Kaushagen

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:13 AM
To: 'Adam Eaton'
Subject: RE: Comments on ELST South Segment B (STA 375 - 380)

Dear Adam,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Adam Eaton [mailto:alreadyeaton@gmail.com]
Sent: Thursday, January 26, 2017 5:43 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comments on ELST South Segment B (STA 375 - 380)

To Lindsey Ozbolt

I am emailing you my objections and concerns with the proposed trail and fish passage changes included in the South Sammamish Segment B 60% plan. In reviewing the plans and communicating the numerous pros and cons of these plan details with my neighbors, I feel compelled to express my shared concerns that I have and add some volume to my neighbors concerns as well. We are a community of 10 homeowners of Whileaway Court and referenced as Driveway #10.

My neighbor Mike Schmidt has done huge amounts of work in his reply and I feel his concerns echo mine. I have used his concerns as a template and have some additional comments.

New culvert under Whileaway Court (reference pages AL39, FP1, and WP9)

- Property rights concerns
 - Most proposed construction is within private road (519710TRCT) that is not part of the trail ROW. ALL home owners have equally shared ownership of this tract, so every owners consent is required for any construction to begin.
 - I look forward to working together and coming to an agreement that best suits all parties.
 - Why does the proposed construction extend into privately owned Gill Trust lots [5197100135](#) and [5197100130](#) instead of remaining within the shared driveway 519710TRCT?
- It is important to preserve the two redwood trees at the west exit of the culvert, near 11+00 on the p-line and adjacent to rock walls #1 & #2. An open dialogue would be greatly appreciated.
- Earth walls #42 and #43

- The chain link fencing is not acceptable, I would like a more aesthetically pleasing and natural fence choice that fits the style of the neighborhoods existing fencing. (Cedar rails)
- Both earth walls #42 and #43 lengths and starting points should be reevaluated with regards to driveway orientation and traffic flows and accessibility.
- What is the relationship of culvert replacement plans to trail plans (tied together, different projects, timelines?)
- How will all the utilities be routed and what will the effect on utilities be during construction?
 - Gas, water, sewer are all underground in the road where culvert resides (as are cable and power in other road areas in the construction zone)
 - Current plan would require removal/replacement of power pole near south edge culvert. Could power on these poles be moved underground as part of this work?
 - FYI: There is a separate proposal for a fire hydrant to be added north of the proposed fish passage culvert work on 519710TRCT. This work should be coordinated.
- How will people have access to their homes during culvert/road construction?
- Road grading and drainage is an important concern. We already have issues with water on the road flowing towards residence driveways, in particular the driveways of 835, 903, 909, or 915, so we would appreciate any grading changes to improve upon the drainage conditions.
- Concern about current design reducing parking availability.
- What are landscape plans for this area after culvert replacement?

New trail plan (reference pages AL20 and LA12):

- Is it necessary for the trail around 378+00 to meander into and destroy existing delightful landscaping adjacent to 929?
 - Can the meander be avoided here or moved somewhere else along the trail?
 - At minimum can the meander be reduced to preserve more of the mature trees and bushes?
 - If infringement on wetlands is a concern, the designation of the area east of the trail here as wetland 23C is very questionable. Can this be reevaluated and the plans changed to avoid deconstruction of a viable landscape.
 - We request that south of driveway #10 landscape be replaced with low growing plants or grass.

Lindsey, we all appreciate you and your offices time and hard work in bringing the best possible project to fruition. We understand that not all our requests and concerns will be met but we do expect them to be thoughtfully dealt with and respected. If you have any concerns or questions feel free to contact me directly.

Thank you,
Adam Eaton

835 E. Lake Sammamish Shore LN SE
Sammamish, WA 98075
6195725412

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:12 AM
To: 'Rowarren506@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Rose,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Rose Warren [mailto:Rowarren506@gmail.com]
Sent: Thursday, January 26, 2017 5:17 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Make the Washington trail network complete! It is incredible that there are so many bike and ped trails available for me to be healthy and active. Thank you for giving this section a priority!

Please approve the permit, as proposed, with expediency.

Sincerely,

Rose Warren
1220 Boren Ave Apt 603
Seattle, WA 98101
480-330-5606

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:03 AM
To: 'hughandjanetkimball@yahoo.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Hugh,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Hugh Kimball [mailto:hughandjanetkimball@yahoo.com]
Sent: Thursday, January 26, 2017 5:16 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I use a bicycle to get around. An efficient trail is helpful and much safer than using the busy road. Thank you for doing such a nice job on the new sections of the trail. It is one of the best trails around.

Sincerely,

Hugh Kimball
8051 28th Ave NE
Seattle, WA 98115
206 525 8229

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:03 AM
To: 'dan.liebling+sam@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Dan,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: D Liebling [mailto:dan.liebling+sam@gmail.com]
Sent: Thursday, January 26, 2017 5:15 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear council members:

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Cycling and walking on E Lk Sammamish Parkway was dangerous until the existing segments were completed. Now, there is a safe path, EXCEPT for the final segment, awaiting your approval.

Remember that once upon a time, people protested the Burke-Gillman trail, but now that same trail is seen as a huge asset and value-add for those neighbors bordering the trail.

D Liebling
156th Ave NE
Redmond, WA 98052
206-000-0000

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:03 AM
To: 'RAMON BELUCHE'
Subject: RE: Comments on East Lake Sammamish Trail - B 60% Plans

Dear Ramon,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: RAMON BELUCHE [mailto:ramonandlinda@msn.com]
Sent: Thursday, January 26, 2017 5:07 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comments on East Lake Sammamish Trail - B 60% Plans

Ms. Ozbolt,

When my wife and I met with County staff during a prescheduled appointment on January 10, we specifically asked about access to the waterfront portion of our property at 1721 E. Lake Sammamish PL. SE. during construction. We were told by Ms. Donahue (I believe that is the name), who assisted us in reviewing the 60% plans, that access would be provided and safety arrangements would be made for it.

I have recently learned from some of my neighbors that they have been told by County staff at the City's plan review desk, that there will not be any access to the waterfront portions of the properties during construction. It would appear as if County staff is arbitrarily planning on preventing access to people's properties during what will likely be a minimum of a 12 month construction period.

Access to the waterfront portion of properties divided by the trail must be maintained during construction and the County must clearly address this particularly sensitive issue as part of the completion of the trail improvement plans. There needs to be clear and specific language in the construction plans and documents to address this issue.

I trust that our comments on the 60% plan review are being also reviewed by the City's staff and elected officials and that they too will participate in formulating solutions to these problems.

Thank you for your consideration,

Ramon A. Beluche

Lindsey Ozbolt

From: Jeff Peterson <jpeterson@tollbrothersinc.com>
Sent: Friday, January 27, 2017 11:35 AM
To: Lindsey Ozbolt
Subject: RE: Comment on SSDP 2016-00415 - Trail

Thank you Lindsey. Hopefully your mailbox returns to normal shortly!
Jeff

From: Lindsey Ozbolt [mailto:LOzbolt@sammamish.us]
Sent: Friday, January 27, 2017 11:02 AM
To: Jeff Peterson
Subject: RE: Comment on SSDP 2016-00415 - Trail

Dear Jeff,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Jeff Peterson [mailto:jpeterson@tollbrothersinc.com]
Sent: Thursday, January 26, 2017 4:48 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comment on SSDP 2016-00415 - Trail

Lindsey:

Please accept this as public comment regarding plans for the trail improvement project in Sammamish. Early last year we worked on the feasibility of a property for development that receives a significant volume of water discharge from the Tamarack neighborhood. As you know, Tamarack was developed under the regulation and permitting requirements of King County. This trail improvement project represents a key element in the eventual solution to the problematic drainage issues in Tamarack that have developed in that neighborhood and have been the subject of many council meetings and a 2016 drainage study of the area. However, upon my cursory review of the plans, stormwater piping appears to be sized in the realm of 12" diameter pipe with type 1 catchbasins. These sizes appear to be inadequate to handle volumes being produced by the Tamarack neighborhood at this time (table 3 of the attached preliminary modeling memo), which currently discharge onto the property uphill of this project which is the subject of our feasibility. As the city has completed drainage studies for the Tamarack neighborhood, it seems advisable that the discharges be factored into the sizing of the storm system improvements which appear to have been designed prior to the drainage study.

As King county was the original approving agency for the Tamarack neighborhood, it seem fair the deficiencies in stormwater for that neighborhood are partially the responsibility of the county, and given the opportunity the county now has to contribute to the solution, it would be a poor use of public funds and effort to not consider these needed drainage facilities in the context of this project.

Thank you for your consideration,

Jeff Peterson
9720 NE 120th PL STE 100
Kirkland, WA 98034

DATE MAY 9, 2016

TO DERYA DILMEN, PROJECT ENGINEER, CITY OF SAMMAMISH

CC

FROM ROBERT PARISH, PE, PROJECT MANAGER, OSBORN CONSULTING, INC.
JOSH VAN WIE, PE, PROJECT ENGINEER, OSBORN CONSULTING, INC.

SUBJECT TAMARACK DRAINAGE IMPROVEMENT PROJECT – MODELING MEMORANDUM

INTRODUCTION

The Tamarack neighborhood is located on the west side of the City of Sammamish bordering Lake Sammamish. The neighborhood contains properties in the area near the intersection of East Lake Sammamish Parkway and Louis Thompson Road NE.

The Tamarack basin contributes flow to Lake Sammamish through a culvert at the intersection of East Lake Sammamish Parkway and Louis Thompson Road. The basin is approximately 52 acres in size, and includes a system of storm drains, culverts, and ditches. Properties in the basin are zoned as R-4 residential, and land cover consists primarily of single family residential houses. Topography ranges in elevation from approximately 40 feet to 460 feet with slopes up to approximately 30% in the steepest areas.

The goal of this study is to use hydrologic and hydraulic modeling to assess the existing flows reaching Lake Sammamish and potential changes in peak flow due to future development in the Tamarack neighborhood. Modeling was performed using the Western Washington Hydrology Model (WWHM) and the EPA Storm Water Management Model (SWMM) through the PCSWMM platform.

SUBBASIN DELINEATION

The Tamarack basin was divided into 8 subbasins for performing modeling calculations. Subbasin boundaries were delineated using King County and City of Sammamish GIS data including elevation contours, streams, parcels, drainage pipes, culverts, manholes, and catch basins. Subbasins were divided by choosing specific points in the stormwater conveyance system and separating out the land area that contributes flow to each point.

Site visits were performed to verify subbasin boundaries. Subbasin boundaries were confirmed by locating high points at the edge of subbasins and by visually locating pipes or culverts that redirected flow to create a basin boundary. The subbasin delineations can be seen in **Figure 1**.

Subbasin 4 is currently undeveloped, and consists of forested area. The remaining subbasins are developed, with the majority of lots built out as single family residential. A few individual undeveloped lots exist in Subbasins 2, 6, and 7.

WWHM MODEL

WWHM was used for computing runoff in each subbasin for existing and future conditions. Input data required for WWHM includes impervious and pervious cover, slopes, and soil types.

Existing impervious areas were calculated using aerial imagery databases available in ArcGIS software. The most recent imagery available was from July, 2013. Impervious areas were traced using ArcGIS, and roadway impervious areas were separated from parcel impervious areas. Impervious cover on parcels was assumed to be 70 percent building area and 30 percent driveway area based on aerial photographs. Separation of individual buildings, driveways, and other impervious is beyond the scope of this work. Pervious areas were assumed to be 100 percent lawn in developed subbasins. In Subbasin 4, which is undeveloped, pervious areas were assumed to be 100 percent forest based on aerial imagery and site visit observations.

Proposed impervious areas were calculated assuming parcels will redevelop individually and increase impervious cover to the maximum allowable level. Developments in the Tamarack basin are required to use level 2 flow control standards according to the City of Sammamish flow control map. Under these standards, developments or redevelopments with greater than 5,000 square feet new or replaced impervious surface are required to install flow control. For the WWHM model, it was assumed that any existing lots with less than 5,000 square feet impervious would redevelop and add impervious area to reach 5,000 square feet. This added a total of 2.12 acres of impervious area for an increase in impervious cover of approximately 4 percent over the entire Tamarack Basin. A summary of existing and proposed conditions is provided in **Table 1**.

Subbasin 4 currently consists of a single large tract of land. The tract is expected to be subdivided and developed into residential lots in the future. The subdivision of the land for development will require installation of flow control meeting the level 2 standards for peak flows and flow durations. Subbasin 4 was modeled as forest, assuming that flow control will maintain predeveloped flows in the subbasin.

Slopes for each subbasin were calculated using GIS elevation contours. Slopes for the eight subbasins ranged from 6 to 29 percent, with an average slope of 17 percent. Soil information was taken from the Natural Resources Conservation Service Web Soil Survey, which compiles soil survey data from various sources. Soils in the Tamarack basin consist primarily of glacial outwash soils, which make up 86 percent of the basin. Some areas of glacial till are also present at the highest and lowest elevations in the basin. WWHM requires soils to be categorized as type A/B, type C, or saturated soils. Soil categories were assigned using the Stormwater Management Manual for Western Washington, which classifies the outwash soils in the basin as type A/B and the till soils as type C. Detailed soil information is provided in **Table 1**.

Under existing conditions, runoff from Subbasins 7 and 8 is collected in an 8-inch drainage system located at NE 4th Street and is released to an open channel that passes through Subbasin 4. Soils in Subbasin 4 consist of glacial outwash, and are expected to have a higher infiltration capacity than till soils. Runoff from basins 7 and 8 was routed through Subbasin 4 using a lateral flow basin in WWHM to estimate the infiltration and remaining runoff that continues through Subbasin 4 to the outfall.

Table 1 | Summary of WWHM Parameters

Subbasin	Total Area (AC)	Existing Percent Impervious	Future Percent Impervious	Slope	Percent Outwash Soil	Percent Till Soil
1	2.15	38%	38%	6%	29%	71%
2	1.61	33%	48%	9%	62%	38%
3	14.07	49%	51%	19%	100%	0%
4	5.82	2%	0%	14%	100%	0%
5	2.70	48%	58%	17%	100%	0%
6	16.25	34%	41%	13%	100%	0%
7	2.22	40%	47%	29%	42%	58%
8	4.51	39%	44%	22%	85%	15%

SWMM MODEL

SWMM was used to model flow from WWHM through the pipes and open channels in the lower part of the Tamarack basin. The drainage system for the model was constructed using survey data, record drawings, and field measurements. Pipes modeled in this study include the mainline pipes that extend from the downstream ends of Subbasins 3, 4, and 6 and continue to Lake Sammamish. A portion of the 8-inch drainage system in Subbasin 8 was also included. The model is meant primarily to provide an estimate of peak flows and velocities in the downstream end of the system. Because of the model's intended use, the full drainage system through the Tamarack basin was not included in the model.

Pipe invert elevations and lengths were taken primarily from survey data and record drawings. Survey data was used for the majority of pipes and culverts along Louis Thompson Road and for the pipes along NE 4th Street in Subbasin 8. Several areas of missing data were encountered for the pipes along Louis Thompson Road where existing manholes could not be located. Based on survey notes and site visits, it appears that existing manholes may have been paved over with asphalt. In these cases, pipe data was taken from record drawings. One area with missing data includes the pipes on the south side of Louis Thompson Road near the intersection with East Lake Sammamish Parkway NE. Record drawings show the system extending to the south along East Lake Sammamish Parkway NE and not connecting into the main Tamarack drainage system. However, no pipes along East Lake Sammamish Parkway NE could be verified during the site visit, and it appears possible that the existing pipes do connect to the main Tamarack system. The model was built assuming the pipes are connected to provide a more conservative estimate of flows. However, it should be noted that the future development will not alter the destination of any flows in the basin. The pipes used in the SWMM model can be seen in **Figure 3**.

Open channel and ditch areas were observed in the field to determine the bottom width, approximate side slope, and estimated channel roughness. Observations were taken at the ditch on the north side of Louis Thompson Drive and at the open channel section between East Lake Sammamish Parkway NE and the East Lake Sammamish Trail to the west of the roadway. The open channel that extends from the trail to Lake Sammamish could not be observed because the channel passes through private property that could not be accessed at the time of the site visit. Parameters for this channel were assigned using engineering judgement based upon the site photographs included as part of the Cooper Beach – Mitigation As built Memorandum (see attached).

Two existing detention systems were included in the model. One is a detention pond located at the Subbasin 5 outlet that provides flow control for the residences near the intersection of 207th Avenue NE and NE 3rd Street. The second is an inline detention pipe located in the 205th Avenue NE right-of-way

near the intersection with Louis Thompson Road. Parameters for both detention systems and their orifices were taken from record drawings.

Flows for the SWMM model were taken from WWHM results for 100-year peak runoff. Flow from each subbasin was applied as a constant flow at the appropriate model node. Flows from Subbasin 3 were split between two nodes because a portion of flow from the subbasin does not reach the conveyance system until near the downstream end. The total flow was divided based on contributing area, with 80 percent assigned to the main drainage line and 20 percent assigned to the farthest downstream node in the subbasin.

SHEAR STRESS CALCULATIONS

Shear stresses for the open channel at the Lake Sammamish outfall were calculated to determine the potential for erosion. The predicted shear stress for each scenario was calculated using equations developed for channel design by the Federal Highway Administration (Kilgore, 2005). The following equations were used for calculating shear stress applied by the modeled flow and permissible shear stress on the channel soil and vegetation:

$$\tau_0 = \gamma R S_0 \text{ (Applied shear stress, FHWA Equation 2.3)}$$

$$\tau_p = \frac{\tau_{p,soil}}{(1-C_f)} \left(\frac{n}{n_s}\right)^2 \text{ (Permissible shear stress, FHWA Equation 4.7)}$$

Values for flow rates, velocities and depths, and slopes were taken from the WWHM and SWMM models and used to calculate shear stress. Values for the grass cover factor and roughness were taken from the FHWA document or other literature sources. The bed material grain size where 75% of material is finer (i.e. D₇₅) was estimated to be 2 inches. This estimate was based on observations of the upstream channel near the trail and photos of the constructed channel provided in the Cooper Beach – Mitigation As built Memorandum.

MODELING RESULTS

The peak flow results predicted by WWHM are provided in **Table 2**. Peak flows for future conditions were greater than existing conditions due to increased impervious cover. Subbasins 2, 5, and 6 had flow increases of greater than 10 percent at the 100-year event. Subbasin 4 is predicted to have no significant change in flow due to expected installation of flow control during future development. This will ultimately depend on the design of the future development.

Table 2 WWHM Modeled Peak Flows								
Scenario	Flows by Subbasin (CFS)							
	1	2	3	4*	5	6	7*	8*
Existing 2-year	0.42	0.27	2.97	0.05	0.57	2.40	-	-
Existing 100-year	1.09	0.71	6.74	1.86	1.30	6.01	-	-
Future 2-year	0.42	0.36	3.07	0.01	0.67	2.78	0.49	0.91
Future 100-year	1.09	0.83	6.92	0.03	1.47	6.67	1.19	2.14

*For existing conditions, subbasins 7 and 8 were modeled as lateral basins with total flow measured at the outlet of subbasin 4

The peak flows and velocities predicted by SWMM for the ditch and open channel sections are listed in **Table 3**. Flows at the Lake Sammamish outfall are estimated to increase from 17.7 CFS under existing conditions to 20.3 CFS under future conditions during the 100-yr event. This constitutes a 15 percent increase in flow at the outfall. The primary reason for the increase is that runoff from Subbasins 7 and 8 will not be infiltrated as it flows over Subbasin 4. A smaller portion of the increase is caused by a higher percentage of impervious cover in all subbasins.

Velocities along Louis Thompson Road are near 10 feet per second for both existing and future conditions at the 100-year event. The high velocities are caused by steep slopes in the roadside ditch and a grass lined channel without rock material to provide increased roughness. Existing velocities in the open channel sections near Lake Washington are predicted to be 3.8 feet per second at the 100-year event, and are predicted to increase slightly with the higher volume of flow in the future.

Table 3 SWMM Modeled Peak Flows and Velocities				
Location	Existing 100 year Peak Flow	Existing 100 year Velocity	Future 100 year Peak Flow	Future 100 year Velocity
Ditch along Louis Thompson Road NE	7.3 cfs	9.0 ft/s	8.1 cfs	10.3 ft/s
Open Channel between East Lake Sammamish Parkway NE and pedestrian trail	17.7 cfs	5.6 ft/s	20.3 cfs	5.8 ft/s
Open Channel between pedestrian trail and Lake Sammamish outfall	17.7 cfs	3.8 ft/s	20.3 cfs	3.9 ft/s

The permissible shear stress at the outfall channel was calculated to be 1.27 lb/sf. Calculated shear stresses for each storm event under existing and proposed conditions are shown in **Table 4**. The shear stresses are not expected to increase dramatically, and all predicted shear stresses are below the permissible shear stress. Because the permissible shear stress is based on site photos rather than field observations, there is room for refining the permissible stress calculation. Additional study is recommended during the design phase to investigate any potential erosive channel concerns and verify the level of shear stress that is appropriate for the channel. However, because of the relatively minor change in shear stress due to increased flows, the future conditions are expected to be similar to the existing conditions. If the existing channel is functioning without erosion concerns, then the future conditions will not likely create additional concern.

Table 4 Modeled Shear Stress at Outfall Channel			
Scenario	Flow	Velocity	Shear Stress
Existing 2-year	6.7 cfs	2.9 ft/s	0.57 lb/sf
Existing 100-year	17.7 cfs	3.8 ft/s	0.88 lb/sf
Future 2-year	8.7 cfs	3.1 ft/s	0.64 lb/sf
Future 100-year	20.3 cfs	3.9 ft/s	0.91 lb/sf

CONCLUSION

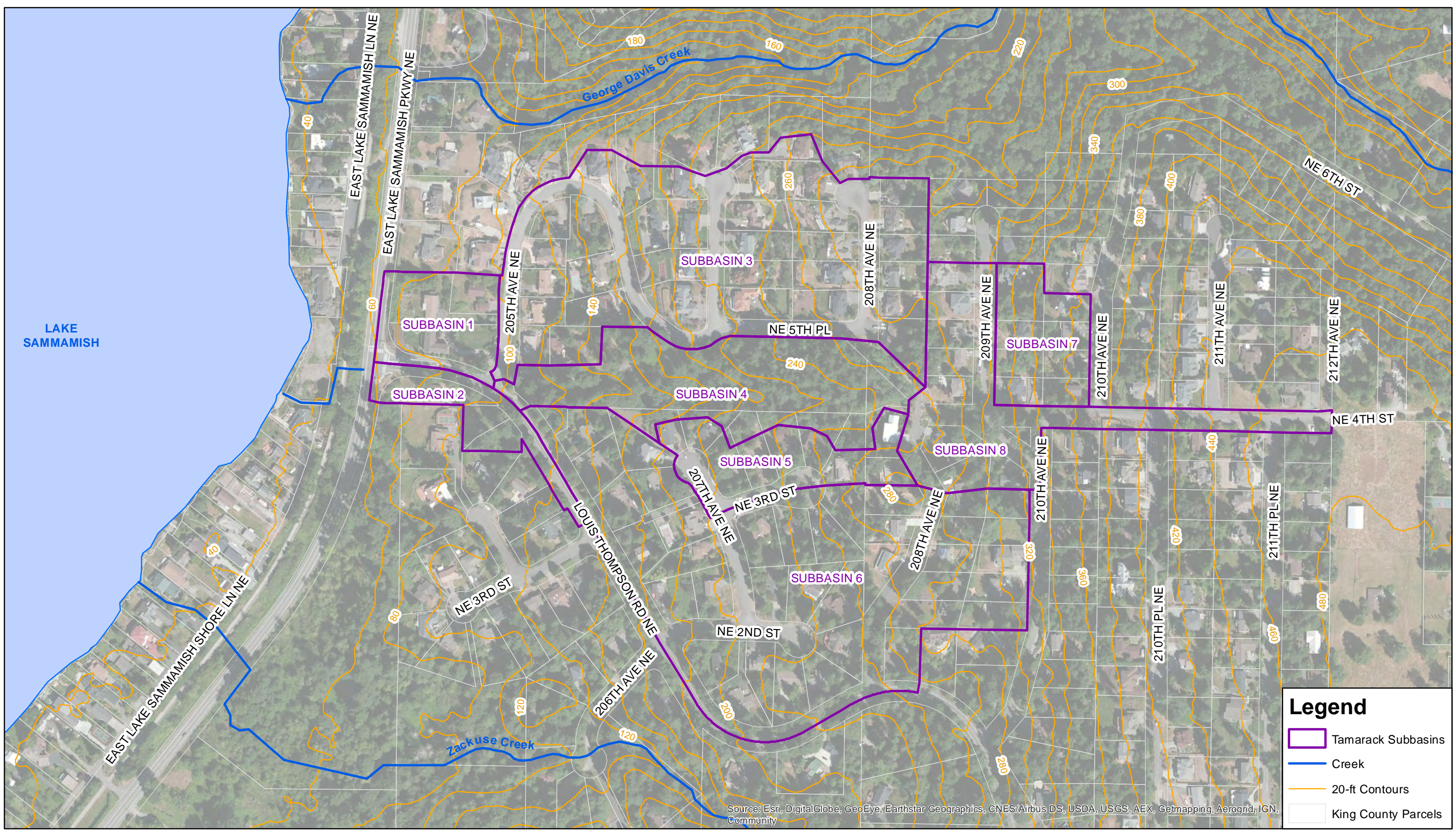
This modeling study developed runoff estimates for 8 subbasins in the Tamarack neighborhood for existing and future developed conditions. Peak flows are expected to increase by as much as 15 percent at the Lake Washington outfall due to increased impervious cover and the change in conveyance for Subbasins 7 and 8 to be conveyed through storm drains rather than an open channel that provides some level of infiltration capacity. Changes in velocity in the open channel near Lake Sammamish are expected to increase slightly due to the higher flow, but increases may not be a concern if there are no erosion or degradation concerns with the existing channel. It is recommended that the condition of the existing open channel be investigated prior to design and construction in Subbasin 4 to review erosion concerns and document existing conditions.

REFERENCES

Kilgore, R.T. and Cotton, G.K., 2005, "Design of Roadside Channels with Flexible Linings," U.S. Department of Transportation, Federal Highway Administration, FHWA-NHI-05-114, Hydraulic Engineering Circular No. 15, Third Edition.

APPENDIX A

FIGURES



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, Community

Legend

- Tamarack Subbasins
- Creek
- 20-ft Contours
- King County Parcels

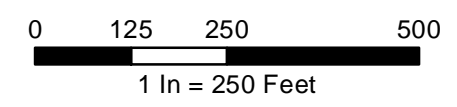
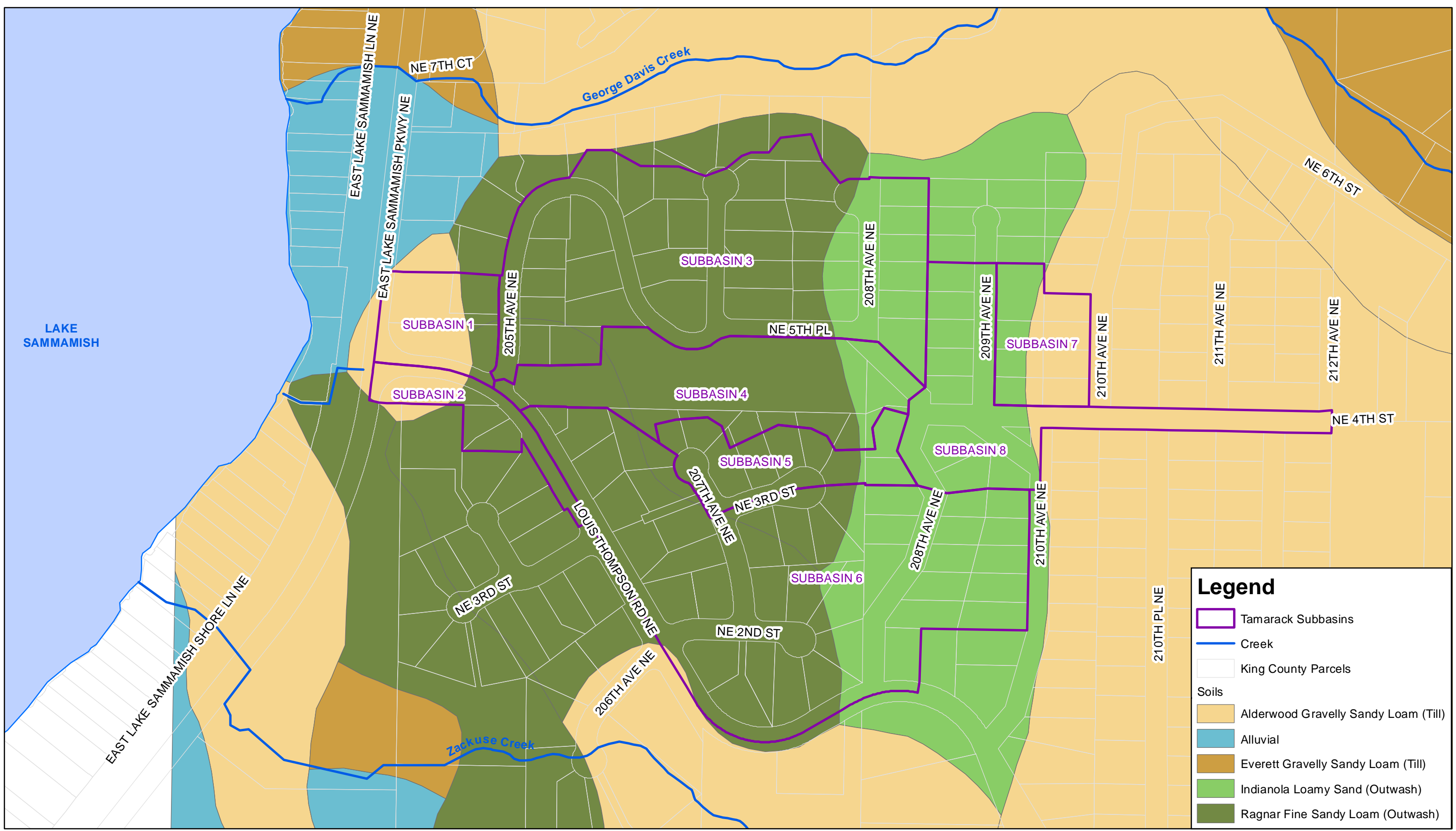


Figure 1: Tamarack Basins
 Tamarack Drainage Improvement Project
 Sammamish, WA



Legend

- Tamarack Subbasins
- Creek
- King County Parcels

Soils

- Alderwood Gravelly Sandy Loam (Till)
- Alluvial
- Everett Gravelly Sandy Loam (Till)
- Indianola Loamy Sand (Outwash)
- Ragnar Fine Sandy Loam (Outwash)

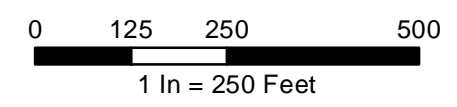


Figure 2: Tamarack Soils
 Tamarack Drainage Improvement Project
 Sammamish, WA

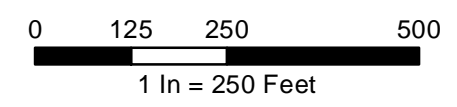
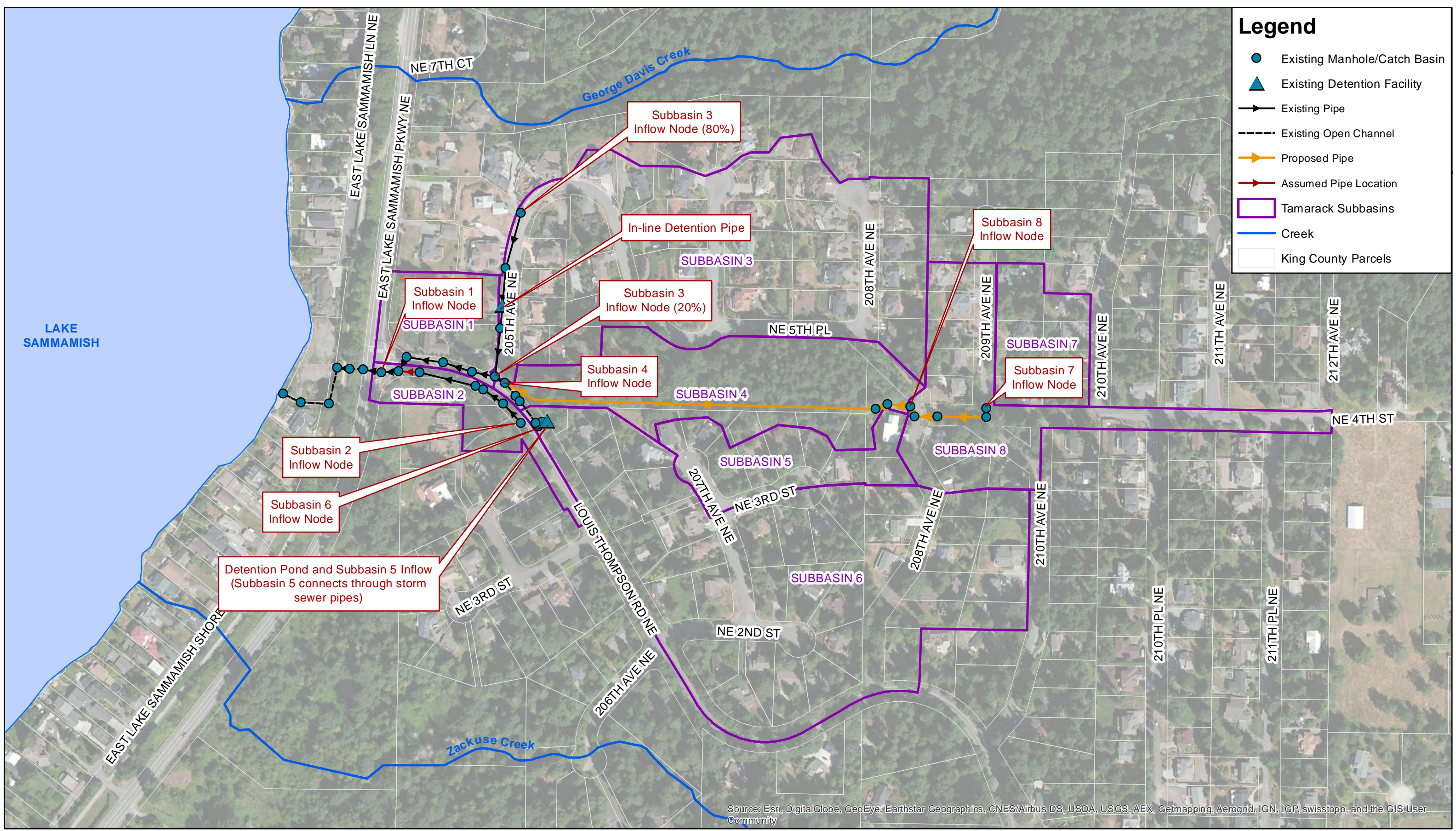


Figure 3: SWMM Model Diagram
Tamarack Drainage Improvement Project
Sammamish, WA

APPENDIX B
MODELING DOCUMENTATION

WWHM2012
PROJECT REPORT

General Model Information

Project Name: Tamarack
Site Name: Tamarack Basin - Lateral Flow Basin
Site Address:
City:
Report Date: 5/9/2016
Gage: Seatac
Data Start: 1948/10/01
Data End: 2009/09/30
Timestep: 15 Minute
Precip Scale: 1.00
Version Date: 2016/02/25
Version: 4.2.12

POC Thresholds

Low Flow Threshold for POC1: 50 Percent of the 2 Year
High Flow Threshold for POC1: 50 Year

Low Flow Threshold for POC2: 50 Percent of the 2 Year
High Flow Threshold for POC2: 50 Year

Low Flow Threshold for POC3: 50 Percent of the 2 Year
High Flow Threshold for POC3: 50 Year

Low Flow Threshold for POC4: 50 Percent of the 2 Year
High Flow Threshold for POC4: 50 Year

Low Flow Threshold for POC5: 50 Percent of the 2 Year
High Flow Threshold for POC5: 50 Year

Low Flow Threshold for POC6: 50 Percent of the 2 Year
High Flow Threshold for POC6: 50 Year

Low Flow Threshold for POC7: 50 Percent of the 2 Year
High Flow Threshold for POC7: 50 Year

Low Flow Threshold for POC8: 50 Percent of the 2 Year
High Flow Threshold for POC8: 50 Year

Landuse Basin Data

Predeveloped Land Use

Subbasin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	0.39
C, Lawn, Mod	0.95
Pervious Total	1.34
Impervious Land Use	acre
ROADS MOD	0.35
ROOF TOPS FLAT	0.32
DRIVEWAYS MOD	0.14
Impervious Total	0.81
Basin Total	2.15

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 2

Bypass: No

GroundWater: No

Pervious Land Use	acre
A B, Lawn, Mod	0.67
C, Lawn, Mod	0.41

Pervious Total 1.08

Impervious Land Use	acre
ROADS MOD	0.42
ROOF TOPS FLAT	0.08
DRIVEWAYS MOD	0.04

Impervious Total 0.54

Basin Total 1.62

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 3

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	7.19
Pervious Total	7.19
Impervious Land Use	acre
ROADS STEEP	2.24
ROOF TOPS FLAT	3.25
DRIVEWAYS STEEP	1.39
Impervious Total	6.88
Basin Total	14.07

Element Flows To:
Surface Interflow Groundwater

Subbasin 5

Bypass:	No
GroundWater:	No
Pervious Land Use A B, Lawn, Steep	acre 1.39
Pervious Total	1.39
Impervious Land Use ROADS STEEP ROOF TOPS FLAT DRIVEWAYS STEEP	acre 0.52 0.55 0.24
Impervious Total	1.31
Basin Total	2.7

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 6

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	10.62
C, Lawn, Mod	0.04
Pervious Total	10.66
Impervious Land Use	acre
ROADS MOD	1.77
ROOF TOPS FLAT	2.68
DRIVEWAYS MOD	1.15
Impervious Total	5.6
Basin Total	16.26

Element Flows To:		
Surface	Interflow	Groundwater

Basin 4 - Perv Lateral Flow

Bypass: No

GroundWater: No

Pervious Land Use acre
A B, Forest, Mod 5.73

Element Flows To:
Surface Interflow Groundwater

Basin 4,7,8 Imperv Lateral

Bypass: No
Impervious Land Use acre
ROADS MOD LAT 2.89
Element Flows To:
Outlet 1 Outlet 2
Basin 4 - Perv Lateral Flow

Subbasin 8 - Perv Lateral Flow A/B

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Steep 2.4

Element Flows To:

Surface

Interflow

Groundwater

Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow

Subbasin 7 - Perv Lateral Flow C

Bypass: No

GroundWater: No

Pervious Land Use acre
C, Lawn, Steep .77

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral	Basin 4 - Perv Lateral	Basin 4 - Perv Lateral Flow

Subbasin 8 - Perv Lateral Flow C

Bypass: No

GroundWater: No

Pervious Land Use acre
C, Lawn, Steep .8

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow

Subbasin 7 - Perv Lateral Flow A/B

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Steep .57

Element Flows To:

Surface

Interflow

Groundwater

Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow

Mitigated Land Use

Subbasin 1

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Mod 0.38

C, Lawn, Mod 0.94

Pervious Total 1.32

Impervious Land Use acre

ROADS MOD 0.35

ROOF TOPS FLAT 0.33

DRIVEWAYS MOD 0.14

Impervious Total 0.82

Basin Total 2.14

Element Flows To:

Surface

Interflow

Groundwater

Subbasin 2

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Mod 0.52

C, Lawn, Mod 0.32

Pervious Total 0.84

Impervious Land Use acre

ROADS MOD 0.42

ROOF TOPS FLAT 0.25

DRIVEWAYS MOD 0.11

Impervious Total 0.78

Basin Total 1.62

Element Flows To:

Surface

Interflow

Groundwater

Subbasin 3

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	6.93
Pervious Total	6.93
Impervious Land Use	acre
ROADS STEEP	2.24
ROOF TOPS FLAT	3.43
DRIVEWAYS STEEP	1.47
Impervious Total	7.14
Basin Total	14.07

Element Flows To:
Surface Interflow Groundwater

Subbasin 4

Bypass:	No
GroundWater:	No
Pervious Land Use A B, Forest, Mod	acre 5.82
Pervious Total	5.82
Impervious Land Use	acre
Impervious Total	0
Basin Total	5.82

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 5

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	1.15
Pervious Total	1.15
Impervious Land Use	acre
ROADS STEEP	0.52
ROOF TOPS FLAT	0.73
DRIVEWAYS STEEP	0.31
Impervious Total	1.56
Basin Total	2.71

Element Flows To:
Surface Interflow Groundwater

Subbasin 6

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	9.61
C, Lawn, Mod	0.03
Pervious Total	9.64
Impervious Land Use	acre
ROADS MOD	1.77
ROOF TOPS FLAT	3.38
DRIVEWAYS MOD	1.45
Impervious Total	6.6
Basin Total	16.24

Element Flows To:
Surface Interflow Groundwater

Subbasin 7

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	0.5
C, Lawn, Steep	0.68
Pervious Total	1.18
Impervious Land Use	acre
ROOF TOPS FLAT	0.72
DRIVEWAYS STEEP	0.31
Impervious Total	1.03
Basin Total	2.21

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 8

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Steep 2.22

C, Lawn, Steep 0.74

Pervious Total 2.96

Impervious Land Use acre

ROADS STEEP 1.03

ROOF TOPS FLAT 0.79

DRIVEWAYS STEEP 0.34

Impervious Total 2.16

Basin Total 5.12

Element Flows To:

Surface

Interflow

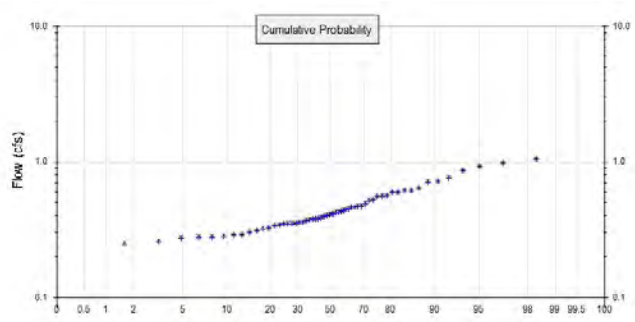
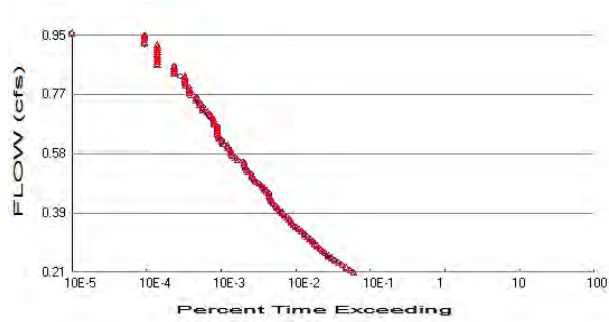
Groundwater

Routing Elements
Predeveloped Routing

Mitigated Routing

Analysis Results

POC 1



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1

Total Pervious Area: 1.34
Total Impervious Area: 0.81

Mitigated Landuse Totals for POC #1

Total Pervious Area: 1.32
Total Impervious Area: 0.82

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.416796
5 year	0.567316
10 year	0.677895
25 year	0.830552
50 year	0.954007
100 year	1.086099

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.419476
5 year	0.570091
10 year	0.680611
25 year	0.83304
50 year	0.956208
100 year	1.087905

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.612	0.615
1950	0.594	0.595
1951	0.375	0.376
1952	0.249	0.251
1953	0.279	0.281
1954	0.341	0.343
1955	0.379	0.382
1956	0.346	0.347
1957	0.439	0.442
1958	0.321	0.323

1959	0.300	0.303
1960	0.393	0.395
1961	0.348	0.351
1962	0.274	0.277
1963	0.376	0.378
1964	0.324	0.325
1965	0.459	0.462
1966	0.282	0.284
1967	0.596	0.597
1968	0.613	0.617
1969	0.414	0.417
1970	0.386	0.389
1971	0.470	0.473
1972	0.559	0.561
1973	0.243	0.246
1974	0.459	0.462
1975	0.449	0.452
1976	0.356	0.358
1977	0.338	0.340
1978	0.425	0.428
1979	0.518	0.523
1980	0.717	0.719
1981	0.403	0.406
1982	0.637	0.640
1983	0.436	0.440
1984	0.289	0.291
1985	0.394	0.398
1986	0.366	0.368
1987	0.487	0.492
1988	0.277	0.280
1989	0.423	0.427
1990	1.046	1.046
1991	0.764	0.766
1992	0.309	0.311
1993	0.288	0.290
1994	0.258	0.260
1995	0.356	0.359
1996	0.561	0.562
1997	0.430	0.433
1998	0.377	0.379
1999	0.920	0.925
2000	0.410	0.413
2001	0.408	0.412
2002	0.554	0.557
2003	0.525	0.527
2004	0.856	0.861
2005	0.352	0.355
2006	0.349	0.350
2007	0.987	0.986
2008	0.711	0.714
2009	0.468	0.473

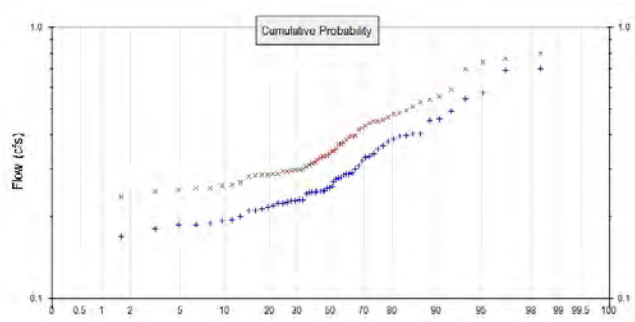
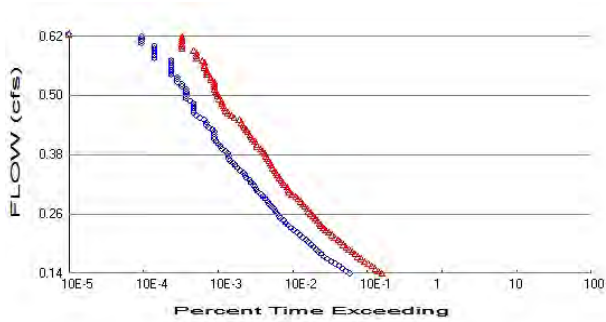
Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	1.0458	1.0461
2	0.9867	0.9861
3	0.9201	0.9251

4	0.8561	0.8610
5	0.7635	0.7655
6	0.7165	0.7187
7	0.7114	0.7138
8	0.6369	0.6402
9	0.6132	0.6173
10	0.6116	0.6146
11	0.5962	0.5974
12	0.5937	0.5946
13	0.5615	0.5617
14	0.5589	0.5607
15	0.5537	0.5569
16	0.5252	0.5274
17	0.5181	0.5233
18	0.4874	0.4924
19	0.4696	0.4729
20	0.4685	0.4727
21	0.4595	0.4622
22	0.4590	0.4617
23	0.4494	0.4520
24	0.4394	0.4422
25	0.4358	0.4400
26	0.4304	0.4326
27	0.4251	0.4277
28	0.4234	0.4275
29	0.4141	0.4167
30	0.4101	0.4129
31	0.4077	0.4116
32	0.4025	0.4058
33	0.3944	0.3976
34	0.3933	0.3953
35	0.3861	0.3888
36	0.3787	0.3816
37	0.3767	0.3788
38	0.3759	0.3782
39	0.3748	0.3764
40	0.3662	0.3683
41	0.3562	0.3592
42	0.3559	0.3580
43	0.3525	0.3548
44	0.3487	0.3507
45	0.3483	0.3503
46	0.3461	0.3467
47	0.3406	0.3429
48	0.3377	0.3399
49	0.3242	0.3252
50	0.3207	0.3234
51	0.3093	0.3111
52	0.3002	0.3034
53	0.2886	0.2909
54	0.2876	0.2898
55	0.2824	0.2844
56	0.2786	0.2815
57	0.2767	0.2800
58	0.2740	0.2767
59	0.2579	0.2604
60	0.2488	0.2508
61	0.2429	0.2455

POC 2



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #2

Total Pervious Area: 1.08
Total Impervious Area: 0.54

Mitigated Landuse Totals for POC #2

Total Pervious Area: 0.84
Total Impervious Area: 0.78

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	Flow(cfs)
2 year	0.272287
5 year	0.368456
10 year	0.440235
25 year	0.540614
50 year	0.622745
100 year	0.711146

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	Flow(cfs)
2 year	0.357064
5 year	0.468532
10 year	0.548138
25 year	0.655564
50 year	0.740714
100 year	0.830382

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #2

Year	Predeveloped	Mitigated
1949	0.378	0.484
1950	0.399	0.466
1951	0.247	0.308
1952	0.164	0.218
1953	0.189	0.263
1954	0.231	0.293
1955	0.249	0.333
1956	0.246	0.297
1957	0.270	0.356
1958	0.210	0.285
1959	0.210	0.293

1960	0.247	0.317
1961	0.224	0.297
1962	0.181	0.250
1963	0.243	0.316
1964	0.224	0.287
1965	0.285	0.370
1966	0.186	0.247
1967	0.405	0.478
1968	0.403	0.531
1969	0.254	0.334
1970	0.247	0.328
1971	0.300	0.398
1972	0.366	0.444
1973	0.169	0.237
1974	0.290	0.377
1975	0.275	0.371
1976	0.229	0.298
1977	0.220	0.288
1978	0.287	0.392
1979	0.355	0.491
1980	0.452	0.556
1981	0.256	0.347
1982	0.387	0.512
1983	0.287	0.396
1984	0.193	0.254
1985	0.248	0.337
1986	0.230	0.299
1987	0.322	0.449
1988	0.195	0.268
1989	0.308	0.419
1990	0.703	0.796
1991	0.489	0.590
1992	0.201	0.260
1993	0.213	0.282
1994	0.187	0.255
1995	0.229	0.311
1996	0.395	0.449
1997	0.278	0.352
1998	0.246	0.325
1999	0.574	0.741
2000	0.258	0.342
2001	0.279	0.383
2002	0.333	0.434
2003	0.340	0.426
2004	0.543	0.704
2005	0.216	0.286
2006	0.226	0.283
2007	0.692	0.763
2008	0.460	0.541
2009	0.331	0.456

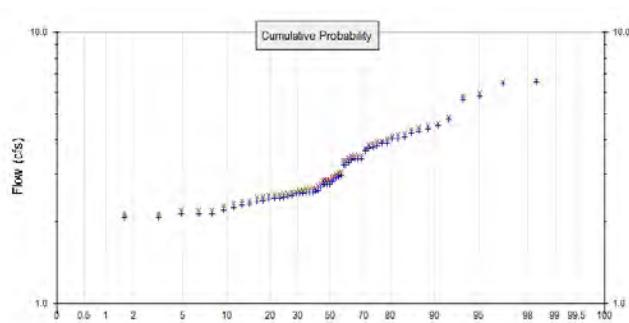
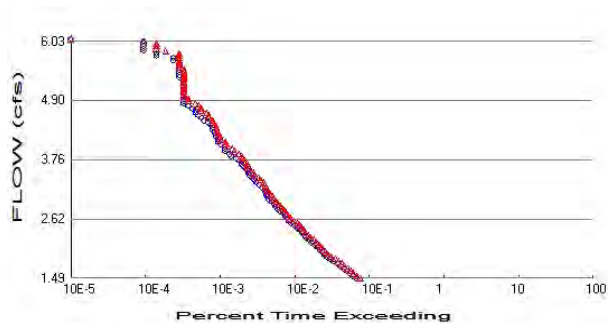
Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #2

Rank	Predeveloped	Mitigated
1	0.7030	0.7957
2	0.6916	0.7627
3	0.5737	0.7415
4	0.5428	0.7039

5	0.4887	0.5895
6	0.4598	0.5565
7	0.4521	0.5409
8	0.4053	0.5309
9	0.4035	0.5115
10	0.3990	0.4912
11	0.3949	0.4839
12	0.3871	0.4778
13	0.3783	0.4660
14	0.3659	0.4563
15	0.3551	0.4491
16	0.3400	0.4489
17	0.3326	0.4441
18	0.3306	0.4339
19	0.3219	0.4259
20	0.3085	0.4190
21	0.3004	0.3980
22	0.2896	0.3961
23	0.2871	0.3915
24	0.2870	0.3833
25	0.2849	0.3769
26	0.2793	0.3706
27	0.2780	0.3705
28	0.2749	0.3558
29	0.2705	0.3518
30	0.2578	0.3472
31	0.2561	0.3419
32	0.2541	0.3369
33	0.2487	0.3339
34	0.2476	0.3327
35	0.2472	0.3282
36	0.2469	0.3251
37	0.2466	0.3175
38	0.2464	0.3156
39	0.2458	0.3109
40	0.2427	0.3075
41	0.2312	0.2988
42	0.2302	0.2982
43	0.2294	0.2968
44	0.2290	0.2965
45	0.2259	0.2931
46	0.2245	0.2925
47	0.2235	0.2883
48	0.2198	0.2873
49	0.2159	0.2857
50	0.2133	0.2850
51	0.2102	0.2834
52	0.2098	0.2816
53	0.2005	0.2683
54	0.1951	0.2627
55	0.1926	0.2601
56	0.1893	0.2547
57	0.1867	0.2543
58	0.1864	0.2503
59	0.1806	0.2473
60	0.1694	0.2369
61	0.1636	0.2182

POC 3



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #3

Total Pervious Area: 7.19
 Total Impervious Area: 6.88

Mitigated Landuse Totals for POC #3

Total Pervious Area: 6.93
 Total Impervious Area: 7.14

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #3

Return Period	Flow(cfs)
2 year	2.973468
5 year	3.869482
10 year	4.505279
25 year	5.35887
50 year	6.032374
100 year	6.739069

Flow Frequency Return Periods for Mitigated. POC #3

Return Period	Flow(cfs)
2 year	3.072409
5 year	3.989723
10 year	4.63956
25 year	5.510849
50 year	6.197513
100 year	6.917348

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #3

Year	Predeveloped	Mitigated
1949	3.768	3.901
1950	3.902	4.046
1951	2.580	2.650
1952	1.886	1.957
1953	2.299	2.382
1954	2.484	2.554
1955	2.734	2.833
1956	2.539	2.591
1957	2.809	2.913
1958	2.383	2.470
1959	2.570	2.661

1960	2.537	2.605
1961	2.438	2.525
1962	2.128	2.207
1963	2.565	2.653
1964	2.491	2.581
1965	2.940	3.032
1966	2.070	2.142
1967	4.045	4.131
1968	4.386	4.539
1969	2.609	2.706
1970	2.671	2.769
1971	3.235	3.352
1972	3.646	3.739
1973	2.080	2.155
1974	2.958	3.065
1975	3.252	3.372
1976	2.430	2.514
1977	2.437	2.526
1978	3.410	3.528
1979	4.252	4.404
1980	4.305	4.449
1981	2.860	2.966
1982	4.090	4.241
1983	3.376	3.500
1984	2.132	2.205
1985	2.750	2.854
1986	2.460	2.552
1987	3.825	3.967
1988	2.366	2.453
1989	3.724	3.850
1990	6.539	6.653
1991	4.742	4.870
1992	2.137	2.211
1993	2.532	2.613
1994	2.210	2.286
1995	2.569	2.664
1996	3.903	3.968
1997	2.903	2.990
1998	2.745	2.846
1999	5.815	6.025
2000	2.756	2.857
2001	3.314	3.431
2002	3.408	3.529
2003	3.415	3.527
2004	5.649	5.850
2005	2.256	2.341
2006	2.316	2.384
2007	6.462	6.547
2008	4.529	4.618
2009	4.037	4.179

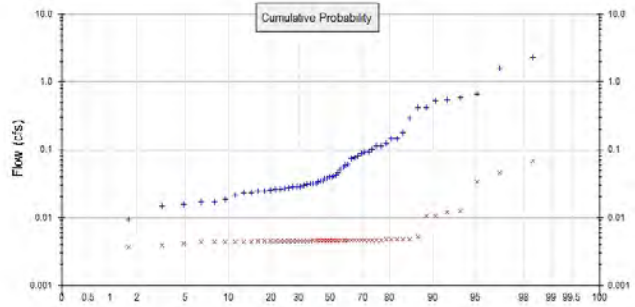
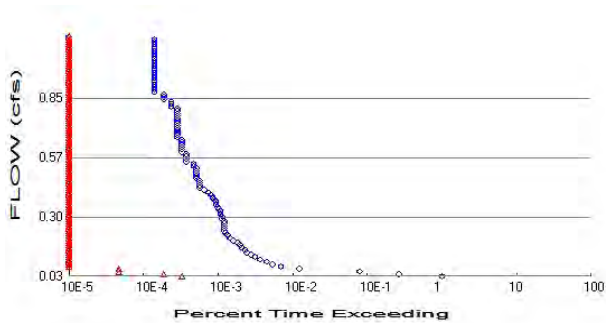
Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #3

Rank	Predeveloped	Mitigated
1	6.5390	6.6531
2	6.4623	6.5467
3	5.8152	6.0252
4	5.6488	5.8498

5	4.7425	4.8704
6	4.5291	4.6184
7	4.3855	4.5395
8	4.3047	4.4488
9	4.2518	4.4043
10	4.0905	4.2414
11	4.0446	4.1786
12	4.0373	4.1313
13	3.9032	4.0458
14	3.9020	3.9683
15	3.8253	3.9672
16	3.7679	3.9010
17	3.7243	3.8501
18	3.6460	3.7386
19	3.4154	3.5290
20	3.4101	3.5282
21	3.4084	3.5271
22	3.3761	3.5000
23	3.3136	3.4315
24	3.2521	3.3721
25	3.2348	3.3520
26	2.9576	3.0646
27	2.9405	3.0324
28	2.9032	2.9900
29	2.8601	2.9663
30	2.8085	2.9127
31	2.7563	2.8568
32	2.7500	2.8537
33	2.7450	2.8456
34	2.7342	2.8326
35	2.6714	2.7686
36	2.6086	2.7060
37	2.5795	2.6636
38	2.5696	2.6612
39	2.5687	2.6529
40	2.5655	2.6501
41	2.5388	2.6130
42	2.5366	2.6054
43	2.5317	2.5907
44	2.4914	2.5807
45	2.4844	2.5541
46	2.4601	2.5517
47	2.4380	2.5257
48	2.4369	2.5251
49	2.4300	2.5144
50	2.3832	2.4700
51	2.3663	2.4531
52	2.3157	2.3844
53	2.2991	2.3819
54	2.2563	2.3407
55	2.2098	2.2857
56	2.1369	2.2111
57	2.1323	2.2068
58	2.1282	2.2048
59	2.0801	2.1546
60	2.0701	2.1423
61	1.8862	1.9572

POC 4



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #4

Total Pervious Area: 10.27
 Total Impervious Area: 2.89

Mitigated Landuse Totals for POC #4

Total Pervious Area: 5.82
 Total Impervious Area: 0

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #4

Return Period	Flow(cfs)
2 year	0.051811
5 year	0.156257
10 year	0.302829
25 year	0.655511
50 year	1.120767
100 year	1.862801

Note: Includes basin areas from Predeveloped POC 7 and 8

Flow Frequency Return Periods for Mitigated. POC #4

Return Period	Flow(cfs)
2 year	0.005048
5 year	0.008331
10 year	0.011249
25 year	0.015971
50 year	0.020372
100 year	0.025655

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #4

Year	Predeveloped	Mitigated
1949	0.037	0.004
1950	0.660	0.012
1951	0.146	0.012
1952	0.023	0.005
1953	0.024	0.005
1954	0.095	0.005
1955	0.042	0.005
1956	0.178	0.005
1957	0.031	0.005
1958	0.032	0.005
1959	0.046	0.005

1960	0.114	0.005
1961	0.076	0.005
1962	0.016	0.004
1963	0.030	0.004
1964	0.056	0.005
1965	0.034	0.005
1966	0.025	0.005
1967	0.420	0.005
1968	0.125	0.005
1969	0.028	0.005
1970	0.025	0.004
1971	0.040	0.005
1972	0.530	0.034
1973	0.032	0.005
1974	0.038	0.005
1975	0.060	0.005
1976	0.080	0.005
1977	0.009	0.004
1978	0.028	0.005
1979	0.018	0.004
1980	0.051	0.005
1981	0.028	0.005
1982	0.074	0.005
1983	0.035	0.005
1984	0.026	0.005
1985	0.017	0.005
1986	0.041	0.004
1987	0.094	0.004
1988	0.021	0.005
1989	0.017	0.005
1990	1.581	0.005
1991	0.288	0.011
1992	0.034	0.005
1993	0.023	0.004
1994	0.015	0.004
1995	0.115	0.005
1996	0.549	0.045
1997	0.147	0.005
1998	0.026	0.004
1999	0.597	0.011
2000	0.027	0.004
2001	0.009	0.005
2002	0.040	0.004
2003	0.027	0.005
2004	0.087	0.005
2005	0.032	0.005
2006	0.101	0.005
2007	2.308	0.068
2008	0.420	0.005
2009	0.061	0.005

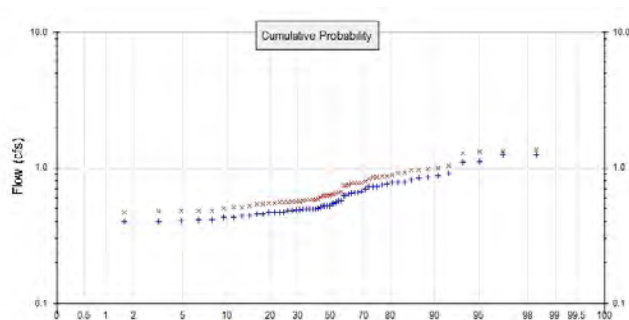
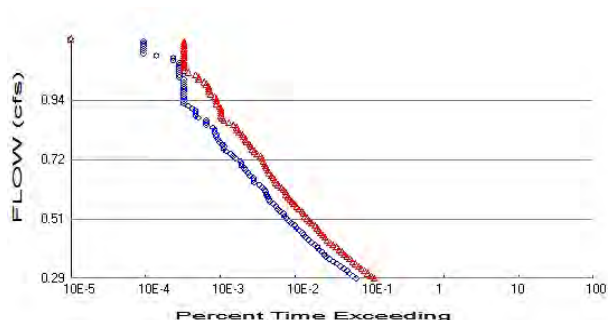
Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #4

Rank	Predeveloped	Mitigated
1	2.3077	0.0675
2	1.5812	0.0453
3	0.6602	0.0335
4	0.5974	0.0123

5	0.5491	0.0121
6	0.5303	0.0106
7	0.4202	0.0105
8	0.4196	0.0052
9	0.2875	0.0047
10	0.1783	0.0047
11	0.1474	0.0047
12	0.1460	0.0047
13	0.1252	0.0047
14	0.1151	0.0047
15	0.1139	0.0047
16	0.1009	0.0047
17	0.0945	0.0047
18	0.0935	0.0047
19	0.0874	0.0047
20	0.0802	0.0047
21	0.0764	0.0047
22	0.0738	0.0046
23	0.0607	0.0046
24	0.0599	0.0046
25	0.0559	0.0046
26	0.0510	0.0046
27	0.0457	0.0046
28	0.0419	0.0046
29	0.0412	0.0046
30	0.0402	0.0046
31	0.0399	0.0046
32	0.0379	0.0046
33	0.0372	0.0046
34	0.0349	0.0046
35	0.0341	0.0046
36	0.0339	0.0046
37	0.0318	0.0045
38	0.0318	0.0045
39	0.0316	0.0045
40	0.0307	0.0045
41	0.0302	0.0045
42	0.0284	0.0045
43	0.0281	0.0045
44	0.0280	0.0045
45	0.0273	0.0045
46	0.0269	0.0045
47	0.0259	0.0045
48	0.0259	0.0045
49	0.0255	0.0045
50	0.0245	0.0044
51	0.0243	0.0044
52	0.0233	0.0044
53	0.0230	0.0044
54	0.0213	0.0044
55	0.0184	0.0044
56	0.0172	0.0044
57	0.0170	0.0043
58	0.0157	0.0041
59	0.0147	0.0039
60	0.0094	0.0037
61	0.0090	0.0037

POC 5



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #5

Total Pervious Area: 1.39
Total Impervious Area: 1.31

Mitigated Landuse Totals for POC #5

Total Pervious Area: 1.15
Total Impervious Area: 1.56

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #5

Return Period	Flow(cfs)
2 year	0.572797
5 year	0.745702
10 year	0.86843
25 year	1.03324
50 year	1.163309
100 year	1.29981

Flow Frequency Return Periods for Mitigated. POC #5

Return Period	Flow(cfs)
2 year	0.667922
5 year	0.861329
10 year	0.997605
25 year	1.179534
50 year	1.322365
100 year	1.471646

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #5

Year	Predeveloped	Mitigated
1949	0.723	0.851
1950	0.748	0.885
1951	0.494	0.562
1952	0.361	0.427
1953	0.443	0.522
1954	0.481	0.548
1955	0.527	0.621
1956	0.496	0.567
1957	0.537	0.637
1958	0.458	0.541
1959	0.496	0.583

1960	0.490	0.569
1961	0.470	0.553
1962	0.407	0.483
1963	0.494	0.577
1964	0.480	0.565
1965	0.571	0.659
1966	0.400	0.469
1967	0.781	0.865
1968	0.849	0.996
1969	0.498	0.592
1970	0.513	0.606
1971	0.622	0.734
1972	0.697	0.787
1973	0.401	0.472
1974	0.569	0.671
1975	0.623	0.738
1976	0.469	0.550
1977	0.468	0.553
1978	0.662	0.774
1979	0.819	0.965
1980	0.840	0.977
1981	0.547	0.649
1982	0.783	0.928
1983	0.647	0.766
1984	0.412	0.481
1985	0.527	0.624
1986	0.470	0.558
1987	0.732	0.868
1988	0.455	0.536
1989	0.727	0.846
1990	1.252	1.364
1991	0.912	1.035
1992	0.414	0.485
1993	0.499	0.576
1994	0.430	0.502
1995	0.492	0.583
1996	0.758	0.824
1997	0.556	0.639
1998	0.526	0.623
1999	1.119	1.320
2000	0.528	0.624
2001	0.640	0.752
2002	0.659	0.774
2003	0.665	0.771
2004	1.090	1.282
2005	0.430	0.511
2006	0.444	0.510
2007	1.241	1.324
2008	0.879	0.965
2009	0.782	0.917

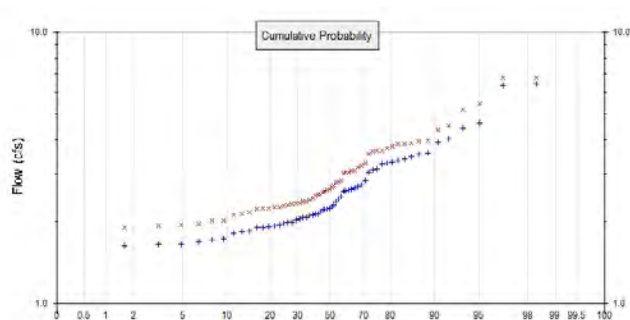
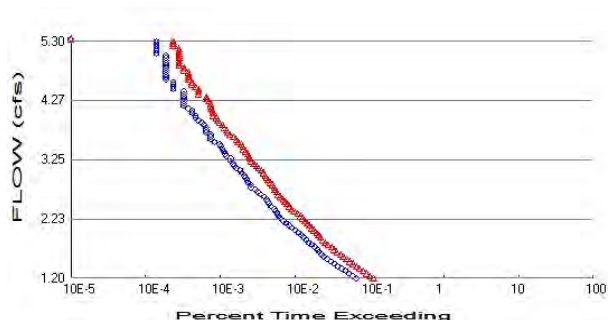
Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #5

Rank	Predeveloped	Mitigated
1	1.2519	1.3640
2	1.2408	1.3245
3	1.1187	1.3195
4	1.0902	1.2821

5	0.9123	1.0354
6	0.8793	0.9957
7	0.8491	0.9766
8	0.8400	0.9650
9	0.8194	0.9650
10	0.7831	0.9278
11	0.7823	0.9168
12	0.7811	0.8851
13	0.7578	0.8677
14	0.7483	0.8647
15	0.7316	0.8509
16	0.7271	0.8462
17	0.7235	0.8241
18	0.6966	0.7872
19	0.6650	0.7745
20	0.6622	0.7737
21	0.6588	0.7710
22	0.6472	0.7659
23	0.6397	0.7522
24	0.6228	0.7378
25	0.6220	0.7341
26	0.5711	0.6711
27	0.5688	0.6587
28	0.5556	0.6487
29	0.5468	0.6393
30	0.5368	0.6368
31	0.5276	0.6240
32	0.5274	0.6236
33	0.5266	0.6228
34	0.5264	0.6205
35	0.5129	0.6060
36	0.4992	0.5916
37	0.4981	0.5833
38	0.4962	0.5827
39	0.4959	0.5772
40	0.4944	0.5757
41	0.4936	0.5694
42	0.4917	0.5670
43	0.4901	0.5655
44	0.4813	0.5625
45	0.4801	0.5580
46	0.4701	0.5529
47	0.4697	0.5529
48	0.4693	0.5498
49	0.4679	0.5479
50	0.4577	0.5407
51	0.4555	0.5364
52	0.4439	0.5218
53	0.4427	0.5111
54	0.4300	0.5100
55	0.4299	0.5020
56	0.4142	0.4847
57	0.4122	0.4828
58	0.4075	0.4813
59	0.4010	0.4721
60	0.3998	0.4687
61	0.3610	0.4273

POC 6



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #6

Total Pervious Area: 10.66
Total Impervious Area: 5.6

Mitigated Landuse Totals for POC #6

Total Pervious Area: 9.64
Total Impervious Area: 6.6

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #6

Return Period	Flow(cfs)
2 year	2.403278
5 year	3.208207
10 year	3.802683
25 year	4.626862
50 year	5.296037
100 year	6.014415

Flow Frequency Return Periods for Mitigated. POC #6

Return Period	Flow(cfs)
2 year	2.779573
5 year	3.662165
10 year	4.30737
25 year	5.194441
50 year	5.909335
100 year	6.672243

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #6

Year	Predeveloped	Mitigated
1949	3.043	3.548
1950	3.569	3.883
1951	2.231	2.505
1952	1.544	1.818
1953	1.808	2.120
1954	2.052	2.328
1955	2.186	2.559
1956	2.110	2.337
1957	2.276	2.674
1958	1.906	2.236
1959	2.034	2.380

1960	2.116	2.378
1961	1.938	2.251
1962	1.716	2.016
1963	2.079	2.412
1964	1.976	2.314
1965	2.429	2.828
1966	1.630	1.901
1967	3.554	3.892
1968	3.418	3.992
1969	2.128	2.501
1970	2.139	2.508
1971	2.576	3.020
1972	3.305	3.666
1973	1.650	1.931
1974	2.380	2.787
1975	2.620	3.078
1976	1.915	2.231
1977	1.945	2.283
1978	2.654	3.095
1979	3.372	3.949
1980	3.271	3.797
1981	2.311	2.717
1982	3.290	3.864
1983	2.702	3.173
1984	1.691	1.964
1985	2.249	2.648
1986	1.991	2.342
1987	3.099	3.643
1988	1.904	2.235
1989	2.834	3.296
1990	6.355	6.803
1991	4.044	4.536
1992	1.652	1.942
1993	1.843	2.133
1994	1.730	2.014
1995	2.075	2.438
1996	3.472	3.725
1997	2.474	2.811
1998	2.205	2.588
1999	4.633	5.426
2000	2.231	2.614
2001	2.607	3.051
2002	2.731	3.214
2003	2.639	3.050
2004	4.429	5.181
2005	1.846	2.170
2006	1.986	2.250
2007	6.466	6.798
2008	3.936	4.365
2009	3.135	3.662

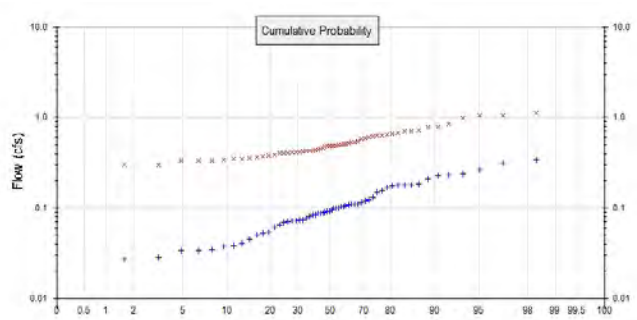
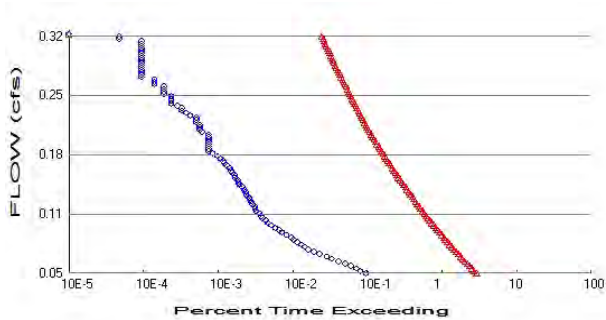
Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #6

Rank	Predeveloped	Mitigated
1	6.4664	6.8033
2	6.3554	6.7976
3	4.6326	5.4259
4	4.4292	5.1811

5	4.0444	4.5363
6	3.9362	4.3648
7	3.5691	3.9918
8	3.5543	3.9488
9	3.4723	3.8918
10	3.4178	3.8834
11	3.3722	3.8639
12	3.3047	3.7967
13	3.2897	3.7253
14	3.2713	3.6663
15	3.1349	3.6616
16	3.0993	3.6429
17	3.0429	3.5484
18	2.8339	3.2962
19	2.7309	3.2142
20	2.7020	3.1730
21	2.6542	3.0950
22	2.6394	3.0781
23	2.6199	3.0507
24	2.6074	3.0502
25	2.5765	3.0196
26	2.4743	2.8276
27	2.4292	2.8114
28	2.3801	2.7870
29	2.3110	2.7165
30	2.2758	2.6738
31	2.2489	2.6477
32	2.2309	2.6143
33	2.2308	2.5881
34	2.2050	2.5593
35	2.1864	2.5076
36	2.1387	2.5055
37	2.1277	2.5009
38	2.1157	2.4376
39	2.1100	2.4116
40	2.0791	2.3804
41	2.0752	2.3777
42	2.0519	2.3419
43	2.0343	2.3367
44	1.9915	2.3282
45	1.9859	2.3140
46	1.9761	2.2827
47	1.9452	2.2512
48	1.9384	2.2504
49	1.9153	2.2358
50	1.9062	2.2350
51	1.9041	2.2315
52	1.8460	2.1698
53	1.8435	2.1328
54	1.8083	2.1197
55	1.7298	2.0155
56	1.7156	2.0141
57	1.6915	1.9643
58	1.6517	1.9419
59	1.6495	1.9314
60	1.6297	1.9007
61	1.5443	1.8178

POC 7



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #7

Total Pervious Area: 0.77
 Total Impervious Area: 0

Mitigated Landuse Totals for POC #7

Total Pervious Area: 1.18
 Total Impervious Area: 1.03

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #7

Return Period	Flow(cfs)
2 year	0.092844
5 year	0.155816
10 year	0.2058
25 year	0.268141
50 year	0.320137
100 year	0.374869

Included in
Predeveloped
POC 4

Flow Frequency Return Periods for Mitigated. POC #7

Return Period	Flow(cfs)
2 year	0.487145
5 year	0.649835
10 year	0.767509
25 year	0.92794
50 year	1.056255
100 year	1.192351

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #7

Year	Predeveloped	Mitigated
1949	0.186	0.703
1950	0.178	0.658
1951	0.095	0.436
1952	0.045	0.301
1953	0.034	0.345
1954	0.074	0.409
1955	0.070	0.441
1956	0.099	0.409
1957	0.110	0.510
1958	0.065	0.382
1959	0.053	0.365

1960	0.107	0.449
1961	0.069	0.405
1962	0.028	0.336
1963	0.091	0.442
1964	0.084	0.373
1965	0.119	0.533
1966	0.053	0.337
1967	0.181	0.673
1968	0.109	0.705
1969	0.116	0.488
1970	0.087	0.462
1971	0.103	0.549
1972	0.169	0.644
1973	0.038	0.296
1974	0.111	0.514
1975	0.123	0.521
1976	0.081	0.411
1977	0.073	0.391
1978	0.083	0.485
1979	0.035	0.634
1980	0.231	0.778
1981	0.077	0.489
1982	0.180	0.724
1983	0.108	0.535
1984	0.051	0.344
1985	0.073	0.475
1986	0.099	0.431
1987	0.088	0.601
1988	0.033	0.345
1989	0.027	0.498
1990	0.341	1.132
1991	0.237	0.845
1992	0.072	0.358
1993	0.041	0.331
1994	0.025	0.303
1995	0.061	0.423
1996	0.179	0.624
1997	0.103	0.489
1998	0.087	0.434
1999	0.263	1.043
2000	0.099	0.489
2001	0.037	0.499
2002	0.149	0.630
2003	0.155	0.593
2004	0.209	0.980
2005	0.090	0.415
2006	0.090	0.400
2007	0.316	1.063
2008	0.229	0.788
2009	0.130	0.577

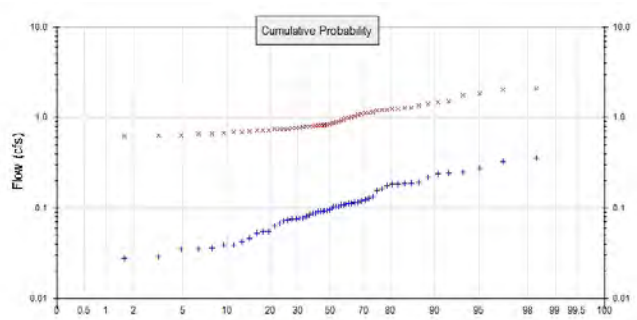
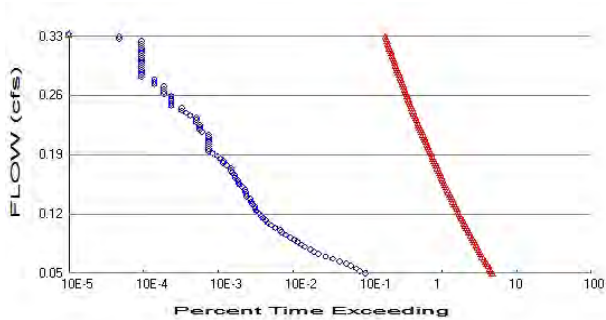
Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #7

Rank	Predeveloped	Mitigated
1	0.3415	1.1324
2	0.3163	1.0632
3	0.2630	1.0431
4	0.2373	0.9800

5	0.2310	0.8450
6	0.2294	0.7881
7	0.2086	0.7779
8	0.1856	0.7238
9	0.1815	0.7054
10	0.1801	0.7032
11	0.1788	0.6725
12	0.1779	0.6578
13	0.1689	0.6444
14	0.1548	0.6338
15	0.1489	0.6298
16	0.1298	0.6237
17	0.1226	0.6008
18	0.1193	0.5933
19	0.1156	0.5765
20	0.1106	0.5489
21	0.1097	0.5354
22	0.1094	0.5330
23	0.1077	0.5211
24	0.1067	0.5136
25	0.1035	0.5103
26	0.1030	0.4992
27	0.0992	0.4985
28	0.0989	0.4895
29	0.0987	0.4890
30	0.0954	0.4889
31	0.0907	0.4877
32	0.0903	0.4855
33	0.0895	0.4754
34	0.0877	0.4624
35	0.0874	0.4489
36	0.0873	0.4415
37	0.0842	0.4409
38	0.0832	0.4357
39	0.0809	0.4337
40	0.0774	0.4308
41	0.0738	0.4229
42	0.0732	0.4148
43	0.0728	0.4110
44	0.0718	0.4094
45	0.0705	0.4087
46	0.0694	0.4053
47	0.0647	0.4003
48	0.0610	0.3909
49	0.0531	0.3817
50	0.0525	0.3735
51	0.0506	0.3654
52	0.0448	0.3582
53	0.0406	0.3450
54	0.0378	0.3449
55	0.0373	0.3444
56	0.0345	0.3366
57	0.0336	0.3358
58	0.0335	0.3309
59	0.0281	0.3034
60	0.0269	0.3005
61	0.0250	0.2965

POC 8



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #8

Total Pervious Area: 0.8
 Total Impervious Area: 0

Mitigated Landuse Totals for POC #8

Total Pervious Area: 2.96
 Total Impervious Area: 2.16

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #8

Return Period	Flow(cfs)
2 year	0.096461
5 year	0.161937
10 year	0.210969
25 year	0.278591
50 year	0.33261
100 year	0.389474

Included in
Predeveloped
POC 4

Flow Frequency Return Periods for Mitigated. POC #8

Return Period	Flow(cfs)
2 year	0.913203
5 year	1.201425
10 year	1.407677
25 year	1.686463
50 year	1.907754
100 year	2.141053

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #8

Year	Predeveloped	Mitigated
1949	0.193	1.191
1950	0.185	1.229
1951	0.099	0.799
1952	0.047	0.566
1953	0.035	0.685
1954	0.077	0.769
1955	0.073	0.832
1956	0.103	0.817
1957	0.114	0.867
1958	0.067	0.718
1959	0.055	0.760

1960	0.111	0.792
1961	0.072	0.750
1962	0.029	0.632
1963	0.094	0.797
1964	0.087	0.742
1965	0.124	0.924
1966	0.055	0.637
1967	0.189	1.286
1968	0.114	1.355
1969	0.120	0.810
1970	0.091	0.823
1971	0.108	0.995
1972	0.175	1.140
1973	0.039	0.613
1974	0.115	0.916
1975	0.127	0.948
1976	0.084	0.757
1977	0.076	0.722
1978	0.086	1.028
1979	0.036	1.268
1980	0.240	1.408
1981	0.080	0.867
1982	0.187	1.258
1983	0.112	1.008
1984	0.053	0.655
1985	0.076	0.837
1986	0.103	0.747
1987	0.091	1.131
1988	0.035	0.708
1989	0.028	1.124
1990	0.355	2.073
1991	0.246	1.508
1992	0.075	0.670
1993	0.042	0.783
1994	0.026	0.662
1995	0.063	0.772
1996	0.186	1.255
1997	0.107	0.891
1998	0.091	0.820
1999	0.273	1.821
2000	0.103	0.849
2001	0.039	0.997
2002	0.155	1.072
2003	0.161	1.099
2004	0.217	1.767
2005	0.093	0.694
2006	0.094	0.719
2007	0.329	2.050
2008	0.238	1.466
2009	0.135	1.210

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #8

Rank	Predeveloped	Mitigated
1	0.3548	2.0730
2	0.3286	2.0503
3	0.2732	1.8212
4	0.2465	1.7675

5	0.2400	1.5080
6	0.2383	1.4658
7	0.2168	1.4077
8	0.1928	1.3546
9	0.1886	1.2859
10	0.1871	1.2680
11	0.1857	1.2578
12	0.1849	1.2550
13	0.1755	1.2291
14	0.1608	1.2104
15	0.1547	1.1910
16	0.1348	1.1398
17	0.1273	1.1311
18	0.1239	1.1240
19	0.1201	1.0992
20	0.1149	1.0720
21	0.1140	1.0283
22	0.1137	1.0083
23	0.1119	0.9966
24	0.1108	0.9946
25	0.1075	0.9485
26	0.1070	0.9241
27	0.1031	0.9162
28	0.1028	0.8907
29	0.1026	0.8667
30	0.0991	0.8667
31	0.0942	0.8487
32	0.0938	0.8372
33	0.0930	0.8321
34	0.0911	0.8229
35	0.0908	0.8200
36	0.0907	0.8168
37	0.0875	0.8104
38	0.0865	0.7989
39	0.0841	0.7967
40	0.0804	0.7921
41	0.0766	0.7829
42	0.0761	0.7723
43	0.0756	0.7689
44	0.0746	0.7599
45	0.0732	0.7570
46	0.0721	0.7497
47	0.0672	0.7465
48	0.0634	0.7416
49	0.0552	0.7217
50	0.0546	0.7191
51	0.0526	0.7176
52	0.0465	0.7075
53	0.0422	0.6936
54	0.0392	0.6852
55	0.0388	0.6701
56	0.0358	0.6623
57	0.0349	0.6553
58	0.0348	0.6373
59	0.0292	0.6324
60	0.0279	0.6134
61	0.0260	0.5664

POC 9

POC #9 was not reported because POC must exist in both scenarios and both scenarios must have been run.

POC 10

POC #10 was not reported because POC must exist in both scenarios and both scenarios must have been run.

