

**O'Donnell, Mary Beth**

---



CP16 # 0297

**From:** Orjiako, Oliver  
**Sent:** Thursday, September 18, 2014 1:59 PM  
**To:** O'Donnell, Mary Beth  
**Subject:** FW Infiltration Map from Commissioner work session this morning

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

For comp plan index!

---

**From:** Orjiako, Oliver  
**Sent:** Thursday, September 18, 2014 1:58 PM  
**To:** 'Eric Golemo'  
**Cc:** Alvarez, Jose; 'James Howsley'; Mike Odren  
**Subject:** RE: Infiltration Map from Commissioner work session this morning

Hello Eric:

Thank you for sharing the memo DEAB submitted to the Board of County Commissioners. The position is DEAB is clear. Staff will docket the memo as part of input into the 2016 plan update and I will follow up with the Board and the cities for all to weigh in. Our first observation is that the exhibits and sample area studied are relatively small and are all in the Battle Ground UGA. Again, thank you. Please, let me know if you have questions.

Best Regards,

Oliver

---

**From:** Eric Golemo [<mailto:EGolemo@SGAengineering.com>]  
**Sent:** Wednesday, September 17, 2014 10:05 PM  
**To:** Orjiako, Oliver  
**Cc:** Alvarez, Jose; 'James Howsley'; Mike Odren  
**Subject:** RE: Infiltration Map from Commissioner work session this morning

Oliver,

Attached is the memo DEAB submitted to the board it contains DEAB's position. Please let me know if you have any questions

Sincerely,  
Eric

Eric E Golemo, PE  
Owner / Director of Engineering and Planning  
**SGA Engineering, PLLC**  
Civil Engineering / Land Use Planning  
Development Services / Landscape Architecture  
2005 Broadway, Vancouver WA 98663  
Phone (360)993-0911  
Fax (360)993-0912  
Mbl (360)903-1056  
Email [EGolemo@sgaengineering.com](mailto:EGolemo@sgaengineering.com)

---

**From:** Orjiako, Oliver [<mailto:Oliver.Orjiako@clark.wa.gov>]  
**Sent:** Monday, September 15, 2014 3:38 PM  
**To:** 'Eric Golemo'  
**Cc:** Alvarez, Jose; James Howsley  
**Subject:** RE: Infiltration Map from Commissioner work session this morning

Hello Eric

Staff docketed the attached document as part of the 2016 comp plan index. I have reviewed the submitted exhibits and have not reach any conclusion but am interested on how you/DEAB would like to proceed Thank you.

Best Regards,

Oliver

---

**From:** Eric Golemo [<mailto:EGolemo@SGAengineering.com>]  
**Sent:** Wednesday, June 18, 2014 10:56 PM  
**To:** Orjiako, Oliver  
**Cc:** Alvarez, Jose; James Howsley  
**Subject:** Infiltration Map from Commissioner work session this morning

Oliver / Jose,  
Attached is the exhibit discussed this morning.  
Thanks,  
Eric

Eric E Golemo, PE  
Owner / Director of Engineering and Planning  
**SGA Engineering, PLLC**  
Civil Engineering / Land Use Planning  
Development Services / Landscape Architecture  
2005 Broadway, Vancouver WA 98663  
Phone (360)993-0911  
Fax (360)993-0912  
Mbl (360)903-1056  
Email [EGolemo@sqaengineering.com](mailto:EGolemo@sqaengineering.com)

This e-mail and related attachments and any response may be subject to public disclosure under state law.



## **DEVELOPMENT and ENGINEERING ADVISORY BOARD**

---

July 29, 2014

Clark County Board of Commissioners  
Attn: Jennifer Clark  
P.O. Box 5000  
Vancouver, WA 98666-5000

**Re: Comprehensive Plan Update - Infrastructure Percent Deduction**

To the Board of County Commissioners,

The Development and Engineering Advisory Board (DEAB) has reviewed documents and proposals regarding the current Comprehensive Plan Update. Members of the board have expressed concern regarding the assumed infrastructure deduction percentage being used to develop the plan. The commissioners asked DEAB to provide some info and input regarding the infrastructure deduction percentage. This letter is in response to that request.

Currently the assumed infrastructure deduction percentage rate is 27.7% for residential and 25% for Commercial and Industrial. This rate has not changed with updated stormwater ordinances. While these assumptions may be appropriate in areas of well draining soils, we believe they underestimate the impact in areas of poorly draining soils which is where most of the undeveloped portion of the urban growth area is located. DEAB has conducted some research with the help of other local engineering consultants. We have attached some sample infrastructure percent calculations in soils with fairly low infiltration rates similar to the areas at the fringe of the urban growth boundary. First we looked at a few theoretical examples prepared by SGA Engineering or the county during the previous stormwater code update. On some, it was assumed LID was feasible, but in low rate soils this may not be the case, or utilizing LID may only compensate for the new LID flow standard.

With DOE forested standard with low infiltration the infrastructure % on these three example projects are: **39%, 51%, and 32%**.

Next we obtained a few calculations on sample projects from several local consultants. These examples do not account for the new LID flow standard. It is assumed this will add cost but not likely take additional area.

Sterling Design provided a calculation for Whispering Pines subdivision. Under the old stormwater rules the infrastructure is 31% with the current adopted rules it goes to 34.5%.

Olson Engineering provided 4 examples in the Battleground area. No exhibits are attached but could be provided upon request.

