

Scatter Creek Aquifer Area Septic System Management Project

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THURSTON COUNTY
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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-Shaw
- ❖ Roger Max
- ❖ Bruce Morgan
- ❖ Maureen Pretell
- ❖ Gene Weaver



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THURSTON COUNTY
Scatter Creek Aquifer
Study Area Boundary 2012

 Scatter Creek Study Area

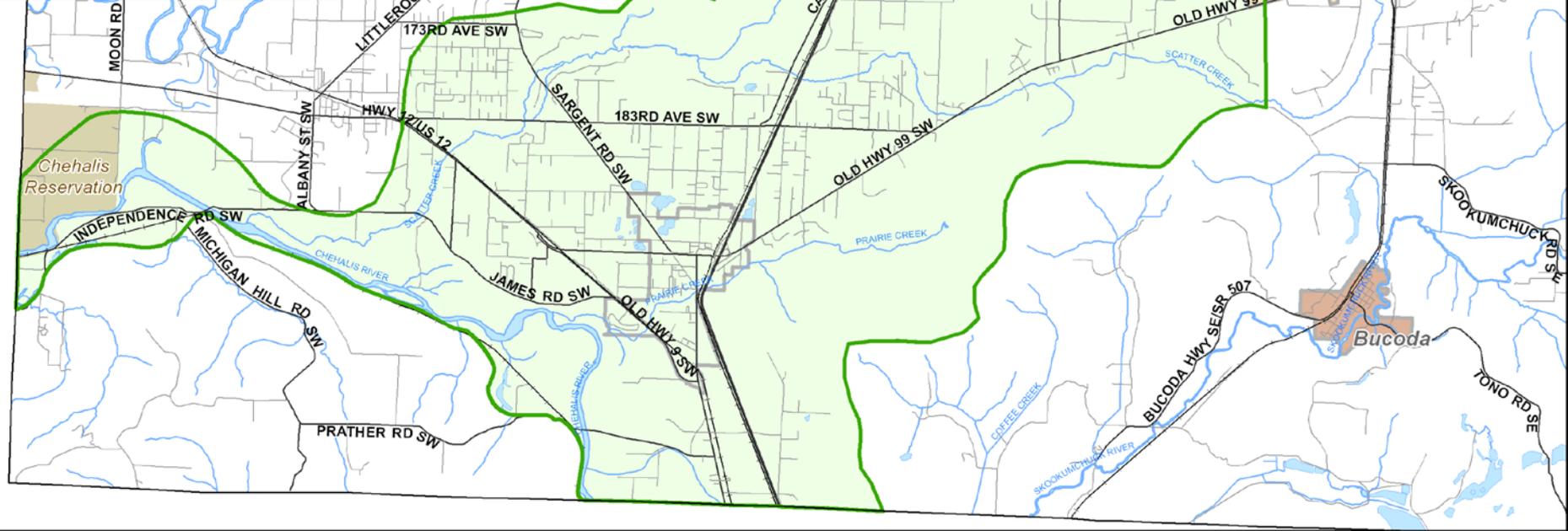


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Map created by iah on 3/16/2012



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Scatter Creek Aquifer

- ❖ Extremely 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



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Septic System Management

- ❖ Focus of this project is looking at the impacts of septic systems on the aquifer.
- ❖ The area is transitioning from agricultural to rural residential



Violet Prairie



- ❖ Aquifer has been contaminated by land uses in past
- ❖ Seen improvement
- ❖ Have opportunity to examine future impacts and take action to protect safe drinking water