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

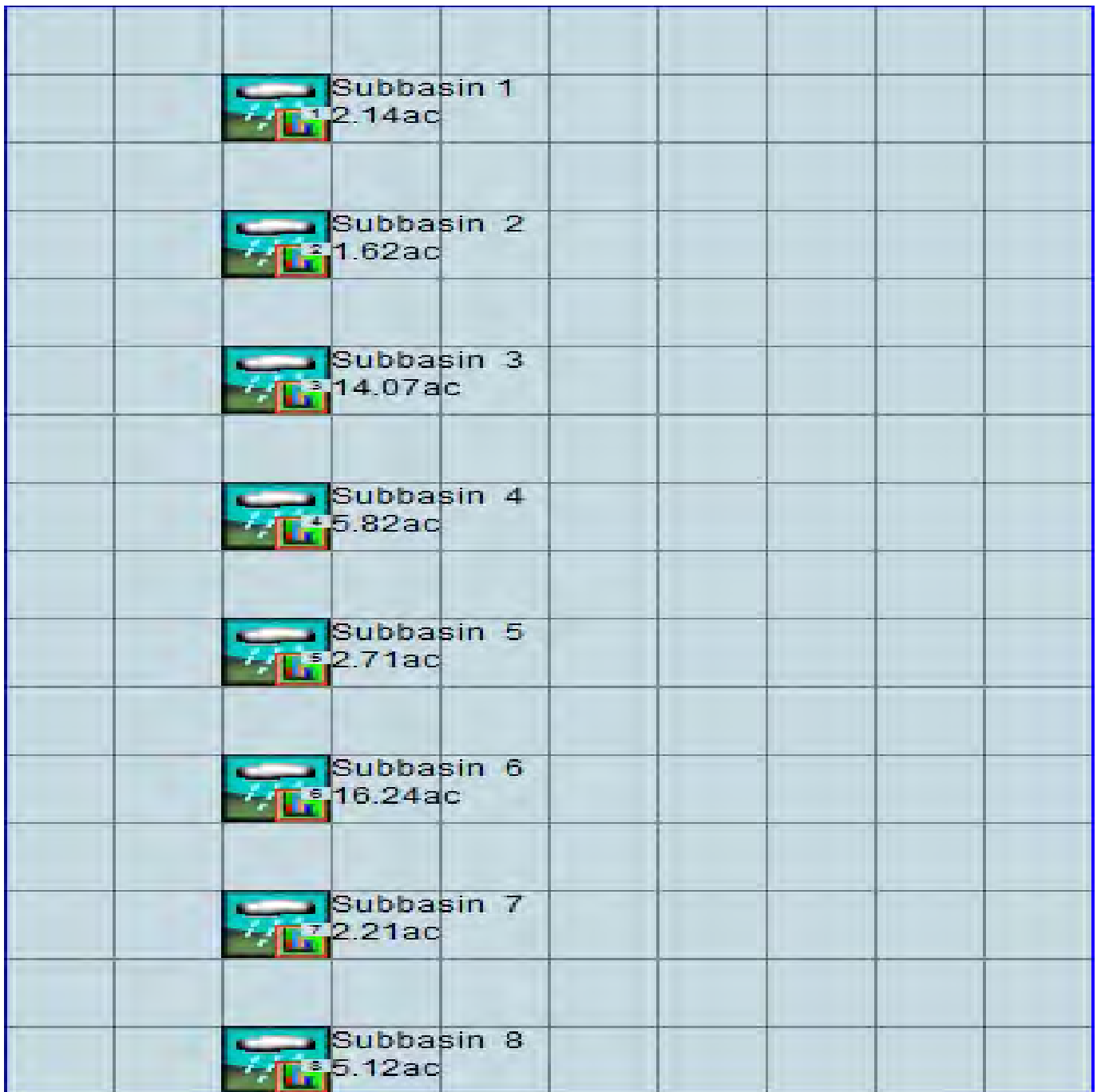
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

RUN

GLOBAL

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RUN INTERP OUTPUT LEVEL   3      0
RESUME     0 RUN          1
UNIT SYSTEM                                1
END GLOBAL
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FILES

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          30    POCTamarack1.dat
          31    POCTamarack2.dat
          32    POCTamarack3.dat
          34    POCTamarack5.dat
          35    POCTamarack6.dat
          36    POCTamarack7.dat
          37    POCTamarack8.dat
          33    POCTamarack4.dat
```

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

```
PERLND      8
PERLND     17
IMPLND      2
IMPLND      4
IMPLND      6
PERLND      9
IMPLND      3
IMPLND      7
IMPLND     16
PERLND     40
PERLND     41
PERLND     42
PERLND     43
PERLND     39
COPY       501
COPY       502
COPY       503
COPY       505
COPY       506
COPY       507
COPY       508
COPY       504
DISPLY      1
DISPLY      2
DISPLY      3
DISPLY      5
DISPLY      6
DISPLY      7
DISPLY      8
DISPLY      4
```

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

```
# - #<-----Title----->***TRAN PIVL DIG1 FIL1 PYR DIG2 FIL2 YRND
1   Subbasin 1          MAX          1 2 30 9
2   Subbasin 2          MAX          1 2 31 9
3   Subbasin 3          MAX          1 2 32 9
5   Subbasin 5          MAX          1 2 34 9
6   Subbasin 6          MAX          1 2 35 9
```

```

7      Subbasin 7 - Perv Latera  MAX      1      2      36      9
8      Subbasin 8 - Perv Latera  MAX      1      2      37      9
4      Basin 4 - Perv Lateral Fl  MAX      1      2      33      9

```

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

```

# - # NPT NMN ***
1      1      1
501    1      1
502    1      1
503    1      1
505    1      1
506    1      1
507    1      1
508    1      1
504    1      1

```

END TIMESERIES

END COPY

GENER

OPCODE

```

#      # OPCD ***

```

END OPCODE

PARM

```

#      #          K ***

```

END PARM

END GENER

PERLND

GEN-INFO

```

<PLS ><-----Name----->NBLKS  Unit-systems  Printer ***
# - #          User  t-series  Engl Metr ***
          in  out
8      A/B, Lawn, Mod      1      1      1      1      27      0
17     C, Lawn, Mod      1      1      1      1      27      0
9      A/B, Lawn, Steep   1      1      1      1      27      0
40     A/B, Lawn, Steep   1      1      1      1      27      0
41     C, Lawn, Steep     1      1      1      1      27      0
42     C, Lawn, Steep     1      1      1      1      27      0
43     A/B, Lawn, Steep   1      1      1      1      27      0
39     A/B, Forest, Mod   1      1      1      1      27      0

```

END GEN-INFO

*** Section PWATER***

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL PEST  NITR  PHOS  TRAC ***
8      0      0      1      0      0      0      0      0      0      0      0      0
17     0      0      1      0      0      0      0      0      0      0      0      0
9      0      0      1      0      0      0      0      0      0      0      0      0
40     0      0      1      0      0      0      0      0      0      0      0      0
41     0      0      1      0      0      0      0      0      0      0      0      0
42     0      0      1      0      0      0      0      0      0      0      0      0
43     0      0      1      0      0      0      0      0      0      0      0      0
39     0      0      1      0      0      0      0      0      0      0      0      0

```

END ACTIVITY

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL PEST  NITR  PHOS  TRAC  *****
8      0      0      4      0      0      0      0      0      0      0      0      0      1      9
17     0      0      4      0      0      0      0      0      0      0      0      0      1      9
9      0      0      4      0      0      0      0      0      0      0      0      0      1      9
40     0      0      4      0      0      0      0      0      0      0      0      0      1      9
41     0      0      4      0      0      0      0      0      0      0      0      0      1      9
42     0      0      4      0      0      0      0      0      0      0      0      0      1      9
43     0      0      4      0      0      0      0      0      0      0      0      0      1      9
39     0      0      4      0      0      0      0      0      0      0      0      0      1      9

```

END PRINT-INFO

PWAT-PARM1

```

<PLS > PWATER variable monthly parameter value flags ***
# - # CSNO RTOP UZFG VCS VUZ VNN VIFW VIRC VLE INFC HWT ***
8      0      0      0      0      0      0      0      0      0      0      0      0
17     0      0      0      0      0      0      0      0      0      0      0      0
9      0      0      0      0      0      0      0      0      0      0      0      0
40     0      0      0      0      0      0      0      0      0      0      0      0
41     0      0      0      0      0      0      0      0      0      0      0      0
42     0      0      0      0      0      0      0      0      0      0      0      0
43     0      0      0      0      0      0      0      0      0      0      0      0
39     0      0      0      0      0      0      0      0      0      0      0      0
END PWAT-PARM1

```

```

PWAT-PARM2
<PLS > PWATER input info: Part 2 ***
# - # ***FOREST LZSN INFILF LRSUR SLSUR KVARV AGWRC
8      0      5      0.8      400      0.1      0.3      0.996
17     0      4.5      0.03      400      0.1      0.5      0.996
9      0      5      0.8      400      0.15      0.3      0.996
40     0      5      0.8      400      0.15      0.3      0.996
41     0      4.5      0.03      400      0.15      0.5      0.996
42     0      4.5      0.03      400      0.15      0.5      0.996
43     0      5      0.8      400      0.15      0.3      0.996
39     0      5      2      400      0.1      0.3      0.996
END PWAT-PARM2

```

```

PWAT-PARM3
<PLS > PWATER input info: Part 3 ***
# - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASET P AGWETP
8      0      0      2      2      0      0      0
17     0      0      2      2      0      0      0
9      0      0      2      2      0      0      0
40     0      0      2      2      0      0      0
41     0      0      2      2      0      0      0
42     0      0      2      2      0      0      0
43     0      0      2      2      0      0      0
39     0      0      2      2      0      0      0
END PWAT-PARM3

```

```

PWAT-PARM4
<PLS > PWATER input info: Part 4 ***
# - # CEPSC UZSN NSUR INTFW IRC LZETP ***
8      0.1      0.5      0.25      0      0.7      0.25
17     0.1      0.25      0.25      6      0.5      0.25
9      0.1      0.5      0.25      0      0.7      0.25
40     0.1      0.5      0.25      0      0.7      0.25
41     0.1      0.15      0.25      6      0.3      0.25
42     0.1      0.15      0.25      6      0.3      0.25
43     0.1      0.5      0.25      0      0.7      0.25
39     0.2      0.5      0.35      0      0.7      0.7
END PWAT-PARM4

```

```

PWAT-STATE1
<PLS > *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS SURS UZS IFWS LZS AGWS GWVS
8      0      0      0      0      3      1      0
17     0      0      0      0      2.5      1      0
9      0      0      0      0      3      1      0
40     0      0      0      0      3      1      0
41     0      0      0      0      2.5      1      0
42     0      0      0      0      2.5      1      0
43     0      0      0      0      3      1      0
39     0      0      0      0      3      1      0
END PWAT-STATE1

```

END PERLND

IMPLND

GEN-INFO

```

<PLS ><-----Name-----> Unit-systems Printer ***
# - # User t-series Engl Metr ***

```

```

                in   out           ***
2      ROADS/MOD      1   1   1   27   0
4      ROOF TOPS/FLAT 1   1   1   27   0
6      DRIVEWAYS/MOD  1   1   1   27   0
3      ROADS/STEEP    1   1   1   27   0
7      DRIVEWAYS/STEEP 1   1   1   27   0
16     ROADS/MOD LAT  1   1   1   27   0
END GEN-INFO
*** Section IWATER***

```

```

ACTIVITY
<PLS > ***** Active Sections *****
# - # ATMP SNOW IWAT SLD IWG IQAL ***
2      0   0   1   0   0   0
4      0   0   1   0   0   0
6      0   0   1   0   0   0
3      0   0   1   0   0   0
7      0   0   1   0   0   0
16     0   0   1   0   0   0
END ACTIVITY

```

```

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW IWAT SLD IWG IQAL *****
2      0   0   4   0   0   0   1   9
4      0   0   4   0   0   0   1   9
6      0   0   4   0   0   0   1   9
3      0   0   4   0   0   0   1   9
7      0   0   4   0   0   0   1   9
16     0   0   4   0   0   0   1   9
END PRINT-INFO

```

```

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP VRS VNN RTLI ***
2      0   0   0   0   0
4      0   0   0   0   0
6      0   0   0   0   0
3      0   0   0   0   0
7      0   0   0   0   0
16     0   0   0   0   0
END IWAT-PARM1

```

```

IWAT-PARM2
<PLS > IWATER input info: Part 2 ***
# - # *** LSUR SLSUR NSUR RETSC
2      400  0.05  0.1  0.08
4      400  0.01  0.1  0.1
6      400  0.05  0.1  0.08
3      400  0.1   0.1  0.05
7      400  0.1   0.1  0.05
16     400  0.05  0.1  0.08
END IWAT-PARM2

```

```

IWAT-PARM3
<PLS > IWATER input info: Part 3 ***
# - # ***PETMAX PETMIN
2      0   0
4      0   0
6      0   0
3      0   0
7      0   0
16     0   0
END IWAT-PARM3

```

```

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS SURS
2      0   0
4      0   0

```



```

6           0           0
3           0           0
7           0           0
16          0           0

```

END IWAT-STATE1

END IMPLND

SCHEMATIC

<-Source->	<--Area-->	<-Target->	MBLK	***
<Name> #	<-factor->	<Name> #	Tbl#	***
Basin 4,7,8 Imperv Lateral	***			
IMPLND 16	0.5044	PERLND 39	50	
Subbasin 8 - Perv Lateral Flow	A/B***			
PERLND 40	0.4188	PERLND 39	30	
PERLND 40	0.4188	PERLND 39	34	
PERLND 40	0.4188	PERLND 39	38	
Subbasin 7 - Perv Lateral Flow	A/B***			
PERLND 43	0.0995	PERLND 39	30	
PERLND 43	0.0995	PERLND 39	34	
PERLND 43	0.0995	PERLND 39	38	
Subbasin 7 - Perv Lateral Flow	C***			
PERLND 41	0.1344	PERLND 39	30	
PERLND 41	0.1344	PERLND 39	34	
PERLND 41	0.1344	PERLND 39	38	
Subbasin 8 - Perv Lateral Flow	C***			
PERLND 42	0.1396	PERLND 39	30	
PERLND 42	0.1396	PERLND 39	34	
PERLND 42	0.1396	PERLND 39	38	
Subbasin 1***				
PERLND 8	0.39	COPY 501	12	
PERLND 8	0.39	COPY 501	13	
PERLND 17	0.95	COPY 501	12	
PERLND 17	0.95	COPY 501	13	
IMPLND 2	0.35	COPY 501	15	
IMPLND 4	0.32	COPY 501	15	
IMPLND 6	0.14	COPY 501	15	
Subbasin 2***				
PERLND 8	0.67	COPY 502	12	
PERLND 8	0.67	COPY 502	13	
PERLND 17	0.41	COPY 502	12	
PERLND 17	0.41	COPY 502	13	
IMPLND 2	0.42	COPY 502	15	
IMPLND 4	0.08	COPY 502	15	
IMPLND 6	0.04	COPY 502	15	
Subbasin 3***				
PERLND 9	7.19	COPY 503	12	
PERLND 9	7.19	COPY 503	13	
IMPLND 3	2.24	COPY 503	15	
IMPLND 4	3.25	COPY 503	15	
IMPLND 7	1.39	COPY 503	15	
Subbasin 5***				
PERLND 9	1.39	COPY 505	12	
PERLND 9	1.39	COPY 505	13	
IMPLND 3	0.52	COPY 505	15	
IMPLND 4	0.55	COPY 505	15	
IMPLND 7	0.24	COPY 505	15	
Subbasin 6***				
PERLND 8	10.62	COPY 506	12	
PERLND 8	10.62	COPY 506	13	
PERLND 17	0.04	COPY 506	12	
PERLND 17	0.04	COPY 506	13	
IMPLND 2	1.77	COPY 506	15	
IMPLND 4	2.68	COPY 506	15	
IMPLND 6	1.15	COPY 506	15	
Basin 4 - Perv Lateral Flow***				
PERLND 39	5.73	COPY 504	12	
PERLND 39	5.73	COPY 504	13	
Subbasin 7 - Perv Lateral Flow	C***			
PERLND 41	0.77	COPY 507	12	

```

PERLND 41 0.77 COPY 507 13
Subbasin 8 - Perv Lateral Flow C***
PERLND 42 0.8 COPY 508 12
PERLND 42 0.8 COPY 508 13

```

```

*****Routing*****
END SCHEMATIC

```

```

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
COPY 501 OUTPUT MEAN 1 1 48.4 DISPLY 1 INPUT TIMSER 1
COPY 502 OUTPUT MEAN 1 1 48.4 DISPLY 2 INPUT TIMSER 1
COPY 503 OUTPUT MEAN 1 1 48.4 DISPLY 3 INPUT TIMSER 1
COPY 505 OUTPUT MEAN 1 1 48.4 DISPLY 5 INPUT TIMSER 1
COPY 506 OUTPUT MEAN 1 1 48.4 DISPLY 6 INPUT TIMSER 1
COPY 507 OUTPUT MEAN 1 1 48.4 DISPLY 7 INPUT TIMSER 1
COPY 508 OUTPUT MEAN 1 1 48.4 DISPLY 8 INPUT TIMSER 1
COPY 504 OUTPUT MEAN 1 1 48.4 DISPLY 4 INPUT TIMSER 1

```

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
END NETWORK

```

```

RCHRES
GEN-INFO
RCHRES Name Nexits Unit Systems Printer ***
# - #<-----><----> User T-series Engl Metr LKFG ***
in out ***
END GEN-INFO
*** Section RCHRES***

```

```

ACTIVITY
<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUGF PKFG PHFG ***
END ACTIVITY

```

```

PRINT-INFO
<PLS > ***** Print-flags ***** PIVL PYR
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
END PRINT-INFO

```

```

HYDR-PARM1
RCHRES Flags for each HYDR Section ***
# - # VC A1 A2 A3 ODFVFG for each *** ODGTFG for each FUNCT for each
FG FG FG FG possible exit *** possible exit possible exit
* * * * * * * * * * * * * * * * * * * * * *
END HYDR-PARM1

```

```

HYDR-PARM2
# - # FTABNO LEN DELTH STCOR KS DB50 ***
<-----><-----><-----><-----><-----><-----> ***
END HYDR-PARM2

```

```

HYDR-INIT
RCHRES Initial conditions for each HYDR section ***
# - # *** VOL Initial value of COLIND Initial value of OUTDGT
*** ac-ft for each possible exit for each possible exit
<-----><-----> <---><---><---><---><---> *** <---><---><---><---><--->
END HYDR-INIT
END RCHRES

```

```

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

```

```

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***

```

```

<Name> # <Name> # tem strg<-factor->strg <Name> # # <Name> # # ***
WDM 2 PREC ENGL 1 PERLND 1 999 EXTNL PREC
WDM 2 PREC ENGL 1 IMPLND 1 999 EXTNL PREC
WDM 1 EVAP ENGL 0.76 PERLND 1 999 EXTNL PETINP
WDM 1 EVAP ENGL 0.76 IMPLND 1 999 EXTNL PETINP

```

END EXT SOURCES

EXT TARGETS

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name> # <Name> # #<-factor->strg <Name> # <Name> tem strg strg***
COPY 501 OUTPUT MEAN 1 1 48.4 WDM 501 FLOW ENGL REPL
COPY 502 OUTPUT MEAN 1 1 48.4 WDM 502 FLOW ENGL REPL
COPY 503 OUTPUT MEAN 1 1 48.4 WDM 503 FLOW ENGL REPL
COPY 505 OUTPUT MEAN 1 1 48.4 WDM 505 FLOW ENGL REPL
COPY 506 OUTPUT MEAN 1 1 48.4 WDM 506 FLOW ENGL REPL
COPY 504 OUTPUT MEAN 1 1 48.4 WDM 504 FLOW ENGL REPL
COPY 507 OUTPUT MEAN 1 1 48.4 WDM 507 FLOW ENGL REPL
COPY 508 OUTPUT MEAN 1 1 48.4 WDM 508 FLOW ENGL REPL

```

END EXT TARGETS

MASS-LINK

```

<Volume> <-Grp> <-Member-><--Mult--> <Target> <-Grp> <-Member->***
<Name> <Name> # #<-factor-> <Name> <Name> # #***
MASS-LINK 12
PERLND PWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 12

MASS-LINK 13
PERLND PWATER IFWO 0.083333 COPY INPUT MEAN
END MASS-LINK 13

MASS-LINK 15
IMPLND IWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 15

MASS-LINK 30
PERLND PWATER SURO PERLND EXTNL SURLI
END MASS-LINK 30

MASS-LINK 34
PERLND PWATER IFWO PERLND EXTNL IFWLI
END MASS-LINK 34

MASS-LINK 38
PERLND PWATER AGWO PERLND EXTNL AGWLI
END MASS-LINK 38

MASS-LINK 50
IMPLND IWATER SURO PERLND EXTNL SURLI
END MASS-LINK 50

```

END MASS-LINK

END RUN

Mitigated UCI File

RUN

GLOBAL

```
WVHM4 model simulation
START      1948 10 01      END      2009 09 30
RUN INTERP OUTPUT LEVEL   3      0
RESUME     0 RUN      1
UNIT SYSTEM      1
END GLOBAL
```

FILES

```
<File> <Un#> <-----File Name----->***
<-ID->                                     ***
WDM      26      Tamarack.wdm
MESSU    25      MitTamarack.MES
          27      MitTamarack.L61
          28      MitTamarack.L62
          30      POCTamarack1.dat
          31      POCTamarack2.dat
          32      POCTamarack3.dat
          33      POCTamarack4.dat
          34      POCTamarack5.dat
          35      POCTamarack6.dat
          36      POCTamarack7.dat
          37      POCTamarack8.dat
```

END FILES

OPN SEQUENCE

```
INGRP      INDELT 00:15
  PERLND      8
  PERLND     17
  IMPLND      2
  IMPLND      4
  IMPLND      6
  PERLND      9
  IMPLND      3
  IMPLND      7
  PERLND      2
  PERLND     18
  COPY       501
  COPY       502
  COPY       503
  COPY       504
  COPY       505
  COPY       506
  COPY       507
  COPY       508
  DISPLY      1
  DISPLY      2
  DISPLY      3
  DISPLY      4
  DISPLY      5
  DISPLY      6
  DISPLY      7
  DISPLY      8
```

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

```
# - #<-----Title----->***TRAN PIVL DIG1 FIL1 PYR DIG2 FIL2 YRND
1      Subbasin 1      MAX      1      2      30      9
2      Subbasin 2      MAX      1      2      31      9
3      Subbasin 3      MAX      1      2      32      9
4      Subbasin 4      MAX      1      2      33      9
5      Subbasin 5      MAX      1      2      34      9
6      Subbasin 6      MAX      1      2      35      9
7      Subbasin 7      MAX      1      2      36      9
8      Subbasin 8      MAX      1      2      37      9
```

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

#	-	#	NPT	NMN	***
1			1	1	
501			1	1	
502			1	1	
503			1	1	
504			1	1	
505			1	1	
506			1	1	
507			1	1	
508			1	1	

END TIMESERIES

END COPY

GENER

OPCODE

#	#	OPCD	***

END OPCODE

PARM

#	#	K	***

END PARM

END GENER

PERLND

GEN-INFO

<PLS ><-----Name----->		NBLKS		Unit-systems		Printer		***
#	-	#		User	t-series	Engl	Metr	***
				in	out	***		
8		A/B, Lawn, Mod	1	1	1	1	27	0
17		C, Lawn, Mod	1	1	1	1	27	0
9		A/B, Lawn, Steep	1	1	1	1	27	0
2		A/B, Forest, Mod	1	1	1	1	27	0
18		C, Lawn, Steep	1	1	1	1	27	0

END GEN-INFO

*** Section PWATER***

ACTIVITY

<PLS > ***** Active Sections *****														***	
#	-	#	ATMP	SNOW	PWAT	SED	PST	PWG	PQAL	MSTL	PEST	NITR	PHOS	TRAC	***
8			0	0	1	0	0	0	0	0	0	0	0	0	
17			0	0	1	0	0	0	0	0	0	0	0	0	
9			0	0	1	0	0	0	0	0	0	0	0	0	
2			0	0	1	0	0	0	0	0	0	0	0	0	
18			0	0	1	0	0	0	0	0	0	0	0	0	

END ACTIVITY

PRINT-INFO

<PLS > ***** Print-flags *****														PIVL	PYR	*****
#	-	#	ATMP	SNOW	PWAT	SED	PST	PWG	PQAL	MSTL	PEST	NITR	PHOS	TRAC	*****	*****
8			0	0	4	0	0	0	0	0	0	0	0	0	1	9
17			0	0	4	0	0	0	0	0	0	0	0	0	1	9
9			0	0	4	0	0	0	0	0	0	0	0	0	1	9
2			0	0	4	0	0	0	0	0	0	0	0	0	1	9
18			0	0	4	0	0	0	0	0	0	0	0	0	1	9

END PRINT-INFO

PWAT-PARM1

<PLS > PWATER variable monthly parameter value flags ***														
#	-	#	CSNO	RTOP	UZFG	VCS	VUZ	VNN	VIFW	VIRC	VLE	INFC	HWT	***
8			0	0	0	0	0	0	0	0	0	0	0	
17			0	0	0	0	0	0	0	0	0	0	0	
9			0	0	0	0	0	0	0	0	0	0	0	
2			0	0	0	0	0	0	0	0	0	0	0	
18			0	0	0	0	0	0	0	0	0	0	0	

END PWAT-PARM1

PWAT-PARM2

<PLS > PWATER input info: Part 2								***	
#	-	#	***FOREST	LZSN	INFILT	LSUR	SLSUR	KVARY	AGWRC
8			0	5	0.8	400	0.1	0.3	0.996

17	0	4.5	0.03	400	0.1	0.5	0.996
9	0	5	0.8	400	0.15	0.3	0.996
2	0	5	2	400	0.1	0.3	0.996
18	0	4.5	0.03	400	0.15	0.5	0.996

END PWAT-PARM2

PWAT-PARM3

```
<PLS > PWATER input info: Part 3 ***
# - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASETP AGWETP
8      0      0      2      2      0      0      0
17     0      0      2      2      0      0      0
9      0      0      2      2      0      0      0
2      0      0      2      2      0      0      0
18     0      0      2      2      0      0      0
```

END PWAT-PARM3

PWAT-PARM4

```
<PLS > PWATER input info: Part 4 ***
# - # CEPSC UZSN NSUR INTFW IRC LZETP ***
8      0.1   0.5   0.25  0      0.7   0.25
17     0.1   0.25  0.25  6      0.5   0.25
9      0.1   0.5   0.25  0      0.7   0.25
2      0.2   0.5   0.35  0      0.7   0.7
18     0.1   0.15  0.25  6      0.3   0.25
```

END PWAT-PARM4

PWAT-STATE1

```
<PLS > *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS SURS UZS IFWS LZS AGWS GWVS
8      0      0      0      0      3      1      0
17     0      0      0      0      2.5    1      0
9      0      0      0      0      3      1      0
2      0      0      0      0      3      1      0
18     0      0      0      0      2.5    1      0
```

END PWAT-STATE1

END PERLND

IMPLND

GEN-INFO

```
<PLS ><-----Name-----> Unit-systems Printer ***
# - # User t-series Engl Metr ***
in out
2      ROADS/MOD          1  1  1  27  0
4      ROOF TOPS/FLAT    1  1  1  27  0
6      DRIVEWAYS/MOD     1  1  1  27  0
3      ROADS/STEEP       1  1  1  27  0
7      DRIVEWAYS/STEEP   1  1  1  27  0
```

END GEN-INFO

*** Section IWATER***

ACTIVITY

```
<PLS > ***** Active Sections *****
# - # ATMP SNOW IWAT SLD IWG IQAL ***
2      0  0  1  0  0  0
4      0  0  1  0  0  0
6      0  0  1  0  0  0
3      0  0  1  0  0  0
7      0  0  1  0  0  0
```

END ACTIVITY

PRINT-INFO

```
<ILS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW IWAT SLD IWG IQAL *****
2      0  0  4  0  0  0  1  9
4      0  0  4  0  0  0  1  9
6      0  0  4  0  0  0  1  9
3      0  0  4  0  0  0  1  9
7      0  0  4  0  0  0  1  9
```

END PRINT-INFO

```

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP VRS VNN RTLI ***
2 0 0 0 0 0
4 0 0 0 0 0
6 0 0 0 0 0
3 0 0 0 0 0
7 0 0 0 0 0
END IWAT-PARM1

```

```

IWAT-PARM2
<PLS > IWATER input info: Part 2 ***
# - # *** LSUR SLSUR NSUR RETSC
2 400 0.05 0.1 0.08
4 400 0.01 0.1 0.1
6 400 0.05 0.1 0.08
3 400 0.1 0.1 0.05
7 400 0.1 0.1 0.05
END IWAT-PARM2

```

```

IWAT-PARM3
<PLS > IWATER input info: Part 3 ***
# - # ***PETMAX PETMIN
2 0 0
4 0 0
6 0 0
3 0 0
7 0 0
END IWAT-PARM3

```

```

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS SURS
2 0 0
4 0 0
6 0 0
3 0 0
7 0 0
END IWAT-STATE1

```

END IMPLND

```

SCHEMATIC
<-Source->          <--Area-->          <-Target->          MBLK          ***
<Name> #            <-factor->          <Name> #          Tbl#          ***
Subbasin 1***
PERLND 8            0.38            COPY 501        12
PERLND 8            0.38            COPY 501        13
PERLND 17           0.94            COPY 501        12
PERLND 17           0.94            COPY 501        13
IMPLND 2            0.35            COPY 501        15
IMPLND 4            0.33            COPY 501        15
IMPLND 6            0.14            COPY 501        15
Subbasin 2***
PERLND 8            0.52            COPY 502        12
PERLND 8            0.52            COPY 502        13
PERLND 17           0.32            COPY 502        12
PERLND 17           0.32            COPY 502        13
IMPLND 2            0.42            COPY 502        15
IMPLND 4            0.25            COPY 502        15
IMPLND 6            0.11            COPY 502        15
Subbasin 3***
PERLND 9            6.93            COPY 503        12
PERLND 9            6.93            COPY 503        13
IMPLND 3            2.24            COPY 503        15
IMPLND 4            3.43            COPY 503        15
IMPLND 7            1.47            COPY 503        15
Subbasin 4***
PERLND 2            5.82            COPY 504        12

```

```

PERLND 2 5.82 COPY 504 13
Subbasin 5***
PERLND 9 1.15 COPY 505 12
PERLND 9 1.15 COPY 505 13
IMPLND 3 0.52 COPY 505 15
IMPLND 4 0.73 COPY 505 15
IMPLND 7 0.31 COPY 505 15
Subbasin 6***
PERLND 8 9.61 COPY 506 12
PERLND 8 9.61 COPY 506 13
PERLND 17 0.03 COPY 506 12
PERLND 17 0.03 COPY 506 13
IMPLND 2 1.77 COPY 506 15
IMPLND 4 3.38 COPY 506 15
IMPLND 6 1.45 COPY 506 15
Subbasin 7***
PERLND 9 0.5 COPY 507 12
PERLND 9 0.5 COPY 507 13
PERLND 18 0.68 COPY 507 12
PERLND 18 0.68 COPY 507 13
IMPLND 4 0.72 COPY 507 15
IMPLND 7 0.31 COPY 507 15
Subbasin 8***
PERLND 9 2.16 COPY 508 12
PERLND 9 2.16 COPY 508 13
PERLND 18 0.37 COPY 508 12
PERLND 18 0.37 COPY 508 13
IMPLND 3 0.92 COPY 508 15
IMPLND 4 0.74 COPY 508 15
IMPLND 7 0.32 COPY 508 15

```

*****Routing*****
END SCHEMATIC

NETWORK

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
COPY 501 OUTPUT MEAN 1 1 48.4 DISPLY 1 INPUT TIMSER 1
COPY 502 OUTPUT MEAN 1 1 48.4 DISPLY 2 INPUT TIMSER 1
COPY 503 OUTPUT MEAN 1 1 48.4 DISPLY 3 INPUT TIMSER 1
COPY 504 OUTPUT MEAN 1 1 48.4 DISPLY 4 INPUT TIMSER 1
COPY 505 OUTPUT MEAN 1 1 48.4 DISPLY 5 INPUT TIMSER 1
COPY 506 OUTPUT MEAN 1 1 48.4 DISPLY 6 INPUT TIMSER 1
COPY 507 OUTPUT MEAN 1 1 48.4 DISPLY 7 INPUT TIMSER 1
COPY 508 OUTPUT MEAN 1 1 48.4 DISPLY 8 INPUT TIMSER 1

```

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
END NETWORK

```

RCHRES

```

GEN-INFO
RCHRES Name Nexits Unit Systems Printer ***
# - #<-----><----> User T-series Engl Metr LKFG ***
in out ***

```

END GEN-INFO
*** Section RCHRES***

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUGF PKFG PHFG ***
END ACTIVITY

```

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL PYR
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
END PRINT-INFO

```



```

HYDR-PARM1
RCHRES  Flags for each HYDR Section          ***
# - #   VC A1 A2 A3  ODFVFG for each *** ODGTFG for each  FUNCT for each
      FG FG FG FG  possible exit *** possible exit  possible exit
      * * * * *   * * * * *   * * * * *   * * * * *
END HYDR-PARM1

```

```

HYDR-PARM2
# - #   FTABNO          LEN          DELTH          STCOR          KS          DB50          ***
<-----><-----><-----><-----><-----><-----><----->          ***
END HYDR-PARM2

```

```

HYDR-INIT
RCHRES  Initial conditions for each HYDR section          ***
# - #   *** VOL          Initial value of COLIND          Initial value of OUTDGT
      *** ac-ft          for each possible exit          for each possible exit
<-----><----->          <-----><-----><-----><-----><----->          *** <-----><-----><-----><-----><----->
END HYDR-INIT
END RCHRES

```

```

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

```

```

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # tem strg<-factor-->strg <Name> # # <Name> # # ***
WDM 2 PREC ENGL 1 PERLND 1 999 EXTNL PREC
WDM 2 PREC ENGL 1 IMPLND 1 999 EXTNL PREC
WDM 1 EVAP ENGL 0.76 PERLND 1 999 EXTNL PETINP
WDM 1 EVAP ENGL 0.76 IMPLND 1 999 EXTNL PETINP

```

```

END EXT SOURCES

```

```

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name> # <Name> # #<-factor-->strg <Name> # <Name> tem strg strg***
COPY 1 OUTPUT MEAN 1 1 48.4 WDM 701 FLOW ENGL REPL
COPY 501 OUTPUT MEAN 1 1 48.4 WDM 801 FLOW ENGL REPL
COPY 2 OUTPUT MEAN 1 1 48.4 WDM 702 FLOW ENGL REPL
COPY 502 OUTPUT MEAN 1 1 48.4 WDM 802 FLOW ENGL REPL
COPY 3 OUTPUT MEAN 1 1 48.4 WDM 703 FLOW ENGL REPL
COPY 503 OUTPUT MEAN 1 1 48.4 WDM 803 FLOW ENGL REPL
COPY 4 OUTPUT MEAN 1 1 48.4 WDM 704 FLOW ENGL REPL
COPY 504 OUTPUT MEAN 1 1 48.4 WDM 804 FLOW ENGL REPL
COPY 5 OUTPUT MEAN 1 1 48.4 WDM 705 FLOW ENGL REPL
COPY 505 OUTPUT MEAN 1 1 48.4 WDM 805 FLOW ENGL REPL
COPY 6 OUTPUT MEAN 1 1 48.4 WDM 706 FLOW ENGL REPL
COPY 506 OUTPUT MEAN 1 1 48.4 WDM 806 FLOW ENGL REPL
COPY 7 OUTPUT MEAN 1 1 48.4 WDM 707 FLOW ENGL REPL
COPY 507 OUTPUT MEAN 1 1 48.4 WDM 807 FLOW ENGL REPL
COPY 8 OUTPUT MEAN 1 1 48.4 WDM 708 FLOW ENGL REPL
COPY 508 OUTPUT MEAN 1 1 48.4 WDM 808 FLOW ENGL REPL
END EXT TARGETS

```

```

MASS-LINK
<Volume> <-Grp> <-Member-><--Mult--> <Target> <-Grp> <-Member->***
<Name> <Name> # #<-factor--> <Name> <Name> # #***
MASS-LINK 12
PERLND PWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 12

