

Scatter Creek Aquifer Area Septic System Management Project

2nd Community Workshop
April 23, 2014 6:30-8:30 pm
Rochester Middle School



THURSTON COUNTY
WASHINGTON
SINCE 1852

Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>

Scatter Creek Citizen's Committee

- ❖ Sandra Adix
- ❖ Tom Budsberg
- ❖ Dave Dafoe
- ❖ Karen Deal
- ❖ Lowell Deguise
- ❖ Marlene Hampton
- ❖ Chanele Holbrook
- ❖ Roger Max
- ❖ Bruce Morgan
- ❖ Amanda Neice
- ❖ Maureen Pretell
- ❖ Gene Weaver



Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>

THURSTON COUNTY
Scatter Creek Aquifer
Study Area Boundary 2012

 Scatter Creek Study Area

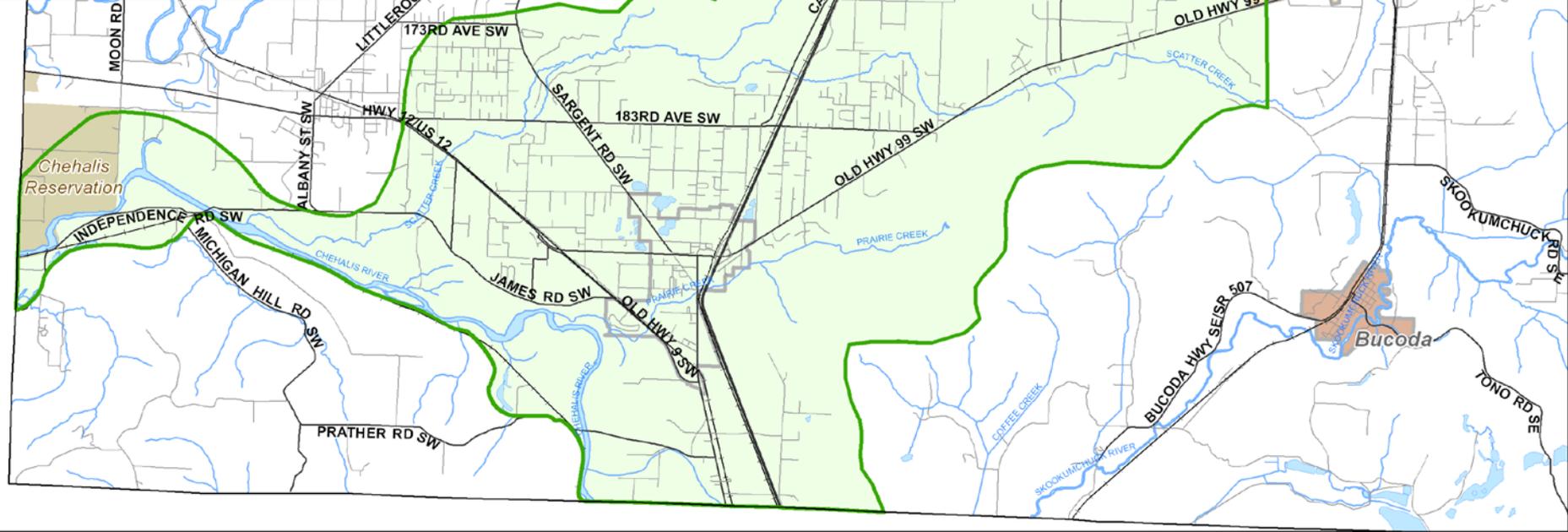


Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related persons make no warranty, expressed or implied, regarding the accuracy, completeness or correctness of any information described on this map. We do not accept liability for any damage or injury caused by the use of this map.

To the fullest extent permissible pursuant to applicable law, Thurston County disclaims all warranties, express or implied, including, but not limited to, implied warranties of merchantability, data fitness for a particular purpose, and non-infringement of proprietary rights.

Under no circumstances, including, but not limited to, negligence, shall Thurston County be liable for any direct, indirect, incidental, special or consequential damages that result from the use of, or the inability to use, Thurston County materials.

Map created by iah on 3/16/2012



THURSTON COUNTY
WASHINGTON
 SINCE 1882

Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>

Scatter Creek Aquifer

- ❖ Very vulnerable groundwater supply
- ❖ Sole source of water for more than 1,000 public water systems and single family wells
- ❖ Over 18,000 people rely on the water



Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>

- ❖ Areas in the aquifer have been contaminated by land uses in past
- ❖ Policies and regulations put in place have helped protect water
- ❖ The area is transitioning from agricultural to rural residential



Violet Prairie



Septic System Management

- ❖ Focus of this project is looking at the impacts of septic systems on the aquifer.
- ❖ Have opportunity to examine future impacts and take action to protect safe drinking water