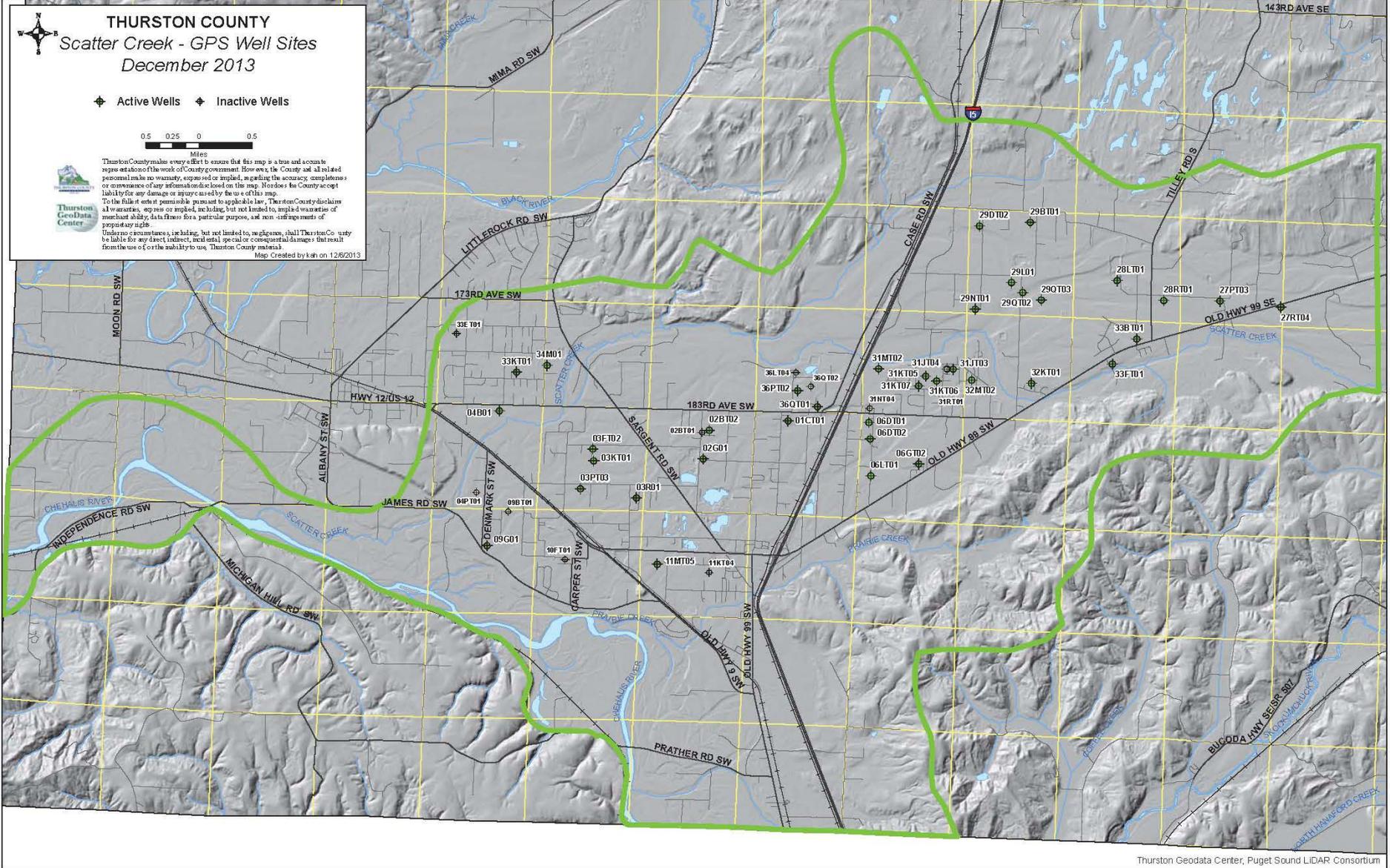


THURSTON COUNTY
Scatter Creek - GPS Well Sites
December 2013

- ◆ Active Wells
- ◆ Inactive Wells



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Well Monitoring Network

Monitoring Results

...good news and bad news

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



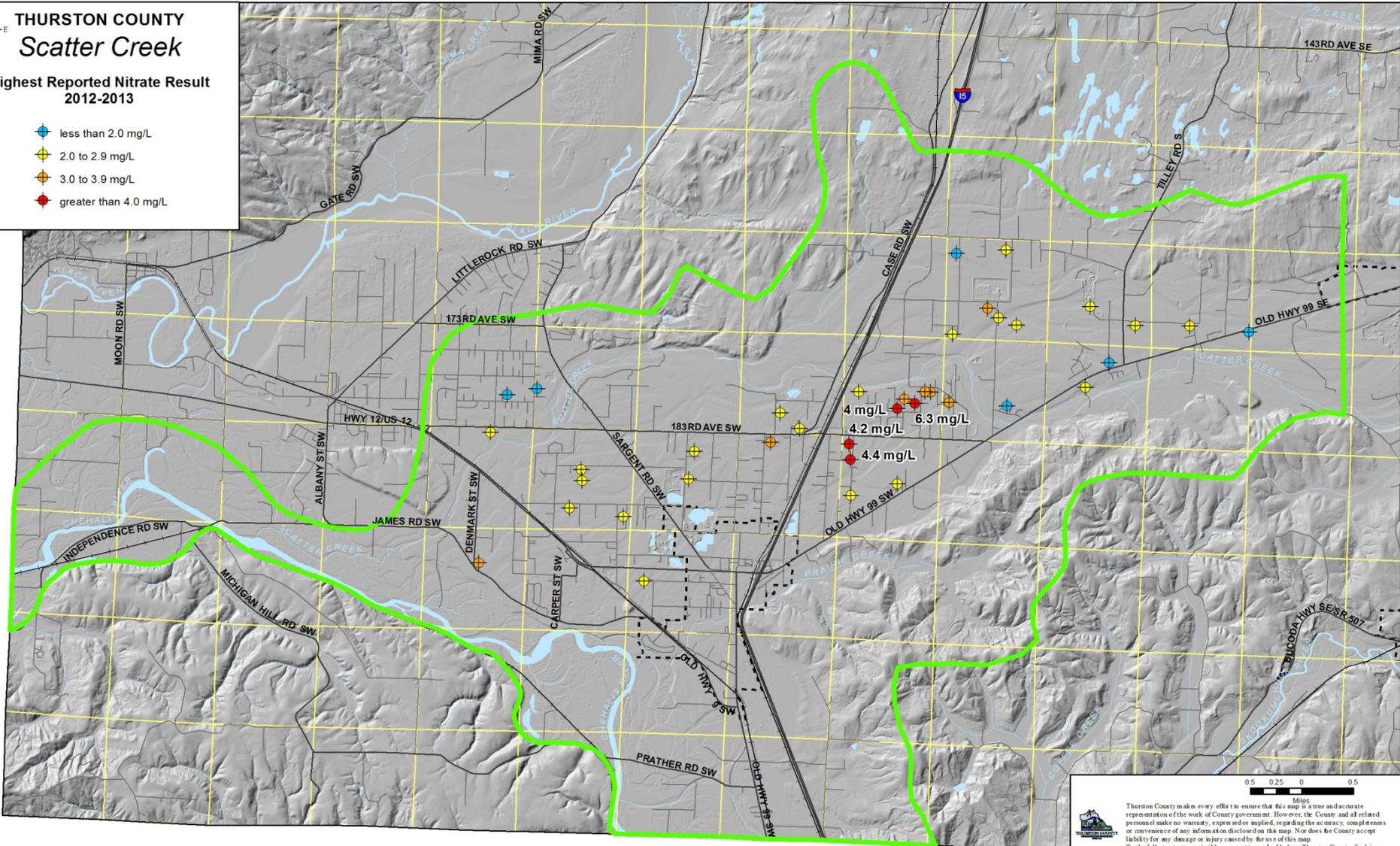
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THURSTON COUNTY Scatter Creek