MASS-LINK 13
PERLND PWATER IFWO 0.083333 COPY INPUT MEAN
END MASS-LINK 13

MASS-LINK 15
IMPLND IWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 15

```

END MASS-LINK

END RUN

Predeveloped HSPF Message File

Mitigated HSPF Message File

Disclaimer

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.022)

Tamarack Basin - Existing Condition 2-year flows

NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.

Analysis Options

Flow Units CFS
Process Models:
 Rainfall/Runoff YES
 Snowmelt NO
 Groundwater NO
 Flow Routing YES
 Ponding Allowed NO
 Water Quality NO
Flow Routing Method DYNWAVE
Starting Date MAR-16-2016 00:00:00
Ending Date MAR-17-2016 00:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Routing Time Step 5.00 sec

Element Count

Number of rain gages 1
Number of subcatchments ... 0
Number of nodes 35
Number of links 36
Number of pollutants 0
Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Design	2-year	INTENSITY	15 min.

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
A01_UNK	JUNCTION	239.24	5.00	5000.0	
A02_CB	JUNCTION	244.01	4.05	5000.0	
A03_CB	JUNCTION	253.10	4.15	5000.0	
A04_CB	JUNCTION	253.52	4.18	5000.0	
A05_CB	JUNCTION	253.64	7.01	5000.0	
A06_CB	JUNCTION	292.11	11.18	5000.0	
B01_MH	JUNCTION	37.39	8.44	0.0	
B02_CUL	JUNCTION	42.64	5.00	5000.0	

B03_CUL	JUNCTION	53.47	5.00	5000.0	
B04_MH	JUNCTION	54.00	6.60	5000.0	Yes
B05_MH	JUNCTION	56.60	5.80	5000.0	
B06_CB	JUNCTION	61.90	5.00	5000.0	
B07_CB	JUNCTION	75.81	4.20	5000.0	
B08_CB	JUNCTION	82.20	5.00	5000.0	
B09_MH	JUNCTION	89.30	8.60	5000.0	Yes
B10_MH_a	JUNCTION	91.09	9.10	5000.0	
B10_MH_b	JUNCTION	91.09	9.10	5000.0	
B11_MH	JUNCTION	91.91	10.10	5000.0	
B12_CB	JUNCTION	107.91	5.76	5000.0	Yes
B13_CUL	JUNCTION	97.57	5.00	5000.0	Yes
B14_CUL	JUNCTION	101.21	5.00	5000.0	
B15_CUL	JUNCTION	102.54	5.00	5000.0	
B16_CUL	JUNCTION	108.82	5.00	5000.0	
B17_CB	JUNCTION	109.12	2.25	5000.0	
B18_CUL	JUNCTION	109.31	5.00	5000.0	Yes
C02_CB	JUNCTION	67.80	4.40	5000.0	
C03_CB	JUNCTION	88.95	2.63	5000.0	
C04_CB	JUNCTION	90.95	2.90	5000.0	
C05_CB	JUNCTION	96.92	3.40	5000.0	
C06_CB	JUNCTION	105.33	1.90	5000.0	Yes
D02_CHAN	JUNCTION	33.07	4.00	0.0	
D03_CHAN	JUNCTION	34.94	4.00	0.0	
STO_1_ORIFICE	JUNCTION	113.60	9.00	5000.0	
D01_CHAN	OUTFALL	31.76	4.00	0.0	
STORAGE_1	STORAGE	113.60	7.00	0.0	Yes

Link Summary

Name	From Node	To Node	Type	Length	%Slope	Roughness
A01_UNK_B13_CUL	A01_UNK	B13_CUL	CONDUIT	1053.0	13.5773	0.1000
A02_CB_A01_UNK	A02_CB	A01_UNK	CONDUIT	34.8	14.1462	0.0130
A03_CB_A02_CB	A03_CB	A02_CB	CONDUIT	66.1	13.8744	0.0130
A04_CB_A03_CB	A04_CB	A03_CB	CONDUIT	30.7	0.7169	0.0130
A05_CB_A04_CB	A05_CB	A04_CB	CONDUIT	64.7	0.4794	0.0130
A06_CB_A05_CB	A06_CB	A05_CB	CONDUIT	137.1	29.1111	0.0130
B01_MH_D03_CHAN	B01_MH	D03_CHAN	CONDUIT	104.8	2.3375	0.0450
B02_CUL_B01_MH	B02_CUL	B01_MH	CONDUIT	35.5	5.8066	0.0130
B03_CUL_B02_CUL	B03_CUL	B02_CUL	CONDUIT	37.2	30.4221	0.1000
B04_MH_B03_CUL	B04_MH	B03_CUL	CONDUIT	53.2	0.9957	0.0130
B05_MH_B04_MH	B05_MH	B04_MH	CONDUIT	47.3	5.5100	0.0130
B06_CB_B05_MH	B06_CB	B05_MH	CONDUIT	46.1	11.5762	0.0130
B07_CB_B06_CB	B07_CB	B06_CB	CONDUIT	103.6	13.5437	0.0130
B08_CB_B07_CB	B08_CB	B07_CB	CONDUIT	86.2	7.3191	0.0130
B09_MH_B08_CB	B09_MH	B08_CB	CONDUIT	67.0	10.6616	0.0130
B10_MH_b_B09_MH	B10_MH_b	B09_MH	CONDUIT	138.6	1.2551	0.0240
B11_MH_B10_MH_a	B11_MH	B10_MH_a	CONDUIT	170.7	0.4805	0.0240
B12_CB_B11_MH	B12_CB	B11_MH	CONDUIT	163.0	8.6232	0.0240
B13_CUL_B09_MH	B13_CUL	B09_MH	CONDUIT	33.0	8.8326	0.0130
B14_CUL_B13_CUL	B14_CUL	B13_CUL	CONDUIT	47.0	7.7747	0.0300
B15_CUL_B14_CUL	B15_CUL	B14_CUL	CONDUIT	19.5	6.8351	0.0130
B16_CUL_B15_CUL	B16_CUL	B15_CUL	CONDUIT	76.9	8.1960	0.0300
B17_CB_B16_CUL	B17_CB	B16_CUL	CONDUIT	6.1	4.8875	0.0130
B18_CUL_B17_CB	B18_CUL	B17_CB	CONDUIT	6.2	3.0701	0.0130
C02_CB_B05_MH	C02_CB	B05_MH	CONDUIT	137.2	8.3368	0.0240
C03_CB_C02_CB	C03_CB	C02_CB	CONDUIT	162.5	13.0041	0.0240
C04_CB_C03_CB	C04_CB	C03_CB	CONDUIT	24.1	8.3244	0.0240
C05_CB_C04_CB	C05_CB	C04_CB	CONDUIT	69.4	8.5667	0.0240
C06_CB_C05_CB	C06_CB	C05_CB	CONDUIT	73.7	11.3550	0.0240
D02_CHAN_D01_CHAN	D02_CHAN	D01_CHAN	CONDUIT	56.2	2.3333	0.0450

D03_CHAN_D02_CHAN	D02_CHAN	CONDUIT	80.2	2.3335	0.0450
STO_1_ORIFICE_B17_CB	STO_1_ORIFICE_B17_CB	CONDUIT	17.1	27.1186	0.0130
OR1	STORAGE_1	STO_1_ORIFICE			
OR1_RISER	STORAGE_1	STO_1_ORIFICE			
OR2	B10_MH_a	B10_MH_b			
OR2_RISER	B10_MH_a	B10_MH_b			

Cross Section Summary

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
A01_UNK_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	45.10
A02_CB_A01_UNK	CIRCULAR	0.67	0.35	0.17	0.67	1	4.55
A03_CB_A02_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	4.50
A04_CB_A03_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	1.02
A05_CB_A04_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	0.84
A06_CB_A05_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	6.52
B01_MH_D03_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.96
B02_CUL_B01_MH	CIRCULAR	3.00	7.07	0.75	3.00	1	160.72
B03_CUL_B02_CUL	TRAPEZOIDAL	4.00	44.00	2.11	19.00	1	592.60
B04_MH_B03_CUL	CIRCULAR	2.00	3.14	0.50	2.00	1	22.57
B05_MH_B04_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	24.66
B06_CB_B05_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	35.74
B07_CB_B06_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	38.66
B08_CB_B07_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	28.42
B09_MH_B08_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	34.30
B10_MH_b_B09_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	6.37
B11_MH_B10_MH_a	CIRCULAR	6.00	28.27	1.50	6.00	1	159.01
B12_CB_B11_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.67
B13_CUL_B09_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	10.59
B14_CUL_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	113.77
B15_CUL_B14_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	9.31
B16_CUL_B15_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	116.81
B17_CB_B16_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	7.88
B18_CUL_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.24
C02_CB_B05_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C03_CB_C02_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.96
C04_CB_C03_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C05_CB_C04_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.65
C06_CB_C05_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.50
D02_CHAN_D01_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.50
D03_CHAN_D02_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.52
STO_1_ORIFICE_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	18.55

Flow Routing Continuity	Volume acre-feet	Volume 10 ⁶ gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.000	0.000
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	13.270	4.324
External Outflow	13.094	4.267
Internal Outflow	0.000	0.000
Storage Losses	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.158	0.051
Continuity Error (%)	0.134	

Highest Continuity Errors

Node B10_MH_a (1.42%)

Node B11_MH (1.31%)

Time-Step Critical Elements

Link B17_CB_B16_CUL (99.99%)

Highest Flow Instability Indexes

All links are stable.

Routing Time Step Summary

Minimum Time Step : 0.50 sec
 Average Time Step : 0.50 sec
 Maximum Time Step : 2.82 sec
 Percent in Steady State : 0.00
 Average Iterations per Step : 2.00

Node Depth Summary

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min
A01_UNK	JUNCTION	0.00	0.00	239.24	0 00:00
A02_CB	JUNCTION	0.00	0.00	244.01	0 00:00
A03_CB	JUNCTION	0.00	0.00	253.10	0 00:00
A04_CB	JUNCTION	0.00	0.00	253.52	0 00:00
A05_CB	JUNCTION	0.00	0.00	253.64	0 00:00
A06_CB	JUNCTION	0.00	0.00	292.11	0 00:00
B01_MH	JUNCTION	0.53	0.54	37.93	0 06:12
B02_CUL	JUNCTION	0.42	0.42	43.06	0 06:27
B03_CUL	JUNCTION	0.44	0.44	53.91	0 06:49
B04_MH	JUNCTION	0.74	0.75	54.75	0 06:11
B05_MH	JUNCTION	0.51	0.52	57.12	0 06:22
B06_CB	JUNCTION	0.41	0.42	62.32	0 06:25
B07_CB	JUNCTION	0.40	0.40	76.21	0 06:16
B08_CB	JUNCTION	0.46	0.47	82.67	0 06:25
B09_MH	JUNCTION	0.42	0.42	89.72	0 06:11
B10_MH_a	JUNCTION	7.22	7.34	98.43	0 01:21
B10_MH_b	JUNCTION	0.63	0.64	91.73	0 01:34
B11_MH	JUNCTION	6.40	6.52	98.43	0 01:00
B12_CB	JUNCTION	0.45	0.45	108.36	0 00:09
B13_CUL	JUNCTION	0.37	0.37	97.94	0 06:10
B14_CUL	JUNCTION	0.26	0.28	101.49	0 00:01
B15_CUL	JUNCTION	0.41	0.41	102.95	0 06:09
B16_CUL	JUNCTION	0.26	0.26	109.08	0 06:09
B17_CB	JUNCTION	0.43	0.43	109.55	0 06:10
B18_CUL	JUNCTION	0.43	0.46	109.77	0 00:00

C02_CB	JUNCTION	0.35	0.35	68.15	0	00:26
C03_CB	JUNCTION	0.13	0.14	89.09	0	00:10
C04_CB	JUNCTION	0.15	0.16	91.11	0	00:01
C05_CB	JUNCTION	0.15	0.15	97.07	0	00:08
C06_CB	JUNCTION	0.14	0.14	105.47	0	00:08
D02_CHAN	JUNCTION	0.56	0.56	33.63	0	06:31
D03_CHAN	JUNCTION	0.53	0.54	35.48	0	06:14
STO_1_ORIFICE	JUNCTION	0.12	0.12	113.72	0	06:08
D01_CHAN	OUTFALL	0.45	0.46	32.22	0	06:14
STORAGE_1	STORAGE	0.61	0.61	114.21	0	06:10

Node Inflow Summary

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal
A01_UNK	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A02_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A03_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A04_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A05_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A06_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
B01_MH	JUNCTION	0.00	6.69	0 06:27	0.000	4.271
B02_CUL	JUNCTION	0.00	6.69	0 06:11	0.000	4.271
B03_CUL	JUNCTION	0.00	6.69	0 06:11	0.000	4.272
B04_MH	JUNCTION	0.42	6.69	0 05:58	0.269	4.272
B05_MH	JUNCTION	0.00	6.27	0 06:11	0.000	4.003
B06_CB	JUNCTION	0.00	6.00	0 06:11	0.000	3.828
B07_CB	JUNCTION	0.00	6.00	0 06:25	0.000	3.828
B08_CB	JUNCTION	0.00	6.00	0 05:56	0.000	3.828
B09_MH	JUNCTION	0.59	6.00	0 06:11	0.384	3.829
B10_MH_a	JUNCTION	0.00	3.13	0 00:49	0.000	1.517
B10_MH_b	JUNCTION	0.00	2.38	0 01:21	0.000	1.495
B11_MH	JUNCTION	0.00	2.38	0 00:19	0.000	1.537
B12_CB	JUNCTION	2.38	2.38	0 00:00	1.537	1.537
B13_CUL	JUNCTION	0.05	3.03	0 06:00	0.033	1.953
B14_CUL	JUNCTION	0.00	2.98	0 06:15	0.000	1.920
B15_CUL	JUNCTION	0.00	2.98	0 06:08	0.000	1.920
B16_CUL	JUNCTION	0.00	2.98	0 05:57	0.000	1.921
B17_CB	JUNCTION	0.00	2.98	0 06:06	0.000	1.921
B18_CUL	JUNCTION	2.40	2.40	0 00:00	1.553	1.553
C02_CB	JUNCTION	0.00	0.27	0 00:10	0.000	0.176
C03_CB	JUNCTION	0.00	0.27	0 00:02	0.000	0.176
C04_CB	JUNCTION	0.00	0.27	0 00:08	0.000	0.176
C05_CB	JUNCTION	0.00	0.27	0 00:08	0.000	0.176
C06_CB	JUNCTION	0.27	0.27	0 00:00	0.176	0.176
D02_CHAN	JUNCTION	0.00	6.69	0 06:14	0.000	4.268
D03_CHAN	JUNCTION	0.00	6.69	0 06:12	0.000	4.270
STO_1_ORIFICE	JUNCTION	0.00	0.57	0 06:10	0.000	0.368
D01_CHAN	OUTFALL	0.00	6.69	0 06:14	0.000	4.267
STORAGE_1	STORAGE	0.57	0.57	0 00:00	0.370	0.370

Node Surcharge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
B11_MH	JUNCTION	23.20	0.522	3.578

Node Flooding Summary

No nodes were flooded.

Storage Volume Summary

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	E&I Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
STORAGE_1	0.355	7	0	0.357	8	0 06:10	0.57

Outfall Loading Summary

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
D01_CHAN	99.83	6.61	6.69	4.267
System	99.83	6.61	6.69	4.267

Link Flow Summary

Link	Type	Maximum Flow CFS	Time of Max Occurrence days hr:min	Maximum Veloc ft/sec	Max/ Full Flow	Max/ Full Depth
A01_UNK_B13_CUL	CONDUIT	0.00	0 00:00	0.00	0.00	0.09
A02_CB_A01_UNK	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A03_CB_A02_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A04_CB_A03_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A05_CB_A04_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A06_CB_A05_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
B01_MH_D03_CHAN	CONDUIT	6.69	0 06:12	2.69	0.01	0.13
B02_CUL_B01_MH	CONDUIT	6.69	0 06:27	11.23	0.04	0.14
B03_CUL_B02_CUL	CONDUIT	6.69	0 06:11	4.02	0.01	0.11
B04_MH_B03_CUL	CONDUIT	6.69	0 06:11	8.54	0.30	0.30
B05_MH_B04_MH	CONDUIT	6.27	0 05:58	8.88	0.25	0.42
B06_CB_B05_MH	CONDUIT	6.00	0 06:11	12.82	0.17	0.31
B07_CB_B06_CB	CONDUIT	6.00	0 06:11	15.44	0.16	0.27
B08_CB_B07_CB	CONDUIT	6.00	0 06:25	12.74	0.21	0.31

B09_MH_B08_CB	CONDUIT	6.00	0	05:56	13.60	0.17	0.30
B10_MH_b_B09_MH	CONDUIT	2.38	0	01:33	3.50	0.37	0.41
B11_MH_B10_MH_a	CONDUIT	3.13	0	00:49	2.71	0.02	1.00
B12_CB_B11_MH	CONDUIT	2.38	0	00:19	6.89	0.42	0.73
B13_CUL_B09_MH	CONDUIT	3.03	0	06:11	11.62	0.29	0.37
B14_CUL_B13_CUL	CONDUIT	2.98	0	06:00	7.13	0.03	0.16
B15_CUL_B14_CUL	CONDUIT	2.98	0	06:15	12.91	0.32	0.33
B16_CUL_B15_CUL	CONDUIT	2.98	0	06:08	5.20	0.03	0.17
B17_CB_B16_CUL	CONDUIT	2.98	0	05:57	17.04	0.38	0.34
B18_CUL_B17_CB	CONDUIT	2.61	0	00:00	9.46	0.42	0.43
C02_CB_B05_MH	CONDUIT	0.27	0	00:26	2.04	0.05	0.33
C03_CB_C02_CB	CONDUIT	0.27	0	00:10	4.20	0.04	0.14
C04_CB_C03_CB	CONDUIT	0.27	0	00:02	4.92	0.05	0.14
C05_CB_C04_CB	CONDUIT	0.27	0	00:08	3.71	0.05	0.15
C06_CB_C05_CB	CONDUIT	0.27	0	00:08	4.09	0.04	0.14
D02_CHAN_D01_CHAN	CONDUIT	6.69	0	06:14	2.90	0.01	0.13
D03_CHAN_D02_CHAN	CONDUIT	6.69	0	06:14	2.61	0.01	0.14
STO_1_ORIFICE_B17_CB	CONDUIT	0.57	0	06:06	3.29	0.03	0.27
OR1	ORIFICE	0.57	0	06:10			1.00
OR1_RISER	ORIFICE	0.00	0	00:00			0.00
OR2	ORIFICE	0.74	0	00:50			1.00
OR2_RISER	ORIFICE	1.64	0	01:21			0.35

Flow Classification Summary

Conduit	Adjusted /Actual Length	--- Fraction of Time in Flow Class ---						Avg. Froude Number	Avg. Flow Change	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit			Down Crit
A01_UNK_B13_CUL	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A02_CB_A01_UNK	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A03_CB_A02_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A04_CB_A03_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A05_CB_A04_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A06_CB_A05_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
B01_MH_D03_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.75	0.0000
B02_CUL_B01_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.69	0.0000
B03_CUL_B02_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.19	0.0000
B04_MH_B03_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.30	0.0000
B05_MH_B04_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.26	0.0000
B06_CB_B05_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.89	0.0000
B07_CB_B06_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	5.04	0.0000
B08_CB_B07_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.85	0.0000
B09_MH_B08_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.23	0.0000
B10_MH_b_B09_MH	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.90	0.0000
B11_MH_B10_MH_a	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0000
B12_CB_B11_MH	1.00	0.00	0.00	0.00	0.98	0.00	0.00	0.01	0.85	0.0000
B13_CUL_B09_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.94	0.0000
B14_CUL_B13_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.37	0.0000
B15_CUL_B14_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.60	0.0000
B16_CUL_B15_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.25	0.0000
B17_CB_B16_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.40	0.0000
B18_CUL_B17_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.32	0.0000
C02_CB_B05_MH	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.43	0.0000
C03_CB_C02_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.23	0.0000
C04_CB_C03_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.18	0.0000
C05_CB_C04_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.03	0.0000
C06_CB_C05_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.33	0.0000
D02_CHAN_D01_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.83	0.0000
D03_CHAN_D02_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.72	0.0000

STO_1_ORIFICE_B17_CB 1.00 0.00 0.00 0.00 0.01 0.99 0.00 0.00 1.30 0.0000

Conduit Surcharge Summary

Conduit	----- Both Ends	Hours Full Upstream	----- Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
B11_MH_B10_MH_a	23.20	23.20	23.20	0.01	0.01

Analysis begun on: Mon May 09 18:10:57 2016
Analysis ended on: Mon May 09 18:11:04 2016
Total elapsed time: 00:00:07

Tamarack Basin - Existing Condition 100-year flows

NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.

Analysis Options

Flow Units CFS
Process Models:
 Rainfall/Runoff YES
 Snowmelt NO
 Groundwater NO
 Flow Routing YES
 Ponding Allowed NO
 Water Quality NO
Flow Routing Method DYNWAVE
Starting Date MAR-16-2016 00:00:00
Ending Date MAR-17-2016 00:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Routing Time Step 5.00 sec

Element Count

Number of rain gages 1
Number of subcatchments ... 0
Number of nodes 35
Number of links 36
Number of pollutants 0
Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Design	100-year	INTENSITY	15 min.

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
A01_UNK	JUNCTION	239.24	5.00	5000.0	
A02_CB	JUNCTION	244.01	4.05	5000.0	
A03_CB	JUNCTION	253.10	4.15	5000.0	
A04_CB	JUNCTION	253.52	4.18	5000.0	
A05_CB	JUNCTION	253.64	7.01	5000.0	
A06_CB	JUNCTION	292.11	11.18	5000.0	
B01_MH	JUNCTION	37.39	8.44	0.0	
B02_CUL	JUNCTION	42.64	5.00	5000.0	

B03_CUL	JUNCTION	53.47	5.00	5000.0	
B04_MH	JUNCTION	54.00	6.60	5000.0	Yes
B05_MH	JUNCTION	56.60	5.80	5000.0	
B06_CB	JUNCTION	61.90	5.00	5000.0	
B07_CB	JUNCTION	75.81	4.20	5000.0	
B08_CB	JUNCTION	82.20	5.00	5000.0	
B09_MH	JUNCTION	89.30	8.60	5000.0	Yes
B10_MH_a	JUNCTION	91.09	9.10	5000.0	
B10_MH_b	JUNCTION	91.09	9.10	5000.0	
B11_MH	JUNCTION	91.91	10.10	5000.0	
B12_CB	JUNCTION	107.91	5.76	5000.0	Yes
B13_CUL	JUNCTION	97.57	5.00	5000.0	Yes
B14_CUL	JUNCTION	101.21	5.00	5000.0	
B15_CUL	JUNCTION	102.54	5.00	5000.0	
B16_CUL	JUNCTION	108.82	5.00	5000.0	
B17_CB	JUNCTION	109.12	2.25	5000.0	
B18_CUL	JUNCTION	109.31	5.00	5000.0	Yes
C02_CB	JUNCTION	67.80	4.40	5000.0	
C03_CB	JUNCTION	88.95	2.63	5000.0	
C04_CB	JUNCTION	90.95	2.90	5000.0	
C05_CB	JUNCTION	96.92	3.40	5000.0	
C06_CB	JUNCTION	105.33	1.90	5000.0	Yes
D02_CHAN	JUNCTION	33.07	4.00	0.0	
D03_CHAN	JUNCTION	34.94	4.00	0.0	
STO_1_ORIFICE	JUNCTION	113.60	9.00	5000.0	
D01_CHAN	OUTFALL	31.76	4.00	0.0	
STORAGE_1	STORAGE	113.60	7.00	0.0	Yes

Link Summary

Name	From Node	To Node	Type	Length	%Slope	Roughness
A01_UNK_B13_CUL	A01_UNK	B13_CUL	CONDUIT	1053.0	13.5773	0.1000
A02_CB_A01_UNK	A02_CB	A01_UNK	CONDUIT	34.8	14.1462	0.0130
A03_CB_A02_CB	A03_CB	A02_CB	CONDUIT	66.1	13.8744	0.0130
A04_CB_A03_CB	A04_CB	A03_CB	CONDUIT	30.7	0.7169	0.0130
A05_CB_A04_CB	A05_CB	A04_CB	CONDUIT	64.7	0.4794	0.0130
A06_CB_A05_CB	A06_CB	A05_CB	CONDUIT	137.1	29.1111	0.0130
B01_MH_D03_CHAN	B01_MH	D03_CHAN	CONDUIT	104.8	2.3375	0.0450
B02_CUL_B01_MH	B02_CUL	B01_MH	CONDUIT	35.5	5.8066	0.0130
B03_CUL_B02_CUL	B03_CUL	B02_CUL	CONDUIT	37.2	30.4221	0.1000
B04_MH_B03_CUL	B04_MH	B03_CUL	CONDUIT	53.2	0.9957	0.0130
B05_MH_B04_MH	B05_MH	B04_MH	CONDUIT	47.3	5.5100	0.0130
B06_CB_B05_MH	B06_CB	B05_MH	CONDUIT	46.1	11.5762	0.0130
B07_CB_B06_CB	B07_CB	B06_CB	CONDUIT	103.6	13.5437	0.0130
B08_CB_B07_CB	B08_CB	B07_CB	CONDUIT	86.2	7.3191	0.0130
B09_MH_B08_CB	B09_MH	B08_CB	CONDUIT	67.0	10.6616	0.0130
B10_MH_b_B09_MH	B10_MH_b	B09_MH	CONDUIT	138.6	1.2551	0.0240
B11_MH_B10_MH_a	B11_MH	B10_MH_a	CONDUIT	170.7	0.4805	0.0240
B12_CB_B11_MH	B12_CB	B11_MH	CONDUIT	163.0	8.6232	0.0240
B13_CUL_B09_MH	B13_CUL	B09_MH	CONDUIT	33.0	8.8326	0.0130
B14_CUL_B13_CUL	B14_CUL	B13_CUL	CONDUIT	47.0	7.7747	0.0300
B15_CUL_B14_CUL	B15_CUL	B14_CUL	CONDUIT	19.5	6.8351	0.0130
B16_CUL_B15_CUL	B16_CUL	B15_CUL	CONDUIT	76.9	8.1960	0.0300
B17_CB_B16_CUL	B17_CB	B16_CUL	CONDUIT	6.1	4.8875	0.0130
B18_CUL_B17_CB	B18_CUL	B17_CB	CONDUIT	6.2	3.0701	0.0130
C02_CB_B05_MH	C02_CB	B05_MH	CONDUIT	137.2	8.3368	0.0240
C03_CB_C02_CB	C03_CB	C02_CB	CONDUIT	162.5	13.0041	0.0240
C04_CB_C03_CB	C04_CB	C03_CB	CONDUIT	24.1	8.3244	0.0240
C05_CB_C04_CB	C05_CB	C04_CB	CONDUIT	69.4	8.5667	0.0240
C06_CB_C05_CB	C06_CB	C05_CB	CONDUIT	73.7	11.3550	0.0240
D02_CHAN_D01_CHAN	D02_CHAN	D01_CHAN	CONDUIT	56.2	2.3333	0.0450

D03_CHAN_D02_CHAN	D02_CHAN	CONDUIT	80.2	2.3335	0.0450
STO_1_ORIFICE_B17_CB	STO_1_ORIFICE_B17_CB	CONDUIT	17.1	27.1186	0.0130
OR1	STORAGE_1	STO_1_ORIFICE	ORIFICE		
OR1_RISER	STORAGE_1	STO_1_ORIFICE	ORIFICE		
OR2	B10_MH_a	B10_MH_b	ORIFICE		
OR2_RISER	B10_MH_a	B10_MH_b	ORIFICE		

Cross Section Summary

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
A01_UNK_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	45.10
A02_CB_A01_UNK	CIRCULAR	0.67	0.35	0.17	0.67	1	4.55
A03_CB_A02_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	4.50
A04_CB_A03_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	1.02
A05_CB_A04_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	0.84
A06_CB_A05_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	6.52
B01_MH_D03_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.96
B02_CUL_B01_MH	CIRCULAR	3.00	7.07	0.75	3.00	1	160.72
B03_CUL_B02_CUL	TRAPEZOIDAL	4.00	44.00	2.11	19.00	1	592.60
B04_MH_B03_CUL	CIRCULAR	2.00	3.14	0.50	2.00	1	22.57
B05_MH_B04_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	24.66
B06_CB_B05_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	35.74
B07_CB_B06_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	38.66
B08_CB_B07_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	28.42
B09_MH_B08_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	34.30
B10_MH_b_B09_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	6.37
B11_MH_B10_MH_a	CIRCULAR	6.00	28.27	1.50	6.00	1	159.01
B12_CB_B11_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.67
B13_CUL_B09_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	10.59
B14_CUL_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	113.77
B15_CUL_B14_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	9.31
B16_CUL_B15_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	116.81
B17_CB_B16_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	7.88
B18_CUL_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.24
C02_CB_B05_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C03_CB_C02_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.96
C04_CB_C03_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C05_CB_C04_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.65
C06_CB_C05_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.50
D02_CHAN_D01_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.50
D03_CHAN_D02_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.52
STO_1_ORIFICE_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	18.55

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.000	0.000
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	35.108	11.440
External Outflow	34.868	11.362
Internal Outflow	0.000	0.000
Storage Losses	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.220	0.072
Continuity Error (%)	0.057	

Time-Step Critical Elements

Link B17_CB_B16_CUL (99.99%)

Highest Flow Instability Indexes

All links are stable.

Routing Time Step Summary

Minimum Time Step : 0.50 sec
Average Time Step : 0.50 sec
Maximum Time Step : 1.18 sec
Percent in Steady State : 0.00
Average Iterations per Step : 2.00

Node Depth Summary

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min
A01_UNK	JUNCTION	0.00	0.00	239.24	0 00:00
A02_CB	JUNCTION	0.00	0.00	244.01	0 00:00
A03_CB	JUNCTION	0.00	0.00	253.10	0 00:00
A04_CB	JUNCTION	0.00	0.00	253.52	0 00:00
A05_CB	JUNCTION	0.00	0.00	253.64	0 00:00
A06_CB	JUNCTION	0.00	0.00	292.11	0 00:00
B01_MH	JUNCTION	0.88	0.89	38.28	0 14:27
B02_CUL	JUNCTION	0.67	0.67	43.31	0 14:50
B03_CUL	JUNCTION	0.76	0.76	54.23	0 14:25
B04_MH	JUNCTION	1.33	1.33	55.33	0 14:25
B05_MH	JUNCTION	0.90	0.90	57.50	0 15:23
B06_CB	JUNCTION	0.70	0.70	62.60	0 14:44
B07_CB	JUNCTION	0.67	0.67	76.48	0 14:35
B08_CB	JUNCTION	0.80	0.80	83.00	0 14:36
B09_MH	JUNCTION	0.71	0.72	90.02	0 14:34
B10_MH_a	JUNCTION	7.81	7.87	98.96	0 00:46
B10_MH_b	JUNCTION	1.08	1.09	92.18	0 00:47
B11_MH	JUNCTION	6.99	7.05	98.96	0 00:46
B12_CB	JUNCTION	3.72	5.76	113.67	0 00:19
B13_CUL	JUNCTION	0.72	0.72	98.29	0 14:34
B14_CUL	JUNCTION	0.45	0.46	101.67	0 00:00
B15_CUL	JUNCTION	0.68	0.68	103.22	0 14:37
B16_CUL	JUNCTION	0.44	0.44	109.26	0 14:36
B17_CB	JUNCTION	0.76	0.76	109.88	0 14:36
B18_CUL	JUNCTION	0.79	0.87	110.18	0 00:00
C02_CB	JUNCTION	0.44	0.44	68.24	0 00:22
C03_CB	JUNCTION	0.22	0.22	89.17	0 00:24
C04_CB	JUNCTION	0.25	0.25	91.20	0 00:01
C05_CB	JUNCTION	0.24	0.24	97.16	0 00:06
C06_CB	JUNCTION	0.22	0.22	105.55	0 00:05
D02_CHAN	JUNCTION	0.90	0.90	33.97	0 14:47
D03_CHAN	JUNCTION	0.88	0.89	35.83	0 14:41

STO_1_ORIFICE	JUNCTION	0.18	0.18	113.78	0	14:36
D01_CHAN	OUTFALL	0.78	0.79	32.55	0	16:24
STORAGE_1	STORAGE	2.12	2.15	115.75	0	14:36

Node Inflow Summary

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal
A01_UNK	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A02_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A03_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A04_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A05_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
A06_CB	JUNCTION	0.00	0.00	0 00:00	0.000	0.000
B01_MH	JUNCTION	0.00	17.70	0 14:35	0.000	11.370
B02_CUL	JUNCTION	0.00	17.70	0 14:35	0.000	11.370
B03_CUL	JUNCTION	0.00	17.70	0 14:24	0.000	11.371
B04_MH	JUNCTION	1.09	17.70	0 14:23	0.702	11.372
B05_MH	JUNCTION	0.00	16.61	0 14:23	0.000	10.671
B06_CB	JUNCTION	0.00	15.90	0 14:23	0.000	10.212
B07_CB	JUNCTION	0.00	15.90	0 14:34	0.000	10.213
B08_CB	JUNCTION	0.00	15.90	0 14:23	0.000	10.213
B09_MH	JUNCTION	1.35	15.90	0 14:34	0.871	10.214
B10_MH_a	JUNCTION	0.00	7.29	0 00:18	0.000	3.465
B10_MH_b	JUNCTION	0.00	5.39	0 00:46	0.000	3.441
B11_MH	JUNCTION	0.00	7.05	0 00:16	0.000	3.484
B12_CB	JUNCTION	5.39	5.39	0 00:00	3.484	3.484
B13_CUL	JUNCTION	1.86	9.16	0 14:26	1.204	5.911
B14_CUL	JUNCTION	0.00	7.30	0 14:35	0.000	4.708
B15_CUL	JUNCTION	0.00	7.30	0 14:33	0.000	4.708
B16_CUL	JUNCTION	0.00	7.30	0 14:34	0.000	4.709
B17_CB	JUNCTION	0.00	7.30	0 14:33	0.000	4.709
B18_CUL	JUNCTION	6.00	6.00	0 00:00	3.879	3.879
C02_CB	JUNCTION	0.00	0.71	0 00:07	0.000	0.459
C03_CB	JUNCTION	0.00	0.71	0 00:01	0.000	0.460
C04_CB	JUNCTION	0.00	0.71	0 00:19	0.000	0.460
C05_CB	JUNCTION	0.00	0.71	0 00:05	0.000	0.460
C06_CB	JUNCTION	0.71	0.71	0 00:00	0.460	0.460
D02_CHAN	JUNCTION	0.00	17.70	0 14:41	0.000	11.364
D03_CHAN	JUNCTION	0.00	17.70	0 14:34	0.000	11.368
STO_1_ORIFICE	JUNCTION	0.00	1.30	0 14:36	0.000	0.830
D01_CHAN	OUTFALL	0.00	17.70	0 16:24	0.000	11.361
STORAGE_1	STORAGE	1.30	1.30	0 00:00	0.840	0.840

Node Surcharge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
B11_MH	JUNCTION	23.69	1.047	3.053
B12_CB	JUNCTION	23.67	4.760	0.000

Node Flooding Summary

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CFS	Time of Max Occurrence days hr:min	Total Flood Volume 10^6 gal	Maximum Poned Depth Feet
B12_CB	0.01	0.35	0 00:19	0.000	5.76

Storage Volume Summary

Storage Unit	Average Volume 1000 ft3	Avg Pcmt Full	E&I Pcmt Loss	Maximum Volume 1000 ft3	Max Pcmt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
STORAGE_1	1.283	27	0	1.305	27	0 14:36	1.30

Outfall Loading Summary

Outfall Node	Flow Freq. Pcmt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
D01_CHAN	99.88	17.60	17.70	11.361
System	99.88	17.60	17.70	11.361

Link Flow Summary

Link	Type	Maximum Flow CFS	Time of Max Occurrence days hr:min	Maximum Veloc ft/sec	Max/ Full Flow	Max/ Full Depth
A01_UNK_B13_CUL	CONDUIT	0.00	0 00:00	0.00	0.00	0.18
A02_CB_A01_UNK	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A03_CB_A02_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A04_CB_A03_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A05_CB_A04_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
A06_CB_A05_CB	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
B01_MH_D03_CHAN	CONDUIT	17.70	0 14:34	3.52	0.04	0.22
B02_CUL_B01_MH	CONDUIT	17.70	0 14:35	14.94	0.11	0.22
B03_CUL_B02_CUL	CONDUIT	17.70	0 14:35	5.56	0.03	0.18
B04_MH_B03_CUL	CONDUIT	17.70	0 14:24	10.61	0.78	0.52
B05_MH_B04_MH	CONDUIT	16.61	0 14:23	11.76	0.67	0.75
B06_CB_B05_MH	CONDUIT	15.90	0 14:23	16.55	0.44	0.53
B07_CB_B06_CB	CONDUIT	15.90	0 14:23	20.20	0.41	0.46

B08_CB_B07_CB	CONDUIT	15.90	0	14:34	16.52	0.56	0.54
B09_MH_B08_CB	CONDUIT	15.90	0	14:23	17.68	0.46	0.51
B10_MH_b_B09_MH	CONDUIT	5.39	0	00:47	4.35	0.85	0.66
B11_MH_B10_MH_a	CONDUIT	7.29	0	00:18	3.47	0.05	1.00
B12_CB_B11_MH	CONDUIT	5.40	0	00:09	8.20	0.95	1.00
B13_CUL_B09_MH	CONDUIT	9.16	0	14:34	15.15	0.87	0.72
B14_CUL_B13_CUL	CONDUIT	7.30	0	14:26	9.05	0.06	0.29
B15_CUL_B14_CUL	CONDUIT	7.30	0	14:35	15.97	0.78	0.56
B16_CUL_B15_CUL	CONDUIT	7.30	0	14:33	7.01	0.06	0.28
B17_CB_B16_CUL	CONDUIT	7.30	0	14:34	20.72	0.93	0.60
B18_CUL_B17_CB	CONDUIT	6.50	0	00:00	11.56	1.04	0.78
C02_CB_B05_MH	CONDUIT	0.71	0	00:12	2.47	0.13	0.57
C03_CB_C02_CB	CONDUIT	0.71	0	00:07	5.57	0.10	0.23
C04_CB_C03_CB	CONDUIT	0.71	0	00:01	6.56	0.13	0.23
C05_CB_C04_CB	CONDUIT	0.71	0	00:19	4.92	0.13	0.24
C06_CB_C05_CB	CONDUIT	0.71	0	00:05	5.42	0.11	0.22
D02_CHAN_D01_CHAN	CONDUIT	17.70	0	16:24	3.79	0.04	0.21
D03_CHAN_D02_CHAN	CONDUIT	17.70	0	14:41	3.48	0.04	0.22
STO_1_ORIFICE_B17_CB	CONDUIT	1.30	0	14:33	3.58	0.07	0.47
OR1	ORIFICE	1.30	0	14:36			1.00
OR1_RISER	ORIFICE	0.00	0	00:00			0.00
OR2	ORIFICE	0.75	0	00:20			1.00
OR2_RISER	ORIFICE	4.65	0	00:46			0.70

Flow Classification Summary

Conduit	Adjusted /Actual Length	--- Fraction of Time in Flow Class ----						Avg. Froude Number	Avg. Flow Change	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit			Down Crit
A01_UNK_B13_CUL	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A02_CB_A01_UNK	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A03_CB_A02_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A04_CB_A03_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A05_CB_A04_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
A06_CB_A05_CB	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000
B01_MH_D03_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.80	0.0000
B02_CUL_B01_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.82	0.0000
B03_CUL_B02_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.33	0.0000
B04_MH_B03_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.05	0.0000
B05_MH_B04_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.00	0.0000
B06_CB_B05_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.64	0.0000
B07_CB_B06_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.91	0.0000
B08_CB_B07_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.63	0.0000
B09_MH_B08_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.03	0.0000
B10_MH_b_B09_MH	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.99	0.82	0.0000
B11_MH_B10_MH_a	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0000
B12_CB_B11_MH	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.01	0.02	0.0000
B13_CUL_B09_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.26	0.0000
B14_CUL_B13_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.24	0.0000
B15_CUL_B14_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.15	0.0000
B16_CUL_B15_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.32	0.0000
B17_CB_B16_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.69	0.0000
B18_CUL_B17_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.84	0.0000
C02_CB_B05_MH	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.40	0.0000
C03_CB_C02_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.31	0.0000
C04_CB_C03_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.26	0.0000
C05_CB_C04_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.10	0.0000
C06_CB_C05_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.41	0.0000
D02_CHAN_D01_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.87	0.0000

D03_CHAN_D02_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.79	0.0000
STO_1_ORIFICE_B17_CB	1.00	0.00	0.00	0.00	0.04	0.96	0.00	0.00	1.04	0.0000

 Conduit Surcharge Summary

Conduit	Hours Full			Hours	
	Both Ends	Upstream	Dnstream	Above Full Normal Flow	Capacity Limited
B11_MH_B10_MH_a	23.69	23.69	23.69	0.01	0.01
B12_CB_B11_MH	23.67	23.67	23.67	0.01	0.01
B18_CUL_B17_CB	0.01	0.01	0.01	0.01	0.01

Analysis begun on: Mon May 09 18:08:33 2016
 Analysis ended on: Mon May 09 18:08:41 2016
 Total elapsed time: 00:00:08

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.022)

Tamarack Basin - Proposed Condition 2-year flows

NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.

Analysis Options

Flow Units CFS
Process Models:
 Rainfall/Runoff YES
 Snowmelt NO
 Groundwater NO
 Flow Routing YES
 Ponding Allowed NO
 Water Quality NO
Flow Routing Method DYNWAVE
Starting Date MAR-16-2016 00:00:00
Ending Date MAR-17-2016 00:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Routing Time Step 5.00 sec

Element Count

Number of rain gages 1
Number of subcatchments ... 0
Number of nodes 35
Number of links 36
Number of pollutants 0
Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Design	2-year	INTENSITY	15 min.

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
A01_UNK	JUNCTION	239.24	5.00	5000.0	Yes
A02_CB	JUNCTION	244.01	4.05	5000.0	
A03_CB	JUNCTION	253.10	4.15	5000.0	
A04_CB	JUNCTION	253.52	4.18	5000.0	
A05_CB	JUNCTION	253.64	7.01	5000.0	
A06_CB	JUNCTION	292.11	11.18	5000.0	Yes
B01_MH	JUNCTION	37.39	8.44	0.0	
B02_CUL	JUNCTION	42.64	5.00	5000.0	

B03_CUL	JUNCTION	53.47	5.00	5000.0	
B04_MH	JUNCTION	54.00	6.60	5000.0	Yes
B05_MH	JUNCTION	56.60	5.80	5000.0	
B06_CB	JUNCTION	61.90	5.00	5000.0	
B07_CB	JUNCTION	75.81	4.20	5000.0	
B08_CB	JUNCTION	82.20	5.00	5000.0	
B09_MH	JUNCTION	89.30	8.60	5000.0	Yes
B10_MH_a	JUNCTION	91.09	9.10	5000.0	
B10_MH_b	JUNCTION	91.09	9.10	5000.0	
B11_MH	JUNCTION	91.91	10.10	5000.0	
B12_CB	JUNCTION	107.91	5.76	5000.0	Yes
B13_CUL	JUNCTION	97.57	5.00	5000.0	Yes
B14_CUL	JUNCTION	101.21	5.00	5000.0	
B15_CUL	JUNCTION	102.54	5.00	5000.0	
B16_CUL	JUNCTION	108.82	5.00	5000.0	
B17_CB	JUNCTION	109.12	2.25	5000.0	
B18_CUL	JUNCTION	109.31	5.00	5000.0	Yes
C02_CB	JUNCTION	67.80	4.40	5000.0	
C03_CB	JUNCTION	88.95	2.63	5000.0	
C04_CB	JUNCTION	90.95	2.90	5000.0	
C05_CB	JUNCTION	96.92	3.40	5000.0	
C06_CB	JUNCTION	105.33	1.90	5000.0	Yes
D02_CHAN	JUNCTION	33.07	4.00	0.0	
D03_CHAN	JUNCTION	34.94	4.00	0.0	
STO_1_ORIFICE	JUNCTION	113.60	9.00	5000.0	
D01_CHAN	OUTFALL	31.76	4.00	0.0	
STORAGE_1	STORAGE	113.60	7.00	0.0	Yes

Link Summary

Name	From Node	To Node	Type	Length	%Slope	Roughness
A01_UNK_B13_CUL	A01_UNK	B13_CUL	CONDUIT	1053.0	13.5773	0.1000
A02_CB_A01_UNK	A02_CB	A01_UNK	CONDUIT	34.8	14.1462	0.0130
A03_CB_A02_CB	A03_CB	A02_CB	CONDUIT	66.1	13.8744	0.0130
A04_CB_A03_CB	A04_CB	A03_CB	CONDUIT	30.7	0.7169	0.0130
A05_CB_A04_CB	A05_CB	A04_CB	CONDUIT	64.7	0.4794	0.0130
A06_CB_A05_CB	A06_CB	A05_CB	CONDUIT	137.1	29.1111	0.0130
B01_MH_D03_CHAN	B01_MH	D03_CHAN	CONDUIT	104.8	2.3375	0.0450
B02_CUL_B01_MH	B02_CUL	B01_MH	CONDUIT	35.5	5.8066	0.0130
B03_CUL_B02_CUL	B03_CUL	B02_CUL	CONDUIT	37.2	30.4221	0.1000
B04_MH_B03_CUL	B04_MH	B03_CUL	CONDUIT	53.2	0.9957	0.0130
B05_MH_B04_MH	B05_MH	B04_MH	CONDUIT	47.3	5.5100	0.0130
B06_CB_B05_MH	B06_CB	B05_MH	CONDUIT	46.1	11.5762	0.0130
B07_CB_B06_CB	B07_CB	B06_CB	CONDUIT	103.6	13.5437	0.0130
B08_CB_B07_CB	B08_CB	B07_CB	CONDUIT	86.2	7.3191	0.0130
B09_MH_B08_CB	B09_MH	B08_CB	CONDUIT	67.0	10.6616	0.0130
B10_MH_b_B09_MH	B10_MH_b	B09_MH	CONDUIT	138.6	1.2551	0.0240
B11_MH_B10_MH_a	B11_MH	B10_MH_a	CONDUIT	170.7	0.4805	0.0240
B12_CB_B11_MH	B12_CB	B11_MH	CONDUIT	163.0	8.6232	0.0240
B13_CUL_B09_MH	B13_CUL	B09_MH	CONDUIT	33.0	8.8326	0.0130
B14_CUL_B13_CUL	B14_CUL	B13_CUL	CONDUIT	47.0	7.7747	0.0300
B15_CUL_B14_CUL	B15_CUL	B14_CUL	CONDUIT	19.5	6.8351	0.0130
B16_CUL_B15_CUL	B16_CUL	B15_CUL	CONDUIT	76.9	8.1960	0.0300
B17_CB_B16_CUL	B17_CB	B16_CUL	CONDUIT	6.1	4.8875	0.0130
B18_CUL_B17_CB	B18_CUL	B17_CB	CONDUIT	6.2	3.0701	0.0130
C02_CB_B05_MH	C02_CB	B05_MH	CONDUIT	137.2	8.3368	0.0240
C03_CB_C02_CB	C03_CB	C02_CB	CONDUIT	162.5	13.0041	0.0240
C04_CB_C03_CB	C04_CB	C03_CB	CONDUIT	24.1	8.3244	0.0240
C05_CB_C04_CB	C05_CB	C04_CB	CONDUIT	69.4	8.5667	0.0240
C06_CB_C05_CB	C06_CB	C05_CB	CONDUIT	73.7	11.3550	0.0240
D02_CHAN_D01_CHAN	D02_CHAN	D01_CHAN	CONDUIT	56.2	2.3333	0.0450

D03_CHAN_D02_CHAN	D02_CHAN	CONDUIT	80.2	2.3335	0.0450
STO_1_ORIFICE_B17_CB	STO_1_ORIFICE_B17_CB	CONDUIT	17.1	27.1186	0.0130
OR1	STORAGE_1	STO_1_ORIFICE	ORIFICE		
OR1_RISER	STORAGE_1	STO_1_ORIFICE	ORIFICE		
OR2	B10_MH_a	B10_MH_b	ORIFICE		
OR2_RISER	B10_MH_a	B10_MH_b	ORIFICE		

Cross Section Summary

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
A01_UNK_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	45.10
A02_CB_A01_UNK	CIRCULAR	0.67	0.35	0.17	0.67	1	4.55
A03_CB_A02_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	4.50
A04_CB_A03_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	1.02
A05_CB_A04_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	0.84
A06_CB_A05_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	6.52
B01_MH_D03_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.96
B02_CUL_B01_MH	CIRCULAR	3.00	7.07	0.75	3.00	1	160.72
B03_CUL_B02_CUL	TRAPEZOIDAL	4.00	44.00	2.11	19.00	1	592.60
B04_MH_B03_CUL	CIRCULAR	2.00	3.14	0.50	2.00	1	22.57
B05_MH_B04_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	24.66
B06_CB_B05_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	35.74
B07_CB_B06_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	38.66
B08_CB_B07_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	28.42
B09_MH_B08_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	34.30
B10_MH_b_B09_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	6.37
B11_MH_B10_MH_a	CIRCULAR	6.00	28.27	1.50	6.00	1	159.01
B12_CB_B11_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.67
B13_CUL_B09_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	10.59
B14_CUL_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	113.77
B15_CUL_B14_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	9.31
B16_CUL_B15_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	116.81
B17_CB_B16_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	7.88
B18_CUL_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.24
C02_CB_B05_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C03_CB_C02_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.96
C04_CB_C03_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C05_CB_C04_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.65
C06_CB_C05_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.50
D02_CHAN_D01_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.50
D03_CHAN_D02_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.52
STO_1_ORIFICE_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	18.55

Flow Routing Continuity	Volume acre-feet	Volume 10 ⁶ gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.000	0.000
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	17.259	5.624
External Outflow	17.063	5.560
Internal Outflow	0.000	0.000
Storage Losses	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.178	0.058
Continuity Error (%)	0.106	

Highest Continuity Errors

Node B10_MH_a (1.38%)

Node B11_MH (1.26%)

Time-Step Critical Elements

Link B17_CB_B16_CUL (99.99%)

Highest Flow Instability Indexes

All links are stable.

Routing Time Step Summary

Minimum Time Step : 0.50 sec
 Average Time Step : 0.50 sec
 Maximum Time Step : 2.45 sec
 Percent in Steady State : 0.00
 Average Iterations per Step : 2.00

Node Depth Summary

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min
A01_UNK	JUNCTION	0.29	0.29	239.53	0 01:32
A02_CB	JUNCTION	0.25	0.25	244.26	0 00:25
A03_CB	JUNCTION	0.15	0.15	253.25	0 00:21
A04_CB	JUNCTION	0.32	0.32	253.84	0 00:53
A05_CB	JUNCTION	0.67	0.67	254.31	0 00:20
A06_CB	JUNCTION	0.12	0.12	292.23	0 00:47
B01_MH	JUNCTION	0.61	0.62	38.01	0 09:08
B02_CUL	JUNCTION	0.47	0.47	43.11	0 08:41
B03_CUL	JUNCTION	0.51	0.52	53.99	0 08:19
B04_MH	JUNCTION	0.86	0.86	54.86	0 07:03
B05_MH	JUNCTION	0.59	0.60	57.20	0 07:11
B06_CB	JUNCTION	0.48	0.48	62.38	0 07:20
B07_CB	JUNCTION	0.46	0.46	76.27	0 07:05
B08_CB	JUNCTION	0.54	0.54	82.74	0 07:07
B09_MH	JUNCTION	0.49	0.49	89.79	0 07:20
B10_MH_a	JUNCTION	7.24	7.36	98.45	0 01:17
B10_MH_b	JUNCTION	0.64	0.66	91.75	0 01:33
B11_MH	JUNCTION	6.42	6.54	98.45	0 00:54
B12_CB	JUNCTION	0.46	0.46	108.37	0 00:09
B13_CUL	JUNCTION	0.47	0.48	98.05	0 07:20
B14_CUL	JUNCTION	0.29	0.30	101.51	0 00:00
B15_CUL	JUNCTION	0.44	0.44	102.98	0 07:13
B16_CUL	JUNCTION	0.28	0.28	109.10	0 07:14
B17_CB	JUNCTION	0.46	0.47	109.59	0 00:00
B18_CUL	JUNCTION	0.47	0.51	109.82	0 00:00

C02_CB	JUNCTION	0.37	0.37	68.17	0	00:22
C03_CB	JUNCTION	0.15	0.15	89.10	0	00:09
C04_CB	JUNCTION	0.18	0.18	91.13	0	00:01
C05_CB	JUNCTION	0.17	0.17	97.09	0	00:08
C06_CB	JUNCTION	0.16	0.16	105.49	0	00:07
D02_CHAN	JUNCTION	0.63	0.64	33.71	0	09:12
D03_CHAN	JUNCTION	0.61	0.62	35.56	0	08:01
STO_1_ORIFICE	JUNCTION	0.13	0.13	113.73	0	07:14
D01_CHAN	OUTFALL	0.53	0.53	32.29	0	08:02
STORAGE_1	STORAGE	0.74	0.74	114.34	0	07:16

Node Inflow Summary

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal
A01_UNK	JUNCTION	0.91	1.40	0 00:18	0.590	0.905
A02_CB	JUNCTION	0.00	0.49	0 00:21	0.000	0.314
A03_CB	JUNCTION	0.00	0.49	0 00:23	0.000	0.314
A04_CB	JUNCTION	0.00	0.49	0 00:20	0.000	0.314
A05_CB	JUNCTION	0.00	0.49	0 00:03	0.000	0.315
A06_CB	JUNCTION	0.49	0.49	0 00:00	0.315	0.315
B01_MH	JUNCTION	0.00	8.70	0 09:08	0.000	5.565
B02_CUL	JUNCTION	0.00	8.70	0 07:29	0.000	5.565
B03_CUL	JUNCTION	0.00	8.70	0 07:01	0.000	5.566
B04_MH	JUNCTION	0.42	8.70	0 07:00	0.271	5.566
B05_MH	JUNCTION	0.00	8.28	0 07:00	0.000	5.296
B06_CB	JUNCTION	0.00	7.93	0 06:59	0.000	5.066
B07_CB	JUNCTION	0.00	7.93	0 07:20	0.000	5.066
B08_CB	JUNCTION	0.00	7.93	0 07:03	0.000	5.066
B09_MH	JUNCTION	0.61	7.93	0 07:20	0.397	5.067
B10_MH_a	JUNCTION	0.00	3.56	0 00:47	0.000	1.568
B10_MH_b	JUNCTION	0.00	2.46	0 01:17	0.000	1.546
B11_MH	JUNCTION	0.00	2.46	0 00:19	0.000	1.588
B12_CB	JUNCTION	2.46	2.46	0 00:00	1.588	1.588
B13_CUL	JUNCTION	0.01	4.85	0 07:02	0.003	3.129
B14_CUL	JUNCTION	0.00	3.45	0 07:14	0.000	2.224
B15_CUL	JUNCTION	0.00	3.45	0 07:10	0.000	2.224
B16_CUL	JUNCTION	0.00	3.45	0 07:13	0.000	2.225
B17_CB	JUNCTION	0.00	3.45	0 07:09	0.000	2.225
B18_CUL	JUNCTION	2.78	2.78	0 00:00	1.796	1.796
C02_CB	JUNCTION	0.00	0.36	0 00:09	0.000	0.231
C03_CB	JUNCTION	0.00	0.36	0 00:02	0.000	0.231
C04_CB	JUNCTION	0.00	0.36	0 00:48	0.000	0.231
C05_CB	JUNCTION	0.00	0.36	0 00:07	0.000	0.231
C06_CB	JUNCTION	0.36	0.36	0 00:00	0.231	0.231
D02_CHAN	JUNCTION	0.00	8.70	0 08:20	0.000	5.562
D03_CHAN	JUNCTION	0.00	8.70	0 07:10	0.000	5.564
STO_1_ORIFICE	JUNCTION	0.00	0.67	0 07:16	0.000	0.428
D01_CHAN	OUTFALL	0.00	8.70	0 08:02	0.000	5.560
STORAGE_1	STORAGE	0.67	0.67	0 00:00	0.432	0.432

Node Surcharge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
B11_MH	JUNCTION	23.23	0.539	3.561

Node Flooding Summary

No nodes were flooded.

Storage Volume Summary

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	E&I Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
STORAGE_1	0.433	9	0	0.437	9	0 07:16	0.67

Outfall Loading Summary

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
D01_CHAN	99.83	8.62	8.70	5.560
System	99.83	8.62	8.70	5.560

Link Flow Summary

Link	Type	Maximum Flow CFS	Time of Max Occurrence days hr:min	Maximum Veloc ft/sec	Max/ Full Flow	Max/ Full Depth
A01_UNK_B13_CUL	CONDUIT	1.40	0 01:32	1.54	0.03	0.19
A02_CB_A01_UNK	CONDUIT	0.49	0 00:18	8.69	0.11	0.33
A03_CB_A02_CB	CONDUIT	0.49	0 00:21	6.87	0.11	0.30
A04_CB_A03_CB	CONDUIT	0.49	0 00:23	2.89	0.48	0.49
A05_CB_A04_CB	CONDUIT	0.49	0 00:20	2.67	0.58	0.52
A06_CB_A05_CB	CONDUIT	0.49	0 00:03	9.72	0.07	0.48
B01_MH_D03_CHAN	CONDUIT	8.70	0 07:10	2.90	0.02	0.15
B02_CUL_B01_MH	CONDUIT	8.70	0 09:08	12.13	0.05	0.16
B03_CUL_B02_CUL	CONDUIT	8.70	0 07:29	4.41	0.01	0.12
B04_MH_B03_CUL	CONDUIT	8.70	0 07:01	9.08	0.39	0.34
B05_MH_B04_MH	CONDUIT	8.28	0 07:00	9.70	0.34	0.49
B06_CB_B05_MH	CONDUIT	7.93	0 07:00	13.85	0.22	0.36
B07_CB_B06_CB	CONDUIT	7.93	0 06:59	16.71	0.21	0.31
B08_CB_B07_CB	CONDUIT	7.93	0 07:20	13.77	0.28	0.36

B09_MH_B08_CB	CONDUIT	7.93	0	07:03	14.71	0.23	0.34
B10_MH_b_B09_MH	CONDUIT	2.46	0	01:34	3.53	0.39	0.42
B11_MH_B10_MH_a	CONDUIT	3.56	0	00:47	2.73	0.02	1.00
B12_CB_B11_MH	CONDUIT	2.46	0	00:19	6.95	0.43	0.73
B13_CUL_B09_MH	CONDUIT	4.85	0	07:20	13.18	0.46	0.48
B14_CUL_B13_CUL	CONDUIT	3.45	0	07:02	7.56	0.03	0.19
B15_CUL_B14_CUL	CONDUIT	3.45	0	07:14	13.38	0.37	0.36
B16_CUL_B15_CUL	CONDUIT	3.45	0	07:10	5.46	0.03	0.18
B17_CB_B16_CUL	CONDUIT	3.45	0	07:13	17.93	0.44	0.37
B18_CUL_B17_CB	CONDUIT	3.08	0	00:00	9.54	0.49	0.47
C02_CB_B05_MH	CONDUIT	0.36	0	00:22	2.49	0.06	0.39
C03_CB_C02_CB	CONDUIT	0.36	0	00:09	4.55	0.05	0.16
C04_CB_C03_CB	CONDUIT	0.36	0	00:02	5.34	0.06	0.16
C05_CB_C04_CB	CONDUIT	0.36	0	00:48	4.00	0.06	0.17
C06_CB_C05_CB	CONDUIT	0.36	0	00:07	4.43	0.05	0.16
D02_CHAN_D01_CHAN	CONDUIT	8.70	0	08:02	3.13	0.02	0.15
D03_CHAN_D02_CHAN	CONDUIT	8.70	0	08:20	2.83	0.02	0.16
STO_1_ORIFICE_B17_CB	CONDUIT	0.67	0	07:09	3.43	0.04	0.30
OR1	ORIFICE	0.67	0	07:16			1.00
OR1_RISER	ORIFICE	0.00	0	00:00			0.00
OR2	ORIFICE	0.74	0	00:48			1.00
OR2_RISER	ORIFICE	1.72	0	01:17			0.36

Flow Classification Summary

Conduit	Adjusted /Actual Length	--- Fraction of Time in Flow Class ---						Avg. Froude Number	Avg. Flow Change	
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit			Down Crit
A01_UNK_B13_CUL	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.47	0.0000
A02_CB_A01_UNK	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.15	0.0000
A03_CB_A02_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.62	0.0000
A04_CB_A03_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.01	0.0000
A05_CB_A04_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.90	0.0000
A06_CB_A05_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.05	0.0000
B01_MH_D03_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.76	0.0000
B02_CUL_B01_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.73	0.0000
B03_CUL_B02_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.23	0.0000
B04_MH_B03_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.26	0.0000
B05_MH_B04_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.26	0.0000
B06_CB_B05_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.87	0.0000
B07_CB_B06_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	5.04	0.0000
B08_CB_B07_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.84	0.0000
B09_MH_B08_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.22	0.0000
B10_MH_b_B09_MH	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.90	0.0000
B11_MH_B10_MH_a	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0000
B12_CB_B11_MH	1.00	0.00	0.00	0.00	0.98	0.00	0.00	0.01	0.86	0.0000
B13_CUL_B09_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.82	0.0000
B14_CUL_B13_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.17	0.0000
B15_CUL_B14_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.55	0.0000
B16_CUL_B15_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.27	0.0000
B17_CB_B16_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.33	0.0000
B18_CUL_B17_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.29	0.0000
C02_CB_B05_MH	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.43	0.0000
C03_CB_C02_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.25	0.0000
C04_CB_C03_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.21	0.0000
C05_CB_C04_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.05	0.0000
C06_CB_C05_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.35	0.0000
D02_CHAN_D01_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.84	0.0000
D03_CHAN_D02_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.74	0.0000

STO_1_ORIFICE_B17_CB 1.00 0.00 0.00 0.00 0.01 0.99 0.00 0.00 1.30 0.0000

Conduit Surcharge Summary

Conduit	----- Both Ends	Hours Full Upstream	----- Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
B11_MH_B10_MH_a	23.23	23.23	23.23	0.01	0.01

Analysis begun on: Mon May 09 18:17:20 2016
Analysis ended on: Mon May 09 18:17:29 2016
Total elapsed time: 00:00:09

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.022)

Tamarack Basin - Proposed Condition 100-year flows

NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.

Analysis Options

Flow Units CFS
Process Models:
 Rainfall/Runoff YES
 Snowmelt NO
 Groundwater NO
 Flow Routing YES
 Ponding Allowed NO
 Water Quality NO
Flow Routing Method DYNWAVE
Starting Date MAR-16-2016 00:00:00
Ending Date MAR-17-2016 00:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Routing Time Step 5.00 sec

Element Count

Number of rain gages 1
Number of subcatchments ... 0
Number of nodes 35
Number of links 36
Number of pollutants 0
Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Design	100-year	INTENSITY	15 min.

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
A01_UNK	JUNCTION	239.24	5.00	5000.0	Yes
A02_CB	JUNCTION	244.01	4.05	5000.0	
A03_CB	JUNCTION	253.10	4.15	5000.0	
A04_CB	JUNCTION	253.52	4.18	5000.0	
A05_CB	JUNCTION	253.64	7.01	5000.0	
A06_CB	JUNCTION	292.11	11.18	5000.0	Yes
B01_MH	JUNCTION	37.39	8.44	0.0	
B02_CUL	JUNCTION	42.64	5.00	5000.0	

B03_CUL	JUNCTION	53.47	5.00	5000.0	
B04_MH	JUNCTION	54.00	6.60	5000.0	Yes
B05_MH	JUNCTION	56.60	5.80	5000.0	
B06_CB	JUNCTION	61.90	5.00	5000.0	
B07_CB	JUNCTION	75.81	4.20	5000.0	
B08_CB	JUNCTION	82.20	5.00	5000.0	
B09_MH	JUNCTION	89.30	8.60	5000.0	Yes
B10_MH_a	JUNCTION	91.09	9.10	5000.0	
B10_MH_b	JUNCTION	91.09	9.10	5000.0	
B11_MH	JUNCTION	91.91	10.10	5000.0	
B12_CB	JUNCTION	107.91	5.76	5000.0	Yes
B13_CUL	JUNCTION	97.57	5.00	5000.0	Yes
B14_CUL	JUNCTION	101.21	5.00	5000.0	
B15_CUL	JUNCTION	102.54	5.00	5000.0	
B16_CUL	JUNCTION	108.82	5.00	5000.0	
B17_CB	JUNCTION	109.12	2.25	5000.0	
B18_CUL	JUNCTION	109.31	5.00	5000.0	Yes
C02_CB	JUNCTION	67.80	4.40	5000.0	
C03_CB	JUNCTION	88.95	2.63	5000.0	
C04_CB	JUNCTION	90.95	2.90	5000.0	
C05_CB	JUNCTION	96.92	3.40	5000.0	
C06_CB	JUNCTION	105.33	1.90	5000.0	Yes
D02_CHAN	JUNCTION	33.07	4.00	0.0	
D03_CHAN	JUNCTION	34.94	4.00	0.0	
STO_1_ORIFICE	JUNCTION	113.60	9.00	5000.0	
D01_CHAN	OUTFALL	31.76	4.00	0.0	
STORAGE_1	STORAGE	113.60	7.00	0.0	Yes

Link Summary

Name	From Node	To Node	Type	Length	%Slope	Roughness
A01_UNK_B13_CUL	A01_UNK	B13_CUL	CONDUIT	1053.0	13.5773	0.1000
A02_CB_A01_UNK	A02_CB	A01_UNK	CONDUIT	34.8	14.1462	0.0130
A03_CB_A02_CB	A03_CB	A02_CB	CONDUIT	66.1	13.8744	0.0130
A04_CB_A03_CB	A04_CB	A03_CB	CONDUIT	30.7	0.7169	0.0130
A05_CB_A04_CB	A05_CB	A04_CB	CONDUIT	64.7	0.4794	0.0130
A06_CB_A05_CB	A06_CB	A05_CB	CONDUIT	137.1	29.1111	0.0130
B01_MH_D03_CHAN	B01_MH	D03_CHAN	CONDUIT	104.8	2.3375	0.0450
B02_CUL_B01_MH	B02_CUL	B01_MH	CONDUIT	35.5	5.8066	0.0130
B03_CUL_B02_CUL	B03_CUL	B02_CUL	CONDUIT	37.2	30.4221	0.1000
B04_MH_B03_CUL	B04_MH	B03_CUL	CONDUIT	53.2	0.9957	0.0130
B05_MH_B04_MH	B05_MH	B04_MH	CONDUIT	47.3	5.5100	0.0130
B06_CB_B05_MH	B06_CB	B05_MH	CONDUIT	46.1	11.5762	0.0130
B07_CB_B06_CB	B07_CB	B06_CB	CONDUIT	103.6	13.5437	0.0130
B08_CB_B07_CB	B08_CB	B07_CB	CONDUIT	86.2	7.3191	0.0130
B09_MH_B08_CB	B09_MH	B08_CB	CONDUIT	67.0	10.6616	0.0130
B10_MH_b_B09_MH	B10_MH_b	B09_MH	CONDUIT	138.6	1.2551	0.0240
B11_MH_B10_MH_a	B11_MH	B10_MH_a	CONDUIT	170.7	0.4805	0.0240
B12_CB_B11_MH	B12_CB	B11_MH	CONDUIT	163.0	8.6232	0.0240
B13_CUL_B09_MH	B13_CUL	B09_MH	CONDUIT	33.0	8.8326	0.0130
B14_CUL_B13_CUL	B14_CUL	B13_CUL	CONDUIT	47.0	7.7747	0.0300
B15_CUL_B14_CUL	B15_CUL	B14_CUL	CONDUIT	19.5	6.8351	0.0130
B16_CUL_B15_CUL	B16_CUL	B15_CUL	CONDUIT	76.9	8.1960	0.0300
B17_CB_B16_CUL	B17_CB	B16_CUL	CONDUIT	6.1	4.8875	0.0130
B18_CUL_B17_CB	B18_CUL	B17_CB	CONDUIT	6.2	3.0701	0.0130
C02_CB_B05_MH	C02_CB	B05_MH	CONDUIT	137.2	8.3368	0.0240
C03_CB_C02_CB	C03_CB	C02_CB	CONDUIT	162.5	13.0041	0.0240
C04_CB_C03_CB	C04_CB	C03_CB	CONDUIT	24.1	8.3244	0.0240
C05_CB_C04_CB	C05_CB	C04_CB	CONDUIT	69.4	8.5667	0.0240
C06_CB_C05_CB	C06_CB	C05_CB	CONDUIT	73.7	11.3550	0.0240
D02_CHAN_D01_CHAN	D02_CHAN	D01_CHAN	CONDUIT	56.2	2.3333	0.0450

D03_CHAN_D02_CHAN	D02_CHAN	CONDUIT	80.2	2.3335	0.0450
STO_1_ORIFICE_B17_CB	STO_1_ORIFICE_B17_CB	CONDUIT	17.1	27.1186	0.0130
OR1	STORAGE_1	STO_1_ORIFICE	ORIFICE		
OR1_RISER	STORAGE_1	STO_1_ORIFICE	ORIFICE		
OR2	B10_MH_a	B10_MH_b	ORIFICE		
OR2_RISER	B10_MH_a	B10_MH_b	ORIFICE		

Cross Section Summary

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
A01_UNK_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	45.10
A02_CB_A01_UNK	CIRCULAR	0.67	0.35	0.17	0.67	1	4.55
A03_CB_A02_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	4.50
A04_CB_A03_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	1.02
A05_CB_A04_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	0.84
A06_CB_A05_CB	CIRCULAR	0.67	0.35	0.17	0.67	1	6.52
B01_MH_D03_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.96
B02_CUL_B01_MH	CIRCULAR	3.00	7.07	0.75	3.00	1	160.72
B03_CUL_B02_CUL	TRAPEZOIDAL	4.00	44.00	2.11	19.00	1	592.60
B04_MH_B03_CUL	CIRCULAR	2.00	3.14	0.50	2.00	1	22.57
B05_MH_B04_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	24.66
B06_CB_B05_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	35.74
B07_CB_B06_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	38.66
B08_CB_B07_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	28.42
B09_MH_B08_CB	CIRCULAR	1.50	1.77	0.38	1.50	1	34.30
B10_MH_b_B09_MH	CIRCULAR	1.50	1.77	0.38	1.50	1	6.37
B11_MH_B10_MH_a	CIRCULAR	6.00	28.27	1.50	6.00	1	159.01
B12_CB_B11_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.67
B13_CUL_B09_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	10.59
B14_CUL_B13_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	113.77
B15_CUL_B14_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	9.31
B16_CUL_B15_CUL	TRAPEZOIDAL	2.00	8.00	1.04	6.00	1	116.81
B17_CB_B16_CUL	CIRCULAR	1.00	0.79	0.25	1.00	1	7.88
B18_CUL_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.24
C02_CB_B05_MH	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C03_CB_C02_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.96
C04_CB_C03_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.57
C05_CB_C04_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	5.65
C06_CB_C05_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	6.50
D02_CHAN_D01_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.50
D03_CHAN_D02_CHAN	TRAPEZOIDAL	4.00	60.00	2.12	27.00	1	499.52
STO_1_ORIFICE_B17_CB	CIRCULAR	1.00	0.79	0.25	1.00	1	18.55

Flow Routing Continuity	Volume acre-feet	Volume 10 ⁶ gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.000	0.000
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	40.339	13.145
External Outflow	40.027	13.043
Internal Outflow	0.000	0.000
Storage Losses	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.293	0.096
Continuity Error (%)	0.049	

Time-Step Critical Elements

Link B17_CB_B16_CUL (99.99%)

Highest Flow Instability Indexes

All links are stable.

Routing Time Step Summary

Minimum Time Step : 0.50 sec
Average Time Step : 0.50 sec
Maximum Time Step : 1.07 sec
Percent in Steady State : 0.00
Average Iterations per Step : 2.00

Node Depth Summary

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min
A01_UNK	JUNCTION	0.48	0.49	239.73	0 01:17
A02_CB	JUNCTION	0.33	0.33	244.34	0 00:03
A03_CB	JUNCTION	0.23	0.23	253.33	0 00:03
A04_CB	JUNCTION	0.60	0.60	254.12	0 00:02
A05_CB	JUNCTION	1.16	2.88	256.52	0 00:01
A06_CB	JUNCTION	0.19	0.19	292.30	0 00:02
B01_MH	JUNCTION	0.95	0.95	38.34	0 17:20
B02_CUL	JUNCTION	0.72	0.72	43.36	0 17:21
B03_CUL	JUNCTION	0.82	0.82	54.29	0 17:25
B04_MH	JUNCTION	1.48	1.49	55.49	0 17:14
B05_MH	JUNCTION	0.99	1.00	57.60	0 17:14
B06_CB	JUNCTION	0.76	0.76	62.66	0 17:14
B07_CB	JUNCTION	0.73	0.73	76.54	0 17:10
B08_CB	JUNCTION	0.88	0.88	83.08	0 17:14
B09_MH	JUNCTION	0.78	0.78	90.08	0 17:37
B10_MH_a	JUNCTION	7.83	7.89	98.98	0 00:46
B10_MH_b	JUNCTION	1.10	1.11	92.20	0 00:47
B11_MH	JUNCTION	7.01	7.07	98.98	0 00:46
B12_CB	JUNCTION	4.42	5.76	113.67	0 00:18
B13_CUL	JUNCTION	1.49	1.54	99.11	0 23:36
B14_CUL	JUNCTION	0.48	0.51	101.72	0 00:00
B15_CUL	JUNCTION	0.74	0.74	103.28	0 17:16
B16_CUL	JUNCTION	0.47	0.47	109.29	0 17:00
B17_CB	JUNCTION	0.85	0.85	109.97	0 17:01
B18_CUL	JUNCTION	0.91	0.95	110.26	0 00:00
C02_CB	JUNCTION	0.46	0.46	68.26	0 00:18
C03_CB	JUNCTION	0.23	0.23	89.18	0 00:09
C04_CB	JUNCTION	0.27	0.28	91.23	0 00:01
C05_CB	JUNCTION	0.26	0.26	97.18	0 00:06
C06_CB	JUNCTION	0.24	0.24	105.57	0 00:06
D02_CHAN	JUNCTION	0.96	0.96	34.03	0 17:05
D03_CHAN	JUNCTION	0.95	0.95	35.89	0 17:02

STO_1_ORIFICE	JUNCTION	0.19	0.19	113.79	0	16:59
D01_CHAN	OUTFALL	0.84	0.85	32.61	0	17:05
STORAGE_1	STORAGE	2.64	2.69	116.29	0	16:59

Node Inflow Summary

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal
A01_UNK	JUNCTION	2.14	3.33	0 00:03	1.384	2.154
A02_CB	JUNCTION	0.00	1.19	0 00:03	0.000	0.770
A03_CB	JUNCTION	0.00	1.19	0 00:02	0.000	0.770
A04_CB	JUNCTION	0.00	1.21	0 00:02	0.000	0.770
A05_CB	JUNCTION	0.00	1.19	0 00:02	0.000	0.771
A06_CB	JUNCTION	1.19	1.19	0 00:00	0.771	0.771
B01_MH	JUNCTION	0.00	20.34	0 17:25	0.000	13.051
B02_CUL	JUNCTION	0.00	20.34	0 17:19	0.000	13.052
B03_CUL	JUNCTION	0.00	20.34	0 17:14	0.000	13.053
B04_MH	JUNCTION	1.09	20.34	0 17:10	0.703	13.054
B05_MH	JUNCTION	0.00	19.25	0 17:09	0.000	12.352
B06_CB	JUNCTION	0.00	18.42	0 17:10	0.000	11.817
B07_CB	JUNCTION	0.00	18.42	0 17:10	0.000	11.817
B08_CB	JUNCTION	0.00	18.42	0 17:03	0.000	11.818
B09_MH	JUNCTION	1.38	18.42	0 17:37	0.894	11.819
B10_MH_a	JUNCTION	0.00	9.04	0 00:18	0.000	3.557
B10_MH_b	JUNCTION	0.00	5.53	0 00:46	0.000	3.533
B11_MH	JUNCTION	0.00	7.17	0 00:16	0.000	3.576
B12_CB	JUNCTION	5.53	5.53	0 00:00	3.576	3.576
B13_CUL	JUNCTION	0.03	11.50	0 17:04	0.017	7.414
B14_CUL	JUNCTION	0.00	8.14	0 17:16	0.000	5.249
B15_CUL	JUNCTION	0.00	8.14	0 17:00	0.000	5.250
B16_CUL	JUNCTION	0.00	8.14	0 17:01	0.000	5.250
B17_CB	JUNCTION	0.00	8.14	0 16:59	0.000	5.251
B18_CUL	JUNCTION	6.67	6.67	0 00:00	4.312	4.312
C02_CB	JUNCTION	0.00	0.83	0 00:08	0.000	0.536
C03_CB	JUNCTION	0.00	0.83	0 00:01	0.000	0.536
C04_CB	JUNCTION	0.00	0.83	0 00:06	0.000	0.536
C05_CB	JUNCTION	0.00	0.83	0 00:06	0.000	0.537
C06_CB	JUNCTION	0.83	0.83	0 00:00	0.537	0.537
D02_CHAN	JUNCTION	0.00	20.34	0 17:02	0.000	13.045
D03_CHAN	JUNCTION	0.00	20.34	0 17:20	0.000	13.049
STO_1_ORIFICE	JUNCTION	0.00	1.47	0 16:59	0.000	0.939
D01_CHAN	OUTFALL	0.00	20.34	0 17:05	0.000	13.042
STORAGE_1	STORAGE	1.47	1.47	0 00:00	0.951	0.951

Node Surge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
A05_CB	JUNCTION	23.97	1.906	4.127
B11_MH	JUNCTION	23.70	1.068	3.032

B12_CB JUNCTION 23.70 4.760 0.000

Node Flooding Summary

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CFS	Time of Max Occurrence days hr:min	Total Flood Volume 10^6 gal	Maximum Pondered Depth Feet
B12_CB	0.01	0.41	0 00:18	0.000	5.76

Storage Volume Summary

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	E&I Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
STORAGE_1	1.620	34	0	1.653	35	0 16:59	1.47

Outfall Loading Summary

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
D01_CHAN	99.88	20.20	20.34	13.042
System	99.88	20.20	20.34	13.042

Link Flow Summary

Link	Type	Maximum Flow CFS	Time of Max Occurrence days hr:min	Maximum Veloc ft/sec	Max/ Full Flow	Max/ Full Depth
A01_UNK_B13_CUL	CONDUIT	3.33	0 01:17	1.92	0.07	0.51
A02_CB_A01_UNK	CONDUIT	1.19	0 00:03	10.91	0.26	0.54
A03_CB_A02_CB	CONDUIT	1.19	0 00:03	8.57	0.26	0.43
A04_CB_A03_CB	CONDUIT	1.19	0 00:02	3.83	1.17	0.83
A05_CB_A04_CB	CONDUIT	1.21	0 00:02	3.69	1.45	0.90
A06_CB_A05_CB	CONDUIT	1.19	0 00:02	12.14	0.18	0.64
B01_MH_D03_CHAN	CONDUIT	20.34	0 17:20	3.66	0.04	0.24
B02_CUL_B01_MH	CONDUIT	20.34	0 17:25	15.57	0.13	0.24
B03_CUL_B02_CUL	CONDUIT	20.34	0 17:19	5.80	0.03	0.19
B04_MH_B03_CUL	CONDUIT	20.34	0 17:14	10.83	0.90	0.58
B05_MH_B04_MH	CONDUIT	19.25	0 17:10	12.31	0.78	0.83
B06_CB_B05_MH	CONDUIT	18.42	0 17:09	17.09	0.52	0.59

B07_CB_B06_CB	CONDUIT	18.42	0	17:10	20.97	0.48	0.50
B08_CB_B07_CB	CONDUIT	18.42	0	17:10	17.09	0.65	0.59
B09_MH_B08_CB	CONDUIT	18.42	0	17:03	18.39	0.54	0.55
B10_MH_b_B09_MH	CONDUIT	5.53	0	00:47	4.38	0.87	0.67
B11_MH_B10_MH_a	CONDUIT	9.04	0	00:18	3.50	0.06	1.00
B12_CB_B11_MH	CONDUIT	5.55	0	00:09	8.21	0.98	1.00
B13_CUL_B09_MH	CONDUIT	11.50	0	17:37	15.35	1.09	1.00
B14_CUL_B13_CUL	CONDUIT	8.14	0	17:04	10.30	0.07	0.50
B15_CUL_B14_CUL	CONDUIT	8.14	0	17:16	16.33	0.87	0.61
B16_CUL_B15_CUL	CONDUIT	8.14	0	17:00	7.21	0.07	0.30
B17_CB_B16_CUL	CONDUIT	8.14	0	17:01	20.91	1.03	0.66
B18_CUL_B17_CB	CONDUIT	6.72	0	00:00	11.38	1.08	0.88
C02_CB_B05_MH	CONDUIT	0.83	0	00:12	3.19	0.15	0.63
C03_CB_C02_CB	CONDUIT	0.83	0	00:08	5.83	0.12	0.25
C04_CB_C03_CB	CONDUIT	0.83	0	00:01	6.87	0.15	0.25
C05_CB_C04_CB	CONDUIT	0.83	0	00:06	5.14	0.15	0.26
C06_CB_C05_CB	CONDUIT	0.83	0	00:06	5.68	0.13	0.24
D02_CHAN_D01_CHAN	CONDUIT	20.34	0	17:05	3.93	0.04	0.23
D03_CHAN_D02_CHAN	CONDUIT	20.34	0	17:02	3.62	0.04	0.24
STO_1_ORIFICE_B17_CB	CONDUIT	1.47	0	16:59	3.55	0.08	0.52
OR1	ORIFICE	1.47	0	16:59			1.00
OR1_RISER	ORIFICE	0.00	0	00:00			0.00
OR2	ORIFICE	0.75	0	00:19			1.00
OR2_RISER	ORIFICE	4.79	0	00:46			0.71

Flow Classification Summary

Conduit	Adjusted /Actual Length	--- Fraction of Time in Flow Class ---							Avg. Froude Number	Avg. Flow Change
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit		
A01_UNK_B13_CUL	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.24	0.0000
A02_CB_A01_UNK	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.04	0.0000
A03_CB_A02_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.20	0.0000
A04_CB_A03_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.85	0.0000
A05_CB_A04_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.73	0.0000
A06_CB_A05_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.45	0.0000
B01_MH_D03_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.81	0.0000
B02_CUL_B01_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.84	0.0000
B03_CUL_B02_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.34	0.0000
B04_MH_B03_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.96	0.0000
B05_MH_B04_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.85	0.0000
B06_CB_B05_MH	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.53	0.0000
B07_CB_B06_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.83	0.0000
B08_CB_B07_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.53	0.0000
B09_MH_B08_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.93	0.0000
B10_MH_b_B09_MH	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.99	0.81	0.0000
B11_MH_B10_MH_a	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0000
B12_CB_B11_MH	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.01	0.02	0.0000
B13_CUL_B09_MH	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.11	0.0000
B14_CUL_B13_CUL	1.00	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.58	0.0000
B15_CUL_B14_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.03	0.0000
B16_CUL_B15_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.31	0.0000
B17_CB_B16_CUL	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	3.41	0.0000
B18_CUL_B17_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.51	0.0000
C02_CB_B05_MH	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.39	0.0000
C03_CB_C02_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.31	0.0000
C04_CB_C03_CB	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.27	0.0000
C05_CB_C04_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.11	0.0000
C06_CB_C05_CB	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.42	0.0000

D02_CHAN_D01_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.88	0.0000
D03_CHAN_D02_CHAN	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.79	0.0000
STO_1_ORIFICE_B17_CB	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.96	0.0000

 Conduit Surcharge Summary

Conduit	Hours Full			Hours	Hours
	Both Ends	Upstream	Dnstream	Above Full Normal Flow	Capacity Limited
A04_CB_A03_CB	0.01	0.01	0.01	23.97	0.01
A05_CB_A04_CB	0.01	0.01	0.01	23.98	0.01
B11_MH_B10_MH_a	23.70	23.70	23.70	0.01	0.01
B12_CB_B11_MH	23.70	23.70	23.70	0.01	0.01
B13_CUL_B09_MH	22.71	22.71	22.71	23.80	22.71
B17_CB_B16_CUL	0.01	0.01	0.01	23.47	0.01
B18_CUL_B17_CB	0.01	0.01	0.01	24.00	0.01

Analysis begun on: Mon May 09 18:18:17 2016
 Analysis ended on: Mon May 09 18:18:26 2016
 Total elapsed time: 00:00:09

APPENDIX C

COOPERS BEACH – MITIGATION AS BUILT



May 5, 2011

AOA-3985

Kathy Curry
City of Sammamish
801 228th Avenue SE
Sammamish, WA 98075

**REFERENCE: Cooper's Beach – 42x E. Lake Sammamish Shore Lane NE,
Sammamish, WA (Corps # NWS-2009-476 Heen/Leseberg)**

SUBJECT: Revised Mitigation As-built - Baseline Assessment Report

Dear Kathy:

This report has been prepared to document baseline conditions following installation of the wetland and shoreline mitigation area at the Cooper's Beach project site, and has been revised to address the comments presented in your March 3, 2011 e-mail to Evan Maxim (see Section 1.0 below). Also included in this report are the vegetation sample plots and photo-points that will be reviewed as part of the five year monitoring program.

1.0 PROJECT SUMMARY

Installation of the wetland mitigation area at the Cooper's Beach project site was generally completed in January 2011 according to the *Shoreline Restoration, Wetland Restoration, Clearing and Grading Permit Plan* (revised June 15, 2010), prepared by The Watershed Company. Site visits for the initial baseline assessment were conducted by AOA and occurred on January 13, and February 3, 2011. Following the initial baseline review, the mitigation area was slightly revised to ensure compliance with SMC 21A.50.351(3)(b). Under this code section, no more than 25% of the total lake frontage may be used for shoreline access.

As depicted on the current as-built plan, the mitigation area has been revised such that the existing bulkhead to remain is now 60 feet in total length (i.e., 25% of the total 240 feet of lake frontage). The remaining 180 feet of shoreline has been planted and will remain in a natural condition. In addition, the northern edge of the mitigation area has been revised slightly to ensure a minimum 45-foot buffer (Photos 1 and 2).



Photo 1: Revised maximum 60-foot long bulkhead to remain.



Photo 2: Revised log along northern edge of mitigation area (note darker bark coloration depicting revised location).

The large logs that have been placed along the 45-foot buffer boundary in lieu of fencing have been staked into the ground with re-bar to ensure that they will remain in place (Photo 3). In addition, the required critical areas sign on the 45-foot buffer boundary has also been installed (Photo 4).



Photo 3: Rebar stake through log along buffer boundary.



Photo 4: Installed critical area sign.

It is our understanding that the origin of the one remaining pipe in the northern portion of the site that discharges into the lake is likely from a rockery drain (Comment 1.e). The origin of this pipe will be confirmed during construction of the house and a plan will be designed to divert all water currently carried in this feature into the mitigation area during house construction.

The existing standpipe and drain line located along the northern edge of the mitigation area will be left in place for perpetuity or until such time as the upstream sediment problems are fixed (Comment 1.f). Since sediment from an off-site upstream ditch continues to erode and enter the on-site mitigation area, periodic maintenance may be required. It is our understanding that it is the subject property owner's intention to attempt to rectify this off-site condition. If the erosion is stabilized and the sediment source is eliminated or significantly reduced, then the standpipe and drain line could be removed.

The only plant substitution approved by The Watershed Company was that deer fern was substituted for lady fern. The revised as-built drawing for the site (**Figure 1**) depicts the actual location of the graded ponds and large woody debris placement. Grading was generally conducted per the approved plan, with some minor modifications in the southwest corner of the mitigation area to preserve two existing red alder trees. In addition, at our recommendation several of the conifers located within ponded areas were moved into drier portions of the mitigation site.

This as-built figure also includes the final total plant quantities and the location of the vegetation sample plots and photo-points. Dimensions were added to the as-built figure that reflect the approved mitigation boundaries and minor changes made in the field to ensure code compliance.

2.0 PERFORMANCE MONITORING

This report summarizes the baseline conditions encountered during our January 13, 2011 site review. The data collected during future site visits will be compared to the data collected during the baseline assessment.

Monitoring field reviews followed by preparation and submittal of annual summary reports will continue for a period of at least five years. This report, as well as future reports, will include: a) photo-documentation, b) estimates of percent vegetative cover, plant survival and undesirable species, c) wildlife usage, d) water quality, hydrology, and site stability, and e) an overall qualitative assessment of project success.

2.1 VEGETATION SAMPLE PLOTS AND PHOTO-POINT LOCATIONS

During the baseline assessment, three vegetation sample plots and three photo-point locations were established. These locations will continue to be monitored throughout the five-year performance monitoring period. Within the vegetation sample plot locations, all plant species will be recorded as well as relative percent

cover of the dominant species within the vegetative strata. Photos will be taken throughout the monitoring period to document the general appearance and progress in plant community establishment. Review of the photos over time will provide a visual representation of success of the planting plan.

Attachment 1 contains photographs from the established photo-point locations.

2.2 VEGETATION DATA FROM SAMPLE PLOTS

VEGETATION SAMPLE PLOT 1 (Wetland Buffer)

Plant Species	Baseline
Western red cedar (<i>Thuja plicata</i>)	1
Douglas fir (<i>Pseudotsuga menziesii</i>)	1
Red flowering currant (<i>Ribes sanguineum</i>)	9
Tall Oregongrape (<i>Mahonia aquifolium</i>)	24
Red-osier dogwood (<i>Cornus sericea</i>)	3
Deer fern (<i>Blechnum spicant</i>)	5

SUMMARY OF PLOT 1 CONDITIONS

- Woody areal coverage of installed woody plants~20%
- Survival rate of installed plants: 100%
- No herbaceous vegetation coverage – plot entirely mulched.
- No invasive coverage.
- MAINTENANCE: Continue on-going routine maintenance.
- SUCCESS CRITERIA: This plot is currently meeting the approved success criteria for woody plant survival (see Section 2.5 below).

VEGETATION SAMPLE PLOT 2 (Southwest Wetland).

Plant Species	Baseline
Western red cedar (<i>Thuja plicata</i>)	1
Sitka willow (<i>Salix sitchensis</i>)	1
Sitka spruce (<i>Picea sitchensis</i>)	1
Nootka rose (<i>Rosa nutkana</i>)	4
Salmonberry (<i>Rubus spectabilis</i>)	5
Small-fruited bulrush (<i>Scirpus microcarpus</i>)	~20%
Watercress (<i>Rorippa nasturtium-aquaticum</i>)	~5%
Velvet grass (<i>Holcus lanatus</i>)	~5%

SUMMARY OF PLOT 2 CONDITIONS

- Woody areal coverage ~15%.
- Survival rate of installed plants: 100%
- Herbaceous coverage is ~30%.
- No significant invasive coverage (no control of velvet grass necessary).
- MAINTENANCE: Continue on-going routine maintenance.

- **SUCCESS CRITERIA:** This plot is currently meeting the approved success criteria for woody plant survival.

VEGETATION SAMPLE PLOT 3 (Southeast Wetland)

Plant Species	Baseline
Nootka rose (<i>Rosa nutkana</i>)	4
Red-osier dogwood (<i>Cornus sericea</i>)	11
Deer fern (<i>Blechnum spicant</i>)	4
Watercress (<i>Rorippa nasturtium-aquaticum</i>)	~25%
Dagger-leaf rush (<i>Juncus ensifolius</i>)	~25%
Mannagrass (<i>Glyceria</i> sp.)	~5%

SUMMARY OF PLOT 3 CONDITIONS

- Woody areal coverage ~15%.
- Survival rate of installed plants: 100%.
- Herbaceous coverage ~55%.
- No invasive coverage.
- **MAINTENANCE:** Continue on-going routine maintenance.
- **SUCCESS CRITERIA:** This plot is currently meeting the approved success criteria for woody plant survival.

2.3 WATER QUALITY AND HYDROLOGY

During each monitoring event, an assessment will be made of the water regime within the mitigation area to ensure that hydrological conditions within the wetland and buffer are suitable to support the desired native plant communities. General observations will also be made of the extent and depth of soil saturation or inundation.

Water quality will be assessed qualitatively; unless it is evident there is a serious problem. In such an event, water samples will be taken and analyzed in a laboratory for suspected pollutants. Results will be reported quantitatively. Qualitative assessments of water quality include:

- oil sheen or other surface films,
- abnormal color or odor,
- stressed or dead vegetation or aquatic fauna,
- turbidity.

Observations and evaluations will be made of slope and soil stability in the mitigation area. Any erosion or slumping of soils will be recorded and reported so that corrective measures may be taken.

At the time of the baseline field investigation, soils throughout the created wetland were generally saturated to the surface with shallow ponding observed within the

graded depressions. Water quality appeared good and no significant erosion or other soil stability problems were observed within the mitigation area.

2.4 WILDLIFE

Wildlife species observed in the wetland and buffer areas (either by direct or indirect means) will be identified and recorded during the monitoring events. Direct observations include actual sightings, while indirect observations include tracks, scat, nests, burrows, song, or other indicative signs.

Wildlife signs or observations at the Cooper's Beach site during the baseline review included the following: black-tailed deer (browse and scat), mallard, mole (uplift mounds), and American coot.

3.0 SUCCESS CRITERIA & CURRENT STATUS

The approved performance standards for the project as developed by The Watershed Company included:

- *100 percent survival of all planting during the first year of monitoring, 100 percent survival of trees during years 2-5, and an 80 percent survival of shrubs during years 2-5 of monitoring.*
- *80 percent survival of groundcover and emergent vegetation in year 2*
- *75 cover standard of groundcover and emergent vegetation by year 5*

It is assumed based on the approved maintenance requirements that invasive species will be controlled at levels below 15% coverage. At the time of the January 2011 baseline monitoring there was 100% survival of all planted species and invasive species coverage was well below the 15% coverage threshold. Therefore all of success criteria are currently being met.

4.0 SUMMARY & MONITORING SCHEDULE

Overall, the site is performing well and is currently meeting the defined success criteria for the project. With proper on-going maintenance, the site should continue to establish successfully.

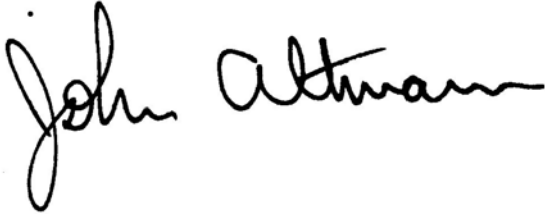
Assuming approval by the City, the next long-term monitoring event is scheduled for the late spring of 2011. The next report will then be prepared following the fall 2011 site visit. Monitoring will continue twice yearly, with the submittal of annual reports.

Should you have any questions or would like to schedule a site review, please call Simone Oliver or me at (425) 333-4535.

Kathy Curry
May 5, 2011
Page 8 of 8

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC

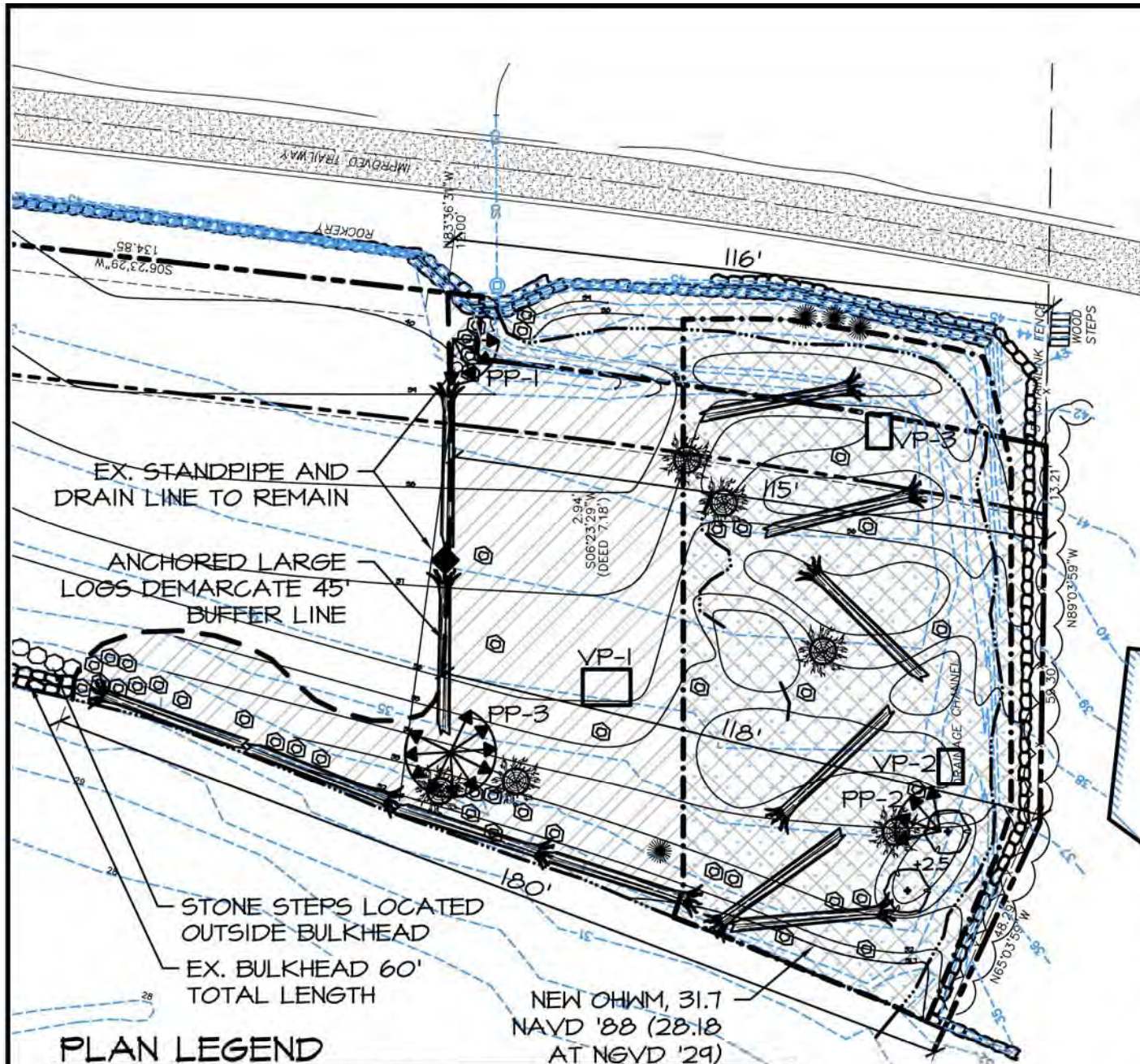
A handwritten signature in black ink that reads "John Altmann". The signature is written in a cursive style with a large, looped initial "J" and a long, sweeping underline.

John Altmann
Ecologist

Attachments

1. Photographs
2. Figure 1 - As-built

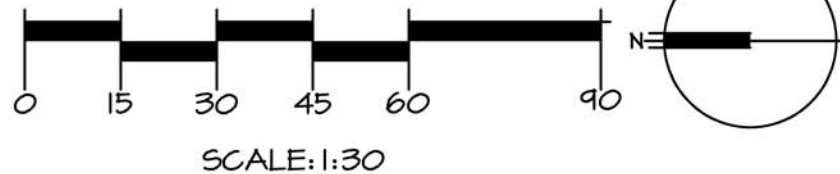
cc: Roger MacPherson



PLAN LEGEND

- PROPERTY LINE
- CREATED WETLAND
- APPROX. CENTERLINE OF STREAM
- BUFFER BOUNDARY
- ENHANCED STREAM/WETLAND (8,467 SF)
- ENHANCED BUFFER (5,783 SF)
- WOODY DEBRIS
- EXISTING STUMP
- EXISTING WILLOW
- EXISTING RED ALDER
- EXISTING BOULDER
- PP-# APPROX. LOCATION OF PHOTO-POINTS
- VP-# APPROX. LOCATION OF VEGETATION SAMPLING PLOTS
- CRITICAL AREA SIGN

GRAPHIC SCALE (IN FEET)



PLANT LIST

TREES

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
BETULA PAPYRIFERA	PAPER BIRCH	3	2 GAL.
PICEA SITCHESIS	SITKA SPRUCE	2	2 GAL.
PSEUDOTSUGA MENSIEZII	DOUGLAS FIR	3	5 GAL.
THUJA PLICATA	WESTERN RED CEDAR	14	5 GAL.

SHRUBS

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
ACER CIRCINATUM	VINE MAPLE	23	2 GAL.
CORNUS SERICEA	RED-OSIER DOGWOOD	88	1 GAL.
CORYLUS CORNUTA	BEAKED HAZELNUT	5	2 GAL.
HOLODISCUS DISCOLOR	OCEAN SPRAY	7	1 GAL.
MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	35	2 GAL.
PHYSOCARPUS CAPITATUS	NINEBARK	29	1 GAL.
PRUNUS EMARGINATA	BITTER CHERRY	12	2 GAL.
RIBES SANGUINEUM	RED FLOWERING CURRENT	34	1 GAL.
ROSA NUTKANA	NOOTKA ROSE	34	1 GAL.
RUBUS SPECTABILIS	SALMONBERRY	25	1 GAL.
SALIX LASIANDRA	PACIFIC WILLOW	8	1 GAL.
SALIX SITCHENSIS	SITKA WILLOW	19	1 GAL.
SAMBUCUS RACEMOSA	RED ELDERBERRY	10	1 GAL.
VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	11	1 GAL.

PERENNIALS/GROUNDCOVER

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
BLECHUM SPICANT	DEER FERN	98	4" POTS
GAULTHERIA SHALLON	SALAL	30	1 GAL.
MAHONIA NERVOSA	LOW OREGON GRAPE	60	1 GAL.
POLYSTICHUM MUNITUM	SWORD FERN	53	4" POTS

EMERGENTS

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
ELEOCHARIS PALUSTRIS	SPIKERUSH	800	10 CU. IN POTS @ 18" O.C.
JUNCUS ENSIFOLIUS	DAGGER-LEAVED RUSH	240	10 CU. IN POTS @ 18" O.C.
SCIRPUS MICROCARPUS	SMALL-FRUITED BULRUSH	220	10 CU. IN POTS @ 18" O.C.
SCIRPUS LACUSTRIS	HARD-STEM BULRUSH	315	10 CU. IN POTS @ 24" O.C.

NOTES

- BASE INFORMATION PROVIDED BY MACPHERSON CONSTRUCTION & DESIGN, (425) 391-3333.
- SITE PLAN AND ORIGINAL DESIGN PREPARED BY THE WATERSHED COMPANY, KIRKLAND, WA, (425) 822-5242.
- BASED ON APPROVED DRAWING 'SHORELINE RESTORATION, WETLAND RESTORATION, CLEARING AND GRADING PERMIT' DATED 6/15/2010, DRAWINGS 1-7 BY THE WATERSHED COMPANY.

PROJECT 3985
 DRAWN SO
 SCALE AS NOTED
 DATE 02-08-11
 REVISED 05-05-11
 1/1

FIGURE 1: AS-BUILT MITIGATION PLAN
 COOPER'S BEACH
 42X EAST LAKE SAMMAMISH SHORE LANE NE
 SAMMAMISH, WA 98074



Altmann Oliver Associates, LLC
 Environmental Planning & Landscape Architecture
 PO Box 578 Cannonville, WA 98014
 Office (425) 333-4515 Fax (425) 333-4499



Photo-point 1: View looking south.



Photo-point 1: View looking southwest.



Photo-point 1: View looking west.



Photo-point 2: View looking east.



Photo-point 2: View looking northeast.



Photo-point 2: View looking north.



Photo-point 3: View looking south.



Photo-point 3: View looking southwest.



Photo-point 3: View looking north.

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:01 AM
To: 'williamrissberger@comcast.net'
Subject: RE: ELST corrections

Dear William,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: williamrissberger@comcast.net [mailto:williamrissberger@comcast.net]
Sent: Thursday, January 26, 2017 4:46 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Valderrama, Ramiro <rvalderr2001@yahoo.com>
Subject: ELST corrections

January 26, 2017
Lindsey Ozbolt

Associate Planner
City of Sammamish
Department of Community Development
LOzbolt@sammamish.us
425.295.0527

Lindsey,

Per our meeting with Kelly Donahue, King County Department of Natural Resources, I am sending you this letter to document two unacceptable errors at location 355 in the ELST 60% build plan. They are:

1. The proposed wood guardrail extending from 352 to 355 along the West side of the proposed trail is at least 3 feet too far west at point 355. It eliminates all vehicle access to my home and three neighbors during construction. It also eliminates access for basic emergency and commercial trucks to my home and my neighbors after construction is complete.
2. The same proposed wood guardrail extends approximately 11 feet too far to its Northern termination at 355. It eliminates access to my home and my neighbors during construction. It also eliminates access for basic emergency and commercial trucks to my home and my neighbors after construction is complete.

These errors must be corrected since I am sure you do not intend to block access to my home. The proposed wood guardrail will have to be moved East and shortened. It needs to follow the track of the existing wood guardrail or be East of it. I have attached 2 images to illustrate where errors are located and why they are unacceptable.

Please let me know the proper steps I can take to insure these errors are corrected in the final build plan.

Regards,

Bill

William Rissberger

1627 East Lake Sammamish PL SE

Sammamish, WA 98075

williamrissberger@comcast.net

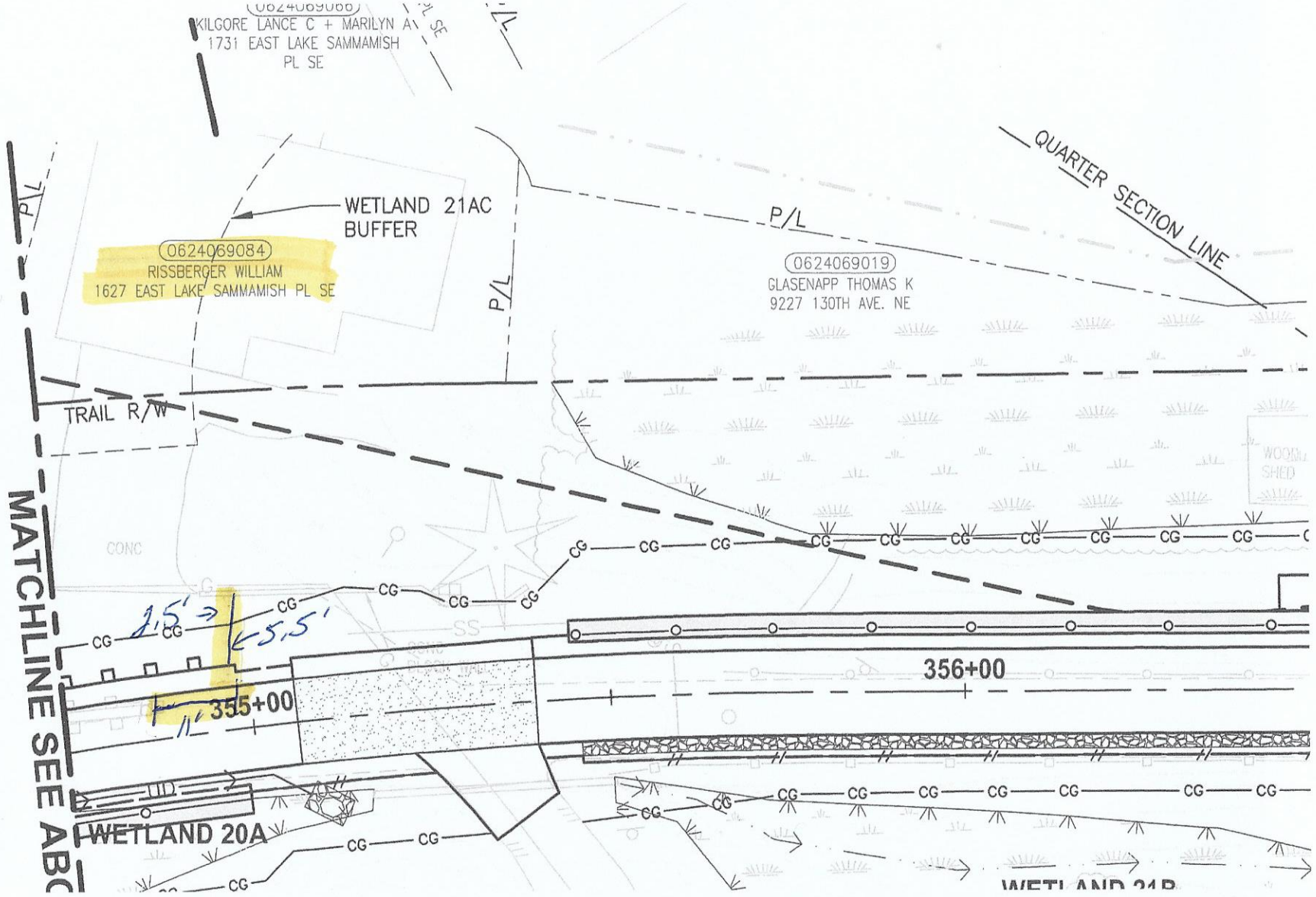
cc: Ramiro Valderrama, RVALDERR2001@yahoo.com

William Rissberger

206-484-2759

PLOTTED BY: purgabut DATE: Wednesday, October 12,

3Svcs\CADD\Phase 19\T03 Civil\Drawg\



MATCHLINE SEE ABC



↑
Proposed CG line

↑
Proposed Wood Barrier

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:00 AM
To: 'wuffer@comcast.net'
Subject: RE: Jim Wolfe Trail Comments

Dear Jim,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: wuffer@comcast.net [mailto:wuffer@comcast.net]
Sent: Thursday, January 26, 2017 4:30 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Jim Wolfe Trail Comments

Hi Lindsey,
I am attaching ten pages of PDF files with my comments and some diagrams and pix.
Please let me know that you got all ten.
Good luck with your work overload.
Thanks,
Jim

Review of Sammamish Trail Plans Near Location 457

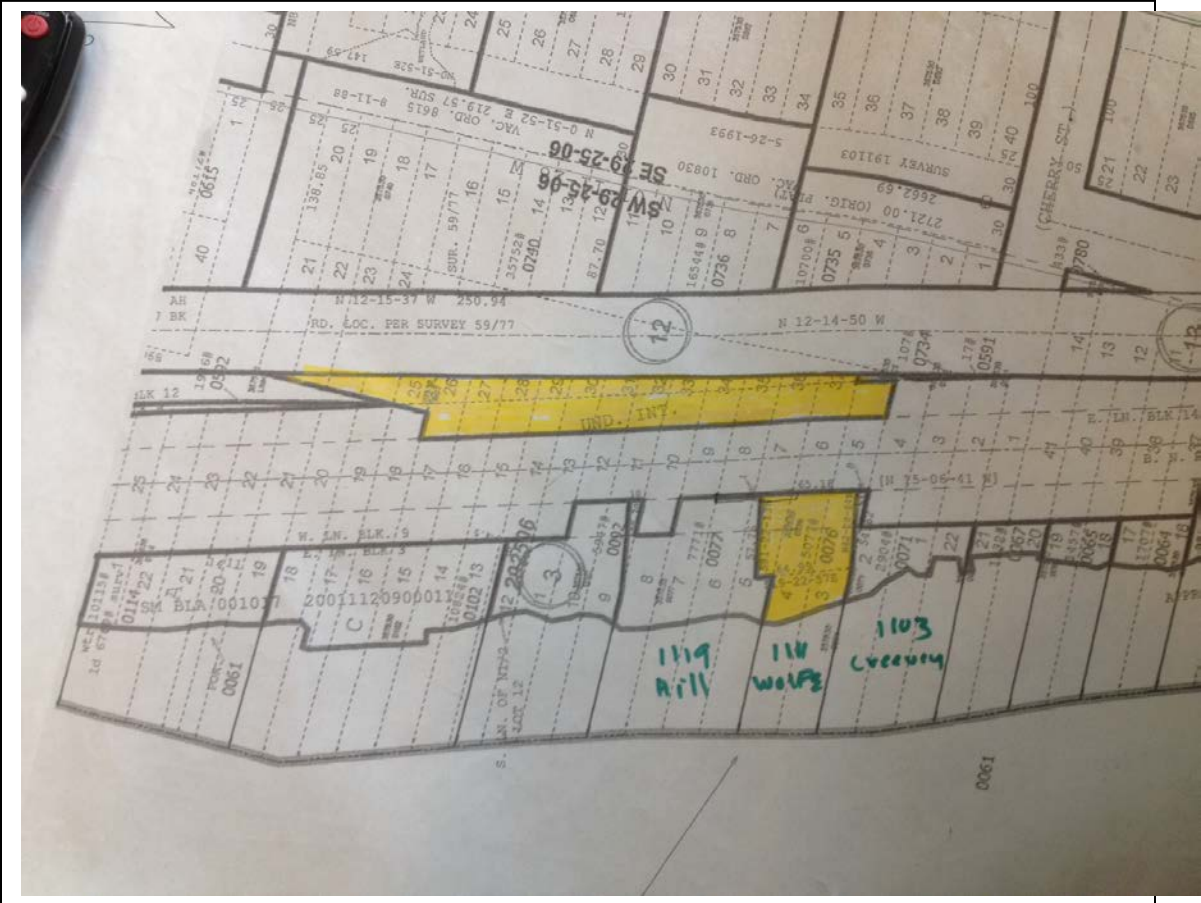
Submitted By: Jim Wolfe, 1111 E. Lk. Sammamish Pkwy NE

Submitted To: Lindsey Ozbolt, Associate Planner, City of Sammamish

Date: 1/26/2017

Item One: Ownership of Parking Lot

On the King County Tract Maps you will find parcel number **357530TRCT**. This parcel is jointly owned by myself and the two neighbors on either side of me. (Jim Creevey—1103 and Ty Hill—1119) This is our driveway and parking area. It is highlighted in yellow in this map:



Note that this parcel is 25' from the centerline of the RR right of way. The current stakes put up by the County in this area indicate a 50' right of way, which is wrong.

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 2

Item Two: Carport

I have had a carport and storage shed combination which I have been using for at least 25 years. It is pictured here:



This carport houses two antique cars---1950 Willys Wagon and Jeepster. The shed has equipment which has to go into and out of my recording studio which is located in my house. The carport is built on a poured concrete foundation wall with a curb. The curb, at its nearest point to the centerline of the trail is 13 feet.

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 3

Here is a picture showing a side view of the curb with the 13' marked in blue:



Note that the broken concrete upon which the poured foundation rests could be removed back to the 13' from centerline mark and that the structure would still be stable. This is also true for the parking area on the north side of Stair #82 which go from the parking lot to the trail. This would allow you to build a wall which starts at 10' from the centerline and which is up to 2' thick and still have room to leave my carport/shed. You could back fill from the broken concrete to the new wall. There is no need to remove the carport/shed. Keeping them where they are would not impact the trail in any way.

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 4

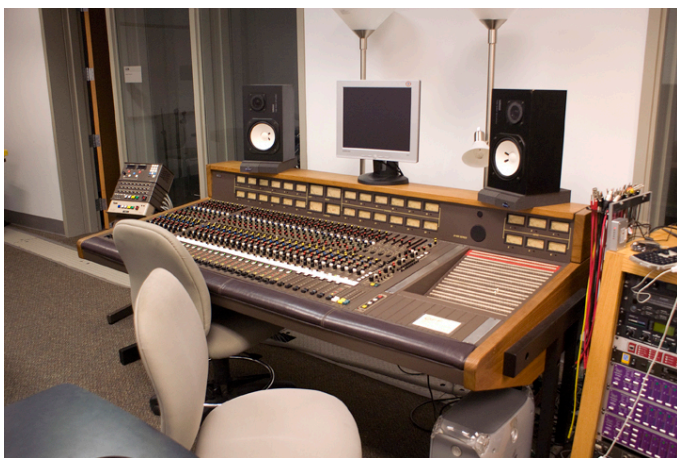
Item Three: Stair #82

On the 60% plans the county shows the elimination of my stairway which goes from my parking lot to the trail (Stair #82) as well as designing a 90 degree turn in the new stairs from the trail to my home (Stair #81). Neither of these design decisions are necessary and both would put my business at risk.

As stated earlier, I have a home recording studio and I bring equipment in and out of the house constantly. One recording machine which is currently stored in the shed next to the carport is a 24 track recorder which weighs around 500 pounds.



This machine has to be hauled down to my studio periodically. It would be nearly impossible to take it down without the current wide stairway from the parking lot to the trail. (Stair #82) In addition, on an almost daily basis musicians bring down heavy guitar amplifiers and drum kits. The existing wide stairway was made that way for a reason, and it is necessary for my business that it not be removed.



In addition, from time to time I need to bring in an MCI recording console pictured at the left. It weighs more than 600 pounds and is over six feet long. There is no way this console could ever be taken down the stairs with the 90 degree turn. (Stair #81) And the width of the upper stairs (Stair #82) makes negotiating the transport of this console possible.

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 5

Stairway discussion continued:

The edge of the bottom riser on Stair #82 going from the parking lot down to the trail is more than 15 feet away from the centerline. This would leave room for at least a 3 foot landing at the bottom of the stairs and that landing would still be more than 12 away from the centerline. There is no need or reason to remove these stairs—and from the discussion above you can see that removal of these stairs would have a severe financial impact on my home business.

Regarding Stair #81:

In addition, there is room for a stairway without a ninety degree turn to go from the trail down to my home (stair #81). There is plenty of linear space for a building code designed stairway to be installed there. From the previous discussion you can see that the currently designed stairway with the ninety degree turn would make it impossible for me to move large, heavy and expensive equipment in and out of my home recording business, which, again, would have a devastating effect on my main source of income.

In addition, because of the nearly constant transportation of heavy musical equipment into and out of my home recording studio, it is important for my clients and hired musicians to have access to my home and enough room for transporting their equipment *during the construction phase of this project* as well as when the trail is complete.

Anything that impedes this flow of equipment would have a severe negative impact on my business and my ability to make a living and would thus produce extreme hardship for me.

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 6

Item Four: Discussion of Parking Requirements

Here is a picture of our driveway and parking lot looking toward the south.



As you can see, there is not a lot of room to maneuver cars in there. My neighbors to the north (Hill family) currently have 4 cars and there are 6 cars owned by those living in my home. Creevey, at the end of the driveway, owns 2 cars. So that's 12 full time cars before any guests or clients come.

Any trail design that allows any less parking than currently available would have a devastating effect on our ability to come and go and also would make it impossible for my clients and musicians to have any place to park to unload equipment. The next part of this discussion will be about the wall on our parking lot side of the trail and how it impacts the parking situation. (Wall #35)

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 7

Item Five: Discussion of Wall #35

Wall #35 is currently shown to be a structural earth wall. For purposes of maximizing our final parking area that wall needs to be as vertical as possible for the whole length of our driveway---that is, adjacent to my home and Hill's home.

To maximize our parking area, a Soldier Pile wall would work better since it can be vertical and not subtract useful space from our parking area.

In addition, as previously discussed, the existing broken concrete foundation could be removed as far back as the curb on our parking area (and also the curb on my carport) and this would allow a Soldier Pile wall to be constructed and then back filled to the line of the existing curb. This would allow you to have a fence at the top of the new wall and still allow our cars to park with our wheels up to the existing curb and the bodies of the cars to hang out past the curb and still not be touching your fence.

The following picture gives you a good idea what I'm talking about:



You can see the mark at 13 feet from the centerline of the trail.

(Incidentally, I am an engineer and actually ran a line from two of your pink centerline stakes and measured from the straight line, so the 13 foot dimension is accurate within a couple inches.)

Our cars currently hang out past the curb. If the curb was left in place and a car hung out 3 feet past the curb, the bumper of the car would still be 10 from the centerline of the trail. This would give you room for a fence on top of your Soldier Pile wall without our cars touching it.