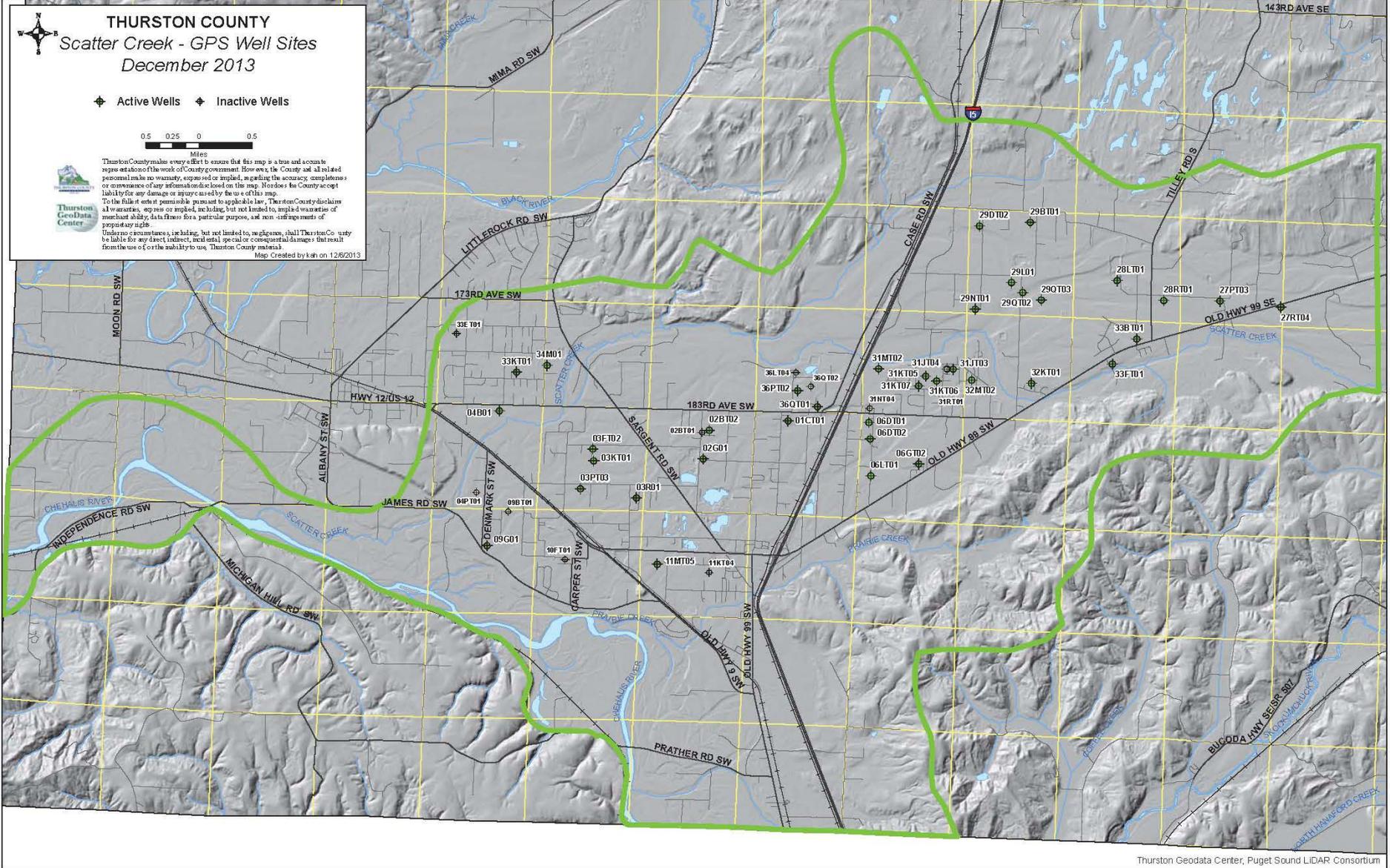


THURSTON COUNTY
Scatter Creek - GPS Well Sites
December 2013

- ◆ Active Wells
- ◆ Inactive Wells



Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map. To the fullest extent permissible pursuant to applicable law, Thurston County disclaims all warranties, express or implied, including, but not limited to, implied warranties of merchantability, fitness for a particular purpose, and non-infringement of copyright or other rights. Under no circumstances, including, but not limited to, negligence, shall Thurston County be liable for any direct, indirect, incidental, special or consequential damages that result from the use of or the inability to use Thurston County materials. Map Created by kahn on 12/6/2013

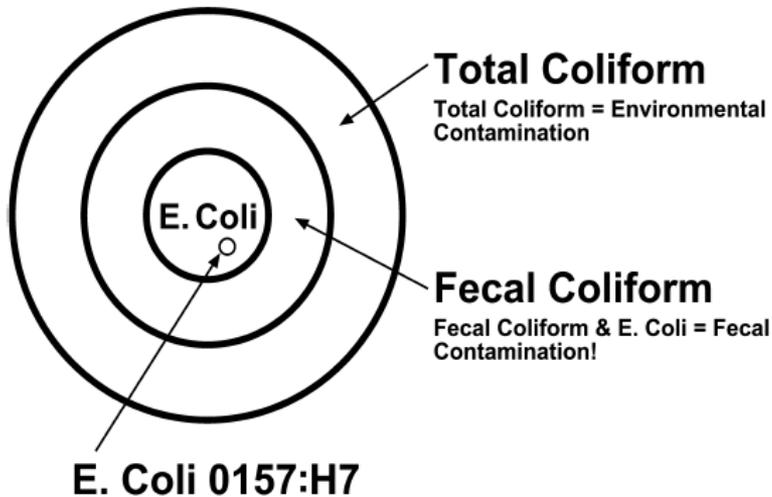


Well Monitoring Network

Health Effects

Coliform Bacteria

TOTAL COLIFORM, FECAL COLIFORM AND E. COLI



Nitrates

- ❖ Infants
- ❖ Pregnant women
- ❖ Immune-compromised

- ❖ Standard 10 mg/l
- ❖ Precautions at 5 mg/l

Indicators

Other contaminants could be present

- Viruses
- Pharmaceuticals
- Pesticides



Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>

Monitoring Results

...good news and bad news

- ❖ Since 2008 nitrate levels have dropped throughout the aquifer
- ❖ Oct 2013 sampling saw increases in nitrates and some unsatisfactory coliform bacteria samples



Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>



THURSTON COUNTY
Scatter Creek Sampling Results
2008-2009

Nitrate Results

● 0.1 to 1.9 mg/L	● 4.0 to 5.9 mg/L	● > 10 mg/L
● 2.0 to 3.9 mg/L	● 6.0 to 9.9 mg/L	

Aerial Photography Taken May 2006

1250 625 0 1250
Feet

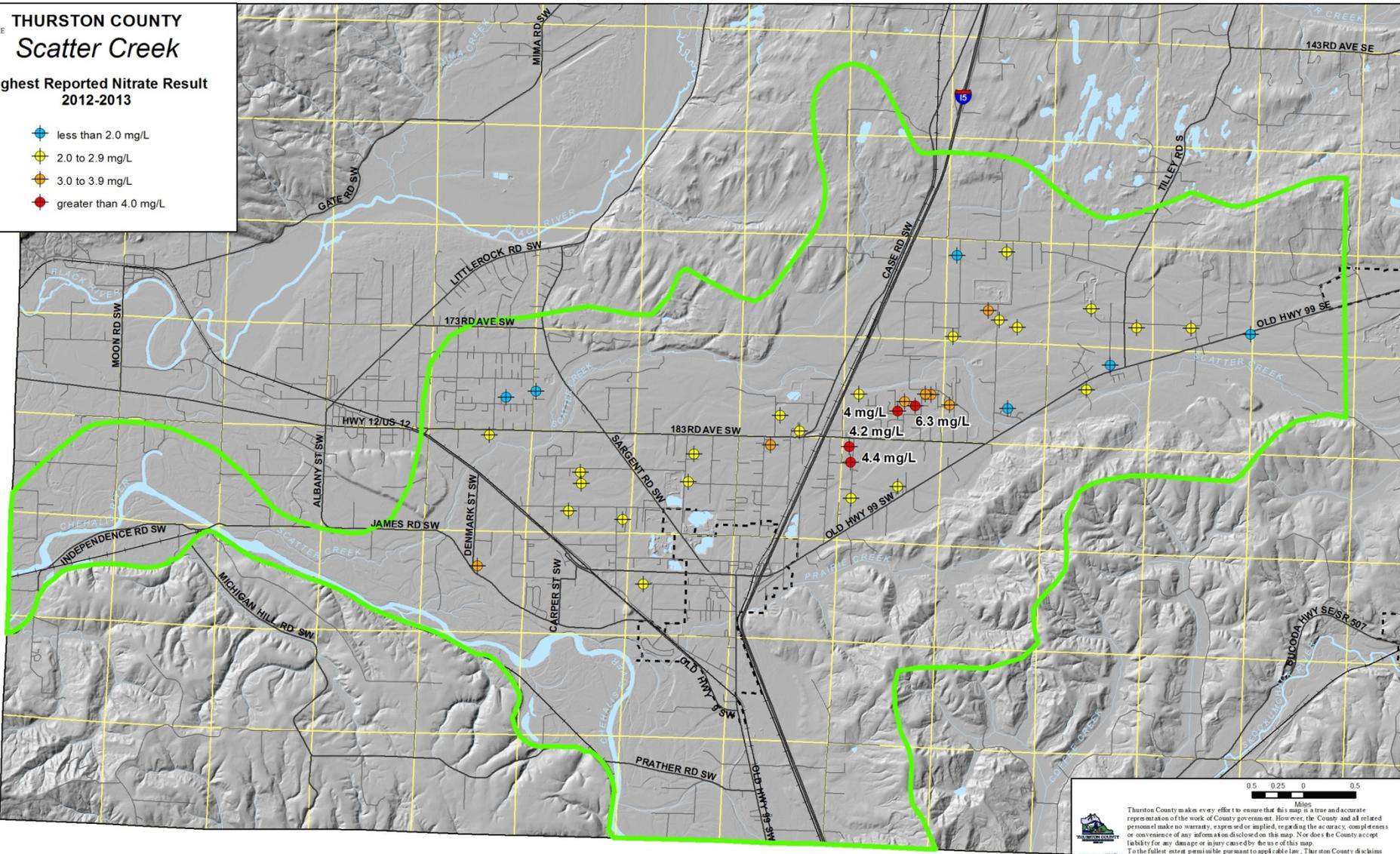
Thurston County, Washington is pleased to make these results available to the public. The data was collected by the Thurston County Health Department and is provided for informational purposes only. The data is not intended to be used for legal or regulatory purposes. The data is not intended to be used for legal or regulatory purposes. The data is not intended to be used for legal or regulatory purposes.