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



0.5 0.25 0 0.5
Miles



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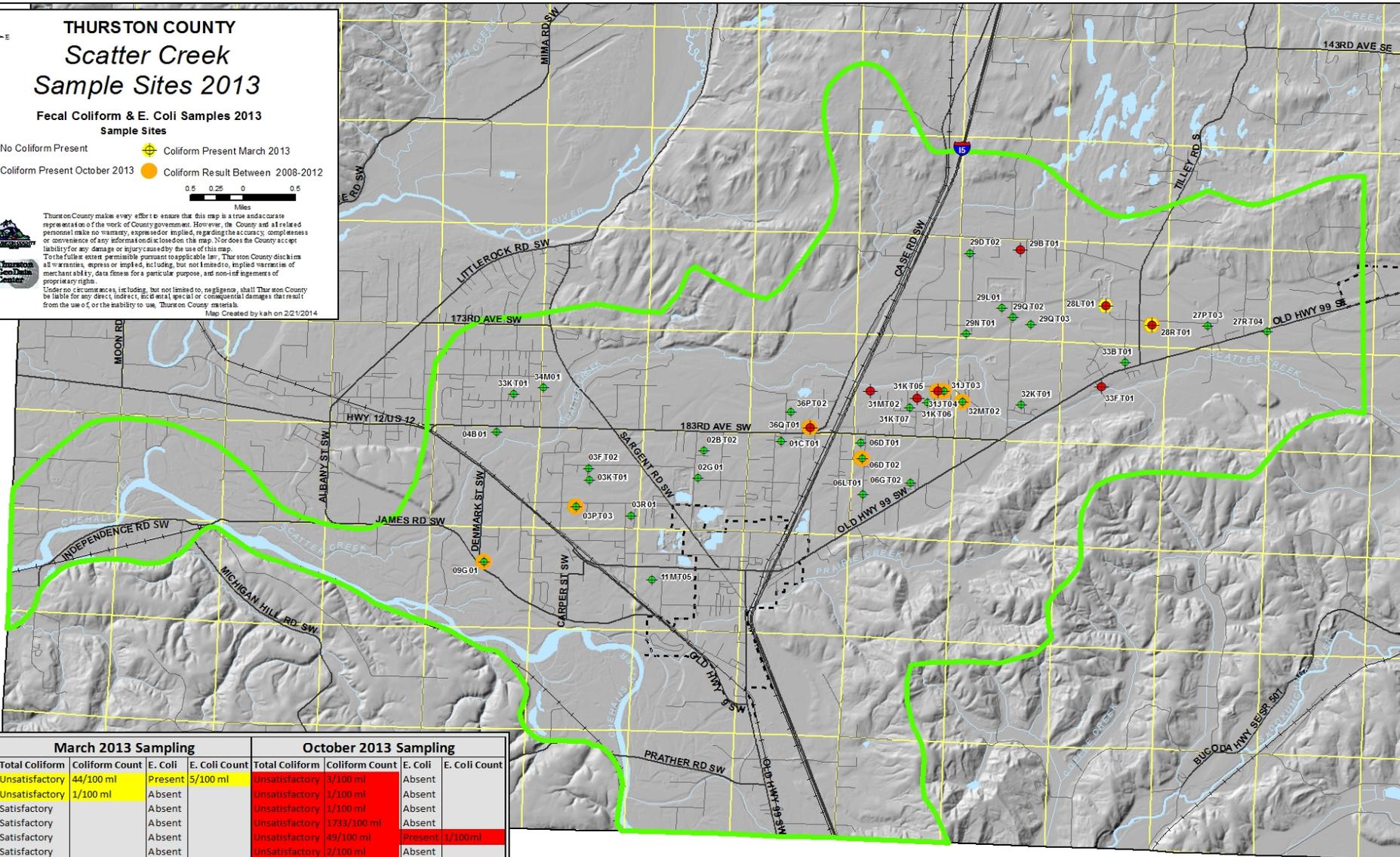
THURSTON COUNTY Scatter Creek Sample Sites 2013

Fecal Coliform & E. Coli Samples 2013
Sample Sites

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



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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	
29B T01	Satisfactory		Absent		Unsatisfactory	1/100 ml	Absent	
31JT04	Satisfactory		Absent		Unsatisfactory	1733/100 ml	Absent	
31KT05	Satisfactory		Absent		Unsatisfactory	49/100 ml	Present	1/100ml
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