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 8

Item Six: Discussion of Stream

I have noted the location of this stream to several people with the county in the past but just today I had a discussion with one of the wetland consultants to whom the route of this stream is a mystery.

The stream which I am discussing comes under the parkway and shows up on our property in the parking area just to the north of the garage. It then goes underground in a pretty straight path towards the lake and may be heard bubbling next to the trail (on the east side) just about exactly west of where it appears in the parking lot.

Then it takes a mysterious path to its final destination on the beach in front of my house. From where it may be heard bubbling up near the Hill's home, it runs south in a buried culvert parallel to the trail under the broken concrete that supports the parking area.

It takes a turn to the west somewhere around 456 + 60 and continues underground toward the lake. It comes out on the beach in front of my house and fills a pond which continuously flows into the lake.

I have lived in my home since 1978 and this stream has never dried up.

Care will have to be taken not to disturb the flow of this stream. At one time the stream backed up on the lake side due to sand and rocks being washed into the pipe in which the stream flows and my back yard flooded. Due to the current configuration of ponds in front of my residence this backing up can no longer happen.

Item Seven: Electricity in the parking area

There is currently power in the parking area. This power comes from my house and shows up at my carport. However I have no clear idea of how the electrical wires are routed under the old rail bed. I believe this power was put in when the water lines were installed, however I'm not sure. It is something that will need to be considered when the heavy equipment moves in.

Item Eight: Water and Sewer

Our water supply starts up on the parkway and is routed to a distribution box in our parking area, just to the south of the tan shed. This box is often overgrown with blackberry bushes and is not obvious. From there, the high pressure lines cross the parking area and travel under the rail bed and supply Creevey and myself. I mention that these are high pressure lines because both Creevey and I use pressure reducing valves down at our residences, but the lines in the parking lot are upstream from the PRVs.

In the past we have had problems with large construction equipment causing one of these supply lines to rupture and we incurred quite a bit of expense in fixing the problem.

It hasn't been an issue for many years, but the heavy equipment that will be used for trail construction might prove to be a problem, especially if the exact location of the water lines is not mapped out exactly.

In addition, we are on a pumping sewer system and so waste runs back under the old rail bed and up to the main sewer lines along the parkway. I know that this happens everywhere on the east side, but I just want to be on record as having some concern that the sewer lines not be disturbed, just as I am concerned with the electrical and water.

Item Nine: Clearing and Grubbing

I understand that the CG line will have to extend around the new stairway from the trail to my residence (Stair #81), however there is no need to have the CG line come down into my yard nearly as far as it is currently shown. I have several trees within the current CG line that I would like to preserve.

In fact the current drawing shows the CG line at the bottom of Stair 81 to be 30 feet from the centerline and your property only extends 25 feet in that direction.

In addition, on the parking lot side of the trail the CG line is shown as over 20 feet from the centerline. There is no reason for this much width along our parking area.

Jim Wolfe Review of Sammamish Trail Plans near 457—Page 10

Item 10: Unnamed Stream #13

The City of Sammamish has regulations about trails crossing wetland buffers. The buffer for Unnamed Stream #13 includes all of the area next to my property where the trail runs. I would like a clarification from the City and the County as to what the requirements are for the trail passing through a stream buffer and want to see how the County addresses the City's requirements.

That concludes my Review of the Sammamish Trail Plans.

I may be reached by phone at:

425-241-7234

I may be reached by email at:

wuffer@comcast.net

I may be reached by mail at:

1111 E. Lk. Sammamish Pkwy NE
Sammamish WA 98074

I hope that I have clearly discussed the many problems I have with the current 60% trail design.

I would like to be contacted by a representative of the County to discuss some of these items in person at my property where it is easy to see the adverse consequences that the current 60% design would have on my business and my life.

Thank you for your consideration,

JIM WOLFE

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:00 AM
To: 'jalschul@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Joan,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Joan Alschuler [mailto:jalschul@gmail.com]
Sent: Thursday, January 26, 2017 4:28 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

As a cyclist, I am so happy to learn of trails that are paved and thus safer for cyclists like me who like to ride on the safest surfaces possible due to 2 replaced hips. I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Joan Alschuler
23836 NE 126th PL
Redmond, WA 98053
608-239-5080

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 11:00 AM
To: 'Fred Mattison'
Subject: RE: King County Trail File #SSDP2016-00415..Comments

Dear Fred,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Fred Mattison [mailto:FredMattison@msn.com]
Sent: Thursday, January 26, 2017 4:16 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: King County Trail File #SSDP2016-00415..Comments

Hi Lindsey,

I reviewed the plans for the East Lake Sammamish Trail and have the following comments:

- 1) Tamarack and Many! other parcels in the area to the east of Louis Thompson Hill Road were created by King County prior to the City of Sammamish being formed.
- 2) There was no overall drainage system or treatment system built to address the runoff from these areas that currently direct runoff into Lake Sammamish.
- 3) The property owners have all been charged surface water management fees for years while no/minimal management of the surface water from this area around Tamarack Louis Thompson Hill Road has occurred.
- 4) With the Tamarack Modeling/surface water management study being complete as of November, 2016 (see attached) and King County's plan being dated September, 2016, it is clear that the drainage system that collects water near the trail, East Lake Sammamish Parkway and limited drainage uphill near the Louis Thompson Hill Road has not been considered in the sizing of the culvert/pipe from East Lake Sammamish Parkway to Lake Sammamish at station 436 + 30 where a 12" HDPE pipe is

scheduled to be installed. This pipe/outfall does not address the drainage challenges of the Tamarack area and future

density/parcels to be developed in the next 2- 10 years.

5) To develop the trail with a substandard drainage pipe running under it to the lake is a major step backwards.

6) Please do not settle for the current pipe sizing that does not address the current and future drainage needs of the area east of

Lake Sammamish Parkway at Louis Thompson Hill Road when the City of Sammamish has just completed several

runoff/drainage studies in the area.

7) It is time for King County to update and correct the drainage system rather than the City being responsible for the cost of this

improvement.

Thank You for all of your efforts that are in the best interest of the City of Sammamish and it's residents.

Call text or email if you need clarification.

We have been residents here for over 30 years. (prior to Sammamish)

Thank You!

Fred Mattison

21319 SE 1ST

Sammamish, WA 98074

206-947-4639 phone

fredmattison@msn.com email

DATE NOVEMBER 17, 2016

TO BEN RESSLER, PROJECT ENGINEER, CITY OF SAMMAMISH

CC

FROM ROBERT PARISH, PE, PROJECT MANAGER, OSBORN CONSULTING, INC.
JOSH VAN WIE, PE, PROJECT ENGINEER, OSBORN CONSULTING, INC.

SUBJECT TAMARACK DRAINAGE IMPROVEMENT PROJECT – MODELING MEMORANDUM

INTRODUCTION

The Tamarack subdivision is located on the west side of the City of Sammamish near Lake Sammamish. The subdivision contains properties in the area near NE 4th Street between 208th Avenue NE and 212th Avenue NE.

A portion of the storm runoff from the Tamarack subdivision flows west, and is combined with flows from residential properties located between the Tamarack subdivision and the intersection of East Lake Sammamish Parkway and Louis Thompson Road NE. This combined area is referred to as the “Project Basin” in this report. The Project Basin is located within the larger Monohon Drainage Basin. The remaining flows from the Tamarack subdivision not included in the Project Basin flow either north to George Davis Creek in the Inglewood Basin, or flow south to contribute flow to Zackuse Creek. The areas flowing north and south were not studied as part of this report.

The Project Basin contributes flow to Lake Sammamish through a culvert at the intersection of East Lake Sammamish Parkway and Louis Thompson Road that is connected with an open channel to the lake. The basin is approximately 52 acres in size, and includes a system of storm drains, culverts, and ditches. Properties in the basin are zoned as R-4 residential, and land cover consists primarily of single family residential houses. Topography ranges in elevation from approximately 40 feet to 460 feet with slopes up to approximately 30% in the steepest areas.

The goal of this study is to use hydrologic and hydraulic modeling to assess the existing flows reaching Lake Sammamish and potential changes in peak flow due to future development in the Tamarack subdivision. Modeling was performed using the Western Washington Hydrology Model (WWHM) and the EPA Storm Water Management Model (SWMM) through the PCSWMM platform.

SUBBASIN DELINEATION

The Project Basin was divided into 8 subbasins for performing modeling calculations. Subbasin boundaries were delineated using King County and City of Sammamish GIS data including elevation contours, streams, drainage pipes, culverts, manholes, and catch basins. Subbasins were divided by choosing specific points in the stormwater conveyance system and separating out the land area that contributes flow to each point.

Site visits were performed to verify subbasin boundaries. Subbasin boundaries were confirmed by locating high points at the edge of subbasins and by visually locating pipes or culverts that redirected flow to create a basin boundary. The subbasin delineations can be seen in **Figure 1**.

Subbasin 4 is currently undeveloped, and consists of forested area. The remaining subbasins are developed, with the majority of lots built out as single family residential. A few individual undeveloped lots exist in Subbasins 2, 6, and 7.

WWHM MODEL

WWHM was used for computing runoff in each subbasin for three scenarios. The three scenarios included existing conditions, proposed conditions after drainage improvements, and future fully developed conditions. Additionally, WWHM was used to size several flow control facility options. Input data required for WWHM includes impervious and pervious cover, slopes, and soil types.

Slopes for each subbasin were calculated using GIS elevation contours. Slopes for the eight subbasins ranged from 6 to 29 percent, with an average slope of 17 percent. Soil information was taken from the Natural Resources Conservation Service Web Soil Survey, which compiles soil survey data from various sources. Soils in the Project Basin consist primarily of glacial outwash soils, which make up 86 percent of the basin. Some areas of glacial till are also present at the highest and lowest elevations in the basin. WWHM requires soils to be categorized as type A/B, type C, or saturated soils. Soil categories were assigned using the Stormwater Management Manual for Western Washington, which classifies the outwash soils in the basin as type A/B and the till soils as type C. Detailed soil information is provided in **Table 1**.

Existing Conditions

Existing impervious areas were calculated using aerial imagery databases available in ArcGIS software. The most recent imagery available was from July, 2013. Impervious areas were traced using ArcGIS, and roadway impervious areas were separated from parcel impervious areas. Impervious cover on parcels was assumed to be 70 percent building area and 30 percent driveway area based on aerial photographs. Separation of individual buildings, driveways, and other impervious is beyond the scope of this work. Pervious areas were assumed to be 100 percent lawn in developed subbasins. In Subbasin 4, which is undeveloped, pervious areas were assumed to be 100 percent forest based on aerial imagery and site visit observations.

Under existing conditions, runoff from Subbasins 7 and 8 is collected in an 8-inch drainage system located at NE 4th Street and is released to an open channel that passes through Subbasin 4. Soils in Subbasin 4 consist of glacial outwash, and are expected to have a higher infiltration capacity than till soils. Runoff from basins 7 and 8 was routed through Subbasin 4 using a lateral flow basin in WWHM to estimate the infiltration and remaining runoff that continues through Subbasin 4 to the outfall.

Proposed Conditions after Drainage Improvements

The proposed drainage improvements will collect surface runoff from Subbasins 7 and 8 and convey flows through the proposed pipes to the existing storm drains in Louis Thompson Road. In the proposed conditions model, runoff from subbasins 7 and 8 was routed directly to the outlet of Subbasin 4 rather than being routed onto the surface of Subbasin 4 through lateral basins. This eliminates the potential for infiltration that occurs under existing conditions as flows from Subbasins 7 and 8 pass through the natural open channel in Subbasin 4.

Future Fully Developed Conditions

Fully developed conditions were modeled to determine the total increase in flow that may occur in the system over time. Impervious areas were calculated assuming parcels will redevelop individually and increase impervious cover to the maximum allowable level. Developments in the Project Basin are required to use level 2 flow control standards according to the City of Sammamish flow control map. Under these standards, redevelopments with greater than 5,000 square feet new or replaced impervious surface are required to install flow control. For the WWHM model, it was assumed that any existing lots with less than 5,000 square feet impervious would redevelop and add impervious area to reach 5,000 square feet. This added a total of 2.12 acres of impervious area for an increase in impervious cover of approximately 4 percent over the entire Project Basin. In reality, future increases in impervious area may require construction of flow control facilities, particularly if the new impervious cover is in a critical drainage or erosion area. The Sammamish Municipal Code (SMC) outlines additional requirements for these areas in SMC 13.20.040. For the sake of this work, it was more conservative to assume that no flow control would be required in the future to estimate the greatest potential increase in flow through the system. A summary of existing and proposed conditions is provided in **Table 1**.

Subbasin 4 currently consists of a single large tract of land. The tract is expected to be subdivided and developed into residential lots in the future. The subdivision of the land for development will require installation of flow control meeting the level 2 standards for peak flows and flow durations. Subbasin 4 was modeled as forest, assuming that flow control will maintain predeveloped flows in the subbasin.

Subbasin	Total Area (AC)	Existing Percent Impervious	Future Percent Impervious	Slope	Percent Outwash Soil	Percent Till Soil
1	2.15	38%	38%	6%	29%	71%
2	1.61	33%	48%	9%	62%	38%
3	14.07	49%	51%	19%	100%	0%
4	5.82	2%	0%	14%	100%	0%
5	2.70	48%	58%	17%	100%	0%
6	16.25	34%	41%	13%	100%	0%
7	2.22	40%	47%	29%	42%	58%
8	4.51	39%	44%	22%	85%	15%

Flow Control Facility Options

Several flow control options were modeled to determine required detention facility sized at different locations in the Project Basin. Flow control facilities were designed so flows to the basin outfall were less than or equal to existing flows for storm events ranging from the 2-year to 100-year events. The following facility options were investigated:

- Standard flow control vault downstream of Subbasins 7 and 8.
- Infiltration vault downstream of Subbasins 7 and 8
- Standard flow control vault downstream of Subbasin 4, assuming Subbasin 4 does not develop in the future.
- Standard flow control vault downstream of Subbasins 3 through 8, assuming Subbasin 4 does not develop in the future.

- Standard flow control vault downstream of Subbasins 3 through 8, assuming Subbasin 4 develops in the future and Subbasins 7 and 8 are piped to the outlet of Subbasin 4.

SWMM MODEL

SWMM was used to model flow from WWHM through the pipes and open channels in the lower part of the Project Basin. The drainage system for the model was constructed using survey data, record drawings, and field measurements. Pipes modeled in this study include the mainline pipes that extend from the downstream ends of Subbasins 3, 4, and 6 and continue toward Lake Sammamish through several open channel sections. The open channel sections include the ditch along Louis Thompson Road, and two channel sections near the Lake Sammamish outfall. A portion of the 8-inch drainage system in Subbasin 8 was also included. The model is meant primarily to provide an estimate of peak flows and velocities in the downstream end of the system. Because of the model's intended use, the full drainage system through the Project Basin was not included in the model.

Pipe invert elevations and lengths were taken primarily from survey data and record drawings. Survey data was used for the majority of pipes and culverts along Louis Thompson Road and for the pipes along NE 4th Street in Subbasin 8. Several areas of missing data were encountered for the pipes along Louis Thompson Road where existing manholes could not be located. Based on survey notes and site visits, it appears that existing manholes may have been paved over with asphalt. In these cases, pipe data was taken from record drawings. One area with missing data includes the pipes on the south side of Louis Thompson Road near the intersection with East Lake Sammamish Parkway NE. Record drawings show the system extending to the south along East Lake Sammamish Parkway NE and not connecting into the main drainage system. However, no pipes along East Lake Sammamish Parkway NE could be verified during the site visit, and it appears possible that the existing pipes do connect to the main system. The model was built assuming the pipes are connected to provide a more conservative estimate of flows. However, it should be noted that the future development will not alter the destination of any flows in the basin. The pipes used in the SWMM model can be seen in **Figure 3**.

Open channel and ditch areas were observed in the field to determine the bottom width, approximate side slope, and estimated channel roughness. Observations were taken at the ditch on the north side of Louis Thompson Drive and at the open channel section between East Lake Sammamish Parkway NE and the East Lake Sammamish Trail to the west of the roadway. The open channel that extends from the trail to Lake Sammamish could not be observed because the channel passes through private property that could not be accessed at the time of the site visit. Parameters for this channel were assigned using engineering judgement based upon the site photographs included as part of the Cooper Beach – Mitigation As built Memorandum (see attached).

Two existing detention systems were included in the model. One is a detention pond located at the Subbasin 5 outlet that provides flow control for the residences near the intersection of 207th Avenue NE and NE 3rd Street. The second is an inline detention pipe located in the 205th Avenue NE right-of-way near the intersection with Louis Thompson Road. Parameters for both detention systems and their orifices were taken from record drawings.

Flows for the SWMM model were taken from WWHM results for 100-year peak runoff. Flow from each subbasin was applied as a constant flow at the appropriate model node. Flows from Subbasin 3 were split between two nodes because a portion of flow from the subbasin does not reach the conveyance system until near the downstream end. The total flow was divided based on contributing area, with 80 percent assigned to the main drainage line and 20 percent assigned to the farthest downstream node in the subbasin.

SHEAR STRESS CALCULATIONS

Shear stresses for the open channel at the Lake Sammamish outfall were calculated to determine the potential for erosion. The predicted shear stress for each scenario was calculated using equations developed for channel design by the Federal Highway Administration (Kilgore, 2005). The following equations were used for calculating shear stress applied by the modeled flow and permissible shear stress on the channel soil and vegetation:

$$\tau_0 = \gamma R S_0 \text{ (Applied shear stress, FHWA Equation 2.3)}$$

$$\tau_p = \frac{\tau_{p,soil}}{(1-C_f)} \left(\frac{n}{n_s}\right)^2 \text{ (Permissible shear stress, FHWA Equation 4.7)}$$

Values for flow rates, velocities and depths, and slopes were taken from the WWHM and SWMM models and used to calculate shear stress. Values for the grass cover factor and roughness were taken from the FHWA document or other literature sources. The bed material grain size where 75% of material is finer (i.e. D_{75}) was estimated to be 2 inches. This estimate was based on observations of the upstream channel near the trail and photos of the constructed channel provided in the Cooper Beach – Mitigation As built Memorandum.

MODELING RESULTS

The peak flow results predicted by WWHM are provided in **Table 2**. Peak flows for the proposed drainage improvements increased only downstream of Subbasin 4. This is because flows from Subbasins 7 and 8 will no longer partially infiltrate into the channel in Subbasin 4, but will bypass the subbasin through the proposed drainage system. Peak flows for future fully developed conditions were greater than existing conditions due to increased impervious cover. Subbasins 2, 5, and 6 had flow increases of greater than 10 percent at the 100-year event. Subbasin 4 is predicted to have no significant change in flow due to expected installation of flow control during future development. This will ultimately depend on the design of the future development.

Table 2 WWHM Modeled Peak Flows**						
Scenario	Flows by Subbasin (CFS)					
	1	2	3	4,7,8*	5	6
Existing 2-year	0.42	0.27	2.38	0.12	0.50	2.35
Existing 100-year	1.09	0.71	6.81	3.47	1.00	5.88
Proposed 2-year	0.42	0.27	2.38	2.05	0.50	2.35
Proposed 100-year	1.09	0.71	6.81	5.13	1.00	5.88
Future 2-year	0.42	0.36	2.52	2.15	0.57	2.73
Future 100-year	1.09	0.83	6.88	5.25	1.11	6.55

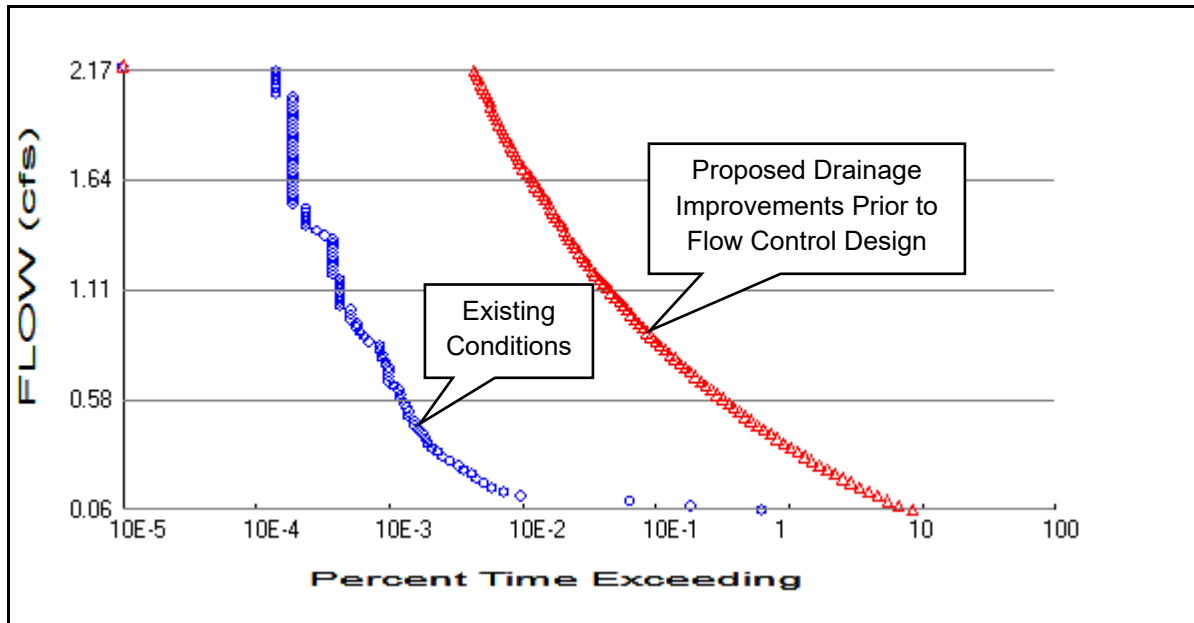
*For existing conditions, Subbasins 7 and 8 were modeled as lateral basins with total flow measured at the outlet of subbasin 4. For proposed conditions, Subbasins 7 and 8 were routed to the outlet of Subbasin 4 to simulate the proposed drainage system that will bypass Subbasin 4.

** These flows assumed no proposed detention

A comparison of flow durations for existing conditions and proposed drainage improvements is shown in **Figure 5**. Flows durations are expected to exceed the existing conditions . This exceedance is a result

of the flows from Subbasins 7 and 8 being piped directly to the outlet of Subbasin 4, rather than being allowed to partially infiltrate in Subbasin 4. The exceedance in flow durations create an erosion concern for the small wetland and downstream channel sections near the Lake Sammamish outfall. Flow control to match existing durations will be needed as part of the proposed drainage improvements in order to protect the downstream channel.

Figure 5: Flow durations for existing conditions and proposed drainage improvements. Flow control will be required during the design phase to match existing durations.



The peak flows and velocities predicted by SWMM for the ditch and open channel sections are listed in **Table 3**. Flows at the Lake Sammamish outfall are estimated to increase from 17.7 CFS under existing conditions to 22.1 CFS under future conditions during the 100-yr event. This constitutes a 25 percent increase in flow at the outfall. The primary reason for the increase is that runoff from Subbasins 7 and 8 will not be infiltrated as it flows over Subbasin 4. A smaller portion of the increase is caused by a higher percentage of impervious cover in all subbasins.

Velocities along Louis Thompson Road are near 10 feet per second for both existing and future conditions at the 100-year event. The high velocities are caused by steep slopes in the roadside ditch and a grass lined channel without rock material to provide increased roughness. Existing velocities in the open channel sections near Lake Sammamish are predicted to be 3.8 feet per second at the 100-year event, and are predicted to increase slightly with the higher volume of flow in the future.

Location	Existing 100 year Peak Flow	Existing 100 year Velocity	Future 100 year Peak Flow	Future 100 year Velocity
Ditch along Louis Thompson Road NE	7.3 cfs	9.0 ft/s	8.1 cfs	10.3 ft/s
Open Channel between East Lake Sammamish Parkway NE and pedestrian trail	17.7 cfs	6.0 ft/s	22.1 cfs	5.8 ft/s
Open Channel between pedestrian trail and Lake Sammamish outfall	17.7 cfs	3.8 ft/s	22.1 cfs	4.0 ft/s

The permissible shear stress at the outfall channel was calculated to be 1.27 lb/sf. Calculated shear stresses for each storm event under existing and proposed conditions are shown in **Table 4**. The shear stresses are not expected to increase dramatically, and all predicted shear stresses are below the permissible shear stress. Because the permissible shear stress is based on site photos rather than field observations, there is room for refining the permissible stress calculation. Additional study is recommended during the design phase to investigate any potential erosive channel concerns and verify the level of shear stress that is appropriate for the channel. However, because of the relatively minor change in shear stress due to increased flows, the future conditions are expected to be similar to the existing conditions. If the existing channel is functioning without erosion concerns, then the future conditions will not likely create additional concern.

Scenario	Flow	Velocity	Shear Stress
Existing 2-year	6.7 cfs	2.9 ft/s	0.57 lb/sf
Existing 100-year	17.7 cfs	3.8 ft/s	0.88 lb/sf
Future 2-year	9.4 cfs	3.2 ft/s	0.67 lb/sf
Future 100-year	22.1 cfs	4.0 ft/s	0.98 lb/sf

FLOW CONTROL OPTIONS

An approach to match the existing peak flows is to provide a detention or infiltration system. The flow control options are summarized below in **Table 5**. Length and width options for each vault were standardized to 20 feet wide and 7 feet deep to provide an easier comparison between options.

Detention Option #1 & #2: For future developed conditions, flows from Subbasins 7 and 8 before entering Subbasin 4 can be reduced to a minimal level by installing a very large detention vault on the order of 850 feet long (for a standard vault: Detention Option #1) to 500 feet long (for an infiltration vault: Detention Option #2). However, even with one of these large-sized vaults, the peak flows at the Lake Sammamish outfall are predicted to increase at the 2-year and 100-year events. This is due to the modeled overall future increase in impervious cover through the other basins. In addition to not meeting the goal of matching existing flows at the Lake Sammamish outfall, these options are not likely be feasible due to the high cost and impractical size of the facilities. This option would not be further considered.

Detention Option #3: A similar reduction in flow could be obtained by installing a 50-foot long vault at the outlet of Subbasin 4. This option assumes that flows from Subbasins 7 and 8 are not piped across Subbasin 4 but are allowed to flow in an open channel that allows infiltration. As with Option #1 and #2, peak flows at the Lake Sammamish outfall are predicted to increase at the 2-year and 100-year events. This is due to the modeled overall future increase in impervious cover through the other basins. This option is feasible, but would not meet the goal of matching existing flows at the Lake Sammamish outfall. This option would not be further considered.

Detention Option #4 & #5: Two options for installing a vault downstream of Subbasins 3 through 8 are able to provide a reduction in peak flows to the Lake Sammamish outfall. These options would collect flow from over 90 percent of the total basin area. Detention Option #4 could be as small as 50-feet long if flows from Subbasins 7 and 8 are not piped across Subbasin 4 but are allowed to flow in an open channel that allows infiltration.

Detention Option #5 assumes that Subbasins 7 and 8 are piped down the hill through Subbasin 4, requiring a 200-foot long vault to provide an adequate reduction in peak flows to the Lake Sammamish outfall.

Table 5 Flow Control Facility Summary				
Flow Control Location	Vault Type	Size	Future 2 year Peak Flow at Lake Sammamish Outfall	Future 100 year Peak Flow at Lake Sammamish Outfall
Detention Option #1 Downstream of Subbasins 7 & 8	Standard	850ft L x 20ft W x 7ft H	10.1 cfs*	23.4 cfs*
Detention Option #2 Downstream of Subbasins 7 & 8	Infiltration Vault	500ft L x 20ft W x 7ft H	10.1 cfs*	23.4 cfs*
Detention Option #3 Downstream of Subbasin 4, assuming Subbasins 7 & 8 are not piped through Subbasin 4	Standard	50ft L x 20ft W x 7ft H	10.7 cfs*	23.9 cfs*
Detention Option #4 Downstream of Subbasins 3,4,5,6,7,8, assuming Subbasins 7 & 8 are not piped through Subbasin 4	Standard	50ft L x 20ft W x 7ft H	5.79 cfs	17.2 cfs
Detention Option #5 Downstream of Subbasins 3,4,5,6,7,8, assuming Subbasins 7 & 8 are piped through Subbasin 4	Standard	200ft L x 20ft W x 7ft H	5.88 cfs	17.1 cfs

* These flows exceed the existing flow at the Lake Sammamish outfall

CONCLUSION

This modeling study developed runoff estimates for 8 subbasins in the Project Basin for existing conditions, proposed drainage improvements, and future fully developed conditions. The proposed drainage improvements are not expected to trigger flow control requirements because new or replaced impervious surface will not be added. However, peak flows and flow durations are expected to increase at the Lake Sammamish outfall due to the change in conveyance for Subbasins 7 and 8 to be conveyed through storm drains rather than an open channel on Subbasins 4 that provides some infiltration. An additional increase in peak flows will occur at the outfall due to an expected increased impervious cover throughout the Project Basin as individual properties redevelop. Peak flows are expected to increase by as much as 25 percent at the outfall for future fully developed conditions.

Several flow control options were investigated to match or decrease peak flows to the outfall under future fully developed conditions with Subbasins 7 and 8 piped to Louis Thompson Road. Assuming that runoff will not be piped across Subbasins 4, then the most feasible option is a 50-foot long by 20-foot wide by 7-foot deep detention vault that would collect runoff from Subbasins 3 through 8, or roughly 90 percent of the Project Basin's total area. This vault would provide a reduction in peak flows to the outfall. The vault would need to be installed in the right-of-way somewhere near the intersection of Louis Thompson Road NE and 205th Avenue NE.

Flow control facilities have been sized to match or provide a reduction from existing peak flows at the Lake Sammamish outfall. If design progresses, flow durations should also be considered so that erosive flows at lower flow rates do not create a concern.

Detention will be required for any developments or redevelopments that trigger flow control requirements. To ensure that increases in impervious cover are mitigated in the future, the City should investigate whether updates to the existing drainage code would be beneficial.

The existing wetland area near the Lake Sammamish outfall must be protected according to drainage code requirements. This will include controlling the wetland's hydroperiod to maintain habitat for wetland plant and animal communities. A hydrologic assessment will be required during the design phase to ensure the proposed drainage improvements will match the existing volume and pattern of water stored in the wetland. This assessment would require a review of the existing condition to approximate how much water the wetland currently receives.

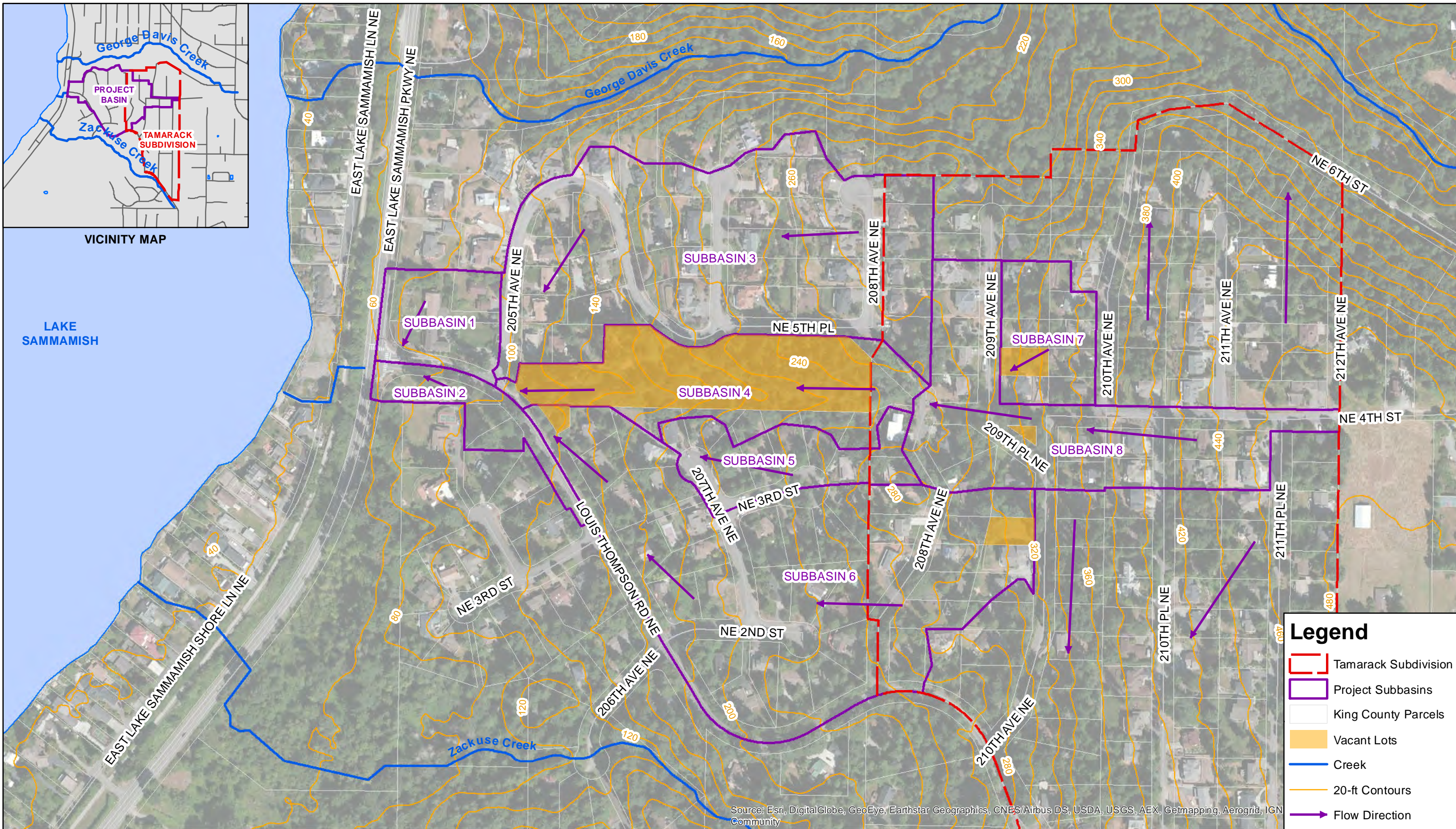
Additionally, it is recommended that the condition of the existing open channel be investigated prior to design and construction in Subbasin 4 to review wetland condition and erosion concerns and to document existing conditions.

REFERENCES

Kilgore, R.T. and Cotton, G.K., 2005, "Design of Roadside Channels with Flexible Linings," U.S. Department of Transportation, Federal Highway Administration, FHWA-NHI-05-114, Hydraulic Engineering Circular No. 15, Third Edition.

APPENDIX A

FIGURES



Legend

- Tamarack Subdivision
- Project Subbasins
- King County Parcels
- Vacant Lots
- Creek
- 20-ft Contours
- Flow Direction

Figure 1: Project Basins
 Tamarack Drainage Improvement Project
 Sammamish, WA

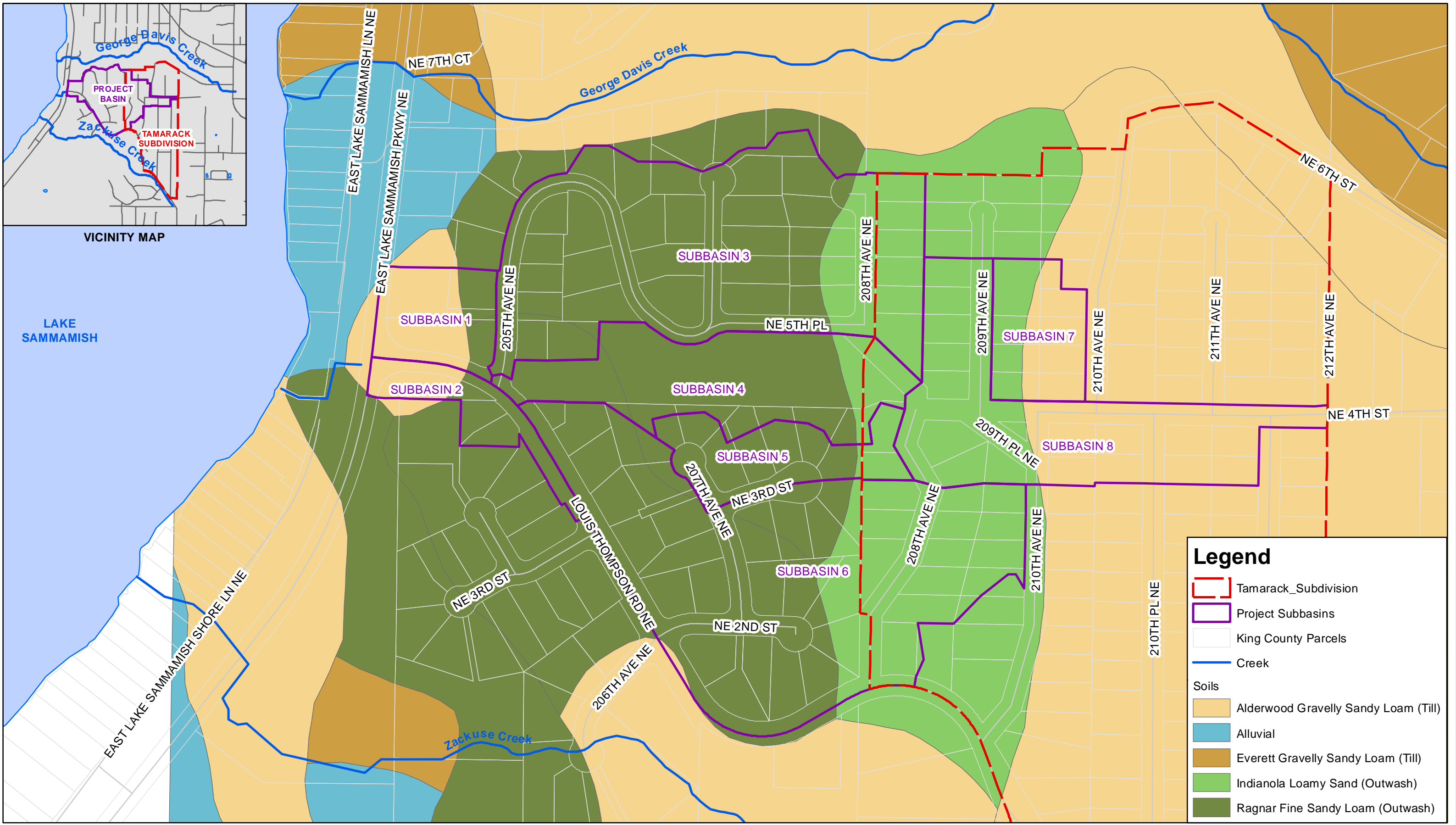
OSBORN CONSULTING INCORPORATED

N

0 125 250 500

1 In = 250 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, Community



Legend

- Tamarack_Subdivision
- Project Subbasins
- King County Parcels
- Creek

Soils

- Alderwood Gravelly Sandy Loam (Till)
- Alluvial
- Everett Gravelly Sandy Loam (Till)
- Indianola Loamy Sand (Outwash)
- Ragnar Fine Sandy Loam (Outwash)

Figure 2: Project Soils
 Tamarack Drainage Improvement Project
 Sammamish, WA

OSBORN CONSULTING INCORPORATED

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0 125 250 500

1 In = 250 Feet

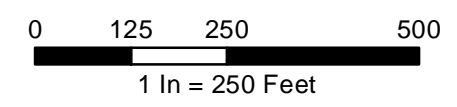
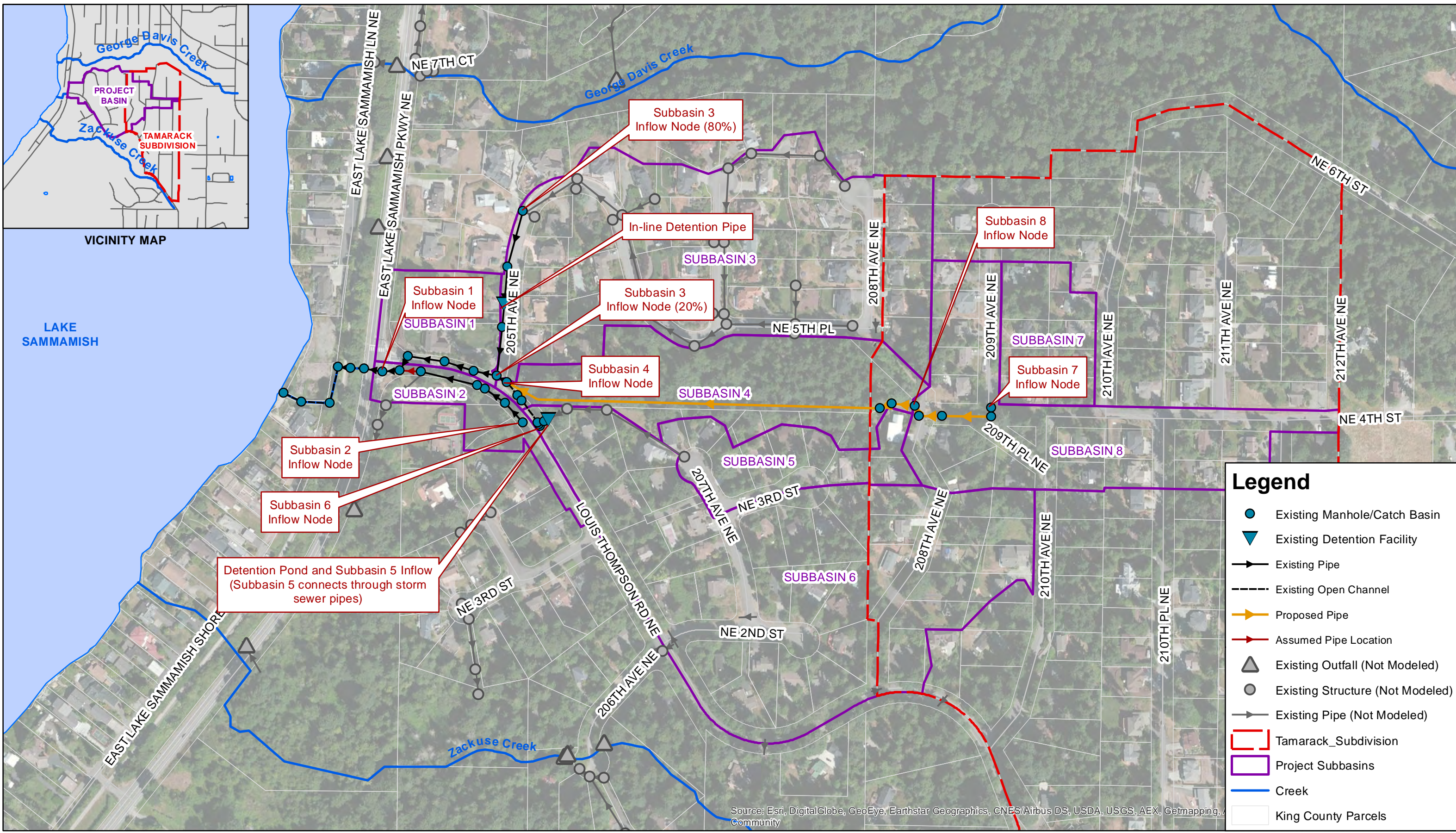
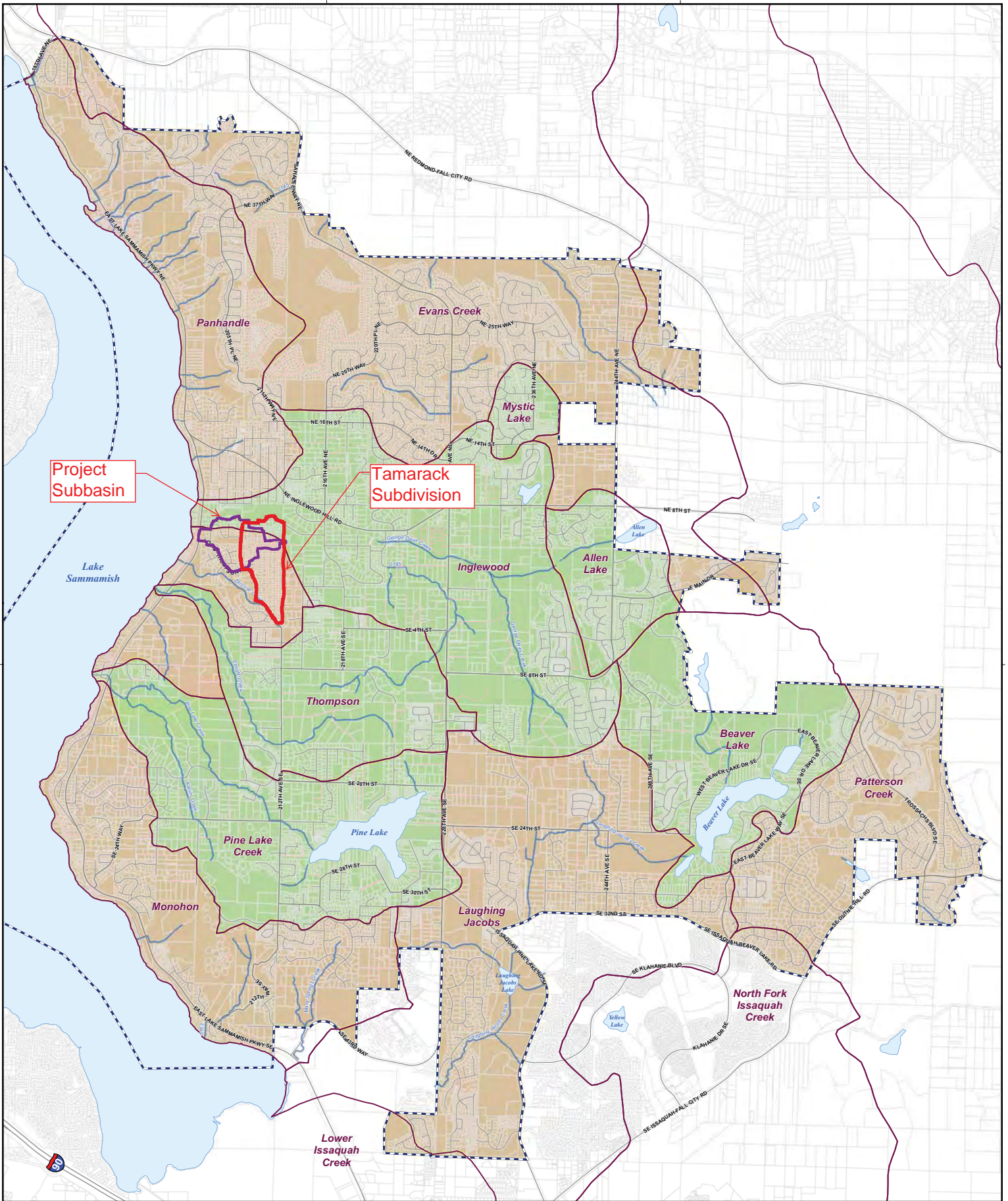


Figure 3: SWMM Model Diagram
Tamarack Drainage Improvement Project
Sammamish, WA



Project Subbasin

Tamarack Subdivision

- Conservation Flow Control (Level 2)
- Flood Problem Flow Control (Level 3)
- Drainage Basins

- Sammamish City Limits
- Streets - Public
- Streets - Private



Basin boundaries expressed on this map are approximate, and will need to be verified during the Downstream Analysis to determine the approximate flow control standard.



Flow Control Map



The information included on this map has been compiled from a variety of sources and is subject to change without notice.
Produced by the City of Sammamish 2014. No warranties of any sort, including but not limited to accuracy, fitness or merchantability, accompany this product.

APPENDIX B
MODELING DOCUMENTATION

WWHM2012
PROJECT REPORT

Tamarack Project Basin
Proposed Drainage Improvements

General Model Information

Project Name: Tamarack - Durations Existing
Site Name: Tamarack Basin - Lateral Flow Basin
Site Address:
City:
Report Date: 5/23/2016
Gage: Seatac
Data Start: 1948/10/01
Data End: 2009/09/30
Timestep: 15 Minute
Precip Scale: 1.00
Version Date: 2016/02/25
Version: 4.2.12

POC Thresholds

Low Flow Threshold for POC1: 50 Percent of the 2 Year
High Flow Threshold for POC1: 50 Year

Low Flow Threshold for POC2: 50 Percent of the 2 Year
High Flow Threshold for POC2: 50 Year

Low Flow Threshold for POC3: 50 Percent of the 2 Year
High Flow Threshold for POC3: 50 Year

Low Flow Threshold for POC4: 50 Percent of the 2 Year
High Flow Threshold for POC4: 50 Year

Low Flow Threshold for POC5: 50 Percent of the 2 Year
High Flow Threshold for POC5: 50 Year

Low Flow Threshold for POC6: 50 Percent of the 2 Year
High Flow Threshold for POC6: 50 Year

Low Flow Threshold for POC7: 50 Percent of the 2 Year
High Flow Threshold for POC7: 50 Year

Low Flow Threshold for POC8: 50 Percent of the 2 Year
High Flow Threshold for POC8: 50 Year

Landuse Basin Data

Predeveloped Land Use

Subbasin 1

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Mod 0.39

C, Lawn, Mod 0.95

Pervious Total 1.34

Impervious Land Use acre

ROADS MOD 0.35

ROOF TOPS FLAT 0.32

DRIVEWAYS MOD 0.14

Impervious Total 0.81

Basin Total 2.15

Element Flows To:

Surface

Interflow

Groundwater

Subbasin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	0.67
C, Lawn, Mod	0.41
Pervious Total	1.08
Impervious Land Use	acre
ROADS MOD	0.42
ROOF TOPS FLAT	0.08
DRIVEWAYS MOD	0.04
Impervious Total	0.54
Basin Total	1.62

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 3A

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	5.75
Pervious Total	5.75
Impervious Land Use	acre
ROADS STEEP	1.79
ROOF TOPS FLAT	2.6
DRIVEWAYS STEEP	1.11
Impervious Total	5.5
Basin Total	11.25

Element Flows To:

Surface	Interflow	Groundwater
Subbasin 3 Detention	Subbasin 3 Detention	

Subbasin 5

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	1.39
Pervious Total	1.39
Impervious Land Use	acre
ROADS STEEP	0.52
ROOF TOPS FLAT	0.55
DRIVEWAYS STEEP	0.24
Impervious Total	1.31
Basin Total	2.7

Element Flows To:

Surface	Interflow	Groundwater
Subbasin 5 Detention	Subbasin 5 Detention	

Subbasin 6

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	10.37
C, Lawn, Mod	0.04
Pervious Total	10.41
Impervious Land Use	acre
ROADS MOD	1.77
ROOF TOPS FLAT	2.59
DRIVEWAYS MOD	1.11
Impervious Total	5.47
Basin Total	15.88

Element Flows To:		
Surface	Interflow	Groundwater

Basin 4 - Perv Lateral Flow

Bypass: No

GroundWater: No

Pervious Land Use acre
A B, Forest, Mod 5.73

Element Flows To:
Surface Interflow Groundwater

Basin 4,7,8 Imperv Lateral

Bypass: No
Impervious Land Use acre
ROADS MOD LAT 3.96
Element Flows To:
Outlet 1 Outlet 2
Basin 4 - Perv Lateral Flow

Subbasin 8 - Perv Lateral Flow A/B

Bypass: No

GroundWater: No

Pervious Land Use acre
A B, Lawn, Steep 2.33

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral	Basin 4 - Perv Lateral	Basin 4 - Perv Lateral Flow

Subbasin 7 - Perv Lateral Flow C

Bypass: No

GroundWater: No

Pervious Land Use acre
C, Lawn, Steep .86

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral	Basin 4 - Perv Lateral	Basin 4 - Perv Lateral Flow

Subbasin 8 - Perv Lateral Flow C

Bypass: No

GroundWater: No

Pervious Land Use acre
C, Lawn, Steep 2.25

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral	Basin 4 - Perv Lateral	Basin 4 - Perv Lateral Flow

Subbasin 7 - Perv Lateral Flow A/B

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Steep .59

Element Flows To:

Surface

Interflow

Groundwater

Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow

Subbasin 3B

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	1.44
Pervious Total	1.44
Impervious Land Use	acre
ROADS STEEP	0.45
ROOF TOPS FLAT	0.65
DRIVEWAYS STEEP	0.28
Impervious Total	1.38
Basin Total	2.82

Element Flows To:
Surface Interflow Groundwater

Mitigated Land Use

Subbasin 1

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Mod 0.39

C, Lawn, Mod 0.95

Pervious Total 1.34

Impervious Land Use acre

ROADS MOD 0.35

ROOF TOPS FLAT 0.32

DRIVEWAYS MOD 0.14

Impervious Total 0.81

Basin Total 2.15

Element Flows To:

Surface

Interflow

Groundwater

Subbasin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	0.67
C, Lawn, Mod	0.41
Pervious Total	1.08
Impervious Land Use	acre
ROADS MOD	0.42
ROOF TOPS FLAT	0.08
DRIVEWAYS MOD	0.04
Impervious Total	0.54
Basin Total	1.62

Element Flows To:
Surface Interflow Groundwater

Subbasin 3A

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	5.75
Pervious Total	5.75
Impervious Land Use	acre
ROADS STEEP	1.79
ROOF TOPS FLAT	2.6
DRIVEWAYS STEEP	1.11
Impervious Total	5.5
Basin Total	11.25

Element Flows To:
Surface Tank 1 Interflow Tank 1 Groundwater

Subbasin 4

Bypass:	No
GroundWater:	No
Pervious Land Use A B, Forest, Mod	acre 5.73
Pervious Total	5.73
Impervious Land Use	acre
ROADS FLAT	0.06
ROOF TOPS FLAT	0.02
DRIVEWAYS MOD	0.01
Impervious Total	0.09
Basin Total	5.82

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 5

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	1.39
Pervious Total	1.39
Impervious Land Use	acre
ROADS STEEP	0.52
ROOF TOPS FLAT	0.55
DRIVEWAYS STEEP	0.24
Impervious Total	1.31
Basin Total	2.7

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1	Trapezoidal Pond 1	

Subbasin 6

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	10.37
C, Lawn, Mod	0.04
Pervious Total	10.41
Impervious Land Use	acre
ROADS MOD	1.77
ROOF TOPS FLAT	2.59
DRIVEWAYS MOD	1.11
Impervious Total	5.47
Basin Total	15.88

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 7

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	0.59
C, Lawn, Steep	0.86
Pervious Total	1.45
Impervious Land Use	acre
ROOF TOPS FLAT	0.62
DRIVEWAYS STEEP	0.26
Impervious Total	0.88
Basin Total	2.33

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 8

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Steep 2.33

C, Lawn, Steep 2.25

Pervious Total 4.58

Impervious Land Use acre

ROADS STEEP 1.78

ROOF TOPS FLAT 0.85

DRIVEWAYS STEEP 0.36

Impervious Total 2.99

Basin Total 7.57

Element Flows To:

Surface

Interflow

Groundwater

Basin 3B

Bypass: Yes

GroundWater: No

Pervious Land Use acre
A B, Lawn, Steep 1.44

Pervious Total 1.44

Impervious Land Use acre
ROADS STEEP 0.45
ROOF TOPS FLAT 0.65
DRIVEWAYS STEEP 0.28

Impervious Total 1.38

Basin Total 2.82

Element Flows To:
Surface

Interflow

Groundwater

Routing Elements

Predeveloped Routing

Subbasin 5 Detention

Bottom Length: 24.00 ft.
Bottom Width: 24.00 ft.
Depth: 8 ft.
Volume at riser head: 0.1096 acre-feet.
Side slope 1: 0.292 To 1
Side slope 2: 0.292 To 1
Side slope 3: 0.292 To 1
Side slope 4: 0.292 To 1
Discharge Structure
Riser Height: 7 ft.
Riser Diameter: 24 in.
Orifice 1 Diameter: 5.75 in. Elevation:0 ft.
Orifice 2 Diameter: 1 in. Elevation:6.5 ft.
Element Flows To:
Outlet 1 Outlet 2

Pond Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.013	0.000	0.000	0.000
0.0889	0.013	0.001	0.267	0.000
0.1778	0.013	0.002	0.378	0.000
0.2667	0.013	0.003	0.463	0.000
0.3556	0.013	0.004	0.535	0.000
0.4444	0.013	0.005	0.598	0.000
0.5333	0.013	0.007	0.655	0.000
0.6222	0.013	0.008	0.707	0.000
0.7111	0.013	0.009	0.756	0.000
0.8000	0.013	0.010	0.802	0.000
0.8889	0.013	0.012	0.845	0.000
0.9778	0.013	0.013	0.887	0.000
1.0667	0.013	0.014	0.926	0.000
1.1556	0.014	0.015	0.964	0.000
1.2444	0.014	0.017	1.000	0.000
1.3333	0.014	0.018	1.036	0.000
1.4222	0.014	0.019	1.070	0.000
1.5111	0.014	0.020	1.102	0.000
1.6000	0.014	0.022	1.134	0.000
1.6889	0.014	0.023	1.166	0.000
1.7778	0.014	0.024	1.196	0.000
1.8667	0.014	0.025	1.225	0.000
1.9556	0.014	0.027	1.254	0.000
2.0444	0.014	0.028	1.282	0.000
2.1333	0.014	0.029	1.310	0.000
2.2222	0.014	0.031	1.337	0.000
2.3111	0.014	0.032	1.364	0.000
2.4000	0.014	0.033	1.390	0.000
2.4889	0.014	0.034	1.415	0.000
2.5778	0.014	0.036	1.440	0.000
2.6667	0.015	0.037	1.465	0.000
2.7556	0.015	0.038	1.489	0.000

2.8444	0.015	0.040	1.513	0.000
2.9333	0.015	0.041	1.536	0.000
3.0222	0.015	0.043	1.559	0.000
3.1111	0.015	0.044	1.582	0.000
3.2000	0.015	0.045	1.605	0.000
3.2889	0.015	0.047	1.627	0.000
3.3778	0.015	0.048	1.649	0.000
3.4667	0.015	0.049	1.670	0.000
3.5556	0.015	0.051	1.691	0.000
3.6444	0.015	0.052	1.712	0.000
3.7333	0.015	0.054	1.733	0.000
3.8222	0.015	0.055	1.754	0.000
3.9111	0.015	0.056	1.774	0.000
4.0000	0.015	0.058	1.794	0.000
4.0889	0.016	0.059	1.814	0.000
4.1778	0.016	0.061	1.833	0.000
4.2667	0.016	0.062	1.853	0.000
4.3556	0.016	0.063	1.872	0.000
4.4444	0.016	0.065	1.891	0.000
4.5333	0.016	0.066	1.910	0.000
4.6222	0.016	0.068	1.928	0.000
4.7111	0.016	0.069	1.947	0.000
4.8000	0.016	0.071	1.965	0.000
4.8889	0.016	0.072	1.983	0.000
4.9778	0.016	0.074	2.001	0.000
5.0667	0.016	0.075	2.019	0.000
5.1556	0.016	0.077	2.037	0.000
5.2444	0.016	0.078	2.054	0.000
5.3333	0.016	0.080	2.072	0.000
5.4222	0.016	0.081	2.089	0.000
5.5111	0.017	0.083	2.106	0.000
5.6000	0.017	0.084	2.123	0.000
5.6889	0.017	0.086	2.140	0.000
5.7778	0.017	0.087	2.156	0.000
5.8667	0.017	0.089	2.173	0.000
5.9556	0.017	0.090	2.189	0.000
6.0444	0.017	0.092	2.205	0.000
6.1333	0.017	0.093	2.222	0.000
6.2222	0.017	0.095	2.238	0.000
6.3111	0.017	0.096	2.254	0.000
6.4000	0.017	0.098	2.269	0.000
6.4889	0.017	0.100	2.285	0.000
6.5778	0.017	0.101	2.308	0.000
6.6667	0.017	0.103	2.327	0.000
6.7556	0.017	0.104	2.345	0.000
6.8444	0.018	0.106	2.363	0.000
6.9333	0.018	0.108	2.380	0.000
7.0222	0.018	0.109	2.467	0.000
7.1111	0.018	0.111	3.198	0.000
7.2000	0.018	0.112	4.316	0.000
7.2889	0.018	0.114	5.685	0.000
7.3778	0.018	0.116	7.207	0.000
7.4667	0.018	0.117	8.785	0.000
7.5556	0.018	0.119	10.32	0.000
7.6444	0.018	0.121	11.71	0.000
7.7333	0.018	0.122	12.90	0.000
7.8222	0.018	0.124	13.83	0.000
7.9111	0.018	0.126	14.51	0.000

8.0000	0.018	0.127	15.03	0.000
8.0889	0.018	0.129	15.73	0.000

Subbasin 3 Detention

Dimensions
 Depth: 6 ft.
 Tank Type: Circular
 Diameter: 6 ft.
 Length: 171 ft.
 Discharge Structure
 Riser Height: 5 ft.
 Riser Diameter: 24 in.
 Orifice 1 Diameter: 3.17 in. Elevation: 0 ft.
 Element Flows To:
 Outlet 1 Outlet 2

Tank Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.000	0.000	0.000	0.000
0.0667	0.004	0.000	0.070	0.000
0.1333	0.006	0.000	0.099	0.000
0.2000	0.008	0.001	0.122	0.000
0.2667	0.009	0.001	0.140	0.000
0.3333	0.010	0.002	0.157	0.000
0.4000	0.011	0.003	0.172	0.000
0.4667	0.012	0.004	0.186	0.000
0.5333	0.013	0.004	0.199	0.000
0.6000	0.014	0.005	0.211	0.000
0.6667	0.014	0.006	0.222	0.000
0.7333	0.015	0.007	0.233	0.000
0.8000	0.016	0.008	0.243	0.000
0.8667	0.016	0.009	0.253	0.000
0.9333	0.017	0.011	0.263	0.000
1.0000	0.017	0.012	0.272	0.000
1.0667	0.018	0.013	0.281	0.000
1.1333	0.018	0.014	0.290	0.000
1.2000	0.018	0.015	0.298	0.000
1.2667	0.019	0.017	0.306	0.000
1.3333	0.019	0.018	0.314	0.000
1.4000	0.019	0.019	0.322	0.000
1.4667	0.020	0.021	0.330	0.000
1.5333	0.020	0.022	0.337	0.000
1.6000	0.020	0.023	0.344	0.000
1.6667	0.021	0.025	0.352	0.000
1.7333	0.021	0.026	0.359	0.000
1.8000	0.021	0.028	0.365	0.000
1.8667	0.021	0.029	0.372	0.000
1.9333	0.022	0.030	0.379	0.000
2.0000	0.022	0.032	0.385	0.000
2.0667	0.022	0.033	0.392	0.000
2.1333	0.022	0.035	0.398	0.000
2.2000	0.022	0.036	0.404	0.000
2.2667	0.022	0.038	0.410	0.000
2.3333	0.023	0.039	0.416	0.000
2.4000	0.023	0.041	0.422	0.000
2.4667	0.023	0.043	0.428	0.000
2.5333	0.023	0.044	0.434	0.000
2.6000	0.023	0.046	0.439	0.000

2.6667	0.023	0.047	0.445	0.000
2.7333	0.023	0.049	0.450	0.000
2.8000	0.023	0.050	0.456	0.000
2.8667	0.023	0.052	0.461	0.000
2.9333	0.023	0.053	0.467	0.000
3.0000	0.023	0.055	0.472	0.000
3.0667	0.023	0.057	0.477	0.000
3.1333	0.023	0.058	0.482	0.000
3.2000	0.023	0.060	0.487	0.000
3.2667	0.023	0.061	0.492	0.000
3.3333	0.023	0.063	0.497	0.000
3.4000	0.023	0.064	0.502	0.000
3.4667	0.023	0.066	0.507	0.000
3.5333	0.023	0.068	0.512	0.000
3.6000	0.023	0.069	0.517	0.000
3.6667	0.023	0.071	0.522	0.000
3.7333	0.022	0.072	0.526	0.000
3.8000	0.022	0.074	0.531	0.000
3.8667	0.022	0.075	0.536	0.000
3.9333	0.022	0.077	0.540	0.000
4.0000	0.022	0.078	0.545	0.000
4.0667	0.022	0.080	0.549	0.000
4.1333	0.021	0.081	0.554	0.000
4.2000	0.021	0.083	0.558	0.000
4.2667	0.021	0.084	0.563	0.000
4.3333	0.021	0.085	0.567	0.000
4.4000	0.020	0.087	0.572	0.000
4.4667	0.020	0.088	0.576	0.000
4.5333	0.020	0.090	0.580	0.000
4.6000	0.019	0.091	0.584	0.000
4.6667	0.019	0.092	0.589	0.000
4.7333	0.019	0.093	0.593	0.000
4.8000	0.018	0.095	0.597	0.000
4.8667	0.018	0.096	0.601	0.000
4.9333	0.018	0.097	0.605	0.000
5.0000	0.017	0.098	0.609	0.000
5.0667	0.017	0.100	0.978	0.000
5.1333	0.016	0.101	1.648	0.000
5.2000	0.016	0.102	2.508	0.000
5.2667	0.015	0.103	3.508	0.000
5.3333	0.014	0.104	4.609	0.000
5.4000	0.014	0.105	5.768	0.000
5.4667	0.013	0.106	6.945	0.000
5.5333	0.012	0.107	8.097	0.000
5.6000	0.011	0.107	9.185	0.000
5.6667	0.010	0.108	10.17	0.000
5.7333	0.009	0.109	11.03	0.000
5.8000	0.008	0.109	11.74	0.000
5.8667	0.006	0.110	12.31	0.000
5.9333	0.004	0.110	12.76	0.000
6.0000	0.000	0.111	13.13	0.000
6.0667	0.000	0.000	13.68	0.000

Mitigated Routing

Tank 1

Dimensions
Depth: 6 ft.
Tank Type: Circular
Diameter: 6 ft.
Length: 171 ft.
Discharge Structure
Riser Height: 5 ft.
Riser Diameter: 24 in.
Orifice 1 Diameter: 3.17 in. Elevation:0 ft.
Element Flows To:
Outlet 1 Outlet 2

Tank Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.000	0.000	0.000	0.000
0.0667	0.004	0.000	0.070	0.000
0.1333	0.006	0.000	0.099	0.000
0.2000	0.008	0.001	0.122	0.000
0.2667	0.009	0.001	0.140	0.000
0.3333	0.010	0.002	0.157	0.000
0.4000	0.011	0.003	0.172	0.000
0.4667	0.012	0.004	0.186	0.000
0.5333	0.013	0.004	0.199	0.000
0.6000	0.014	0.005	0.211	0.000
0.6667	0.014	0.006	0.222	0.000
0.7333	0.015	0.007	0.233	0.000
0.8000	0.016	0.008	0.243	0.000
0.8667	0.016	0.009	0.253	0.000
0.9333	0.017	0.011	0.263	0.000
1.0000	0.017	0.012	0.272	0.000
1.0667	0.018	0.013	0.281	0.000
1.1333	0.018	0.014	0.290	0.000
1.2000	0.018	0.015	0.298	0.000
1.2667	0.019	0.017	0.306	0.000
1.3333	0.019	0.018	0.314	0.000
1.4000	0.019	0.019	0.322	0.000
1.4667	0.020	0.021	0.330	0.000
1.5333	0.020	0.022	0.337	0.000
1.6000	0.020	0.023	0.344	0.000
1.6667	0.021	0.025	0.352	0.000
1.7333	0.021	0.026	0.359	0.000
1.8000	0.021	0.028	0.365	0.000
1.8667	0.021	0.029	0.372	0.000
1.9333	0.022	0.030	0.379	0.000
2.0000	0.022	0.032	0.385	0.000
2.0667	0.022	0.033	0.392	0.000
2.1333	0.022	0.035	0.398	0.000
2.2000	0.022	0.036	0.404	0.000
2.2667	0.022	0.038	0.410	0.000
2.3333	0.023	0.039	0.416	0.000
2.4000	0.023	0.041	0.422	0.000
2.4667	0.023	0.043	0.428	0.000

2.5333	0.023	0.044	0.434	0.000
2.6000	0.023	0.046	0.439	0.000
2.6667	0.023	0.047	0.445	0.000
2.7333	0.023	0.049	0.450	0.000
2.8000	0.023	0.050	0.456	0.000
2.8667	0.023	0.052	0.461	0.000
2.9333	0.023	0.053	0.467	0.000
3.0000	0.023	0.055	0.472	0.000
3.0667	0.023	0.057	0.477	0.000
3.1333	0.023	0.058	0.482	0.000
3.2000	0.023	0.060	0.487	0.000
3.2667	0.023	0.061	0.492	0.000
3.3333	0.023	0.063	0.497	0.000
3.4000	0.023	0.064	0.502	0.000
3.4667	0.023	0.066	0.507	0.000
3.5333	0.023	0.068	0.512	0.000
3.6000	0.023	0.069	0.517	0.000
3.6667	0.023	0.071	0.522	0.000
3.7333	0.022	0.072	0.526	0.000
3.8000	0.022	0.074	0.531	0.000
3.8667	0.022	0.075	0.536	0.000
3.9333	0.022	0.077	0.540	0.000
4.0000	0.022	0.078	0.545	0.000
4.0667	0.022	0.080	0.549	0.000
4.1333	0.021	0.081	0.554	0.000
4.2000	0.021	0.083	0.558	0.000
4.2667	0.021	0.084	0.563	0.000
4.3333	0.021	0.085	0.567	0.000
4.4000	0.020	0.087	0.572	0.000
4.4667	0.020	0.088	0.576	0.000
4.5333	0.020	0.090	0.580	0.000
4.6000	0.019	0.091	0.584	0.000
4.6667	0.019	0.092	0.589	0.000
4.7333	0.019	0.093	0.593	0.000
4.8000	0.018	0.095	0.597	0.000
4.8667	0.018	0.096	0.601	0.000
4.9333	0.018	0.097	0.605	0.000
5.0000	0.017	0.098	0.609	0.000
5.0667	0.017	0.100	0.978	0.000
5.1333	0.016	0.101	1.648	0.000
5.2000	0.016	0.102	2.508	0.000
5.2667	0.015	0.103	3.508	0.000
5.3333	0.014	0.104	4.609	0.000
5.4000	0.014	0.105	5.768	0.000
5.4667	0.013	0.106	6.945	0.000
5.5333	0.012	0.107	8.097	0.000
5.6000	0.011	0.107	9.185	0.000
5.6667	0.010	0.108	10.17	0.000
5.7333	0.009	0.109	11.03	0.000
5.8000	0.008	0.109	11.74	0.000
5.8667	0.006	0.110	12.31	0.000
5.9333	0.004	0.110	12.76	0.000
6.0000	0.000	0.111	13.13	0.000
6.0667	0.000	0.000	13.68	0.000

Trapezoidal Pond 1

Bottom Length: 24.00 ft.
 Bottom Width: 24.00 ft.
 Depth: 8 ft.
 Volume at riser head: 0.1096 acre-feet.
 Side slope 1: 0.292 To 1
 Side slope 2: 0.292 To 1
 Side slope 3: 0.292 To 1
 Side slope 4: 0.292 To 1
 Discharge Structure
 Riser Height: 7 ft.
 Riser Diameter: 24 in.
 Orifice 1 Diameter: 5.75 in. Elevation:0 ft.
 Orifice 2 Diameter: 1 in. Elevation:6.5 ft.
 Element Flows To:
 Outlet 1 Outlet 2

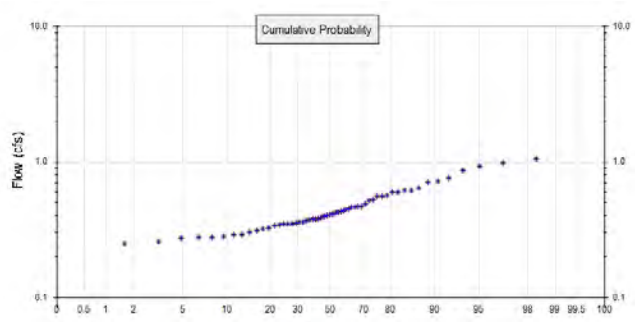
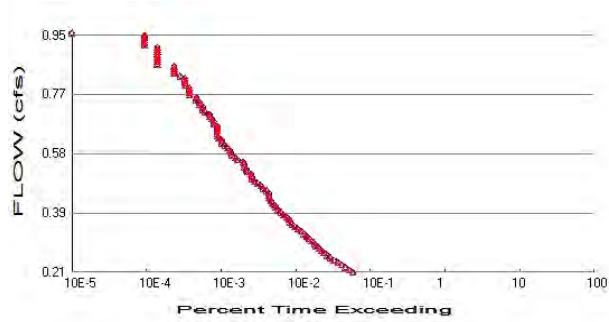
Pond Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.013	0.000	0.000	0.000
0.0889	0.013	0.001	0.267	0.000
0.1778	0.013	0.002	0.378	0.000
0.2667	0.013	0.003	0.463	0.000
0.3556	0.013	0.004	0.535	0.000
0.4444	0.013	0.005	0.598	0.000
0.5333	0.013	0.007	0.655	0.000
0.6222	0.013	0.008	0.707	0.000
0.7111	0.013	0.009	0.756	0.000
0.8000	0.013	0.010	0.802	0.000
0.8889	0.013	0.012	0.845	0.000
0.9778	0.013	0.013	0.887	0.000
1.0667	0.013	0.014	0.926	0.000
1.1556	0.014	0.015	0.964	0.000
1.2444	0.014	0.017	1.000	0.000
1.3333	0.014	0.018	1.036	0.000
1.4222	0.014	0.019	1.070	0.000
1.5111	0.014	0.020	1.102	0.000
1.6000	0.014	0.022	1.134	0.000
1.6889	0.014	0.023	1.166	0.000
1.7778	0.014	0.024	1.196	0.000
1.8667	0.014	0.025	1.225	0.000
1.9556	0.014	0.027	1.254	0.000
2.0444	0.014	0.028	1.282	0.000
2.1333	0.014	0.029	1.310	0.000
2.2222	0.014	0.031	1.337	0.000
2.3111	0.014	0.032	1.364	0.000
2.4000	0.014	0.033	1.390	0.000
2.4889	0.014	0.034	1.415	0.000
2.5778	0.014	0.036	1.440	0.000
2.6667	0.015	0.037	1.465	0.000
2.7556	0.015	0.038	1.489	0.000
2.8444	0.015	0.040	1.513	0.000
2.9333	0.015	0.041	1.536	0.000
3.0222	0.015	0.043	1.559	0.000
3.1111	0.015	0.044	1.582	0.000

3.2000	0.015	0.045	1.605	0.000
3.2889	0.015	0.047	1.627	0.000
3.3778	0.015	0.048	1.649	0.000
3.4667	0.015	0.049	1.670	0.000
3.5556	0.015	0.051	1.691	0.000
3.6444	0.015	0.052	1.712	0.000
3.7333	0.015	0.054	1.733	0.000
3.8222	0.015	0.055	1.754	0.000
3.9111	0.015	0.056	1.774	0.000
4.0000	0.015	0.058	1.794	0.000
4.0889	0.016	0.059	1.814	0.000
4.1778	0.016	0.061	1.833	0.000
4.2667	0.016	0.062	1.853	0.000
4.3556	0.016	0.063	1.872	0.000
4.4444	0.016	0.065	1.891	0.000
4.5333	0.016	0.066	1.910	0.000
4.6222	0.016	0.068	1.928	0.000
4.7111	0.016	0.069	1.947	0.000
4.8000	0.016	0.071	1.965	0.000
4.8889	0.016	0.072	1.983	0.000
4.9778	0.016	0.074	2.001	0.000
5.0667	0.016	0.075	2.019	0.000
5.1556	0.016	0.077	2.037	0.000
5.2444	0.016	0.078	2.054	0.000
5.3333	0.016	0.080	2.072	0.000
5.4222	0.016	0.081	2.089	0.000
5.5111	0.017	0.083	2.106	0.000
5.6000	0.017	0.084	2.123	0.000
5.6889	0.017	0.086	2.140	0.000
5.7778	0.017	0.087	2.156	0.000
5.8667	0.017	0.089	2.173	0.000
5.9556	0.017	0.090	2.189	0.000
6.0444	0.017	0.092	2.205	0.000
6.1333	0.017	0.093	2.222	0.000
6.2222	0.017	0.095	2.238	0.000
6.3111	0.017	0.096	2.254	0.000
6.4000	0.017	0.098	2.269	0.000
6.4889	0.017	0.100	2.285	0.000
6.5778	0.017	0.101	2.308	0.000
6.6667	0.017	0.103	2.327	0.000
6.7556	0.017	0.104	2.345	0.000
6.8444	0.018	0.106	2.363	0.000
6.9333	0.018	0.108	2.380	0.000
7.0222	0.018	0.109	2.467	0.000
7.1111	0.018	0.111	3.198	0.000
7.2000	0.018	0.112	4.316	0.000
7.2889	0.018	0.114	5.685	0.000
7.3778	0.018	0.116	7.207	0.000
7.4667	0.018	0.117	8.785	0.000
7.5556	0.018	0.119	10.32	0.000
7.6444	0.018	0.121	11.71	0.000
7.7333	0.018	0.122	12.90	0.000
7.8222	0.018	0.124	13.83	0.000
7.9111	0.018	0.126	14.51	0.000
8.0000	0.018	0.127	15.03	0.000
8.0889	0.018	0.129	15.73	0.000

Analysis Results

POC 1



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1

Total Pervious Area: 1.34
 Total Impervious Area: 0.81

Mitigated Landuse Totals for POC #1

Total Pervious Area: 1.34
 Total Impervious Area: 0.81

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.416796
5 year	0.567316
10 year	0.677895
25 year	0.830552
50 year	0.954007
100 year	1.086099

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.416796
5 year	0.567316
10 year	0.677895
25 year	0.830552
50 year	0.954007
100 year	1.086099

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.612	0.612
1950	0.594	0.594
1951	0.375	0.375
1952	0.249	0.249
1953	0.279	0.279
1954	0.341	0.341
1955	0.379	0.379
1956	0.346	0.346
1957	0.439	0.439
1958	0.321	0.321

1959	0.300	0.300
1960	0.393	0.393
1961	0.348	0.348
1962	0.274	0.274
1963	0.376	0.376
1964	0.324	0.324
1965	0.459	0.459
1966	0.282	0.282
1967	0.596	0.596
1968	0.613	0.613
1969	0.414	0.414
1970	0.386	0.386
1971	0.470	0.470
1972	0.559	0.559
1973	0.243	0.243
1974	0.459	0.459
1975	0.449	0.449
1976	0.356	0.356
1977	0.338	0.338
1978	0.425	0.425
1979	0.518	0.518
1980	0.717	0.717
1981	0.403	0.403
1982	0.637	0.637
1983	0.436	0.436
1984	0.289	0.289
1985	0.394	0.394
1986	0.366	0.366
1987	0.487	0.487
1988	0.277	0.277
1989	0.423	0.423
1990	1.046	1.046
1991	0.764	0.764
1992	0.309	0.309
1993	0.288	0.288
1994	0.258	0.258
1995	0.356	0.356
1996	0.561	0.561
1997	0.430	0.430
1998	0.377	0.377
1999	0.920	0.920
2000	0.410	0.410
2001	0.408	0.408
2002	0.554	0.554
2003	0.525	0.525
2004	0.856	0.856
2005	0.352	0.352
2006	0.349	0.349
2007	0.987	0.987
2008	0.711	0.711
2009	0.468	0.468

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	1.0458	1.0458
2	0.9867	0.9867
3	0.9201	0.9201

4	0.8561	0.8561
5	0.7635	0.7635
6	0.7165	0.7165
7	0.7114	0.7114
8	0.6369	0.6369
9	0.6132	0.6132
10	0.6116	0.6116
11	0.5962	0.5962
12	0.5937	0.5937
13	0.5615	0.5615
14	0.5589	0.5589
15	0.5537	0.5537
16	0.5252	0.5252
17	0.5181	0.5181
18	0.4874	0.4874
19	0.4696	0.4696
20	0.4685	0.4685
21	0.4595	0.4595
22	0.4590	0.4590
23	0.4494	0.4494
24	0.4394	0.4394
25	0.4358	0.4358
26	0.4304	0.4304
27	0.4251	0.4251
28	0.4234	0.4234
29	0.4141	0.4141
30	0.4101	0.4101
31	0.4077	0.4077
32	0.4025	0.4025
33	0.3944	0.3944
34	0.3933	0.3933
35	0.3861	0.3861
36	0.3787	0.3787
37	0.3767	0.3767
38	0.3759	0.3759
39	0.3748	0.3748
40	0.3662	0.3662
41	0.3562	0.3562
42	0.3559	0.3559
43	0.3525	0.3525
44	0.3487	0.3487
45	0.3483	0.3483
46	0.3461	0.3461
47	0.3406	0.3406
48	0.3377	0.3377
49	0.3242	0.3242
50	0.3207	0.3207
51	0.3093	0.3093
52	0.3002	0.3002
53	0.2886	0.2886
54	0.2876	0.2876
55	0.2824	0.2824
56	0.2786	0.2786
57	0.2767	0.2767
58	0.2740	0.2740
59	0.2579	0.2579
60	0.2488	0.2488
61	0.2429	0.2429

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.2084	1243	1243	100	Pass
0.2159	1126	1126	100	Pass
0.2235	985	985	100	Pass
0.2310	885	885	100	Pass
0.2385	786	786	100	Pass
0.2461	697	697	100	Pass
0.2536	625	625	100	Pass
0.2611	571	571	100	Pass
0.2686	515	515	100	Pass
0.2762	474	474	100	Pass
0.2837	443	443	100	Pass
0.2912	403	403	100	Pass
0.2988	379	379	100	Pass
0.3063	352	352	100	Pass
0.3138	321	321	100	Pass
0.3214	297	297	100	Pass
0.3289	274	274	100	Pass
0.3364	250	250	100	Pass
0.3440	229	229	100	Pass
0.3515	210	210	100	Pass
0.3590	190	190	100	Pass
0.3666	182	182	100	Pass
0.3741	172	172	100	Pass
0.3816	162	162	100	Pass
0.3892	148	148	100	Pass
0.3967	137	137	100	Pass
0.4042	124	124	100	Pass
0.4117	116	116	100	Pass
0.4193	110	110	100	Pass
0.4268	103	103	100	Pass
0.4343	100	100	100	Pass
0.4419	94	94	100	Pass
0.4494	93	93	100	Pass
0.4569	92	92	100	Pass
0.4645	87	87	100	Pass
0.4720	79	79	100	Pass
0.4795	73	73	100	Pass
0.4871	67	67	100	Pass
0.4946	60	60	100	Pass
0.5021	56	56	100	Pass
0.5097	55	55	100	Pass
0.5172	54	54	100	Pass
0.5247	48	48	100	Pass
0.5322	46	46	100	Pass
0.5398	44	44	100	Pass
0.5473	43	43	100	Pass
0.5548	42	42	100	Pass
0.5624	35	35	100	Pass
0.5699	33	33	100	Pass
0.5774	30	30	100	Pass
0.5850	29	29	100	Pass
0.5925	28	28	100	Pass
0.6000	26	26	100	Pass

0.6076	24	24	100	Pass
0.6151	22	22	100	Pass
0.6226	22	22	100	Pass
0.6302	20	20	100	Pass
0.6377	19	19	100	Pass
0.6452	19	19	100	Pass
0.6528	19	19	100	Pass
0.6603	19	19	100	Pass
0.6678	19	19	100	Pass
0.6753	17	17	100	Pass
0.6829	17	17	100	Pass
0.6904	16	16	100	Pass
0.6979	15	15	100	Pass
0.7055	15	15	100	Pass
0.7130	13	13	100	Pass
0.7205	12	12	100	Pass
0.7281	12	12	100	Pass
0.7356	11	11	100	Pass
0.7431	11	11	100	Pass
0.7507	10	10	100	Pass
0.7582	10	10	100	Pass
0.7657	8	8	100	Pass
0.7733	8	8	100	Pass
0.7808	8	8	100	Pass
0.7883	8	8	100	Pass
0.7958	7	7	100	Pass
0.8034	7	7	100	Pass
0.8109	7	7	100	Pass
0.8184	7	7	100	Pass
0.8260	6	6	100	Pass
0.8335	5	5	100	Pass
0.8410	5	5	100	Pass
0.8486	5	5	100	Pass
0.8561	5	5	100	Pass
0.8636	3	3	100	Pass
0.8712	3	3	100	Pass
0.8787	3	3	100	Pass
0.8862	3	3	100	Pass
0.8938	3	3	100	Pass
0.9013	3	3	100	Pass
0.9088	3	3	100	Pass
0.9163	3	3	100	Pass
0.9239	2	2	100	Pass
0.9314	2	2	100	Pass
0.9389	2	2	100	Pass
0.9465	2	2	100	Pass
0.9540	2	2	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

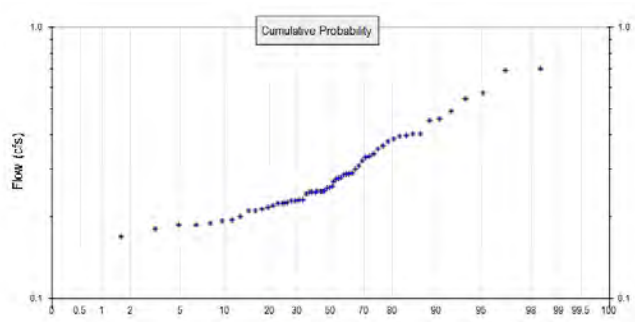
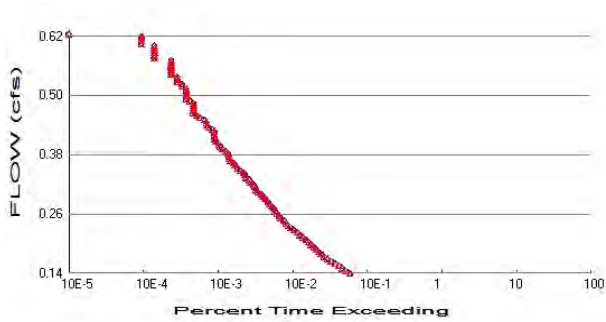
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

POC 2



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #2

Total Pervious Area: 1.08
Total Impervious Area: 0.54

Mitigated Landuse Totals for POC #2

Total Pervious Area: 1.08
Total Impervious Area: 0.54

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	Flow(cfs)
2 year	0.272287
5 year	0.368456
10 year	0.440235
25 year	0.540614
50 year	0.622745
100 year	0.711146

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	Flow(cfs)
2 year	0.272287
5 year	0.368456
10 year	0.440235
25 year	0.540614
50 year	0.622745
100 year	0.711146

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #2

Year	Predeveloped	Mitigated
1949	0.378	0.378
1950	0.399	0.399
1951	0.247	0.247
1952	0.164	0.164
1953	0.189	0.189
1954	0.231	0.231
1955	0.249	0.249
1956	0.246	0.246
1957	0.270	0.270
1958	0.210	0.210
1959	0.210	0.210

1960	0.247	0.247
1961	0.224	0.224
1962	0.181	0.181
1963	0.243	0.243
1964	0.224	0.224
1965	0.285	0.285
1966	0.186	0.186
1967	0.405	0.405
1968	0.403	0.403
1969	0.254	0.254
1970	0.247	0.247
1971	0.300	0.300
1972	0.366	0.366
1973	0.169	0.169
1974	0.290	0.290
1975	0.275	0.275
1976	0.229	0.229
1977	0.220	0.220
1978	0.287	0.287
1979	0.355	0.355
1980	0.452	0.452
1981	0.256	0.256
1982	0.387	0.387
1983	0.287	0.287
1984	0.193	0.193
1985	0.248	0.248
1986	0.230	0.230
1987	0.322	0.322
1988	0.195	0.195
1989	0.308	0.308
1990	0.703	0.703
1991	0.489	0.489
1992	0.201	0.201
1993	0.213	0.213
1994	0.187	0.187
1995	0.229	0.229
1996	0.395	0.395
1997	0.278	0.278
1998	0.246	0.246
1999	0.574	0.574
2000	0.258	0.258
2001	0.279	0.279
2002	0.333	0.333
2003	0.340	0.340
2004	0.543	0.543
2005	0.216	0.216
2006	0.226	0.226
2007	0.692	0.692
2008	0.460	0.460
2009	0.331	0.331

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #2

Rank	Predeveloped	Mitigated
1	0.7030	0.7030
2	0.6916	0.6916
3	0.5737	0.5737
4	0.5428	0.5428

5	0.4887	0.4887
6	0.4598	0.4598
7	0.4521	0.4521
8	0.4053	0.4053
9	0.4035	0.4035
10	0.3990	0.3990
11	0.3949	0.3949
12	0.3871	0.3871
13	0.3783	0.3783
14	0.3659	0.3659
15	0.3551	0.3551
16	0.3400	0.3400
17	0.3326	0.3326
18	0.3306	0.3306
19	0.3219	0.3219
20	0.3085	0.3085
21	0.3004	0.3004
22	0.2896	0.2896
23	0.2871	0.2871
24	0.2870	0.2870
25	0.2849	0.2849
26	0.2793	0.2793
27	0.2780	0.2780
28	0.2749	0.2749
29	0.2705	0.2705
30	0.2578	0.2578
31	0.2561	0.2561
32	0.2541	0.2541
33	0.2487	0.2487
34	0.2476	0.2476
35	0.2472	0.2472
36	0.2469	0.2469
37	0.2466	0.2466
38	0.2464	0.2464
39	0.2458	0.2458
40	0.2427	0.2427
41	0.2312	0.2312
42	0.2302	0.2302
43	0.2294	0.2294
44	0.2290	0.2290
45	0.2259	0.2259
46	0.2245	0.2245
47	0.2235	0.2235
48	0.2198	0.2198
49	0.2159	0.2159
50	0.2133	0.2133
51	0.2102	0.2102
52	0.2098	0.2098
53	0.2005	0.2005
54	0.1951	0.1951
55	0.1926	0.1926
56	0.1893	0.1893
57	0.1867	0.1867
58	0.1864	0.1864
59	0.1806	0.1806
60	0.1694	0.1694
61	0.1636	0.1636

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1361	1238	1238	100	Pass
0.1411	1100	1100	100	Pass
0.1460	992	992	100	Pass
0.1509	887	887	100	Pass
0.1558	786	786	100	Pass
0.1607	701	701	100	Pass
0.1656	622	622	100	Pass
0.1705	557	557	100	Pass
0.1755	512	512	100	Pass
0.1804	471	471	100	Pass
0.1853	442	442	100	Pass
0.1902	409	409	100	Pass
0.1951	377	377	100	Pass
0.2000	347	347	100	Pass
0.2050	319	319	100	Pass
0.2099	293	293	100	Pass
0.2148	266	266	100	Pass
0.2197	246	246	100	Pass
0.2246	221	221	100	Pass
0.2295	202	202	100	Pass
0.2344	185	185	100	Pass
0.2394	174	174	100	Pass
0.2443	161	161	100	Pass
0.2492	146	146	100	Pass
0.2541	140	140	100	Pass
0.2590	131	131	100	Pass
0.2639	125	125	100	Pass
0.2689	117	117	100	Pass
0.2738	111	111	100	Pass
0.2787	103	103	100	Pass
0.2836	99	99	100	Pass
0.2885	91	91	100	Pass
0.2934	85	85	100	Pass
0.2983	80	80	100	Pass
0.3033	73	73	100	Pass
0.3082	69	69	100	Pass
0.3131	65	65	100	Pass
0.3180	63	63	100	Pass
0.3229	58	58	100	Pass
0.3278	56	56	100	Pass
0.3328	51	51	100	Pass
0.3377	49	49	100	Pass
0.3426	46	46	100	Pass
0.3475	42	42	100	Pass
0.3524	39	39	100	Pass
0.3573	36	36	100	Pass
0.3622	34	34	100	Pass
0.3672	31	31	100	Pass
0.3721	30	30	100	Pass
0.3770	30	30	100	Pass
0.3819	29	29	100	Pass
0.3868	27	27	100	Pass
0.3917	24	24	100	Pass

0.3966	23	23	100	Pass
0.4016	22	22	100	Pass
0.4065	20	20	100	Pass
0.4114	19	19	100	Pass
0.4163	19	19	100	Pass
0.4212	19	19	100	Pass
0.4261	19	19	100	Pass
0.4311	18	18	100	Pass
0.4360	16	16	100	Pass
0.4409	15	15	100	Pass
0.4458	15	15	100	Pass
0.4507	14	14	100	Pass
0.4556	12	12	100	Pass
0.4605	11	11	100	Pass
0.4655	10	10	100	Pass
0.4704	10	10	100	Pass
0.4753	10	10	100	Pass
0.4802	10	10	100	Pass
0.4851	10	10	100	Pass
0.4900	9	9	100	Pass
0.4950	8	8	100	Pass
0.4999	8	8	100	Pass
0.5048	8	8	100	Pass
0.5097	8	8	100	Pass
0.5146	8	8	100	Pass
0.5195	7	7	100	Pass
0.5244	7	7	100	Pass
0.5294	6	6	100	Pass
0.5343	6	6	100	Pass
0.5392	6	6	100	Pass
0.5441	5	5	100	Pass
0.5490	5	5	100	Pass
0.5539	5	5	100	Pass
0.5588	5	5	100	Pass
0.5638	5	5	100	Pass
0.5687	5	5	100	Pass
0.5736	5	5	100	Pass
0.5785	3	3	100	Pass
0.5834	3	3	100	Pass
0.5883	3	3	100	Pass
0.5933	3	3	100	Pass
0.5982	3	3	100	Pass
0.6031	3	3	100	Pass
0.6080	2	2	100	Pass
0.6129	2	2	100	Pass
0.6178	2	2	100	Pass
0.6227	2	2	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #2

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

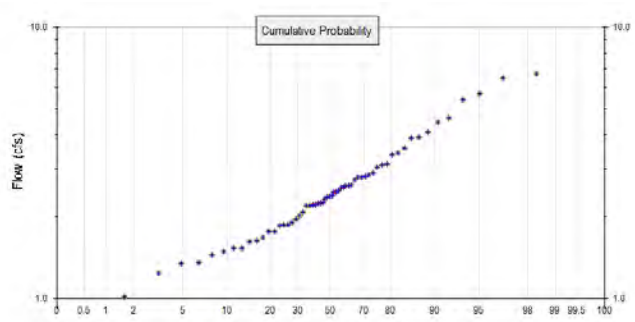
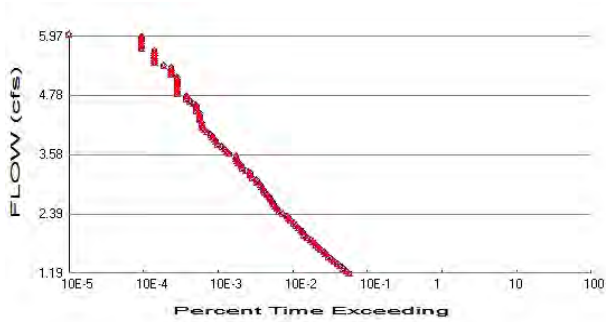
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

POC 3



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #3

Total Pervious Area: 7.19
 Total Impervious Area: 6.88

Mitigated Landuse Totals for POC #3

Total Pervious Area: 7.19
 Total Impervious Area: 6.88

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #3

Return Period	Flow(cfs)
2 year	2.378656
5 year	3.418804
10 year	4.165974
25 year	5.17525
50 year	5.974148
100 year	6.813226

Flow Frequency Return Periods for Mitigated. POC #3

Return Period	Flow(cfs)
2 year	2.378656
5 year	3.418804
10 year	4.165974
25 year	5.17525
50 year	5.974148
100 year	6.813226

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #3

Year	Predeveloped	Mitigated
1949	3.131	3.131
1950	3.894	3.894
1951	2.572	2.572
1952	1.864	1.864
1953	2.249	2.249
1954	1.528	1.528
1955	2.461	2.461
1956	2.259	2.259
1957	2.802	2.802
1958	1.530	1.530
1959	1.671	1.671

1960	2.456	2.456
1961	2.385	2.385
1962	1.236	1.236
1963	1.485	1.485
1964	1.866	1.866
1965	2.361	2.361
1966	1.958	1.958
1967	3.927	3.927
1968	2.625	2.625
1969	2.214	2.214
1970	1.901	1.901
1971	2.212	2.212
1972	3.043	3.043
1973	1.768	1.768
1974	1.613	1.613
1975	2.801	2.801
1976	1.625	1.625
1977	1.847	1.847
1978	2.731	2.731
1979	2.485	2.485
1980	2.564	2.564
1981	2.886	2.886
1982	4.085	4.085
1983	3.389	3.389
1984	1.441	1.441
1985	2.812	2.812
1986	2.374	2.374
1987	2.605	2.605
1988	2.198	2.198
1989	1.356	1.356
1990	6.720	6.720
1991	4.633	4.633
1992	2.016	2.016
1993	0.882	0.882
1994	1.011	1.011
1995	2.236	2.236
1996	3.582	3.582
1997	2.845	2.845
1998	1.757	1.757
1999	5.697	5.697
2000	2.598	2.598
2001	2.076	2.076
2002	3.439	3.439
2003	1.343	1.343
2004	5.407	5.407
2005	2.319	2.319
2006	2.196	2.196
2007	6.481	6.481
2008	4.449	4.449
2009	3.114	3.114

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #3

Rank	Predeveloped	Mitigated
1	6.7202	6.7202
2	6.4813	6.4813
3	5.6972	5.6972
4	5.4074	5.4074

5	4.6332	4.6332
6	4.4492	4.4492
7	4.0852	4.0852
8	3.9267	3.9267
9	3.8940	3.8940
10	3.5825	3.5825
11	3.4391	3.4391
12	3.3887	3.3887
13	3.1314	3.1314
14	3.1144	3.1144
15	3.0427	3.0427
16	2.8861	2.8861
17	2.8452	2.8452
18	2.8120	2.8120
19	2.8020	2.8020
20	2.8006	2.8006
21	2.7309	2.7309
22	2.6254	2.6254
23	2.6052	2.6052
24	2.5982	2.5982
25	2.5724	2.5724
26	2.5640	2.5640
27	2.4852	2.4852
28	2.4609	2.4609
29	2.4561	2.4561
30	2.3851	2.3851
31	2.3739	2.3739
32	2.3613	2.3613
33	2.3189	2.3189
34	2.2595	2.2595
35	2.2488	2.2488
36	2.2364	2.2364
37	2.2140	2.2140
38	2.2115	2.2115
39	2.1977	2.1977
40	2.1956	2.1956
41	2.0760	2.0760
42	2.0161	2.0161
43	1.9577	1.9577
44	1.9013	1.9013
45	1.8659	1.8659
46	1.8640	1.8640
47	1.8468	1.8468
48	1.7676	1.7676
49	1.7570	1.7570
50	1.6711	1.6711
51	1.6247	1.6247
52	1.6125	1.6125
53	1.5303	1.5303
54	1.5283	1.5283
55	1.4848	1.4848
56	1.4407	1.4407
57	1.3557	1.3557
58	1.3432	1.3432
59	1.2356	1.2356
60	1.0109	1.0109
61	0.8821	0.8821

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.1893	1220	1220	100	Pass
1.2377	1117	1117	100	Pass
1.2860	1029	1029	100	Pass
1.3343	923	923	100	Pass
1.3827	838	838	100	Pass
1.4310	763	763	100	Pass
1.4793	709	709	100	Pass
1.5276	635	635	100	Pass
1.5760	590	590	100	Pass
1.6243	553	553	100	Pass
1.6726	502	502	100	Pass
1.7210	470	470	100	Pass
1.7693	437	437	100	Pass
1.8176	405	405	100	Pass
1.8660	375	375	100	Pass
1.9143	333	333	100	Pass
1.9626	306	306	100	Pass
2.0110	287	287	100	Pass
2.0593	274	274	100	Pass
2.1076	254	254	100	Pass
2.1560	238	238	100	Pass
2.2043	222	222	100	Pass
2.2526	198	198	100	Pass
2.3010	189	189	100	Pass
2.3493	177	177	100	Pass
2.3976	157	157	100	Pass
2.4459	140	140	100	Pass
2.4943	131	131	100	Pass
2.5426	123	123	100	Pass
2.5909	117	117	100	Pass
2.6393	113	113	100	Pass
2.6876	106	106	100	Pass
2.7359	102	102	100	Pass
2.7843	96	96	100	Pass
2.8326	90	90	100	Pass
2.8809	87	87	100	Pass
2.9293	81	81	100	Pass
2.9776	79	79	100	Pass
3.0259	72	72	100	Pass
3.0743	70	70	100	Pass
3.1226	61	61	100	Pass
3.1709	57	57	100	Pass
3.2193	57	57	100	Pass
3.2676	51	51	100	Pass
3.3159	45	45	100	Pass
3.3642	43	43	100	Pass
3.4126	40	40	100	Pass
3.4609	38	38	100	Pass
3.5092	37	37	100	Pass
3.5576	37	37	100	Pass
3.6059	30	30	100	Pass
3.6542	28	28	100	Pass
3.7026	26	26	100	Pass

3.7509	24	24	100	Pass
3.7992	21	21	100	Pass
3.8476	20	20	100	Pass
3.8959	19	19	100	Pass
3.9442	18	18	100	Pass
3.9926	17	17	100	Pass
4.0409	15	15	100	Pass
4.0892	14	14	100	Pass
4.1376	13	13	100	Pass
4.1859	13	13	100	Pass
4.2342	13	13	100	Pass
4.2825	12	12	100	Pass
4.3309	12	12	100	Pass
4.3792	12	12	100	Pass
4.4275	12	12	100	Pass
4.4759	11	11	100	Pass
4.5242	11	11	100	Pass
4.5725	11	11	100	Pass
4.6209	10	10	100	Pass
4.6692	9	9	100	Pass
4.7175	8	8	100	Pass
4.7659	8	8	100	Pass
4.8142	6	6	100	Pass
4.8625	6	6	100	Pass
4.9109	6	6	100	Pass
4.9592	6	6	100	Pass
5.0075	6	6	100	Pass
5.0558	6	6	100	Pass
5.1042	6	6	100	Pass
5.1525	6	6	100	Pass
5.2008	5	5	100	Pass
5.2492	5	5	100	Pass
5.2975	5	5	100	Pass
5.3458	5	5	100	Pass
5.3942	4	4	100	Pass
5.4425	3	3	100	Pass
5.4908	3	3	100	Pass
5.5392	3	3	100	Pass
5.5875	3	3	100	Pass
5.6358	3	3	100	Pass
5.6842	3	3	100	Pass
5.7325	2	2	100	Pass
5.7808	2	2	100	Pass
5.8292	2	2	100	Pass
5.8775	2	2	100	Pass
5.9258	2	2	100	Pass
5.9741	2	2	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #3

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

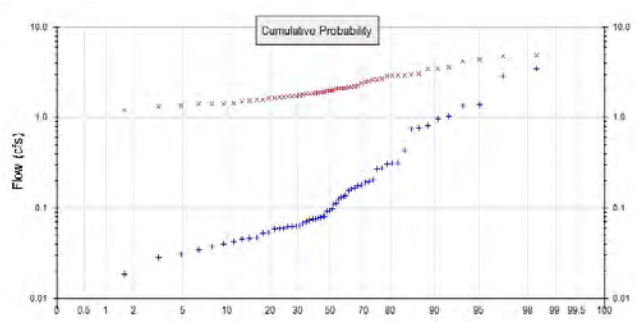
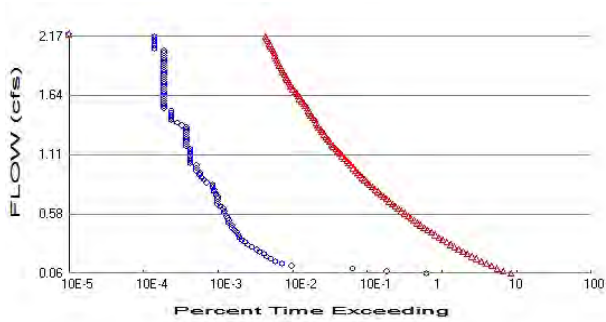
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Tank 1 POC	<input type="checkbox"/>	809.70			<input type="checkbox"/>	0.00			
Total Volume Infiltrated		809.70	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

POC 4



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #4

Total Pervious Area: 11.76
 Total Impervious Area: 3.96

Mitigated Landuse Totals for POC #4

Total Pervious Area: 11.76
 Total Impervious Area: 3.96

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #4

Return Period	Flow(cfs)
2 year	0.1159
5 year	0.338036
10 year	0.63464
25 year	1.312858
50 year	2.165686
100 year	3.469708

Flow Frequency Return Periods for Mitigated. POC #4

Return Period	Flow(cfs)
2 year	2.052285
5 year	2.75609
10 year	3.267799
25 year	3.968342
50 year	4.530714
100 year	5.128923

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #4

Year	Predeveloped	Mitigated
1949	0.312	2.935
1950	1.365	2.848
1951	0.308	1.827
1952	0.070	1.231
1953	0.053	1.427
1954	0.166	1.701
1955	0.094	1.842
1956	0.276	1.836
1957	0.076	2.068
1958	0.063	1.564
1959	0.091	1.524

1960	0.193	1.902
1961	0.155	1.700
1962	0.031	1.351
1963	0.109	1.853
1964	0.176	1.671
1965	0.073	2.159
1966	0.068	1.429
1967	0.958	2.966
1968	0.194	3.031
1969	0.077	1.979
1970	0.047	1.910
1971	0.080	2.280
1972	1.027	2.681
1973	0.063	1.230
1974	0.080	2.140
1975	0.126	2.115
1976	0.130	1.751
1977	0.019	1.664
1978	0.058	2.123
1979	0.038	2.633
1980	0.098	3.501
1981	0.062	1.974
1982	0.137	2.950
1983	0.079	2.171
1984	0.046	1.450
1985	0.034	1.882
1986	0.112	1.783
1987	0.162	2.395
1988	0.042	1.405
1989	0.040	2.236
1990	2.872	4.849
1991	0.750	3.620
1992	0.063	1.552
1993	0.046	1.583
1994	0.028	1.318
1995	0.179	1.710
1996	0.816	2.901
1997	0.312	2.018
1998	0.060	1.894
1999	1.400	4.367
2000	0.054	1.995
2001	0.018	2.100
2002	0.134	2.540
2003	0.075	2.646
2004	0.427	4.161
2005	0.059	1.664
2006	0.204	1.669
2007	3.489	4.725
2008	0.764	3.438
2009	0.270	2.471

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #4

Rank	Predeveloped	Mitigated
1	3.4888	4.8489
2	2.8717	4.7247
3	1.3996	4.3672
4	1.3649	4.1611

5	1.0265	3.6199
6	0.9575	3.5011
7	0.8164	3.4383
8	0.7644	3.0308
9	0.7504	2.9662
10	0.4265	2.9495
11	0.3125	2.9355
12	0.3121	2.9012
13	0.3083	2.8475
14	0.2757	2.6812
15	0.2699	2.6457
16	0.2036	2.6332
17	0.1941	2.5396
18	0.1935	2.4706
19	0.1785	2.3955
20	0.1761	2.2797
21	0.1656	2.2357
22	0.1622	2.1706
23	0.1548	2.1593
24	0.1370	2.1402
25	0.1344	2.1230
26	0.1298	2.1154
27	0.1262	2.0996
28	0.1123	2.0684
29	0.1093	2.0183
30	0.0981	1.9948
31	0.0938	1.9793
32	0.0908	1.9736
33	0.0804	1.9098
34	0.0801	1.9024
35	0.0786	1.8940
36	0.0769	1.8823
37	0.0756	1.8529
38	0.0745	1.8419
39	0.0735	1.8365
40	0.0702	1.8268
41	0.0679	1.7830
42	0.0632	1.7510
43	0.0630	1.7103
44	0.0625	1.7007
45	0.0622	1.6999
46	0.0595	1.6706
47	0.0594	1.6689
48	0.0583	1.6639
49	0.0538	1.6636
50	0.0525	1.5831
51	0.0468	1.5637
52	0.0462	1.5522
53	0.0456	1.5240
54	0.0423	1.4500
55	0.0399	1.4288
56	0.0377	1.4265
57	0.0341	1.4051
58	0.0311	1.3509
59	0.0282	1.3181
60	0.0185	1.2306
61	0.0178	1.2295

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0580	13242	179473	1355	Fail
0.0792	3908	141957	3632	Fail
0.1005	1346	117638	8739	Fail
0.1218	204	99137	48596	Fail
0.1431	154	83823	54430	Fail
0.1644	124	72209	58233	Fail
0.1857	109	62327	57180	Fail
0.2070	96	54178	56435	Fail
0.2283	88	46927	53326	Fail
0.2496	77	41152	53444	Fail
0.2709	71	36104	50850	Fail
0.2921	60	31570	52616	Fail
0.3134	53	27934	52705	Fail
0.3347	49	24768	50546	Fail
0.3560	44	21859	49679	Fail
0.3773	41	19453	47446	Fail
0.3986	40	17293	43232	Fail
0.4199	38	15483	40744	Fail
0.4412	35	13755	39300	Fail
0.4625	33	12329	37360	Fail
0.4838	33	11120	33696	Fail
0.5050	30	10004	33346	Fail
0.5263	30	9050	30166	Fail
0.5476	29	8237	28403	Fail
0.5689	28	7484	26728	Fail
0.5902	26	6757	25988	Fail
0.6115	26	6158	23684	Fail
0.6328	25	5576	22304	Fail
0.6541	23	5080	22086	Fail
0.6754	21	4639	22090	Fail
0.6967	21	4209	20042	Fail
0.7179	21	3850	18333	Fail
0.7392	21	3529	16804	Fail
0.7605	20	3228	16139	Fail
0.7818	19	2988	15726	Fail
0.8031	19	2723	14331	Fail
0.8244	18	2494	13855	Fail
0.8457	18	2304	12800	Fail
0.8670	15	2128	14186	Fail
0.8883	14	1962	14014	Fail
0.9096	13	1828	14061	Fail
0.9309	12	1692	14100	Fail
0.9521	12	1578	13150	Fail
0.9734	11	1487	13518	Fail
0.9947	11	1384	12581	Fail
1.0160	11	1296	11781	Fail
1.0373	9	1223	13588	Fail
1.0586	9	1147	12744	Fail
1.0799	9	1065	11833	Fail
1.1012	9	988	10977	Fail
1.1225	9	924	10266	Fail
1.1438	9	865	9611	Fail
1.1650	9	816	9066	Fail
1.1863	8	753	9412	Fail

1.2076	8	710	8875	Fail
1.2289	8	669	8362	Fail
1.2502	8	629	7862	Fail
1.2715	8	593	7412	Fail
1.2928	8	564	7050	Fail
1.3141	8	533	6662	Fail
1.3354	8	505	6312	Fail
1.3567	8	473	5912	Fail
1.3779	7	457	6528	Fail
1.3992	6	442	7366	Fail
1.4205	5	421	8420	Fail
1.4418	5	398	7960	Fail
1.4631	5	378	7560	Fail
1.4844	5	361	7219	Fail
1.5057	5	350	7000	Fail
1.5270	4	336	8400	Fail
1.5483	4	315	7875	Fail
1.5696	4	301	7525	Fail
1.5908	4	286	7150	Fail
1.6121	4	265	6625	Fail
1.6334	4	256	6400	Fail
1.6547	4	245	6125	Fail
1.6760	4	231	5775	Fail
1.6973	4	215	5375	Fail
1.7186	4	203	5075	Fail
1.7399	4	198	4950	Fail
1.7612	4	191	4775	Fail
1.7825	4	181	4525	Fail
1.8038	4	173	4325	Fail
1.8250	4	166	4150	Fail
1.8463	4	159	3975	Fail
1.8676	4	155	3875	Fail
1.8889	4	150	3750	Fail
1.9102	4	141	3525	Fail
1.9315	4	136	3400	Fail
1.9528	4	132	3300	Fail
1.9741	4	127	3175	Fail
1.9954	4	122	3050	Fail
2.0167	4	121	3025	Fail
2.0379	4	117	2925	Fail
2.0592	3	112	3733	Fail
2.0805	3	108	3600	Fail
2.1018	3	105	3500	Fail
2.1231	3	99	3300	Fail
2.1444	3	96	3200	Fail
2.1657	3	92	3066	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #4

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

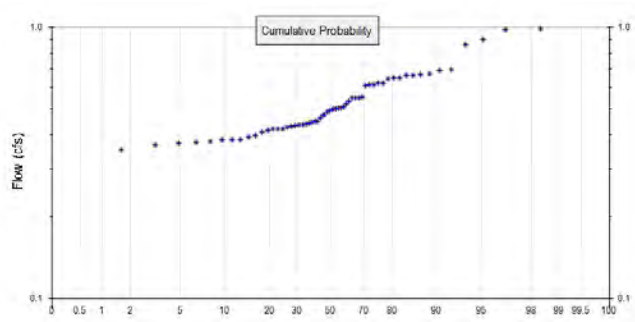
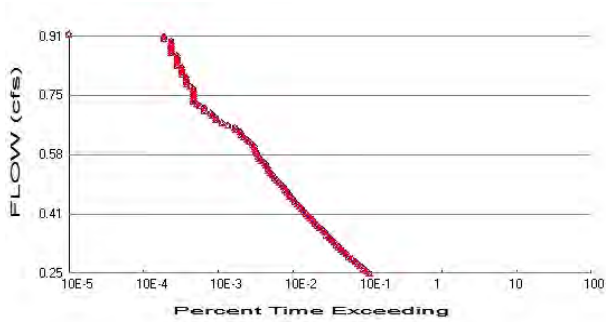
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 5



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #5

Total Pervious Area: 1.39
Total Impervious Area: 1.31

Mitigated Landuse Totals for POC #5

Total Pervious Area: 1.39
Total Impervious Area: 1.31

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #5

Return Period	Flow(cfs)
2 year	0.498655
5 year	0.624019
10 year	0.710318
25 year	0.823401
50 year	0.91073
100 year	1.000817

Flow Frequency Return Periods for Mitigated. POC #5

Return Period	Flow(cfs)
2 year	0.498655
5 year	0.624019
10 year	0.710318
25 year	0.823401
50 year	0.91073
100 year	1.000817

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #5

Year	Predeveloped	Mitigated
1949	0.624	0.624
1950	0.648	0.648
1951	0.437	0.437
1952	0.351	0.351
1953	0.383	0.383
1954	0.417	0.417
1955	0.462	0.462
1956	0.472	0.472
1957	0.495	0.495
1958	0.397	0.397
1959	0.422	0.422

1960	0.411	0.411
1961	0.447	0.447
1962	0.380	0.380
1963	0.449	0.449
1964	0.434	0.434
1965	0.546	0.546
1966	0.368	0.368
1967	0.675	0.675
1968	0.625	0.625
1969	0.486	0.486
1970	0.437	0.437
1971	0.505	0.505
1972	0.648	0.648
1973	0.353	0.353
1974	0.502	0.502
1975	0.549	0.549
1976	0.375	0.375
1977	0.429	0.429
1978	0.520	0.520
1979	0.612	0.612
1980	0.698	0.698
1981	0.496	0.496
1982	0.670	0.670
1983	0.549	0.549
1984	0.384	0.384
1985	0.509	0.509
1986	0.443	0.443
1987	0.647	0.647
1988	0.423	0.423
1989	0.551	0.551
1990	0.981	0.981
1991	0.666	0.666
1992	0.375	0.375
1993	0.392	0.392
1994	0.385	0.385
1995	0.441	0.441
1996	0.614	0.614
1997	0.499	0.499
1998	0.451	0.451
1999	0.899	0.899
2000	0.476	0.476
2001	0.498	0.498
2002	0.609	0.609
2003	0.533	0.533
2004	0.863	0.863
2005	0.431	0.431
2006	0.421	0.421
2007	0.989	0.989
2008	0.693	0.693
2009	0.663	0.663

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #5

Rank	Predeveloped	Mitigated
1	0.9894	0.9894
2	0.9812	0.9812
3	0.8995	0.8995
4	0.8626	0.8626

5	0.6975	0.6975
6	0.6926	0.6926
7	0.6751	0.6751
8	0.6702	0.6702
9	0.6658	0.6658
10	0.6628	0.6628
11	0.6479	0.6479
12	0.6478	0.6478
13	0.6472	0.6472
14	0.6248	0.6248
15	0.6239	0.6239
16	0.6143	0.6143
17	0.6118	0.6118
18	0.6085	0.6085
19	0.5513	0.5513
20	0.5487	0.5487
21	0.5485	0.5485
22	0.5463	0.5463
23	0.5328	0.5328
24	0.5202	0.5202
25	0.5092	0.5092
26	0.5049	0.5049
27	0.5018	0.5018
28	0.4995	0.4995
29	0.4984	0.4984
30	0.4965	0.4965
31	0.4945	0.4945
32	0.4864	0.4864
33	0.4760	0.4760
34	0.4716	0.4716
35	0.4620	0.4620
36	0.4506	0.4506
37	0.4489	0.4489
38	0.4467	0.4467
39	0.4430	0.4430
40	0.4411	0.4411
41	0.4366	0.4366
42	0.4366	0.4366
43	0.4343	0.4343
44	0.4312	0.4312
45	0.4289	0.4289
46	0.4230	0.4230
47	0.4216	0.4216
48	0.4212	0.4212
49	0.4171	0.4171
50	0.4107	0.4107
51	0.3971	0.3971
52	0.3920	0.3920
53	0.3846	0.3846
54	0.3844	0.3844
55	0.3833	0.3833
56	0.3804	0.3804
57	0.3751	0.3751
58	0.3750	0.3750
59	0.3681	0.3681
60	0.3527	0.3527
61	0.3511	0.3511

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.2493	2267	2267	100	Pass
0.2560	2066	2066	100	Pass
0.2627	1900	1900	100	Pass
0.2694	1727	1727	100	Pass
0.2761	1579	1579	100	Pass
0.2827	1458	1458	100	Pass
0.2894	1340	1340	100	Pass
0.2961	1205	1205	100	Pass
0.3028	1110	1110	100	Pass
0.3095	1029	1029	100	Pass
0.3161	958	958	100	Pass
0.3228	893	893	100	Pass
0.3295	824	824	100	Pass
0.3362	761	761	100	Pass
0.3429	711	711	100	Pass
0.3495	664	664	100	Pass
0.3562	609	609	100	Pass
0.3629	577	577	100	Pass
0.3696	541	541	100	Pass
0.3763	498	498	100	Pass
0.3829	458	458	100	Pass
0.3896	428	428	100	Pass
0.3963	398	398	100	Pass
0.4030	375	375	100	Pass
0.4097	351	351	100	Pass
0.4163	325	325	100	Pass
0.4230	299	299	100	Pass
0.4297	283	283	100	Pass
0.4364	262	262	100	Pass
0.4431	246	246	100	Pass
0.4498	227	227	100	Pass
0.4564	213	213	100	Pass
0.4631	196	196	100	Pass
0.4698	191	191	100	Pass
0.4765	182	182	100	Pass
0.4832	170	170	100	Pass
0.4898	160	160	100	Pass
0.4965	151	151	100	Pass
0.5032	139	139	100	Pass
0.5099	132	132	100	Pass
0.5166	123	123	100	Pass
0.5232	113	113	100	Pass
0.5299	107	107	100	Pass
0.5366	100	100	100	Pass
0.5433	99	99	100	Pass
0.5500	94	94	100	Pass
0.5566	90	90	100	Pass
0.5633	82	82	100	Pass
0.5700	77	77	100	Pass
0.5767	74	74	100	Pass
0.5834	70	70	100	Pass
0.5901	68	68	100	Pass
0.5967	66	66	100	Pass

0.6034	65	65	100	Pass
0.6101	61	61	100	Pass
0.6168	55	55	100	Pass
0.6235	52	52	100	Pass
0.6301	47	47	100	Pass
0.6368	44	44	100	Pass
0.6435	42	42	100	Pass
0.6502	37	37	100	Pass
0.6569	36	36	100	Pass
0.6635	29	29	100	Pass
0.6702	24	24	100	Pass
0.6769	20	20	100	Pass
0.6836	20	20	100	Pass
0.6903	18	18	100	Pass
0.6969	17	17	100	Pass
0.7036	14	14	100	Pass
0.7103	14	14	100	Pass
0.7170	12	12	100	Pass
0.7237	11	11	100	Pass
0.7303	10	10	100	Pass
0.7370	10	10	100	Pass
0.7437	10	10	100	Pass
0.7504	10	10	100	Pass
0.7571	10	10	100	Pass
0.7638	10	10	100	Pass
0.7704	9	9	100	Pass
0.7771	8	8	100	Pass
0.7838	8	8	100	Pass
0.7905	8	8	100	Pass
0.7972	8	8	100	Pass
0.8038	7	7	100	Pass
0.8105	7	7	100	Pass
0.8172	7	7	100	Pass
0.8239	7	7	100	Pass
0.8306	6	6	100	Pass
0.8372	6	6	100	Pass
0.8439	6	6	100	Pass
0.8506	6	6	100	Pass
0.8573	6	6	100	Pass
0.8640	5	5	100	Pass
0.8706	5	5	100	Pass
0.8773	5	5	100	Pass
0.8840	5	5	100	Pass
0.8907	5	5	100	Pass
0.8974	5	5	100	Pass
0.9040	4	4	100	Pass
0.9107	4	4	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #5

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

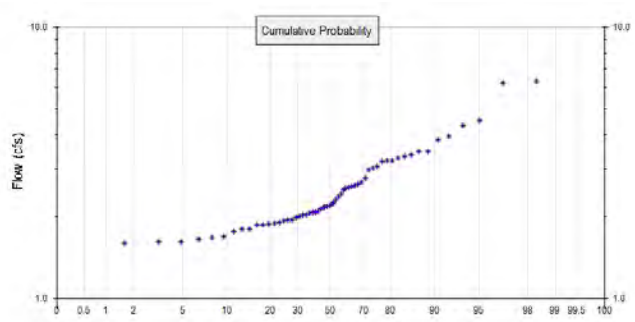
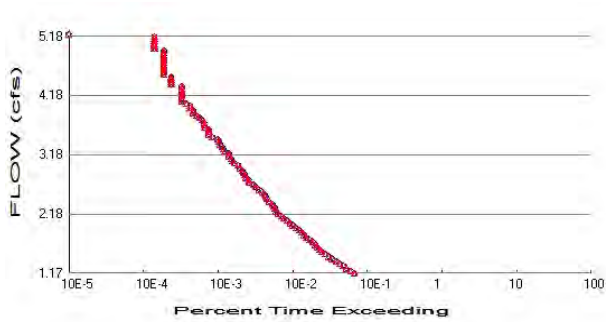
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Trapezoidal Pond 1 POC	<input type="checkbox"/>	193.34			<input type="checkbox"/>	0.00			
Total Volume Infiltrated		193.34	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 6



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #6

Total Pervious Area: 10.41
 Total Impervious Area: 5.47

Mitigated Landuse Totals for POC #6

Total Pervious Area: 10.41
 Total Impervious Area: 5.47

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #6

Return Period	Flow(cfs)
2 year	2.349287
5 year	3.13595
10 year	3.71691
25 year	4.52232
50 year	5.176234
100 year	5.878212

Flow Frequency Return Periods for Mitigated. POC #6

Return Period	Flow(cfs)
2 year	2.349287
5 year	3.13595
10 year	3.71691
25 year	4.52232
50 year	5.176234
100 year	5.878212

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #6

Year	Predeveloped	Mitigated
1949	2.974	2.974
1950	3.487	3.487
1951	2.180	2.180
1952	1.508	1.508
1953	1.768	1.768
1954	2.007	2.007
1955	2.138	2.138
1956	2.064	2.064
1957	2.224	2.224
1958	1.863	1.863
1959	1.989	1.989

1960	2.068	2.068
1961	1.894	1.894
1962	1.677	1.677
1963	2.033	2.033
1964	1.932	1.932
1965	2.373	2.373
1966	1.594	1.594
1967	3.474	3.474
1968	3.343	3.343
1969	2.079	2.079
1970	2.091	2.091
1971	2.519	2.519
1972	3.228	3.228
1973	1.613	1.613
1974	2.327	2.327
1975	2.560	2.560
1976	1.873	1.873
1977	1.901	1.901
1978	2.597	2.597
1979	3.297	3.297
1980	3.201	3.201
1981	2.258	2.258
1982	3.215	3.215
1983	2.641	2.641
1984	1.654	1.654
1985	2.197	2.197
1986	1.946	1.946
1987	3.029	3.029
1988	1.861	1.861
1989	2.774	2.774
1990	6.208	6.208
1991	3.953	3.953
1992	1.614	1.614
1993	1.806	1.806
1994	1.693	1.693
1995	2.028	2.028
1996	3.395	3.395
1997	2.418	2.418
1998	2.155	2.155
1999	4.529	4.529
2000	2.180	2.180
2001	2.550	2.550
2002	2.668	2.668
2003	2.582	2.582
2004	4.331	4.331
2005	1.803	1.803
2006	1.941	1.941
2007	6.317	6.317
2008	3.846	3.846
2009	3.066	3.066

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #6

Rank	Predeveloped	Mitigated
1	6.3171	6.3171
2	6.2081	6.2081
3	4.5290	4.5290
4	4.3308	4.3308

5	3.9528	3.9528
6	3.8459	3.8459
7	3.4873	3.4873
8	3.4743	3.4743
9	3.3949	3.3949
10	3.3428	3.3428
11	3.2971	3.2971
12	3.2282	3.2282
13	3.2147	3.2147
14	3.2014	3.2014
15	3.0662	3.0662
16	3.0286	3.0286
17	2.9743	2.9743
18	2.7736	2.7736
19	2.6678	2.6678
20	2.6406	2.6406
21	2.5967	2.5967
22	2.5824	2.5824
23	2.5603	2.5603
24	2.5496	2.5496
25	2.5187	2.5187
26	2.4175	2.4175
27	2.3734	2.3734
28	2.3270	2.3270
29	2.2581	2.2581
30	2.2238	2.2238
31	2.1969	2.1969
32	2.1800	2.1800
33	2.1797	2.1797
34	2.1551	2.1551
35	2.1377	2.1377
36	2.0905	2.0905
37	2.0790	2.0790
38	2.0683	2.0683
39	2.0642	2.0642
40	2.0325	2.0325
41	2.0280	2.0280
42	2.0067	2.0067
43	1.9892	1.9892
44	1.9459	1.9459
45	1.9405	1.9405
46	1.9320	1.9320
47	1.9013	1.9013
48	1.8945	1.8945
49	1.8728	1.8728
50	1.8632	1.8632
51	1.8608	1.8608
52	1.8056	1.8056
53	1.8034	1.8034
54	1.7678	1.7678
55	1.6927	1.6927
56	1.6765	1.6765
57	1.6541	1.6541
58	1.6139	1.6139
59	1.6128	1.6128
60	1.5936	1.5936
61	1.5084	1.5084

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.1746	1423	1423	100	Pass
1.2151	1277	1277	100	Pass
1.2555	1128	1128	100	Pass
1.2959	1021	1021	100	Pass
1.3363	913	913	100	Pass
1.3767	811	811	100	Pass
1.4172	721	721	100	Pass
1.4576	654	654	100	Pass
1.4980	585	585	100	Pass
1.5384	524	524	100	Pass
1.5788	491	491	100	Pass
1.6193	459	459	100	Pass
1.6597	434	434	100	Pass
1.7001	394	394	100	Pass
1.7405	363	363	100	Pass
1.7809	326	326	100	Pass
1.8214	304	304	100	Pass
1.8618	282	282	100	Pass
1.9022	263	263	100	Pass
1.9426	238	238	100	Pass
1.9830	216	216	100	Pass
2.0235	197	197	100	Pass
2.0639	179	179	100	Pass
2.1043	163	163	100	Pass
2.1447	152	152	100	Pass
2.1851	136	136	100	Pass
2.2256	129	129	100	Pass
2.2660	125	125	100	Pass
2.3064	117	117	100	Pass
2.3468	113	113	100	Pass
2.3872	104	104	100	Pass
2.4277	95	95	100	Pass
2.4681	92	92	100	Pass
2.5085	89	89	100	Pass
2.5489	83	83	100	Pass
2.5893	75	75	100	Pass
2.6298	68	68	100	Pass
2.6702	63	63	100	Pass
2.7106	55	55	100	Pass
2.7510	55	55	100	Pass
2.7914	51	51	100	Pass
2.8319	49	49	100	Pass
2.8723	46	46	100	Pass
2.9127	45	45	100	Pass
2.9531	42	42	100	Pass
2.9935	40	40	100	Pass
3.0340	35	35	100	Pass
3.0744	33	33	100	Pass
3.1148	32	32	100	Pass
3.1552	30	30	100	Pass
3.1956	30	30	100	Pass
3.2361	26	26	100	Pass
3.2765	25	25	100	Pass

3.3169	24	24	100	Pass
3.3573	23	23	100	Pass
3.3977	22	22	100	Pass
3.4382	21	21	100	Pass
3.4786	18	18	100	Pass
3.5190	16	16	100	Pass
3.5594	16	16	100	Pass
3.5998	16	16	100	Pass
3.6403	14	14	100	Pass
3.6807	14	14	100	Pass
3.7211	14	14	100	Pass
3.7615	13	13	100	Pass
3.8020	12	12	100	Pass
3.8424	11	11	100	Pass
3.8828	10	10	100	Pass
3.9232	10	10	100	Pass
3.9636	9	9	100	Pass
4.0041	9	9	100	Pass
4.0445	8	8	100	Pass
4.0849	7	7	100	Pass
4.1253	7	7	100	Pass
4.1657	7	7	100	Pass
4.2062	7	7	100	Pass
4.2466	7	7	100	Pass
4.2870	7	7	100	Pass
4.3274	7	7	100	Pass
4.3678	5	5	100	Pass
4.4083	5	5	100	Pass
4.4487	5	5	100	Pass
4.4891	5	5	100	Pass
4.5295	4	4	100	Pass
4.5699	4	4	100	Pass
4.6104	4	4	100	Pass
4.6508	4	4	100	Pass
4.6912	4	4	100	Pass
4.7316	4	4	100	Pass
4.7720	4	4	100	Pass
4.8125	4	4	100	Pass
4.8529	4	4	100	Pass
4.8933	4	4	100	Pass
4.9337	4	4	100	Pass
4.9741	3	3	100	Pass
5.0146	3	3	100	Pass
5.0550	3	3	100	Pass
5.0954	3	3	100	Pass
5.1358	3	3	100	Pass
5.1762	3	3	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #6

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 7

POC #7 was not reported because POC must exist in both scenarios and both scenarios must have been run.

POC 8

POC #8 was not reported because POC must exist in both scenarios and both scenarios must have been run.

POC 9

POC #9 was not reported because POC must exist in both scenarios and both scenarios must have been run.

POC 10

POC #10 was not reported because POC must exist in both scenarios and both scenarios must have been run.

POC 11

POC #11 was not reported because POC must exist in both scenarios and both scenarios must have been run.

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

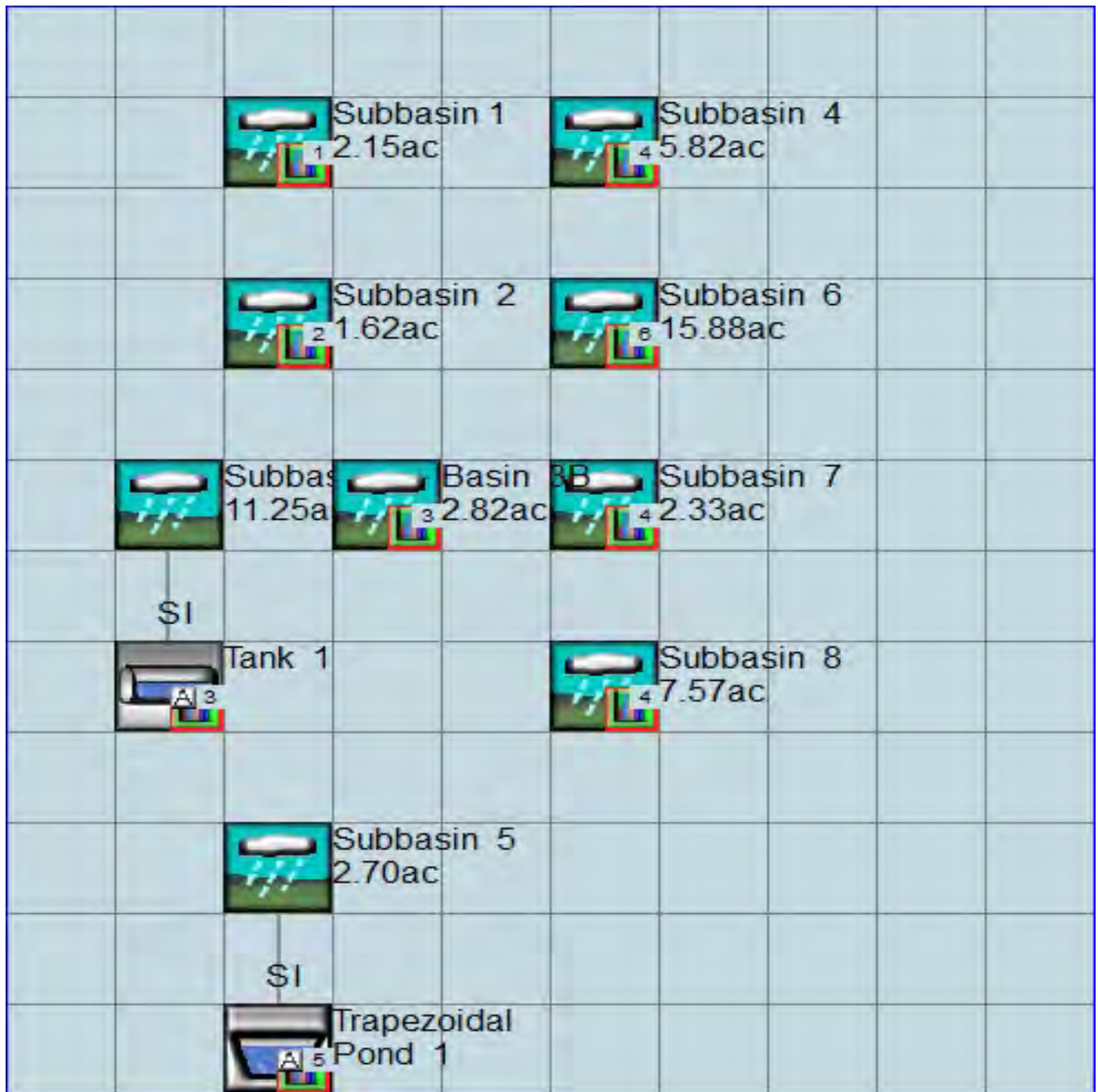
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

RUN

GLOBAL