THURSTON COUNTY Scatter Creek

Highest Reported Nitrate Result 2012-2013

- ◆ less than 2.0 mg/L
- ◆ 2.0 to 2.9 mg/L
- ◆ 3.0 to 3.9 mg/L
- ◆ greater than 4.0 mg/L



0 0.25 0.5
Miles



Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map. To the fullest extent permissible pursuant to applicable law, Thurston County disclaims all warranties, express or implied, including, but not limited to, implied warranties of merchantability, data fitness for a particular purpose, and non-infringement of proprietary rights. Under no circumstances, including, but not limited to, negligence, shall Thurston County be liable for any direct, indirect, incidental, special or consequential damages that result from the use of or the inability to use, Thurston County materials.
Map Created by kah on 2/21/2014

THURSTON COUNTY Scatter Creek Sample Sites 2013

Fecal Coliform & E. Coli Samples 2013
Sample Sites

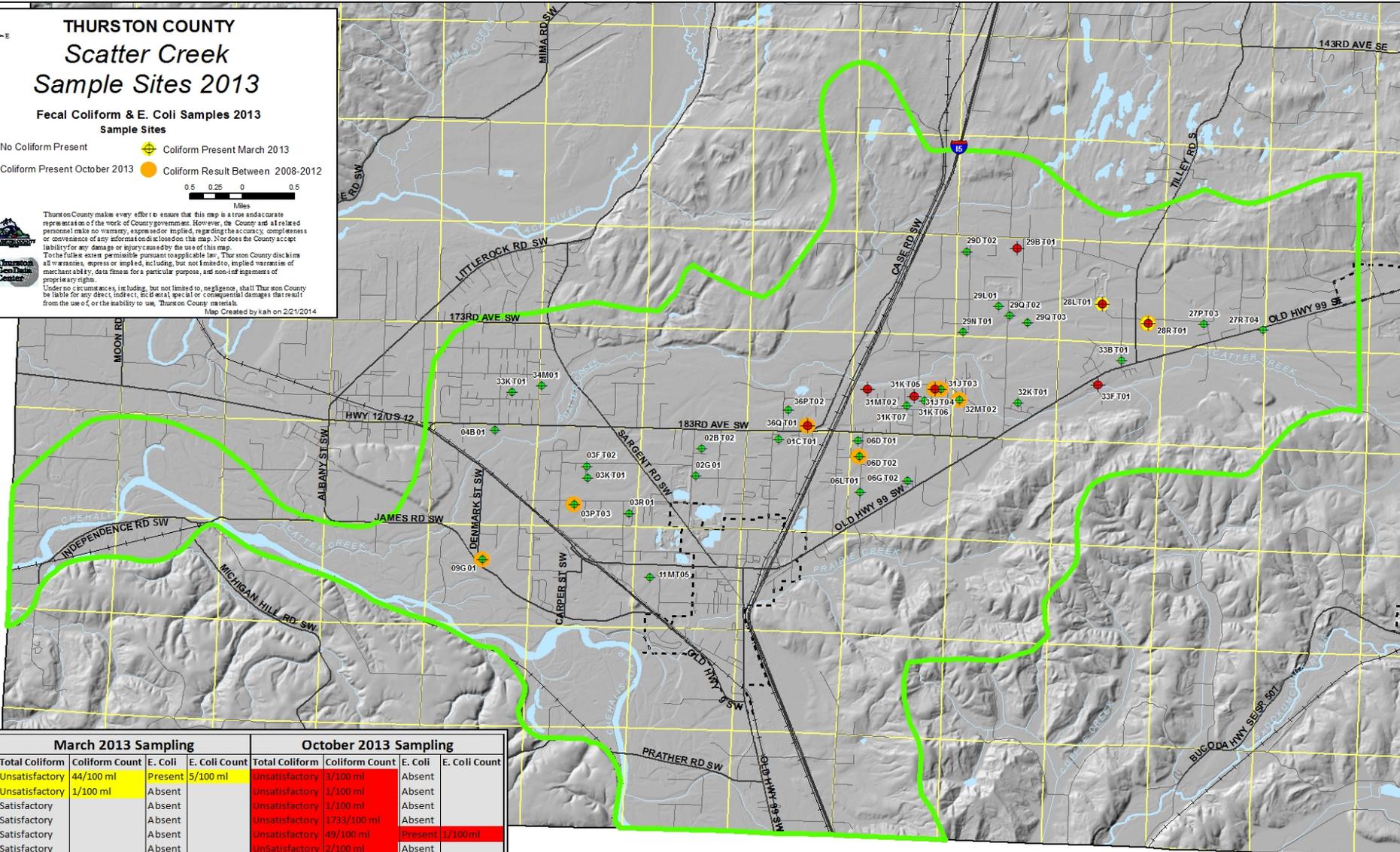
- ◆ No Coliform Present
- ◆ Coliform Present October 2013
- ◆ Coliform Present March 2013
- ◆ Coliform Result Between 2008-2012



Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map. To the fullest extent permissible pursuant to applicable law, the County disclaims all warranties, express or implied, including, but not limited to, implied warranties of merchantability, data fitness for a particular purpose, and non-infringement of proprietary rights.

Under no circumstances, including, but not limited to, negligence, shall Thurston County be liable for any direct, indirect, incidental, special or consequential damages that result from the use of, or the inability to use, Thurston County materials.

Map Created by kah on 2/21/2014



Well ID	March 2013 Sampling				October 2013 Sampling			
	Total Coliform	Coliform Count	E. Coli	E. Coli Count	Total Coliform	Coliform Count	E. Coli	E. Coli Count
28LT01	Unsatisfactory	44/100 ml	Present	5/100 ml	Unsatisfactory	3/100 ml	Absent	
28RT01	Unsatisfactory	1/100 ml	Absent		Unsatisfactory	1/100 ml	Absent	
29BT01	Satisfactory		Absent		Unsatisfactory	1/100 ml	Absent	
31JT04	Satisfactory		Absent		Unsatisfactory	1733/100 ml	Absent	
31KT05	Satisfactory		Absent		Unsatisfactory	49/100 ml	Present	1/100 ml
31MT02	Satisfactory		Absent		Unsatisfactory	2/100 ml	Absent	
33FT01	Satisfactory		Absent		Unsatisfactory	57/100 ml	Absent	
36QT01	Satisfactory		Absent		Unsatisfactory	27/100 ml	Absent	

Table does not include repeat samples.