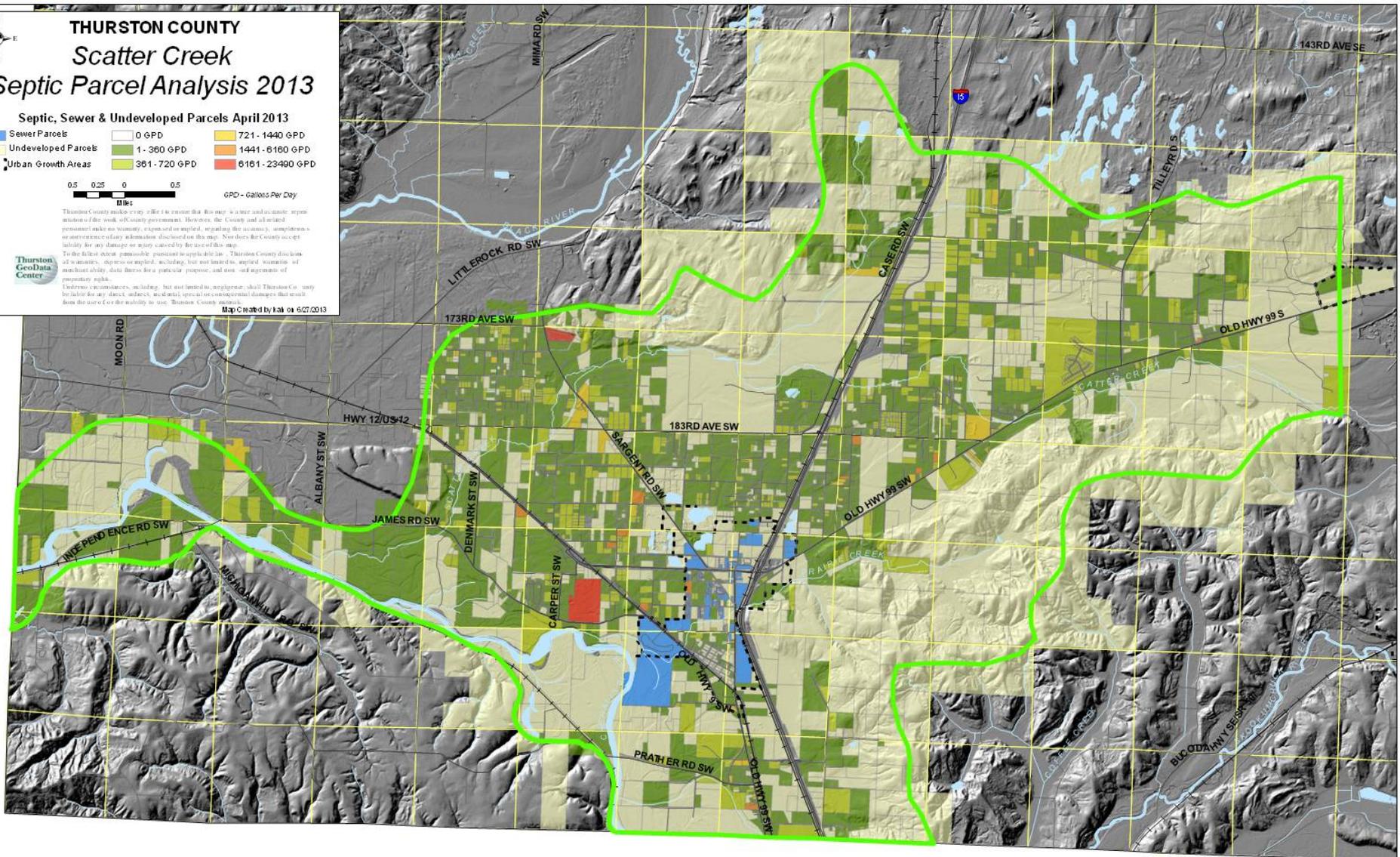
GPD - Gallons Per Day

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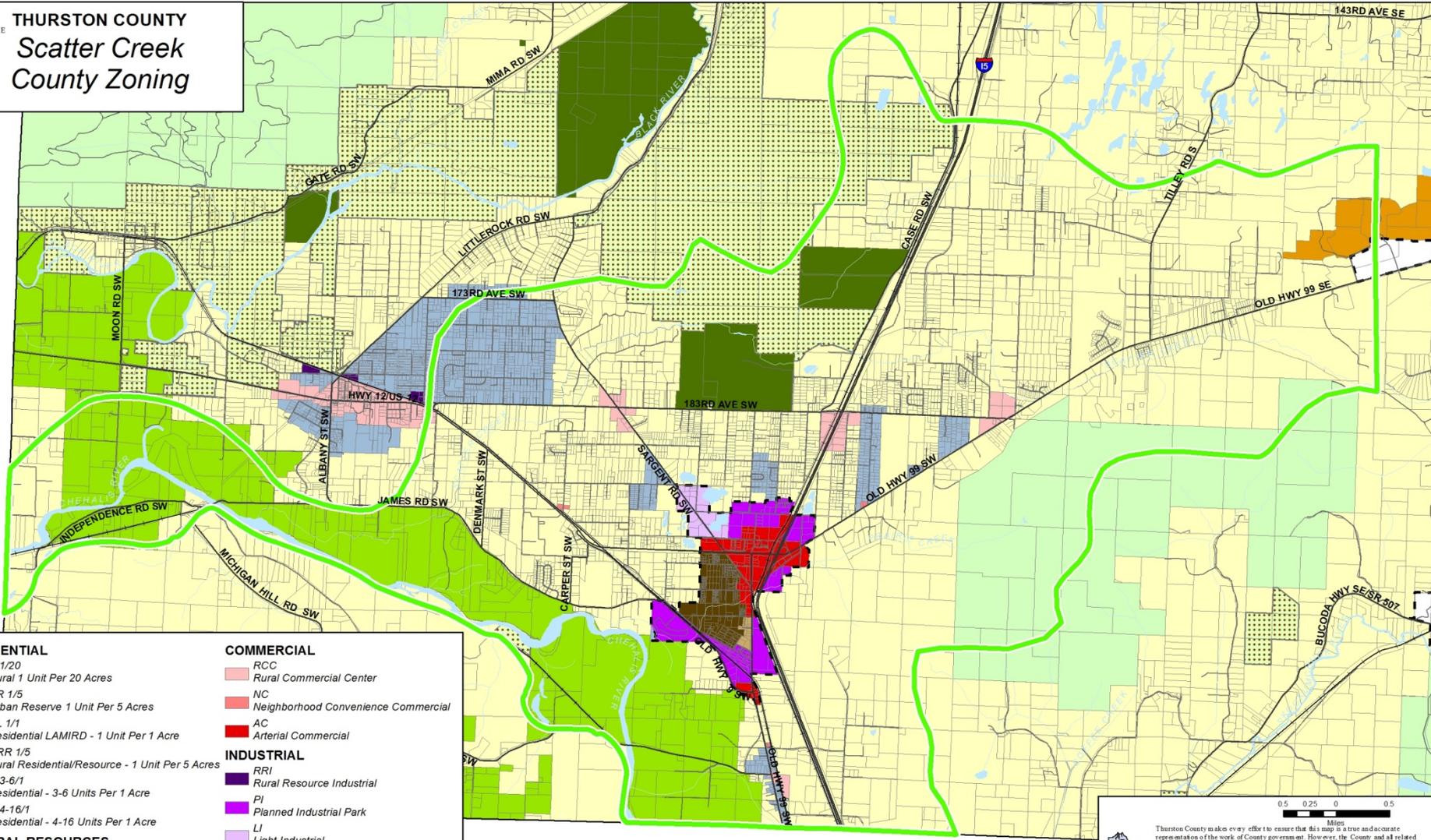
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THURSTON COUNTY Scatter Creek County Zoning