```

WVHM4 model simulation
START      1948 10 01      END      2009 09 30
RUN INTERP OUTPUT LEVEL   3      0
RESUME     0 RUN          1
UNIT SYSTEM                                1
END GLOBAL
  
```

FILES

```

<File>  <Un#>  <-----File Name----->***
<-ID->                                     ***
WDM      26     Tamarack - Durations Existing.wdm
MESSU    25     PreTamarack - Durations Existing.MES
          27     PreTamarack - Durations Existing.L61
          28     PreTamarack - Durations Existing.L62
          30     POCTamarack - Durations Existing1.dat
          31     POCTamarack - Durations Existing2.dat
          35     POCTamarack - Durations Existing6.dat
          36     POCTamarack - Durations Existing7.dat
          37     POCTamarack - Durations Existing8.dat
          32     POCTamarack - Durations Existing3.dat
          34     POCTamarack - Durations Existing5.dat
          33     POCTamarack - Durations Existing4.dat
  
```

END FILES

OPN SEQUENCE

```

INGRP          INDELT 00:15
  PERLND        8
  PERLND       17
  IMPLND        2
  IMPLND        4
  IMPLND        6
  PERLND        9
  IMPLND        3
  IMPLND        7
  IMPLND       16
  PERLND       40
  PERLND       41
  PERLND       42
  PERLND       43
  RCHRES        1
  RCHRES        2
  PERLND       39
  COPY         501
  COPY         502
  COPY         506
  COPY         507
  COPY         508
  COPY         503
  COPY         505
  COPY         504
  DISPLY        1
  DISPLY        2
  DISPLY        6
  DISPLY        7
  DISPLY        8
  DISPLY        3
  DISPLY        5
  DISPLY        4
  
```

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

```

# - #<-----Title----->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
1      Subbasin 1          MAX          1  2  30  9
2      Subbasin 2          MAX          1  2  31  9
6      Subbasin 6          MAX          1  2  35  9
  
```


7	Subbasin 7 - Perv Latera	MAX	1	2	36	9
8	Subbasin 8 - Perv Latera	MAX	1	2	37	9
3	Subbasin 3B	MAX	1	2	32	9
5	Subbasin 5 Detention	MAX	1	2	34	9
4	Basin 4 - Perv Lateral Fl	MAX	1	2	33	9

END DISPLY-INFO1
 END DISPLY
 COPY

TIMESERIES
 # - # NPT NMN ***
 1 1 1
 501 1 1
 502 1 1
 506 1 1
 507 1 1
 508 1 1
 503 1 1
 505 1 1
 504 1 1
 END TIMESERIES

END COPY
 GENER

OPCODE
 # # OPCD ***
 END OPCODE
 PARM
 # # K ***
 END PARM

END GENER

PERLND

GEN-INFO
 <PLS ><-----Name----->NBLKS Unit-systems Printer ***
 # - # User t-series Engl Metr ***
 in out ***
 8 A/B, Lawn, Mod 1 1 1 1 27 0
 17 C, Lawn, Mod 1 1 1 1 27 0
 9 A/B, Lawn, Steep 1 1 1 1 27 0
 40 A/B, Lawn, Steep 1 1 1 1 27 0
 41 C, Lawn, Steep 1 1 1 1 27 0
 42 C, Lawn, Steep 1 1 1 1 27 0
 43 A/B, Lawn, Steep 1 1 1 1 27 0
 39 A/B, Forest, Mod 1 1 1 1 27 0
 END GEN-INFO
 *** Section PWATER***

ACTIVITY
 <PLS > ***** Active Sections *****
 # - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC ***
 8 0 0 1 0 0 0 0 0 0 0 0 0
 17 0 0 1 0 0 0 0 0 0 0 0 0
 9 0 0 1 0 0 0 0 0 0 0 0 0
 40 0 0 1 0 0 0 0 0 0 0 0 0
 41 0 0 1 0 0 0 0 0 0 0 0 0
 42 0 0 1 0 0 0 0 0 0 0 0 0
 43 0 0 1 0 0 0 0 0 0 0 0 0
 39 0 0 1 0 0 0 0 0 0 0 0 0
 END ACTIVITY

PRINT-INFO
 <PLS > ***** Print-flags ***** PIVL PYR
 # - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC *****
 8 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 17 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 9 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 40 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 41 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 42 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 43 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 39 0 0 4 0 0 0 0 0 0 0 0 0 1 9
 END PRINT-INFO

```

PWAT-PARM1
<PLS > PWATER variable monthly parameter value flags ***
# - # CSNO RTOP UZFG VCS VUZ VMN VIFW VIRC VLE INFC HWT ***
8      0      0      0      0      0      0      0      0      0      0      0      0
17     0      0      0      0      0      0      0      0      0      0      0      0
9      0      0      0      0      0      0      0      0      0      0      0      0
40     0      0      0      0      0      0      0      0      0      0      0      0
41     0      0      0      0      0      0      0      0      0      0      0      0
42     0      0      0      0      0      0      0      0      0      0      0      0
43     0      0      0      0      0      0      0      0      0      0      0      0
39     0      0      0      0      0      0      0      0      0      0      0      0
END PWAT-PARM1

```

```

PWAT-PARM2
<PLS > PWATER input info: Part 2 ***
# - # ***FOREST LZSN INFILT LSUR SLSUR KVARY AGWRC
8      0      5      0.8      400      0.1      0.3      0.996
17     0      4.5    0.03    400      0.1      0.5      0.996
9      0      5      0.8      400      0.15     0.3      0.996
40     0      5      0.8      400      0.15     0.3      0.996
41     0      4.5    0.03    400      0.15     0.5      0.996
42     0      4.5    0.03    400      0.15     0.5      0.996
43     0      5      0.8      400      0.15     0.3      0.996
39     0      5      2      400      0.1      0.3      0.996
END PWAT-PARM2

```

```

PWAT-PARM3
<PLS > PWATER input info: Part 3 ***
# - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASETP AGWETP
8      0      0      2      2      0      0      0
17     0      0      2      2      0      0      0
9      0      0      2      2      0      0      0
40     0      0      2      2      0      0      0
41     0      0      2      2      0      0      0
42     0      0      2      2      0      0      0
43     0      0      2      2      0      0      0
39     0      0      2      2      0      0      0
END PWAT-PARM3

```

```

PWAT-PARM4
<PLS > PWATER input info: Part 4 ***
# - # CEPSC UZSN NSUR INTFW IRC LZETP ***
8      0.1    0.5    0.25    0      0.7    0.25
17     0.1    0.25   0.25    6      0.5    0.25
9      0.1    0.5    0.25    0      0.7    0.25
40     0.1    0.5    0.25    0      0.7    0.25
41     0.1    0.15   0.25    6      0.3    0.25
42     0.1    0.15   0.25    6      0.3    0.25
43     0.1    0.5    0.25    0      0.7    0.25
39     0.2    0.5    0.35    0      0.7    0.7
END PWAT-PARM4

```

```

PWAT-STATE1
<PLS > *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS SURS UZS IFWS LZS AGWS GWVS
8      0      0      0      0      3      1      0
17     0      0      0      0      2.5    1      0
9      0      0      0      0      3      1      0
40     0      0      0      0      3      1      0
41     0      0      0      0      2.5    1      0
42     0      0      0      0      2.5    1      0
43     0      0      0      0      3      1      0
39     0      0      0      0      3      1      0
END PWAT-STATE1

```

END PERLND

IMPLND
GEN-INFO

```

<PLS ><-----Name----->   Unit-systems   Printer   ***
# - #                           User   t-series   Engr   Metr   ***
                                   in    out
2      ROADS/MOD                 1     1     1     27     0
4      ROOF TOPS/FLAT            1     1     1     27     0
6      DRIVEWAYS/MOD             1     1     1     27     0
3      ROADS/STEEP               1     1     1     27     0
7      DRIVEWAYS/STEEP           1     1     1     27     0
16     ROADS/MOD LAT             1     1     1     27     0
END GEN-INFO
*** Section IWATER***

```

```

ACTIVITY
<PLS > ***** Active Sections *****
# - # ATMP SNOW IWAT  SLD  IWG IQAL  ***
2      0    0    1    0    0    0
4      0    0    1    0    0    0
6      0    0    1    0    0    0
3      0    0    1    0    0    0
7      0    0    1    0    0    0
16     0    0    1    0    0    0
END ACTIVITY

```

```

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW IWAT  SLD  IWG IQAL  *****
2      0    0    4    0    0    0    1    9
4      0    0    4    0    0    0    1    9
6      0    0    4    0    0    0    1    9
3      0    0    4    0    0    0    1    9
7      0    0    4    0    0    0    1    9
16     0    0    4    0    0    0    1    9
END PRINT-INFO

```

```

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP  VRS  VNN  RTLI  ***
2      0    0    0    0    0
4      0    0    0    0    0
6      0    0    0    0    0
3      0    0    0    0    0
7      0    0    0    0    0
16     0    0    0    0    0
END IWAT-PARM1

```

```

IWAT-PARM2
<PLS > IWATER input info: Part 2 ***
# - # *** LSUR  SLSUR  NSUR  RETSC
2      400    0.05    0.1    0.08
4      400    0.01    0.1    0.1
6      400    0.05    0.1    0.08
3      400    0.1    0.1    0.05
7      400    0.1    0.1    0.05
16     400    0.05    0.1    0.08
END IWAT-PARM2

```

```

IWAT-PARM3
<PLS > IWATER input info: Part 3 ***
# - # ***PETMAX  PETMIN
2      0    0
4      0    0
6      0    0
3      0    0
7      0    0
16     0    0
END IWAT-PARM3

```

```

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS  SURS

```

```

2          0          0
4          0          0
6          0          0
3          0          0
7          0          0
16         0          0

```

END IWAT-STATE1

END IMPLND

SCHEMATIC

<-Source-> <Name> #	<--Area--> <-factor-->	<-Target--> <Name> #	MBLK Tbl#	*** ***
Basin 4,7,8 Imperv Lateral	***			
IMPLND 16	0.6911	PERLND 39	50	
Subbasin 8 - Perv Lateral Flow	A/B***			
PERLND 40	0.4066	PERLND 39	30	
PERLND 40	0.4066	PERLND 39	34	
PERLND 40	0.4066	PERLND 39	38	
Subbasin 3A***				
PERLND 9	5.75	RCHRES 2	2	
PERLND 9	5.75	RCHRES 2	3	
IMPLND 3	1.79	RCHRES 2	5	
IMPLND 4	2.6	RCHRES 2	5	
IMPLND 7	1.11	RCHRES 2	5	
Subbasin 5***				
PERLND 9	1.39	RCHRES 1	2	
PERLND 9	1.39	RCHRES 1	3	
IMPLND 3	0.52	RCHRES 1	5	
IMPLND 4	0.55	RCHRES 1	5	
IMPLND 7	0.24	RCHRES 1	5	
Subbasin 7 - Perv Lateral Flow	A/B***			
PERLND 43	0.103	PERLND 39	30	
PERLND 43	0.103	PERLND 39	34	
PERLND 43	0.103	PERLND 39	38	
Subbasin 7 - Perv Lateral Flow	C***			
PERLND 41	0.1501	PERLND 39	30	
PERLND 41	0.1501	PERLND 39	34	
PERLND 41	0.1501	PERLND 39	38	
Subbasin 8 - Perv Lateral Flow	C***			
PERLND 42	0.3927	PERLND 39	30	
PERLND 42	0.3927	PERLND 39	34	
PERLND 42	0.3927	PERLND 39	38	
Subbasin 1***				
PERLND 8	0.39	COPY 501	12	
PERLND 8	0.39	COPY 501	13	
PERLND 17	0.95	COPY 501	12	
PERLND 17	0.95	COPY 501	13	
IMPLND 2	0.35	COPY 501	15	
IMPLND 4	0.32	COPY 501	15	
IMPLND 6	0.14	COPY 501	15	
Subbasin 2***				
PERLND 8	0.67	COPY 502	12	
PERLND 8	0.67	COPY 502	13	
PERLND 17	0.41	COPY 502	12	
PERLND 17	0.41	COPY 502	13	
IMPLND 2	0.42	COPY 502	15	
IMPLND 4	0.08	COPY 502	15	
IMPLND 6	0.04	COPY 502	15	
Subbasin 6***				
PERLND 8	10.37	COPY 506	12	
PERLND 8	10.37	COPY 506	13	
PERLND 17	0.04	COPY 506	12	
PERLND 17	0.04	COPY 506	13	
IMPLND 2	1.77	COPY 506	15	
IMPLND 4	2.59	COPY 506	15	
IMPLND 6	1.11	COPY 506	15	
Basin 4 - Perv Lateral Flow	***			
PERLND 39	5.73	COPY 504	12	
PERLND 39	5.73	COPY 504	13	

```

Subbasin 7 - Perv Lateral Flow C***
PERLND 41 0.86 COPY 507 12
PERLND 41 0.86 COPY 507 13
Subbasin 8 - Perv Lateral Flow C***
PERLND 42 2.25 COPY 508 12
PERLND 42 2.25 COPY 508 13
Subbasin 3B***
PERLND 9 1.44 COPY 503 12
PERLND 9 1.44 COPY 503 13
IMPLND 3 0.45 COPY 503 15
IMPLND 4 0.65 COPY 503 15
IMPLND 7 0.28 COPY 503 15

```

```

*****Routing*****
RCHRES 1 1 COPY 505 16
RCHRES 2 1 COPY 503 16
END SCHEMATIC

```

```

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor-->strg <Name> # # <Name> # # ***
COPY 501 OUTPUT MEAN 1 1 48.4 DISPLY 1 INPUT TIMSER 1
COPY 502 OUTPUT MEAN 1 1 48.4 DISPLY 2 INPUT TIMSER 1
COPY 506 OUTPUT MEAN 1 1 48.4 DISPLY 6 INPUT TIMSER 1
COPY 507 OUTPUT MEAN 1 1 48.4 DISPLY 7 INPUT TIMSER 1
COPY 508 OUTPUT MEAN 1 1 48.4 DISPLY 8 INPUT TIMSER 1
COPY 503 OUTPUT MEAN 1 1 48.4 DISPLY 3 INPUT TIMSER 1
COPY 505 OUTPUT MEAN 1 1 48.4 DISPLY 5 INPUT TIMSER 1
COPY 504 OUTPUT MEAN 1 1 48.4 DISPLY 4 INPUT TIMSER 1

```

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor-->strg <Name> # # <Name> # # ***
END NETWORK

```

```

RCHRES
GEN-INFO
RCHRES Name Nexits Unit Systems Printer ***
# - #<-----><----> User T-series Engl Metr LKFG ***
in out ***
1 Subbasin 5 Deten-049 1 1 1 1 28 0 1
2 Subbasin 3 Deten-052 1 1 1 1 28 0 1
END GEN-INFO
*** Section RCHRES***

```

```

ACTIVITY
<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
1 1 0 0 0 0 0 0 0 0 0 0
2 1 0 0 0 0 0 0 0 0 0 0
END ACTIVITY

```

```

PRINT-INFO
<PLS > ***** Print-flags ***** PIVL PYR
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
1 4 0 0 0 0 0 0 0 0 0 0 1 9
2 4 0 0 0 0 0 0 0 0 0 0 1 9
END PRINT-INFO

```

```

HYDR-PARM1
RCHRES Flags for each HYDR Section ***
# - # VC A1 A2 A3 ODFVFG for each *** ODGTFG for each FUNCT for each
FG FG FG FG possible exit *** possible exit possible exit
* * * * * * * * * * * * * * * * * * * * * *
1 0 1 0 0 4 0 0 0 0 0 0 0 0 2 2 2 2 2
2 0 1 0 0 4 0 0 0 0 0 0 0 0 2 2 2 2 2
END HYDR-PARM1

```

```

HYDR-PARM2

```

```

# - #      FTABNO          LEN      DELTH      STCOR          KS      DB50          ***
<-----><-----><-----><-----><-----><-----><----->          ***
1          1          0.01      0.0      0.0      0.5      0.0
2          2          0.03      0.0      0.0      0.5      0.0

```

END HYDR-PARM2

HYDR-INIT

RCHRES Initial conditions for each HYDR section ***

```

# - # *** VOL      Initial value of COLIND      Initial value of OUTDGT
*** ac-ft      for each possible exit      for each possible exit

```

```

<-----><----->      <-----><-----><-----><-----><-----> *** <-----><-----><-----><-----><----->
1          0          4.0 0.0 0.0 0.0 0.0          0.0 0.0 0.0 0.0 0.0
2          0          4.0 0.0 0.0 0.0 0.0          0.0 0.0 0.0 0.0 0.0

```

END HYDR-INIT

END RCHRES

SPEC-ACTIONS

END SPEC-ACTIONS

FTABLES

FTABLE 1

91	4	Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.013223	0.000000	0.000000	0.000000	0.267497		
0.088889	0.013280	0.001178	0.002361	0.378297			
0.177778	0.013338	0.002361	0.003549	0.463318			
0.266667	0.013395	0.003549	0.004742	0.534993			
0.355556	0.013453	0.004742	0.005941	0.598140			
0.444444	0.013511	0.005941	0.007144	0.655230			
0.533333	0.013569	0.007144	0.008353	0.707729			
0.622222	0.013627	0.008353	0.009567	0.756594			
0.711111	0.013685	0.009567	0.010786	0.802490			
0.800000	0.013743	0.010786	0.012010	0.845898			
0.888889	0.013801	0.012010	0.013239	0.887186			
0.977778	0.013860	0.013239	0.014474	0.926635			
1.066667	0.013918	0.014474	0.015714	0.964472			
1.155556	0.013977	0.015714	0.016959	1.000880			
1.244444	0.014036	0.016959	0.018209	1.036010			
1.333333	0.014095	0.018209	0.019465	1.069986			
1.422222	0.014154	0.019465	0.020725	1.102916			
1.511111	0.014213	0.020725	0.021991	1.134892			
1.600000	0.014273	0.021991	0.023263	1.165990			
1.688889	0.014332	0.023263	0.024539	1.196281			
1.777778	0.014392	0.024539	0.025821	1.225823			
1.866667	0.014452	0.025821	0.027109	1.254670			
1.955556	0.014512	0.027109	0.028401	1.282868			
2.044444	0.014572	0.028401	0.029699	1.310460			
2.133333	0.014632	0.029699	0.031002	1.337483			
2.222222	0.014692	0.031002	0.032311	1.363970			
2.311111	0.014752	0.032311	0.033625	1.389953			
2.400000	0.014813	0.033625	0.034944	1.415459			
2.488889	0.014873	0.034944	0.036269	1.440513			
2.577778	0.014934	0.036269	0.037599	1.465139			
2.666667	0.014995	0.037599	0.038935	1.489358			
2.755556	0.015056	0.038935	0.040276	1.513189			
2.844444	0.015117	0.040276	0.041622	1.536651			
2.933333	0.015178	0.041622	0.042974	1.559759			
3.022222	0.015240	0.042974	0.044332	1.582531			
3.111111	0.015301	0.044332	0.045694	1.604979			
3.200000	0.015363	0.045694	0.047063	1.627118			
3.288889	0.015424	0.047063	0.048437	1.648959			
3.377778	0.015486	0.048437	0.049816	1.670515			
3.466667	0.015548	0.049816	0.051201	1.691797			
3.555556	0.015610	0.051201	0.052591	1.712814			
3.644444	0.015672	0.052591	0.053987	1.733576			
3.733333	0.015735	0.053987	0.055388	1.754092			
3.822222	0.015797	0.055388	0.056795	1.774371			
3.911111	0.015860	0.056795	0.058208	1.794421			
4.000000	0.015923	0.058208	0.059626	1.814250			
4.088889	0.015985	0.059626	0.061050	1.833864			
4.177778	0.016048	0.061050					

4.266667	0.016111	0.062479	1.853270
4.355556	0.016175	0.063914	1.872476
4.444444	0.016238	0.065354	1.891486
4.533333	0.016301	0.066801	1.910307
4.622222	0.016365	0.068253	1.928945
4.711111	0.016429	0.069710	1.947404
4.800000	0.016492	0.071173	1.965690
4.888889	0.016556	0.072642	1.983807
4.977778	0.016620	0.074117	2.001761
5.066667	0.016685	0.075597	2.019555
5.155556	0.016749	0.077083	2.037193
5.244444	0.016813	0.078574	2.054680
5.333333	0.016878	0.080072	2.072019
5.422222	0.016943	0.081575	2.089215
5.511111	0.017007	0.083084	2.106270
5.600000	0.017072	0.084598	2.123188
5.688889	0.017137	0.086119	2.139972
5.777778	0.017203	0.087645	2.156626
5.866667	0.017268	0.089177	2.173152
5.955556	0.017333	0.090715	2.189553
6.044444	0.017399	0.092259	2.205833
6.133333	0.017465	0.093808	2.221993
6.222222	0.017530	0.095363	2.238037
6.311111	0.017596	0.096925	2.253966
6.400000	0.017662	0.098492	2.269783
6.488889	0.017729	0.100065	2.285491
6.577778	0.017795	0.101643	2.308660
6.666667	0.017861	0.103228	2.327666
6.755556	0.017928	0.104819	2.345699
6.844444	0.017995	0.106415	2.363199
6.933333	0.018061	0.108018	2.380329
7.022222	0.018128	0.109626	2.467500
7.111111	0.018195	0.111241	3.198544
7.200000	0.018262	0.112861	4.316850
7.288889	0.018330	0.114487	5.685745
7.377778	0.018397	0.116120	7.207863
7.466667	0.018465	0.117758	8.785919
7.555556	0.018532	0.119402	10.32063
7.644444	0.018600	0.121053	11.71823
7.733333	0.018668	0.122709	12.90286
7.822222	0.018736	0.124371	13.83219
7.911111	0.018804	0.126040	14.51567
8.000000	0.018872	0.127714	15.03487

END FTABLE 1
 FTABLE 2
 91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.000000	0.000000	0.000000		
0.066667	0.004938	0.000220	0.070410		
0.133333	0.006944	0.000620	0.099574		
0.200000	0.008456	0.001135	0.121953		
0.266667	0.009708	0.001742	0.140819		
0.333333	0.010790	0.002426	0.157441		
0.400000	0.011751	0.003178	0.172467		
0.466667	0.012616	0.003991	0.186286		
0.533333	0.013406	0.004858	0.199148		
0.600000	0.014132	0.005777	0.211229		
0.666667	0.014804	0.006741	0.222655		
0.733333	0.015430	0.007749	0.233522		
0.800000	0.016013	0.008798	0.243906		
0.866667	0.016560	0.009884	0.253865		
0.933333	0.017073	0.011005	0.263448		
1.000000	0.017556	0.012160	0.272695		
1.066667	0.018010	0.013345	0.281638		
1.133333	0.018439	0.014560	0.290306		
1.200000	0.018843	0.015803	0.298722		
1.266667	0.019224	0.017072	0.306908		
1.333333	0.019584	0.018366	0.314881		
1.400000	0.019924	0.019683	0.322657		

1.466667	0.020245	0.021022	0.330250
1.533333	0.020547	0.022382	0.337672
1.600000	0.020832	0.023761	0.344935
1.666667	0.021100	0.025159	0.352048
1.733333	0.021351	0.026574	0.359020
1.800000	0.021587	0.028006	0.365859
1.866667	0.021808	0.029452	0.372572
1.933333	0.022015	0.030913	0.379167
2.000000	0.022207	0.032387	0.385649
2.066667	0.022385	0.033874	0.392024
2.133333	0.022549	0.035372	0.398297
2.200000	0.022701	0.036880	0.404472
2.266667	0.022839	0.038398	0.410555
2.333333	0.022965	0.039925	0.416549
2.400000	0.023078	0.041460	0.422457
2.466667	0.023179	0.043002	0.428285
2.533333	0.023267	0.044550	0.434034
2.600000	0.023343	0.046104	0.439708
2.666667	0.023408	0.047662	0.445309
2.733333	0.023460	0.049224	0.450841
2.800000	0.023501	0.050790	0.456306
2.866667	0.023530	0.052358	0.461706
2.933333	0.023548	0.053927	0.467044
3.000000	0.023554	0.055497	0.472322
3.066667	0.023548	0.057067	0.477541
3.133333	0.023530	0.058637	0.482704
3.200000	0.023501	0.060204	0.487812
3.266667	0.023460	0.061770	0.492867
3.333333	0.023408	0.063332	0.497871
3.400000	0.023343	0.064891	0.502825
3.466667	0.023267	0.066444	0.507731
3.533333	0.023179	0.067993	0.512589
3.600000	0.023078	0.069535	0.517402
3.666667	0.022965	0.071069	0.522171
3.733333	0.022839	0.072596	0.526897
3.800000	0.022701	0.074114	0.531581
3.866667	0.022549	0.075623	0.536223
3.933333	0.022385	0.077121	0.540826
4.000000	0.022207	0.078607	0.545390
4.066667	0.022015	0.080081	0.549916
4.133333	0.021808	0.081542	0.554405
4.200000	0.021587	0.082989	0.558859
4.266667	0.021351	0.084420	0.563276
4.333333	0.021100	0.085835	0.567660
4.400000	0.020832	0.087233	0.572010
4.466667	0.020547	0.088612	0.576327
4.533333	0.020245	0.089972	0.580612
4.600000	0.019924	0.091311	0.584866
4.666667	0.019584	0.092628	0.589089
4.733333	0.019224	0.093922	0.593281
4.800000	0.018843	0.095191	0.597445
4.866667	0.018439	0.096434	0.601580
4.933333	0.018010	0.097649	0.605686
5.000000	0.017556	0.098835	0.609765
5.066667	0.017073	0.099989	0.978910
5.133333	0.016560	0.101111	1.648713
5.200000	0.016013	0.102196	2.508517
5.266667	0.015430	0.103245	3.508899
5.333333	0.014804	0.104253	4.608973
5.400000	0.014132	0.105218	5.768278
5.466667	0.013406	0.106136	6.945177
5.533333	0.012616	0.107004	8.097647
5.600000	0.011751	0.107816	9.185308
5.666667	0.010790	0.108568	10.17228
5.733333	0.009708	0.109252	11.03063
5.800000	0.008456	0.109859	11.74437
5.866667	0.006944	0.110374	12.31382
5.933333	0.004938	0.110774	12.76044
6.000000	0.000000	0.110994	13.13191

END FTABLE 2

END FTABLES

EXT SOURCES

<-Volume->	<Member>	SsysSgap<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	tem strg<-factor->	strg	<Name>	# #
WDM	2	PREC	ENGL	1	PERLND	1 999	EXTNL PREC
WDM	2	PREC	ENGL	1	IMPLND	1 999	EXTNL PREC
WDM	1	EVAP	ENGL	0.76	PERLND	1 999	EXTNL PETINP
WDM	1	EVAP	ENGL	0.76	IMPLND	1 999	EXTNL PETINP

END EXT SOURCES

EXT TARGETS

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Volume->	<Member>	Tsys	Tgap	Amd	***	
<Name>	#	<Name>	#	#<-factor->	strg	<Name>	#	<Name>	tem	strg	strg***
COPY	501	OUTPUT	MEAN	1 1	48.4	WDM	501	FLOW	ENGL	REPL	
COPY	502	OUTPUT	MEAN	1 1	48.4	WDM	502	FLOW	ENGL	REPL	
COPY	506	OUTPUT	MEAN	1 1	48.4	WDM	506	FLOW	ENGL	REPL	
COPY	504	OUTPUT	MEAN	1 1	48.4	WDM	504	FLOW	ENGL	REPL	
COPY	507	OUTPUT	MEAN	1 1	48.4	WDM	507	FLOW	ENGL	REPL	
COPY	508	OUTPUT	MEAN	1 1	48.4	WDM	508	FLOW	ENGL	REPL	
RCHRES	1	HYDR	RO	1 1	1	WDM	1000	FLOW	ENGL	REPL	
RCHRES	1	HYDR	STAGE	1 1	1	WDM	1001	STAG	ENGL	REPL	
COPY	505	OUTPUT	MEAN	1 1	48.4	WDM	505	FLOW	ENGL	REPL	
COPY	503	OUTPUT	MEAN	1 1	48.4	WDM	503	FLOW	ENGL	REPL	
RCHRES	2	HYDR	RO	1 1	1	WDM	1002	FLOW	ENGL	REPL	
RCHRES	2	HYDR	STAGE	1 1	1	WDM	1003	STAG	ENGL	REPL	

MASS-LINK

<Volume>	<-Grp>	<-Member->	<--Mult-->	<Target>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	#<-factor->	<Name>	#	#
MASS-LINK	2						
PERLND	PWATER	SURO		0.083333	RCHRES	INFLOW	IVOL
END MASS-LINK	2						
MASS-LINK	3						
PERLND	PWATER	IFWO		0.083333	RCHRES	INFLOW	IVOL
END MASS-LINK	3						
MASS-LINK	5						
IMPLND	IWATER	SURO		0.083333	RCHRES	INFLOW	IVOL
END MASS-LINK	5						
MASS-LINK	12						
PERLND	PWATER	SURO		0.083333	COPY	INPUT	MEAN
END MASS-LINK	12						
MASS-LINK	13						
PERLND	PWATER	IFWO		0.083333	COPY	INPUT	MEAN
END MASS-LINK	13						
MASS-LINK	15						
IMPLND	IWATER	SURO		0.083333	COPY	INPUT	MEAN
END MASS-LINK	15						
MASS-LINK	16						
RCHRES	ROFLOW				COPY	INPUT	MEAN
END MASS-LINK	16						
MASS-LINK	30						
PERLND	PWATER	SURO			PERLND	EXTNL	SURLI
END MASS-LINK	30						
MASS-LINK	34						
PERLND	PWATER	IFWO			PERLND	EXTNL	IFWLI
END MASS-LINK	34						
MASS-LINK	38						
PERLND	PWATER	AGWO			PERLND	EXTNL	AGWLI

END MASS-LINK 38
MASS-LINK 50
IMPLND IWATER SURO PERLND EXTNL SURLI
END MASS-LINK 50

END MASS-LINK

END RUN

Mitigated UCI File

RUN

GLOBAL

WVHM4 model simulation
START 1948 10 01 END 2009 09 30
RUN INTERP OUTPUT LEVEL 3 0
RESUME 0 RUN 1 UNIT SYSTEM 1
END GLOBAL

FILES

<File>	<Un#>	<-----File Name----->	***
<-ID->			***
WDM	26	Tamarack - Durations Existing.wdm	
MESSU	25	MitTamarack - Durations Existing.MES	
	27	MitTamarack - Durations Existing.L61	
	28	MitTamarack - Durations Existing.L62	
	30	POCTamarack - Durations Existing1.dat	
	31	POCTamarack - Durations Existing2.dat	
	33	POCTamarack - Durations Existing4.dat	
	35	POCTamarack - Durations Existing6.dat	
	32	POCTamarack - Durations Existing3.dat	
	34	POCTamarack - Durations Existing5.dat	

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

PERLND	8
PERLND	17
IMPLND	2
IMPLND	4
IMPLND	6
PERLND	9
IMPLND	3
IMPLND	7
PERLND	2
IMPLND	1
PERLND	18
RCHRES	1
RCHRES	2
COPY	501
COPY	502
COPY	504
COPY	506
COPY	3
COPY	503
COPY	603
COPY	5
COPY	505
COPY	605
DISPLY	1
DISPLY	2
DISPLY	4
DISPLY	6
DISPLY	3
DISPLY	5

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

#	-	#	<-----Title----->	***	TRAN	PIVL	DIG1	FIL1	PYR	DIG2	FIL2	YRND
1			Subbasin 1		MAX				1	2	30	9
2			Subbasin 2		MAX				1	2	31	9
4			Subbasin 4		MAX				1	2	33	9
6			Subbasin 6		MAX				1	2	35	9
3			Tank 1		MAX				1	2	32	9
5			Trapezoidal Pond 1		MAX				1	2	34	9

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

#	-	#	NPT	NMN	***
1			1	1	
501			1	1	
502			1	1	
504			1	1	
506			1	1	
3			1	1	
503			1	1	
603			1	1	
5			1	1	
505			1	1	
605			1	1	

END TIMESERIES

END COPY

GENER

OPCODE

#	#	OPCD	***

END OPCODE

PARM

#	#	K	***

END PARM

END GENER

PERLND

GEN-INFO

<PLS ><-----Name----->		NBLKS		Unit-systems		Printer		***	
#	-	#		User	t-series	Engl	Metr	***	
				in	out	***			
8			A/B, Lawn, Mod	1	1	1	1	27	0
17			C, Lawn, Mod	1	1	1	1	27	0
9			A/B, Lawn, Steep	1	1	1	1	27	0
2			A/B, Forest, Mod	1	1	1	1	27	0
18			C, Lawn, Steep	1	1	1	1	27	0

END GEN-INFO

*** Section PWATER***

ACTIVITY

<PLS >		***** Active Sections *****												***	
#	-	#	ATMP	SNOW	PWAT	SED	PST	PWG	PQAL	MSTL	PEST	NITR	PHOS	TRAC	***
8			0	0	1	0	0	0	0	0	0	0	0	0	0
17			0	0	1	0	0	0	0	0	0	0	0	0	0
9			0	0	1	0	0	0	0	0	0	0	0	0	0
2			0	0	1	0	0	0	0	0	0	0	0	0	0
18			0	0	1	0	0	0	0	0	0	0	0	0	0

END ACTIVITY

PRINT-INFO

<PLS >		***** Print-flags *****												PIVL	PYR	*****	
#	-	#	ATMP	SNOW	PWAT	SED	PST	PWG	PQAL	MSTL	PEST	NITR	PHOS	TRAC			
8			0	0	4	0	0	0	0	0	0	0	0	0	1	9	
17			0	0	4	0	0	0	0	0	0	0	0	0	1	9	
9			0	0	4	0	0	0	0	0	0	0	0	0	1	9	
2			0	0	4	0	0	0	0	0	0	0	0	0	1	9	
18			0	0	4	0	0	0	0	0	0	0	0	0	1	9	

END PRINT-INFO

PWAT-PARM1

<PLS >		PWATER variable monthly parameter value flags											***	
#	-	#	CSNO	RTOP	UZFG	VCS	VUZ	VNM	VIFW	VIRC	VLE	INFC	HWT	***
8			0	0	0	0	0	0	0	0	0	0	0	
17			0	0	0	0	0	0	0	0	0	0	0	
9			0	0	0	0	0	0	0	0	0	0	0	
2			0	0	0	0	0	0	0	0	0	0	0	
18			0	0	0	0	0	0	0	0	0	0	0	

END PWAT-PARM1

PWAT-PARM2

<PLS >		PWATER input info: Part 2						***	
#	-	#	***FOREST	LZSN	INFILT	LSUR	SLSUR	KVARY	AGWRC

8	0	5	0.8	400	0.1	0.3	0.996
17	0	4.5	0.03	400	0.1	0.5	0.996
9	0	5	0.8	400	0.15	0.3	0.996
2	0	5	2	400	0.1	0.3	0.996
18	0	4.5	0.03	400	0.15	0.5	0.996

END PWAT-PARM2

PWAT-PARM3

<PLS > PWATER input info: Part 3 ***

#	-	#	***PETMAX	PETMIN	INFEXP	INFILD	DEEPPFR	BASETTP	AGWETP
8			0	0	2	2	0	0	0
17			0	0	2	2	0	0	0
9			0	0	2	2	0	0	0
2			0	0	2	2	0	0	0
18			0	0	2	2	0	0	0

END PWAT-PARM3

PWAT-PARM4

<PLS > PWATER input info: Part 4 ***

#	-	#	CEPSC	UZSN	NSUR	INTFW	IRC	LZETP	***
8			0.1	0.5	0.25	0	0.7	0.25	***
17			0.1	0.25	0.25	6	0.5	0.25	
9			0.1	0.5	0.25	0	0.7	0.25	
2			0.2	0.5	0.35	0	0.7	0.7	
18			0.1	0.15	0.25	6	0.3	0.25	

END PWAT-PARM4

PWAT-STATE1

<PLS > *** Initial conditions at start of simulation
 ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***

#	-	#	***	CEPS	SURS	UZS	IFWS	LZS	AGWS	GWVS
8				0	0	0	0	3	1	0
17				0	0	0	0	2.5	1	0
9				0	0	0	0	3	1	0
2				0	0	0	0	3	1	0
18				0	0	0	0	2.5	1	0

END PWAT-STATE1

END PERLND

IMPLND

GEN-INFO

<PLS ><-----Name-----> Unit-systems Printer ***

#	-	#	User	t-series	Engl	Metr	***
				in	out		***
2			ROADS/MOD	1	1	1	27 0
4			ROOF TOPS/FLAT	1	1	1	27 0
6			DRIVEWAYS/MOD	1	1	1	27 0
3			ROADS/STEEP	1	1	1	27 0
7			DRIVEWAYS/STEEP	1	1	1	27 0
1			ROADS/FLAT	1	1	1	27 0

END GEN-INFO
 *** Section IWATER***

ACTIVITY

<PLS > ***** Active Sections *****

#	-	#	ATMP	SNOW	IWAT	SLD	IWG	IQAL	***
2			0	0	1	0	0	0	
4			0	0	1	0	0	0	
6			0	0	1	0	0	0	
3			0	0	1	0	0	0	
7			0	0	1	0	0	0	
1			0	0	1	0	0	0	

END ACTIVITY

PRINT-INFO

<ILS > ***** Print-flags ***** PIVL PYR

#	-	#	ATMP	SNOW	IWAT	SLD	IWG	IQAL	*****
2			0	0	4	0	0	0	1 9
4			0	0	4	0	0	0	1 9
6			0	0	4	0	0	0	1 9

```

3      0  0  4  0  0  0  1  9
7      0  0  4  0  0  0  1  9
1      0  0  4  0  0  0  1  9
END PRINT-INFO

```

```

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP VRS VNN RTLI ***
2      0  0  0  0  0
4      0  0  0  0  0
6      0  0  0  0  0
3      0  0  0  0  0
7      0  0  0  0  0
1      0  0  0  0  0
END IWAT-PARM1

```

```

IWAT-PARM2
<PLS > IWATER input info: Part 2 ***
# - # *** LSUR SLSUR NSUR RETSC
2      400 0.05 0.1 0.08
4      400 0.01 0.1 0.1
6      400 0.05 0.1 0.08
3      400 0.1 0.1 0.05
7      400 0.1 0.1 0.05
1      400 0.01 0.1 0.1
END IWAT-PARM2

```

```

IWAT-PARM3
<PLS > IWATER input info: Part 3 ***
# - # ***PETMAX PETMIN
2      0 0
4      0 0
6      0 0
3      0 0
7      0 0
1      0 0
END IWAT-PARM3

```

```

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS SURS
2      0 0
4      0 0
6      0 0
3      0 0
7      0 0
1      0 0
END IWAT-STATE1

```

END IMPLND

```

SCHEMATIC
<-Source->          <--Area-->          <-Target->          MBLK          ***
<Name> #           <-factor-->          <Name> #          Tbl#          ***
Subbasin 3A***
PERLND 9           5.75          RCHRES 1          2
PERLND 9           5.75          RCHRES 1          3
IMPLND 3           1.79          RCHRES 1          5
IMPLND 4           2.6           RCHRES 1          5
IMPLND 7           1.11          RCHRES 1          5
Subbasin 5***
PERLND 9           1.39          RCHRES 2          2
PERLND 9           1.39          RCHRES 2          3
IMPLND 3           0.52          RCHRES 2          5
IMPLND 4           0.55          RCHRES 2          5
IMPLND 7           0.24          RCHRES 2          5
Subbasin 1***
PERLND 8           0.39          COPY 501          12
PERLND 8           0.39          COPY 501          13
PERLND 17          0.95          COPY 501          12

```

PERLND	17	0.95	COPY	501	13
IMPLND	2	0.35	COPY	501	15
IMPLND	4	0.32	COPY	501	15
IMPLND	6	0.14	COPY	501	15
Subbasin 2***					
PERLND	8	0.67	COPY	502	12
PERLND	8	0.67	COPY	502	13
PERLND	17	0.41	COPY	502	12
PERLND	17	0.41	COPY	502	13
IMPLND	2	0.42	COPY	502	15
IMPLND	4	0.08	COPY	502	15
IMPLND	6	0.04	COPY	502	15
Subbasin 4***					
PERLND	2	5.73	COPY	504	12
PERLND	2	5.73	COPY	504	13
IMPLND	1	0.06	COPY	504	15
IMPLND	4	0.02	COPY	504	15
IMPLND	6	0.01	COPY	504	15
Subbasin 6***					
PERLND	8	10.37	COPY	506	12
PERLND	8	10.37	COPY	506	13
PERLND	17	0.04	COPY	506	12
PERLND	17	0.04	COPY	506	13
IMPLND	2	1.77	COPY	506	15
IMPLND	4	2.59	COPY	506	15
IMPLND	6	1.11	COPY	506	15
Subbasin 7***					
PERLND	9	0.59	COPY	504	12
PERLND	9	0.59	COPY	504	13
PERLND	18	0.86	COPY	504	12
PERLND	18	0.86	COPY	504	13
IMPLND	4	0.62	COPY	504	15
IMPLND	7	0.26	COPY	504	15
Subbasin 8***					
PERLND	9	2.33	COPY	504	12
PERLND	9	2.33	COPY	504	13
PERLND	18	2.25	COPY	504	12
PERLND	18	2.25	COPY	504	13
IMPLND	3	1.78	COPY	504	15
IMPLND	4	0.85	COPY	504	15
IMPLND	7	0.36	COPY	504	15
Basin 3B***					
PERLND	9	1.44	COPY	503	12
PERLND	9	1.44	COPY	603	12
PERLND	9	1.44	COPY	503	13
PERLND	9	1.44	COPY	603	13
IMPLND	3	0.45	COPY	503	15
IMPLND	3	0.45	COPY	603	15
IMPLND	4	0.65	COPY	503	15
IMPLND	4	0.65	COPY	603	15
IMPLND	7	0.28	COPY	503	15
IMPLND	7	0.28	COPY	603	15

*****Routing*****

PERLND	9	5.75	COPY	3	12
IMPLND	3	1.79	COPY	3	15
IMPLND	4	2.6	COPY	3	15
IMPLND	7	1.11	COPY	3	15
PERLND	9	5.75	COPY	3	13
PERLND	9	1.39	COPY	5	12
IMPLND	3	0.52	COPY	5	15
IMPLND	4	0.55	COPY	5	15
IMPLND	7	0.24	COPY	5	15
PERLND	9	1.39	COPY	5	13
RCHRES	1	1	COPY	503	16
RCHRES	2	1	COPY	505	16
END SCHEMATIC					

NETWORK

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***

```

<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
COPY 501 OUTPUT MEAN 1 1 48.4 DISPLY 1 INPUT TIMSER 1
COPY 502 OUTPUT MEAN 1 1 48.4 DISPLY 2 INPUT TIMSER 1
COPY 504 OUTPUT MEAN 1 1 48.4 DISPLY 4 INPUT TIMSER 1
COPY 506 OUTPUT MEAN 1 1 48.4 DISPLY 6 INPUT TIMSER 1
COPY 503 OUTPUT MEAN 1 1 48.4 DISPLY 3 INPUT TIMSER 1
COPY 505 OUTPUT MEAN 1 1 48.4 DISPLY 5 INPUT TIMSER 1

```

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
END NETWORK

```

RCHRES

```

GEN-INFO
RCHRES Name Nexits Unit Systems Printer ***
# - #<-----><----> User T-series Engl Metr LKFG ***
in out ***
1 Tank 1 1 1 1 28 0 1
2 Trapezoidal Pond-056 1 1 1 1 28 0 1
END GEN-INFO
*** Section RCHRES***

```

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFQ PKFG PHFG ***
1 1 0 0 0 0 0 0 0 0
2 1 0 0 0 0 0 0 0 0
END ACTIVITY

```

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL PYR
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
1 4 0 0 0 0 0 0 0 0 0 1 9
2 4 0 0 0 0 0 0 0 0 0 1 9
END PRINT-INFO

```

HYDR-PARM1

```

RCHRES Flags for each HYDR Section ***
# - # VC A1 A2 A3 ODFVFG for each *** ODGTFG for each FUNCT for each
FG FG FG FG possible exit *** possible exit possible exit
* * * * * * * * * * * * * * * * * * * * * * * * * * * *
1 0 1 0 0 4 0 0 0 0 0 0 0 0 2 2 2 2 2
2 0 1 0 0 4 0 0 0 0 0 0 0 0 2 2 2 2 2
END HYDR-PARM1

```

HYDR-PARM2

```

# - # FTABNO LEN DELTH STCOR KS DB50 ***
<-----><-----><-----><-----><-----><----->
1 1 0.03 0.0 0.0 0.5 0.0
2 2 0.01 0.0 0.0 0.5 0.0
END HYDR-PARM2

```

HYDR-INIT

```

RCHRES Initial conditions for each HYDR section ***
# - # *** VOL Initial value of COLIND Initial value of OUTDGT
*** ac-ft for each possible exit for each possible exit
<-----><-----> <---><---><---><---><---> *** <---><---><---><---><--->
1 0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
2 0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
END HYDR-INIT

```

END RCHRES

SPEC-ACTIONS

END SPEC-ACTIONS

FTABLES