THURSTON COUNTY Scatter Creek Septic Parcel Analysis 2013

Septic, Sewer & Undeveloped Parcels April 2013

- Sewer Parcels
- Undeveloped Parcels
- Urban Growth Areas
- 0 GPD
- 1-360 GPD
- 361-720 GPD
- 721-1440 GPD
- 1441-6160 GPD
- 6161-23490 GPD



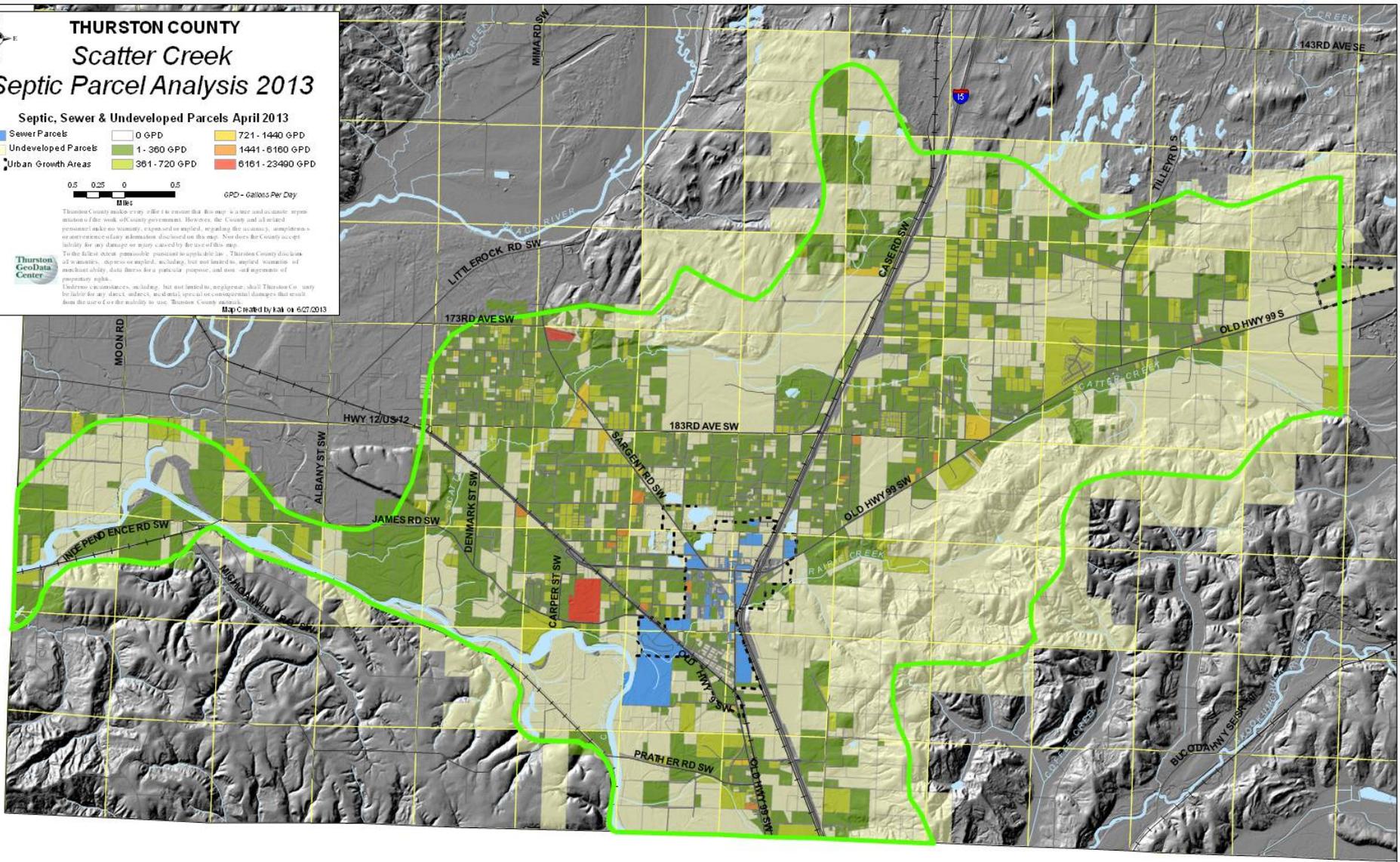
GPD - Gallons Per Day

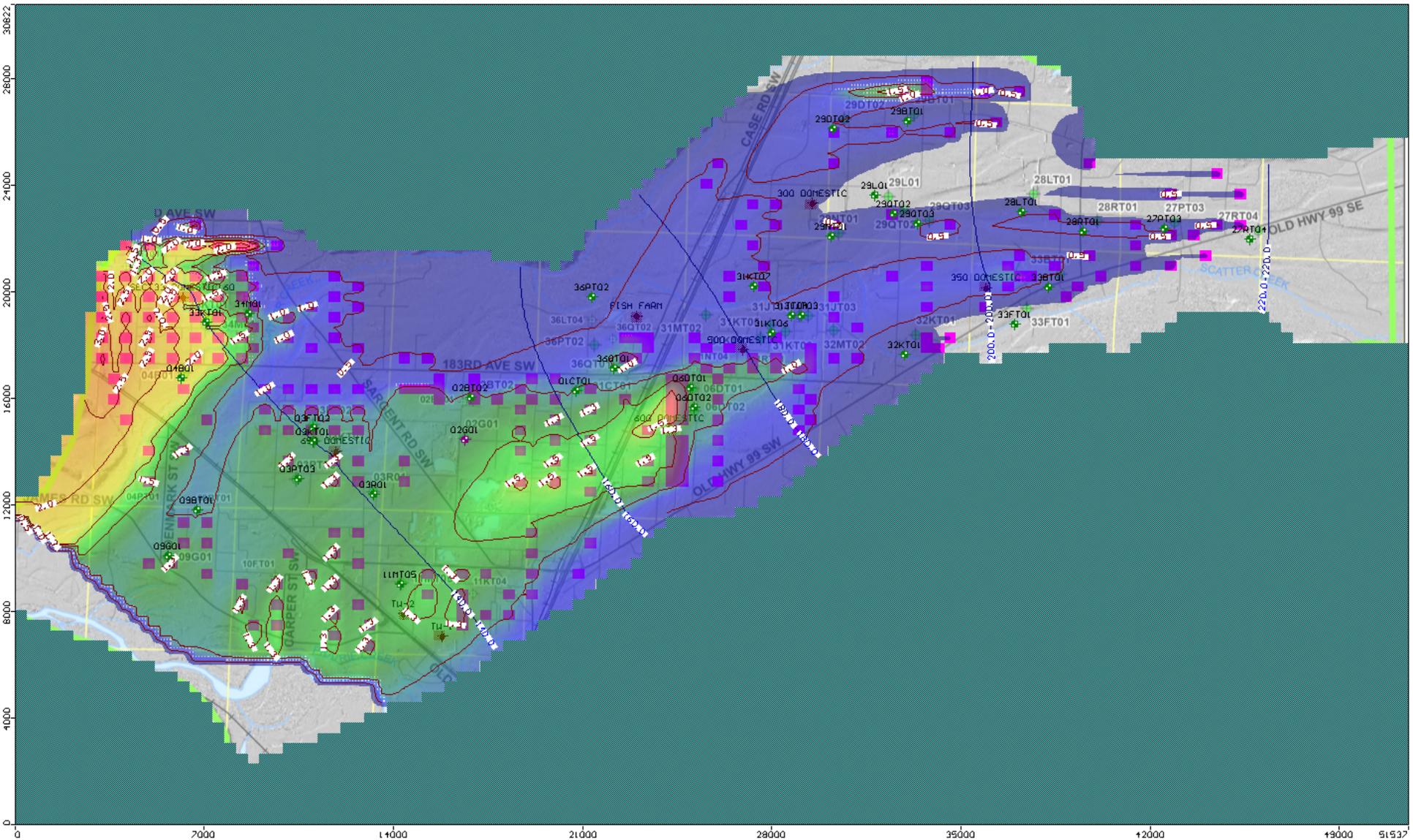
Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, representation or opinion, regarding the accuracy, completeness or absence of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map.