The summary is below:

18 Lot subdivision - 42%

167 lot Subdivision - 25%

117 Lot Subdivision - 32%

26.3Ac Commercial - 34%

In conclusion DEAB feels the 27.7% is low and doesn't accurately reflect the percentage of land lost to infrastructure. The average infrastructure percentage in the 8 examples we looked at was about 36.2%. It should be noted that not all land brought into the urban growth boundary is in poorly drained soil. But based on a weighted average 32-35% is likely a more accurate range for the assumed Infrastructure Percent Deduction.

Please let us know if you have any questions.

Respectfully,



Michael Odren, R.L.A.

Chair, Development and Engineering Advisory Board



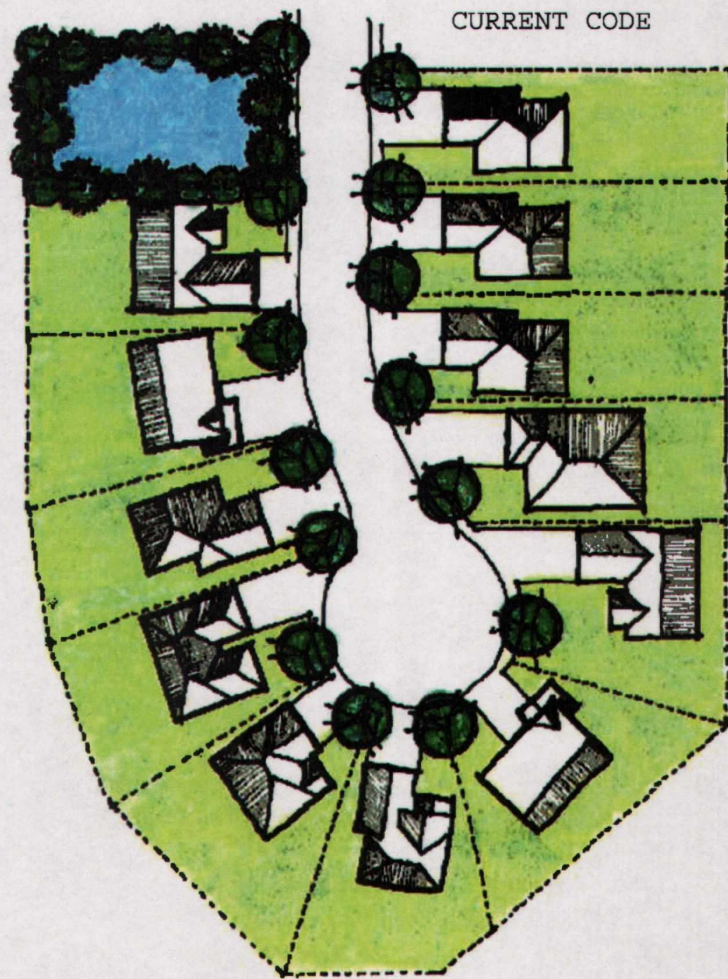
Eric E. Golemo, PE

Sub-Committee Chair, Development and Engineering Advisory Board

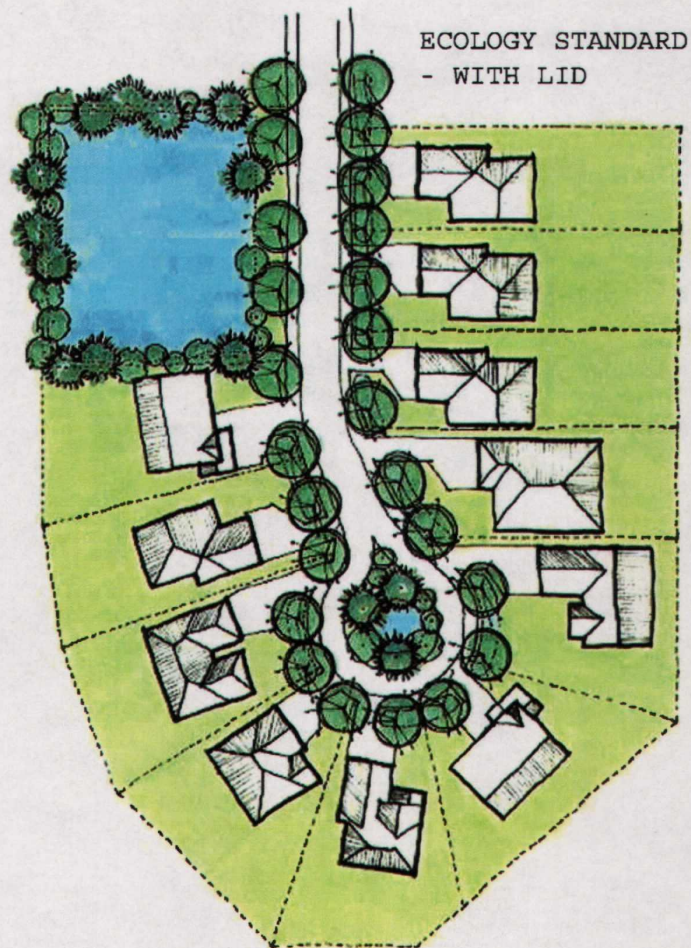
**Attachments and Supporting Information:**

- 1) Site use per code Table Projects 1-3
- 2) Project 1 - Figure
- 3) Project 2 - Figure
- 4) Project 3 - Figure
- 5) Email from Peter Tuck of Olson Engineering (7-2-2014) - Project examples
- 6) Email from Joel Stirling of Sterling Design (7-10-2014) - Project example