```

FTABLE 1
91 4
Depth Area Volume Outflow1 Velocity Travel Time***
(ft) (acres) (acre-ft) (cfs) (ft/sec) (Minutes)***

```


0.000000	0.000000	0.000000	0.000000
0.066667	0.004938	0.000220	0.070410
0.133333	0.006944	0.000620	0.099574
0.200000	0.008456	0.001135	0.121953
0.266667	0.009708	0.001742	0.140819
0.333333	0.010790	0.002426	0.157441
0.400000	0.011751	0.003178	0.172467
0.466667	0.012616	0.003991	0.186286
0.533333	0.013406	0.004858	0.199148
0.600000	0.014132	0.005777	0.211229
0.666667	0.014804	0.006741	0.222655
0.733333	0.015430	0.007749	0.233522
0.800000	0.016013	0.008798	0.243906
0.866667	0.016560	0.009884	0.253865
0.933333	0.017073	0.011005	0.263448
1.000000	0.017556	0.012160	0.272695
1.066667	0.018010	0.013345	0.281638
1.133333	0.018439	0.014560	0.290306
1.200000	0.018843	0.015803	0.298722
1.266667	0.019224	0.017072	0.306908
1.333333	0.019584	0.018366	0.314881
1.400000	0.019924	0.019683	0.322657
1.466667	0.020245	0.021022	0.330250
1.533333	0.020547	0.022382	0.337672
1.600000	0.020832	0.023761	0.344935
1.666667	0.021100	0.025159	0.352048
1.733333	0.021351	0.026574	0.359020
1.800000	0.021587	0.028006	0.365859
1.866667	0.021808	0.029452	0.372572
1.933333	0.022015	0.030913	0.379167
2.000000	0.022207	0.032387	0.385649
2.066667	0.022385	0.033874	0.392024
2.133333	0.022549	0.035372	0.398297
2.200000	0.022701	0.036880	0.404472
2.266667	0.022839	0.038398	0.410555
2.333333	0.022965	0.039925	0.416549
2.400000	0.023078	0.041460	0.422457
2.466667	0.023179	0.043002	0.428285
2.533333	0.023267	0.044550	0.434034
2.600000	0.023343	0.046104	0.439708
2.666667	0.023408	0.047662	0.445309
2.733333	0.023460	0.049224	0.450841
2.800000	0.023501	0.050790	0.456306
2.866667	0.023530	0.052358	0.461706
2.933333	0.023548	0.053927	0.467044
3.000000	0.023554	0.055497	0.472322
3.066667	0.023548	0.057067	0.477541
3.133333	0.023530	0.058637	0.482704
3.200000	0.023501	0.060204	0.487812
3.266667	0.023460	0.061770	0.492867
3.333333	0.023408	0.063332	0.497871
3.400000	0.023343	0.064891	0.502825
3.466667	0.023267	0.066444	0.507731
3.533333	0.023179	0.067993	0.512589
3.600000	0.023078	0.069535	0.517402
3.666667	0.022965	0.071069	0.522171
3.733333	0.022839	0.072596	0.526897
3.800000	0.022701	0.074114	0.531581
3.866667	0.022549	0.075623	0.536223
3.933333	0.022385	0.077121	0.540826
4.000000	0.022207	0.078607	0.545390
4.066667	0.022015	0.080081	0.549916
4.133333	0.021808	0.081542	0.554405
4.200000	0.021587	0.082989	0.558859
4.266667	0.021351	0.084420	0.563276
4.333333	0.021100	0.085835	0.567660
4.400000	0.020832	0.087233	0.572010
4.466667	0.020547	0.088612	0.576327
4.533333	0.020245	0.089972	0.580612
4.600000	0.019924	0.091311	0.584866

4.666667	0.019584	0.092628	0.589089
4.733333	0.019224	0.093922	0.593281
4.800000	0.018843	0.095191	0.597445
4.866667	0.018439	0.096434	0.601580
4.933333	0.018010	0.097649	0.605686
5.000000	0.017556	0.098835	0.609765
5.066667	0.017073	0.099989	0.978910
5.133333	0.016560	0.101111	1.648713
5.200000	0.016013	0.102196	2.508517
5.266667	0.015430	0.103245	3.508899
5.333333	0.014804	0.104253	4.608973
5.400000	0.014132	0.105218	5.768278
5.466667	0.013406	0.106136	6.945177
5.533333	0.012616	0.107004	8.097647
5.600000	0.011751	0.107816	9.185308
5.666667	0.010790	0.108568	10.17228
5.733333	0.009708	0.109252	11.03063
5.800000	0.008456	0.109859	11.74437
5.866667	0.006944	0.110374	12.31382
5.933333	0.004938	0.110774	12.76044
6.000000	0.000000	0.110994	13.13191

END FTABLE 1

FTABLE 2

91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.013223	0.000000	0.000000		
0.088889	0.013280	0.001178	0.267497		
0.177778	0.013338	0.002361	0.378297		
0.266667	0.013395	0.003549	0.463318		
0.355556	0.013453	0.004742	0.534993		
0.444444	0.013511	0.005941	0.598140		
0.533333	0.013569	0.007144	0.655230		
0.622222	0.013627	0.008353	0.707729		
0.711111	0.013685	0.009567	0.756594		
0.800000	0.013743	0.010786	0.802490		
0.888889	0.013801	0.012010	0.845898		
0.977778	0.013860	0.013239	0.887186		
1.066667	0.013918	0.014474	0.926635		
1.155556	0.013977	0.015714	0.964472		
1.244444	0.014036	0.016959	1.000880		
1.333333	0.014095	0.018209	1.036010		
1.422222	0.014154	0.019465	1.069986		
1.511111	0.014213	0.020725	1.102916		
1.600000	0.014273	0.021991	1.134892		
1.688889	0.014332	0.023263	1.165990		
1.777778	0.014392	0.024539	1.196281		
1.866667	0.014452	0.025821	1.225823		
1.955556	0.014512	0.027109	1.254670		
2.044444	0.014572	0.028401	1.282868		
2.133333	0.014632	0.029699	1.310460		
2.222222	0.014692	0.031002	1.337483		
2.311111	0.014752	0.032311	1.363970		
2.400000	0.014813	0.033625	1.389953		
2.488889	0.014873	0.034944	1.415459		
2.577778	0.014934	0.036269	1.440513		
2.666667	0.014995	0.037599	1.465139		
2.755556	0.015056	0.038935	1.489358		
2.844444	0.015117	0.040276	1.513189		
2.933333	0.015178	0.041622	1.536651		
3.022222	0.015240	0.042974	1.559759		
3.111111	0.015301	0.044332	1.582531		
3.200000	0.015363	0.045694	1.604979		
3.288889	0.015424	0.047063	1.627118		
3.377778	0.015486	0.048437	1.648959		
3.466667	0.015548	0.049816	1.670515		
3.555556	0.015610	0.051201	1.691797		
3.644444	0.015672	0.052591	1.712814		
3.733333	0.015735	0.053987	1.733576		
3.822222	0.015797	0.055388	1.754092		

3.911111	0.015860	0.056795	1.774371
4.000000	0.015923	0.058208	1.794421
4.088889	0.015985	0.059626	1.814250
4.177778	0.016048	0.061050	1.833864
4.266667	0.016111	0.062479	1.853270
4.355556	0.016175	0.063914	1.872476
4.444444	0.016238	0.065354	1.891486
4.533333	0.016301	0.066801	1.910307
4.622222	0.016365	0.068253	1.928945
4.711111	0.016429	0.069710	1.947404
4.800000	0.016492	0.071173	1.965690
4.888889	0.016556	0.072642	1.983807
4.977778	0.016620	0.074117	2.001761
5.066667	0.016685	0.075597	2.019555
5.155556	0.016749	0.077083	2.037193
5.244444	0.016813	0.078574	2.054680
5.333333	0.016878	0.080072	2.072019
5.422222	0.016943	0.081575	2.089215
5.511111	0.017007	0.083084	2.106270
5.600000	0.017072	0.084598	2.123188
5.688889	0.017137	0.086119	2.139972
5.777778	0.017203	0.087645	2.156626
5.866667	0.017268	0.089177	2.173152
5.955556	0.017333	0.090715	2.189553
6.044444	0.017399	0.092259	2.205833
6.133333	0.017465	0.093808	2.221993
6.222222	0.017530	0.095363	2.238037
6.311111	0.017596	0.096925	2.253966
6.400000	0.017662	0.098492	2.269783
6.488889	0.017729	0.100065	2.285491
6.577778	0.017795	0.101643	2.308660
6.666667	0.017861	0.103228	2.327666
6.755556	0.017928	0.104819	2.345699
6.844444	0.017995	0.106415	2.363199
6.933333	0.018061	0.108018	2.380329
7.022222	0.018128	0.109626	2.467500
7.111111	0.018195	0.111241	3.198544
7.200000	0.018262	0.112861	4.316850
7.288889	0.018330	0.114487	5.685745
7.377778	0.018397	0.116120	7.207863
7.466667	0.018465	0.117758	8.785919
7.555556	0.018532	0.119402	10.32063
7.644444	0.018600	0.121053	11.71823
7.733333	0.018668	0.122709	12.90286
7.822222	0.018736	0.124371	13.83219
7.911111	0.018804	0.126040	14.51567
8.000000	0.018872	0.127714	15.03487

END FTABLE 2

END FTABLES

EXT SOURCES

<-Volume->	<Member>	SsysSgap<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	tem strg<-factor->	strg	<Name>	# #
WDM	2	PREC	ENGL	1	PERLND	1 999 EXTNL	PREC
WDM	2	PREC	ENGL	1	IMPLND	1 999 EXTNL	PREC
WDM	1	EVAP	ENGL	0.76	PERLND	1 999 EXTNL	PETINP
WDM	1	EVAP	ENGL	0.76	IMPLND	1 999 EXTNL	PETINP

END EXT SOURCES

EXT TARGETS

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Volume->	<Member>	Tsys	Tgap	Amd	***	
<Name>	#	<Name>	#	#<-factor->	strg	<Name>	#	<Name>	tem	strg	
COPY	1	OUTPUT	MEAN	1	1	48.4	WDM	701	FLOW	ENGL	REPL
COPY	501	OUTPUT	MEAN	1	1	48.4	WDM	801	FLOW	ENGL	REPL
COPY	601	OUTPUT	MEAN	1	1	48.4	WDM	901	FLOW	ENGL	REPL
COPY	2	OUTPUT	MEAN	1	1	48.4	WDM	702	FLOW	ENGL	REPL
COPY	502	OUTPUT	MEAN	1	1	48.4	WDM	802	FLOW	ENGL	REPL
COPY	602	OUTPUT	MEAN	1	1	48.4	WDM	902	FLOW	ENGL	REPL
COPY	4	OUTPUT	MEAN	1	1	48.4	WDM	704	FLOW	ENGL	REPL

COPY	504	OUTPUT	MEAN	1	1	48.4	WDM	804	FLOW	ENGL	REPL
COPY	604	OUTPUT	MEAN	1	1	48.4	WDM	904	FLOW	ENGL	REPL
COPY	6	OUTPUT	MEAN	1	1	48.4	WDM	706	FLOW	ENGL	REPL
COPY	506	OUTPUT	MEAN	1	1	48.4	WDM	806	FLOW	ENGL	REPL
COPY	606	OUTPUT	MEAN	1	1	48.4	WDM	906	FLOW	ENGL	REPL
COPY	3	OUTPUT	MEAN	1	1	48.4	WDM	703	FLOW	ENGL	REPL
COPY	503	OUTPUT	MEAN	1	1	48.4	WDM	803	FLOW	ENGL	REPL
COPY	603	OUTPUT	MEAN	1	1	48.4	WDM	903	FLOW	ENGL	REPL
RCHRES	1	HYDR	RO	1	1	1	WDM	1004	FLOW	ENGL	REPL
RCHRES	1	HYDR	STAGE	1	1	1	WDM	1005	STAG	ENGL	REPL
RCHRES	2	HYDR	RO	1	1	1	WDM	1006	FLOW	ENGL	REPL
RCHRES	2	HYDR	STAGE	1	1	1	WDM	1007	STAG	ENGL	REPL
COPY	5	OUTPUT	MEAN	1	1	48.4	WDM	705	FLOW	ENGL	REPL
COPY	505	OUTPUT	MEAN	1	1	48.4	WDM	805	FLOW	ENGL	REPL
COPY	605	OUTPUT	MEAN	1	1	48.4	WDM	905	FLOW	ENGL	REPL

END EXT TARGETS

MASS-LINK

<Volume>	<-Grp>	<-Member->	<--Mult-->	<Target>	<-Grp>	<-Member->***
<Name>		<Name> #	#<-factor->	<Name>		<Name> # #***
MASS-LINK		2				
PERLND	PWATER	SURO	0.083333	RCHRES	INFLOW	IVOL
END MASS-LINK		2				
MASS-LINK		3				
PERLND	PWATER	IFWO	0.083333	RCHRES	INFLOW	IVOL
END MASS-LINK		3				
MASS-LINK		5				
IMPLND	IWATER	SURO	0.083333	RCHRES	INFLOW	IVOL
END MASS-LINK		5				
MASS-LINK		12				
PERLND	PWATER	SURO	0.083333	COPY	INPUT	MEAN
END MASS-LINK		12				
MASS-LINK		13				
PERLND	PWATER	IFWO	0.083333	COPY	INPUT	MEAN
END MASS-LINK		13				
MASS-LINK		15				
IMPLND	IWATER	SURO	0.083333	COPY	INPUT	MEAN
END MASS-LINK		15				
MASS-LINK		16				
RCHRES	ROFLOW			COPY	INPUT	MEAN
END MASS-LINK		16				

END MASS-LINK

END RUN

Predeveloped HSPF Message File

Mitigated HSPF Message File

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WWHM2012
PROJECT REPORT

Tamarack Project Basin
Future Fully Developed Conditions

General Model Information

Project Name: Tamarack - Durations
Site Name: Tamarack Basin - Lateral Flow Basin
Site Address:
City:
Report Date: 5/18/2016
Gage: Seatac
Data Start: 1948/10/01
Data End: 2009/09/30
Timestep: 15 Minute
Precip Scale: 1.00
Version Date: 2016/02/25
Version: 4.2.12

POC Thresholds

Low Flow Threshold for POC1: 50 Percent of the 2 Year
High Flow Threshold for POC1: 50 Year

Low Flow Threshold for POC2: 50 Percent of the 2 Year
High Flow Threshold for POC2: 50 Year

Low Flow Threshold for POC3: 50 Percent of the 2 Year
High Flow Threshold for POC3: 50 Year

Low Flow Threshold for POC4: 50 Percent of the 2 Year
High Flow Threshold for POC4: 50 Year

Low Flow Threshold for POC5: 50 Percent of the 2 Year
High Flow Threshold for POC5: 50 Year

Low Flow Threshold for POC6: 50 Percent of the 2 Year
High Flow Threshold for POC6: 50 Year

Low Flow Threshold for POC7: 50 Percent of the 2 Year
High Flow Threshold for POC7: 50 Year

Low Flow Threshold for POC8: 50 Percent of the 2 Year
High Flow Threshold for POC8: 50 Year

Landuse Basin Data

Predeveloped Land Use

Subbasin 1

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Mod 0.39

C, Lawn, Mod 0.95

Pervious Total 1.34

Impervious Land Use acre

ROADS MOD 0.35

ROOF TOPS FLAT 0.32

DRIVEWAYS MOD 0.14

Impervious Total 0.81

Basin Total 2.15

Element Flows To:

Surface

Interflow

Groundwater

Subbasin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	0.67
C, Lawn, Mod	0.41
Pervious Total	1.08
Impervious Land Use	acre
ROADS MOD	0.42
ROOF TOPS FLAT	0.08
DRIVEWAYS MOD	0.04
Impervious Total	0.54
Basin Total	1.62

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 3A

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	5.75
Pervious Total	5.75
Impervious Land Use	acre
ROADS STEEP	1.79
ROOF TOPS FLAT	2.6
DRIVEWAYS STEEP	1.11
Impervious Total	5.5
Basin Total	11.25

Element Flows To:
Surface Interflow Groundwater
Subbasin 3 Detention Subbasin 3 Detention

Subbasin 5

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	1.39
Pervious Total	1.39
Impervious Land Use	acre
ROADS STEEP	0.52
ROOF TOPS FLAT	0.55
DRIVEWAYS STEEP	0.24
Impervious Total	1.31
Basin Total	2.7

Element Flows To:

Surface	Interflow	Groundwater
Subbasin 5 Detention	Subbasin 5 Detention	

Subbasin 6

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	10.37
C, Lawn, Mod	0.04
Pervious Total	10.41
Impervious Land Use	acre
ROADS MOD	1.77
ROOF TOPS FLAT	2.59
DRIVEWAYS MOD	1.11
Impervious Total	5.47
Basin Total	15.88

Element Flows To:		
Surface	Interflow	Groundwater

Basin 4 - Perv Lateral Flow

Bypass: No

GroundWater: No

Pervious Land Use acre
A B, Forest, Mod 5.73

Element Flows To:
Surface Interflow Groundwater

Basin 4,7,8 Imperv Lateral

Bypass: No
Impervious Land Use acre
ROADS MOD LAT 3.96
Element Flows To:
Outlet 1 Outlet 2
Basin 4 - Perv Lateral Flow

Subbasin 8 - Perv Lateral Flow A/B

Bypass: No

GroundWater: No

Pervious Land Use acre
A B, Lawn, Steep 2.33

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow

Subbasin 7 - Perv Lateral Flow C

Bypass: No

GroundWater: No

Pervious Land Use acre
C, Lawn, Steep .86

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow

Subbasin 8 - Perv Lateral Flow C

Bypass: No

GroundWater: No

Pervious Land Use acre
C, Lawn, Steep 2.25

Element Flows To:

Surface	Interflow	Groundwater
Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow	Basin 4 - Perv Lateral Flow

Subbasin 7 - Perv Lateral Flow A/B

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Steep .59

Element Flows To:

Surface

Interflow

Groundwater

Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow Basin 4 - Perv Lateral Flow

Subbasin 3B

Bypass:	No
GroundWater:	No
Pervious Land Use A B, Forest, Steep	acre 1.44
Pervious Total	1.44
Impervious Land Use ROADS STEEP ROOF TOPS FLAT DRIVEWAYS STEEP	acre 0.45 0.65 0.28
Impervious Total	1.38
Basin Total	2.82

Element Flows To:		
Surface	Interflow	Groundwater

Mitigated Land Use

Subbasin 1

Bypass: No

GroundWater: No

Pervious Land Use acre

A B, Lawn, Mod 0.38

C, Lawn, Mod 0.94

Pervious Total 1.32

Impervious Land Use acre

ROADS MOD 0.35

ROOF TOPS FLAT 0.33

DRIVEWAYS MOD 0.14

Impervious Total 0.82

Basin Total 2.14

Element Flows To:

Surface

Interflow

Groundwater

Subbasin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	0.52
C, Lawn, Mod	0.32
Pervious Total	0.84
Impervious Land Use	acre
ROADS MOD	0.42
ROOF TOPS FLAT	0.25
DRIVEWAYS MOD	0.11
Impervious Total	0.78
Basin Total	1.62

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 3A

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	5.54
Pervious Total	5.54
Impervious Land Use	acre
ROADS STEEP	1.79
ROOF TOPS FLAT	2.74
DRIVEWAYS STEEP	1.18
Impervious Total	5.71
Basin Total	11.25

Element Flows To:		
Surface	Interflow	Groundwater
Tank 1	Tank 1	

Subbasin 4

Bypass:	No
GroundWater:	No
Pervious Land Use A B, Forest, Mod	acre 5.82
Pervious Total	5.82
Impervious Land Use	acre
Impervious Total	0
Basin Total	5.82

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 5

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	1.15
Pervious Total	1.15
Impervious Land Use	acre
ROADS STEEP	0.52
ROOF TOPS FLAT	0.73
DRIVEWAYS STEEP	0.31
Impervious Total	1.56
Basin Total	2.71

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1	Trapezoidal Pond 1	

Subbasin 6

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Mod	9.37
C, Lawn, Mod	0.03
Pervious Total	9.4
Impervious Land Use	acre
ROADS MOD	1.77
ROOF TOPS FLAT	3.3
DRIVEWAYS MOD	1.41
Impervious Total	6.48
Basin Total	15.88

Element Flows To:		
Surface	Interflow	Groundwater

Subbasin 7

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	0.52
C, Lawn, Steep	0.77
Pervious Total	1.29
Impervious Land Use	acre
ROOF TOPS FLAT	0.72
DRIVEWAYS STEEP	0.31
Impervious Total	1.03
Basin Total	2.32

Element Flows To:
Surface Interflow Groundwater

Subbasin 8

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Lawn, Steep	2.2
C, Lawn, Steep	2.13
Pervious Total	4.33
Impervious Land Use	acre
ROADS STEEP	1.78
ROOF TOPS FLAT	1.02
DRIVEWAYS STEEP	0.44
Impervious Total	3.24
Basin Total	7.57

Element Flows To:
Surface Interflow Groundwater

Basin 3B

Bypass: Yes

GroundWater: No

Pervious Land Use acre
A B, Lawn, Steep 1.39

Pervious Total 1.39

Impervious Land Use acre
ROADS STEEP 0.45
ROOF TOPS FLAT 0.69
DRIVEWAYS STEEP 0.29

Impervious Total 1.43

Basin Total 2.82

Element Flows To:
Surface

Interflow

Groundwater

Routing Elements

Predeveloped Routing

Subbasin 5 Detention

Bottom Length: 24.00 ft.
Bottom Width: 24.00 ft.
Depth: 8 ft.
Volume at riser head: 0.1096 acre-feet.
Side slope 1: 0.292 To 1
Side slope 2: 0.292 To 1
Side slope 3: 0.292 To 1
Side slope 4: 0.292 To 1
Discharge Structure
Riser Height: 7 ft.
Riser Diameter: 24 in.
Orifice 1 Diameter: 5.75 in. Elevation:0 ft.
Orifice 2 Diameter: 1 in. Elevation:6.5 ft.
Element Flows To:
Outlet 1 Outlet 2

Pond Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infil(cfs)
0.0000	0.013	0.000	0.000	0.000
0.0889	0.013	0.001	0.267	0.000
0.1778	0.013	0.002	0.378	0.000
0.2667	0.013	0.003	0.463	0.000
0.3556	0.013	0.004	0.535	0.000
0.4444	0.013	0.005	0.598	0.000
0.5333	0.013	0.007	0.655	0.000
0.6222	0.013	0.008	0.707	0.000
0.7111	0.013	0.009	0.756	0.000
0.8000	0.013	0.010	0.802	0.000
0.8889	0.013	0.012	0.845	0.000
0.9778	0.013	0.013	0.887	0.000
1.0667	0.013	0.014	0.926	0.000
1.1556	0.014	0.015	0.964	0.000
1.2444	0.014	0.017	1.000	0.000
1.3333	0.014	0.018	1.036	0.000
1.4222	0.014	0.019	1.070	0.000
1.5111	0.014	0.020	1.102	0.000
1.6000	0.014	0.022	1.134	0.000
1.6889	0.014	0.023	1.166	0.000
1.7778	0.014	0.024	1.196	0.000
1.8667	0.014	0.025	1.225	0.000
1.9556	0.014	0.027	1.254	0.000
2.0444	0.014	0.028	1.282	0.000
2.1333	0.014	0.029	1.310	0.000
2.2222	0.014	0.031	1.337	0.000
2.3111	0.014	0.032	1.364	0.000
2.4000	0.014	0.033	1.390	0.000
2.4889	0.014	0.034	1.415	0.000
2.5778	0.014	0.036	1.440	0.000
2.6667	0.015	0.037	1.465	0.000
2.7556	0.015	0.038	1.489	0.000

2.8444	0.015	0.040	1.513	0.000
2.9333	0.015	0.041	1.536	0.000
3.0222	0.015	0.043	1.559	0.000
3.1111	0.015	0.044	1.582	0.000
3.2000	0.015	0.045	1.605	0.000
3.2889	0.015	0.047	1.627	0.000
3.3778	0.015	0.048	1.649	0.000
3.4667	0.015	0.049	1.670	0.000
3.5556	0.015	0.051	1.691	0.000
3.6444	0.015	0.052	1.712	0.000
3.7333	0.015	0.054	1.733	0.000
3.8222	0.015	0.055	1.754	0.000
3.9111	0.015	0.056	1.774	0.000
4.0000	0.015	0.058	1.794	0.000
4.0889	0.016	0.059	1.814	0.000
4.1778	0.016	0.061	1.833	0.000
4.2667	0.016	0.062	1.853	0.000
4.3556	0.016	0.063	1.872	0.000
4.4444	0.016	0.065	1.891	0.000
4.5333	0.016	0.066	1.910	0.000
4.6222	0.016	0.068	1.928	0.000
4.7111	0.016	0.069	1.947	0.000
4.8000	0.016	0.071	1.965	0.000
4.8889	0.016	0.072	1.983	0.000
4.9778	0.016	0.074	2.001	0.000
5.0667	0.016	0.075	2.019	0.000
5.1556	0.016	0.077	2.037	0.000
5.2444	0.016	0.078	2.054	0.000
5.3333	0.016	0.080	2.072	0.000
5.4222	0.016	0.081	2.089	0.000
5.5111	0.017	0.083	2.106	0.000
5.6000	0.017	0.084	2.123	0.000
5.6889	0.017	0.086	2.140	0.000
5.7778	0.017	0.087	2.156	0.000
5.8667	0.017	0.089	2.173	0.000
5.9556	0.017	0.090	2.189	0.000
6.0444	0.017	0.092	2.205	0.000
6.1333	0.017	0.093	2.222	0.000
6.2222	0.017	0.095	2.238	0.000
6.3111	0.017	0.096	2.254	0.000
6.4000	0.017	0.098	2.269	0.000
6.4889	0.017	0.100	2.285	0.000
6.5778	0.017	0.101	2.308	0.000
6.6667	0.017	0.103	2.327	0.000
6.7556	0.017	0.104	2.345	0.000
6.8444	0.018	0.106	2.363	0.000
6.9333	0.018	0.108	2.380	0.000
7.0222	0.018	0.109	2.467	0.000
7.1111	0.018	0.111	3.198	0.000
7.2000	0.018	0.112	4.316	0.000
7.2889	0.018	0.114	5.685	0.000
7.3778	0.018	0.116	7.207	0.000
7.4667	0.018	0.117	8.785	0.000
7.5556	0.018	0.119	10.32	0.000
7.6444	0.018	0.121	11.71	0.000
7.7333	0.018	0.122	12.90	0.000
7.8222	0.018	0.124	13.83	0.000
7.9111	0.018	0.126	14.51	0.000

8.0000	0.018	0.127	15.03	0.000
8.0889	0.018	0.129	15.73	0.000

Subbasin 3 Detention

Dimensions
 Depth: 6 ft.
 Tank Type: Circular
 Diameter: 6 ft.
 Length: 171 ft.
 Discharge Structure
 Riser Height: 5 ft.
 Riser Diameter: 24 in.
 Orifice 1 Diameter: 3.17 in. Elevation: 0 ft.
 Element Flows To:
 Outlet 1 Outlet 2

Tank Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.000	0.000	0.000	0.000
0.0667	0.004	0.000	0.070	0.000
0.1333	0.006	0.000	0.099	0.000
0.2000	0.008	0.001	0.122	0.000
0.2667	0.009	0.001	0.140	0.000
0.3333	0.010	0.002	0.157	0.000
0.4000	0.011	0.003	0.172	0.000
0.4667	0.012	0.004	0.186	0.000
0.5333	0.013	0.004	0.199	0.000
0.6000	0.014	0.005	0.211	0.000
0.6667	0.014	0.006	0.222	0.000
0.7333	0.015	0.007	0.233	0.000
0.8000	0.016	0.008	0.243	0.000
0.8667	0.016	0.009	0.253	0.000
0.9333	0.017	0.011	0.263	0.000
1.0000	0.017	0.012	0.272	0.000
1.0667	0.018	0.013	0.281	0.000
1.1333	0.018	0.014	0.290	0.000
1.2000	0.018	0.015	0.298	0.000
1.2667	0.019	0.017	0.306	0.000
1.3333	0.019	0.018	0.314	0.000
1.4000	0.019	0.019	0.322	0.000
1.4667	0.020	0.021	0.330	0.000
1.5333	0.020	0.022	0.337	0.000
1.6000	0.020	0.023	0.344	0.000
1.6667	0.021	0.025	0.352	0.000
1.7333	0.021	0.026	0.359	0.000
1.8000	0.021	0.028	0.365	0.000
1.8667	0.021	0.029	0.372	0.000
1.9333	0.022	0.030	0.379	0.000
2.0000	0.022	0.032	0.385	0.000
2.0667	0.022	0.033	0.392	0.000
2.1333	0.022	0.035	0.398	0.000
2.2000	0.022	0.036	0.404	0.000
2.2667	0.022	0.038	0.410	0.000
2.3333	0.023	0.039	0.416	0.000
2.4000	0.023	0.041	0.422	0.000
2.4667	0.023	0.043	0.428	0.000
2.5333	0.023	0.044	0.434	0.000
2.6000	0.023	0.046	0.439	0.000

2.6667	0.023	0.047	0.445	0.000
2.7333	0.023	0.049	0.450	0.000
2.8000	0.023	0.050	0.456	0.000
2.8667	0.023	0.052	0.461	0.000
2.9333	0.023	0.053	0.467	0.000
3.0000	0.023	0.055	0.472	0.000
3.0667	0.023	0.057	0.477	0.000
3.1333	0.023	0.058	0.482	0.000
3.2000	0.023	0.060	0.487	0.000
3.2667	0.023	0.061	0.492	0.000
3.3333	0.023	0.063	0.497	0.000
3.4000	0.023	0.064	0.502	0.000
3.4667	0.023	0.066	0.507	0.000
3.5333	0.023	0.068	0.512	0.000
3.6000	0.023	0.069	0.517	0.000
3.6667	0.023	0.071	0.522	0.000
3.7333	0.022	0.072	0.526	0.000
3.8000	0.022	0.074	0.531	0.000
3.8667	0.022	0.075	0.536	0.000
3.9333	0.022	0.077	0.540	0.000
4.0000	0.022	0.078	0.545	0.000
4.0667	0.022	0.080	0.549	0.000
4.1333	0.021	0.081	0.554	0.000
4.2000	0.021	0.083	0.558	0.000
4.2667	0.021	0.084	0.563	0.000
4.3333	0.021	0.085	0.567	0.000
4.4000	0.020	0.087	0.572	0.000
4.4667	0.020	0.088	0.576	0.000
4.5333	0.020	0.090	0.580	0.000
4.6000	0.019	0.091	0.584	0.000
4.6667	0.019	0.092	0.589	0.000
4.7333	0.019	0.093	0.593	0.000
4.8000	0.018	0.095	0.597	0.000
4.8667	0.018	0.096	0.601	0.000
4.9333	0.018	0.097	0.605	0.000
5.0000	0.017	0.098	0.609	0.000
5.0667	0.017	0.100	0.978	0.000
5.1333	0.016	0.101	1.648	0.000
5.2000	0.016	0.102	2.508	0.000
5.2667	0.015	0.103	3.508	0.000
5.3333	0.014	0.104	4.609	0.000
5.4000	0.014	0.105	5.768	0.000
5.4667	0.013	0.106	6.945	0.000
5.5333	0.012	0.107	8.097	0.000
5.6000	0.011	0.107	9.185	0.000
5.6667	0.010	0.108	10.17	0.000
5.7333	0.009	0.109	11.03	0.000
5.8000	0.008	0.109	11.74	0.000
5.8667	0.006	0.110	12.31	0.000
5.9333	0.004	0.110	12.76	0.000
6.0000	0.000	0.111	13.13	0.000
6.0667	0.000	0.000	13.68	0.000

Mitigated Routing

Tank 1

Dimensions
 Depth: 6 ft.
 Tank Type: Circular
 Diameter: 6 ft.
 Length: 171 ft.
 Discharge Structure
 Riser Height: 5 ft.
 Riser Diameter: 24 in.
 Orifice 1 Diameter: 3.17 in. Elevation:0 ft.
 Element Flows To:
 Outlet 1 Outlet 2

Tank Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.000	0.000	0.000	0.000
0.0667	0.004	0.000	0.070	0.000
0.1333	0.006	0.000	0.099	0.000
0.2000	0.008	0.001	0.122	0.000
0.2667	0.009	0.001	0.140	0.000
0.3333	0.010	0.002	0.157	0.000
0.4000	0.011	0.003	0.172	0.000
0.4667	0.012	0.004	0.186	0.000
0.5333	0.013	0.004	0.199	0.000
0.6000	0.014	0.005	0.211	0.000
0.6667	0.014	0.006	0.222	0.000
0.7333	0.015	0.007	0.233	0.000
0.8000	0.016	0.008	0.243	0.000
0.8667	0.016	0.009	0.253	0.000
0.9333	0.017	0.011	0.263	0.000
1.0000	0.017	0.012	0.272	0.000
1.0667	0.018	0.013	0.281	0.000
1.1333	0.018	0.014	0.290	0.000
1.2000	0.018	0.015	0.298	0.000
1.2667	0.019	0.017	0.306	0.000
1.3333	0.019	0.018	0.314	0.000
1.4000	0.019	0.019	0.322	0.000
1.4667	0.020	0.021	0.330	0.000
1.5333	0.020	0.022	0.337	0.000
1.6000	0.020	0.023	0.344	0.000
1.6667	0.021	0.025	0.352	0.000
1.7333	0.021	0.026	0.359	0.000
1.8000	0.021	0.028	0.365	0.000
1.8667	0.021	0.029	0.372	0.000
1.9333	0.022	0.030	0.379	0.000
2.0000	0.022	0.032	0.385	0.000
2.0667	0.022	0.033	0.392	0.000
2.1333	0.022	0.035	0.398	0.000
2.2000	0.022	0.036	0.404	0.000
2.2667	0.022	0.038	0.410	0.000
2.3333	0.023	0.039	0.416	0.000
2.4000	0.023	0.041	0.422	0.000
2.4667	0.023	0.043	0.428	0.000

2.5333	0.023	0.044	0.434	0.000
2.6000	0.023	0.046	0.439	0.000
2.6667	0.023	0.047	0.445	0.000
2.7333	0.023	0.049	0.450	0.000
2.8000	0.023	0.050	0.456	0.000
2.8667	0.023	0.052	0.461	0.000
2.9333	0.023	0.053	0.467	0.000
3.0000	0.023	0.055	0.472	0.000
3.0667	0.023	0.057	0.477	0.000
3.1333	0.023	0.058	0.482	0.000
3.2000	0.023	0.060	0.487	0.000
3.2667	0.023	0.061	0.492	0.000
3.3333	0.023	0.063	0.497	0.000
3.4000	0.023	0.064	0.502	0.000
3.4667	0.023	0.066	0.507	0.000
3.5333	0.023	0.068	0.512	0.000
3.6000	0.023	0.069	0.517	0.000
3.6667	0.023	0.071	0.522	0.000
3.7333	0.022	0.072	0.526	0.000
3.8000	0.022	0.074	0.531	0.000
3.8667	0.022	0.075	0.536	0.000
3.9333	0.022	0.077	0.540	0.000
4.0000	0.022	0.078	0.545	0.000
4.0667	0.022	0.080	0.549	0.000
4.1333	0.021	0.081	0.554	0.000
4.2000	0.021	0.083	0.558	0.000
4.2667	0.021	0.084	0.563	0.000
4.3333	0.021	0.085	0.567	0.000
4.4000	0.020	0.087	0.572	0.000
4.4667	0.020	0.088	0.576	0.000
4.5333	0.020	0.090	0.580	0.000
4.6000	0.019	0.091	0.584	0.000
4.6667	0.019	0.092	0.589	0.000
4.7333	0.019	0.093	0.593	0.000
4.8000	0.018	0.095	0.597	0.000
4.8667	0.018	0.096	0.601	0.000
4.9333	0.018	0.097	0.605	0.000
5.0000	0.017	0.098	0.609	0.000
5.0667	0.017	0.100	0.978	0.000
5.1333	0.016	0.101	1.648	0.000
5.2000	0.016	0.102	2.508	0.000
5.2667	0.015	0.103	3.508	0.000
5.3333	0.014	0.104	4.609	0.000
5.4000	0.014	0.105	5.768	0.000
5.4667	0.013	0.106	6.945	0.000
5.5333	0.012	0.107	8.097	0.000
5.6000	0.011	0.107	9.185	0.000
5.6667	0.010	0.108	10.17	0.000
5.7333	0.009	0.109	11.03	0.000
5.8000	0.008	0.109	11.74	0.000
5.8667	0.006	0.110	12.31	0.000
5.9333	0.004	0.110	12.76	0.000
6.0000	0.000	0.111	13.13	0.000
6.0667	0.000	0.000	13.68	0.000

Trapezoidal Pond 1

Bottom Length: 24.00 ft.
 Bottom Width: 24.00 ft.
 Depth: 8 ft.
 Volume at riser head: 0.1096 acre-feet.
 Side slope 1: 0.292 To 1
 Side slope 2: 0.292 To 1
 Side slope 3: 0.292 To 1
 Side slope 4: 0.292 To 1
 Discharge Structure
 Riser Height: 7 ft.
 Riser Diameter: 24 in.
 Orifice 1 Diameter: 5.75 in. Elevation:0 ft.
 Orifice 2 Diameter: 1 in. Elevation:6.5 ft.
 Element Flows To:
 Outlet 1 Outlet 2

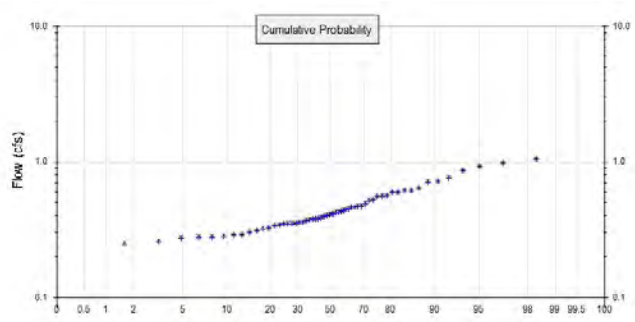
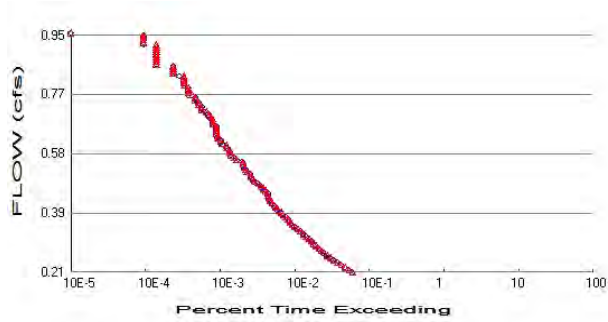
Pond Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.013	0.000	0.000	0.000
0.0889	0.013	0.001	0.267	0.000
0.1778	0.013	0.002	0.378	0.000
0.2667	0.013	0.003	0.463	0.000
0.3556	0.013	0.004	0.535	0.000
0.4444	0.013	0.005	0.598	0.000
0.5333	0.013	0.007	0.655	0.000
0.6222	0.013	0.008	0.707	0.000
0.7111	0.013	0.009	0.756	0.000
0.8000	0.013	0.010	0.802	0.000
0.8889	0.013	0.012	0.845	0.000
0.9778	0.013	0.013	0.887	0.000
1.0667	0.013	0.014	0.926	0.000
1.1556	0.014	0.015	0.964	0.000
1.2444	0.014	0.017	1.000	0.000
1.3333	0.014	0.018	1.036	0.000
1.4222	0.014	0.019	1.070	0.000
1.5111	0.014	0.020	1.102	0.000
1.6000	0.014	0.022	1.134	0.000
1.6889	0.014	0.023	1.166	0.000
1.7778	0.014	0.024	1.196	0.000
1.8667	0.014	0.025	1.225	0.000
1.9556	0.014	0.027	1.254	0.000
2.0444	0.014	0.028	1.282	0.000
2.1333	0.014	0.029	1.310	0.000
2.2222	0.014	0.031	1.337	0.000
2.3111	0.014	0.032	1.364	0.000
2.4000	0.014	0.033	1.390	0.000
2.4889	0.014	0.034	1.415	0.000
2.5778	0.014	0.036	1.440	0.000
2.6667	0.015	0.037	1.465	0.000
2.7556	0.015	0.038	1.489	0.000
2.8444	0.015	0.040	1.513	0.000
2.9333	0.015	0.041	1.536	0.000
3.0222	0.015	0.043	1.559	0.000
3.1111	0.015	0.044	1.582	0.000

3.2000	0.015	0.045	1.605	0.000
3.2889	0.015	0.047	1.627	0.000
3.3778	0.015	0.048	1.649	0.000
3.4667	0.015	0.049	1.670	0.000
3.5556	0.015	0.051	1.691	0.000
3.6444	0.015	0.052	1.712	0.000
3.7333	0.015	0.054	1.733	0.000
3.8222	0.015	0.055	1.754	0.000
3.9111	0.015	0.056	1.774	0.000
4.0000	0.015	0.058	1.794	0.000
4.0889	0.016	0.059	1.814	0.000
4.1778	0.016	0.061	1.833	0.000
4.2667	0.016	0.062	1.853	0.000
4.3556	0.016	0.063	1.872	0.000
4.4444	0.016	0.065	1.891	0.000
4.5333	0.016	0.066	1.910	0.000
4.6222	0.016	0.068	1.928	0.000
4.7111	0.016	0.069	1.947	0.000
4.8000	0.016	0.071	1.965	0.000
4.8889	0.016	0.072	1.983	0.000
4.9778	0.016	0.074	2.001	0.000
5.0667	0.016	0.075	2.019	0.000
5.1556	0.016	0.077	2.037	0.000
5.2444	0.016	0.078	2.054	0.000
5.3333	0.016	0.080	2.072	0.000
5.4222	0.016	0.081	2.089	0.000
5.5111	0.017	0.083	2.106	0.000
5.6000	0.017	0.084	2.123	0.000
5.6889	0.017	0.086	2.140	0.000
5.7778	0.017	0.087	2.156	0.000
5.8667	0.017	0.089	2.173	0.000
5.9556	0.017	0.090	2.189	0.000
6.0444	0.017	0.092	2.205	0.000
6.1333	0.017	0.093	2.222	0.000
6.2222	0.017	0.095	2.238	0.000
6.3111	0.017	0.096	2.254	0.000
6.4000	0.017	0.098	2.269	0.000
6.4889	0.017	0.100	2.285	0.000
6.5778	0.017	0.101	2.308	0.000
6.6667	0.017	0.103	2.327	0.000
6.7556	0.017	0.104	2.345	0.000
6.8444	0.018	0.106	2.363	0.000
6.9333	0.018	0.108	2.380	0.000
7.0222	0.018	0.109	2.467	0.000
7.1111	0.018	0.111	3.198	0.000
7.2000	0.018	0.112	4.316	0.000
7.2889	0.018	0.114	5.685	0.000
7.3778	0.018	0.116	7.207	0.000
7.4667	0.018	0.117	8.785	0.000
7.5556	0.018	0.119	10.32	0.000
7.6444	0.018	0.121	11.71	0.000
7.7333	0.018	0.122	12.90	0.000
7.8222	0.018	0.124	13.83	0.000
7.9111	0.018	0.126	14.51	0.000
8.0000	0.018	0.127	15.03	0.000
8.0889	0.018	0.129	15.73	0.000

Analysis Results

POC 1



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1

Total Pervious Area: 1.34
 Total Impervious Area: 0.81

Mitigated Landuse Totals for POC #1

Total Pervious Area: 1.32
 Total Impervious Area: 0.82

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.416796
5 year	0.567316
10 year	0.677895
25 year	0.830552
50 year	0.954007
100 year	1.086099

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.419476
5 year	0.570091
10 year	0.680611
25 year	0.83304
50 year	0.956208
100 year	1.087905

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.612	0.615
1950	0.594	0.595
1951	0.375	0.376
1952	0.249	0.251
1953	0.279	0.281
1954	0.341	0.343
1955	0.379	0.382
1956	0.346	0.347
1957	0.439	0.442
1958	0.321	0.323

1959	0.300	0.303
1960	0.393	0.395
1961	0.348	0.351
1962	0.274	0.277
1963	0.376	0.378
1964	0.324	0.325
1965	0.459	0.462
1966	0.282	0.284
1967	0.596	0.597
1968	0.613	0.617
1969	0.414	0.417
1970	0.386	0.389
1971	0.470	0.473
1972	0.559	0.561
1973	0.243	0.246
1974	0.459	0.462
1975	0.449	0.452
1976	0.356	0.358
1977	0.338	0.340
1978	0.425	0.428
1979	0.518	0.523
1980	0.717	0.719
1981	0.403	0.406
1982	0.637	0.640
1983	0.436	0.440
1984	0.289	0.291
1985	0.394	0.398
1986	0.366	0.368
1987	0.487	0.492
1988	0.277	0.280
1989	0.423	0.427
1990	1.046	1.046
1991	0.764	0.766
1992	0.309	0.311
1993	0.288	0.290
1994	0.258	0.260
1995	0.356	0.359
1996	0.561	0.562
1997	0.430	0.433
1998	0.377	0.379
1999	0.920	0.925
2000	0.410	0.413
2001	0.408	0.412
2002	0.554	0.557
2003	0.525	0.527
2004	0.856	0.861
2005	0.352	0.355
2006	0.349	0.350
2007	0.987	0.986
2008	0.711	0.714
2009	0.468	0.473

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	1.0458	1.0461
2	0.9867	0.9861
3	0.9201	0.9251

4	0.8561	0.8610
5	0.7635	0.7655
6	0.7165	0.7187
7	0.7114	0.7138
8	0.6369	0.6402
9	0.6132	0.6173
10	0.6116	0.6146
11	0.5962	0.5974
12	0.5937	0.5946
13	0.5615	0.5617
14	0.5589	0.5607
15	0.5537	0.5569
16	0.5252	0.5274
17	0.5181	0.5233
18	0.4874	0.4924
19	0.4696	0.4729
20	0.4685	0.4727
21	0.4595	0.4622
22	0.4590	0.4617
23	0.4494	0.4520
24	0.4394	0.4422
25	0.4358	0.4400
26	0.4304	0.4326
27	0.4251	0.4277
28	0.4234	0.4275
29	0.4141	0.4167
30	0.4101	0.4129
31	0.4077	0.4116
32	0.4025	0.4058
33	0.3944	0.3976
34	0.3933	0.3953
35	0.3861	0.3888
36	0.3787	0.3816
37	0.3767	0.3788
38	0.3759	0.3782
39	0.3748	0.3764
40	0.3662	0.3683
41	0.3562	0.3592
42	0.3559	0.3580
43	0.3525	0.3548
44	0.3487	0.3507
45	0.3483	0.3503
46	0.3461	0.3467
47	0.3406	0.3429
48	0.3377	0.3399
49	0.3242	0.3252
50	0.3207	0.3234
51	0.3093	0.3111
52	0.3002	0.3034
53	0.2886	0.2909
54	0.2876	0.2898
55	0.2824	0.2844
56	0.2786	0.2815
57	0.2767	0.2800
58	0.2740	0.2767
59	0.2579	0.2604
60	0.2488	0.2508
61	0.2429	0.2455

Duration Flows

The Development **Failed** :duration increase for more than 50% of the flows.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.2084	1243	1278	102	Fail
0.2159	1126	1152	102	Fail
0.2235	985	1019	103	Fail
0.2310	885	907	102	Fail
0.2385	786	804	102	Fail
0.2461	697	724	103	Fail
0.2536	625	650	104	Fail
0.2611	571	588	102	Fail
0.2686	515	536	104	Fail
0.2762	474	484	102	Fail
0.2837	443	453	102	Fail
0.2912	403	411	101	Fail
0.2988	379	384	101	Fail
0.3063	352	360	102	Fail
0.3138	321	337	104	Fail
0.3214	297	304	102	Fail
0.3289	274	280	102	Fail
0.3364	250	257	102	Fail
0.3440	229	237	103	Fail
0.3515	210	214	101	Fail
0.3590	190	197	103	Fail
0.3666	182	186	102	Fail
0.3741	172	173	100	Pass
0.3816	162	165	101	Fail
0.3892	148	150	101	Fail
0.3967	137	141	102	Fail
0.4042	124	130	104	Fail
0.4117	116	120	103	Fail
0.4193	110	113	102	Pass
0.4268	103	107	103	Pass
0.4343	100	101	101	Pass
0.4419	94	97	103	Pass
0.4494	93	94	101	Pass
0.4569	92	92	100	Pass
0.4645	87	88	101	Pass
0.4720	79	82	103	Pass
0.4795	73	75	102	Pass
0.4871	67	70	104	Pass
0.4946	60	62	103	Pass
0.5021	56	59	105	Pass
0.5097	55	56	101	Pass
0.5172	54	55	101	Pass
0.5247	48	49	102	Pass
0.5322	46	47	102	Pass
0.5398	44	45	102	Pass
0.5473	43	43	100	Pass
0.5548	42	43	102	Pass
0.5624	35	36	102	Pass
0.5699	33	33	100	Pass
0.5774	30	30	100	Pass
0.5850	29	29	100	Pass
0.5925	28	29	103	Pass
0.6000	26	26	100	Pass

0.6076	24	26	108	Pass
0.6151	22	23	104	Pass
0.6226	22	22	100	Pass
0.6302	20	20	100	Pass
0.6377	19	20	105	Pass
0.6452	19	19	100	Pass
0.6528	19	19	100	Pass
0.6603	19	19	100	Pass
0.6678	19	19	100	Pass
0.6753	17	17	100	Pass
0.6829	17	17	100	Pass
0.6904	16	17	106	Pass
0.6979	15	16	106	Pass
0.7055	15	15	100	Pass
0.7130	13	14	107	Pass
0.7205	12	12	100	Pass
0.7281	12	12	100	Pass
0.7356	11	11	100	Pass
0.7431	11	11	100	Pass
0.7507	10	10	100	Pass
0.7582	10	10	100	Pass
0.7657	8	9	112	Fail
0.7733	8	8	100	Pass
0.7808	8	8	100	Pass
0.7883	8	8	100	Pass
0.7958	7	7	100	Pass
0.8034	7	7	100	Pass
0.8109	7	7	100	Pass
0.8184	7	7	100	Pass
0.8260	6	7	116	Fail
0.8335	5	5	100	Pass
0.8410	5	5	100	Pass
0.8486	5	5	100	Pass
0.8561	5	5	100	Pass
0.8636	3	3	100	Pass
0.8712	3	3	100	Pass
0.8787	3	3	100	Pass
0.8862	3	3	100	Pass
0.8938	3	3	100	Pass
0.9013	3	3	100	Pass
0.9088	3	3	100	Pass
0.9163	3	3	100	Pass
0.9239	2	3	150	Fail
0.9314	2	2	100	Pass
0.9389	2	2	100	Pass
0.9465	2	2	100	Pass
0.9540	2	2	100	Pass

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

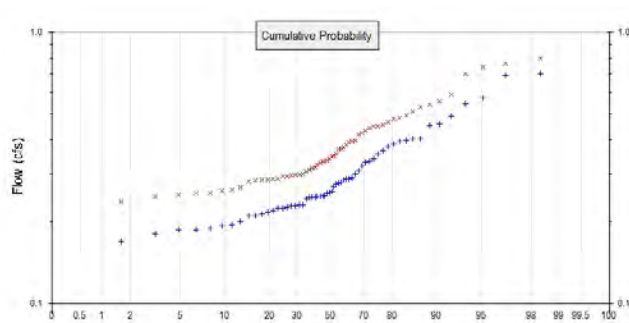
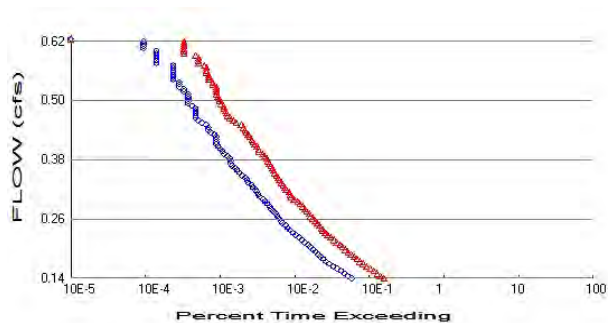
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

POC 2



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #2

Total Pervious Area: 1.08
 Total Impervious Area: 0.54

Mitigated Landuse Totals for POC #2

Total Pervious Area: 0.84
 Total Impervious Area: 0.78

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	Flow(cfs)
2 year	0.272287
5 year	0.368456
10 year	0.440235
25 year	0.540614
50 year	0.622745
100 year	0.711146

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	Flow(cfs)
2 year	0.357064
5 year	0.468532
10 year	0.548138
25 year	0.655564
50 year	0.740714
100 year	0.830382

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #2

Year	Predeveloped	Mitigated
1949	0.378	0.484
1950	0.399	0.466
1951	0.247	0.308
1952	0.164	0.218
1953	0.189	0.263
1954	0.231	0.293
1955	0.249	0.333
1956	0.246	0.297
1957	0.270	0.356
1958	0.210	0.285
1959	0.210	0.293

1960	0.247	0.317
1961	0.224	0.297
1962	0.181	0.250
1963	0.243	0.316
1964	0.224	0.287
1965	0.285	0.370
1966	0.186	0.247
1967	0.405	0.478
1968	0.403	0.531
1969	0.254	0.334
1970	0.247	0.328
1971	0.300	0.398
1972	0.366	0.444
1973	0.169	0.237
1974	0.290	0.377
1975	0.275	0.371
1976	0.229	0.298
1977	0.220	0.288
1978	0.287	0.392
1979	0.355	0.491
1980	0.452	0.556
1981	0.256	0.347
1982	0.387	0.512
1983	0.287	0.396
1984	0.193	0.254
1985	0.248	0.337
1986	0.230	0.299
1987	0.322	0.449
1988	0.195	0.268
1989	0.308	0.419
1990	0.703	0.796
1991	0.489	0.590
1992	0.201	0.260
1993	0.213	0.282
1994	0.187	0.255
1995	0.229	0.311
1996	0.395	0.449
1997	0.278	0.352
1998	0.246	0.325
1999	0.574	0.741
2000	0.258	0.342
2001	0.279	0.383
2002	0.333	0.434
2003	0.340	0.426
2004	0.543	0.704
2005	0.216	0.286
2006	0.226	0.283
2007	0.692	0.763
2008	0.460	0.541
2009	0.331	0.456

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #2

Rank	Predeveloped	Mitigated
1	0.7030	0.7957
2	0.6916	0.7627
3	0.5737	0.7415
4	0.5428	0.7039

5	0.4887	0.5895
6	0.4598	0.5565
7	0.4521	0.5409
8	0.4053	0.5309
9	0.4035	0.5115
10	0.3990	0.4912
11	0.3949	0.4839
12	0.3871	0.4778
13	0.3783	0.4660
14	0.3659	0.4563
15	0.3551	0.4491
16	0.3400	0.4489
17	0.3326	0.4441
18	0.3306	0.4339
19	0.3219	0.4259
20	0.3085	0.4190
21	0.3004	0.3980
22	0.2896	0.3961
23	0.2871	0.3915
24	0.2870	0.3833
25	0.2849	0.3769
26	0.2793	0.3706
27	0.2780	0.3705
28	0.2749	0.3558
29	0.2705	0.3518
30	0.2578	0.3472
31	0.2561	0.3419
32	0.2541	0.3369
33	0.2487	0.3339
34	0.2476	0.3327
35	0.2472	0.3282
36	0.2469	0.3251
37	0.2466	0.3175
38	0.2464	0.3156
39	0.2458	0.3109
40	0.2427	0.3075
41	0.2312	0.2988
42	0.2302	0.2982
43	0.2294	0.2968
44	0.2290	0.2965
45	0.2259	0.2931
46	0.2245	0.2925
47	0.2235	0.2883
48	0.2198	0.2873
49	0.2159	0.2857
50	0.2133	0.2850
51	0.2102	0.2834
52	0.2098	0.2816
53	0.2005	0.2683
54	0.1951	0.2627
55	0.1926	0.2601
56	0.1893	0.2547
57	0.1867	0.2543
58	0.1864	0.2503
59	0.1806	0.2473
60	0.1694	0.2369
61	0.1636	0.2182

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1361	1238	3345	270	Fail
0.1411	1100	2971	270	Fail
0.1460	992	2716	273	Fail
0.1509	887	2447	275	Fail
0.1558	786	2192	278	Fail
0.1607	701	1956	279	Fail
0.1656	622	1767	284	Fail
0.1705	557	1599	287	Fail
0.1755	512	1468	286	Fail
0.1804	471	1340	284	Fail
0.1853	442	1221	276	Fail
0.1902	409	1115	272	Fail
0.1951	377	1020	270	Fail
0.2000	347	936	269	Fail
0.2050	319	871	273	Fail
0.2099	293	777	265	Fail
0.2148	266	713	268	Fail
0.2197	246	649	263	Fail
0.2246	221	591	267	Fail
0.2295	202	548	271	Fail
0.2344	185	514	277	Fail
0.2394	174	485	278	Fail
0.2443	161	459	285	Fail
0.2492	146	428	293	Fail
0.2541	140	404	288	Fail
0.2590	131	372	283	Fail
0.2639	125	352	281	Fail
0.2689	117	336	287	Fail
0.2738	111	310	279	Fail
0.2787	103	292	283	Fail
0.2836	99	273	275	Fail
0.2885	91	250	274	Fail
0.2934	85	234	275	Fail
0.2983	80	209	261	Fail
0.3033	73	196	268	Fail
0.3082	69	184	266	Fail
0.3131	65	180	276	Fail
0.3180	63	165	261	Fail
0.3229	58	157	270	Fail
0.3278	56	149	266	Fail
0.3328	51	141	276	Fail
0.3377	49	132	269	Fail
0.3426	46	128	278	Fail
0.3475	42	121	288	Fail
0.3524	39	114	292	Fail
0.3573	36	111	308	Fail
0.3622	34	107	314	Fail
0.3672	31	102	329	Fail
0.3721	30	98	326	Fail
0.3770	30	93	310	Fail
0.3819	29	90	310	Fail
0.3868	27	84	311	Fail
0.3917	24	79	329	Fail
0.3966	23	72	313	Fail

0.4016	22	70	318	Fail
0.4065	20	67	335	Fail
0.4114	19	62	326	Fail
0.4163	19	59	310	Fail
0.4212	19	57	300	Fail
0.4261	19	53	278	Fail
0.4311	18	51	283	Fail
0.4360	16	48	300	Fail
0.4409	15	46	306	Fail
0.4458	15	44	293	Fail
0.4507	14	41	292	Fail
0.4556	12	35	291	Fail
0.4605	11	32	290	Fail
0.4655	10	29	290	Fail
0.4704	10	27	270	Fail
0.4753	10	26	260	Fail
0.4802	10	25	250	Fail
0.4851	10	24	240	Fail
0.4900	9	24	266	Fail
0.4950	8	22	275	Fail
0.4999	8	21	262	Fail
0.5048	8	21	262	Fail
0.5097	8	20	250	Fail
0.5146	8	19	237	Fail
0.5195	7	19	271	Fail
0.5244	7	19	271	Fail
0.5294	6	19	316	Fail
0.5343	6	17	283	Fail
0.5392	6	17	283	Fail
0.5441	5	15	300	Fail
0.5490	5	15	300	Fail
0.5539	5	15	300	Fail
0.5588	5	14	280	Fail
0.5638	5	14	280	Fail
0.5687	5	14	280	Fail
0.5736	5	13	260	Fail
0.5785	3	11	366	Fail
0.5834	3	11	366	Fail
0.5883	3	11	366	Fail
0.5933	3	10	333	Fail
0.5982	3	7	233	Fail
0.6031	3	7	233	Fail
0.6080	2	7	350	Fail
0.6129	2	7	350	Fail
0.6178	2	7	350	Fail
0.6227	2	7	350	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #2

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

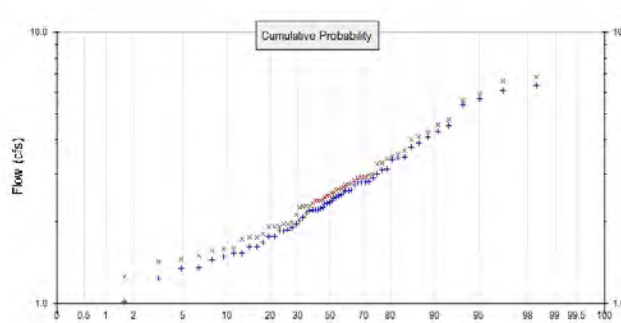
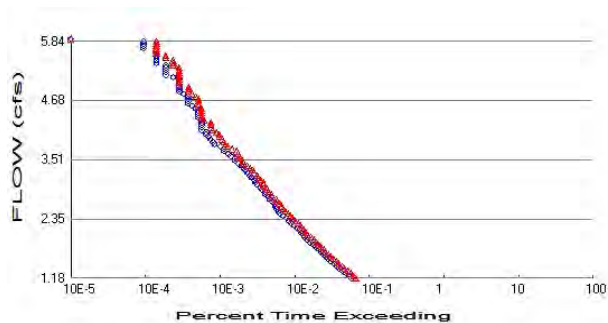
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 3



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #3

Total Pervious Area: 7.19
 Total Impervious Area: 6.88

Mitigated Landuse Totals for POC #3

Total Pervious Area: 6.93
 Total Impervious Area: 7.14

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #3

Return Period	Flow(cfs)
2 year	2.364141
5 year	3.37629
10 year	4.099862
25 year	5.073688
50 year	5.842112
100 year	6.647232

Flow Frequency Return Periods for Mitigated. POC #3

Return Period	Flow(cfs)
2 year	2.524029
5 year	3.567112
10 year	4.306955
25 year	5.296724
50 year	6.073725
100 year	6.884618

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #3

Year	Predeveloped	Mitigated
1949	3.128	3.399
1950	3.894	4.085
1951	2.506	2.642
1952	1.863	1.912
1953	2.249	2.297
1954	1.525	1.587
1955	2.462	2.566
1956	2.260	2.396
1957	2.801	2.904
1958	1.530	1.750
1959	1.672	1.729

1960	2.449	2.546
1961	2.385	2.495
1962	1.235	1.493
1963	1.484	1.599
1964	1.856	1.958
1965	2.345	2.653
1966	1.956	1.993
1967	3.767	4.017
1968	2.626	2.738
1969	2.204	2.290
1970	1.901	2.255
1971	2.211	2.496
1972	2.998	3.268
1973	1.765	1.800
1974	1.613	1.744
1975	2.798	2.911
1976	1.619	1.961
1977	1.846	1.922
1978	2.731	2.839
1979	2.485	2.620
1980	2.561	2.670
1981	2.887	2.997
1982	4.085	4.269
1983	3.389	3.483
1984	1.440	1.567
1985	2.813	2.907
1986	2.362	2.457
1987	2.605	2.776
1988	2.197	2.347
1989	1.356	1.460
1990	6.364	6.844
1991	4.511	4.764
1992	2.017	2.126
1993	0.882	0.901
1994	1.010	1.252
1995	2.214	2.383
1996	3.462	3.651
1997	2.788	2.975
1998	1.756	1.919
1999	5.697	5.937
2000	2.594	2.751
2001	2.076	2.389
2002	3.440	3.566
2003	1.343	1.425
2004	5.407	5.596
2005	2.318	2.408
2006	2.150	2.278
2007	6.078	6.579
2008	4.300	4.556
2009	3.114	3.285

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #3

Rank	Predeveloped	Mitigated
1	6.3638	6.8444
2	6.0782	6.5788
3	5.6967	5.9367
4	5.4067	5.5961

5	4.5113	4.7636
6	4.2998	4.5556
7	4.0850	4.2694
8	3.8942	4.0846
9	3.7672	4.0174
10	3.4624	3.6510
11	3.4399	3.5661
12	3.3893	3.4832
13	3.1279	3.3993
14	3.1145	3.2854
15	2.9975	3.2685
16	2.8871	2.9965
17	2.8126	2.9748
18	2.8012	2.9112
19	2.7983	2.9071
20	2.7878	2.9037
21	2.7312	2.8390
22	2.6258	2.7761
23	2.6055	2.7515
24	2.5944	2.7384
25	2.5611	2.6703
26	2.5057	2.6527
27	2.4854	2.6419
28	2.4618	2.6196
29	2.4490	2.5656
30	2.3853	2.5455
31	2.3622	2.4959
32	2.3447	2.4953
33	2.3180	2.4571
34	2.2599	2.4082
35	2.2489	2.3965
36	2.2138	2.3891
37	2.2114	2.3833
38	2.2042	2.3470
39	2.1965	2.2973
40	2.1495	2.2903
41	2.0762	2.2783
42	2.0171	2.2554
43	1.9555	2.1256
44	1.9008	1.9931
45	1.8631	1.9613
46	1.8559	1.9578
47	1.8458	1.9218
48	1.7650	1.9185
49	1.7559	1.9123
50	1.6720	1.8002
51	1.6193	1.7497
52	1.6129	1.7436
53	1.5303	1.7291
54	1.5245	1.5994
55	1.4839	1.5867
56	1.4395	1.5672
57	1.3556	1.4932
58	1.3428	1.4596
59	1.2352	1.4250
60	1.0104	1.2519
61	0.8819	0.9013

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.1821	1236	1413	114	Fail
1.2291	1131	1312	116	Fail
1.2762	1047	1202	114	Fail
1.3233	938	1104	117	Fail
1.3704	855	1005	117	Fail
1.4174	782	923	118	Fail
1.4645	728	844	115	Fail
1.5116	652	784	120	Fail
1.5586	602	712	118	Fail
1.6057	562	644	114	Fail
1.6528	520	603	115	Fail
1.6999	479	559	116	Fail
1.7469	453	525	115	Fail
1.7940	414	483	116	Fail
1.8411	386	445	115	Fail
1.8881	345	418	121	Fail
1.9352	316	385	121	Fail
1.9823	293	350	119	Fail
2.0294	279	319	114	Fail
2.0764	262	301	114	Fail
2.1235	248	282	113	Fail
2.1706	231	267	115	Fail
2.2176	208	253	121	Fail
2.2647	191	238	124	Fail
2.3118	181	220	121	Fail
2.3588	167	203	121	Fail
2.4059	151	188	124	Fail
2.4530	137	174	127	Fail
2.5001	129	158	122	Fail
2.5471	122	149	122	Fail
2.5942	117	143	122	Fail
2.6413	113	133	117	Fail
2.6883	106	125	117	Fail
2.7354	98	120	122	Fail
2.7825	94	108	114	Fail
2.8296	87	104	119	Fail
2.8766	85	96	112	Fail
2.9237	79	91	115	Fail
2.9708	74	88	118	Fail
3.0178	67	81	120	Fail
3.0649	64	81	126	Fail
3.1120	61	74	121	Fail
3.1591	56	70	125	Fail
3.2061	54	68	125	Fail
3.2532	50	60	120	Fail
3.3003	46	58	126	Fail
3.3473	44	54	122	Fail
3.3944	41	49	119	Fail
3.4415	38	44	115	Fail
3.4886	34	43	126	Fail
3.5356	34	40	117	Fail
3.5827	30	39	130	Fail
3.6298	28	37	132	Fail
3.6768	24	36	150	Fail

3.7239	24	31	129	Fail
3.7710	22	27	122	Fail
3.8181	18	25	138	Fail
3.8651	17	24	141	Fail
3.9122	16	23	143	Fail
3.9593	15	21	140	Fail
4.0063	14	21	150	Fail
4.0534	14	19	135	Fail
4.1005	12	17	141	Fail
4.1476	12	16	133	Fail
4.1946	12	16	133	Fail
4.2417	12	16	133	Fail
4.2888	12	13	108	Pass
4.3358	11	12	109	Pass
4.3829	11	12	109	Pass
4.4300	11	12	109	Pass
4.4770	11	12	109	Pass
4.5241	10	12	120	Fail
4.5712	9	11	122	Fail
4.6183	8	11	137	Fail
4.6653	8	11	137	Fail
4.7124	8	11	137	Fail
4.7595	8	10	125	Fail
4.8065	7	9	128	Fail
4.8536	6	8	133	Fail
4.9007	6	8	133	Fail
4.9478	6	8	133	Fail
4.9948	6	6	100	Pass
5.0419	6	6	100	Pass
5.0890	6	6	100	Pass
5.1360	5	6	120	Fail
5.1831	4	6	150	Fail
5.2302	4	6	150	Fail
5.2773	4	6	150	Fail
5.3243	4	6	150	Fail
5.3714	4	5	125	Fail
5.4185	3	5	166	Fail
5.4655	3	5	166	Fail
5.5126	3	4	133	Fail
5.5597	3	4	133	Fail
5.6068	3	3	100	Pass
5.6538	3	3	100	Pass
5.7009	2	3	150	Fail
5.7480	2	3	150	Fail
5.7950	2	3	150	Fail
5.8421	2	3	150	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #3

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

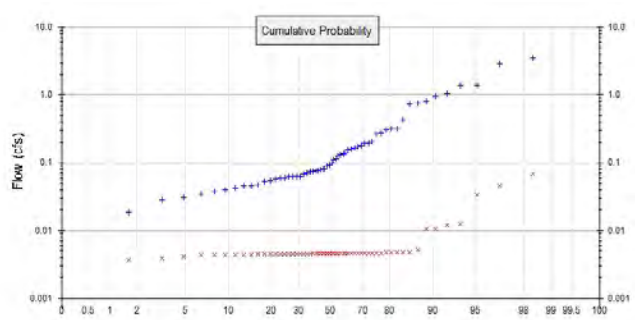
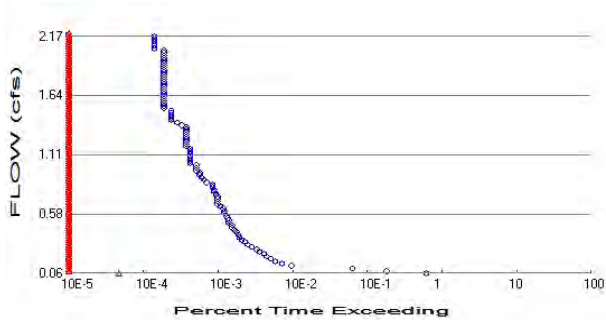
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Tank 1 POC	<input type="checkbox"/>	840.12			<input type="checkbox"/>	0.00			
Total Volume Infiltrated		840.12	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 4



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #4

Total Pervious Area: 11.76
 Total Impervious Area: 3.96

Mitigated Landuse Totals for POC #4

Total Pervious Area: 5.82
 Total Impervious Area: 0

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #4

Return Period	Flow(cfs)
2 year	0.1159
5 year	0.338036
10 year	0.63464
25 year	1.312858
50 year	2.165686
100 year	3.469708

Flow Frequency Return Periods for Mitigated. POC #4

Return Period	Flow(cfs)
2 year	0.005048
5 year	0.008331
10 year	0.011249
25 year	0.015971
50 year	0.020372
100 year	0.025655

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #4

Year	Predeveloped	Mitigated
1949	0.312	0.004
1950	1.365	0.012
1951	0.308	0.012
1952	0.070	0.005
1953	0.053	0.005
1954	0.166	0.005
1955	0.094	0.005
1956	0.276	0.005
1957	0.076	0.005
1958	0.063	0.005
1959	0.091	0.005

1960	0.193	0.005
1961	0.155	0.005
1962	0.031	0.004
1963	0.109	0.004
1964	0.176	0.005
1965	0.073	0.005
1966	0.068	0.005
1967	0.958	0.005
1968	0.194	0.005
1969	0.077	0.005
1970	0.047	0.004
1971	0.080	0.005
1972	1.027	0.034
1973	0.063	0.005
1974	0.080	0.005
1975	0.126	0.005
1976	0.130	0.005
1977	0.019	0.004
1978	0.058	0.005
1979	0.038	0.004
1980	0.098	0.005
1981	0.062	0.005
1982	0.137	0.005
1983	0.079	0.005
1984	0.046	0.005
1985	0.034	0.005
1986	0.112	0.004
1987	0.162	0.004
1988	0.042	0.005
1989	0.040	0.005
1990	2.872	0.005
1991	0.750	0.011
1992	0.063	0.005
1993	0.046	0.004
1994	0.028	0.004
1995	0.179	0.005
1996	0.816	0.045
1997	0.312	0.005
1998	0.060	0.004
1999	1.400	0.011
2000	0.054	0.004
2001	0.018	0.005
2002	0.134	0.004
2003	0.075	0.005
2004	0.427	0.005
2005	0.059	0.005
2006	0.204	0.005
2007	3.489	0.068
2008	0.764	0.005
2009	0.270	0.005

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #4

Rank	Predeveloped	Mitigated
1	3.4888	0.0675
2	2.8717	0.0453
3	1.3996	0.0335
4	1.3649	0.0123

5	1.0265	0.0121
6	0.9575	0.0106
7	0.8164	0.0105
8	0.7644	0.0052
9	0.7504	0.0047
10	0.4265	0.0047
11	0.3125	0.0047
12	0.3121	0.0047
13	0.3083	0.0047
14	0.2757	0.0047
15	0.2699	0.0047
16	0.2036	0.0047
17	0.1941	0.0047
18	0.1935	0.0047
19	0.1785	0.0047
20	0.1761	0.0047
21	0.1656	0.0047
22	0.1622	0.0046
23	0.1548	0.0046
24	0.1370	0.0046
25	0.1344	0.0046
26	0.1298	0.0046
27	0.1262	0.0046
28	0.1123	0.0046
29	0.1093	0.0046
30	0.0981	0.0046
31	0.0938	0.0046
32	0.0908	0.0046
33	0.0804	0.0046
34	0.0801	0.0046
35	0.0786	0.0046
36	0.0769	0.0046
37	0.0756	0.0045
38	0.0745	0.0045
39	0.0735	0.0045
40	0.0702	0.0045
41	0.0679	0.0045
42	0.0632	0.0045
43	0.0630	0.0045
44	0.0625	0.0045
45	0.0622	0.0045
46	0.0595	0.0045
47	0.0594	0.0045
48	0.0583	0.0045
49	0.0538	0.0045
50	0.0525	0.0044
51	0.0468	0.0044
52	0.0462	0.0044
53	0.0456	0.0044
54	0.0423	0.0044
55	0.0399	0.0044
56	0.0377	0.0044
57	0.0341	0.0043
58	0.0311	0.0041
59	0.0282	0.0039
60	0.0185	0.0037
61	0.0178	0.0037

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0580	13242	1	0	Pass
0.0792	3908	0	0	Pass
0.1005	1346	0	0	Pass
0.1218	204	0	0	Pass
0.1431	154	0	0	Pass
0.1644	124	0	0	Pass
0.1857	109	0	0	Pass
0.2070	96	0	0	Pass
0.2283	88	0	0	Pass
0.2496	77	0	0	Pass
0.2709	71	0	0	Pass
0.2921	60	0	0	Pass
0.3134	53	0	0	Pass
0.3347	49	0	0	Pass
0.3560	44	0	0	Pass
0.3773	41	0	0	Pass
0.3986	40	0	0	Pass
0.4199	38	0	0	Pass
0.4412	35	0	0	Pass
0.4625	33	0	0	Pass
0.4838	33	0	0	Pass
0.5050	30	0	0	Pass
0.5263	30	0	0	Pass
0.5476	29	0	0	Pass
0.5689	28	0	0	Pass
0.5902	26	0	0	Pass
0.6115	26	0	0	Pass
0.6328	25	0	0	Pass
0.6541	23	0	0	Pass
0.6754	21	0	0	Pass
0.6967	21	0	0	Pass
0.7179	21	0	0	Pass
0.7392	21	0	0	Pass
0.7605	20	0	0	Pass
0.7818	19	0	0	Pass
0.8031	19	0	0	Pass
0.8244	18	0	0	Pass
0.8457	18	0	0	Pass
0.8670	15	0	0	Pass
0.8883	14	0	0	Pass
0.9096	13	0	0	Pass
0.9309	12	0	0	Pass
0.9521	12	0	0	Pass
0.9734	11	0	0	Pass
0.9947	11	0	0	Pass
1.0160	11	0	0	Pass
1.0373	9	0	0	Pass
1.0586	9	0	0	Pass
1.0799	9	0	0	Pass
1.1012	9	0	0	Pass
1.1225	9	0	0	Pass
1.1438	9	0	0	Pass
1.1650	9	0	0	Pass

1.1863	8	0	0	Pass
1.2076	8	0	0	Pass
1.2289	8	0	0	Pass
1.2502	8	0	0	Pass
1.2715	8	0	0	Pass
1.2928	8	0	0	Pass
1.3141	8	0	0	Pass
1.3354	8	0	0	Pass
1.3567	8	0	0	Pass
1.3779	7	0	0	Pass
1.3992	6	0	0	Pass
1.4205	5	0	0	Pass
1.4418	5	0	0	Pass
1.4631	5	0	0	Pass
1.4844	5	0	0	Pass
1.5057	5	0	0	Pass
1.5270	4	0	0	Pass
1.5483	4	0	0	Pass
1.5696	4	0	0	Pass
1.5908	4	0	0	Pass
1.6121	4	0	0	Pass
1.6334	4	0	0	Pass
1.6547	4	0	0	Pass
1.6760	4	0	0	Pass
1.6973	4	0	0	Pass
1.7186	4	0	0	Pass
1.7399	4	0	0	Pass
1.7612	4	0	0	Pass
1.7825	4	0	0	Pass
1.8038	4	0	0	Pass
1.8250	4	0	0	Pass
1.8463	4	0	0	Pass
1.8676	4	0	0	Pass
1.8889	4	0	0	Pass
1.9102	4	0	0	Pass
1.9315	4	0	0	Pass
1.9528	4	0	0	Pass
1.9741	4	0	0	Pass
1.9954	4	0	0	Pass
2.0167	4	0	0	Pass
2.0379	4	0	0	Pass
2.0592	3	0	0	Pass
2.0805	3	0	0	Pass
2.1018	3	0	0	Pass
2.1231	3	0	0	Pass
2.1444	3	0	0	Pass
2.1657	3	0	0	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #4

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

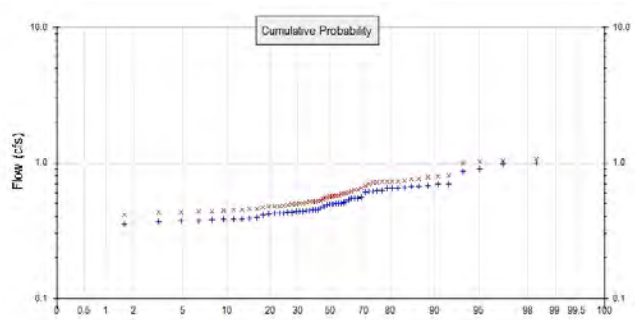
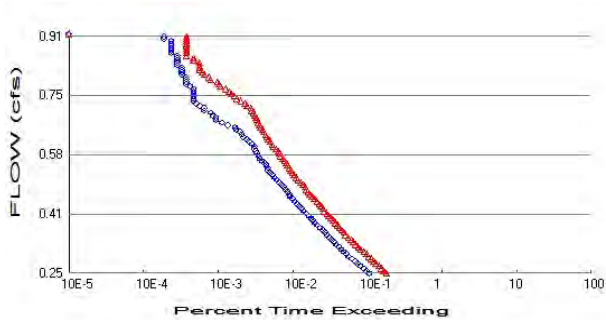
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 5



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #5

Total Pervious Area: 1.39
Total Impervious Area: 1.31

Mitigated Landuse Totals for POC #5

Total Pervious Area: 1.15
Total Impervious Area: 1.56

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #5

Return Period	Flow(cfs)
2 year	0.498655
5 year	0.624019
10 year	0.710318
25 year	0.823401
50 year	0.91073
100 year	1.000817

Flow Frequency Return Periods for Mitigated. POC #5

Return Period	Flow(cfs)
2 year	0.571506
5 year	0.70847
10 year	0.802065
25 year	0.923993
50 year	1.017665
100 year	1.1139

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #5

Year	Predeveloped	Mitigated
1949	0.624	0.723
1950	0.648	0.727
1951	0.437	0.499
1952	0.351	0.414
1953	0.383	0.438
1954	0.417	0.475
1955	0.462	0.543
1956	0.472	0.526
1957	0.495	0.573
1958	0.397	0.455
1959	0.422	0.478

1960	0.411	0.474
1961	0.447	0.520
1962	0.380	0.444
1963	0.449	0.524
1964	0.434	0.509
1965	0.546	0.616
1966	0.368	0.432
1967	0.675	0.738
1968	0.625	0.722
1969	0.486	0.557
1970	0.437	0.502
1971	0.505	0.593
1972	0.648	0.718
1973	0.353	0.403
1974	0.502	0.567
1975	0.549	0.632
1976	0.375	0.437
1977	0.429	0.485
1978	0.520	0.599
1979	0.612	0.714
1980	0.698	0.786
1981	0.496	0.574
1982	0.670	0.783
1983	0.549	0.646
1984	0.384	0.448
1985	0.509	0.588
1986	0.443	0.515
1987	0.647	0.728
1988	0.423	0.497
1989	0.551	0.635
1990	0.981	1.060
1991	0.666	0.763
1992	0.375	0.430
1993	0.392	0.457
1994	0.385	0.447
1995	0.441	0.503
1996	0.614	0.675
1997	0.499	0.565
1998	0.451	0.520
1999	0.899	1.025
2000	0.476	0.549
2001	0.498	0.571
2002	0.609	0.697
2003	0.533	0.605
2004	0.863	0.988
2005	0.431	0.492
2006	0.421	0.468
2007	0.989	1.043
2008	0.693	0.802
2009	0.663	0.759

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #5

Rank	Predeveloped	Mitigated
1	0.9894	1.0597
2	0.9812	1.0434
3	0.8995	1.0252
4	0.8626	0.9877

5	0.6975	0.8019
6	0.6926	0.7864
7	0.6751	0.7834
8	0.6702	0.7629
9	0.6658	0.7589
10	0.6628	0.7383
11	0.6479	0.7281
12	0.6478	0.7266
13	0.6472	0.7233
14	0.6248	0.7222
15	0.6239	0.7178
16	0.6143	0.7136
17	0.6118	0.6968
18	0.6085	0.6749
19	0.5513	0.6464
20	0.5487	0.6347
21	0.5485	0.6316
22	0.5463	0.6155
23	0.5328	0.6048
24	0.5202	0.5992
25	0.5092	0.5934
26	0.5049	0.5876
27	0.5018	0.5740
28	0.4995	0.5734
29	0.4984	0.5705
30	0.4965	0.5670
31	0.4945	0.5648
32	0.4864	0.5574
33	0.4760	0.5490
34	0.4716	0.5431
35	0.4620	0.5264
36	0.4506	0.5239
37	0.4489	0.5205
38	0.4467	0.5197
39	0.4430	0.5151
40	0.4411	0.5085
41	0.4366	0.5029
42	0.4366	0.5015
43	0.4343	0.4987
44	0.4312	0.4972
45	0.4289	0.4919
46	0.4230	0.4848
47	0.4216	0.4781
48	0.4212	0.4747
49	0.4171	0.4740
50	0.4107	0.4684
51	0.3971	0.4570
52	0.3920	0.4548
53	0.3846	0.4482
54	0.3844	0.4467
55	0.3833	0.4437
56	0.3804	0.4376
57	0.3751	0.4374
58	0.3750	0.4323
59	0.3681	0.4303
60	0.3527	0.4145
61	0.3511	0.4027

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.2493	2267	3844	169	Fail
0.2560	2066	3540	171	Fail
0.2627	1900	3296	173	Fail
0.2694	1727	3048	176	Fail
0.2761	1579	2789	176	Fail
0.2827	1458	2614	179	Fail
0.2894	1340	2411	179	Fail
0.2961	1205	2222	184	Fail
0.3028	1110	2095	188	Fail
0.3095	1029	1931	187	Fail
0.3161	958	1731	180	Fail
0.3228	893	1614	180	Fail
0.3295	824	1498	181	Fail
0.3362	761	1378	181	Fail
0.3429	711	1297	182	Fail
0.3495	664	1190	179	Fail
0.3562	609	1097	180	Fail
0.3629	577	1031	178	Fail
0.3696	541	966	178	Fail
0.3763	498	906	181	Fail
0.3829	458	851	185	Fail
0.3896	428	803	187	Fail
0.3963	398	754	189	Fail
0.4030	375	704	187	Fail
0.4097	351	657	187	Fail
0.4163	325	615	189	Fail
0.4230	299	572	191	Fail
0.4297	283	544	192	Fail
0.4364	262	511	195	Fail
0.4431	246	482	195	Fail
0.4498	227	454	200	Fail
0.4564	213	419	196	Fail
0.4631	196	389	198	Fail
0.4698	191	364	190	Fail
0.4765	182	342	187	Fail
0.4832	170	327	192	Fail
0.4898	160	311	194	Fail
0.4965	151	294	194	Fail
0.5032	139	271	194	Fail
0.5099	132	251	190	Fail
0.5166	123	240	195	Fail
0.5232	113	221	195	Fail
0.5299	107	211	197	Fail
0.5366	100	202	202	Fail
0.5433	99	191	192	Fail
0.5500	94	182	193	Fail
0.5566	90	175	194	Fail
0.5633	82	166	202	Fail
0.5700	77	157	203	Fail
0.5767	74	147	198	Fail
0.5834	70	143	204	Fail
0.5901	68	136	200	Fail
0.5967	66	128	193	Fail
0.6034	65	118	181	Fail

0.6101	61	113	185	Fail
0.6168	55	107	194	Fail
0.6235	52	101	194	Fail
0.6301	47	96	204	Fail
0.6368	44	92	209	Fail
0.6435	42	87	207	Fail
0.6502	37	84	227	Fail
0.6569	36	79	219	Fail
0.6635	29	76	262	Fail
0.6702	24	74	308	Fail
0.6769	20	70	350	Fail
0.6836	20	69	345	Fail
0.6903	18	66	366	Fail
0.6969	17	64	376	Fail
0.7036	14	60	428	Fail
0.7103	14	59	421	Fail
0.7170	12	52	433	Fail
0.7237	11	49	445	Fail
0.7303	10	43	430	Fail
0.7370	10	38	380	Fail
0.7437	10	35	350	Fail
0.7504	10	32	320	Fail
0.7571	10	30	300	Fail
0.7638	10	27	270	Fail
0.7704	9	23	255	Fail
0.7771	8	22	275	Fail
0.7838	8	21	262	Fail
0.7905	8	17	212	Fail
0.7972	8	16	200	Fail
0.8038	7	14	200	Fail
0.8105	7	13	185	Fail
0.8172	7	12	171	Fail
0.8239	7	12	171	Fail
0.8306	6	12	200	Fail
0.8372	6	12	200	Fail
0.8439	6	10	166	Fail
0.8506	6	10	166	Fail
0.8573	6	8	133	Fail
0.8640	5	8	160	Fail
0.8706	5	8	160	Fail
0.8773	5	8	160	Fail
0.8840	5	8	160	Fail
0.8907	5	8	160	Fail
0.8974	5	8	160	Fail
0.9040	4	8	200	Fail
0.9107	4	8	200	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #5

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

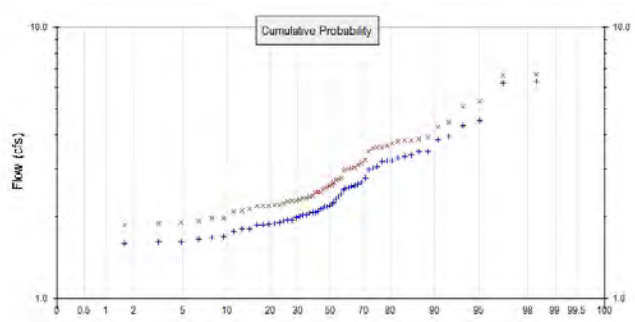
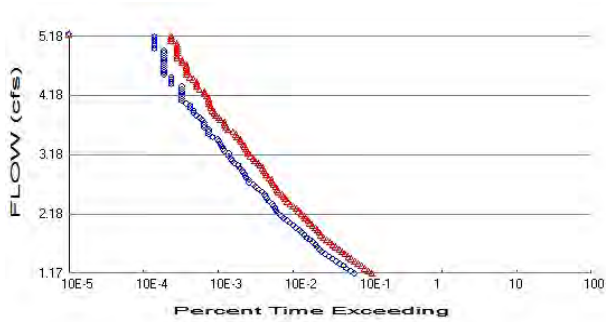
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Trapezoidal Pond 1 POC	<input type="checkbox"/>	229.46			<input type="checkbox"/>	0.00			
Total Volume Infiltrated		229.46	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 6



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #6

Total Pervious Area: 10.41
Total Impervious Area: 5.47

Mitigated Landuse Totals for POC #6

Total Pervious Area: 9.4
Total Impervious Area: 6.48

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #6

Return Period	Flow(cfs)
2 year	2.349287
5 year	3.13595
10 year	3.71691
25 year	4.52232
50 year	5.176234
100 year	5.878212

Flow Frequency Return Periods for Mitigated. POC #6

Return Period	Flow(cfs)
2 year	2.729423
5 year	3.594909
10 year	4.227448
25 year	5.096922
50 year	5.797504
100 year	6.545027

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #6

Year	Predeveloped	Mitigated
1949	2.974	3.485
1950	3.487	3.807
1951	2.180	2.458
1952	1.508	1.785
1953	1.768	2.082
1954	2.007	2.286
1955	2.138	2.514
1956	2.064	2.295
1957	2.224	2.626
1958	1.863	2.196
1959	1.989	2.339

1960	2.068	2.334
1961	1.894	2.211
1962	1.677	1.979
1963	2.033	2.368
1964	1.932	2.273
1965	2.373	2.776
1966	1.594	1.867
1967	3.474	3.817
1968	3.343	3.922
1969	2.079	2.456
1970	2.091	2.463
1971	2.519	2.966
1972	3.228	3.595
1973	1.613	1.897
1974	2.327	2.738
1975	2.560	3.023
1976	1.873	2.192
1977	1.901	2.242
1978	2.597	3.041
1979	3.297	3.879
1980	3.201	3.732
1981	2.258	2.668
1982	3.215	3.795
1983	2.641	3.116
1984	1.654	1.930
1985	2.197	2.600
1986	1.946	2.300
1987	3.029	3.577
1988	1.861	2.195
1989	2.774	3.240
1990	6.208	6.665
1991	3.953	4.451
1992	1.614	1.907
1993	1.806	2.097
1994	1.693	1.980
1995	2.028	2.394
1996	3.395	3.652
1997	2.418	2.759
1998	2.155	2.542
1999	4.529	5.330
2000	2.180	2.567
2001	2.550	2.997
2002	2.668	3.156
2003	2.582	2.997
2004	4.331	5.090
2005	1.803	2.131
2006	1.941	2.208
2007	6.317	6.657
2008	3.846	4.281
2009	3.066	3.598

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #6

Rank	Predeveloped	Mitigated
1	6.3171	6.6651
2	6.2081	6.6570
3	4.5290	5.3298
4	4.3308	5.0899

5	3.9528	4.4507
6	3.8459	4.2806
7	3.4873	3.9221
8	3.4743	3.8791
9	3.3949	3.8168
10	3.3428	3.8068
11	3.2971	3.7945
12	3.2282	3.7315
13	3.2147	3.6525
14	3.2014	3.5978
15	3.0662	3.5949
16	3.0286	3.5775
17	2.9743	3.4848
18	2.7736	3.2399
19	2.6678	3.1559
20	2.6406	3.1163
21	2.5967	3.0414
22	2.5824	3.0229
23	2.5603	2.9971
24	2.5496	2.9971
25	2.5187	2.9660
26	2.4175	2.7760
27	2.3734	2.7586
28	2.3270	2.7377
29	2.2581	2.6676
30	2.2238	2.6256
31	2.1969	2.5997
32	2.1800	2.5673
33	2.1797	2.5419
34	2.1551	2.5142
35	2.1377	2.4629
36	2.0905	2.4578
37	2.0790	2.4559
38	2.0683	2.3939
39	2.0642	2.3684
40	2.0325	2.3385
41	2.0280	2.3335
42	2.0067	2.2997
43	1.9892	2.2945
44	1.9459	2.2856
45	1.9405	2.2732
46	1.9320	2.2420
47	1.9013	2.2113
48	1.8945	2.2082
49	1.8728	2.1960
50	1.8632	2.1949
51	1.8608	2.1920
52	1.8056	2.1305
53	1.8034	2.0973
54	1.7678	2.0821
55	1.6927	1.9796
56	1.6765	1.9794
57	1.6541	1.9295
58	1.6139	1.9070
59	1.6128	1.8973
60	1.5936	1.8671
61	1.5084	1.7847

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.1746	1423	2453	172	Fail
1.2151	1277	2199	172	Fail
1.2555	1128	1978	175	Fail
1.2959	1021	1789	175	Fail
1.3363	913	1595	174	Fail
1.3767	811	1452	179	Fail
1.4172	721	1304	180	Fail
1.4576	654	1194	182	Fail
1.4980	585	1078	184	Fail
1.5384	524	975	186	Fail
1.5788	491	898	182	Fail
1.6193	459	806	175	Fail
1.6597	434	733	168	Fail
1.7001	394	670	170	Fail
1.7405	363	611	168	Fail
1.7809	326	550	168	Fail
1.8214	304	510	167	Fail
1.8618	282	482	170	Fail
1.9022	263	455	173	Fail
1.9426	238	430	180	Fail
1.9830	216	395	182	Fail
2.0235	197	364	184	Fail
2.0639	179	342	191	Fail
2.1043	163	316	193	Fail
2.1447	152	302	198	Fail
2.1851	136	279	205	Fail
2.2256	129	258	200	Fail
2.2660	125	238	190	Fail
2.3064	117	216	184	Fail
2.3468	113	197	174	Fail
2.3872	104	183	175	Fail
2.4277	95	170	178	Fail
2.4681	92	160	173	Fail
2.5085	89	153	171	Fail
2.5489	83	136	163	Fail
2.5893	75	132	176	Fail
2.6298	68	126	185	Fail
2.6702	63	118	187	Fail
2.7106	55	113	205	Fail
2.7510	55	111	201	Fail
2.7914	51	102	200	Fail
2.8319	49	93	189	Fail
2.8723	46	92	200	Fail
2.9127	45	87	193	Fail
2.9531	42	85	202	Fail
2.9935	40	78	195	Fail
3.0340	35	73	208	Fail
3.0744	33	67	203	Fail
3.1148	32	63	196	Fail
3.1552	30	58	193	Fail
3.1956	30	54	180	Fail
3.2361	26	53	203	Fail
3.2765	25	51	204	Fail
3.3169	24	49	204	Fail

3.3573	23	46	200	Fail
3.3977	22	43	195	Fail
3.4382	21	42	200	Fail
3.4786	18	38	211	Fail
3.5190	16	37	231	Fail
3.5594	16	34	212	Fail
3.5998	16	29	181	Fail
3.6403	14	27	192	Fail
3.6807	14	26	185	Fail
3.7211	14	26	185	Fail
3.7615	13	23	176	Fail
3.8020	12	22	183	Fail
3.8424	11	20	181	Fail
3.8828	10	19	190	Fail
3.9232	10	18	180	Fail
3.9636	9	17	188	Fail
4.0041	9	17	188	Fail
4.0445	8	16	200	Fail
4.0849	7	16	228	Fail
4.1253	7	16	228	Fail
4.1657	7	15	214	Fail
4.2062	7	14	200	Fail
4.2466	7	14	200	Fail
4.2870	7	12	171	Fail
4.3274	7	11	157	Fail
4.3678	5	11	220	Fail
4.4083	5	11	220	Fail
4.4487	5	10	200	Fail
4.4891	5	9	180	Fail
4.5295	4	8	200	Fail
4.5699	4	8	200	Fail
4.6104	4	8	200	Fail
4.6508	4	8	200	Fail
4.6912	4	8	200	Fail
4.7316	4	7	175	Fail
4.7720	4	7	175	Fail
4.8125	4	6	150	Fail
4.8529	4	6	150	Fail
4.8933	4	6	150	Fail
4.9337	4	6	150	Fail
4.9741	3	6	200	Fail
5.0146	3	6	200	Fail
5.0550	3	6	200	Fail
5.0954	3	5	166	Fail
5.1358	3	5	166	Fail
5.1762	3	5	166	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #6

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

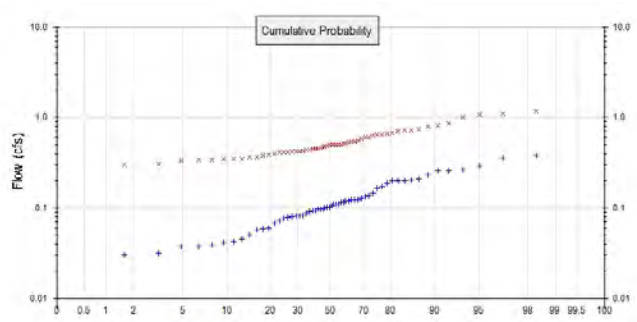
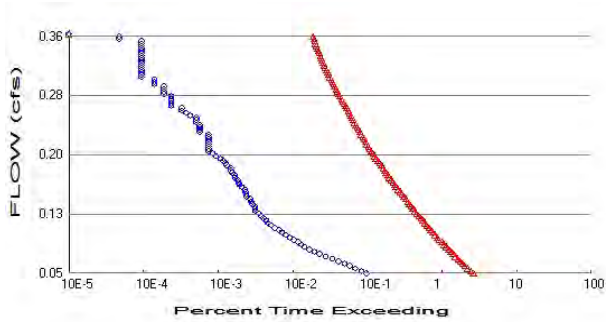
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 7



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #7

Total Pervious Area: 0.86
Total Impervious Area: 0

Mitigated Landuse Totals for POC #7

Total Pervious Area: 1.29
Total Impervious Area: 1.03

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #7

Return Period	Flow(cfs)
2 year	0.103696
5 year	0.174028
10 year	0.226792
25 year	0.299486
50 year	0.357556
100 year	0.418685

Flow Frequency Return Periods for Mitigated. POC #7

Return Period	Flow(cfs)
2 year	0.496902
5 year	0.666664
10 year	0.789999
25 year	0.958747
50 year	1.094141
100 year	1.238102

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #7

Year	Predeveloped	Mitigated
1949	0.207	0.725
1950	0.199	0.681
1951	0.107	0.448
1952	0.050	0.306
1953	0.037	0.347
1954	0.082	0.418
1955	0.079	0.448
1956	0.111	0.415
1957	0.123	0.523
1958	0.072	0.387
1959	0.059	0.366

1960	0.119	0.461
1961	0.077	0.413
1962	0.031	0.339
1963	0.101	0.452
1964	0.094	0.380
1965	0.133	0.547
1966	0.059	0.343
1967	0.203	0.696
1968	0.122	0.718
1969	0.129	0.501
1970	0.098	0.473
1971	0.116	0.560
1972	0.189	0.666
1973	0.042	0.297
1974	0.124	0.525
1975	0.137	0.535
1976	0.090	0.421
1977	0.081	0.399
1978	0.093	0.493
1979	0.039	0.638
1980	0.258	0.805
1981	0.086	0.498
1982	0.201	0.741
1983	0.120	0.541
1984	0.057	0.350
1985	0.082	0.484
1986	0.110	0.443
1987	0.098	0.606
1988	0.037	0.345
1989	0.030	0.499
1990	0.381	1.177
1991	0.265	0.874
1992	0.080	0.367
1993	0.045	0.332
1994	0.028	0.303
1995	0.068	0.429
1996	0.200	0.647
1997	0.115	0.501
1998	0.097	0.440
1999	0.294	1.071
2000	0.110	0.501
2001	0.042	0.504
2002	0.166	0.647
2003	0.173	0.612
2004	0.233	1.004
2005	0.100	0.425
2006	0.101	0.412
2007	0.353	1.106
2008	0.256	0.815
2009	0.145	0.579

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #7

Rank	Predeveloped	Mitigated
1	0.3814	1.1772
2	0.3533	1.1060
3	0.2937	1.0711
4	0.2650	1.0044

5	0.2580	0.8744
6	0.2562	0.8154
7	0.2330	0.8050
8	0.2073	0.7406
9	0.2027	0.7250
10	0.2011	0.7182
11	0.1997	0.6959
12	0.1987	0.6810
13	0.1887	0.6659
14	0.1729	0.6473
15	0.1663	0.6472
16	0.1449	0.6378
17	0.1369	0.6116
18	0.1332	0.6060
19	0.1291	0.5790
20	0.1235	0.5602
21	0.1226	0.5472
22	0.1222	0.5414
23	0.1203	0.5354
24	0.1191	0.5255
25	0.1156	0.5232
26	0.1151	0.5035
27	0.1108	0.5015
28	0.1105	0.5012
29	0.1103	0.5006
30	0.1066	0.4987
31	0.1013	0.4979
32	0.1008	0.4927
33	0.1000	0.4839
34	0.0979	0.4726
35	0.0976	0.4614
36	0.0975	0.4523
37	0.0940	0.4477
38	0.0930	0.4477
39	0.0904	0.4425
40	0.0864	0.4402
41	0.0824	0.4291
42	0.0818	0.4253
43	0.0813	0.4206
44	0.0802	0.4184
45	0.0787	0.4149
46	0.0775	0.4132
47	0.0722	0.4115
48	0.0682	0.3994
49	0.0594	0.3867
50	0.0587	0.3801
51	0.0565	0.3666
52	0.0500	0.3659
53	0.0453	0.3504
54	0.0422	0.3472
55	0.0417	0.3450
56	0.0385	0.3428
57	0.0375	0.3391
58	0.0374	0.3323
59	0.0314	0.3058
60	0.0300	0.3034
61	0.0279	0.2967

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0518	2082	55953	2687	Fail
0.0549	1781	51782	2907	Fail
0.0580	1461	46820	3204	Fail
0.0611	1243	43355	3487	Fail
0.0642	1063	40254	3786	Fail
0.0673	884	37409	4231	Fail
0.0704	725	34907	4814	Fail
0.0735	591	32490	5497	Fail
0.0766	488	30265	6201	Fail
0.0796	417	28212	6765	Fail
0.0827	355	26244	7392	Fail
0.0858	307	24490	7977	Fail
0.0889	279	22886	8202	Fail
0.0920	253	21432	8471	Fail
0.0951	219	19611	8954	Fail
0.0982	194	18375	9471	Fail
0.1013	172	17222	10012	Fail
0.1043	153	16084	10512	Fail
0.1074	141	15145	10741	Fail
0.1105	123	14230	11569	Fail
0.1136	110	13387	12170	Fail
0.1167	100	12583	12583	Fail
0.1198	94	11884	12642	Fail
0.1229	86	11169	12987	Fail
0.1260	81	10519	12986	Fail
0.1290	75	9755	13006	Fail
0.1321	68	9225	13566	Fail
0.1352	67	8735	13037	Fail
0.1383	65	8258	12704	Fail
0.1414	62	7824	12619	Fail
0.1445	59	7407	12554	Fail
0.1476	57	7001	12282	Fail
0.1507	52	6605	12701	Fail
0.1538	51	6235	12225	Fail
0.1568	50	5903	11806	Fail
0.1599	49	5576	11379	Fail
0.1630	44	5202	11822	Fail
0.1661	41	4941	12051	Fail
0.1692	40	4712	11780	Fail
0.1723	39	4453	11417	Fail
0.1754	36	4239	11775	Fail
0.1785	35	4025	11500	Fail
0.1815	33	3820	11575	Fail
0.1846	32	3634	11356	Fail
0.1877	32	3465	10828	Fail
0.1908	28	3300	11785	Fail
0.1939	27	3144	11644	Fail
0.1970	25	2990	11960	Fail
0.2001	23	2796	12156	Fail
0.2032	20	2656	13280	Fail
0.2062	18	2541	14116	Fail
0.2093	16	2411	15068	Fail
0.2124	16	2295	14343	Fail
0.2155	16	2203	13768	Fail

0.2186	16	2111	13193	Fail
0.2217	16	2016	12600	Fail
0.2248	16	1927	12043	Fail
0.2279	16	1854	11587	Fail
0.2309	16	1772	11075	Fail
0.2340	12	1691	14091	Fail
0.2371	12	1628	13566	Fail
0.2402	12	1560	13000	Fail
0.2433	12	1503	12525	Fail
0.2464	11	1447	13154	Fail
0.2495	11	1386	12600	Fail
0.2526	11	1331	12100	Fail
0.2557	9	1282	14244	Fail
0.2587	8	1233	15412	Fail
0.2618	7	1186	16942	Fail
0.2649	7	1141	16300	Fail
0.2680	5	1083	21660	Fail
0.2711	5	1041	20820	Fail
0.2742	5	1005	20100	Fail
0.2773	5	963	19260	Fail
0.2804	5	916	18320	Fail
0.2834	4	879	21975	Fail
0.2865	4	843	21075	Fail
0.2896	4	809	20225	Fail
0.2927	4	781	19525	Fail
0.2958	3	755	25166	Fail
0.2989	3	732	24400	Fail
0.3020	3	709	23633	Fail
0.3051	2	679	33950	Fail
0.3081	2	649	32450	Fail
0.3112	2	632	31600	Fail
0.3143	2	606	30300	Fail
0.3174	2	581	29050	Fail
0.3205	2	560	28000	Fail
0.3236	2	543	27150	Fail
0.3267	2	524	26200	Fail
0.3298	2	513	25650	Fail
0.3329	2	500	25000	Fail
0.3359	2	483	24150	Fail
0.3390	2	472	23600	Fail
0.3421	2	459	22950	Fail
0.3452	2	444	22200	Fail
0.3483	2	430	21500	Fail
0.3514	2	421	21050	Fail
0.3545	1	413	41300	Fail
0.3576	1	399	39900	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #7

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

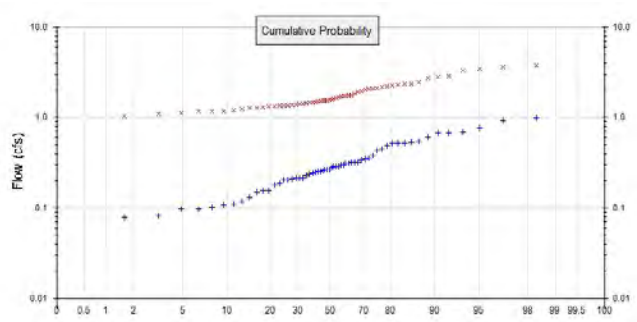
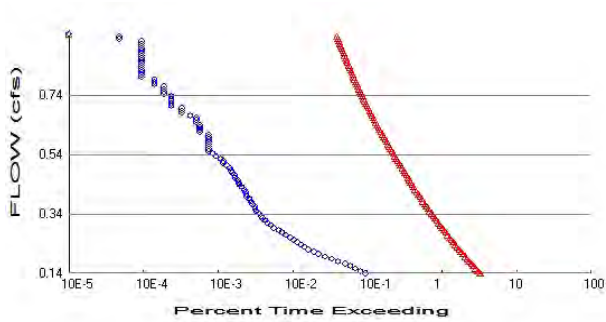
Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 8



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #8

Total Pervious Area: 2.25
Total Impervious Area: 0

Mitigated Landuse Totals for POC #8

Total Pervious Area: 4.33
Total Impervious Area: 3.24

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #8

Return Period	Flow(cfs)
2 year	0.271296
5 year	0.455306
10 year	0.593352
25 year	0.783538
50 year	0.935466
100 year	1.095396

Flow Frequency Return Periods for Mitigated. POC #8

Return Period	Flow(cfs)
2 year	1.654455
5 year	2.198737
10 year	2.591282
25 year	3.125213
50 year	3.551386
100 year	4.002663

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #8

Year	Predeveloped	Mitigated
1949	0.542	2.321
1950	0.520	2.217
1951	0.279	1.439
1952	0.131	1.013
1953	0.098	1.174
1954	0.216	1.360
1955	0.206	1.494
1956	0.290	1.479
1957	0.321	1.640
1958	0.189	1.270
1959	0.153	1.269

1960	0.312	1.520
1961	0.203	1.374
1962	0.082	1.097
1963	0.265	1.483
1964	0.246	1.351
1965	0.349	1.705
1966	0.155	1.160
1967	0.530	2.340
1968	0.320	2.472
1969	0.338	1.559
1970	0.255	1.531
1971	0.302	1.835
1972	0.494	2.089
1973	0.110	1.021
1974	0.323	1.717
1975	0.358	1.671
1976	0.236	1.412
1977	0.213	1.342
1978	0.243	1.760
1979	0.101	2.170
1980	0.675	2.813
1981	0.226	1.578
1982	0.526	2.352
1983	0.315	1.762
1984	0.148	1.180
1985	0.214	1.514
1986	0.289	1.415
1987	0.256	1.947
1988	0.098	1.199
1989	0.079	1.893
1990	0.998	3.742
1991	0.693	2.845
1992	0.210	1.257
1993	0.119	1.351
1994	0.073	1.111
1995	0.178	1.377
1996	0.522	2.258
1997	0.301	1.599
1998	0.255	1.540
1999	0.768	3.486
2000	0.289	1.588
2001	0.109	1.729
2002	0.435	2.042
2003	0.452	2.132
2004	0.610	3.345
2005	0.262	1.312
2006	0.264	1.319
2007	0.924	3.601
2008	0.670	2.716
2009	0.379	2.059

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #8

Rank	Predeveloped	Mitigated
1	0.9978	3.7423
2	0.9243	3.6005
3	0.7684	3.4857
4	0.6933	3.3452

5	0.6751	2.8453
6	0.6702	2.8128
7	0.6096	2.7159
8	0.5423	2.4718
9	0.5303	2.3519
10	0.5262	2.3396
11	0.5224	2.3214
12	0.5200	2.2579
13	0.4936	2.2171
14	0.4523	2.1703
15	0.4351	2.1316
16	0.3791	2.0889
17	0.3582	2.0593
18	0.3485	2.0423
19	0.3378	1.9471
20	0.3232	1.8934
21	0.3207	1.8353
22	0.3197	1.7625
23	0.3148	1.7604
24	0.3117	1.7290
25	0.3024	1.7167
26	0.3010	1.7048
27	0.2900	1.6709
28	0.2891	1.6404
29	0.2885	1.5994
30	0.2788	1.5883
31	0.2649	1.5776
32	0.2637	1.5588
33	0.2616	1.5404
34	0.2562	1.5310
35	0.2553	1.5201
36	0.2550	1.5136
37	0.2460	1.4943
38	0.2432	1.4830
39	0.2365	1.4785
40	0.2261	1.4395
41	0.2155	1.4153
42	0.2139	1.4120
43	0.2127	1.3768
44	0.2099	1.3744
45	0.2059	1.3602
46	0.2027	1.3515
47	0.1890	1.3506
48	0.1784	1.3424
49	0.1553	1.3190
50	0.1535	1.3118
51	0.1479	1.2703
52	0.1309	1.2687
53	0.1186	1.2574
54	0.1103	1.1991
55	0.1091	1.1803
56	0.1008	1.1740
57	0.0981	1.1601
58	0.0978	1.1110
59	0.0821	1.0966
60	0.0785	1.0211
61	0.0731	1.0129

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1356	2023	69214	3421	Fail
0.1437	1715	64573	3765	Fail
0.1518	1484	60423	4071	Fail
0.1599	1258	56552	4495	Fail
0.1680	1072	52980	4942	Fail
0.1760	866	49258	5687	Fail
0.1841	714	46264	6479	Fail
0.1922	574	43505	7579	Fail
0.2003	474	40853	8618	Fail
0.2084	407	38414	9438	Fail
0.2164	348	36168	10393	Fail
0.2245	304	34051	11200	Fail
0.2326	277	32105	11590	Fail
0.2407	246	30222	12285	Fail
0.2488	221	28490	12891	Fail
0.2568	197	26950	13680	Fail
0.2649	172	25474	14810	Fail
0.2730	153	24127	15769	Fail
0.2811	138	22629	16397	Fail
0.2891	118	21410	18144	Fail
0.2972	110	20264	18421	Fail
0.3053	98	19167	19558	Fail
0.3134	91	18183	19981	Fail
0.3215	83	17207	20731	Fail
0.3295	80	16326	20407	Fail
0.3376	76	15490	20381	Fail
0.3457	69	14673	21265	Fail
0.3538	67	13960	20835	Fail
0.3619	65	13240	20369	Fail
0.3699	62	12596	20316	Fail
0.3780	59	11914	20193	Fail
0.3861	56	11328	20228	Fail
0.3942	52	10810	20788	Fail
0.4023	51	10318	20231	Fail
0.4103	50	9820	19640	Fail
0.4184	48	9381	19543	Fail
0.4265	44	8941	20320	Fail
0.4346	41	8547	20846	Fail
0.4426	40	8149	20372	Fail
0.4507	39	7762	19902	Fail
0.4588	36	7441	20669	Fail
0.4669	35	7125	20357	Fail
0.4750	33	6842	20733	Fail
0.4830	32	6509	20340	Fail
0.4911	31	6211	20035	Fail
0.4992	28	5940	21214	Fail
0.5073	25	5666	22664	Fail
0.5154	25	5411	21644	Fail
0.5234	23	5197	22595	Fail
0.5315	20	4979	24895	Fail
0.5396	18	4763	26461	Fail
0.5477	16	4581	28631	Fail
0.5558	16	4383	27393	Fail
0.5638	16	4188	26175	Fail

0.5719	16	4023	25143	Fail
0.5800	16	3878	24237	Fail
0.5881	16	3696	23100	Fail
0.5961	16	3544	22150	Fail
0.6042	16	3392	21200	Fail
0.6123	12	3247	27058	Fail
0.6204	12	3106	25883	Fail
0.6285	12	3020	25166	Fail
0.6365	12	2898	24150	Fail
0.6446	11	2774	25218	Fail
0.6527	11	2656	24145	Fail
0.6608	11	2560	23272	Fail
0.6689	9	2460	27333	Fail
0.6769	7	2376	33942	Fail
0.6850	7	2291	32728	Fail
0.6931	7	2209	31557	Fail
0.7012	5	2128	42560	Fail
0.7093	5	2043	40860	Fail
0.7173	5	1978	39560	Fail
0.7254	5	1911	38220	Fail
0.7335	5	1851	37020	Fail
0.7416	4	1776	44400	Fail
0.7496	4	1707	42675	Fail
0.7577	4	1651	41275	Fail
0.7658	4	1589	39725	Fail
0.7739	3	1544	51466	Fail
0.7820	3	1492	49733	Fail
0.7900	3	1440	48000	Fail
0.7981	2	1402	70100	Fail
0.8062	2	1358	67900	Fail
0.8143	2	1317	65850	Fail
0.8224	2	1285	64250	Fail
0.8304	2	1245	62250	Fail
0.8385	2	1213	60650	Fail
0.8466	2	1155	57750	Fail
0.8547	2	1124	56200	Fail
0.8628	2	1094	54700	Fail
0.8708	2	1061	53050	Fail
0.8789	2	1041	52050	Fail
0.8870	2	1005	50250	Fail
0.8951	2	972	48600	Fail
0.9032	2	942	47100	Fail
0.9112	2	911	45550	Fail
0.9193	2	882	44100	Fail
0.9274	1	858	85800	Fail
0.9355	1	828	82800	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality

Water Quality BMP Flow and Volume for POC #8

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Failed

POC 9

POC #9 was not reported because POC must exist in both scenarios and both scenarios must have been run.

POC 10

POC #10 was not reported because POC must exist in both scenarios and both scenarios must have been run.

POC 11

POC #11 was not reported because POC must exist in both scenarios and both scenarios must have been run.

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

RUN

GLOBAL

WWM4 model simulation
START 1948 10 01 END 2009 09 30
RUN INTERP OUTPUT LEVEL 3 0
RESUME 0 RUN 1 UNIT SYSTEM 1
END GLOBAL

FILES

<File>	<Un#>	<-----File Name----->	***
<-ID->			***
WDM	26	Tamarack - Durations.wdm	
MESSU	25	PreTamarack - Durations.MES	
	27	PreTamarack - Durations.L61	
	28	PreTamarack - Durations.L62	
	30	POCTamarack - Durations1.dat	
	31	POCTamarack - Durations2.dat	
	35	POCTamarack - Durations6.dat	
	36	POCTamarack - Durations7.dat	
	37	POCTamarack - Durations8.dat	
	32	POCTamarack - Durations3.dat	
	34	POCTamarack - Durations5.dat	
	33	POCTamarack - Durations4.dat	

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

PERLND	8
PERLND	17
IMPLND	2
IMPLND	4
IMPLND	6
PERLND	9
IMPLND	3
IMPLND	7
IMPLND	16
PERLND	40
PERLND	41
PERLND	42
PERLND	43
PERLND	3
RCHRES	1
RCHRES	2
PERLND	39
COPY	501
COPY	502
COPY	506
COPY	507
COPY	508
COPY	503
COPY	505
COPY	504
DISPLY	1
DISPLY	2
DISPLY	6
DISPLY	7
DISPLY	8
DISPLY	3
DISPLY	5
DISPLY	4

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

#	-	#<-----Title----->	***TRAN	PIVL	DIG1	FIL1	PYR	DIG2	FIL2	YRND
1		Subbasin 1		MAX			1	2	30	9
2		Subbasin 2		MAX			1	2	31	9