To the extent that it is possible, permission is granted to reproduce this map for non-commercial purposes, provided that the County is acknowledged as the source of the information. This permission does not extend to the use of the map for any commercial purpose, including but not limited to, the sale, distribution, or reproduction of the map for any purpose, and any use of the map for any purpose other than that intended by the County is prohibited.

Under no circumstances, including but not limited to, negligence, shall Thurston County be liable for any direct, indirect, or consequential damages that result from the use of or the inability to use this map. Thurston County reserves the right to modify this map at any time without notice.

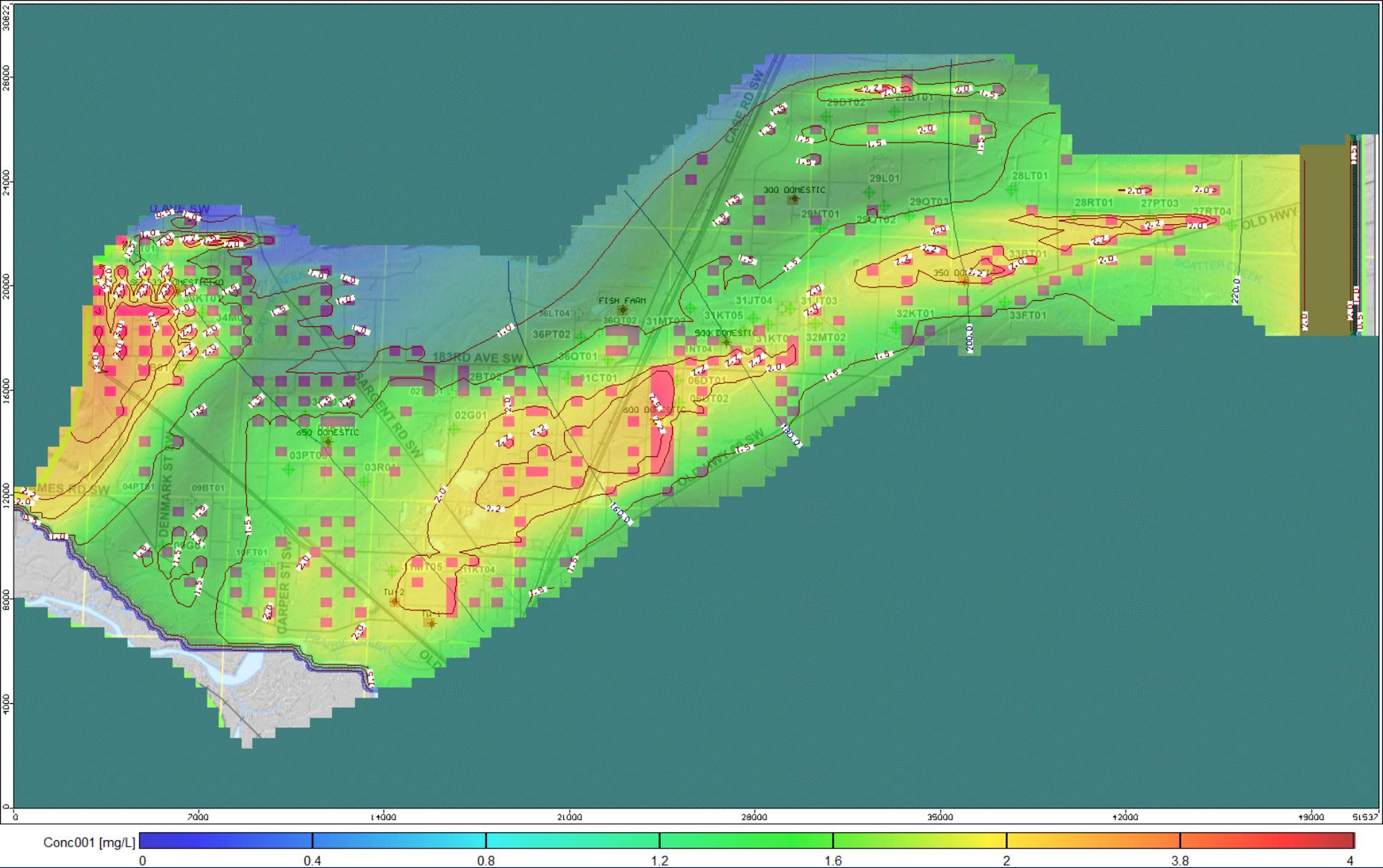
Map Created by ksl on 6/27/2013





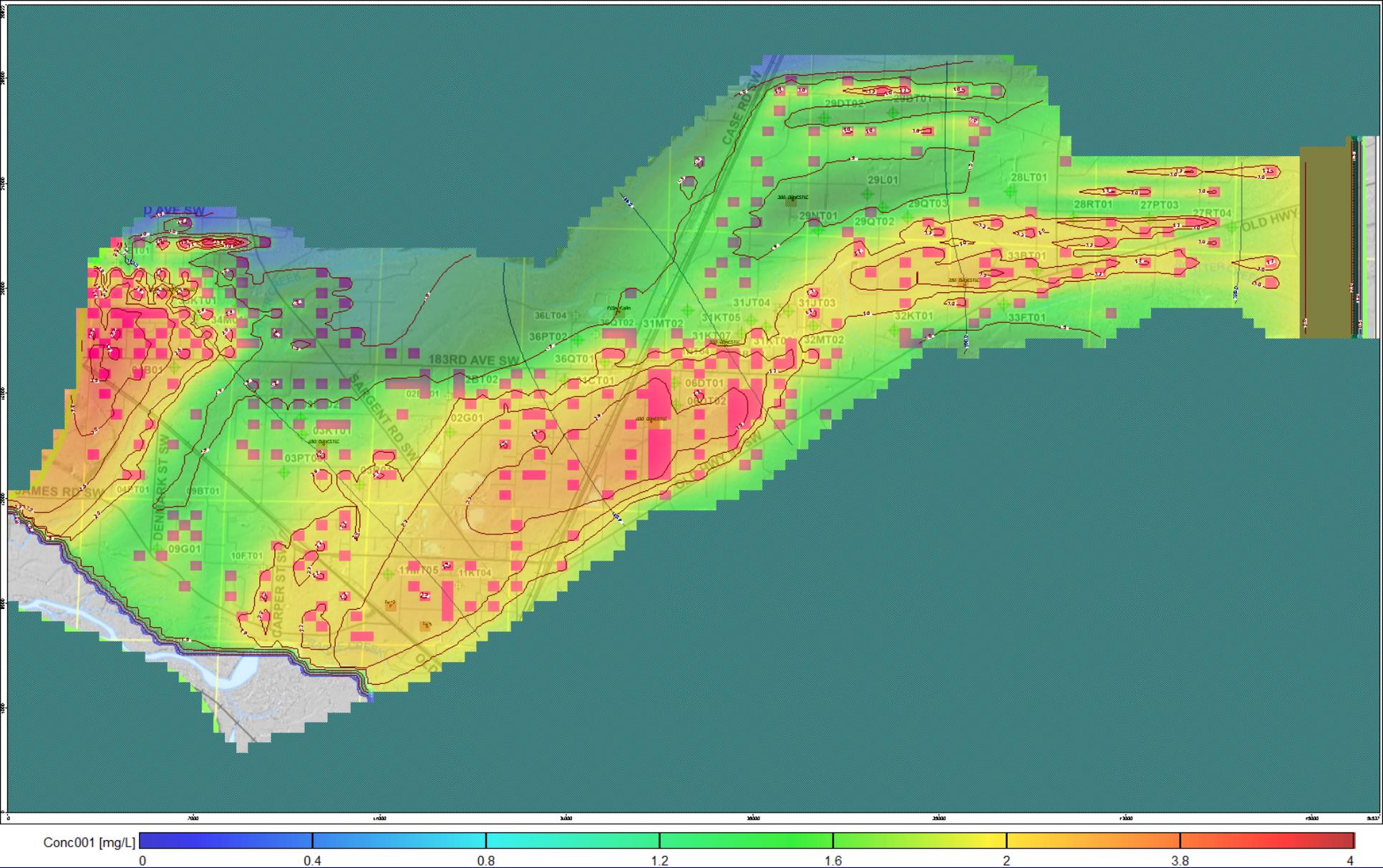
1st Model Scenario