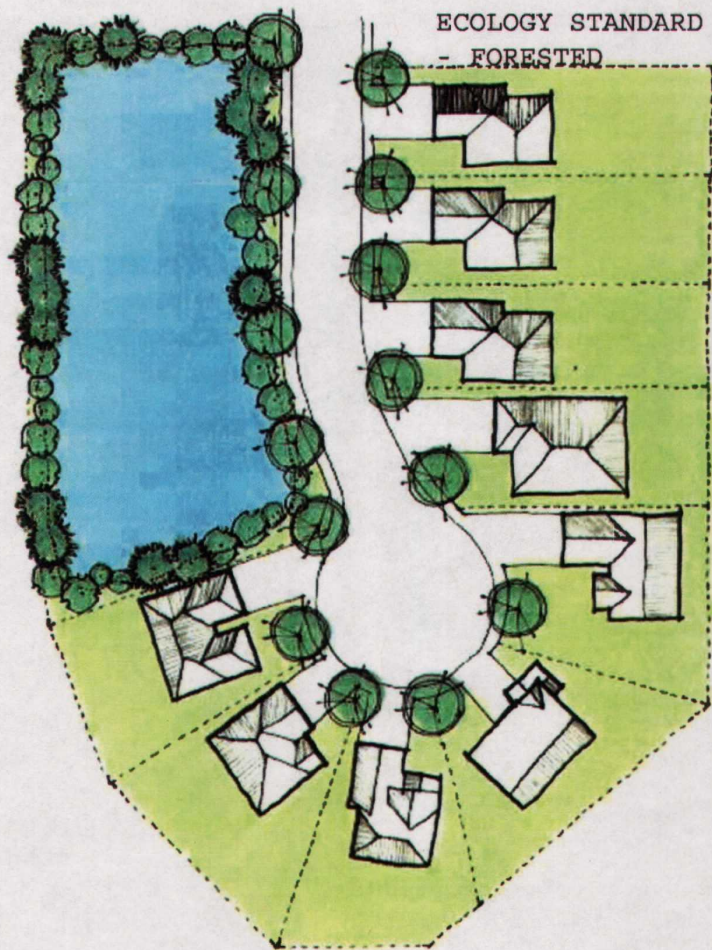
<b>PROJECT</b>	<b>APPLICABLE CODE</b>	<b>LOTS</b>	<b>STORM</b>	<b>INFRASTRUCTURE</b>	<b>TOTAL</b>
1	<b>CURRENT CODE</b>	12	6%	14%	20%
	<b>ECOLOGY STANDARD WITH LID</b>	11	14%	11%	25%
	<b>ECOLOGY STANDARD - FORESTED</b>	9	25%	14%	39%
2	<b>CURRENT CODE</b>	55	5%	28%	31%
	<b>PROPOSED ORDINANCE - PASTURE</b>	51	12%	24%	38%
	<b>PROPOSED ORDINANCE - FORESTED</b>	39	29%	22%	51%
3	<b>COMMERCIAL - CURRENT CODE</b>	-	12%	4%	16%
	<b>COMMERCIAL - PROPOSED ORDINANCE</b>	-	28%	4%	32%