```

6      Subbasin 6          MAX          1    2    35    9
7      Subbasin 7 - Perv Latera MAX          1    2    36    9
8      Subbasin 8 - Perv Latera MAX          1    2    37    9
3      Subbasin 3B        MAX          1    2    32    9
5      Subbasin 5 Detention MAX          1    2    34    9
4      Basin 4 - Perv Lateral Fl MAX          1    2    33    9

```

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

```

# - # NPT NMN ***
1      1      1      1
501    1      1      1
502    1      1      1
506    1      1      1
507    1      1      1
508    1      1      1
503    1      1      1
505    1      1      1
504    1      1      1

```

END TIMESERIES

END COPY

GENER

OPCODE

```
#      # OPCD ***
```

END OPCODE

PARM

```
#      #          K ***
```

END PARM

END GENER

PERLND

GEN-INFO

```

<PLS ><-----Name----->NBLKS      Unit-systems      Printer ***
# - #      User      t-series      Engl Metr ***
              in      out      ***
8      A/B, Lawn, Mod      1      1      1      1      27      0
17     C, Lawn, Mod      1      1      1      1      27      0
9      A/B, Lawn, Steep    1      1      1      1      27      0
40     A/B, Lawn, Steep    1      1      1      1      27      0
41     C, Lawn, Steep      1      1      1      1      27      0
42     C, Lawn, Steep      1      1      1      1      27      0
43     A/B, Lawn, Steep    1      1      1      1      27      0
3      A/B, Forest, Steep  1      1      1      1      27      0
39     A/B, Forest, Mod    1      1      1      1      27      0

```

END GEN-INFO

*** Section PWATER***

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC ***
8      0      0      1      0      0      0      0      0      0      0      0      0
17     0      0      1      0      0      0      0      0      0      0      0      0
9      0      0      1      0      0      0      0      0      0      0      0      0
40     0      0      1      0      0      0      0      0      0      0      0      0
41     0      0      1      0      0      0      0      0      0      0      0      0
42     0      0      1      0      0      0      0      0      0      0      0      0
43     0      0      1      0      0      0      0      0      0      0      0      0
3      0      0      1      0      0      0      0      0      0      0      0      0
39     0      0      1      0      0      0      0      0      0      0      0      0

```

END ACTIVITY

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC *****
8      0      0      4      0      0      0      0      0      0      0      0      0      1      9
17     0      0      4      0      0      0      0      0      0      0      0      0      1      9
9      0      0      4      0      0      0      0      0      0      0      0      0      1      9
40     0      0      4      0      0      0      0      0      0      0      0      0      1      9
41     0      0      4      0      0      0      0      0      0      0      0      0      1      9
42     0      0      4      0      0      0      0      0      0      0      0      0      1      9

```

43	0	0	4	0	0	0	0	0	0	0	0	0	1	9
3	0	0	4	0	0	0	0	0	0	0	0	0	1	9
39	0	0	4	0	0	0	0	0	0	0	0	0	1	9

END PRINT-INFO

PWAT-PARM1
 <PLS > PWATER variable monthly parameter value flags ***
 # - # CSNO RTOP UZFG VCS VUZ VNN VIFW VIRG VLE INFC HWT ***
 8 0 0 0 0 0 0 0 0 0 0 0
 17 0 0 0 0 0 0 0 0 0 0 0
 9 0 0 0 0 0 0 0 0 0 0 0
 40 0 0 0 0 0 0 0 0 0 0 0
 41 0 0 0 0 0 0 0 0 0 0 0
 42 0 0 0 0 0 0 0 0 0 0 0
 43 0 0 0 0 0 0 0 0 0 0 0
 3 0 0 0 0 0 0 0 0 0 0 0
 39 0 0 0 0 0 0 0 0 0 0 0
 END PWAT-PARM1

PWAT-PARM2
 <PLS > PWATER input info: Part 2 ***
 # - # ***FOREST LZSN INFILT LRSUR SLSUR KVARV AGWRC
 8 0 5 0.8 400 0.1 0.3 0.996
 17 0 4.5 0.03 400 0.1 0.5 0.996
 9 0 5 0.8 400 0.15 0.3 0.996
 40 0 5 0.8 400 0.15 0.3 0.996
 41 0 4.5 0.03 400 0.15 0.5 0.996
 42 0 4.5 0.03 400 0.15 0.5 0.996
 43 0 5 0.8 400 0.15 0.3 0.996
 3 0 5 2 400 0.15 0.3 0.996
 39 0 5 2 400 0.1 0.3 0.996
 END PWAT-PARM2

PWAT-PARM3
 <PLS > PWATER input info: Part 3 ***
 # - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASETP AGWETP
 8 0 0 2 2 0 0 0
 17 0 0 2 2 0 0 0
 9 0 0 2 2 0 0 0
 40 0 0 2 2 0 0 0
 41 0 0 2 2 0 0 0
 42 0 0 2 2 0 0 0
 43 0 0 2 2 0 0 0
 3 0 0 2 2 0 0 0
 39 0 0 2 2 0 0 0
 END PWAT-PARM3

PWAT-PARM4
 <PLS > PWATER input info: Part 4 ***
 # - # CEPSC UZSN NSUR INTFW IRC LZETP ***
 8 0.1 0.5 0.25 0 0.7 0.25
 17 0.1 0.25 0.25 6 0.5 0.25
 9 0.1 0.5 0.25 0 0.7 0.25
 40 0.1 0.5 0.25 0 0.7 0.25
 41 0.1 0.15 0.25 6 0.3 0.25
 42 0.1 0.15 0.25 6 0.3 0.25
 43 0.1 0.5 0.25 0 0.7 0.25
 3 0.2 0.5 0.35 0 0.7 0.7
 39 0.2 0.5 0.35 0 0.7 0.7
 END PWAT-PARM4

PWAT-STATE1
 <PLS > *** Initial conditions at start of simulation
 ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
 # - # *** CEPS SURS UZS IFWS LZS AGWS GWVS
 8 0 0 0 0 3 1 0
 17 0 0 0 0 2.5 1 0
 9 0 0 0 0 3 1 0
 40 0 0 0 0 3 1 0
 41 0 0 0 0 2.5 1 0
 42 0 0 0 0 2.5 1 0

43	0	0	0	0	3	1	0
3	0	0	0	0	3	1	0
39	0	0	0	0	3	1	0

END PWAT-STATE1

END PERLND

IMPLND

GEN-INFO
 <PLS ><-----Name-----> Unit-systems Printer ***
 # - # User t-series Engl Metr ***
 in out ***

2	ROADS/MOD	1	1	1	27	0
4	ROOF TOPS/FLAT	1	1	1	27	0
6	DRIVEWAYS/MOD	1	1	1	27	0
3	ROADS/STEEP	1	1	1	27	0
7	DRIVEWAYS/STEEP	1	1	1	27	0
16	ROADS/MOD LAT	1	1	1	27	0

END GEN-INFO
 *** Section IWATER***

ACTIVITY
 <PLS > ***** Active Sections *****
 # - # ATMP SNOW IWAT SLD IWG IQAL ***

2	0	0	1	0	0	0
4	0	0	1	0	0	0
6	0	0	1	0	0	0
3	0	0	1	0	0	0
7	0	0	1	0	0	0
16	0	0	1	0	0	0

END ACTIVITY

PRINT-INFO
 <ILS > ***** Print-flags ***** PIVL PYR
 # - # ATMP SNOW IWAT SLD IWG IQAL *****

2	0	0	4	0	0	0	1	9
4	0	0	4	0	0	0	1	9
6	0	0	4	0	0	0	1	9
3	0	0	4	0	0	0	1	9
7	0	0	4	0	0	0	1	9
16	0	0	4	0	0	0	1	9

END PRINT-INFO

IWAT-PARM1
 <PLS > IWATER variable monthly parameter value flags ***
 # - # CSNO RTOP VRS VNN RTLI ***

2	0	0	0	0	0
4	0	0	0	0	0
6	0	0	0	0	0
3	0	0	0	0	0
7	0	0	0	0	0
16	0	0	0	0	0

END IWAT-PARM1

IWAT-PARM2
 <PLS > IWATER input info: Part 2 ***
 # - # *** LSUR SLSUR NSUR RETSC

2	400	0.05	0.1	0.08
4	400	0.01	0.1	0.1
6	400	0.05	0.1	0.08
3	400	0.1	0.1	0.05
7	400	0.1	0.1	0.05
16	400	0.05	0.1	0.08

END IWAT-PARM2

IWAT-PARM3
 <PLS > IWATER input info: Part 3 ***
 # - # ***PETMAX PETMIN

2	0	0
4	0	0

```

6           0           0
3           0           0
7           0           0
16          0           0

```

END IWAT-PARM3

IWAT-STATE1

<PLS > *** Initial conditions at start of simulation

```

# - # *** RETS      SURS
2           0           0
4           0           0
6           0           0
3           0           0
7           0           0
16          0           0

```

END IWAT-STATE1

END IMPLND

SCHEMATIC

<-Source->	<--Area-->	<-Target-->	MBLK	***
<Name> #	<-factor-->	<Name> #	Tbl#	***
Basin 4,7,8 Imperv Lateral	***			
IMPLND 16	0.6911	PERLND 39	50	
Subbasin 8 - Perv Lateral Flow A/B	***			
PERLND 40	0.4066	PERLND 39	30	
PERLND 40	0.4066	PERLND 39	34	
PERLND 40	0.4066	PERLND 39	38	
Subbasin 3A	***			
PERLND 9	5.75	RCHRES 2	2	
PERLND 9	5.75	RCHRES 2	3	
IMPLND 3	1.79	RCHRES 2	5	
IMPLND 4	2.6	RCHRES 2	5	
IMPLND 7	1.11	RCHRES 2	5	
Subbasin 5	***			
PERLND 9	1.39	RCHRES 1	2	
PERLND 9	1.39	RCHRES 1	3	
IMPLND 3	0.52	RCHRES 1	5	
IMPLND 4	0.55	RCHRES 1	5	
IMPLND 7	0.24	RCHRES 1	5	
Subbasin 7 - Perv Lateral Flow A/B	***			
PERLND 43	0.103	PERLND 39	30	
PERLND 43	0.103	PERLND 39	34	
PERLND 43	0.103	PERLND 39	38	
Subbasin 7 - Perv Lateral Flow C	***			
PERLND 41	0.1501	PERLND 39	30	
PERLND 41	0.1501	PERLND 39	34	
PERLND 41	0.1501	PERLND 39	38	
Subbasin 8 - Perv Lateral Flow C	***			
PERLND 42	0.3927	PERLND 39	30	
PERLND 42	0.3927	PERLND 39	34	
PERLND 42	0.3927	PERLND 39	38	
Subbasin 1	***			
PERLND 8	0.39	COPY 501	12	
PERLND 8	0.39	COPY 501	13	
PERLND 17	0.95	COPY 501	12	
PERLND 17	0.95	COPY 501	13	
IMPLND 2	0.35	COPY 501	15	
IMPLND 4	0.32	COPY 501	15	
IMPLND 6	0.14	COPY 501	15	
Subbasin 2	***			
PERLND 8	0.67	COPY 502	12	
PERLND 8	0.67	COPY 502	13	
PERLND 17	0.41	COPY 502	12	
PERLND 17	0.41	COPY 502	13	
IMPLND 2	0.42	COPY 502	15	
IMPLND 4	0.08	COPY 502	15	
IMPLND 6	0.04	COPY 502	15	
Subbasin 6	***			
PERLND 8	10.37	COPY 506	12	

```

PERLND 8 10.37 COPY 506 13
PERLND 17 0.04 COPY 506 12
PERLND 17 0.04 COPY 506 13
IMPLND 2 1.77 COPY 506 15
IMPLND 4 2.59 COPY 506 15
IMPLND 6 1.11 COPY 506 15
Basin 4 - Perv Lateral Flow***
PERLND 39 5.73 COPY 504 12
PERLND 39 5.73 COPY 504 13
Subbasin 7 - Perv Lateral Flow C***
PERLND 41 0.86 COPY 507 12
PERLND 41 0.86 COPY 507 13
Subbasin 8 - Perv Lateral Flow C***
PERLND 42 2.25 COPY 508 12
PERLND 42 2.25 COPY 508 13
Subbasin 3B***
PERLND 3 1.44 COPY 503 12
PERLND 3 1.44 COPY 503 13
IMPLND 3 0.45 COPY 503 15
IMPLND 4 0.65 COPY 503 15
IMPLND 7 0.28 COPY 503 15

```

*****Routing*****

```

RCHRES 1 1 COPY 505 16
RCHRES 2 1 COPY 503 16
END SCHEMATIC

```

NETWORK

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
COPY 501 OUTPUT MEAN 1 1 48.4 DISPLY 1 INPUT TIMSER 1
COPY 502 OUTPUT MEAN 1 1 48.4 DISPLY 2 INPUT TIMSER 1
COPY 506 OUTPUT MEAN 1 1 48.4 DISPLY 6 INPUT TIMSER 1
COPY 507 OUTPUT MEAN 1 1 48.4 DISPLY 7 INPUT TIMSER 1
COPY 508 OUTPUT MEAN 1 1 48.4 DISPLY 8 INPUT TIMSER 1
COPY 503 OUTPUT MEAN 1 1 48.4 DISPLY 3 INPUT TIMSER 1
COPY 505 OUTPUT MEAN 1 1 48.4 DISPLY 5 INPUT TIMSER 1
COPY 504 OUTPUT MEAN 1 1 48.4 DISPLY 4 INPUT TIMSER 1

```

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
END NETWORK

```

RCHRES

GEN-INFO

```

RCHRES Name Nexits Unit Systems Printer ***
# - #<-----><----> User T-series Engl Metr LKFG ***
in out
1 Subbasin 5 Deten-049 1 1 1 1 28 0 1
2 Subbasin 3 Deten-052 1 1 1 1 28 0 1

```

END GEN-INFO

*** Section RCHRES***

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUGF PKFG PHFG ***
1 1 0 0 0 0 0 0 0 0 0
2 1 0 0 0 0 0 0 0 0 0

```

END ACTIVITY

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL PYR
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
1 4 0 0 0 0 0 0 0 0 0 1 9
2 4 0 0 0 0 0 0 0 0 0 1 9

```

END PRINT-INFO

HYDR-PARM1

```

RCHRES  Flags for each HYDR Section                                     ***
# - #   VC A1 A2 A3  ODFVFG for each *** ODGTFG for each  FUNCT for each
      FG FG FG FG  possible exit *** possible exit  possible exit
      * * * *   * * * *   * * * *   * * * *
1       0 1 0 0    4 0 0 0 0    0 0 0 0 0    2 2 2 2 2
2       0 1 0 0    4 0 0 0 0    0 0 0 0 0    2 2 2 2 2
END HYDR-PARM1

```

```

HYDR-PARM2
# - #   FTABNO          LEN          DELTH          STCOR          KS          DB50          ***
<-----><-----><-----><-----><-----><-----><----->          ***
1       1             0.01          0.0           0.0           0.5           0.0
2       2             0.03          0.0           0.0           0.5           0.0

```

END HYDR-PARM2

```

HYDR-INIT
RCHRES  Initial conditions for each HYDR section                       ***
# - #   *** VOL          Initial value of COLIND          Initial value of OUTDGT
      *** ac-ft          for each possible exit          for each possible exit
<-----><----->          <-----><-----><-----><----->          *** <-----><-----><-----><----->
1       0             4.0 0.0 0.0 0.0 0.0          0.0 0.0 0.0 0.0 0.0
2       0             4.0 0.0 0.0 0.0 0.0          0.0 0.0 0.0 0.0 0.0

```

END HYDR-INIT

END RCHRES

SPEC-ACTIONS

END SPEC-ACTIONS

FTABLES

```

FTABLE 1
91      4
      Depth          Area          Volume          Outflowl          Velocity          Travel Time***
      (ft)          (acres)          (acre-ft)          (cfs)          (ft/sec)          (Minutes)***
0.000000 0.013223 0.000000 0.000000
0.088889 0.013280 0.001178 0.267497
0.177778 0.013338 0.002361 0.378297
0.266667 0.013395 0.003549 0.463318
0.355556 0.013453 0.004742 0.534993
0.444444 0.013511 0.005941 0.598140
0.533333 0.013569 0.007144 0.655230
0.622222 0.013627 0.008353 0.707729
0.711111 0.013685 0.009567 0.756594
0.800000 0.013743 0.010786 0.802490
0.888889 0.013801 0.012010 0.845898
0.977778 0.013860 0.013239 0.887186
1.066667 0.013918 0.014474 0.926635
1.155556 0.013977 0.015714 0.964472
1.244444 0.014036 0.016959 1.000880
1.333333 0.014095 0.018209 1.036010
1.422222 0.014154 0.019465 1.069986
1.511111 0.014213 0.020725 1.102916
1.600000 0.014273 0.021991 1.134892
1.688889 0.014332 0.023263 1.165990
1.777778 0.014392 0.024539 1.196281
1.866667 0.014452 0.025821 1.225823
1.955556 0.014512 0.027109 1.254670
2.044444 0.014572 0.028401 1.282868
2.133333 0.014632 0.029699 1.310460
2.222222 0.014692 0.031002 1.337483
2.311111 0.014752 0.032311 1.363970
2.400000 0.014813 0.033625 1.389953
2.488889 0.014873 0.034944 1.415459
2.577778 0.014934 0.036269 1.440513
2.666667 0.014995 0.037599 1.465139
2.755556 0.015056 0.038935 1.489358
2.844444 0.015117 0.040276 1.513189
2.933333 0.015178 0.041622 1.536651
3.022222 0.015240 0.042974 1.559759
3.111111 0.015301 0.044332 1.582531
3.200000 0.015363 0.045694 1.604979
3.288889 0.015424 0.047063 1.627118
3.377778 0.015486 0.048437 1.648959

```

3.466667	0.015548	0.049816	1.670515
3.555556	0.015610	0.051201	1.691797
3.644444	0.015672	0.052591	1.712814
3.733333	0.015735	0.053987	1.733576
3.822222	0.015797	0.055388	1.754092
3.911111	0.015860	0.056795	1.774371
4.000000	0.015923	0.058208	1.794421
4.088889	0.015985	0.059626	1.814250
4.177778	0.016048	0.061050	1.833864
4.266667	0.016111	0.062479	1.853270
4.355556	0.016175	0.063914	1.872476
4.444444	0.016238	0.065354	1.891486
4.533333	0.016301	0.066801	1.910307
4.622222	0.016365	0.068253	1.928945
4.711111	0.016429	0.069710	1.947404
4.800000	0.016492	0.071173	1.965690
4.888889	0.016556	0.072642	1.983807
4.977778	0.016620	0.074117	2.001761
5.066667	0.016685	0.075597	2.019555
5.155556	0.016749	0.077083	2.037193
5.244444	0.016813	0.078574	2.054680
5.333333	0.016878	0.080072	2.072019
5.422222	0.016943	0.081575	2.089215
5.511111	0.017007	0.083084	2.106270
5.600000	0.017072	0.084598	2.123188
5.688889	0.017137	0.086119	2.139972
5.777778	0.017203	0.087645	2.156626
5.866667	0.017268	0.089177	2.173152
5.955556	0.017333	0.090715	2.189553
6.044444	0.017399	0.092259	2.205833
6.133333	0.017465	0.093808	2.221993
6.222222	0.017530	0.095363	2.238037
6.311111	0.017596	0.096925	2.253966
6.400000	0.017662	0.098492	2.269783
6.488889	0.017729	0.100065	2.285491
6.577778	0.017795	0.101643	2.308660
6.666667	0.017861	0.103228	2.327666
6.755556	0.017928	0.104819	2.345699
6.844444	0.017995	0.106415	2.363199
6.933333	0.018061	0.108018	2.380329
7.022222	0.018128	0.109626	2.467500
7.111111	0.018195	0.111241	3.198544
7.200000	0.018262	0.112861	4.316850
7.288889	0.018330	0.114487	5.685745
7.377778	0.018397	0.116120	7.207863
7.466667	0.018465	0.117758	8.785919
7.555556	0.018532	0.119402	10.32063
7.644444	0.018600	0.121053	11.71823
7.733333	0.018668	0.122709	12.90286
7.822222	0.018736	0.124371	13.83219
7.911111	0.018804	0.126040	14.51567
8.000000	0.018872	0.127714	15.03487

END FTABLE 1

FTABLE 2

91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.000000	0.000000	0.000000		
0.066667	0.004938	0.000220	0.070410		
0.133333	0.006944	0.000620	0.099574		
0.200000	0.008456	0.001135	0.121953		
0.266667	0.009708	0.001742	0.140819		
0.333333	0.010790	0.002426	0.157441		
0.400000	0.011751	0.003178	0.172467		
0.466667	0.012616	0.003991	0.186286		
0.533333	0.013406	0.004858	0.199148		
0.600000	0.014132	0.005777	0.211229		
0.666667	0.014804	0.006741	0.222655		
0.733333	0.015430	0.007749	0.233522		
0.800000	0.016013	0.008798	0.243906		

0.866667	0.016560	0.009884	0.253865
0.933333	0.017073	0.011005	0.263448
1.000000	0.017556	0.012160	0.272695
1.066667	0.018010	0.013345	0.281638
1.133333	0.018439	0.014560	0.290306
1.200000	0.018843	0.015803	0.298722
1.266667	0.019224	0.017072	0.306908
1.333333	0.019584	0.018366	0.314881
1.400000	0.019924	0.019683	0.322657
1.466667	0.020245	0.021022	0.330250
1.533333	0.020547	0.022382	0.337672
1.600000	0.020832	0.023761	0.344935
1.666667	0.021100	0.025159	0.352048
1.733333	0.021351	0.026574	0.359020
1.800000	0.021587	0.028006	0.365859
1.866667	0.021808	0.029452	0.372572
1.933333	0.022015	0.030913	0.379167
2.000000	0.022207	0.032387	0.385649
2.066667	0.022385	0.033874	0.392024
2.133333	0.022549	0.035372	0.398297
2.200000	0.022701	0.036880	0.404472
2.266667	0.022839	0.038398	0.410555
2.333333	0.022965	0.039925	0.416549
2.400000	0.023078	0.041460	0.422457
2.466667	0.023179	0.043002	0.428285
2.533333	0.023267	0.044550	0.434034
2.600000	0.023343	0.046104	0.439708
2.666667	0.023408	0.047662	0.445309
2.733333	0.023460	0.049224	0.450841
2.800000	0.023501	0.050790	0.456306
2.866667	0.023530	0.052358	0.461706
2.933333	0.023548	0.053927	0.467044
3.000000	0.023554	0.055497	0.472322
3.066667	0.023548	0.057067	0.477541
3.133333	0.023530	0.058637	0.482704
3.200000	0.023501	0.060204	0.487812
3.266667	0.023460	0.061770	0.492867
3.333333	0.023408	0.063332	0.497871
3.400000	0.023343	0.064891	0.502825
3.466667	0.023267	0.066444	0.507731
3.533333	0.023179	0.067993	0.512589
3.600000	0.023078	0.069535	0.517402
3.666667	0.022965	0.071069	0.522171
3.733333	0.022839	0.072596	0.526897
3.800000	0.022701	0.074114	0.531581
3.866667	0.022549	0.075623	0.536223
3.933333	0.022385	0.077121	0.540826
4.000000	0.022207	0.078607	0.545390
4.066667	0.022015	0.080081	0.549916
4.133333	0.021808	0.081542	0.554405
4.200000	0.021587	0.082989	0.558859
4.266667	0.021351	0.084420	0.563276
4.333333	0.021100	0.085835	0.567660
4.400000	0.020832	0.087233	0.572010
4.466667	0.020547	0.088612	0.576327
4.533333	0.020245	0.089972	0.580612
4.600000	0.019924	0.091311	0.584866
4.666667	0.019584	0.092628	0.589089
4.733333	0.019224	0.093922	0.593281
4.800000	0.018843	0.095191	0.597445
4.866667	0.018439	0.096434	0.601580
4.933333	0.018010	0.097649	0.605686
5.000000	0.017556	0.098835	0.609765
5.066667	0.017073	0.099989	0.978910
5.133333	0.016560	0.101111	1.648713
5.200000	0.016013	0.102196	2.508517
5.266667	0.015430	0.103245	3.508899
5.333333	0.014804	0.104253	4.608973
5.400000	0.014132	0.105218	5.768278
5.466667	0.013406	0.106136	6.945177

```

5.533333 0.012616 0.107004 8.097647
5.600000 0.011751 0.107816 9.185308
5.666667 0.010790 0.108568 10.17228
5.733333 0.009708 0.109252 11.03063
5.800000 0.008456 0.109859 11.74437
5.866667 0.006944 0.110374 12.31382
5.933333 0.004938 0.110774 12.76044
6.000000 0.000000 0.110994 13.13191

```

```

END FTABLE 2
END FTABLES

```

EXT SOURCES

```

<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # tem strg<-factor->strg <Name> # # <Name> # # ***
WDM 2 PREC ENGL 1 PERLND 1 999 EXTNL PREC
WDM 2 PREC ENGL 1 IMPLND 1 999 EXTNL PREC
WDM 1 EVAP ENGL 0.76 PERLND 1 999 EXTNL PETINP
WDM 1 EVAP ENGL 0.76 IMPLND 1 999 EXTNL PETINP

```

END EXT SOURCES

EXT TARGETS

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name> # <Name> # #<-factor->strg <Name> # <Name> tem strg strg***
COPY 501 OUTPUT MEAN 1 1 48.4 WDM 501 FLOW ENGL REPL
COPY 502 OUTPUT MEAN 1 1 48.4 WDM 502 FLOW ENGL REPL
COPY 506 OUTPUT MEAN 1 1 48.4 WDM 506 FLOW ENGL REPL
COPY 504 OUTPUT MEAN 1 1 48.4 WDM 504 FLOW ENGL REPL
COPY 507 OUTPUT MEAN 1 1 48.4 WDM 507 FLOW ENGL REPL
COPY 508 OUTPUT MEAN 1 1 48.4 WDM 508 FLOW ENGL REPL
RCHRES 1 HYDR RO 1 1 1 WDM 1000 FLOW ENGL REPL
RCHRES 1 HYDR STAGE 1 1 1 WDM 1001 STAG ENGL REPL
COPY 505 OUTPUT MEAN 1 1 48.4 WDM 505 FLOW ENGL REPL
COPY 503 OUTPUT MEAN 1 1 48.4 WDM 503 FLOW ENGL REPL
RCHRES 2 HYDR RO 1 1 1 WDM 1002 FLOW ENGL REPL
RCHRES 2 HYDR STAGE 1 1 1 WDM 1003 STAG ENGL REPL

```

END EXT TARGETS

MASS-LINK

```

<Volume> <-Grp> <-Member-><--Mult--> <Target> <-Grp> <-Member->***
<Name> <Name> # #<-factor-> <Name> <Name> # #***
MASS-LINK 2
PERLND PWATER SURO 0.083333 RCHRES INFLOW IVOL
END MASS-LINK 2

MASS-LINK 3
PERLND PWATER IFWO 0.083333 RCHRES INFLOW IVOL
END MASS-LINK 3

MASS-LINK 5
IMPLND IWATER SURO 0.083333 RCHRES INFLOW IVOL
END MASS-LINK 5

MASS-LINK 12
PERLND PWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 12

MASS-LINK 13
PERLND PWATER IFWO 0.083333 COPY INPUT MEAN
END MASS-LINK 13

MASS-LINK 15
IMPLND IWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 15

MASS-LINK 16
RCHRES ROFLOW COPY INPUT MEAN
END MASS-LINK 16

MASS-LINK 30

```

PERLND PWATER SURO
END MASS-LINK 30

MASS-LINK 34
PERLND PWATER IFWO
END MASS-LINK 34

MASS-LINK 38
PERLND PWATER AGWO
END MASS-LINK 38

MASS-LINK 50
IMPLND IWATER SURO
END MASS-LINK 50

PERLND EXTNL SURLI

PERLND EXTNL IFWLI

PERLND EXTNL AGWLI

PERLND EXTNL SURLI

END MASS-LINK

END RUN

Mitigated UCI File

RUN

GLOBAL

WWM4 model simulation
START 1948 10 01 END 2009 09 30
RUN INTERP OUTPUT LEVEL 3 0
RESUME 0 RUN 1 UNIT SYSTEM 1
END GLOBAL

FILES

<File>	<Un#>	<-----File Name----->	***
<-ID->			***
WDM	26	Tamarack - Durations.wdm	
MESSU	25	MitTamarack - Durations.MES	
	27	MitTamarack - Durations.L61	
	28	MitTamarack - Durations.L62	
	30	POCTamarack - Durations1.dat	
	31	POCTamarack - Durations2.dat	
	33	POCTamarack - Durations4.dat	
	35	POCTamarack - Durations6.dat	
	36	POCTamarack - Durations7.dat	
	37	POCTamarack - Durations8.dat	
	32	POCTamarack - Durations3.dat	
	34	POCTamarack - Durations5.dat	

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

PERLND	8
PERLND	17
IMPLND	2
IMPLND	4
IMPLND	6
PERLND	9
IMPLND	3
IMPLND	7
PERLND	2
PERLND	18
RCHRES	1
RCHRES	2
COPY	501
COPY	502
COPY	504
COPY	506
COPY	507
COPY	508
COPY	3
COPY	503
COPY	603
COPY	5
COPY	505
COPY	605
DISPLY	1
DISPLY	2
DISPLY	4
DISPLY	6
DISPLY	7
DISPLY	8
DISPLY	3
DISPLY	5

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

#	-	#<-----Title----->	***TRAN	PIVL	DIG1	FIL1	PYR	DIG2	FIL2	YRND
1		Subbasin 1	MAX				1	2	30	9
2		Subbasin 2	MAX				1	2	31	9
4		Subbasin 4	MAX				1	2	33	9

```

6      Subbasin 6      MAX      1      2      35      9
7      Subbasin 7      MAX      1      2      36      9
8      Subbasin 8      MAX      1      2      37      9
3      Tank 1      MAX      1      2      32      9
5      Trapezoidal Pond 1      MAX      1      2      34      9

```

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

```

# - # NPT NMN ***
1      1      1
501    1      1
502    1      1
504    1      1
506    1      1
507    1      1
508    1      1
3      1      1
503    1      1
603    1      1
5      1      1
505    1      1
605    1      1

```

END TIMESERIES

END COPY

GENER

OPCODE

```
# # OPCD ***
```

END OPCODE

PARAM

```
# # K ***
```

END PARAM

END GENER

PERLND

GEN-INFO

```

<PLS ><-----Name----->NBLKS      Unit-systems      Printer ***
# - #      User      t-series      Engl Metr ***
              in      out
8      A/B, Lawn, Mod      1      1      1      1      27      0
17     C, Lawn, Mod      1      1      1      1      27      0
9      A/B, Lawn, Steep      1      1      1      1      27      0
2      A/B, Forest, Mod      1      1      1      1      27      0
18     C, Lawn, Steep      1      1      1      1      27      0

```

END GEN-INFO

*** Section PWATER***

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC ***
8      0      0      1      0      0      0      0      0      0      0      0      0
17     0      0      1      0      0      0      0      0      0      0      0      0
9      0      0      1      0      0      0      0      0      0      0      0      0
2      0      0      1      0      0      0      0      0      0      0      0      0
18     0      0      1      0      0      0      0      0      0      0      0      0

```

END ACTIVITY

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC *****
8      0      0      4      0      0      0      0      0      0      0      0      0      1      9
17     0      0      4      0      0      0      0      0      0      0      0      0      1      9
9      0      0      4      0      0      0      0      0      0      0      0      0      1      9
2      0      0      4      0      0      0      0      0      0      0      0      0      1      9
18     0      0      4      0      0      0      0      0      0      0      0      0      1      9

```

END PRINT-INFO

PWAT-PARM1

```

<PLS > PWATER variable monthly parameter value flags ***
# - # CSNO RTOP UZFG VCS VUZ VNN VIFW VIRC VLE INFC HWT ***
8      0      0      0      0      0      0      0      0      0      0      0

```

```

17      0      0      0      0      0      0      0      0      0      0      0
9       0      0      0      0      0      0      0      0      0      0      0
2       0      0      0      0      0      0      0      0      0      0      0
18      0      0      0      0      0      0      0      0      0      0      0

```

END PWAT-PARM1

PWAT-PARM2

```

<PLS >      PWATER input info: Part 2      ***
# - # ***FOREST      LZSN      INFILT      LSUR      SLSUR      KVARY      AGWRC
8       0      5      0.8      400      0.1      0.3      0.996
17      0      4.5      0.03      400      0.1      0.5      0.996
9       0      5      0.8      400      0.15      0.3      0.996
2       0      5      2      400      0.1      0.3      0.996
18      0      4.5      0.03      400      0.15      0.5      0.996

```

END PWAT-PARM2

PWAT-PARM3

```

<PLS >      PWATER input info: Part 3      ***
# - # ***PETMAX      PETMIN      INFEXP      INFILD      DEEPFR      BASETP      AGWETP
8       0      0      2      2      0      0      0
17      0      0      2      2      0      0      0
9       0      0      2      2      0      0      0
2       0      0      2      2      0      0      0
18      0      0      2      2      0      0      0

```

END PWAT-PARM3

PWAT-PARM4

```

<PLS >      PWATER input info: Part 4      ***
# - #      CEPSC      UZSN      NSUR      INTFW      IRC      LZETP      ***
8       0.1      0.5      0.25      0      0.7      0.25
17      0.1      0.25      0.25      6      0.5      0.25
9       0.1      0.5      0.25      0      0.7      0.25
2       0.2      0.5      0.35      0      0.7      0.7
18      0.1      0.15      0.25      6      0.3      0.25

```

END PWAT-PARM4

PWAT-STATE1

```

<PLS > *** Initial conditions at start of simulation
      ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS      SURS      UZS      IFWS      LZS      AGWS      GWVS
8       0      0      0      0      3      1      0
17      0      0      0      0      2.5      1      0
9       0      0      0      0      3      1      0
2       0      0      0      0      3      1      0
18      0      0      0      0      2.5      1      0

```

END PWAT-STATE1

END PERLND

IMPLND

GEN-INFO

```

<PLS ><-----Name----->      Unit-systems      Printer      ***
# - #      User      t-series      Engr      Metr      ***
      in      out      ***
2       ROADS/MOD      1      1      1      27      0
4       ROOF TOPS/FLAT      1      1      1      27      0
6       DRIVEWAYS/MOD      1      1      1      27      0
3       ROADS/STEEP      1      1      1      27      0
7       DRIVEWAYS/STEEP      1      1      1      27      0

```

END GEN-INFO

*** Section IWATER***

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # ATMP      SNOW      IWAT      SLD      IWG      IQAL      ***
2       0      0      1      0      0      0
4       0      0      1      0      0      0
6       0      0      1      0      0      0
3       0      0      1      0      0      0
7       0      0      1      0      0      0

```

END ACTIVITY

```

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW IWAT  SLD  IWG IQAL  *****
2      0    0    4    0    0    0    1    9
4      0    0    4    0    0    0    1    9
6      0    0    4    0    0    0    1    9
3      0    0    4    0    0    0    1    9
7      0    0    4    0    0    0    1    9
END PRINT-INFO

```

```

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP  VRS  VNN RTLI  ***
2      0    0    0    0    0
4      0    0    0    0    0
6      0    0    0    0    0
3      0    0    0    0    0
7      0    0    0    0    0
END IWAT-PARM1

```

```

IWAT-PARM2
<PLS > IWATER input info: Part 2          ***
# - # ***  LSUR    SLSUR    NSUR    RETSC
2      400    0.05    0.1    0.08
4      400    0.01    0.1    0.1
6      400    0.05    0.1    0.08
3      400    0.1    0.1    0.05
7      400    0.1    0.1    0.05
END IWAT-PARM2

```

```

IWAT-PARM3
<PLS > IWATER input info: Part 3          ***
# - # ***PETMAX  PETMIN
2      0    0
4      0    0
6      0    0
3      0    0
7      0    0
END IWAT-PARM3

```

```

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # ***  RETS    SURS
2      0    0
4      0    0
6      0    0
3      0    0
7      0    0
END IWAT-STATE1

```

END IMPLND

```

SCHEMATIC
<-Source->          <--Area-->          <-Target->          MBLK          ***
<Name> #           <-factor->          <Name> #          Tbl#          ***
Subbasin 3A***
PERLND  9           5.54          RCHRES  1          2
PERLND  9           5.54          RCHRES  1          3
IMPLND  3           1.79          RCHRES  1          5
IMPLND  4           2.74          RCHRES  1          5
IMPLND  7           1.18          RCHRES  1          5
Subbasin 5***
PERLND  9           1.15          RCHRES  2          2
PERLND  9           1.15          RCHRES  2          3
IMPLND  3           0.52          RCHRES  2          5
IMPLND  4           0.73          RCHRES  2          5
IMPLND  7           0.31          RCHRES  2          5
Subbasin 1***
PERLND  8           0.38          COPY    501          12

```

PERLND	8	0.38	COPY	501	13
PERLND	17	0.94	COPY	501	12
PERLND	17	0.94	COPY	501	13
IMPLND	2	0.35	COPY	501	15
IMPLND	4	0.33	COPY	501	15
IMPLND	6	0.14	COPY	501	15
Subbasin 2***					
PERLND	8	0.52	COPY	502	12
PERLND	8	0.52	COPY	502	13
PERLND	17	0.32	COPY	502	12
PERLND	17	0.32	COPY	502	13
IMPLND	2	0.42	COPY	502	15
IMPLND	4	0.25	COPY	502	15
IMPLND	6	0.11	COPY	502	15
Subbasin 4***					
PERLND	2	5.82	COPY	504	12
PERLND	2	5.82	COPY	504	13
Subbasin 6***					
PERLND	8	9.37	COPY	506	12
PERLND	8	9.37	COPY	506	13
PERLND	17	0.03	COPY	506	12
PERLND	17	0.03	COPY	506	13
IMPLND	2	1.77	COPY	506	15
IMPLND	4	3.3	COPY	506	15
IMPLND	6	1.41	COPY	506	15
Subbasin 7***					
PERLND	9	0.52	COPY	507	12
PERLND	9	0.52	COPY	507	13
PERLND	18	0.77	COPY	507	12
PERLND	18	0.77	COPY	507	13
IMPLND	4	0.72	COPY	507	15
IMPLND	7	0.31	COPY	507	15
Subbasin 8***					
PERLND	9	2.2	COPY	508	12
PERLND	9	2.2	COPY	508	13
PERLND	18	2.13	COPY	508	12
PERLND	18	2.13	COPY	508	13
IMPLND	3	1.78	COPY	508	15
IMPLND	4	1.02	COPY	508	15
IMPLND	7	0.44	COPY	508	15
Basin 3B***					
PERLND	9	1.39	COPY	503	12
PERLND	9	1.39	COPY	603	12
PERLND	9	1.39	COPY	503	13
PERLND	9	1.39	COPY	603	13
IMPLND	3	0.45	COPY	503	15
IMPLND	3	0.45	COPY	603	15
IMPLND	4	0.69	COPY	503	15
IMPLND	4	0.69	COPY	603	15
IMPLND	7	0.29	COPY	503	15
IMPLND	7	0.29	COPY	603	15

*****Routing*****

PERLND	9	5.54	COPY	3	12
IMPLND	3	1.79	COPY	3	15
IMPLND	4	2.74	COPY	3	15
IMPLND	7	1.18	COPY	3	15
PERLND	9	5.54	COPY	3	13
PERLND	9	1.15	COPY	5	12
IMPLND	3	0.52	COPY	5	15
IMPLND	4	0.73	COPY	5	15
IMPLND	7	0.31	COPY	5	15
PERLND	9	1.15	COPY	5	13
RCHRES	1	1	COPY	503	16
RCHRES	2	1	COPY	505	16

END SCHEMATIC

NETWORK

```
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
```

```

COPY 501 OUTPUT MEAN 1 1 48.4 DISPLY 1 INPUT TIMSER 1
COPY 502 OUTPUT MEAN 1 1 48.4 DISPLY 2 INPUT TIMSER 1
COPY 504 OUTPUT MEAN 1 1 48.4 DISPLY 4 INPUT TIMSER 1
COPY 506 OUTPUT MEAN 1 1 48.4 DISPLY 6 INPUT TIMSER 1
COPY 507 OUTPUT MEAN 1 1 48.4 DISPLY 7 INPUT TIMSER 1
COPY 508 OUTPUT MEAN 1 1 48.4 DISPLY 8 INPUT TIMSER 1
COPY 503 OUTPUT MEAN 1 1 48.4 DISPLY 3 INPUT TIMSER 1
COPY 505 OUTPUT MEAN 1 1 48.4 DISPLY 5 INPUT TIMSER 1

```

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
END NETWORK

```

RCHRES

GEN-INFO

```

RCHRES Name Nexits Unit Systems Printer ***
# - #<-----><----> User T-series Engl Metr LKFG ***
in out ***
1 Tank 1 1 1 1 28 0 1
2 Trapezoidal Pond-056 1 1 1 1 28 0 1
END GEN-INFO
*** Section RCHRES***

```

ACTIVITY

```

<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
1 1 0 0 0 0 0 0 0 0 0
2 1 0 0 0 0 0 0 0 0 0
END ACTIVITY

```

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL PYR
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
1 4 0 0 0 0 0 0 0 0 0 1 9
2 4 0 0 0 0 0 0 0 0 0 1 9
END PRINT-INFO

```

HYDR-PARM1

```

RCHRES Flags for each HYDR Section ***
# - # VC A1 A2 A3 ODFVFG for each *** ODGTFG for each FUNCT for each
FG FG FG FG possible exit *** possible exit possible exit
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
1 0 1 0 0 4 0 0 0 0 0 0 0 0 0 2 2 2 2 2
2 0 1 0 0 4 0 0 0 0 0 0 0 0 0 2 2 2 2 2
END HYDR-PARM1

```

HYDR-PARM2

```

# - # FTABNO LEN DELTH STCOR KS DB50 ***
<-----><-----><-----><-----><-----><-----><----->
1 1 0.03 0.0 0.0 0.5 0.0
2 2 0.01 0.0 0.0 0.5 0.0
END HYDR-PARM2

```

HYDR-INIT

```

RCHRES Initial conditions for each HYDR section ***
# - # *** VOL Initial value of COLIND Initial value of OUTDGT
*** ac-ft for each possible exit for each possible exit
<-----><-----> <---><---><---><---><---> *** <---><---><---><---><--->
1 0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
2 0 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
END HYDR-INIT

```

END RCHRES

SPEC-ACTIONS

END SPEC-ACTIONS

FTABLES

