

**Response to Comments on the Draft Vashon-Maury Island
Rapid Rural Reconnaissance Report**

| | Comment | From | Response |
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| 1. | Recommends adding public education component: classes for landowners that offer hands-on techniques for land management and stewardship, focusing on surface and ground water management. Topics to include septic systems, wise water use and stormwater management, native plantscaping, and alternatives to toxics. Proposed course outline included. | Vashon Maury Island Land Trust | This recommendation will be added to the report as a recommended program. |
| 2. | Vashon-Maury Island Groundwater Protection Committee has concerns regarding contamination. The committee should review the hydrology, water quality, and groundwater chapters of the report. | Council Member Constantine's Office | We have forwarded this comment and a link to the Vashon-Maury Island Rapid Rural Recon. Report to Sarah Ogier, staff to the Groundwater Protection Committee, and requested comments by April 26th. |
| 3. | Questions arose at the public meeting regarding the Glacier site. The EIS addresses the madrone forest and its ecological value, which was an issue that John Gerstle raised. | Council Member Constantine's Office | We will revise the criteria sheet for this project to reflect the missing ecological information. Project ranking may change as a result. |
| 4. | Review information on the Glacier project provided in the Maury Island Gravel Mine Final EIS. Specifically, threat to the aquifer with the mining coming within 15' of the aquifer, 271,000 ton berm of toxic contaminants to be situated on the north edge of the excavation above the aquifer and Puget Sound (three earthquake faults lie across the south end of Maury and there was earthquake damage during our last major quake), and the Madrone forest. Another issue that should be reviewed is what percent of the 270 acre sight will be cleared, what resulting drainage problems are anticipated, what the effect will be on the recharge time. | Preserve Our Islands | We will revise the criteria sheet for this project to reflect the missing ecological information. Project ranking may change as a result. |
| 5. | Chapter 3: I could not get sections of this to come up on my screen, so I may be off by suggesting that there be a description of the monitoring plan the county is implementing. The groundwater committee has also adopted a threshold level for contaminants on the island that is 50% less than the state standard. I suggest that be added as well. Sarah Ogier has information on both of these. | Martin Baker & Donna Klemka | Project recommendation VMI-16 captures King County's Ground water monitoring program. |
| 6. | Chapter 4: This year, Vashon is part of the Seattle-Area Geologic Mapping Project | Martin Baker & | A reference to this study may be added to |

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| | being done by the UW. The result will be a completely new map of the surficial geology of Vashon. Kathy Troost (206-616-9769, ktroost@u.washington.edu) presented information to our groundwater committee on the project and said that in their work in other parts of King County have found evidence for more numerous faults and deformations, more extensive landslides, unrecorded filled gullies, and more geologic units. Importantly for Vashon, they have also found less till at the ground surface than is currently mapped, and discontinuity in the till that is found. I think it is important to mention this study, that the results will be a new map of Vashon geology, and, ultimately, a new map of areas of high, medium and low susceptibility (roughly also recharge). This is of tremendous importance to the preservation of the island hydrology and our drinking water sources. | Donna Klemka | Chapter 5 of the RRR report if the study's scope is consistent with the goals of this reconnaissance effort. We will evaluate its applicability prior to finalizing the RRR report. |
| 7. | a. just before 4.2.3 delete "potential pollution threats are relatively minor." The groundwater committee and most islanders would not agree with this assessment. I suggest the emphasis be on the fact that nitrates are rising in some areas of the island. This is major, particularly to the customers of Burton Water, which is experiencing increased nitrate level in their water sources. | Martin Baker & Donna Klemka | We will make the suggested change in the final report. |
| 8. | b. 4.3 on stormwater management - I've attached the position statement on LID that the groundwater committee adopted. A major priority of the committee is preservation (or mimicing through LID) the natural hydrology of the island. This might be helpful, especially the goals section, in emphasizing our commitment to infiltration and the relationship that has to sustaining our water resources. I would also like to see the strongest possible language in the recommendations section on LID, particularly in the town of Vashon. | Martin Baker & Donna Klemka | The following sentence will be added to Section 4.3: "The County should seek to achieve the following goals when planning and implementing surface water management on Vashon-Maury Island: <ul style="list-style-type: none"> • Mimic as closely as possible the natural hydrologic function of the watershed • Maximize the protection of surface and ground water quality • Optimize base stream flows • Maximize ground water recharge • Preserve natural stream morphology • Preserve aquatic habitats" |
| 9. | Specific suggestions: c. In Chapter, section 6.2 discusses "potential pollutant sources" | Martin Baker & Donna Klemka | a. The RRR report referenced the Vashon Town Center Stormwater Study for its language pertaining to the effects of |