CURRENT CODE

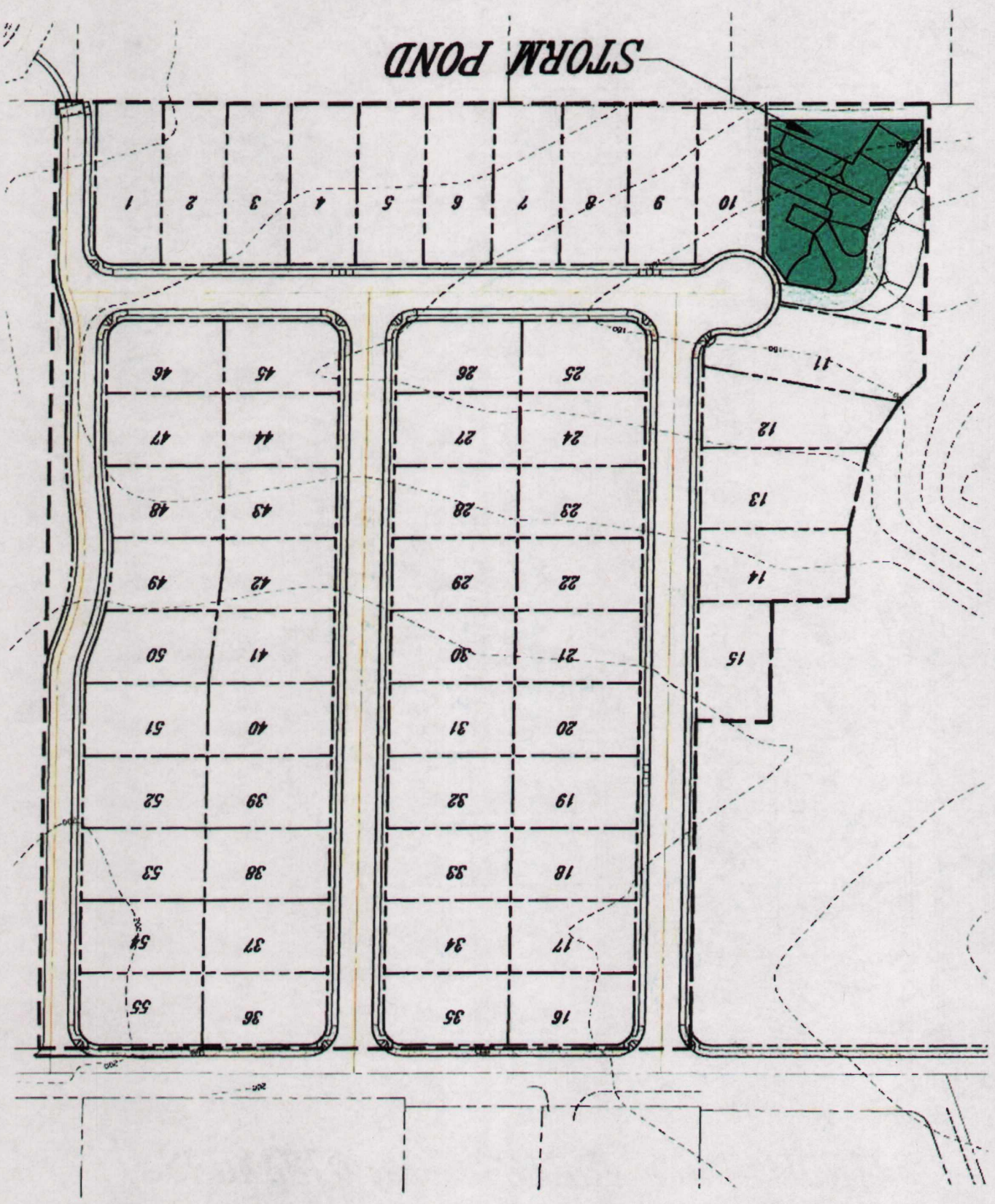


ECOLOGY STANDARD  
- WITH LID



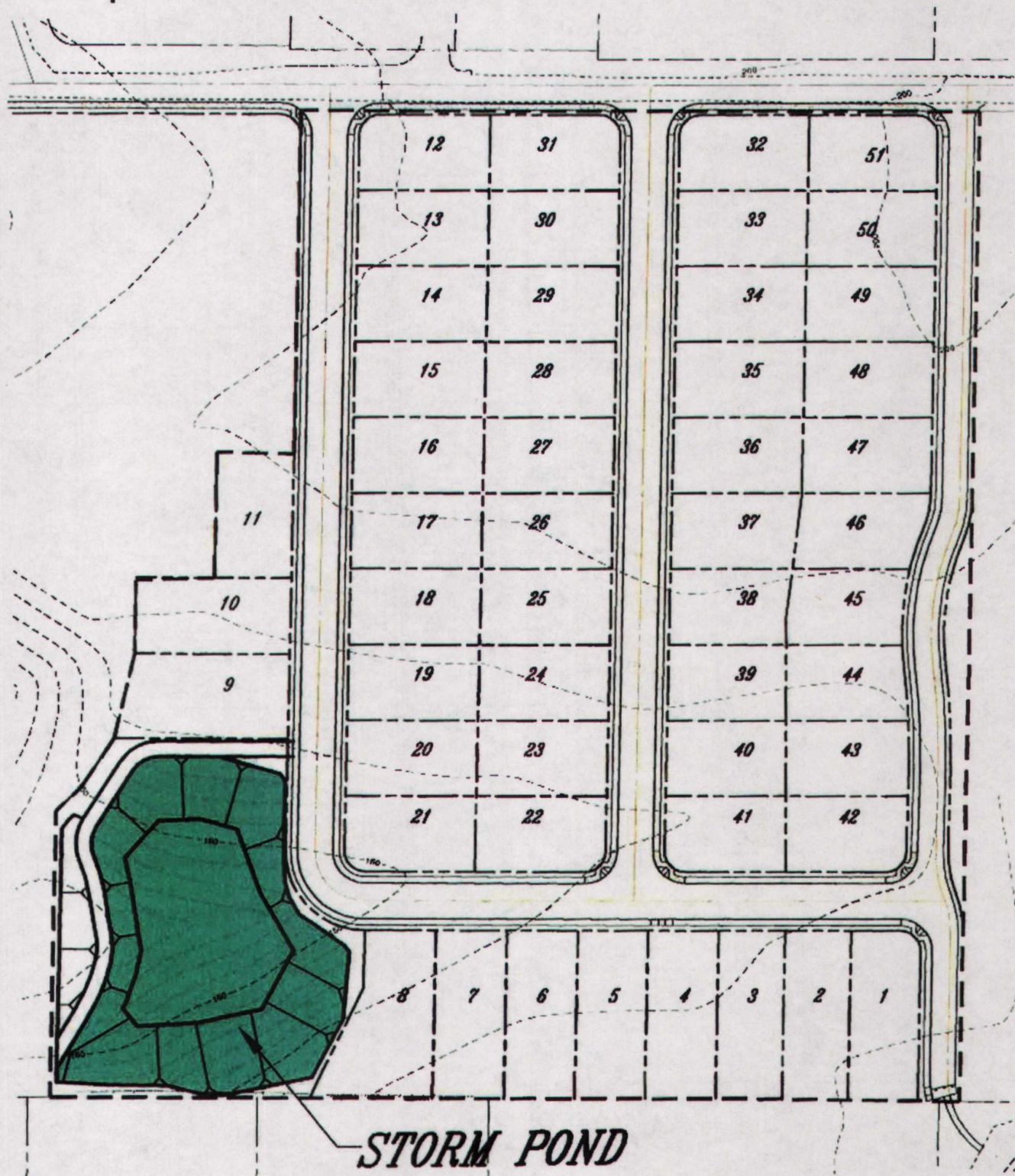