Current septic systems only



2nd Model Scenario

Adds all current legal lots + 2 mg/l nitrate from Tenino

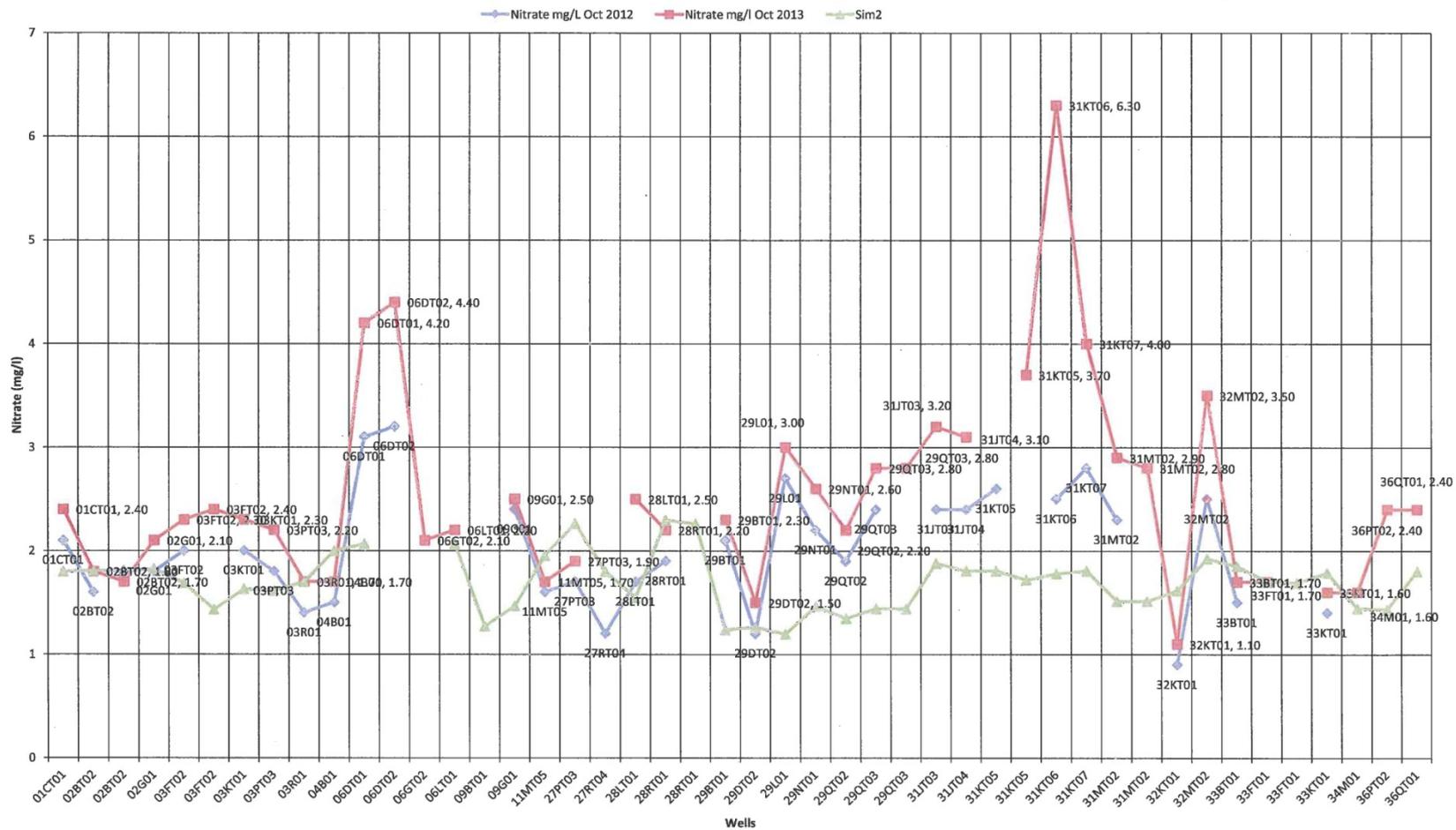


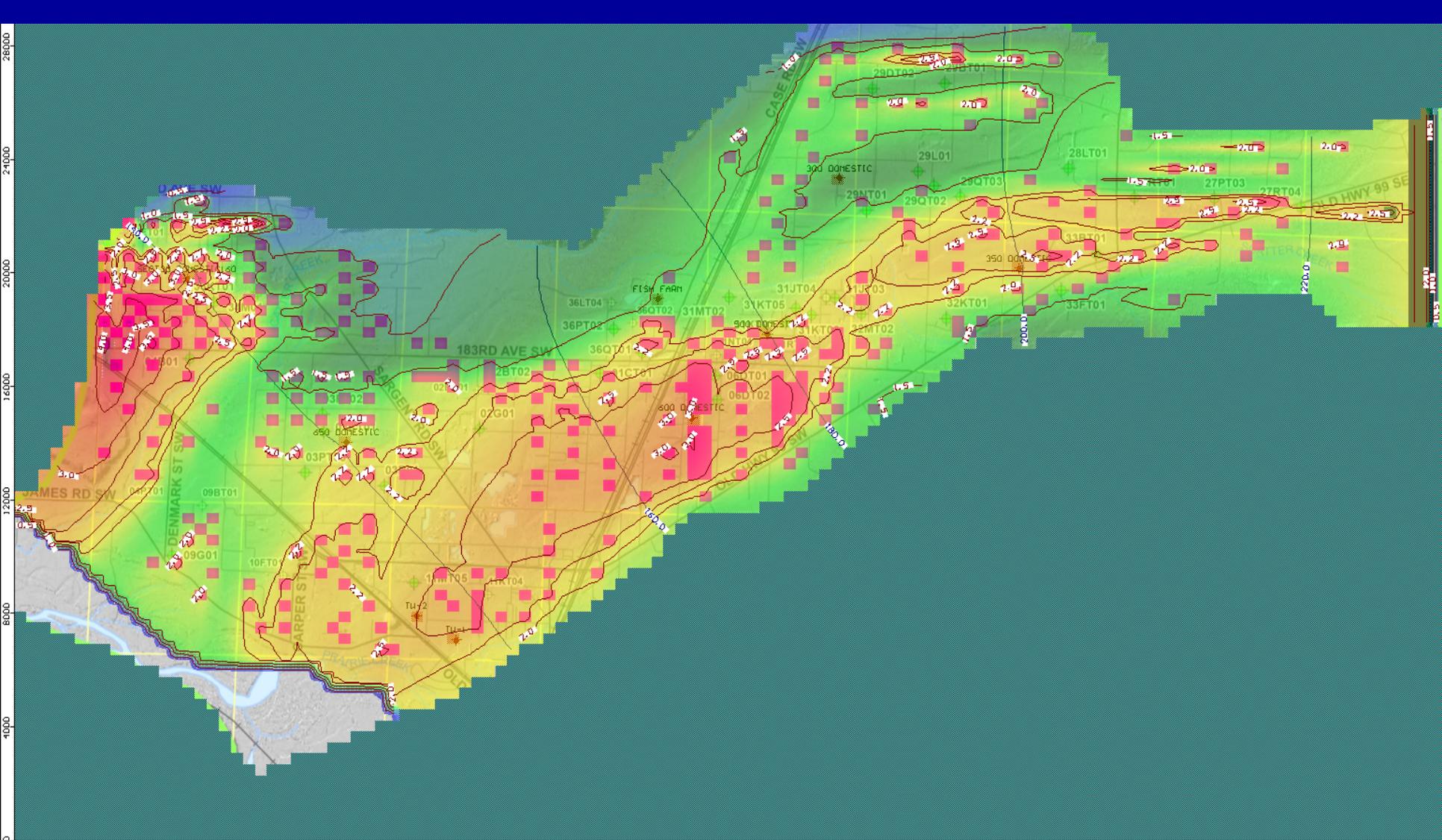
Conc001 [mg/L] 0 0.4 0.8 1.2 1.6 2 3.8 4

3rd Model Scenario

Assumes full build-out + 2 mg/l nitrate from Tenino

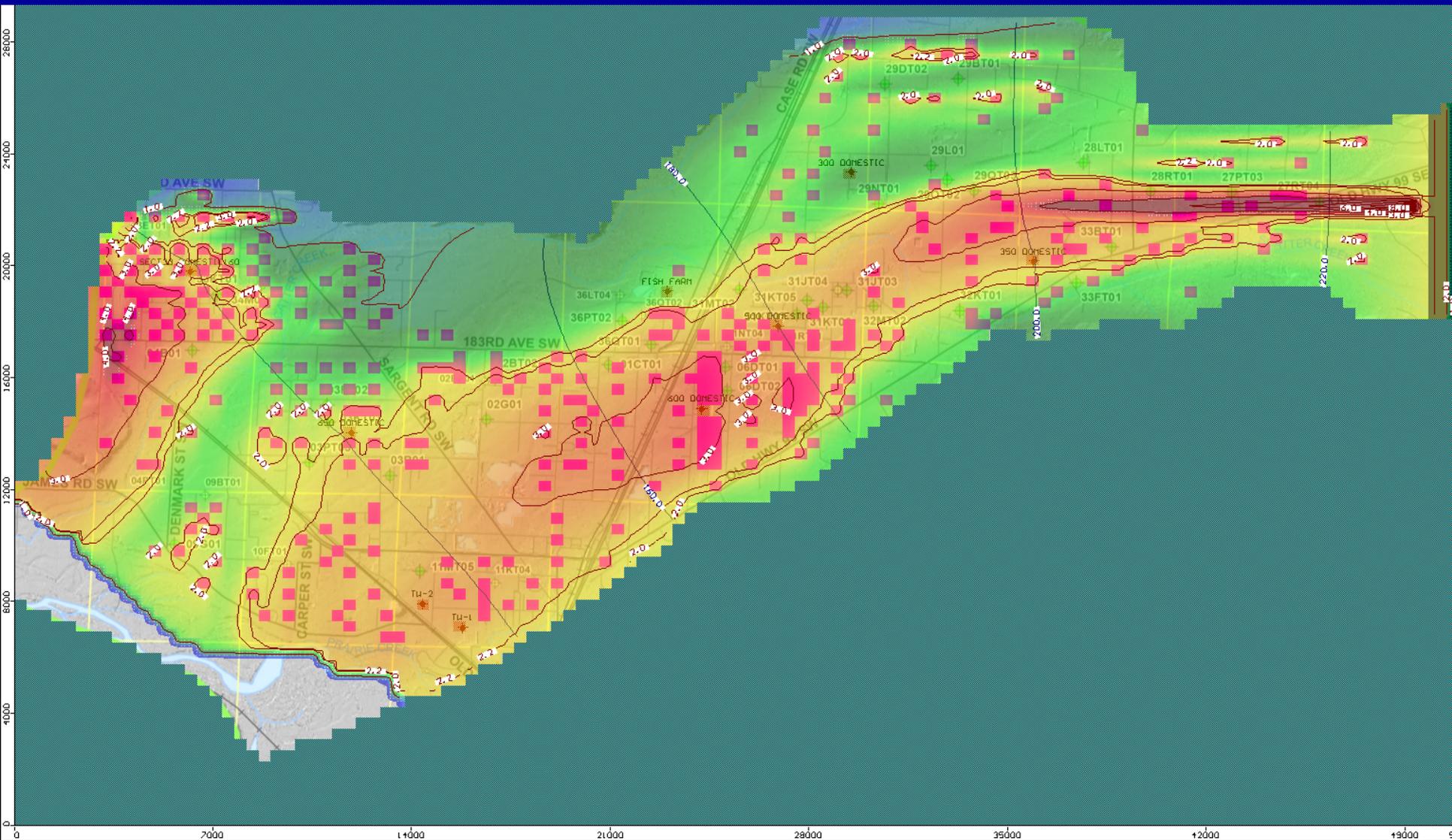
Nitrate GW Concentrations Comparison: October 2012 vs October 2013 vs Simulation 2