- RESIDENTIAL**
- R 1/20
 - Rural 1 Unit Per 20 Acres
 - UR 1/5
 - Urban Reserve 1 Unit Per 5 Acres
 - RL 1/1
 - Residential LAMIRD - 1 Unit Per 1 Acre
 - RRR 1/5
 - Rural Residential/Resource - 1 Unit Per 5 Acres
 - R 3-6/1
 - Residential - 3-6 Units Per 1 Acre
 - R 4-16/1
 - Residential - 4-16 Units Per 1 Acre
- NATURAL RESOURCES**
- LTA
 - Long-Term Agriculture
 - LTF
 - Long-Term Forestry
 - PP
 - Public Parks, Trails & Preserves

- COMMERCIAL**
- RCC
 - Rural Commercial Center
 - NC
 - Neighborhood Convenience Commercial
 - AC
 - Arterial Commercial
- INDUSTRIAL**
- RRI
 - Rural Resource Industrial
 - PI
 - Planned Industrial Park
 - LI
 - Light Industrial
- Other**
- Urban Growth Area
 - Parcels
 - Scatter Creek Study Area

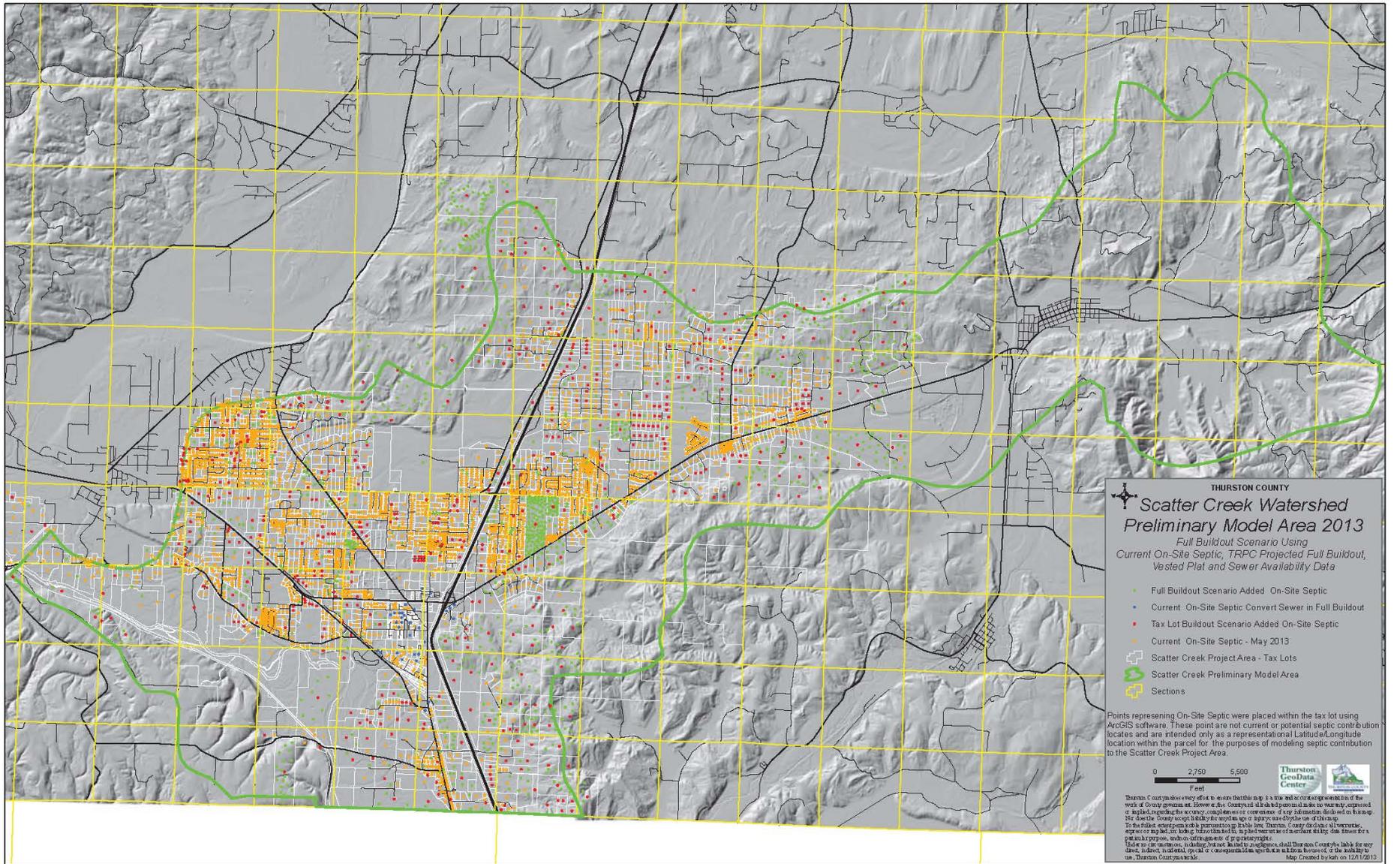


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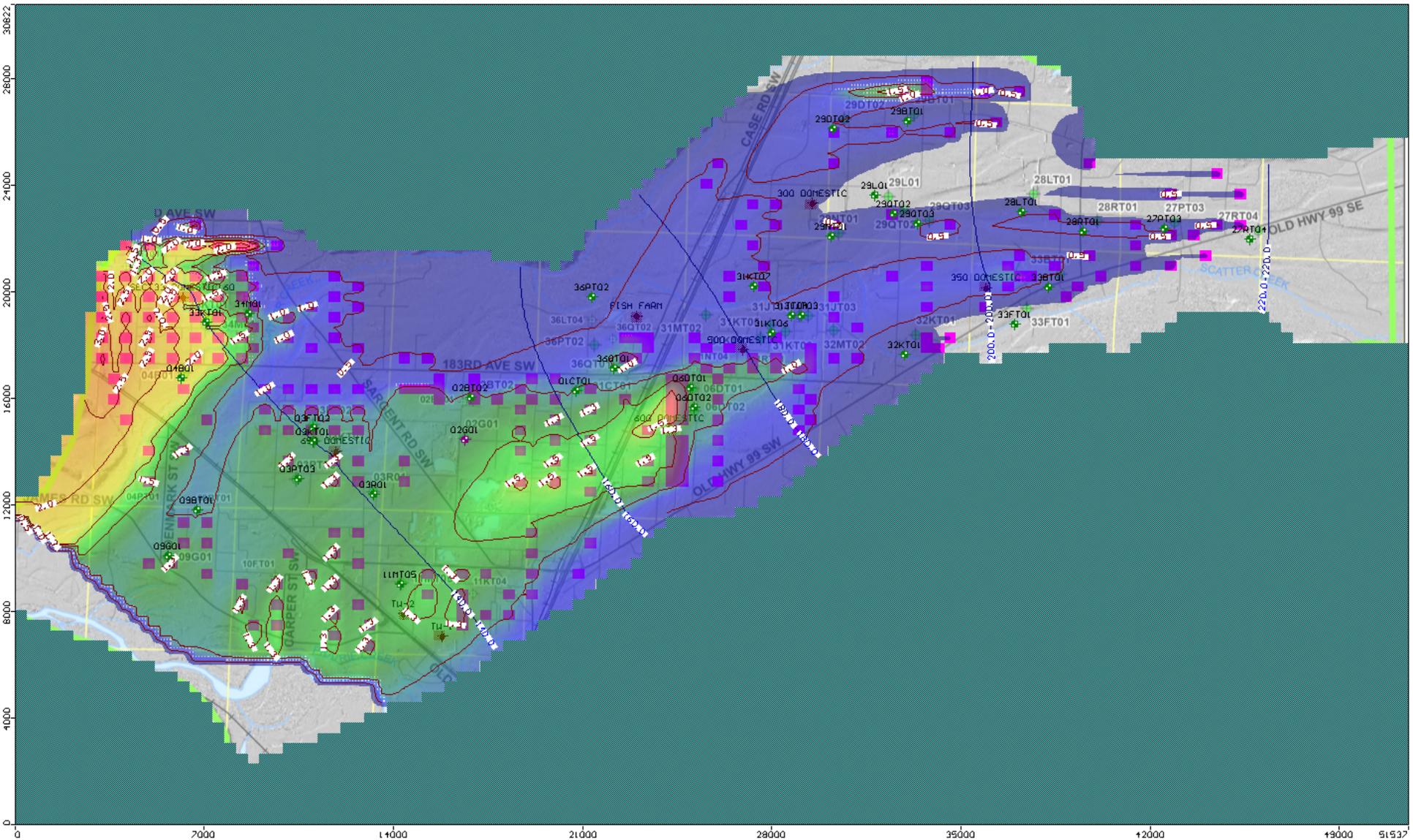
THURSTON COUNTY
Scatter Creek Watershed
Preliminary Model Area 2013
Full Buildout Scenario Using
Current On-Site Septic, TRPC Projected Full Buildout,
Vested Plat and Sewer Availability Data

- Full Buildout Scenario Added On-Site Septic
- Current On-Site Septic Convert Sewer in Full Buildout
- Tax Lot Buildout Scenario Added On-Site Septic
- Current On-Site Septic - May 2013
- Scatter Creek Project Area - Tax Lots
- Scatter Creek Preliminary Model Area
- Sections

Points representing On-Site Septic were placed within the tax lot using ArcGIS software. These points are not current or potential septic contribution locations and are intended only as a representational Latitude/Longitude location within the parcel for the purposes of modeling septic contribution to the Scatter Creek Project Area.

