

# Critical Aquifer Recharge Areas Review

Technical Update and Ordinance Review

CARA Review Committee  
Meeting 5  
June 19, 2013

Rob Lindsay, Spokane County Utilities



# Presentation Outline

- Updates to Draft CARA Review Report
  - Discussion
- Draft CARA Ordinance Revisions
  - Chronology
  - Agency Input / Other Input
  - Comments and Responses
  - Discussion
- Next Steps

# Draft – CARA Final Report

- Updates to Draft - CARA Final Report
  - Revisions to Attachment A:
    - Changes to Draft Guidance
      - decision tree, overview, detailed instructions
    - New Application Packet
      - additional instructions, site info, certification
    - Changes to CARA Spreadsheet
      - incorporation of phosphorus evaluation
- Timeline for Comments / Final Approval of Report

**Draft CARA Non-Residential On-Site Sanitary Wastewater Treatment and Disposal Analysis Spreadsheet**

**Instructions:** Enter information into areas shaded green. Red values must be updated.

1. Project name:	ABC Church				
2. Completed by and Date:	John Doe, May 4, 2013				
3. Facility type:	Church (see application for more detail)				
4. Address and tax parcel number:	No address assigned; Tax parcel number 46040.9000				
5. Attach a map of parcel	Attached				
6. Name of nearest waterbody	Spokane River				
Input Values		Sign	Values	Units	Instructions
7. Parcel lot size	A <sub>P</sub>		5	acre	Site specific 1 acre = 43,560 ft <sup>2</sup>
8. Depth to groundwater	D <sub>gw</sub>		2.0	feet	Provide reference, e.g., driller well log
9. Distance to shoreline	D <sub>sw</sub>		400.0	feet	Provide map
10. Recharge	R		4	in/yr	Use recharge Map
11. Wastewater volume	V <sub>w</sub>		400	gpd	Use table or provide basis
12. Drainfield area	A <sub>D</sub>		920	ft <sup>2</sup>	Primary drainfield area
13. Soil Type	Type 4 - Fine sands, loamy fine			unitless	Use Drop Menu and WAC 246-272A-0220
County Values		Sign	Values	Units	Notes
14. Total nitrogen concentration in wastewater	N <sub>w</sub>		45.0	mg/l	Default
15. Soil denitrification	d		0.1	unitless	Default
16. Nitrate concentration in precipitation	N <sub>R</sub>		0.24	mg/l as N	Default
17. Total phosphorus (P) concentration in wastewater	PI		10.6	mg/l	Default
18. P adsorption capacity of soil - vadose zone	Pa1		150	ppm	Default
19. P adsorption capacity of soil - groundwater layer	Pa2		50	ppm	Default
Hydraulic Output Values		Sign	Values	Units	Notes
20. Hydraulic loading	D <sub>H</sub>		0.6	gal/ft <sup>2</sup> /day	
21. Minimum drainfield area	A <sub>D</sub>		667	ft <sup>2</sup>	
Nitrate and Phosphorus Output Values		Sign	Values	Units	Notes
22. Volume of recharge over parcel	V <sub>P</sub>		1,488	gpd	A <sub>P</sub> * R * conversion
23. Total infiltration (drainfield & parcel)	V <sub>PT</sub>		1,888	gpd	V <sub>w</sub> + V <sub>P</sub>
24. Total Nitrogen concentration from drainfield & parcel	N <sub>p</sub>		8.8	mg/l as N	$((V_P * N_R + V_W * N_W) * (1 - d)) / (V_P + V_W)$
25. Phosphorus Breakthrough Time	BT		7.2	years	
Assessment			Values	Units	Instructions
26. Hydraulic loading		Loading rate acceptable		unitless	
27. Nitrate		Loading rate acceptable		unitless	
28. Phosphorus		Further analysis/restrictions		unitless	

# Draft CARA Ordinance Revisions

- Background
  - Concept Documents sent to SRHD, County Staff for review
  - Initial Drafts distributed to Committee 6/12
    - Preliminary/Conceptual only
      - Process Document
      - Revised CARA Ordinance
- Agency Input/Comments
  - Spokane Regional Health District
  - Spokane County Building/Planning, Utilities
  - Washington State Dept. of Ecology
- Other Input/Comments
  - Center For Justice/Spokane Riverkeeper

# Draft CARA Ordinance Revisions

- Agency Input/Comments
  - Spokane Regional Health District
    - Few at this time, will coordinate with County in implementation
  - Washington Dept. of Ecology
    - Methodology for dealing with changes to default values such as recharge

# Draft CARA Ordinance Revisions

- Agency Input/Comments
  - Spokane County Building/Planning
    - “Process” document, not “Guidance”
    - Include spreadsheet formulas in the Process Document
    - Include Recharge Map in Process Document/Ordinance
    - Include compliance criteria for N, P loading rates in Process Document
    - Will need technical review for compliance with WAC; Support from Utilities staff
    - Consider adding Title Notices for change in ownership; Change of Use regulations for CARA already exist
    - Consider permit review fees and incorporate in code

# Draft CARA Ordinance Revisions

## – Spokane County Utilities

- What ifs:

- Site use/ownership changes?
- Site is developed based on misrepresented information?
- Site development is either reduced or intensified by current owner?

- Other Input/Comments

- Spokane Riverkeeper

- Comments focused on evaluations of phosphorus and the 20 year proposed breakthrough criteria:
  - Situations where sites are not likely to be in the UGA in 20 years
  - Shallow groundwater considerations
  - Situations where site soil have higher breakthrough rates that would result in <20 year retention

# Draft CARA Ordinance Revisions

- Discussion
  - Additional Comments/Input?
  - Other Concerns?
- Next Steps
  - Comments for Draft CARA Review Report
  - Comments on Draft Process Document/CARA Ordinance
  - Next Meeting
- Thank You!!