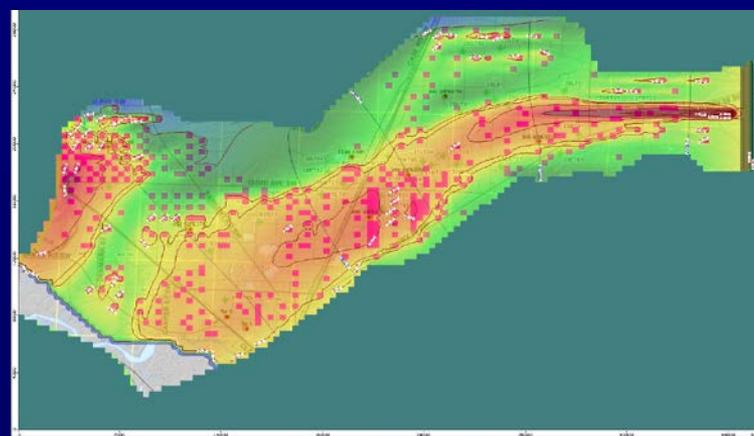
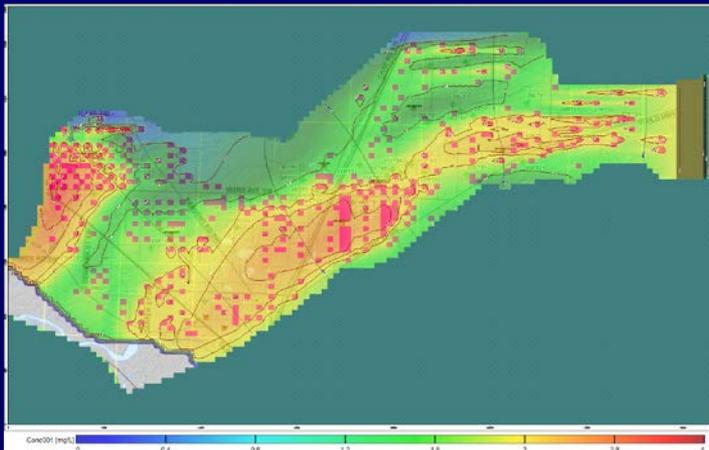
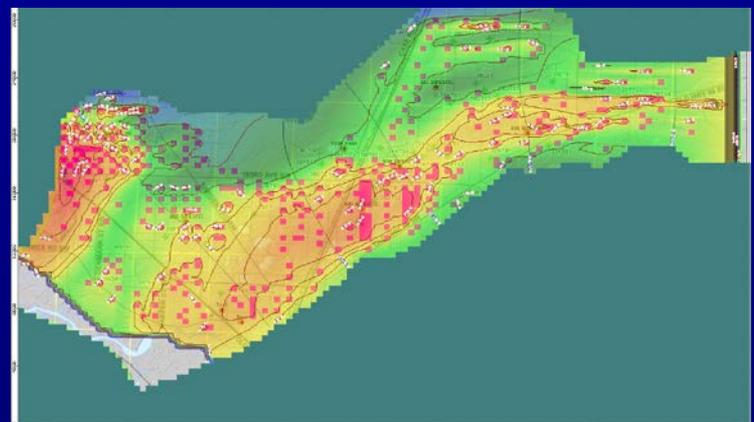
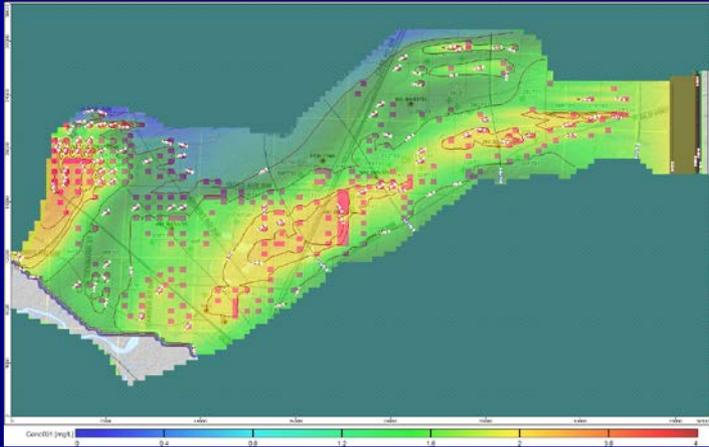
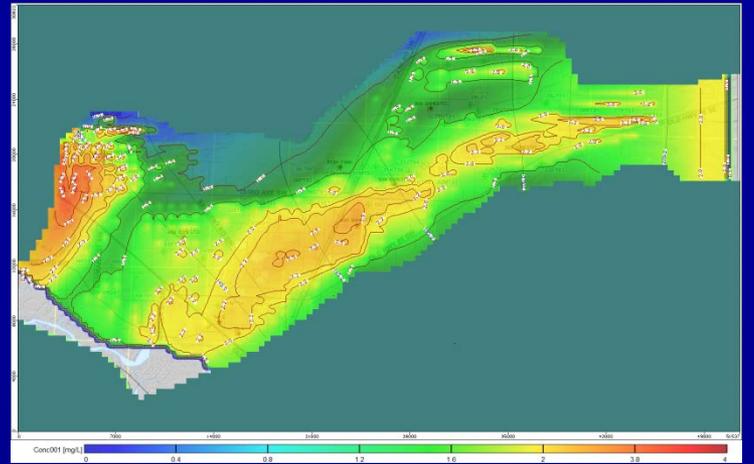
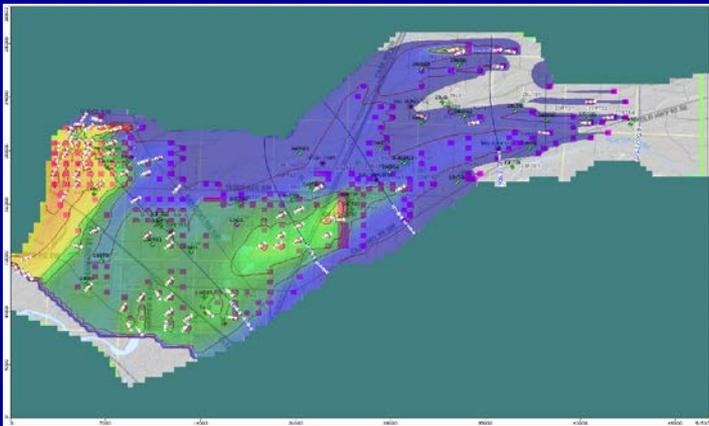
5th Model Scenario

All current & legal lots, lawn fertilizer, Tenino adj.



6th Model Scenario

Full build-out, lawn fertilizer, Tenino full capacity



Your Water, Your Neighbor's Water

Different perceptions of risk

- ❖ Are future conditions something that needs to be addressed?
- ❖ What issues/ideas/options should the committee consider?
- ❖ The best outcome will...





Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>

Community Input

Your Job:

- ❖ Help us be sure we consider all options
- ❖ Help us understand how each option will affect people
- ❖ Help us identify who and what else we need to include in the process

So that we can make the best responsible decision to protect drinking water.

Recommendations

Citizens Committee develops draft recommendations

- Shared with Board of Health and community
- Recommendations refined

If a policy change is recommended, it must go through its own public process before being adopted

- Notice
- Public hearing
- Formal adoption by Board



Coming Up

- ❖ Next community workshop anticipated in September – feedback on draft recommendations
- ❖ Expect final committee recommendations presented to Board of Health by Nov/Dec.



Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>

Project Website:

www.co.thurston.wa.us/health/ehsc

360-867-2582



Public Health and Social Services Department
<http://www.co.thurston.wa.us/health>