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| <p>...I recommend that the wording (in the draft recon) about Shinglemill and Gorsuch Creeks be revised. The draft study reads: "The percent total impervious surface in Shinglemill is only 6% and the percent forest cover is 60%. In Gorsuch impervious cover is 20% and forest cover is 42%. Observations, monitoring and data indicate that development in general and the town center in particular have had some impact on both streams. The hydrologic regime of Shinglemill Creek has undergone relatively little change. Gorsuch Creek hydrology shows greater impact than Shinglemill, but it has not been as severely impacted as highly developed stream systems in urban areas Since the urban-zoned area only comprises 5% of the Shinglemill subbasin, stormwater impacts from the town have been relatively small on the Shinglemill subbasin as a whole; localized impacts on the reach of the stream that the runoff from the town discharges into are proportionally greater. Impacts to the Gorsuch subbasin are proportionately higher, though less well documented." The draft report goes on to conclude in the recommendations section that "the analysis done for this study indicates that stormwater impacts from the town on the Shinglemill Creek subbasin, which has high resource value is relatively small. The stormwater impact from the town on Gorsuch Creek, which has lower resource value is significant..."</p> <p>...The text of this section (and of the draft report) says that "no low-cost stormwater improvements that would provide any significant reduction in runoff for the town have been identified." This implies that specific stormwater improvements were identified (which they were not), and that none of them would either provide any significant reduction in runoff, or were not low-cost. The draft report spends more time discussing construction of "water quality and flow control facilities (at a cost of \$5-10 million) than it does examining LID options. In fact, there is no substantive discussion of LID methods; a single paragraph in the draft report begins: "an alternative method of managing stormwater runoff that has been proposed is the use of open swales." This paragraph describes one of the City of Seattle's projects, and concludes by saying that "Seattle's stormwater standards are quite different from King County's; the performance of the SEA Street project has not been compared to KC Surface Water Design Manual Standards." No infiltration projects were identified or assessed in the draft study. This section of Chapter 6 needs to be rewritten to reflect the actual scope of the study, and accurately reflect the need for a complete analysis of drainage in the town of Vashon, and the identification of specific LID projects to protect Gorsuch, Shinglemill, Judd, and other island surface water from storm events</p> | | <p>development to both Shinglemill and Gorsuch Creek. The edits being suggested to section 6.2 will not be made at this time. Your recommendations are consistent with what's in the report now, however the level of detail being recommended goes beyond the survey level approach that was scoped out for the RRR report.</p> <p>b. An extensive discussion about LID practices and investigation of potential LID project recommendation goes beyond the scope and funding available for this initial reconnaissance effort. Project recommendation VMI-19 encourages the County to invest future resource to identify more LID opportunities on the island.</p> |
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| | from this urbanized area... | | |
| 10. | <p>The current issue has to do with how the RRRR handles the issues of risk and consequences for potential contamination of groundwater, more than with the technical detail of the water quality information it contains. There, I do think that the RRRR could be strengthened to highlight the concerns:</p> <ul style="list-style-type: none"> • On page 4-6, the RRRR states "potential pollution threats are relatively minor." Perhaps there the point could be better made that while current sources of contamination do not pose an immediate threat to the groundwater resource, the sole source aquifer is Vashon's only sustainable water supply and therefore all pollution threats are considered very serious and trends need to be monitored with vigilance. Carr (1983 p. 7-20) did a good job of pointing out that "the important consideration is not the total concentration but rather the trend of the water quality." • Although the RRRR recognizes that "nitrate and chloride may be considered the most significant threat at this time" (p 4-6), more could be said here that might help address the above concern: <ul style="list-style-type: none"> • An often-overlooked conclusion of the Carr Report (1983) is that the authors felt that "renovation capacity" ("defined as the maximum density of dwelling units based on the reduction of contaminants to acceptable levels by attenuation"; Carr p. 10-1) actually represents a more severe constraint to growth on Vashon than does the available supply. Carr concluded that the <i>available</i> groundwater resource (i.e., quantity) could support a total population of 13,000 (Carr p. 9-5) but that "consideration of renovation capacity provides a maximum population of about 11,000 people on the islands" (Carr p. 10-6) and therefore he recommended limiting the islands' total population to the latter figure (Carr p. 12-3). Although the elevated nitrates may not be harmful at this particular moment in time (nor were they when Carr wrote his report), it is the long term trend of an increase in nitrate with increased septic that could exceed renovation capacity. Carr did a good job of drawing out the long-term management significance of a trend in that direction, and the RRRR could incorporate similar language. | Jeremy Pratt ENTRIX, Inc. | <p>Language about risks to groundwater contamination does exist in the RRR report. See sections 4.1.2 Groundwater recharge and discharge, 4.2.2 Groundwater Quality.</p> <p>See comment #7 above. The report will be revised as suggested in that comment.</p> <p>Lastly, the RRR report used and reviewed data collected by the Carr report along with other more recent groundwater-monitoring studies. King County Groundwater Protection staff is monitoring groundwater quantity and quality on the Island. In addition, RRR report project recommendation VMI-16 recommends that King County develop a long term groundwater monitoring program.</p> |

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| | <ul style="list-style-type: none"> • The same goes for chloride. Carr recognized a "definite indication of salt water intrusion on the islands" (Carr 7-16) and that "without management and corrective measures, it will be possible and even likely that salt water intrusion will continue to increase" (p. 7-17) The RRRR may not need to sound an alarm on this as there seems to be little indication that seawater intrusion has gotten any worse since 1983, but Carr's conclusion that "uncontrolled well development and withdrawal would create local overdrafts and salt water intrusion in to wells located around the margins of the islands" should probably be incorporated in the RRRR. • The Vashon Groundwater Management Plan (1998) does not make statements as strong as those made by Carr, and this should probably be acknowledged. In 1998, it was concluded that concentrations of chloride, nitrate and TDS were within normal ranges and that there was no evidence of seawater intrusion (Supplement 1 - Area Characterization p. 119) and the RRRR discussion is in line with this more recent assessment. Again, trends and risk are the issues of concern, and it should be possible to acknowledge both the current good quality of groundwater and the serious concern for resource protection. • The risk of continuing or increased proliferation of exempt wells should be identified as another source of risk for groundwater contamination in the RRRR. | | |
| 11. | <p>The draft Rural Reconnaissance Report statement on page 4-6 "Available information also suggests that potential pollution threats are relatively minor..." is not in accord with the Vashon-Maury Island Groundwater Committee's views. I believe that most of the committee members regard the potential pollution threats as being very serious insofar as there is no viable alternative source of water for Vashon other than its own water supply. John Gerstle</p> | JHGerstle | See response to comment #7 above. |