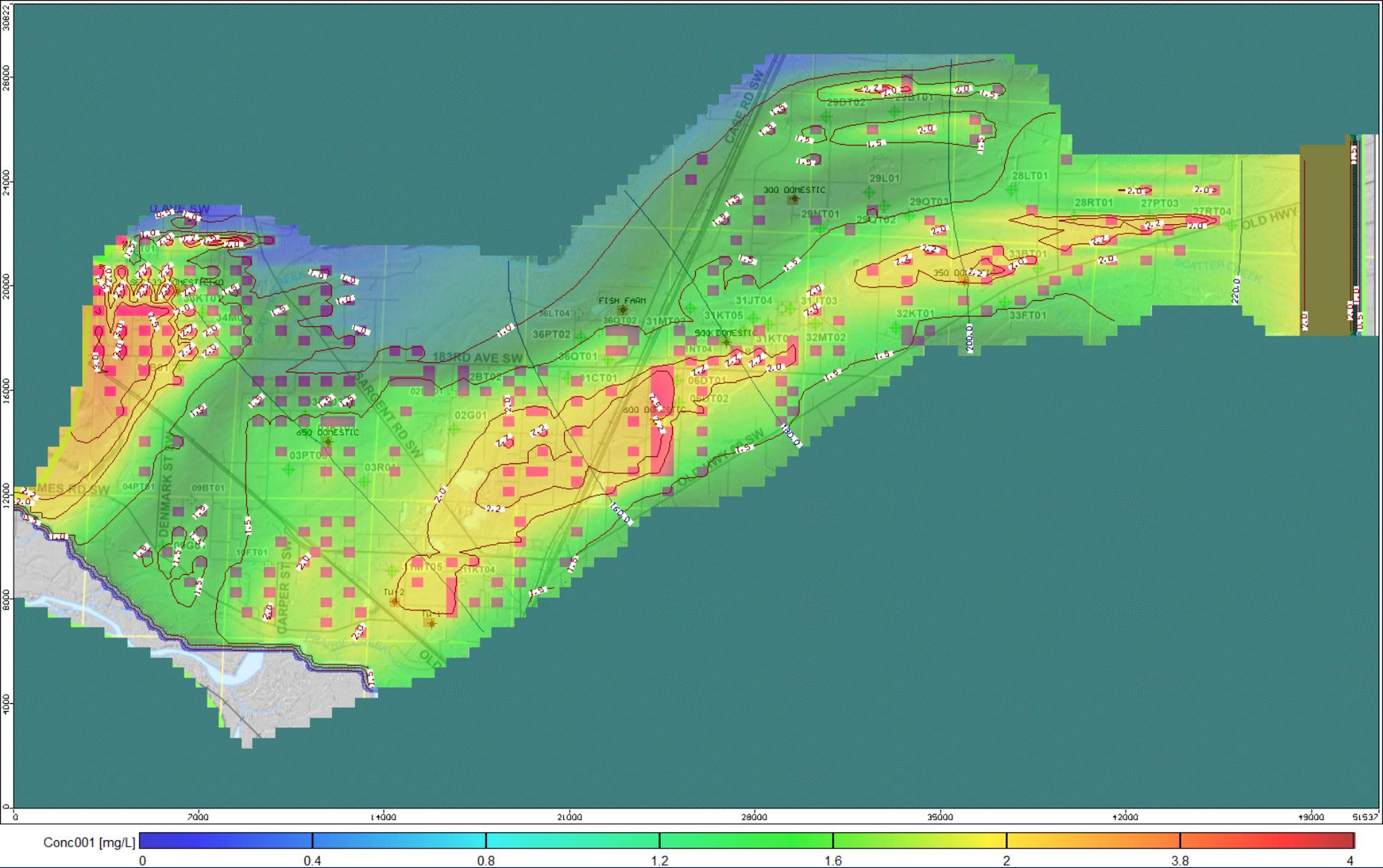


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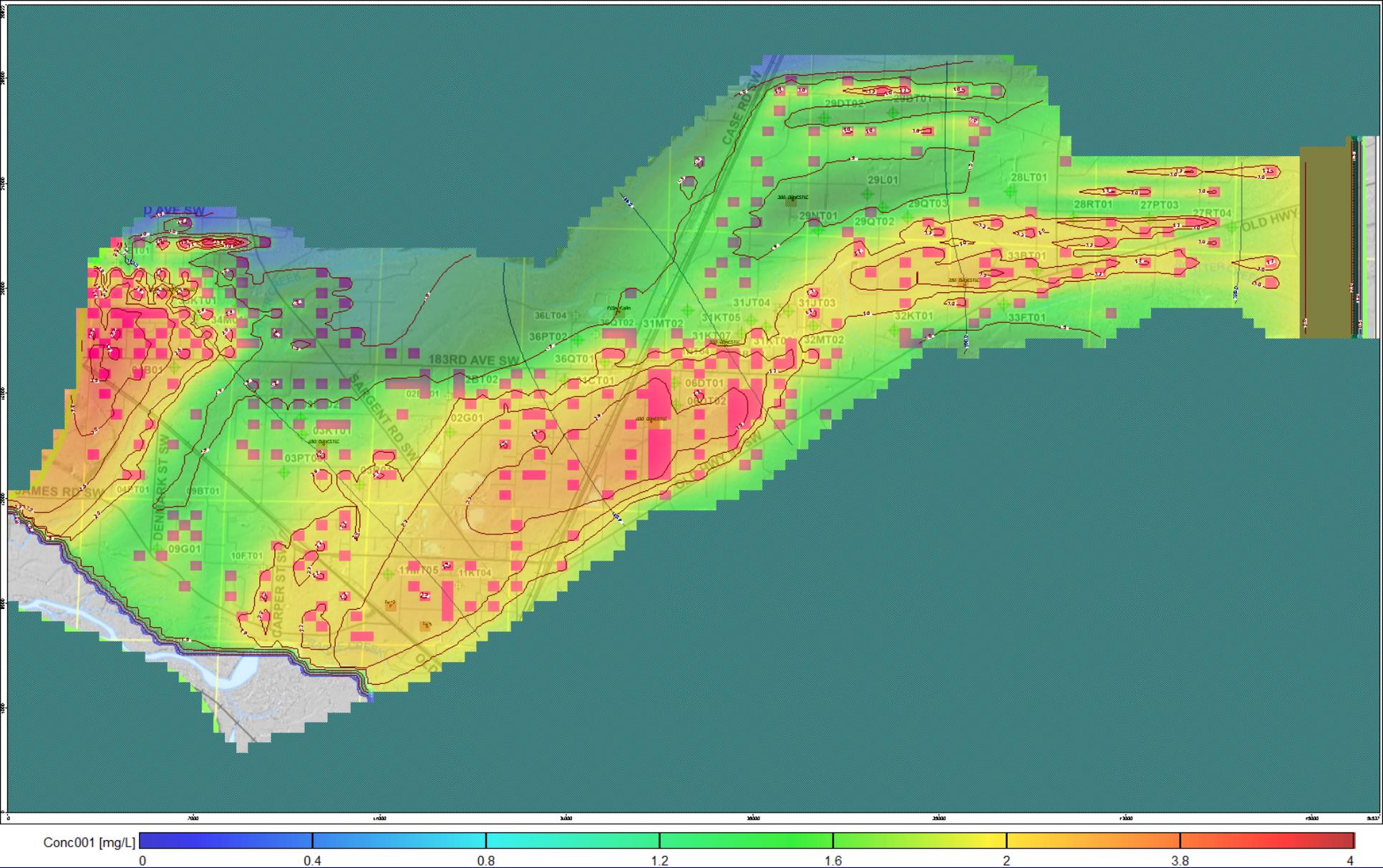
1st Model Scenario