```

FTABLE 1
91 4
Depth Area Volume Outflow1 Velocity Travel Time***

```

(ft)	(acres)	(acre-ft)	(cfs)	(ft/sec)	(Minutes)***
0.000000	0.000000	0.000000	0.000000		
0.066667	0.004938	0.000220	0.070410		
0.133333	0.006944	0.000620	0.099574		
0.200000	0.008456	0.001135	0.121953		
0.266667	0.009708	0.001742	0.140819		
0.333333	0.010790	0.002426	0.157441		
0.400000	0.011751	0.003178	0.172467		
0.466667	0.012616	0.003991	0.186286		
0.533333	0.013406	0.004858	0.199148		
0.600000	0.014132	0.005777	0.211229		
0.666667	0.014804	0.006741	0.222655		
0.733333	0.015430	0.007749	0.233522		
0.800000	0.016013	0.008798	0.243906		
0.866667	0.016560	0.009884	0.253865		
0.933333	0.017073	0.011005	0.263448		
1.000000	0.017556	0.012160	0.272695		
1.066667	0.018010	0.013345	0.281638		
1.133333	0.018439	0.014560	0.290306		
1.200000	0.018843	0.015803	0.298722		
1.266667	0.019224	0.017072	0.306908		
1.333333	0.019584	0.018366	0.314881		
1.400000	0.019924	0.019683	0.322657		
1.466667	0.020245	0.021022	0.330250		
1.533333	0.020547	0.022382	0.337672		
1.600000	0.020832	0.023761	0.344935		
1.666667	0.021100	0.025159	0.352048		
1.733333	0.021351	0.026574	0.359020		
1.800000	0.021587	0.028006	0.365859		
1.866667	0.021808	0.029452	0.372572		
1.933333	0.022015	0.030913	0.379167		
2.000000	0.022207	0.032387	0.385649		
2.066667	0.022385	0.033874	0.392024		
2.133333	0.022549	0.035372	0.398297		
2.200000	0.022701	0.036880	0.404472		
2.266667	0.022839	0.038398	0.410555		
2.333333	0.022965	0.039925	0.416549		
2.400000	0.023078	0.041460	0.422457		
2.466667	0.023179	0.043002	0.428285		
2.533333	0.023267	0.044550	0.434034		
2.600000	0.023343	0.046104	0.439708		
2.666667	0.023408	0.047662	0.445309		
2.733333	0.023460	0.049224	0.450841		
2.800000	0.023501	0.050790	0.456306		
2.866667	0.023530	0.052358	0.461706		
2.933333	0.023548	0.053927	0.467044		
3.000000	0.023554	0.055497	0.472322		
3.066667	0.023548	0.057067	0.477541		
3.133333	0.023530	0.058637	0.482704		
3.200000	0.023501	0.060204	0.487812		
3.266667	0.023460	0.061770	0.492867		
3.333333	0.023408	0.063332	0.497871		
3.400000	0.023343	0.064891	0.502825		
3.466667	0.023267	0.066444	0.507731		
3.533333	0.023179	0.067993	0.512589		
3.600000	0.023078	0.069535	0.517402		
3.666667	0.022965	0.071069	0.522171		
3.733333	0.022839	0.072596	0.526897		
3.800000	0.022701	0.074114	0.531581		
3.866667	0.022549	0.075623	0.536223		
3.933333	0.022385	0.077121	0.540826		
4.000000	0.022207	0.078607	0.545390		
4.066667	0.022015	0.080081	0.549916		
4.133333	0.021808	0.081542	0.554405		
4.200000	0.021587	0.082989	0.558859		
4.266667	0.021351	0.084420	0.563276		
4.333333	0.021100	0.085835	0.567660		
4.400000	0.020832	0.087233	0.572010		
4.466667	0.020547	0.088612	0.576327		
4.533333	0.020245	0.089972	0.580612		

4.600000	0.019924	0.091311	0.584866
4.666667	0.019584	0.092628	0.589089
4.733333	0.019224	0.093922	0.593281
4.800000	0.018843	0.095191	0.597445
4.866667	0.018439	0.096434	0.601580
4.933333	0.018010	0.097649	0.605686
5.000000	0.017556	0.098835	0.609765
5.066667	0.017073	0.099989	0.978910
5.133333	0.016560	0.101111	1.648713
5.200000	0.016013	0.102196	2.508517
5.266667	0.015430	0.103245	3.508899
5.333333	0.014804	0.104253	4.608973
5.400000	0.014132	0.105218	5.768278
5.466667	0.013406	0.106136	6.945177
5.533333	0.012616	0.107004	8.097647
5.600000	0.011751	0.107816	9.185308
5.666667	0.010790	0.108568	10.17228
5.733333	0.009708	0.109252	11.03063
5.800000	0.008456	0.109859	11.74437
5.866667	0.006944	0.110374	12.31382
5.933333	0.004938	0.110774	12.76044
6.000000	0.000000	0.110994	13.13191

END FTABLE 1

FTABLE 2

91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.013223	0.000000	0.000000		
0.088889	0.013280	0.001178	0.267497		
0.177778	0.013338	0.002361	0.378297		
0.266667	0.013395	0.003549	0.463318		
0.355556	0.013453	0.004742	0.534993		
0.444444	0.013511	0.005941	0.598140		
0.533333	0.013569	0.007144	0.655230		
0.622222	0.013627	0.008353	0.707729		
0.711111	0.013685	0.009567	0.756594		
0.800000	0.013743	0.010786	0.802490		
0.888889	0.013801	0.012010	0.845898		
0.977778	0.013860	0.013239	0.887186		
1.066667	0.013918	0.014474	0.926635		
1.155556	0.013977	0.015714	0.964472		
1.244444	0.014036	0.016959	1.000880		
1.333333	0.014095	0.018209	1.036010		
1.422222	0.014154	0.019465	1.069986		
1.511111	0.014213	0.020725	1.102916		
1.600000	0.014273	0.021991	1.134892		
1.688889	0.014332	0.023263	1.165990		
1.777778	0.014392	0.024539	1.196281		
1.866667	0.014452	0.025821	1.225823		
1.955556	0.014512	0.027109	1.254670		
2.044444	0.014572	0.028401	1.282868		
2.133333	0.014632	0.029699	1.310460		
2.222222	0.014692	0.031002	1.337483		
2.311111	0.014752	0.032311	1.363970		
2.400000	0.014813	0.033625	1.389953		
2.488889	0.014873	0.034944	1.415459		
2.577778	0.014934	0.036269	1.440513		
2.666667	0.014995	0.037599	1.465139		
2.755556	0.015056	0.038935	1.489358		
2.844444	0.015117	0.040276	1.513189		
2.933333	0.015178	0.041622	1.536651		
3.022222	0.015240	0.042974	1.559759		
3.111111	0.015301	0.044332	1.582531		
3.200000	0.015363	0.045694	1.604979		
3.288889	0.015424	0.047063	1.627118		
3.377778	0.015486	0.048437	1.648959		
3.466667	0.015548	0.049816	1.670515		
3.555556	0.015610	0.051201	1.691797		
3.644444	0.015672	0.052591	1.712814		
3.733333	0.015735	0.053987	1.733576		

3.822222	0.015797	0.055388	1.754092
3.911111	0.015860	0.056795	1.774371
4.000000	0.015923	0.058208	1.794421
4.088889	0.015985	0.059626	1.814250
4.177778	0.016048	0.061050	1.833864
4.266667	0.016111	0.062479	1.853270
4.355556	0.016175	0.063914	1.872476
4.444444	0.016238	0.065354	1.891486
4.533333	0.016301	0.066801	1.910307
4.622222	0.016365	0.068253	1.928945
4.711111	0.016429	0.069710	1.947404
4.800000	0.016492	0.071173	1.965690
4.888889	0.016556	0.072642	1.983807
4.977778	0.016620	0.074117	2.001761
5.066667	0.016685	0.075597	2.019555
5.155556	0.016749	0.077083	2.037193
5.244444	0.016813	0.078574	2.054680
5.333333	0.016878	0.080072	2.072019
5.422222	0.016943	0.081575	2.089215
5.511111	0.017007	0.083084	2.106270
5.600000	0.017072	0.084598	2.123188
5.688889	0.017137	0.086119	2.139972
5.777778	0.017203	0.087645	2.156626
5.866667	0.017268	0.089177	2.173152
5.955556	0.017333	0.090715	2.189553
6.044444	0.017399	0.092259	2.205833
6.133333	0.017465	0.093808	2.221993
6.222222	0.017530	0.095363	2.238037
6.311111	0.017596	0.096925	2.253966
6.400000	0.017662	0.098492	2.269783
6.488889	0.017729	0.100065	2.285491
6.577778	0.017795	0.101643	2.308660
6.666667	0.017861	0.103228	2.327666
6.755556	0.017928	0.104819	2.345699
6.844444	0.017995	0.106415	2.363199
6.933333	0.018061	0.108018	2.380329
7.022222	0.018128	0.109626	2.467500
7.111111	0.018195	0.111241	3.198544
7.200000	0.018262	0.112861	4.316850
7.288889	0.018330	0.114487	5.685745
7.377778	0.018397	0.116120	7.207863
7.466667	0.018465	0.117758	8.785919
7.555556	0.018532	0.119402	10.32063
7.644444	0.018600	0.121053	11.71823
7.733333	0.018668	0.122709	12.90286
7.822222	0.018736	0.124371	13.83219
7.911111	0.018804	0.126040	14.51567
8.000000	0.018872	0.127714	15.03487

END FTABLE 2

END FTABLES

EXT SOURCES

<-Volume->	<Member>	SsysSgap<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***			
<Name>	#	<Name>	#	tem	strg<-factor->	strg	<Name>	#	#	***
WDM	2	PREC	ENGL	1		PERLND	1	999	EXTNL	PREC
WDM	2	PREC	ENGL	1		IMPLND	1	999	EXTNL	PREC
WDM	1	EVAP	ENGL	0.76		PERLND	1	999	EXTNL	PETINP
WDM	1	EVAP	ENGL	0.76		IMPLND	1	999	EXTNL	PETINP

END EXT SOURCES

EXT TARGETS

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Volume->	<Member>	Tsys	Tgap	Amd	***	
<Name>	#	<Name>	#	#<-factor->	strg	<Name>	#	<Name>	tem	strg	strg***
COPY	1	OUTPUT	MEAN	1	1	48.4	WDM	701	FLOW	ENGL	REPL
COPY	501	OUTPUT	MEAN	1	1	48.4	WDM	801	FLOW	ENGL	REPL
COPY	601	OUTPUT	MEAN	1	1	48.4	WDM	901	FLOW	ENGL	REPL
COPY	2	OUTPUT	MEAN	1	1	48.4	WDM	702	FLOW	ENGL	REPL
COPY	502	OUTPUT	MEAN	1	1	48.4	WDM	802	FLOW	ENGL	REPL
COPY	602	OUTPUT	MEAN	1	1	48.4	WDM	902	FLOW	ENGL	REPL

COPY	4	OUTPUT	MEAN	1	1	48.4	WDM	704	FLOW	ENGL	REPL
COPY	504	OUTPUT	MEAN	1	1	48.4	WDM	804	FLOW	ENGL	REPL
COPY	604	OUTPUT	MEAN	1	1	48.4	WDM	904	FLOW	ENGL	REPL
COPY	6	OUTPUT	MEAN	1	1	48.4	WDM	706	FLOW	ENGL	REPL
COPY	506	OUTPUT	MEAN	1	1	48.4	WDM	806	FLOW	ENGL	REPL
COPY	606	OUTPUT	MEAN	1	1	48.4	WDM	906	FLOW	ENGL	REPL
COPY	7	OUTPUT	MEAN	1	1	48.4	WDM	707	FLOW	ENGL	REPL
COPY	507	OUTPUT	MEAN	1	1	48.4	WDM	807	FLOW	ENGL	REPL
COPY	607	OUTPUT	MEAN	1	1	48.4	WDM	907	FLOW	ENGL	REPL
COPY	8	OUTPUT	MEAN	1	1	48.4	WDM	708	FLOW	ENGL	REPL
COPY	508	OUTPUT	MEAN	1	1	48.4	WDM	808	FLOW	ENGL	REPL
COPY	608	OUTPUT	MEAN	1	1	48.4	WDM	908	FLOW	ENGL	REPL
COPY	3	OUTPUT	MEAN	1	1	48.4	WDM	703	FLOW	ENGL	REPL
COPY	503	OUTPUT	MEAN	1	1	48.4	WDM	803	FLOW	ENGL	REPL
COPY	603	OUTPUT	MEAN	1	1	48.4	WDM	903	FLOW	ENGL	REPL
RCHRES	1	HYDR	RO	1	1	1	WDM	1004	FLOW	ENGL	REPL
RCHRES	1	HYDR	STAGE	1	1	1	WDM	1005	STAG	ENGL	REPL
RCHRES	2	HYDR	RO	1	1	1	WDM	1006	FLOW	ENGL	REPL
RCHRES	2	HYDR	STAGE	1	1	1	WDM	1007	STAG	ENGL	REPL
COPY	5	OUTPUT	MEAN	1	1	48.4	WDM	705	FLOW	ENGL	REPL
COPY	505	OUTPUT	MEAN	1	1	48.4	WDM	805	FLOW	ENGL	REPL
COPY	605	OUTPUT	MEAN	1	1	48.4	WDM	905	FLOW	ENGL	REPL

END EXT TARGETS

MASS-LINK

<Volume>	<-Grp>	<-Member->	<--Mult-->	<Target>	<-Grp>	<-Member->***
<Name>		<Name> #	#<-factor-->	<Name>		<Name> # #***
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PERLND	PWATER	SURO	0.083333	RCHRES		INFLOW IVOL
END MASS-LINK		2				
MASS-LINK		3				
PERLND	PWATER	IFWO	0.083333	RCHRES		INFLOW IVOL
END MASS-LINK		3				
MASS-LINK		5				
IMPLND	IWATER	SURO	0.083333	RCHRES		INFLOW IVOL
END MASS-LINK		5				
MASS-LINK		12				
PERLND	PWATER	SURO	0.083333	COPY		INPUT MEAN
END MASS-LINK		12				
MASS-LINK		13				
PERLND	PWATER	IFWO	0.083333	COPY		INPUT MEAN
END MASS-LINK		13				
MASS-LINK		15				
IMPLND	IWATER	SURO	0.083333	COPY		INPUT MEAN
END MASS-LINK		15				
MASS-LINK		16				
RCHRES	ROFLOW			COPY		INPUT MEAN
END MASS-LINK		16				

END MASS-LINK

END RUN

Predeveloped HSPF Message File

Mitigated HSPF Message File

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APPENDIX C

COOPERS BEACH – MITIGATION AS BUILT



May 5, 2011

AOA-3985

Kathy Curry
City of Sammamish
801 228th Avenue SE
Sammamish, WA 98075

**REFERENCE: Cooper's Beach – 42x E. Lake Sammamish Shore Lane NE,
Sammamish, WA (Corps # NWS-2009-476 Heen/Leseberg)**

SUBJECT: Revised Mitigation As-built - Baseline Assessment Report

Dear Kathy:

This report has been prepared to document baseline conditions following installation of the wetland and shoreline mitigation area at the Cooper's Beach project site, and has been revised to address the comments presented in your March 3, 2011 e-mail to Evan Maxim (see Section 1.0 below). Also included in this report are the vegetation sample plots and photo-points that will be reviewed as part of the five year monitoring program.

1.0 PROJECT SUMMARY

Installation of the wetland mitigation area at the Cooper's Beach project site was generally completed in January 2011 according to the *Shoreline Restoration, Wetland Restoration, Clearing and Grading Permit Plan* (revised June 15, 2010), prepared by The Watershed Company. Site visits for the initial baseline assessment were conducted by AOA and occurred on January 13, and February 3, 2011. Following the initial baseline review, the mitigation area was slightly revised to ensure compliance with SMC 21A.50.351(3)(b). Under this code section, no more than 25% of the total lake frontage may be used for shoreline access.

As depicted on the current as-built plan, the mitigation area has been revised such that the existing bulkhead to remain is now 60 feet in total length (i.e., 25% of the total 240 feet of lake frontage). The remaining 180 feet of shoreline has been planted and will remain in a natural condition. In addition, the northern edge of the mitigation area has been revised slightly to ensure a minimum 45-foot buffer (Photos 1 and 2).



Photo 1: Revised maximum 60-foot long bulkhead to remain.



Photo 2: Revised log along northern edge of mitigation area (note darker bark coloration depicting revised location).

The large logs that have been placed along the 45-foot buffer boundary in lieu of fencing have been staked into the ground with re-bar to ensure that they will remain in place (Photo 3). In addition, the required critical areas sign on the 45-foot buffer boundary has also been installed (Photo 4).



Photo 3: Rebar stake through log along buffer boundary.



Photo 4: Installed critical area sign.

It is our understanding that the origin of the one remaining pipe in the northern portion of the site that discharges into the lake is likely from a rockery drain (Comment 1.e). The origin of this pipe will be confirmed during construction of the house and a plan will be designed to divert all water currently carried in this feature into the mitigation area during house construction.

The existing standpipe and drain line located along the northern edge of the mitigation area will be left in place for perpetuity or until such time as the upstream sediment problems are fixed (Comment 1.f). Since sediment from an off-site upstream ditch continues to erode and enter the on-site mitigation area, periodic maintenance may be required. It is our understanding that it is the subject property owner's intention to attempt to rectify this off-site condition. If the erosion is stabilized and the sediment source is eliminated or significantly reduced, then the standpipe and drain line could be removed.

The only plant substitution approved by The Watershed Company was that deer fern was substituted for lady fern. The revised as-built drawing for the site (**Figure 1**) depicts the actual location of the graded ponds and large woody debris placement. Grading was generally conducted per the approved plan, with some minor modifications in the southwest corner of the mitigation area to preserve two existing red alder trees. In addition, at our recommendation several of the conifers located within ponded areas were moved into drier portions of the mitigation site.

This as-built figure also includes the final total plant quantities and the location of the vegetation sample plots and photo-points. Dimensions were added to the as-built figure that reflect the approved mitigation boundaries and minor changes made in the field to ensure code compliance.

2.0 PERFORMANCE MONITORING

This report summarizes the baseline conditions encountered during our January 13, 2011 site review. The data collected during future site visits will be compared to the data collected during the baseline assessment.

Monitoring field reviews followed by preparation and submittal of annual summary reports will continue for a period of at least five years. This report, as well as future reports, will include: a) photo-documentation, b) estimates of percent vegetative cover, plant survival and undesirable species, c) wildlife usage, d) water quality, hydrology, and site stability, and e) an overall qualitative assessment of project success.

2.1 VEGETATION SAMPLE PLOTS AND PHOTO-POINT LOCATIONS

During the baseline assessment, three vegetation sample plots and three photo-point locations were established. These locations will continue to be monitored throughout the five-year performance monitoring period. Within the vegetation sample plot locations, all plant species will be recorded as well as relative percent

cover of the dominant species within the vegetative strata. Photos will be taken throughout the monitoring period to document the general appearance and progress in plant community establishment. Review of the photos over time will provide a visual representation of success of the planting plan.

Attachment 1 contains photographs from the established photo-point locations.

2.2 VEGETATION DATA FROM SAMPLE PLOTS

VEGETATION SAMPLE PLOT 1 (Wetland Buffer)

Plant Species	Baseline
Western red cedar (<i>Thuja plicata</i>)	1
Douglas fir (<i>Pseudotsuga menziesii</i>)	1
Red flowering currant (<i>Ribes sanguineum</i>)	9
Tall Oregongrape (<i>Mahonia aquifolium</i>)	24
Red-osier dogwood (<i>Cornus sericea</i>)	3
Deer fern (<i>Blechnum spicant</i>)	5

SUMMARY OF PLOT 1 CONDITIONS

- Woody areal coverage of installed woody plants~20%
- Survival rate of installed plants: 100%
- No herbaceous vegetation coverage – plot entirely mulched.
- No invasive coverage.
- MAINTENANCE: Continue on-going routine maintenance.
- SUCCESS CRITERIA: This plot is currently meeting the approved success criteria for woody plant survival (see Section 2.5 below).

VEGETATION SAMPLE PLOT 2 (Southwest Wetland).

Plant Species	Baseline
Western red cedar (<i>Thuja plicata</i>)	1
Sitka willow (<i>Salix sitchensis</i>)	1
Sitka spruce (<i>Picea sitchensis</i>)	1
Nootka rose (<i>Rosa nutkana</i>)	4
Salmonberry (<i>Rubus spectabilis</i>)	5
Small-fruited bulrush (<i>Scirpus microcarpus</i>)	~20%
Watercress (<i>Rorippa nasturtium-aquaticum</i>)	~5%
Velvet grass (<i>Holcus lanatus</i>)	~5%

SUMMARY OF PLOT 2 CONDITIONS

- Woody areal coverage ~15%.
- Survival rate of installed plants: 100%
- Herbaceous coverage is ~30%.
- No significant invasive coverage (no control of velvet grass necessary).
- MAINTENANCE: Continue on-going routine maintenance.

- **SUCCESS CRITERIA:** This plot is currently meeting the approved success criteria for woody plant survival.

VEGETATION SAMPLE PLOT 3 (Southeast Wetland)

Plant Species	Baseline
Nootka rose (<i>Rosa nutkana</i>)	4
Red-osier dogwood (<i>Cornus sericea</i>)	11
Deer fern (<i>Blechnum spicant</i>)	4
Watercress (<i>Rorippa nasturtium-aquaticum</i>)	~25%
Dagger-leaf rush (<i>Juncus ensifolius</i>)	~25%
Mannagrass (<i>Glyceria</i> sp.)	~5%

SUMMARY OF PLOT 3 CONDITIONS

- Woody areal coverage ~15%.
- Survival rate of installed plants: 100%.
- Herbaceous coverage ~55%.
- No invasive coverage.
- **MAINTENANCE:** Continue on-going routine maintenance.
- **SUCCESS CRITERIA:** This plot is currently meeting the approved success criteria for woody plant survival.

2.3 WATER QUALITY AND HYDROLOGY

During each monitoring event, an assessment will be made of the water regime within the mitigation area to ensure that hydrological conditions within the wetland and buffer are suitable to support the desired native plant communities. General observations will also be made of the extent and depth of soil saturation or inundation.

Water quality will be assessed qualitatively; unless it is evident there is a serious problem. In such an event, water samples will be taken and analyzed in a laboratory for suspected pollutants. Results will be reported quantitatively. Qualitative assessments of water quality include:

- oil sheen or other surface films,
- abnormal color or odor,
- stressed or dead vegetation or aquatic fauna,
- turbidity.

Observations and evaluations will be made of slope and soil stability in the mitigation area. Any erosion or slumping of soils will be recorded and reported so that corrective measures may be taken.

At the time of the baseline field investigation, soils throughout the created wetland were generally saturated to the surface with shallow ponding observed within the

graded depressions. Water quality appeared good and no significant erosion or other soil stability problems were observed within the mitigation area.

2.4 WILDLIFE

Wildlife species observed in the wetland and buffer areas (either by direct or indirect means) will be identified and recorded during the monitoring events. Direct observations include actual sightings, while indirect observations include tracks, scat, nests, burrows, song, or other indicative signs.

Wildlife signs or observations at the Cooper's Beach site during the baseline review included the following: black-tailed deer (browse and scat), mallard, mole (uplift mounds), and American coot.

3.0 SUCCESS CRITERIA & CURRENT STATUS

The approved performance standards for the project as developed by The Watershed Company included:

- *100 percent survival of all planting during the first year of monitoring, 100 percent survival of trees during years 2-5, and an 80 percent survival of shrubs during years 2-5 of monitoring.*
- *80 percent survival of groundcover and emergent vegetation in year 2*
- *75 cover standard of groundcover and emergent vegetation by year 5*

It is assumed based on the approved maintenance requirements that invasive species will be controlled at levels below 15% coverage. At the time of the January 2011 baseline monitoring there was 100% survival of all planted species and invasive species coverage was well below the 15% coverage threshold. Therefore all of success criteria are currently being met.

4.0 SUMMARY & MONITORING SCHEDULE

Overall, the site is performing well and is currently meeting the defined success criteria for the project. With proper on-going maintenance, the site should continue to establish successfully.

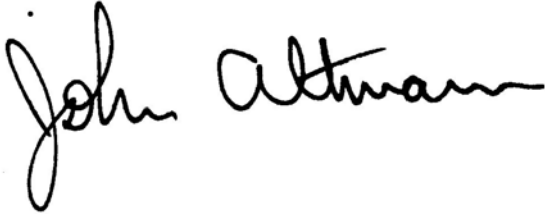
Assuming approval by the City, the next long-term monitoring event is scheduled for the late spring of 2011. The next report will then be prepared following the fall 2011 site visit. Monitoring will continue twice yearly, with the submittal of annual reports.

Should you have any questions or would like to schedule a site review, please call Simone Oliver or me at (425) 333-4535.

Kathy Curry
May 5, 2011
Page 8 of 8

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC

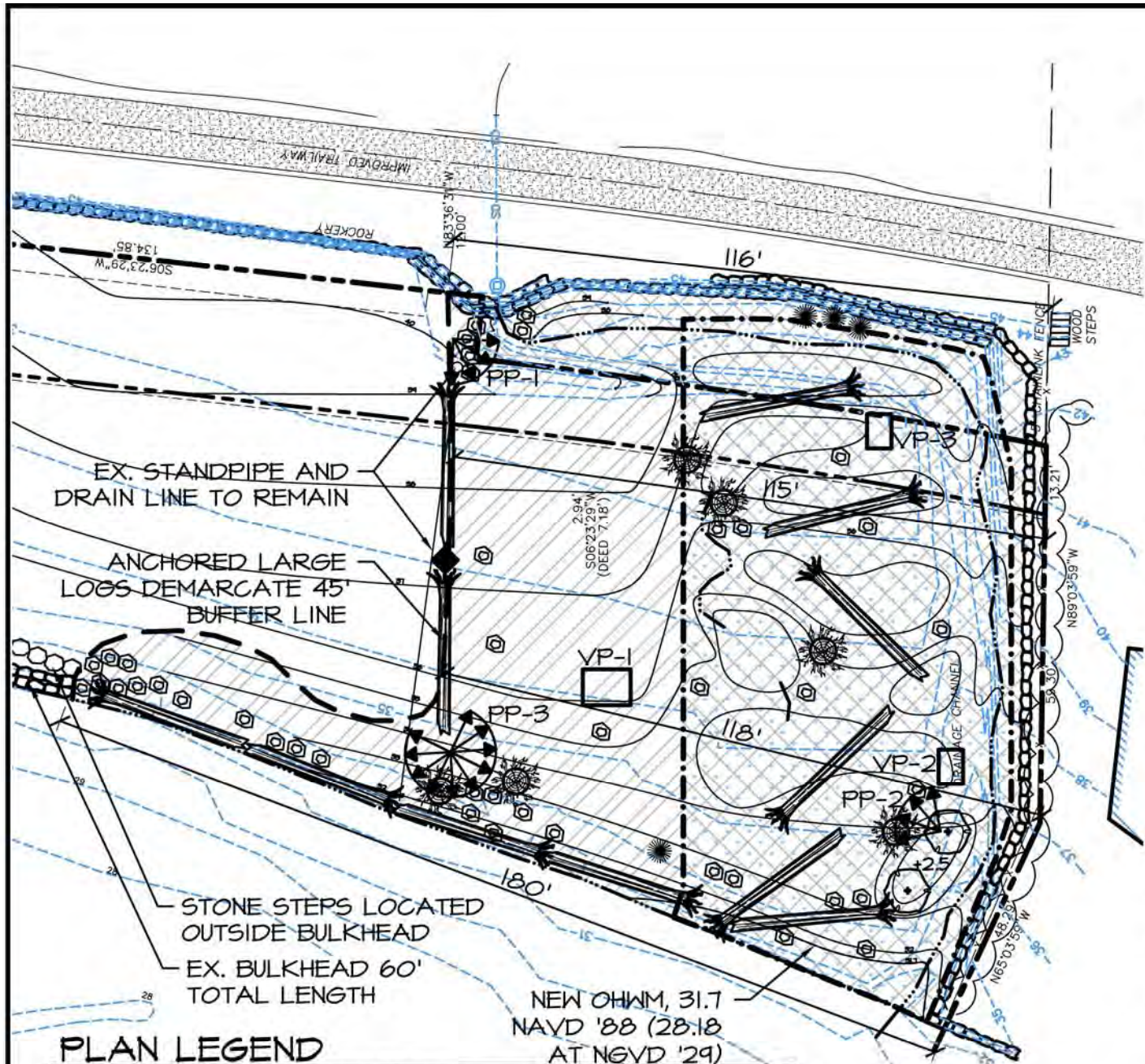
A handwritten signature in black ink that reads "John Altmann". The signature is written in a cursive style with a large, looped initial "J".

John Altmann
Ecologist

Attachments

1. Photographs
2. Figure 1 - As-built

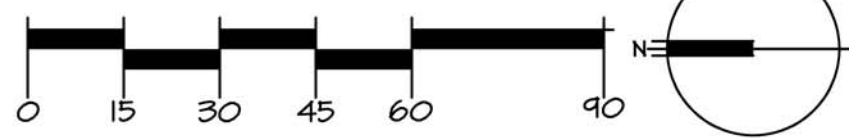
cc: Roger MacPherson



PLAN LEGEND

- PROPERTY LINE
- CREATED WETLAND
- APPROX. CENTERLINE OF STREAM
- BUFFER BOUNDARY
- ENHANCED STREAM/WETLAND (8,467 SF)
- ENHANCED BUFFER (5,783 SF)
- WOODY DEBRIS
- EXISTING STUMP
- EXISTING WILLOW
- EXISTING RED ALDER
- EXISTING BOULDER
- PP-# APPROX. LOCATION OF PHOTO-POINTS
- VP-# APPROX. LOCATION OF VEGETATION SAMPLING PLOTS
- CRITICAL AREA SIGN

GRAPHIC SCALE (IN FEET)



SCALE: 1:30

PLANT LIST

TREES

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
BETULA PAPYRIFERA	PAPER BIRCH	3	2 GAL.
PICEA SITCHESIS	SITKA SPRUCE	2	2 GAL.
PSEUDOTSUGA MENSIEZII	DOUGLAS FIR	3	5 GAL.
THUJA PLICATA	WESTERN RED CEDAR	14	5 GAL.

SHRUBS

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
ACER CIRCINATUM	VINE MAPLE	23	2 GAL.
CORNUS SERICEA	RED-OSIER DOGWOOD	88	1 GAL.
CORYLUS CORNUTA	BEAKED HAZELNUT	5	2 GAL.
HOLODISCUS DISCOLOR	OCEAN SPRAY	7	1 GAL.
MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	35	2 GAL.
PHYSOCARPUS CAPITATUS	NINEBARK	29	1 GAL.
PRUNUS EMARGINATA	BITTER CHERRY	12	2 GAL.
RIBES SANGUINEUM	RED FLOWERING CURRENT	34	1 GAL.
ROSA NUTKANA	NOOTKA ROSE	34	1 GAL.
RUBUS SPECTABILIS	SALMONBERRY	25	1 GAL.
SALIX LASIANDRA	PACIFIC WILLOW	8	1 GAL.
SALIX SITCHENSIS	SITKA WILLOW	19	1 GAL.
SAMBUCUS RACEMOSA	RED ELDERBERRY	10	1 GAL.
VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	11	1 GAL.

PERENNIALS/GROUNDCOVER

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
BLECHUM SPICANT	DEER FERN	98	4" POTS
GAULTHERIA SHALLON	SALAL	30	1 GAL.
MAHONIA NERVOSA	LOW OREGON GRAPE	60	1 GAL.
POLYSTICHUM MUNITUM	SWORD FERN	53	4" POTS

EMERGENTS

SCIENTIFIC NAME	COMMON NAME	TOTAL PROJECT QTY.	SIZE/SPACING
ELEOCHARIS PALUSTRIS	SPIKERUSH	800	10 CU. IN POTS @ 18" O.C.
JUNCUS ENSIFOLIUS	DAGGER-LEAVED RUSH	240	10 CU. IN POTS @ 18" O.C.
SCIRPUS MICROCARPUS	SMALL-FRUITED BULRUSH	220	10 CU. IN POTS @ 18" O.C.
SCIRPUS LACUSTRIS	HARD-STEM BULRUSH	315	10 CU. IN POTS @ 24" O.C.

NOTES

- BASE INFORMATION PROVIDED BY MACPHERSON CONSTRUCTION & DESIGN, (425) 391-3333.
- SITE PLAN AND ORIGINAL DESIGN PREPARED BY THE WATERSHED COMPANY, KIRKLAND, WA, (425) 822-5242.
- BASED ON APPROVED DRAWING 'SHORELINE RESTORATION, WETLAND RESTORATION, CLEARING AND GRADING PERMIT' DATED 6/15/2010, DRAWINGS 1-7 BY THE WATERSHED COMPANY.

PROJECT 3985
 DRAWN SO
 SCALE AS NOTED
 DATE 02-08-11
 REVISED 05-05-11
 1/1

FIGURE 1: AS-BUILT MITIGATION PLAN
 COOPER'S BEACH
 42X EAST LAKE SAMMAMISH SHORE LANE NE
 SAMMAMISH, WA 98074



Altmann Oliver Associates, LLC
 Environmental Planning & Landscape Architecture
 PO Box 578 Cannonville, WA 98014
 Office (425) 333-4515 Fax (425) 333-4499



Photo-point 1: View looking south.



Photo-point 1: View looking southwest.



Photo-point 1: View looking west.



Photo-point 2: View looking east.



Photo-point 2: View looking northeast.



Photo-point 2: View looking north.



Photo-point 3: View looking south.



Photo-point 3: View looking southwest.



Photo-point 3: View looking north.

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:58 AM
To: 'stocklimann67@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Michelle,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Michael Mann [mailto:stocklimann67@gmail.com]
Sent: Thursday, January 26, 2017 3:59 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Micheal Mann

Michael Mann
1826 FRANKLIN AVE E
SEATTLE, WA 98102
2069307501

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:58 AM
To: 'm_w_r7@hotmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Melissa,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Melissa Lail [mailto:m_w_r7@hotmail.com]
Sent: Thursday, January 26, 2017 3:48 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

I love riding my bike and this will give me a new place to explore. Also, I'm hoping to get my dad hooked on biking too and having a nice trail close by is key to my master plan. I know when I got into riding a few years ago that riding on a nice, safe trail was what really got me to enjoy getting some exercise. I hadn't ridden much since I was a kid but when I bought a bike and tired riding around my neighborhood it was a pretty disappointing experience. Riding around the neighborhood wasn't very fun when I got started because, I was pretty wobbly and there isn't much flat ground near my house and on top of that I had to worry about cars. When I started riding on bike paths, I was able to relax and enjoy. This allowed me to improve my bike handling and helped me to improve my confidence. I really want my dad to also have that same type of positive experience. I think having this trail completed and so close by will be very helpful.

Sincerely,

Melissa Lail

Melissa Lail
2524 97th PL SE
Everett, WA 98208
253-468-6517

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:58 AM
To: 'Shannon Holman Ramirez'
Subject: RE: Subject: Comments on ELST South Segment B (STA 375 - 380)

Dear Shannon,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Shannon Holman Ramirez [mailto:auntieshannon1@gmail.com]
Sent: Thursday, January 26, 2017 3:25 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Subject: Comments on ELST South Segment B (STA 375 - 380)

To Lindsey Ozbolt and other interested parties,

I am submitting comments on the proposed trail and fish passage changes included in the South Sammamish Segment B 60% plan. As part of researching and producing this commentary and feedback I reviewed the plan documents, discussed the various plan details and concerns with our neighbors, and also visited the City of Sammamish City Hall to discuss some of these issues with King County representatives in person. The neighbors in this discussion have expressed similar concerns and include the 10 homeowners of Whileaway Court who share ownership of the common private driveway that would be effected by this proposal.

I would also like to point out that in addition to living in the area for the past 20 years where the proposed changes would effect, I have also been very active in contributing to research and preservation of Kokanee salmon both in Pine Lake Creek but also in other capacities in the Sammamish water basin. I am also a volunteer member of the Kokanee Work Group lead by David St. John.

Given the quantity of feedback I have gathered I think it best to present the information in bullet form, after which I will comment further on a few of the key points.

New culvert under Whileaway court (reference pages AL39, FP1, and WP9):

- Good for the fish!
- Good for improved water flow, drainage, and creek flooding mitigation
- Property rights concerns
 - Most proposed construction is within private road (519710TRCT) that is not part of the trail ROW. All home owners have a shared ownership in this tract, so owner consent is required.
 - Why does the proposed construction extend into privately owned Gill Trust lots [5197100135](#) and [5197100130](#) instead of remaining within the shared driveway 519710TRCT?
- It is very important to preserve the two massive ancient redwood trees at the west exit of the culvert, near 11+00 on the p-line and adjacent to rock walls #1 & #2. Does the “M” designation on the tree removal plan for these two trees reflect concern?
- Earth walls #42 and #43
 - Chain link fencing is not visually acceptable, would need a more aesthetically pleasing and natural fence choice that fits the style of the neighborhood and the beautiful natural surroundings of the creek passing there.
 - Length of “earth walls” is concerning, why are they so long?
 - In particular the south starting point of wall #43. That starting point should be moved at least 5 feet farther north. As it is located now it is likely to be a back-up hazard for cars backing out of the driveway from the 903 residence and turning to back up to the north.
 - Why does wall #42 run so far to the north, seems this could be substantially reduced?
- What is the relationship of culvert replacement plans to trail plans (tied together, different projects, timelines?)
- How does funding work, all paid for by King County?
- How will all the utilities be routed and what will the effect on utilities be during construction?
 - Gas, water, sewer are all underground in the road where culvert resides (as are cable and power in other road areas in the construction zone)
 - Current plan would require removal/replacement of power pole near south edge culvert. Could power on these poles be moved underground as part of this work?
 - FYI: There is a separate proposal for a fire hydrant to be added north of the proposed fish passage culvert work on 519710TRCT. This work should be coordinated.
- How will people have access to their homes during culvert/road construction?
- Road grading and drainage is an important concern. We already have issues with water on the road flowing towards residence driveways, in particular the driveways of 903, 909, or 915, so we would appreciate any grading changes improve upon the drainage conditions.
- Concern about current design reducing parking availability.
- What are landscape plans for this area after culvert replacement?

New trail plan (reference pages AL20 and LA12):

- Is it necessary for the trail around 378+00 to meander into and destroy existing delightful landscaping adjacent to 929?
 - Plan will destroy numerous large very mature Rhododendrons, Oregon Grape, Aspen, and Fir trees
 - Can the meander be avoided here or moved somewhere else along the trail?
 - At minimum can the meander be reduced to preserve more of the mature trees and bushes?
 - If infringement on wetlands is a concern, the designation of the area east of the trail here as wetland 23C is questionable. Can this be reevaluated and the plans changed to avoid destruction of the Rhododendron, Oregon Grape, Aspen and Fir trees?
- Where grass area is replaced just south of Driveway #10 access, please ensure only very low growing plants are added to the enhancement area to replace the grass. This is required for good visibility onto trail and parkway from the driveway.

To expand on some of the key points I will first focus on the new culvert plans under Whileaway court. One concern here is it is important to preserve the two large, majestic, redwood trees that are planted here just to the west of the culvert. I am pleased to see that, to my understanding, feedback given to folks planning the culvert changes during an onsite meeting in April of 2016 (Kelly Donahue from King County and several representatives from Parametrix) was incorporated. It appears the plans have offset the new proposed culvert further away from the two redwoods in order to reduce the disturbance to the tree roots during required excavation. The trees were planted in the 40's and are a keystone of the landscape in our neighborhood, they must be seen in person to be fully appreciated and cannot be sacrificed!

We are also very interested in the improved fish passage that the new culvert will provide, and in particular the increased capacity the new culvert will have in allowing storm water to pass through. The old/current culvert there is much smaller and has been a concern of ours for plugging and overflowing.

We have additional concerns about several other details of the proposed plan outlined above, in particular the chain link fencing and earth walls. It's important to us that the new culvert aesthetically look very pleasing and fit into the neighborhood landscaping and natural look and feel. Chain link fencing does not meet that requirement, we would like this to be changed to some other suitable more natural material. It appears the earth walls will be constructed of precast concrete blocks which will mostly be buried down to the road surface level, and only exposed where the cut of the creek bed slopes down. If so, we believe this would be suitable if they did not have chain link fence attached.

My final point for the culvert plans is that I want to emphasize that in this section, unlike the trail ROW, the proposed changes to the culvert occur on private property. There are important property rights and consent that need to be adhered to here.

Secondly I would like to comment further on the trail deviation outlined in AL20. We are dismayed to see that the current plan has the trail diverting to the west such that a significant and very beautiful naturally landscaped area will be destroyed by the trail. The area has been maintained for nearly 20 years in its current state, and contains many native plants and trees including other much older vegetation including mature Rhododendrons, Oregon Grape, Aspen, and Fir trees. We would ask that as much of that landscaping be preserved as is possible. Are there changes that can be made to the trail path in this section that can avoid or minimize that destruction? Can it be moved more towards the existing trail path or shifted in some other way? If the reason for the diversion is due to the designated wetland 23C east of the trail in this section, then we would respectfully request that this designation be reevaluated. It really does not look like a wetland, it is a hill sloping down with a ditch carrying water away north and south. It would also be very illustrative for folks in charge of planning the trail in this section to come down and see the current state and landscaping in person if that hasn't been done already. The landscaped area is well worth preserving and it would be a terrible waste to destroy it.

Overall, we are happy to see the trail plans progress, and we see several benefits to the fish passage culvert work as well. We welcome and encourage a dialog between the county trail planners and our neighborhood to discuss the concerns, adjust the plans, and make some beneficial changes.

Can you please provide more information in your response to this email regarding how the feedback will be processed, how it will be communicated to king county, how we will hear about incorporation of the feedback, and if there is additional opportunity for feedback after any changes are considered and made? Also, sharing the timeline of the entire review process leading up to eventual approval and construction would also be helpful.

Thanks for your attention and consideration, and please let us know if you have any questions. We appreciate your follow-up on this matter.

Shannon and Chris Ramirez

909 E LK Sammamish Sh LN SE

Sammamish, WA

[425.836.5384](tel:425.836.5384)

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:57 AM
To: 'mark.bike.anderson@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Mark,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Mark Anderson [mailto:mark.bike.anderson@gmail.com]
Sent: Thursday, January 26, 2017 3:04 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I've ridden this trail many times and hate the fact that I have to jump to the road in the middle. I support the completion and support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. It will accommodate walkers, runners and bikers.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

This will be a great community amenity when completed. Please complete the trail and keep me off the road.

Sincerely,

Mark Anderson

Mark Anderson
3242 56th Ave. SW
Seattle, WA 98116
2069383244

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:55 AM
To: 'Thomas Leach'
Subject: RE: 821 E. Lake Sammamish Pkwy NE (Trail #'s 447 - 448)

Dear Thomas,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Thomas Leach [mailto:tom_leach@me.com]
Sent: Thursday, January 26, 2017 2:46 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: 821 E. Lake Sammamish Pkwy NE (Trail #'s 447 - 448)

Hi Lindsey:

I just met with Kelly today and she was a tremendous help in reviewing the trail and construction plan. We came up with the following comments / concerns:

- We have a substantial tree located on our property. The tag number is 8173. We noticed that the tree location differed between the tree preservation plan and the 60% plan. It is unclear as to whether this tree will be removed or not. The tree preservation plan shows removal but it is not located properly on the tree preservation plan.
- Staircase number 68 has a structural landing within the C&G area. I will need to know the following:
 - Will this be cleared out, If so, who is responsible for the reconstruction of the staircase?
 - Will there be access to the staircase during construction as this is the only way into the property.
 - Will there be any permanent security gate made to the staircase when the trail is complete? If there is a gate who is responsible for the cost?
- There is a significant bluff between the trail and my residence. There is currently a line of arborvitae that is approximately 20 feet tall that is right on the CG line. It is not clear if those will be removed or not. I am not clear if they do get removed if a fence will replace them.
- The trail currently bisects my parking area and my house. I have been using the public space between the trail and East Lake Sammamish Parkway for parking. I had the Special Use Permit but I just found out it has expired and I need to reapply. I will reapply within the coming weeks. There is currently no other access or parking available. My questions are the following:
 - Can I expect no net loss of parking available to me during and after construction?
 - During the construction phase will crews be using the public land for staging equipment and crew vehicles?
 - Will there be a way to build some sort of car port for vehicle protection in the public area when the construction phase is complete?

- Alternatively I might be able to construct a garage and access it through the same alley that my neighbor to the south uses (trail number 446-447). I believe the street name is E. Lake Sammamish Shore Lane NE. Thus you would not have any additional access point across the trail to worry about.

Take care,

Tom Leach

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:54 AM
To: 'Michelle Eden'
Subject: RE: Comments RE: Trail construction

Dear Michelle,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Michelle Eden [mailto:mmeden@hotmail.com]
Sent: Thursday, January 26, 2017 2:47 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comments RE: Trail construction

Dear Ms. Ozbolt,

Four neighbors met on Wednesday, January 25, 2017 with Kelly Donahue from King County. Kelly reviewed the trail plans and our specific feedback, and said that our final comments need to be sent to you. Kelly suggested we amend our earlier document to you to address concerns as they are related to the formal county plans. In that regard we are looking for solutions to our issues in area 353 to 355. My specific property is nearest to 353.50.

Our concerns are as follows:

1. During construction the CG line for fencing on the west side of these sections will keep us from entering any of our properties. Even assuming we could get past area 355 we could not get past the tree nor could the Roberts family turn into their garage.
2. Post construction the 60% plans, as drawn, will not allow access for emergency vehicles, delivery trucks (FedEx, UPS, DHL etc.) and perhaps larger residential vehicles.
3. Post construction the 60% plans, as drawn, will not allow the Roberts family (area 353) to safely pass parked vehicles parked at our location, the Eden residence (area 353 + 50). It is currently a tight fit as built now.

We are asking that prior to construction the following changes are made to the 60% plans.

1. The CG fence line be adjusted to allow access for emergency, residential and commercial vehicles to our properties. Practically speaking the CG fence should not be further west than the current fence/bollards are now.

2. The trail center line be moved east at least another two to three feet in sections 353 to 355 to allow for access to our properties. In essence move the trail east such that our final fence/bollards are no further west than they are currently on the temporary trail.

3. The north end of the proposed wooden barrier be moved south to its current endpoint (or further south) to allow for safe vehicle access.

The good news is that the county already is proposing to develop the permanent trail east of its current temporary location. We are only asking that it be moved a few feet further east allowing us to have the access as we currently have now. Given the nature of the existing terrain in our areas (353 - 355) and the proposed work in the 60% plan this request would not significantly change the construction details and would allow our neighborhood safe access during and after construction.

I would like to track the progress and process of my requests. Please let me know how I can do that.

Sincerely,

Michelle Eden
1633 E Lk Samm Place SE
Sammamish, WA 98075
206-650-6804

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:53 AM
To: 'ny nuon'
Subject: RE: South Sammamish Trail section 2b design, markers 470-473 Comments

Dear Ny,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: ny nuon [mailto:nynuon@hotmail.com]
Sent: Thursday, January 26, 2017 2:44 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: South Sammamish Trail section 2b design, markers 470-473 Comments

Dear Ms. Ozbolt,

Please see attached.

Thank you,

Ny Nuon

To whom it may concern,

The proposed trail plans on East Lake Sammamish Parkway NE, Sammamish, WA 98074 are concerning to me. The area of concern uses trail markers 470-473. There is a pickle ball court that I have been playing on for the last 10 years. We have played multiple tournaments there and it has been a source of great fun for my friends and I. I have even coached some of my friends there on how to be a better tennis and pickle ball player. The proposed new plans, destroys the pickle ball court. It makes the space unusable for pickle ball. I would really like it if you changed the plans.

Thank you,

Ny Nuon,
4583 N Ainsley Way
Prescott Valley, AZ 86314

nynuon@hotmail.com

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:39 AM
To: 'charlesdavidwilliams@gmail.com'
Subject: RE: Approval needed for Segment 2B of the ELST

Dear Charles,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Charles Williams [mailto:charlesdavidwilliams@gmail.com]
Sent: Thursday, January 26, 2017 2:20 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Approval needed for Segment 2B of the ELST

Dear

Dear city of Sammamish,

The form part so you know what this is about:

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

The part that I'm writing with a story:

The East Lake Sammamish trail is in a pretty great location. It is a great commuting pathway and wonderful for summertime recreation along the lake. However, the weak point is that the narrow sections and dirt sections make the trail harder to access for all ages and abilities. I rode it several times with less experienced cyclists this summer and saw two of them crash despite exercising caution. They didn't get more than a scrape or two but we know that every crash carries with it a risk of a more substantial injury. We can prevent these by completing the proposed trail improvements.

Please approve the permit, as submitted.

Sincerely,

Charles Williams
2203 MINOR AVE E
SEATTLE, WA 98102
2067925827

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:38 AM
To: 'smith.madison.m@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Maddie,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Madison Smith [mailto:smith.madison.m@gmail.com]
Sent: Thursday, January 26, 2017 2:20 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

As a daily bike commuter in the area, I have experienced first hand how important trails are for commuting. With trails that are safe and accessible, many more feel comfortable commuting by bike or foot.

Please approve the permit, as proposed, with expediency.

Sincerely,
Maddie Smith

Madison Smith
7501 Greenwood Ave N #101
Seattle, WA 98103
3609270263

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:38 AM
To: 'sita24@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Sita,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Sita Bhaskaran [mailto:sita24@gmail.com]
Sent: Thursday, January 26, 2017 2:11 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

I am 67 years old and have recently moved to Washington state to be closer to my daughter. I love to ride the Burke Gilman to Sammamish river trail to Marymoor park. Would be great if I could ride on a paved East Lake Sammamish trail onto Sammamish and Issaquah.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,
Sita Bhaskaran
sita24@gmail.com
18501 69th Lane NE, Apt 109
Kenmore, WA 98028

Sita Bhaskaran
18501 69th Lane NE, Apt 109
Kenmore, WA 98028
2486471984

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:38 AM
To: 'frankmckulka@comcast.net'
Subject: RE: Notes regarding the trail

Dear Frank,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: frankmckulka@comcast.net [mailto:frankmckulka@comcast.net]
Sent: Thursday, January 26, 2017 2:10 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: rissberger, william <williamrissberger@comcast.net>; roberts, steve <steve@roberts.org>; Jerry <jerryj27@msn.com>
Subject: Fwd: Notes regarding the trail

Dear Lindsey,

We met on Wednesday with Kelly Donahue from King County. Kelly reviewed the plans and our comments and said that comments need to be sent to you for sending on to King County. My name is Frank McKulka and our home is in section 354 with our group of four neighbors in sections 353 to 355. The neighbors are myself, William Rissberger, Michelle Eden and Steve Roberts. The properties are shown in exhibit 1.

Our concerns are as follows:

-1. During construction the CG line for fencing on the west side of these sections will keep us from entering our properties. Refer to attachment re. property accessibility. Realizing that this is a 60% plan one would expect some errors, this is one of them. We also noted with Kelly that the culvert in this section does not run continuously as would be expected.

-2. Post construction the 60% plans as drawn will not allow access for emergency equipment, trucks (FedEx, UPS, DHL etc.) and perhaps larger residential vehicles. Photos that show this issue and are also included in Bill Rissberger's letter.

We are asking that during construction the following changes are made to the 60% plans.

-1. The CG fence line be adjusted to allow access for emergency, residential and commercial vehicles to our properties.

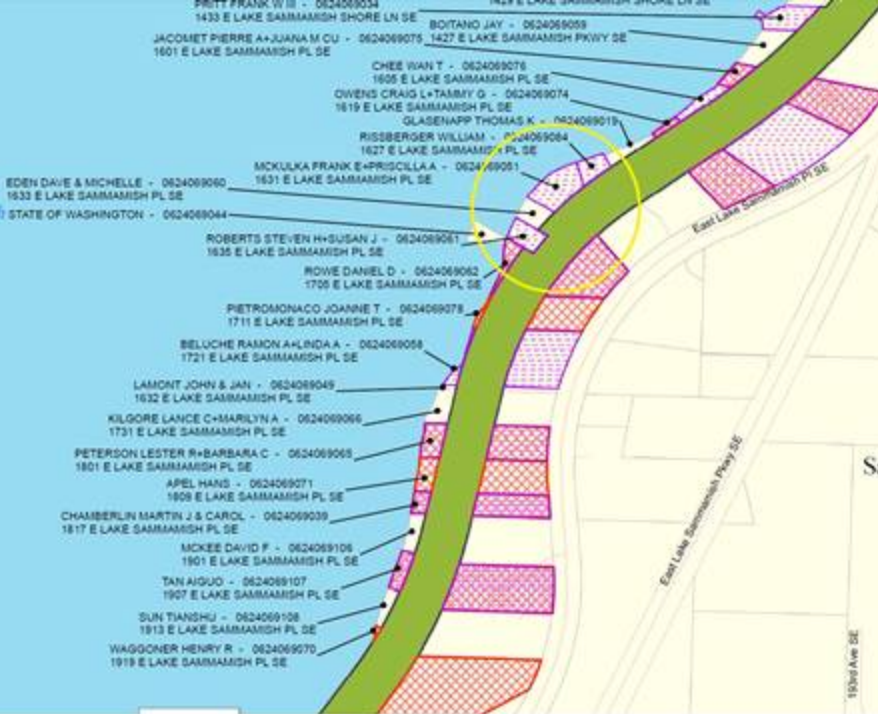
-2. The trail center line be moved east approximately two+ feet in sections 353 to 355 to allow for access to our properties.

-3. The wooden barrier be moved south to its current endpoint to allow for vehicle access.

In addition we would like to know how this review will work and when our concerns will be addressed with a response to us. We would also like to know how reasonable requests like these have been dealt with in Segment A.

Thank you for your efforts to construct a trail that is workable for all, Frank and Pam McKulka, 425 557 0725

Lake Sammamish



- PRITT FRANK W III - 0624069034
1433 E LAKE SAMMAMISH SHORE LN SE
- BOITANO JAY - 0624069059
1429 E LAKE SAMMAMISH SHORE LN SE
- JACOMET PIERRE A+JUANA M CU - 0624069075
1601 E LAKE SAMMAMISH PL SE
- CHEE WIAN T - 0624069076
1605 E LAKE SAMMAMISH PL SE
- OVENS CRAIG L+TAMMY G - 0624069074
1619 E LAKE SAMMAMISH PL SE
- GLASENAPP THOMAS K - 0624069019
1627 E LAKE SAMMAMISH PL SE
- RISBERGER WILLIAM - 0624069064
1627 E LAKE SAMMAMISH PL SE
- MCKULKA FRANK E+PRISCILLA A - 0624069051
1631 E LAKE SAMMAMISH PL SE
- EDEN DAVE & MICHELLE - 0624069060
1633 E LAKE SAMMAMISH PL SE
- STATE OF WASHINGTON - 0624069044
- ROBERTS STEVEN H+SUSAN J - 0624069061
1635 E LAKE SAMMAMISH PL SE
- ROWE DANIEL D - 0624069062
1705 E LAKE SAMMAMISH PL SE
- PIETROMONACO JOANNE T - 0624069078
1711 E LAKE SAMMAMISH PL SE
- BELUCHE RASON A+LINDA A - 0624069058
1721 E LAKE SAMMAMISH PL SE
- LAMONT JOHN & JAN - 0624069049
1632 E LAKE SAMMAMISH PL SE
- KILGORE LANCE C+MARILYN A - 0624069066
1731 E LAKE SAMMAMISH PL SE
- PETERSON LESTER R+BARBARA C - 0624069065
1801 E LAKE SAMMAMISH PL SE
- APEL HANS - 0624069071
1809 E LAKE SAMMAMISH PL SE
- CHAMBERLIN MARTIN J & CAROL - 0624069039
1817 E LAKE SAMMAMISH PL SE
- MCKEE DAVID F - 0624069106
1901 E LAKE SAMMAMISH PL SE
- TAN AJGUO - 0624069107
1907 E LAKE SAMMAMISH PL SE
- SUN TIANSHU - 0624069108
1913 E LAKE SAMMAMISH PL SE
- WAGGONER HENRY R - 0624069070
1919 E LAKE SAMMAMISH PL SE

East Lake Sammamish Pl SE

East Lake Sammamish Pkwy SE

193rd Ave SE

City of Sammamish



Proposed CG line



Proposed Wood Barrier

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:28 AM
To: 'adam.k.carlton@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Adam,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Adam Carlton [mailto:adam.k.carlton@gmail.com]
Sent: Thursday, January 26, 2017 11:47 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

Adam Carlton
4040 NE 204 ST
Lake Forest Park, WA 98155
2067698584

Ada McKee and David F. McKee

TAX PARCEL No. 062406 9106

1901 East Lake Sammamish PL SE

RECEIVED

JAN 26 2017

CITY OF SAMMAMISH

1. Retaining Wall = Stair No. #48 is just in front of retaining wall consequently any removal of stair #48 for widening could jeopardize the structure of retaining wall for the house.
2. Stair No. #47 = which is set to be eliminated during construction. Construction crew needs to be careful of sprinkler system when removing steps towards the lake. Homeowner will place markers.
3. Stair No. #45 = Homeowner suggests installing gate leading towards lake for safety of personal property i.e., boat, jetski, ski equipment.
4. Signs = signs should be installed at entrance with rules of the (usage) usage of trail. Homeowner has witnessed a biker riding after dark. The biker uses a bright light that is seen from the homeowners kitchen. Homeowner with photograph for evidence

Ada McKee and David F. McKee 062406 9/26 Page 2 of 2
1901 East Lake Sammamish PL SE

5. Usage by Public = Please do not allow motorcycles or horses, to use the trail. Horses will deposit manure of which will be a health hazard. Motorized vehicles pose a threat to the safety of the public.
6. AA SHTO = Please abide by the national guidelines outlined in AASHTO which require a 12 feet trail with 12 feet shoulders.

Comments:

Homeowner has lived on the lake for many years and look forward to working with the county to create a safe trail to enjoy with my children for years to come.

Thank You,
Ada McKee

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:21 AM
To: 'apailthorp@msn.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Aaron,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Aaron Pailthorp [mailto:apailthorp@msn.com]
Sent: Thursday, January 26, 2017 9:45 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Trails like this provide a welcome recreational outlet as well as an inexpensive transportation alternative. I like to leave the city to ride in the hills and spend money along the way.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I'm looking forward to coming to the area to use the trail and leaving my spending money behind.

Sincerely,

Aaron Pailthorp
1806 30th Ave S
Seattle, WA 98144
206-310-6113

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:27 AM
To: 'aschearer@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Alex,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Alex Schearer [mailto:aschearer@gmail.com]
Sent: Thursday, January 26, 2017 11:11 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing in support of completing the ELST and approving permit SSDP2016-00415.

I'm an avid cyclist in the area and have been looking forward to riding on the completed trail for some time. Once complete, this trail will be a jewel in the area for people who want to enjoy the lake and surrounding area.

Thanks, Alex

Alex Schearer
902 18th ave
Seattle, WA 98122
2069925737

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:32 AM
To: 'paperjam@serv.net'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Sue,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: B.Sue Johnson [mailto:paperjam@serv.net]
Sent: Thursday, January 26, 2017 12:39 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I have lived on Bainbridge Island since 1985, but grew up in the region and have been a recreational and commuting cyclist for over 45 years. I cannot adequately express my appreciation for the regional trail systems that have developed in those decades, not just for the increased safety they provide for non-motorized transportation, but also the sheer pleasure of connectivity without auto traffic that they provide me. One of my favorite training rides is what I call my "Lakes and Trails Loop", using the Myrtle Edwards, Interbay, South Canal, Burke-Gilman, Sammamish, 520, Mercer Slough, and I-90 trails. When I'm feeling ambitious, I expand this loop to include the East Lake Sammamish, and I have used the Issaquah-Preston and Snoqualmie Valley trails as well. Because the system has such great connectivity now, missing links really stand out as barriers to safe cycling.

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

B.Sue Johnson
Bainbridge Island, WA

B.Sue Johnson
5419 Lynwood Center Rd NE
Bainbridge Island, WA 98110
2068428242

Lindsey Ozbolt

From: Brad Moore <bgmoore77@gmail.com>
Sent: Thursday, January 26, 2017 9:12 AM
To: Lindsey Ozbolt
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

I work in Bellevue; my family and I all bike both for recreation and transportation/commuting. Completing this trail makes both of these activities better.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Brad Moore
1408 - 140th Place NE, Suite 150
Bellevue, WA 98007
2069206247

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:36 AM
To: 'bvandroo@comcast.net'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Barbara,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Barbara Van Droof [mailto:bvandroo@comcast.net]
Sent: Thursday, January 26, 2017 1:54 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

You may wonder why I am writing? I lead bike rides for Northshore Senior Center and Cascade Bike Club. Most of the older riders like to ride on safe trails or less traveled rural roads. I do at least 2-4 rides on the east side.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Barbara Van Droof
11523 Exeter Ave. NE
Seattle, WA 98125
2063633606

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:20 AM
To: 'Christine Calderon'
Subject: RE: Comments re: East Lake Sammamish Trail

Dear Christine,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Christine Calderon [mailto:christine.calderon@gmail.com]
Sent: Thursday, January 26, 2017 9:37 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comments re: East Lake Sammamish Trail

Attn: Lindsey Ozbolt

As a homeowner in the area included in segment B of the East Lake Sammamish Trail, I am asking the Council to defer granting any development permit until the concerns of the homeowners affected by this plan are heard and answered.

I have reviewed the preliminary plans that are quite frankly challenging for the lay person to comprehend. I started by reading the mission: To develop an alternative transportation corridor in a former railroad corridor. Well – that seems easy enough to understand. I know where the railroad tracks were. The document notes: The existing gravel trail will be widened to 12 feet and paved with 2 ft gravel shoulders on both sides. I'm very familiar with the Burke Gillman trail through the University District and through Bothell where it runs along the Sammamish Slough. I know what that type of a trail looks like. It's well used by commuters as well as recreational bikers and walkers and I support that.

Then my eye goes back to the plans. How can something so “simple” become so elaborate? One of the major areas of concern for me is the assumption by King County that they have the right to take as much as 100 feet of private land and call it public property. The federal court of claims ruled that the railroad only had an easement over private property for rail purposes and this easement has passed to the county to develop an alternative transportation corridor in a former railroad corridor.

When I look at the proposed plans for my home, the first thing I think I see is the creation of a wetland where I have grown vegetables and flowers, have apple and pear trees and where, at times, I park cars or store trailers and lake toys. This is not a natural wetland. If there is expected run-off from the paved trail, the run-off can be directed to the east side of the trail which is undeveloped and is a naturally occurring wetland. Much more cost-effective than creating something for which there is no need.

It also appears that a great portion of the trail will be lined with a chain link fence. I would hope that there is as much concern for the deer that need access to the lake as there appears to be for fish. The other day there were three young bucks in the yard headed for the lake. How are they going to reach water?

And, again, if I’m understanding what I’m reading, it seems as though there are a number of trees on private property, outside the trail footprint, that are slated for removal. By whose authority?

The plan seems unnecessarily grandiose and I wonder who is paying for it. Resources, particularly in the Parks Department, are scarce and should be carefully managed.

I urge you to carefully review what is at stake and not recommend any shoreline development permit until legitimate questions from the affected homeowners are answered and a more complete description of the project is made available. This plan is sort of what they are going to do, maybe.

Thank you for listening to my concerns -

Christine Calderon

211 E Lake Sammamish Shorelanes NE

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:27 AM
To: 'chrislangs@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Chris,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Chris Langston [mailto:chrislangs@gmail.com]
Sent: Thursday, January 26, 2017 10:47 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415. This is an important piece of infrastructure that will keep cyclists off of the busy arterial and improve conditions for all involved.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Chris Langston
Graham
Seattle, WA 98118
2068535376

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:29 AM
To: 'Chris McKinsey'
Subject: RE: East lake sammamish trail SSDP comments

Dear Chris,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Chris McKinsey [mailto:chris_mckinsey@msn.com]
Sent: Thursday, January 26, 2017 12:07 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Chris McKinsey <chris_mckinsey@msn.com>
Subject: East lake sammamish trail SSDP comments

Hello,

Chris M. McKinsey
273 East Lake Sammamish Shore LN NE
Sammamish, WA, 98074

Hello, I am the property owner of the above address which is located between Lake Sammamish and the former BNSF right-of-way currently being used by King County as a trail. This mail is in regards to my comments regarding the 60% plans for East Lake Sammamish Trail section South B SSDP applied for by King County.

I would like to raise the following concerns to the city:

1. King County has not provided a chain of title demonstrated fee simple ownership in my section of the trail. Unlike some sections, my chain of title clearly shows an easement was granted to the railway. As such, the County does not have standing to be able to change the trail alignment or width in this section outside of the original interim trail profile.
2. Along my section of the trail, the current proposed 60% plan moves the center alignment several feet towards my property. As this is over a 160 foot section, this causes serious intrusion into my property and requires significant clear cutting of mature landscaping. In particular, a row of 25 20 foot high cedars would be removed. In addition to enhancing the natural character of the area, it also serves as a natural barrier to parkway road noise and screening to water run-off from the trail. As this landscaping also lies within multiple wetland buffers,

the City should either preserve the original alignment and landscaping, or provide the appropriate mitigation elsewhere.

3. Moving the trail center line towards my property also means a large reduction in my parking area reducing accessibility to my property. This is an established use dating back to the original residence construction in 1936.
4. The newly proposed design shows no drainage outfall to the lake, instead dumping it off into a "dispersion" area which essentially increases the water table of my up land soils of my residence. Today the current landscaping that they propose to remove actually helps to mitigate runoff. You can imagine the struggle we face down here with keeping water under control on our properties (bottom of hill, adjacent to lake, wet soils). The county should keep the original footprint and rely on existing vegetation in this area, or regrade the trail to force runoff to the other side, which is currently labeled as a wetland, as the dispersion area. The City should not allow the County to approve a plan that dumps drainage onto neighboring trail side owners without their permission or some kind of improved dispersion. This is just government passing the problem on to residence when it should in fact be the other way around.
5. The county 60% plans say they are removing my lots dedicated access (a small wooden stairway) to the trail bed that was installed prior to the county's claimed ownership. They also claim they will run a chain-link fence down the entire length of my neighborhood. The "Shorelands" neighborhood is 1/4 mile long, which means without my dedicated access stairs my kids will have to walk 1/4" mile down a road to access the trail to ride their bikes. I would propose the county be required to preserve, either reuse or rebuild in place, any dedicated trailside residence accesses that were established prior to their taking interest in the trail.
6. The chain link fence they propose will block wildlife access. I have deer on a daily basis crossing my property on the lake side and then crossing the parkway to work their way back up the plateau to graze.
7. The county is proposing to rebuild the private bridge over Zacusse creek that lies outside of the trail right-of-way. Rather this is the private access road that I use to legally access my property. The county must be required to design a bridge that meets all access requirements. The bridge must be strong enough and wide enough to support fire trucks, garbage trucks, concrete trucks for resident wanted to renovation/repair, etc... This must be a stipulation of the permit the city grants.

Thank you, and please feel free to contact me to discuss further if there are questions.

Chris McKinsey
425-327-4667

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:33 AM
To: 'Chris Powers'
Subject: RE: South Sammamish Trail Section 2b Desin, Markers 470-473 Comments

Dear Chris,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Chris Powers [mailto:chris@allegraprescott.com]
Sent: Thursday, January 26, 2017 12:43 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: South Sammamish Trail Section 2b Desin, Markers 470-473 Comments

See attached.

Thanks,

Chris Powers
Production Manager

Allegra Marketing Print and Mail
1026 Spire Drive
Prescott, AZ 86305
928.445.6262
www.allegraprescott.com



To whom it may concern,

The proposed trail plans on East Lake Sammamish Parkway NE, Sammamish, WA 98074 are concerning to me. The area of concern uses trail markers 470-473. There is a pickle ball court that I have been playing on for the last 10 years. We have played multiple tournaments there and it has been a source of great fun for my friends and I, and something I look forward to when I come back to visit my friends. I have even coached some of my friends there on how to be a better pickle ball player. The proposed new plans destroy the pickle ball court. It makes the space unusable for pickle ball. I would really like it if you changed the plans.

Thank you,

Chris Powers,
4583 N Ainsley Way
Prescott Valley, AZ 86314

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:27 AM
To: 'windcaller@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Chester,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Chester ZELLER [mailto:windcaller@gmail.com]
Sent: Thursday, January 26, 2017 11:12 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

It is trails like this that get kids out away from electronics and increase the health of our children.

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

Chester ZELLER
919 2ND AVE W. 207
SEATTLE, WA 98119
2064348349

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:36 AM
To: 'deyvidmckay@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear David,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: David McKay [mailto:deyvidmckay@gmail.com]
Sent: Thursday, January 26, 2017 1:41 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

I'm a 70 yo retired health professional and love cycling. I live on Capitol Hill in Seattle, but love doing a loop trip across the I-90 bridge to Marymoor Park, then following the East Lake Sammamish, Sammamish River and Burke Gilman Trails back home, around the north end of Lake Washington. To me, finishing the ELST trail ranks up there in priority with the Ballard "missing link" section of the Burke Gilman trail, and it would be a beautiful thing to see this finally completed.

Thanks,
David McKay
1501 17th Ave Apt 1110
Seattle, WA 98122

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

David McKay
1501 17th Ave, Apt 1110
Seattle, WA 98122
2064654888

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:15 AM
To: 'goldensrgr8@comcast.net'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Diane,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Diane Porter [mailto:goldensrgr8@comcast.net]
Sent: Thursday, January 26, 2017 8:10 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Diane Porter
P.O. Box 1407
Milton, WA 98354
253-988-1088

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:18 AM
To: 'Eric Donelson'
Subject: RE: ELST ?'s

Dear Eric,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Eric Donelson [mailto:eric.systemaire@outlook.com]
Sent: Thursday, January 26, 2017 9:22 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: Calvin White (Seasquirl@comcast.net) <Seasquirl@comcast.net>
Subject: ELST ?'s

Lindsey,

We are members of the View Point Park Community Assoc. (VPPCA) and have been following the latest plan for the trail revisions. Couple of questions I have that are in addition to what has been our collective concerns. The chain-link fence on the west side of the trail (sections 339 to 342) and the wooden fence to the east side of the trail (section 339) will be removed during construction. What is the plan to replace these existing fences? If replacement is part of the scope of work for the trail revision effort, fine. If not, what can be done to retrieve the removed fences so that we (VPPCA) can replace as needed?

Would appreciate your response.

thanks,

Eric & Pat Donelson
2206 - 190th Pl. S.E.
Sammamish, Wa. 98075

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:23 AM
To: 'Gene Beall'
Subject: RE: East Lake Sammamish Trail, Segment B - feedback

Dear Gene,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Gene Beall [mailto:gene-beall@comcast.net]
Sent: Thursday, January 26, 2017 10:11 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: East Lake Sammamish Trail, Segment B - feedback

Ms. Ozbolt, the purpose of this email is to provide feedback and ask some questions regarding the proposed plans for the East Lake Sammamish Trail, Segment B.

First, I applaud the city/county efforts on the trail to date and, in general, the plans for Segment B. I appreciate the efforts to improve fish habitat for migrating salmon along the associated streams and the efforts to develop the trail in ways that make it as widely usable as possible by the community-at-large.

For background, my wife and I live at 915 E Lake Sammamish Shore Lane SE. We and the 9 other property owners along this little stretch of E Lake Sammamish Shore Lane SE (aka Whileaway Court) use Driveway #10 that crosses the trail. This stretch of E Lake Sammamish Shore Lane SE is a private road, collectively owned by the 9 parties who own the associated lots.

I have two areas of concern and some related questions and suggestions.

1. **Please save the big, beautiful Aspen and Douglas Fir trees**

The Tree Preservation Plan TP12 (on page 12 of the Tree Preservation Sheets) shows that several big Aspen trees and several of the big Douglas Fir trees currently located along the western edge of the trail, just south of Driveway #10, are to be removed. We would very much like for all of these big, beautiful trees to be saved...somehow. Here are some ideas/suggestions for how that might be accomplished. The essence is this:

- a) designate the area east of this stretch of trail something other than wetland (because it's not wetland)
- b) move the centerline of the new trail to the east of the current trail centerline (rather than to the west)
- c) install stop signs on our Driveway #10 (if that helps)

Here is a more complete explanation of those steps:

- a) AL20 (page 52) of the Segment B plans show this stretch of the trail, specifically from our common Driveway #10 to the south about 175 feet, near STA 377+00. The plan shows that the centerline of the trail along this stretch is being moved to the west of the centerline of the current gravel trail. The relocation of the trail centerline may be driven partly by the designation of wetland along the eastern border of this stretch of trail and the desire/requirement not to diminish wetland areas. I certainly applaud the design guideline to preserve wetland areas but I would respectfully ask that someone go out and re-evaluate that bit of land. It's not wetland. It's a slope down from the parkway to a ditch along the east side of the trail. The area is covered mostly with blackberry bushes and other brush, not wetland flora. And it most certainly does not include big, beautiful, mature trees.
- b) If that area along the east side of the trail could be designated other than wetland, it might allow the centerline of the trail to be moved to the east of the centerline of the current gravel trail, rather than to the west. This is exactly what is being done immediately south of STA 377+00 so perhaps it can also be done north of STA 377+00. This would reduce the area that needs to be cleared on the west side of the trail where the big trees are.
- c) Another contributor to the proposed removal of these trees may be the sight distant requirements associated with our Driveway #10. I certainly applaud the city/county efforts to ensure/improve the safety of the trail crossings. I cannot see in the plans, if a stop sign is planned to be installed for cars using our Driveway #10. If a stop sign were installed, it would reduce the sight distance triangle and thereby further reduce the area that needs to be cleared along the west side of the trail in order to ensure the proper sight distances, and thus help to save the big trees.

One final comment on this topic: if you stand in our Driveway #10 and look south down the trail, you will see a row of big, beautiful trees and shrubs along the right side of the trail. To the left of the trail, you will see mostly brush and a few small straggly trees. To think that we would sacrifice all those big, beautiful trees on the right and save the brush on the left is simply unconscionable...and I believe unnecessary. Please consider modifying the trail design as I've suggested, and with other creative ideas that you can come up with, to save these big, beautiful trees. Where there is will, there is a way.

2. Pine Lake Creek Culvert #2

Mike and Jackie Schmidt (who reside two doors to the north of us at 903 E Lake Sammamish Shore Lane SE) submitted a comprehensive set of comments and questions regarding the work at Pine Lake Creek Culvert #2. My wife and I have all the same questions and concerns so rather than restating them in different words, I will simply restate the Schmidt's feedback here in italics (with their permission):

"New culvert under Whileaway court (reference pages AL39, FP1, and WP9):

- *Good for the fish!*
- *Good for improved water flow, drainage, and creek flooding mitigation*
- *Property rights concerns*
 - *Most proposed construction is within private road (519710TRCT) that is not part of the trail ROW. All home owners have a shared ownership in this tract, so owner consent is required.*
 - *Why does the proposed construction extend into privately owned Gill Trust lots 5197100135 and 5197100130 instead of remaining within the shared driveway 519710TRCT?*
- *It is very important to preserve the two massive ancient redwood trees at the west exit of the culvert, near 11+00 on the p-line and adjacent to rock walls #1 & #2. Does the "M" designation on the tree removal plan for these two trees reflect concern?*
- *Earth walls #42 and #43*
 - *Chain link fencing is not visually acceptable, would need a more aesthetically pleasing and natural fence choice that fits the style of the neighborhood and the beautiful natural surroundings of the creek passing there.*
 - *Length of "earth walls" is concerning, why are they so long?*

- *In particular the south starting point of wall #43. That starting point should be moved at least 5 feet farther north. As it is located now it is likely to be a back-up hazard for cars backing out of the driveway from the 903 residence and turning to back up to the north.*
- *Why does wall #42 run so far to the north, seems this could be substantially reduced?*
- *What is the relationship of culvert replacement plans to trail plans (tied together, different projects, timelines?)*
- *How does funding work, all paid for by King County?*
- *How will all the utilities be routed and what will the effect on utilities be during construction?*
 - *Gas, water, sewer are all underground in the road where culvert resides (as are cable and power in other road areas in the construction zone)*
 - *Current plan would require removal/replacement of power pole near south edge culvert. Could power on these poles be moved underground as part of this work?*
 - *FYI: There is a separate proposal for a fire hydrant to be added north of the proposed fish passage culvert work on 519710TRCT. This work should be coordinated.*
- *How will people have access to their homes during culvert/road construction?*
- *Road grading and drainage is an important concern. We already have issues with water on the road flowing towards residence driveways, in particular the driveways of 903, 909, or 915, so we would appreciate any grading changes improve upon the drainage conditions.*
- *Concern about current design reducing parking availability.*
- *What are landscape plans for this area after culvert replacement?*

...

To expand on some of the key points I will first focus on the new culvert plans under Whileaway court. One concern here is it is important to preserve the two large, majestic, redwood trees that are planted here just to the west of the culvert. I am pleased to see that, to my understanding, feedback given to folks planning the culvert changes during an onsite meeting in April of 2016 (Kelly Donahue from King County and several representatives from Parametrix) was incorporated. It appears the plans have offset the new proposed culvert further away from the two redwoods in order to reduce the disturbance to the tree roots during required excavation. The trees were planted in the 40's and are a keystone of the landscape in our neighborhood, they must be seen in person to be fully appreciated and cannot be sacrificed!

We are also very interested in the improved fish passage that the new culvert will provide, and in particular the increased capacity the new culvert will have in allowing storm water to pass through. The old/current culvert there is much smaller and has been a concern of ours for plugging and overflowing.

We have additional concerns about several other details of the proposed plan outlined above, in particular the chain link fencing and earth walls. It's important to us that the new culvert aesthetically look very pleasing and fit into the neighborhood landscaping and natural look and feel. Chain link fencing does not meet that requirement, we would like this to be changed to some other suitable more natural material. It appears the earth walls will be constructed of precast concrete blocks which will mostly be buried down to the road surface level, and only exposed where the cut of the creek bed slopes down. If so, we believe this would be suitable if they did not have chain link fence attached.

My final point for the culvert plans is that I want to emphasize that in this section, unlike the trail ROW, the proposed changes to the culvert occur on private property. There are important property rights and consent that need to be adhered to here."

Thank you for the opportunity to provide feedback to the trail plans! If you have any questions about our comments, please do not hesitate to contact us. We appreciate all the effort to make the trail the best it can be!

Gene & Sally Beall
 915 E Lake Sammamish Shore Lane SE
 Sammamish, WA 98075-7494

Home phone: 425-868-0232

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:33 AM
To: 'gbelau@yahoo.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Geoff,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Geoff Belau [mailto:gbelau@yahoo.com]
Sent: Thursday, January 26, 2017 12:58 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

I am a father of two young boys, ages 7 and 3, who are/will be learning to explore the region where they live by bike. It is important to me that we have opportunities to ride in relative safety as a family. I also strongly believe that the expansion of our regional trail system offers many public benefits, including health, environment, quality of life, and racial/socio-economic equity.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Geoff Belau

Geoff Belau
9017 4th Ave S
Seattle, WA 98108
206.851.0055

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:24 AM
To: 'gregrehm@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Greg,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Greg Rehm [mailto:gregrehm@gmail.com]
Sent: Thursday, January 26, 2017 10:35 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

As a bike camper this connection will allow greater flexibility in reaching the Cascades.

Sincerely,
Greg Rehm

Greg Rehm
5911 18th ave South
Seattle, WA 98108
2066013763

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:24 AM
To: 'ummmhayley@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Hayley,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Hayley Bonsteel [mailto:ummmhayley@gmail.com]
Sent: Thursday, January 26, 2017 10:31 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail. As a survivor of a bicycle crash with a vehicle, safety is of the utmost importance to me - facilities MUST be designed with bicyclists' safety in mind. I do not want others to experience what I have experienced in the years since my crash (chronic pain, spine problems, PTSD--the works).

When complete, the trail will be an even greater community amenity than in its interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail, so that future generations will be able to experience the amazing assets of our region.

Sincerely,

Hayley Bonsteel
418 E Loretta Pl #208
Seattle, WA 98102
4102592782

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:17 AM
To: 'hollykoenig@altaplanning.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Holly,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Holly Koenig [mailto:hollykoenig@altaplanning.com]
Sent: Thursday, January 26, 2017 9:16 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Holly Koenig
1402 3rd Avenue, Suite 206
Seattle, WA 98101
2066933050

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:16 AM
To: 'jklepack@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear John,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: John Klepack [mailto:jklepack@gmail.com]
Sent: Thursday, January 26, 2017 8:14 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

Lake sammamish is a beautiful feature of our area and both bikers and pedestrians deserve first-class facilities to enjoy it. We've surrounded the lakes by roads, providing one nice trail is an important step toward a less car-oriented future.

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

John Klepack
7065 7th Ave Nw
Seattle, WA 98117
6073421301

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:12 AM
To: 'jlaudolff@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear James,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: James Laudolff [mailto:jlaudolff@gmail.com]
Sent: Thursday, January 26, 2017 5:41 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

I commute on the north part of the trail every single day and it is tremendously valuable to me.

Sincerely,

James Laudloff
24518 SE37th St, 4
Issaquah, WA 98029
4252134727

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:16 AM
To: 'janauss@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Jacob,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Jacob Nauss [mailto:janauss@gmail.com]
Sent: Thursday, January 26, 2017 8:45 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Completing this trail will be a huge success for walking/cycling in King Country, and will open up more opportunities for businesses to capitalize on another source of customers coming in/by their businesses via the trail.

Please approve the permit, as proposed, with expediency.

Jacob Nauss
4711 50th Ave SW
Seattle, WA 98116
2069620503

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:30 AM
To: 'Justin.resnick@gmail.com'
Subject: RE: I support the Permit for Segment 2B of the ELST

Dear Justn,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Justn Resnick [mailto:Justin.resnick@gmail.com]
Sent: Thursday, January 26, 2017 12:30 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: I support the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Multiuse paths and trails are a valuable community asset.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Justn Resnick
3023 18th Ave S
Seattle, WA 98144
2157791056

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:32 AM
To: 'jseeman4@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Julianne,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Julianne Seeman [mailto:jseeman4@gmail.com]
Sent: Thursday, January 26, 2017 12:47 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Julianne Seeman
13229 Linden North 105B
Seattle,, WA 98133
206 641 5854

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:29 AM
To: 'kyle.r.b@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Kyle,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Kyle Brown [mailto:kyle.r.b@gmail.com]
Sent: Thursday, January 26, 2017 12:12 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

I already ride the interim trail occasionally. It makes for a nice recreational ride and a convenient and safe route between Issaquah and Redmond.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Kyle Brown
1740 Melrose Ave., #702
Seattle, WA 98122
6086980421

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:30 AM
To: 'kstevens97@yahoo.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Kevin,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Kevin Stevens [mailto:kstevens97@yahoo.com]
Sent: Thursday, January 26, 2017 12:25 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

My wife and I ride our bicycles on trails from our home in Seattle, through Redmond, Sammamish, and Issaquah, often stopping for lunch or coffee. The development of the ELST so far has added to the enjoyment and safety of our adventures. When we are forced back out to East Lake Sammamish Parkway, we lose some of that. While we are seasoned cyclists, there are many people who would not at all if the road were their only choice.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in its interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,
Kevin Stevens

Kevin Stevens
322 NW 54th St
Seattle, WA 98107
206-297-1985

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:22 AM
To: 'vorosk@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Kim,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Kim Voros [mailto:vorosk@gmail.com]
Sent: Thursday, January 26, 2017 9:56 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Kim Voros

Kim Voros
315 NE 159th
Shoreline, WA 98155
5037015769

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:35 AM
To: 'loisboulder1@comcast.net'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Lois,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Lois Hayes [mailto:loisboulder1@comcast.net]
Sent: Thursday, January 26, 2017 1:31 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Paving the trail will make it much less painful for those of us who have shoulders with arthritis.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users.

Please approve the permit, as proposed, with expediency.

Sincerely,

Lois Hayes
4501 134th Place SE
Bellevue, WA 98006

4254635004

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:13 AM
To: 'larrylusch@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Larry,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Larry Lusch [mailto:larrylusch@gmail.com]
Sent: Thursday, January 26, 2017 6:48 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear City of Sammamish,

Please approve the final segment of the East Lake Sammamish Trail. This beautiful trail is a gem in the crown of the city. My wife and I love this trail. We walk it and ride our bikes on it.

Gail and I are both in our mid-60's. We're working hard to stay fit and healthy. While we do go to a gym in bad weather, the ELST is our "go to" source of fresh air and outdoor enjoyment.

The improvements made to the trail so far are outstanding. It's a joy to see children and people of all ages walking, biking, or being pushed in a stroller along ELST. For young parents who push their infants in strollers, the paved surface is so much better.

We were overjoyed when the approval came for the segment that is being worked on now. We assumed the "battle" was over. It was so disappointing to realize 29 or so people were trying to hold up the final segment.

Please listen to the majority in this situation and approve completion of the final segment.

Thanks for listening and thanks for serving the community.

Larry Lusch

Larry Lusch
35203 SE Ridge Street
Snoqualmie, WA 98065
636-542-0633

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:35 AM
To: 'Mike Koppel'
Subject: RE: Resident comments re:station #408- address 169 SE

Dear Mike,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Mike Koppel [mailto:koppelfive@icloud.com]
Sent: Thursday, January 26, 2017 1:40 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Resident comments re:station #408- address 169 SE

Hello Lindsey,

I had a meeting today to review the current trail plans of the South Segment B and here is what I came away with that could use some clarification.

1. Access to parkway during construction
 - current access is designated for construction vehicles/access
 - there will be pavement added west of the trail to create a new access for us

~What is planned for us to best access the parkway, receive guests and packages, retrieve mail and put out garbage during the construction phase?

2. Current landscape
 - it appears on the plan that the current cedar hedge west of the trail is outside of the CG line

~Will that hedge in fact remain as is?

3. Removal of access driveway to parkway
 - plans show no restoration of current driveway area west of trail

~Will there be vegetation added to assist in privacy from trail users having access to our property?

Thank you for considering my concerns.

Shari Koppel

Sent from my iPad

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:22 AM
To: 'Amy Brockhaus'
Subject: RE: Mountains to Sound Greenway comments on East Lake Sammamish Trail shoreline permit

Dear Amy,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Amy Brockhaus [mailto:amy.brockhaus@mtsgreenway.org]
Sent: Thursday, January 26, 2017 9:36 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Mountains to Sound Greenway comments on East Lake Sammamish Trail shoreline permit

Hi Lindsey,

Please accept the attached letter of comment for the East Lake Sammamish Trail Shoreline Substantial Development permit for segment 2B. Thank you!

Amy Brockhaus
Deputy Director

Mountains to Sound Greenway Trust
D 206.382.5565 x24 | C 206.327.1732
amy.brockhaus@mtsgreenway.org

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Washington State Department of Natural Resources

Executive Director
Jon Hoekstra (*)
Mountains to Sound Greenway Trust

January 20, 2017

Lindsey Ozbolt, Associate Planner
City of Sammamish City Hall
801 228th Avenue SE
Sammamish, Washington 98075

Re: Support for East Lake Sammamish Trail

Dear Lindsey,

I am writing on behalf of the Mountains to Sound Greenway Trust to express our strong support for the King County's application for a Shoreline Substantial Development permit for Segment 2B of the East Lake Sammamish Trail, specifically the 3.5 mile section between Inglewood Hill Road and SE 33rd Street, through the city of Sammamish.

The East Lake Sammamish Trail is an integral part of our regional trail system. King County's acquisition of this trail corridor in 1998 played a critical role in connecting trails through the Puget Sound region and throughout the Mountains to Sound Greenway, the scenic landscape surrounding Interstate 90 between Puget Sound and central Washington State. The unpaved section in Sammamish is the last missing link in a 44-mile corridor from the Burke-Gilman Trail in Seattle, all the way to downtown Issaquah.

Full development of the East Lake Sammamish Trail will be one of the most significant regional trail accomplishments in our region.

The East Lake Sammamish Trail also connects to the proposed Emerald Necklace, a trail corridor across the Sammamish Plateau that will create a loop trail around Sammamish.


We strongly support paving and other improvements to the final section of the East Lake Sammamish Trail. Finishing this trail will provide access to Lake Sammamish in accordance with the Shorelines Management Act, and will be a benefit to recreation for people of all abilities and the ecological health of the region.


The Mountains to Sound Greenway Trust supports a comprehensive transportation system with connected regional trails and pedestrian walkways, in order to improve transportation options, enhance work environments and quality of life, increase opportunities for recreation, improve public health and reduce traffic congestion and greenhouse gas emissions.

Completion of the East Lake Sammamish Trail represents the culmination of a long-term vision for connecting communities by trail around the lake, and leaves a tremendous legacy to benefit our entire region.

Please accept our strong support for permitting and completion of the East Lake Sammamish Trail.

Sincerely,


Amy Brockhaus, Deputy Director


Jim Berry, Greenway Trust Board of Advisors
Sammamish resident

Sally Bagshaw (X), Councilmember, City of Seattle
Jim Becker, Founder, SmartLab Toys, becker&moyer!
Gary Berndt, Civic Leader, Cle Elum
Mark Boyar (*), President
Middle Fork Outdoor Recreation Coalition
Kevin Brown, Director, King County Parks & Recreation
Will Castillo, Principal, GGLO
Dow Constantine (X), King County Executive
Kitty Craig, Deputy Director, Washington Program
The Wilderness Society
Karl Forsgaard, President
Alpine Lakes Protection Society
Ava Frisinger, Former Mayor, City of Issaquah
Todd Glass, Partner
Wilson, Sonsini, Goodrich & Rosati PC
Kari Glover, Global Integration Partner, Retired
K&L Gates
Peter Goldmark (X), Commissioner of Public Lands
Washington State Department of Natural Resources
Rich Grillo, Community at Large Representative
Cle Elum
Bruce Gryniewski, Partner, Gallatin Public Affairs
Don Hoch (X), Director
Washington State Parks & Recreation Commission
Laura Hoffman, Amazon Publishing,
Copper Ridge Farm
Cora Johnson, Geotechnical Engineer
GeoEngineers
Andrew Kenefick, Senior Legal Counsel
Waste Management of Washington, Inc.
Jamie Kingsbury (X), Supervisor
Mt. Baker-Snoqualmie National Forest
Janet Knox, Principal Environmental Geochemist
Pacific Groundwater Group
Ken Konigsmark, Issaquah Alps Trails Club
Leon Kos, City Administrator (retired), City of Issaquah
Paul Kundtz, Northwest Director
The Trust for Public Land
Helen Lee, Financial Advisor
Morgan Stanley Wealth Management
Danny Levine, President, NationAd Communications
Ariene Levy (*), Partner, Social Venture Partners
Josh Lipsky (*), Partner, Cascadia Law Group PLLC
Robert Manelski, Senior Director, 787 Program
The Boeing Company
Gordon McHenry Jr (*), President & CEO, Solid Ground
Sue McLain (*), Former Senior VP Delivery
Operations, Puget Sound Energy
Chad Nesland, Director, Microsoft Procurement
Mary Norton, City of Snoqualmie Parks Board
Meadowbrook Farm
Thomas O'Keefe, Pacific NW Stewardship Director
American Whitewater
Julia Parrish, Associate Dean of Academic Affairs
College of Environment, University of Washington
Marie Quasius (*), Attorney, K&L Gates LLP
Charles Raines, Director Cascade Checkerboard Project
Sierra Club
Janet Ray (*), Asst VP, Corporate Affairs & Publishing
AAA Washington
Jim Reinhardtsen (*), Principal & Senior Managing
Director, HEARTLAND LLC
Grant Ringel, Communications Director
Puget Sound Energy
Floyd Rogers, Environmental Advocate
Vik Sahney, Divisional Vice President, Sustainability
REI Co-op
Al Smith, Partner, Perkins Coie LLP
David Sturtevant (*), Retired, Vice President, CH2M
Marianne Tagney
Community at Large Representative
Leah Tivoli, Organizational Performance Manager
City Budget Office, Seattle
Mike Williams (X), Supervisor
Okanagan-Wenatchee National Forest
Kathy Williams, Former Senior Vice President,
HomeStreet Bank
Joel Yaker, Solution Architect, Microsoft
(*), Executive Committee Member
(X) Ex-Officio (non-voting) Director



Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:15 AM
To: 'nathan_joel@hotmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Nathan,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Nathan Hancock [mailto:nathan_joel@hotmail.com]
Sent: Thursday, January 26, 2017 7:25 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

I'm a frequent rider through this area and think the missing link will be great for bringing the local and regional community outdoors. The for all ages trail is more comfortable for many opposed to the parallel road with steep segments and turning vehicles.

Nathan Hancock
2440 Dexter Ave N Apt 2
Seattle, WA 98109
4697423205

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:12 AM
To: 'Rangotti2004@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Robin,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Robin Angotti [mailto:Rangotti2004@gmail.com]
Sent: Thursday, January 26, 2017 5:00 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Robin Angotti
17433 Bothell Way NE unit B301
Bothell, WA 98011
206-940-1417

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:21 AM
To: 'Reid Brockway'
Subject: RE: Comments on ELST

Dear Reid,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Reid Brockway [mailto:waterat@comcast.net]
Sent: Thursday, January 26, 2017 9:39 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comments on ELST

Lindsey,

Attached please find my comments on the ELST 60% plans and on the project in general. I offer these for consideration with regard to the SSDP permit application presently under review.

Thanks,
Reid Brockway 425-868-7899

Reid Brockway 167 E Lk Sammamish Sh Ln NE

1. Dispersion areas intrusive and unnecessary

The dispersion areas shown on sheets AL28 – AL31 (and elsewhere) intrude into portions of the rail corridor currently used for gardens, parking, and other improvements long-since established. These areas can be eliminated by simply sloping the trail pavement so it drains to the east. Most of the area east of the trail in this region, despite being labeled “wetlands” in some portions, is basically a large man-made ditch between the parkway and railbed that has long served as a catch basin. Besides avoiding unnecessary impact on citizens, this will be a significant cost savings.

2. Dispersion areas inadequately defined

Although not stated, the “dispersion areas” shown on various AL sheets are apparently to be vegetated areas to handle storm water runoff from the trail surface. They are inadequately defined in the 60% plans. Typical Section D (P.30) and E (P.31) appear to show these, and Construction Notes 9 and 10 say “See LA sheets for planting schedule”, but there is no planting schedule provided. Without this detail, and in the absence of a maintenance plan specific to these areas, plan reviewers cannot assess the impact on their neighborhoods. The SSDP should not be approved until this information is provided and the public has had a chance to review it.

3. Chain link fence is barrier to wildlife

A chain link fence is shown running almost continuously on sheets AL28 – AL32. Deer and other wildlife frequently come down to the lakeshore in this area, and this fence will constitute a barrier to their passage. If this fence is absolutely necessary for safety, there should at least be more openings in it at to allow the animals to pass.

4. Unnecessary removal of trees

According to the Tree Preservation Plans, there are 16 trees slated for removal as reflected on sheet TP16 that are outside the planned trail footprint, and a few more like that on sheets TP17 and TP18. These trees should not be removed. It appears this is intended only to allow construction of the dispersion area, but:

1. Trees absorb moisture and contribute significantly to dispersion of runoff, and
2. The dispersion area should be located on the other side of the trail.

Tree retention is a key issue with trailside residents, and every effort should be made to preserve existing trees.

5. Wetland buffers shown to cross trail and roads

The county has argued that the wetland exemption stipulated in SMC 21A.50.290(2)(a) means that wetland buffers stop at one side (generally the east side) of the trail. The code supports this as long as:

the isolated part of the buffer does not provide additional protection of the wetland and provides insignificant biological, geological or hydrological buffer functions relating to the wetland

This code also allows wetland buffers to terminate at roads.

The 60% plans show buffers continuing on the west side of the trail and across some neighborhood access roads. See for example sheets AL29, wetland 26C, and sheet AL34, wetland 28E. Since the land generally slopes downhill to the west, these isolated sections of buffer typically do not provide the above functions. Such buffers encumber the adjacent properties. The county should not apply one standard to itself and another to the properties adjacent to or bisected by the trail. Except where it can be shown by scientific analysis that these isolated buffer regions *do* have significant effect across the trail or road, these buffers should be shown as stopping at the edge of the trail or road, whichever applies.

6. Permits conditional on 90% plans

The SSDP should not be approved by the city until the various issues the public identifies with the 60% plans have been addressed, necessary redesign occurs, that redesign is reflected in the 90% plans, the public review cycle for the 90% plans has taken place, and any remaining design issues have been satisfactorily resolved. To the extent the clearing and grading permit is impacted by any redesign, the same thing applies. The city's permitting authority is the only real leverage the public currently has with the county, and to issue the permits before this process has been fully carried out takes away that leverage.

7. Government trampling on property rights

Many trailside property owners believe that they have fee interest in the rail corridor. They believe that the Judge Pechman decision was badly flawed, and that the ruling of the Federal Claims Court will ultimately be shown to be accurate. That is to say, the railroad easement was extinguished at the time of abandonment and replaced, through rail banking, by a surface easement for trail use only. The property owners have appealed the Pechman decision and believe they will ultimately prevail and show fee interest in the underlying land.

In addition there is the adverse possession issue in state court. Those property owners intend to show that the railroad, and thus the county, only acquired the right to control a narrow strip of land that the railroad actually used, not a 100 foot wide corridor.

However the county's trail design goes far beyond the mere installation of a hiking and biking trail. It uses substantial portions of the full corridor for wetland mitigation and restoration,

dispersion of stormwater runoff from the trail, construction of structures made necessary by shifting and widening the trail, etc. As a consequence, many long standing uses the adjacent property owners have made of the rail corridor are being compromised or destroyed. These uses, which the county calls "encroachments", have been there, with the railroad's tacit permission, in some cases for 100 years or more. Further, many mature trees are being unnecessarily removed. This would never be allowed if those property owners' fee interest in the rail corridor was recognized. And once that fee interest is affirmed in court, these property owners will feel justified in suing for damages.

Notwithstanding the claim that this is an "Essential Public Facility", this is a project being proposed on land where the permit applicant's claim of ownership is tenuous at best. The 60% design reflects a project that goes well beyond the mere installation of a hiking and biking trail. Both the city and county should recognize that they are at risk if a project of this scale is allowed to proceed.

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:28 AM
To: 'Reid Brockway'
Subject: RE: Comments protocol

Hi Reid,

I am working my way through my emails as quickly as possible. Everyone submitting a comment is receiving a confirmation of receipt as I get to the email.

Thanks,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Reid Brockway [mailto:waterat@comcast.net]
Sent: Thursday, January 26, 2017 11:17 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comments protocol

Lindsey,

People have been asking me if they should expect an acknowledgment when they submit comments on the ELST. Could you tell me what the protocol is that that?

Thanks,
Reid

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:17 AM
To: 'spiralcage@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Robert,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Robert Kirkpatrick [mailto:spiralcage@gmail.com]
Sent: Thursday, January 26, 2017 9:12 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Robert Kirkpatrick
1727 South Horton Street, #2
Seattle, WA 98144
(360) 292-3927

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:23 AM
To: 'richknox@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Rich,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Rich Knox [mailto:richknox@gmail.com]
Sent: Thursday, January 26, 2017 10:06 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Rich Knox
1111 18th Ave, Apt 2
Seattle, WA 98122
2062579922

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:18 AM
To: 'rick_pressley@yahoo.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Richard,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Richard Pressley [mailto:rick_pressley@yahoo.com]
Sent: Thursday, January 26, 2017 9:22 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity than in it's interim state, and will provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Richard Pressley
13716 Lake City Way NE #308
Seattle, WA 98125
206-713-1108

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:28 AM
To: 'ron.whitman@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Ron,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Ronald Whitman [mailto:ron.whitman@gmail.com]
Sent: Thursday, January 26, 2017 11:18 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Do not let a handful of self-interested NIMBY homeowners derail this critical link in the Sammamish Trail.

This trail isn't just about recreation. By providing a viable alternative to driving on roads, this trail will not only enable people to commute and do other trips by bike, it will also take cars off of our roadways, easing traffic congestion. Given that much of this trail is already built, completing this link is an extremely cost effective way of improving the overall transportation network in our area.

Please approve the permit, as proposed, with expediency.

Sincerely,
Ron Whitman
6117 34th Ave NW

Seattle, WA 98107

Ronald Whitman
6117 34th Ave NW
Seattle, WA 98107
206-985-8775

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:35 AM
To: 'rcwood88@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Rachel,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Rachel Wood [mailto:rcwood88@gmail.com]
Sent: Thursday, January 26, 2017 1:24 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

The ELST provides a valuable transportation and recreation outlet for many people, myself included. It's completion would enhance its accessibility, safety, and use. Providing bicycle and walking trails additionally encourages alternative means for commuting, which relieves traffic stress and increases the safety of roadways. It also decreases greenhouse emissions and environmental impacts that adversely affect human health.

Therefore, I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

Thank you,
Rachel

Rachel Wood
32nd ave
seattle, WA 98117
4436149972

Lindsey Ozbolt

From: Scott Bonjukian <scott.bonjukian@hotmail.com>
Sent: Thursday, January 26, 2017 12:14 PM
To: Lindsey Ozbolt
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I am regular cyclist in the region and am extremely optimistic for the connections and other benefits the ELST will provide. Please complete the ELST and approve permit # SSDP2016-00415 as submitted.

Approval will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. I occasionally bike on the eastside today, and completion of the trail will enable me to visit your community more and spend more tourist dollars in your local economy.

The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect AASHTO industry standards.

A 12-foot trail with 2-foot shoulders will create a safe trail with space for people running, walking and bicycling. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Scott Bonjukian
328 Bellevue Avenue E
Seattle, WA 98102
(360) 286-9519

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:35 AM
To: 'sean.pender@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Sean,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Sean Pender [mailto:sean.pender@gmail.com]
Sent: Thursday, January 26, 2017 1:40 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm a bicyclist who likes to ride all over the region, so even though I live in Seattle, I ride to Lake Forest Park to go to the bookstore, I ride to Newcastle or Renton to visit relatives and today I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards will allow for safe use by a variety of different users, including people who walk and bike.

The priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

I'm hoping that I can someday use this trail to more easily get to the Eastside and visit relatives and spend time and money in communities along the way.

Sincerely,

Sean Pender
6529 28th Ave NE
Seattle, WA 98115
206-526-2440

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:37 AM
To: 'Ted Davis'
Subject: RE: Comments on the Shoreline Substantial Development Plan

Dear Ted,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Ted Davis [mailto:ted.Davis@comcast.net]
Sent: Thursday, January 26, 2017 2:04 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Comments on the Shoreline Substantial Development Plan

Date: January 26, 2017

Lindsey Osbolt lozbolt@sammamish.us

Associate Planner

City of Sammamish

801 228th Avenue SE

Sammamish, Washington 98075

Request to Rescind the “Permit Application Complete” for the Shoreline Substantial Development Trail Segment 2B-SSDP2016-00415 of the Lake Sammamish Trail is based on comments to the Sammamish City Council and our review of the 60% plans.

Ted and Elaine Davis Ted.Davis@Comcast.net

3137 East Lake Sammamish Shore Lane SE

Sammamish, WA98075

See LANDSCAPE PLAN LA3 296+50

Our Property is located on PLAN AND PROFILE AL3 adjoining marker number 296.50 and on EXISTING CONDITIONS AND PLANS EX3. We have questions regarding the open and unresolved land ownership issue and the 60% REVIEW SUBMITTAL recently published and ask the Shoreline Substantial Development Permit no. 2016-00415 be rescinded until these questions are addressed and answered.

Comments to the Sammamish City Council Meeting on January 10, 2017

In the process of coming to decisions, on issues before you, much of the research and investigation is not performed by you individually, but by staff, consultants and other types of contractors working for the city.

That is why I believe, regarding the decision on December 13 that deemed the Sammamish “Trail Application Complete” you may not have all the information needed/required to make that decision regarding Corridor Parcel 292506-9007 of the East Lake Sammamish Trail Segment 2B.

If you have lived in your home for over 18 years the same structure prior owners lived in since 1968 and you recently discovered your house had a ROW line drawn, on the proposed 60% trail parcel maps, through the front entry of your home, through the upstairs bedroom walk in

closet and through most your carport.... **you would be concerned**, and I believe you would want to resolve the issue. **(See Images # 1 and # 2)**

This is especially important to us when the City Attorney's letter dated 14 December, 2016, references comments such as: "That real property included within the legal description of for the Corridor Parcel is under King County Control and use," "Free and clear of all claims by the Plaintiffs." This opinion also indicates that King County "is entitled to the exclusive use and possession of the area on, above, and below the surface for railroad purposes and incidental uses permitted under Washington law".

I believe you would agree, if you were us, you would want clarification as prescribed under SMC 20.05.040 *Application Requirements (1) (r) Verification of that property is in the exclusive ownership of the applicant.*

I mentioned earlier you may not have had all the information needed to make your decision. The information you are missing *is* Several Lake Sammamish home owners have ongoing litigation with King County, challenging the original ownership of portions of the ROW and the width of the easement used by the railroad. That was not mentioned, perhaps his office did not know, in the letter from the City Attorney to the City Council. The case is 15-2-20483-1 SEA

We are not part of the Pechman case or that litigation. Our purpose before you today is to request the Sammamish City Council rescind the Permit Application Complete until the litigation at the state court level, regarding who has clear title to the land in the "Corridor" has been resolved or we meet with representatives of King County to solve the land ownership and easement issues for the good of all.

Comments regarding questions to be answered in the 60% plans

We have reviewed the 60% plans and see in several areas close to us, the needs of the trail have been balanced while trying to minimizing the impact on the adjoining property owners.

1 Will the Concrete block wall remain after the trail construction has been completed?

As we review the CG (Clearing and Grading) we cannot determine if the concrete block wall plans simply have not been addressed, if there was an omission of the plans or what is the planned future for the wall. The concrete block wall is between 12 and 14 feet from the trail center line. The CG touches and splits a portion of the concrete block wall, but not the entire wall. The single vehicle lane where our house is located, is inside the ROW and has one way in and the same way out. The lane provides very limited parking for residents, delivery trucks, maintenance personnel and guests. Daily, our neighbors and our family use the area between the asphalt lane in front of our houses and the concrete block wall for parking. Most importantly, this area provides a wide spot on the lane for emergency vehicles and regularly

aids other vehicles in turning around instead of having to back all the way up the lane.
(See image # 3 Wall)

2 Will the CG (Clearing and Grading) remove the cedar fence and the plants that are currently between the concrete wall and the gravel trail during construction and what type of fence will replace the current fence?

Currently, as indicated on the 60% plans a permitted 6-foot tall cedar fence separates the gravel trail from the top of the wall. What is not noted on the plans is the 4-foot height from the top of the wall to the gravel parking area below. (See image # 3 Wall)

3 Will parking, continue along the concrete block wall, by marker 296.50 during construction?

Parking spaces along our lane are scarce under normal conditions. Any reduction in available parking will be burden on the home owners and or anyone wanting to park in along the lane. How does the King County plan to accommodate parking along East Lake Sammamish Shore Lane SE during the construction?

5. Stairs/steps (#5 at marker 296.60?) to the trail are shown, on the 60% plans as existing. How will the county accommodate a gate to the trail, currently accessed by stairs (#5 at marker 296.60)? Part of the stairs (#5) are outside of the ROW how will they be incorporated into the final plan? (See Image #4 Steps)

6. We do not see there are no plans for replacement steps on the east side of the trail close to marker 295.20 that lead to East Lake Sammamish Parkway SE. Was this an omission or simply the plans for steps have not been completed?

The current steps are used daily by residents on the entire lane homeowners to access their mailboxes and areas along the East Lake Sammamish SE Parkway for parking. If the steps are not replaced individuals must walk approximately ½ mile round trip on East Lake Sammamish Shore Lane SE and along a dangerous curved section of the Parkway to access their mail and overflow parking. At least 4 home owners are retired and the absence of a stairway for access to their mailboxes and parking will be burden to them. What can the county do to address this issue and accommodate these concerns? (See image # 5)

7 During construction how does the county plan to replace our access to the mailboxes and the parking areas, currently accessed by the stairs, along East Lake Sammamish Parkway SE?

Until these concerns, along with the land ownership issues, are addressed the City of Sammamish will not have enough information on which to determine if the application is complete and should not move forward with their final decision on the permit.

Images referenced above on next page

Image # 1 Photo of homes with ROW imposed;



Image #2 Davis home (3137) with ROW marker next to north side of home.



Image # 3 Concrete Block Wall with 6 ft. Cedar Fence



Image # 4 Steps to Trail



Image # 5 Steps from Trail to East Lake Sammamish Parkway SE



End of Images/End of Comments

Respectfully submitted,

Ted & Elaine Davis

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:11 AM
To: 't737p@aim.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Thomas,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Thomas Parsons [mailto:t737p@aim.com]
Sent: Thursday, January 26, 2017 1:50 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses of the trail... from running to riding a bike. Please approve the permit with the trail widths as proposed.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users, whether in a vehicle, on foot, or on a bike. The trail alignment, as proposed in the permit, provides sight lines for good approach visibility for people on the trail and people crossing the trail.

Please approve the permit, as proposed, with expediency.

Thomas Parsons
4210 Brooklyn Ave NE, 4
SEATTLE, WA 98105
4402429358

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:15 AM
To: 'wesleyducey@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Wesley,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Wesley Ducey [mailto:wesleyducey@gmail.com]
Sent: Thursday, January 26, 2017 7:54 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415. I've personally used the completed sections of trail for bike training for rides like the STP, RedBell 100, and hopefully a few new ones this summer.

Please approve the permit, as submitted.

Approval of the permit will advance completion of the 44 mile regional trail system between Seattle and the foothills of the Cascades. The trail, as proposed in the permit, will provide a safe walking and biking route through Sammamish. Please support the proposed trail widths, which reflect industry standards (AASHTO).

A 12ft trail with 2ft shoulders will create a safe trail with space for the various different uses... from people running to people riding a bike. Please approve the permit, including the proposed width of the trail.

Ensuring crossing priority for the trail is an important safety issue. Giving priority to the trail when roads and driveways cross the path will be intuitive for all users. The trail alignment, as proposed in the permit, provides sight lines for good visibility for people on the trail and people crossing the trail at trail intersections.

Please approve the permit, as proposed, with expediency.

Sincerely,

Wesley Ducey
4015 49th Ave SW
Seattle, WA 98116
206-395-7096

Lindsey Ozbolt

From: Lindsey Ozbolt
Sent: Friday, January 27, 2017 10:25 AM
To: 'zachary.b.williams@gmail.com'
Subject: RE: Please Approve the Permit for Segment 2B of the ELST

Dear Zach,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt
Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

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

From: Zach Williams [mailto:zachary.b.williams@gmail.com]
Sent: Thursday, January 26, 2017 10:41 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Please Approve the Permit for Segment 2B of the ELST

Dear

Dear city of Sammamish,

I'm writing to express my support for completing the ELST and approving permit SSDP2016-00415.

My wife and I made the choice to give up to sell our car, and biking is a main component of how we get around. Safe facilities that separate people biking from car traffic with more than paint allow us a vital lifeline for transportation -- not just for recreation. Completing this section of the trail would provide a connection that was hitherto unavailable to us.

The opposition I have heard to the permit has echoes of the uproar over the creation of the Burke Gilman Trail in Seattle in the 70s. The concerns ended up amounting to nothing, and the trail now provides an invaluable benefit to the thousands of people who use it every day.

Please approve the trail permit, as submitted, so that users of all ages and abilities can safely use the trail. A trail built to national standards (AASHTO), that is 12 ft, plus 2 ft gravel shoulders, will allow for safe use by a variety of different users, including people who walk and bike.

As proposed in the permit, priority at trail crossings should be given to the trail and trail users. Consistent crossing priority is intuitive and safe for users of both the trail and the driveways and roads that cross the trail.

When complete, the trail will be an even greater community amenity, and provide a safe option for people who bike to travel to and through Sammamish. Please complete the trail.

Sincerely,

Zach Williams
2031 Franklin Ave E
Seattle, WA 98102
3609906673

RE: Trail segment 2 b comment

Lindsey Ozbolt

Fri 1/27/2017 10:19 AM

To: cindeefj@gmail.com <cindeefj@gmail.com>;

Dear Cynthia,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415) and Inglewood Hill Parking Lot (SSDP2016-00414).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: cindeefj@gmail.com [mailto:cindeefj@gmail.com]
Sent: Thursday, January 26, 2017 9:36 AM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: Trail segment 2 b comment

Dear Ms. Ozbolt,

The split driveway that services Trail Markers 470-473 culminates at our residence, 1537 East Lake Sammamish Parkway NE, and appears will be most impacted by the recent Inglewood Hill Parking Lot/Trail 60% Plan. In the spirit of creating a "WIN-WIN" situation for both the county, community & residences (470-473) we respectfully request an opportunity to meet with the County Planners to review the following areas of concern. To that end, we are willing to provide input and participate financially, if necessary, to come up with a plan to either keep the existing ADA portion of the driveway or redesign it to successfully serve the needs of our common community.

ADA COMPLIANT

Our split driveway was built to accommodate our family members and guests with disabilities. Those requiring

wheel chairs, walkers, scooters or canes can only access the trail via the gently sloped portion of our driveway that is ADA Compliant and currently begins at the trail and angles towards the south of our home... the adjoining driveway is way too steep. Our garages are purposefully angled to the south as well, to provide smoother entry access and to maximize the "best use" of the tight space. Our home, dock and boat launch are also ADA Compliant.

We host the WOUNDED WAR VETERANS (and many other guests w disabilities) to provide them with a safe place to come and participate in water sports and enjoy the trail. Many arrive in vehicles w gate lifts needed to facilitate their wheelchairs & necessities. The vehicles access the property at the apex of East Lake Sammamish Pkwy NE then veer off to the left to access the ADA Compliant driveway, leaving them in a position to unload passengers, wheelchairs, etc... and safely exit the property to the right via the steep sloped portion of the driveway.

The Ingelwood Hill Parking Lot/Trail 60% Plan needs to keep the existing or redesign to include an ADA Compliant driveway to the Kokomo Place residences.

SAFETY

The ADA Compliant portion of our driveway also allows EMERGENCY "911" vehicles to enter and exit the property quickly. Any large vehicle...garbage trucks, mail, UPS or delivery trucks faces the same safety issue if the ADA Compliant portion of our driveway is removed. The apex of the driveway beginning on East Lake Sammamish Pkwy NE is both steep and narrow. If it were to become the sole entrance/exit, then these large vehicles would be forced to back up the driveway into the oncoming traffic on East Lake Sammamish putting many at risk.

Additionally, we have 17 children, ages 9 and under in our marker block (470-473), that play daily on the sport court. They access the trail as well as the property via the ADA Compliant portion of our driveway with their scooters, bicycles and wagons; the other portion of the driveway is way too steep. The circular flow of traffic serves those residences to the north and south of us as well while simultaneously keeping our community a safe place to be whether a child playing or a disabled person.

PRIVACY & SECURITY

The lack of privacy poses a potential threat to the homeowner. Although beautifully designed, the community parking lot provides a perfect setup for a "grab & Go" thief. Homeowners risk potential theft & vandalism due to the elimination of privacy landscaping. Additionally, homeowners are left feeling like anyone on the trail could be watching them at anytime. According to Google, there are 80 registered sex offenders in the zip code of 98074.

To protect the privacy of the homeowner we would like the option to keep existing or plant new landscaping between the public trail and our residences not to exceed a height limit of six (6) feet. We understand the need for visibility to the lake for all but to implement a plan that totally disregards the privacy of the homeowner is disrespectful. Increasing the landscaping height limit to "six (6) feet or less" would satisfy both sides of this

issue. Additionally, allowing the homeowner to install a security gate that aligns w the county's chain link fence would provide a deterrent and potentially lower the crime rate.

Thank you for the opportunity to express these concerns. We look forward to hearing from you with a meeting time and place that we can find solutions to these common community issues.

Respectfully,

Cynthia F. Jobe
1537 East Lake Sammamish Parkway NE(markers 470-473)
[425 985 5979](tel:4259855979)
E: cindeefj@gmail.com

redesigning the existing driveway is paramount. It needs to continue be ADA COMPLIANT.

RE: East Lake Samammish Trail - Stealing Land

Lindsey Ozbolt

Fri 1/27/2017 10:34 AM

To: Coleen Staples <coleenstaples@yahoo.com>;

Dear Coleen,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415) and Inglewood Hill Parking Lot (SSDP2016-00414).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

Lindsey Ozbolt

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Coleen Staples [mailto:coleenstaples@yahoo.com]
Sent: Thursday, January 26, 2017 12:59 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Subject: East Lake Samammish Trail - Stealing Land

Hello Lindsay,

As an Issaquah resident, I have enjoyed the use of our improved trails along East Lake Sammamish and throughout town. However, I am shocked, angry and worried about the plan to widen the trail at the expense of property owners. I am not alone in feeling that this is a dishonest interpretation of the law.

Our friends purchased property on the lake in section 415 with clearly declared property lines, which they paid for. It was appraised based on these property lines and all property owners should be paid for the land they are losing so the city can build an over-sized trail.

Can a precedence be sited for situation in the area where such a wide trail is built through a residential area? A video on the city website said they would not take the land unless owners approved of it. I know many owners do not approve but they are being forced to give it up. The city is confiscating property for the "good of the community" and making them tear down long standing buildings and 100 year old blueberry bushes. Frankly... regardless of the benefits for "the greater good"... this is a **dishonest interpretation of the law. Just because you can, doesn't mean you should.** How is this different than other

times in history when government or private investors took land from people who had few resources to defend their rights? This is shameful and outrageous.

I realize that improving the trail is a positive effort, but I ask that you pay owners for their land or find another way.

Concerned citizen,

Coleen Staples

RE: East Lake Sammamish Trail

Lindsey Ozbolt

Fri 1/27/2017 10:50 AM

To: Wizard <wizard11@isomedia.com>;

Dear Jen,

Thank you for contacting the City of Sammamish regarding the current Shoreline Substantial Development Permit Application for East Lake Sammamish Trail Segment 2B (SSDP2016-00415) and Inglewood Hill Parking Lot (SSDP2016-00414).

Your comments have been received and will be included in the project record. At the close of the comment period, all comments will be compiled and provided to King County for review and response. You will be included in future notices the City issues for this proposal.

Regards,

[Lindsey Ozbolt](#)

Associate Planner | City of Sammamish | Department of Community Development
425.295.0527

From: Wizard [mailto:wizard11@isomedia.com]
Sent: Thursday, January 26, 2017 2:36 PM
To: Lindsey Ozbolt <LOzbolt@sammamish.us>
Cc: James Stenson <wizard@isomedia.com>
Subject: East Lake Sammamish Trail

Ms Osbolt:

I am writing to you as a resident that lives in the "completed" section of the East Lake Sammamish Trail ("ELST") or better known as Section 1A in the City of Sammamish. Suffice it to say that the design and construction/paving of the trail resulted in well documented, seriously detrimental water run off issues for me and my neighbors. Many meetings were held; King County attended all of them along with their engineers. The City of Sammamish was also well represented at the meetings. A plan of action to try and mitigate the damaging water run off was agreed upon by all parties present....and then King County reneged on their verbal agreement, with no explanation other than "they weren't responsible" for the water issues that were created ONLY after they finished paving and regrading the trail. When Senator Andy Hill saw the video of the run off problems created by the King County design and build of the trail, his comment was "That is killing Salmon". Clearly the construction of the trail followed the design – so one can only come to the conclusion that the design and engineering is not very well done. And yet King County seems to think that they bear no responsibility. About the same attitude they take when asked to produce legal proof that they in fact "own" the land on which they are intending to pave.

To the credit of the City of Sammamish, they have done what they can to help us mitigate the water issues and try to keep from washing all of the dirt and rock from our driveway in the Lake Sammamish.

I will be happy to go on record as saying that King County has been unresponsive, unprepared and unwilling to do anything other than what they want to do. No consideration for anything other than their own poorly engineered agenda. Property rights, common safety, common courtesy are not issues that they care to address or in which to engage. Fooling the City of Sammamish once – shame on King County – Fooling the City of Sammamish into permitting a demonstrably poor design a second time – Shame on the City of Sammamish.

Feel free to reach out to Susan Cezar, as she is familiar with our plight in dealing with King County. I would be happy to discuss any/all of the above with you if you feel so inclined.

Regards,

James Stenson

This communication (including any attachments) may contain privileged or confidential information intended for a specific individual and purpose, and is protected by law. If you are not the intended recipient, you should delete this communication and/or shred the materials and any attachments and are hereby notified that any disclosures, copying or distribution of this communication, or the taking of any action based on it, is strictly prohibited.

Thank you