**STORM POND**

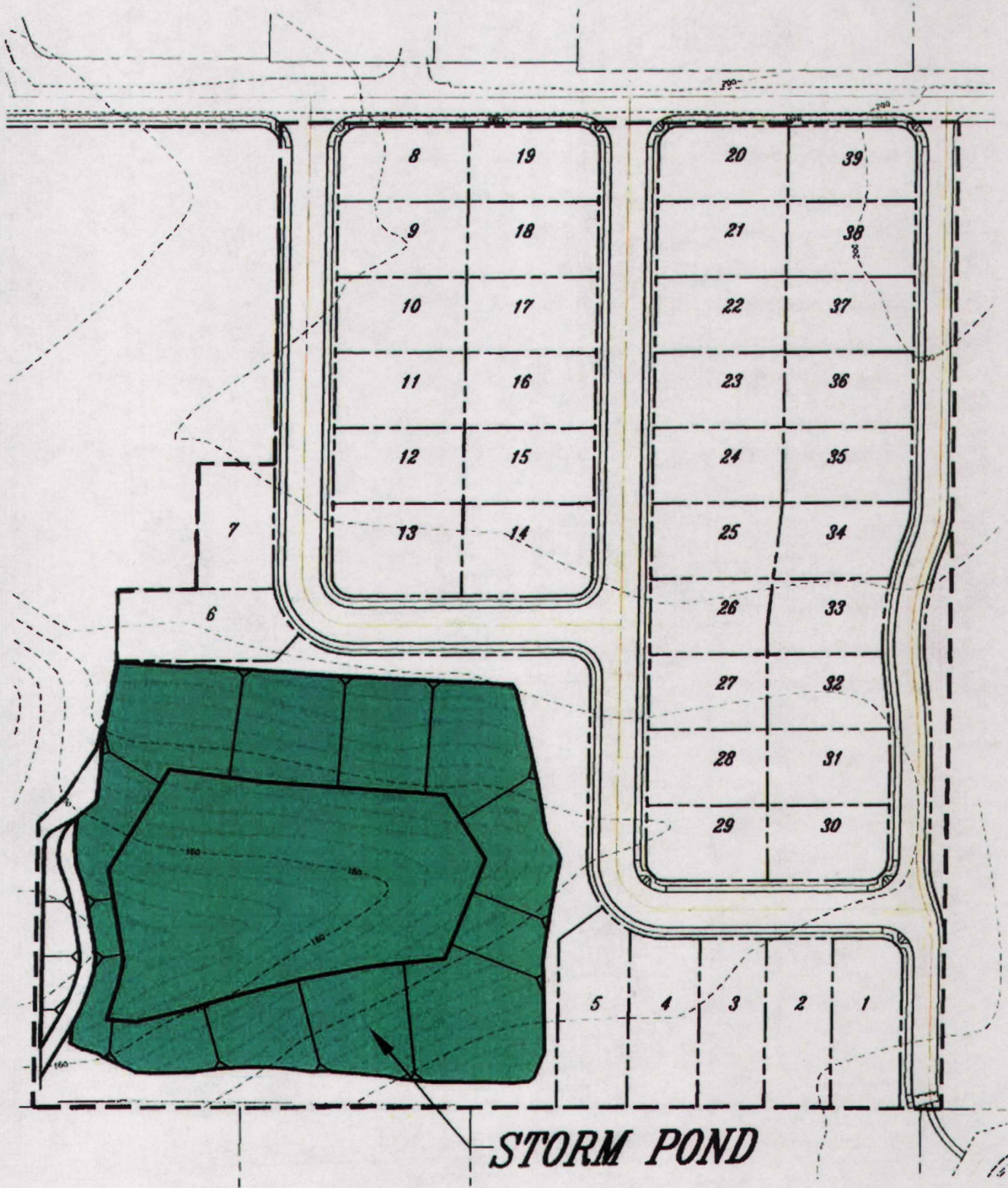


**POND UNDER CURRENT STORM ORDINANCE**

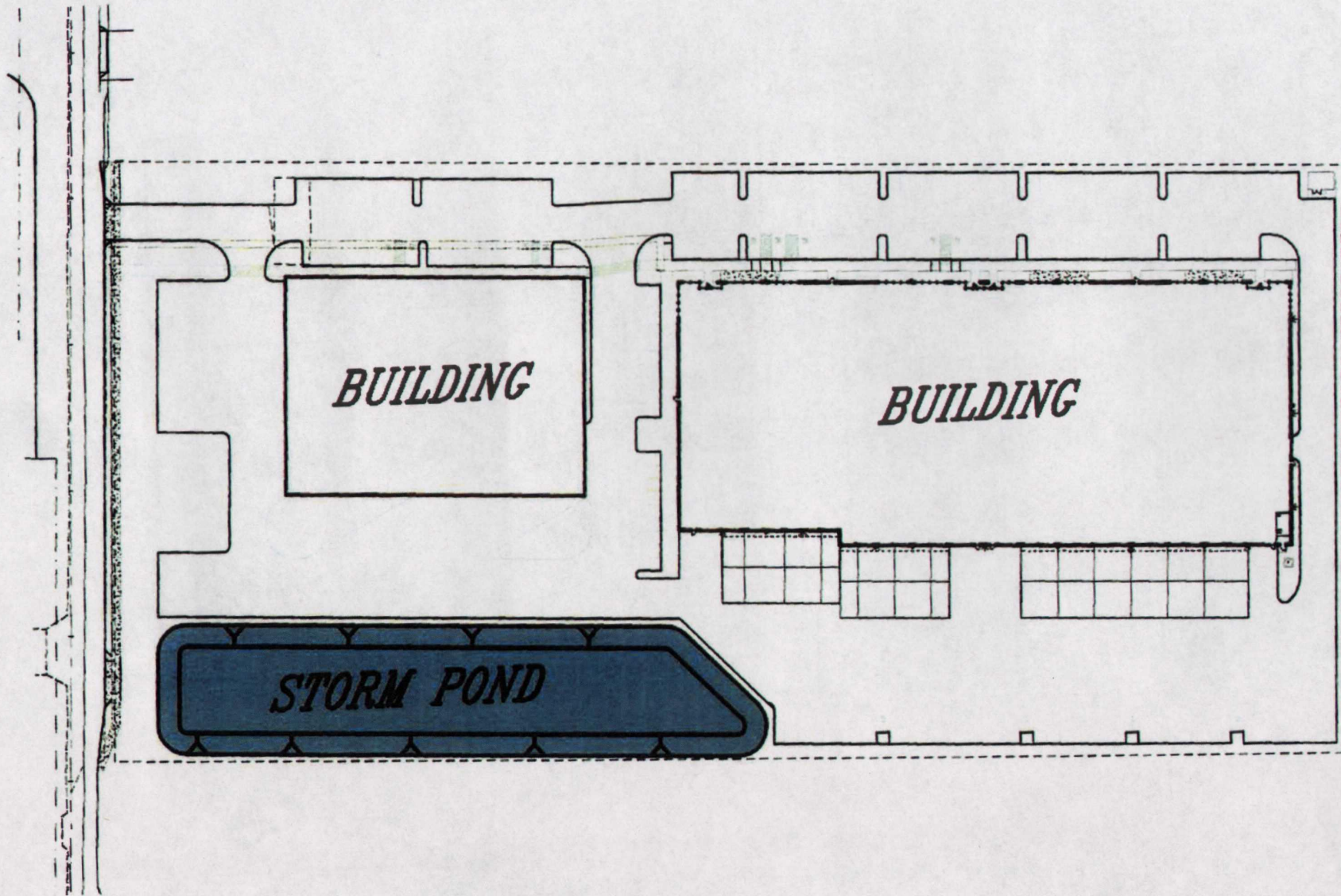
# POND UNDER PROPOSED STORM ORDINANCE (PREDEVELOPED PASTURE CONDITION)



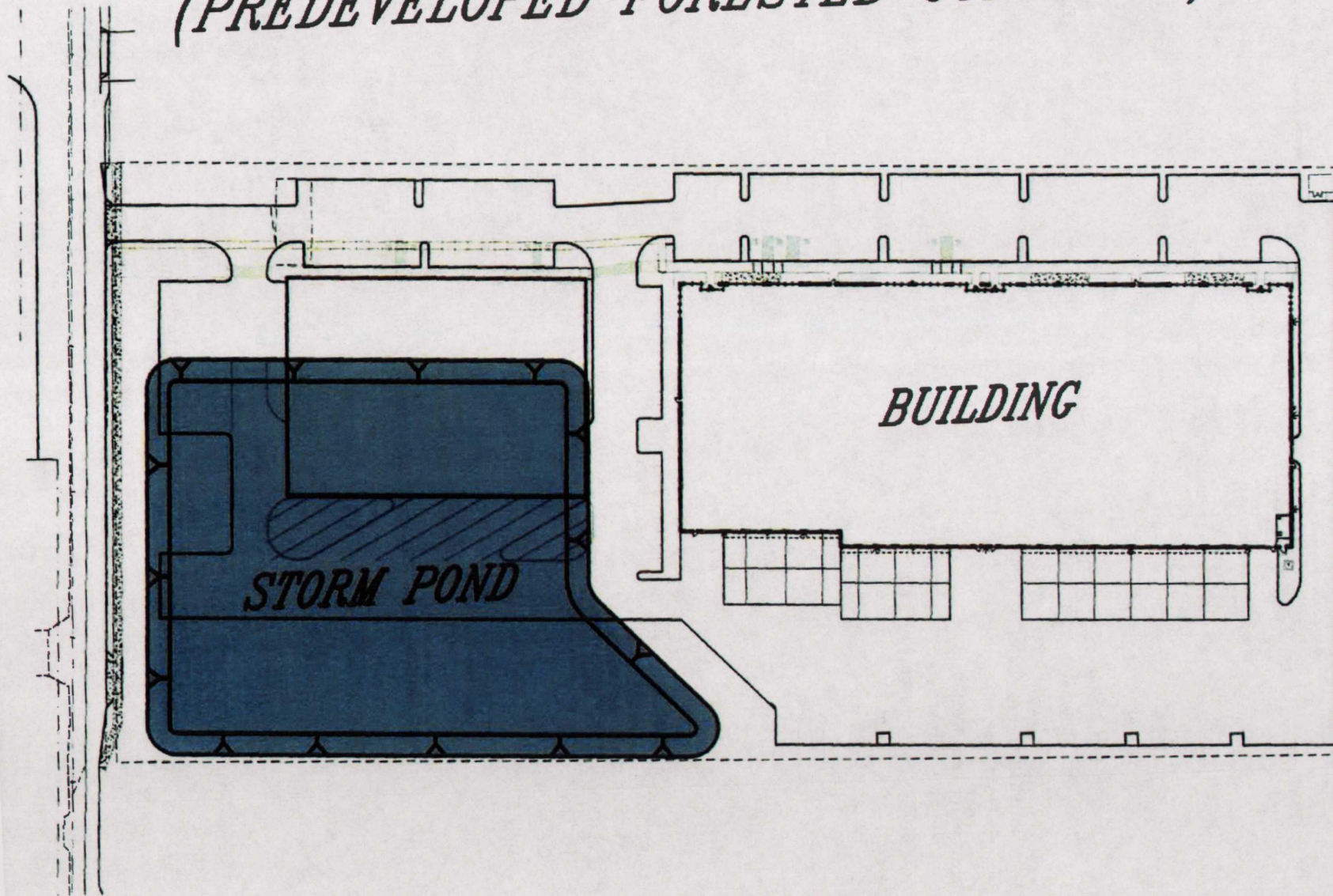
# POND UNDER PROPOSED STORM URDINANCE (PREDEVELOPED FORESTED CONDITION)