Current septic systems only



2nd Model Scenario

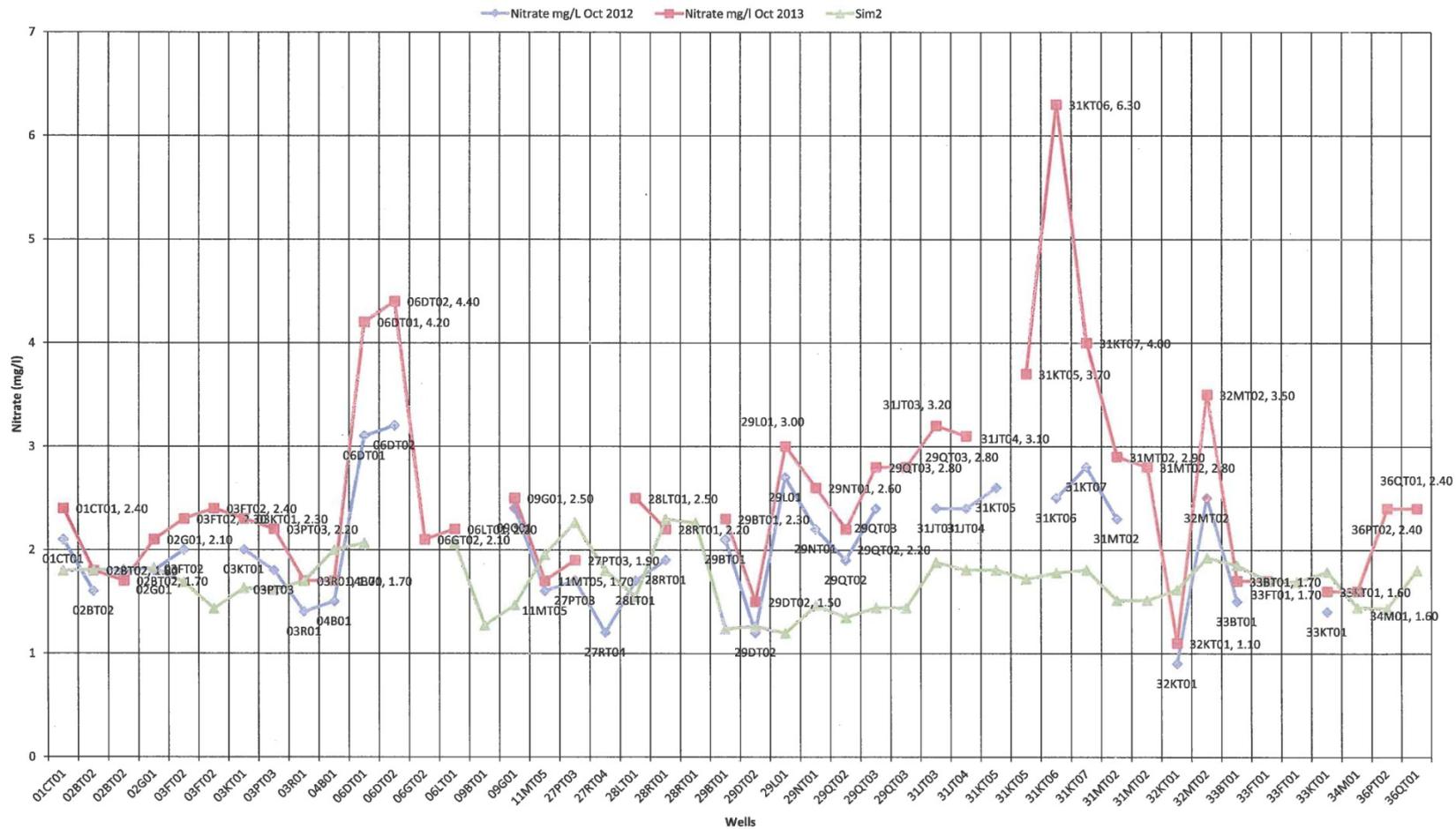
Adds all current legal lots + 2 mg/l nitrate from Tenino



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



Next Steps

- ❖ Calibrating model
- ❖ Evaluating nitrate contribution from other sources such as
 - Fertilizer
 - Wastewater treatment plant
- ❖ Citizen's Committee works on recommendations



Decision Making Process

Citizens Committee works with Health Department

- ❖ Discusses results of modeling and monitoring
- ❖ Suggested scenarios to model
- ❖ Develops range of options to protect drinking water quality in aquifer
- ❖ Seek community input

Community Input

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

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

Coming Up

- ❖ Newsletter: review?
- ❖ Wednesday, April 23 is the next community workshop: role?
- ❖ Another anticipated in September
- ❖ Expect committee recommendations by Nov/Dec.



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Board Input to Protect Scatter Creek Aquifer

- ❖ Comments?
- ❖ Questions?
- ❖ Direction to staff?
- ❖ Direction to citizen's committee?



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

Project Website:

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

Many thanks to:

The Scatter Creek Aquifer Project Citizen's Committee

Kelly Alfaro Haugen, GIS wizard extraordinaire

Nicky Upson, the webmaster



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