*POND UNDER CURRENT STORM ORDINANCE*



*POND UNDER PROPOSED STORM ORDINANCE  
(PREDEVELOPED FORESTED CONDITION)*



**Mike Odren**

---

**From:** Peter Tuck [peter@olsonengr.com]  
**Sent:** Wednesday, July 02, 2014 1:54 PM  
**To:** Jamie Howsley; Eric Golemo  
**Cc:** Mike Odren  
**Subject:** RE: Comp Plan update infrastructure deduction

Jamie/Eric,

Regarding the area of a project impacted by road ROW and stormwater facilities in the Battle Ground area, I have the following:

18 Lot subdivision - 42%  
167 lot Subdivision - 25%  
117 Lot Subdivision - 32%  
26.3Ac Commercial - 28% with no frontage since City did that project. If that area was included %age would increase to approximately 34%

These calculations take the developable area only and do not include wetland areas that are not impacted.

Let me know if you have any questions.

Peter.

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

**From:** Jamie Howsley [mailto:[jamie.howsley@jordanramis.com](mailto:jamie.howsley@jordanramis.com)]  
**Sent:** Tuesday, July 01, 2014 3:38 PM  
**To:** Eric Golemo; Peter Tuck  
**Cc:** Mike Odren  
**Subject:** RE: Comp Plan update infrastructure deduction

Holsinger is giving me something tomorrow. He thinks 40%

Please excuse spelling mistakes as is sent with Good via my iPhone ([www.good.com](http://www.good.com))

**CONFIDENTIALITY NOTICE:** Please do not read, copy, or disseminate this communication unless you are the intended addressee. This e-mail may contain confidential and/or privileged information intended only for the addressee. If you have received this in error, please notify me via return e-mail.

**TAX ADVICE NOTICE:** IRS Circular 230 requires us to advise you that if this communication or any attachment contains any tax advice, the advice is not intended to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties or (ii) promoting, marketing, or recommending any transaction, plan, or arrangement. A taxpayer may rely on professional advice to avoid tax-related penalties only if the advice is reflected in a comprehensive tax opinion that conforms to stringent requirements. Please contact us if you

have any questions about this requirement, or would like to discuss preparation of an opinion that conforms to these IRS rules.

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

**From:** Eric Golemo [mailto:Egolemo@SGAengineering.com]  
**Sent:** Tuesday, July 01, 2014 03:34 PM Pacific Standard Time  
**To:** Peter Tuck  
**Cc:** Mike Odren; Jamie Howsley  
**Subject:** RE: Comp Plan update Infrastructure deduction

Were you able to come up with anything? I would like to respond to the Commissioners this week. Our office is working on some info. But, we don't have a lot going on in Battleground right now under the new code. Do you have any examples you could contribute.

**From:** Eric Golemo [mailto:Egolemo@SGAengineering.com]  
**Sent:** Thursday, June 26, 2014 4:05 PM  
**To:** Peter Tuck (peter@olsonengr.com)  
**Cc:** Mike Odren (mikeo@olsonengr.com); James Howsley (Jamie.howsley@jordanramis.com)  
**Subject:** Comp Plan update Infrastructure deduction

Peter,

Jamie and I attended the hearing on the comp plan. One of the items we are working on is the infrastructure deduction. It is currently set at 27%.

This hasn't changed with the Stormwater code. We have argued that the 27% is likely adequate where you have good to moderately draining soils but not in poorly drained soils. The commissioners asked for some supporting documentation. Our office is working on some info. But, we don't have a lot going on in Battleground right now under the new code. Do you have any examples you could contribute.

Thanks,

Eric

Eric E. Golemo, PE  
Owner / Director of Engineering and Planning

SGA Engineering, PLLC

Civil Engineering / Land Use Planning

Development Services / Landscape Architecture  
2005 Broadway, Vancouver WA 98663  
Phone: (360)993-0911  
Fax: (360)993-0912

Mbl: (360)903-1056  
Email: EGolemo@sgaengineering.com

**Mike Odren**

---

**From:** Joel Stirling [joel@sterling-design.biz]  
**Sent:** Thursday, July 10, 2014 1:16 PM  
**To:** 'Eric Golemo'  
**Cc:** 'James Howsley'  
**Subject:** RE: Whispering Pines Infrastructure Deduction-Battle Ground

The stormwater management facilities would increase from 9% of the project up to 12.5% project under that scenario. Total infrastructure would go from 34% up to 37.5% if the park dedication is included or from 31% up to 34.5% without the park.

Sincerely,

Joel Gregory Stirling, P.E.  
STERLING DESIGN, INC.  
Ph. (360) 759-1794  
Fax. (360) 759-4983  
Mbl.(360) 600-5666

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

**From:** Eric Golemo [mailto:Egolemo@SGAengineering.com]  
**Sent:** Thursday, July 10, 2014 1:03 PM  
**To:** 'Joel Stirling'  
**Cc:** James Howsley  
**Subject:** RE: Whispering Pines Infrastructure Deduction-Battle Ground

Do you have an updated infrastructure percentage I can plug in?  
Thanks,  
Eric

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

**From:** Joel Stirling [mailto:joel@sterling-design.biz]  
**Sent:** Thursday, July 10, 2014 12:56 PM  
**To:** 'Eric Golemo'  
**Cc:** 'Joel Rutherford'  
**Subject:** RE: Whispering Pines Infrastructure Deduction-Battle Ground

Good Afternoon Eric,

Based on the model run that I put together in the WHM2012 program, utilizing the Auto Pond feature, the pond size went from 1.07 acres up to 2.19 acres which is roughly double the size (2.05 times larger). It is my experience that the Auto Pond feature is very conservative and the pond likely can be optimized further but even with the optimization it appears that there is a significant increase in required detention storage between the old and the new stormwater requirements for the Whispering Pines Subdivision. Let me know if there is anything else I can assist you with.

Sincerely,

Joel Gregory Stirling, P.E.  
STERLING DESIGN, INC.  
Ph. (360) 759-1794  
Fax. (360) 759-4983



Mbl.(360) 600-5666

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

From: Eric Golemo [mailto:Egolemo@SGAengineering.com]  
Sent: Thursday, July 10, 2014 10:37 AM  
To: 'Joel Stirling'  
Cc: Joel Rutherford  
Subject: RE: Whispering Pines Infrastructure Deduction-Battle Ground

Joel,  
Were you able to get an estimate under the new code?  
Thanks,  
Eric

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

From: Eric Golemo [mailto:Egolemo@SGAengineering.com]  
Sent: Wednesday, July 02, 2014 3:50 PM  
To: 'Joel Stirling'  
Subject: RE: Whispering Pines Infrastructure Deduction-Battle Ground

Thanks.

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

From: Joel Stirling [mailto:joel@sterling-design.biz]  
Sent: Wednesday, July 02, 2014 3:46 PM  
To: 'Eric Golemo'; 'Jamie Howsley'; peter@olsonengr.com  
Cc: mikeo@olsonengr.com  
Subject: RE: Whispering Pines Infrastructure Deduction-Battle Ground

I am stuck in meetings for the rest of the afternoon today but will see if I or one of my staff can set up a model run in WWHM12 in the morning for comparison. As you all are aware, the requirement to utilize "old growth forest" as the pre-developed site condition is likely what will have the biggest impact on the size of the pond. I will keep you posted.

Sincerely,

Joel Gregory Stirling, P.E.  
STERLING DESIGN, INC.  
Ph. (360) 759-1794  
Fax. (360) 759-4983  
Mbl.(360) 600-5666

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

From: Eric Golemo [mailto:Egolemo@SGAengineering.com]  
Sent: Wednesday, July 02, 2014 3:40 PM  
To: 'Jamie Howsley'; peter@olsonengr.com  
Cc: mikeo@olsonengr.com; Joel Stirling  
Subject: RE: Whispering Pines Infrastructure Deduction-Battle Ground

Do we have a calculation for the new code?  
Joel, have you looked at this?

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

From: Jamie Howsley [mailto:jamie.howsley@jordanramis.com]  
Sent: Wednesday, July 02, 2014 2:54 PM

To: Eric Golemo; peter@olsonengr.com  
Cc: mikeo@olsonengr.com; Jamie Howsley  
Subject: Whispering Pines Infrastructure Deduction-Battle Ground

Eric and Peter,

Attached is the infrastructure deduction for Holsinger's Whispering Pines subdivision. It is approved however under the old stormwater rules. I am being told that the stormwater would likely double if under the new rules. As you can see with the park it is 34% without 31%.

Best,

Jamie

JAMES D. HOWSLEY | Attorney  
Jordan Ramis PC | Attorneys at Law | Celebrating 50 years WA Direct:  
360-567-3913  
OR Direct: 503-598-5592  
OR Main: 503-598-7070

CONFIDENTIALITY NOTICE: Please do not read, copy, or disseminate this communication unless you are the intended addressee. This e-mail may contain confidential and/or privileged information intended only for the addressee. If you have received this in error, please notify me via return e-mail.

TAX ADVICE NOTICE: IRS Circular 230 requires us to advise you that if this communication or any attachment contains any tax advice, the advice is not intended to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties or (ii) promoting, marketing, or recommending any transaction, plan, or arrangement. A taxpayer may rely on professional advice to avoid tax-related penalties only if the advice is reflected in a comprehensive tax opinion that conforms to stringent requirements. Please contact us if you have any questions about this requirement, or would like to discuss preparation of an opinion that conforms to these IRS rules.

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

From: MPC6000-VAN@jordanramis.com [mailto:MPC6000-VAN@jordanramis.com]  
Sent: Wednesday, July 02, 2014 2:51 PM  
To: Jamie Howsley  
Subject:

This E-mail was sent from "MPC6000-VAN" (Aficio MP C6000).

Scan Date: 07.02.2014 14:50:45 (-0700)  
Queries to: MPC6000-VAN@jordanramis.com