

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

	<b>Comment</b>	<b>From</b>	<b>Response</b>
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 toxic. Proposed course outline included.	Vashon Maury Island Land Trust	This recommendation will be added to the report as a recommended program.  6-04: Added project # VMI-39, <u><i>Educational Program: "Stewarding Your Land"</i></u>
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 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.  6-04: Comments have been received and are reflected in this comment response tracking matrix.
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.  6-04: VMI-11, " <u><i>Glacier Nearshore Conservation</i></u> " was modified to include language about the protection of wildlife habitat through preserving madrone forests near the island's bluff and nearshore.
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	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.  6-04: VMI-11; see response to comment #3. Specific detailed discussions about its impacts to Maury Island's aquifer goes beyond the survey level approach of the RRR project. Therefore, additional language about Glacier's mining impacts will not be included in the finalized report.

	will be cleared, what resulting drainage problems are anticipated, what the effect will be on the recharge time.		
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 recommends that King County establishes a Groundwater monitoring program for Vashon Island.
6.	Chapter 4: This year, Vashon is part of the Seattle-Area Geologic Mapping Project being done by the UW. The result will be a completely new map of the surficial geology of Vashon. Kathy Troost (206-616-9769, <a href="mailto:ktroost@u.washington.edu">ktroost@u.washington.edu</a> ) 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.	Martin Baker & Donna Klemka	<p>A reference to this study may be added to 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.</p> <p>6-04: An internet address, linking to the Geologic Mapping Project will be added to Chapter 4 of this report.</p> <p>6-22 The following reference was added to chapter 11, section 11.2.</p> <p><i>“Future reconnaissance report updates can use the Pacific Northwest Center for Geologic Mapping Studies at the Department of Earth and Space Sciences, University of Washington’s Vashon Island geologic map and data sets developed to support hazard assessments and land use applications for the Puget Lowland. The geologic map and data sets for Vashon Island can be downloaded at the following website: <a href="http://geomapnw.ess.washington.edu/index.php">http://geomapnw.ess.washington.edu/index.php</a>”</i></p>
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	<p>We will make the suggested change in the final report.</p> <p>6-04: Suggested change was made. The report now reads:  <u><i>“Available information also suggests that nitrate and chloride contamination may be considered the most significant threat at this time.”</i></u></p>
8.	b. 4.3 on stormwater management - I've attached the	Martin Baker &	The following sentence was added to Section 4.3:

	<p>position statement on LID that the groundwater committee adopted. A major priority of the committee is preservation (or mimicking 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.</p>	<p>Donna Klemka</p>	<p><u>“Stormwater management practices on Vashon –Maury Island should seek to achieve the following goals when being implemented:</u></p> <ul style="list-style-type: none"> <li>● <u>Mimic as closely as possible the natural hydrologic function of the watershed</u></li> <li>● <u>Maximize the protection of surface and ground water quality</u></li> <li>● <u>Optimize base stream flows</u></li> <li>● <u>Maximize ground water recharge</u></li> <li>● <u>Preserve natural stream morphology</u></li> <li>● <u>Preserve aquatic habitats”</u></li> </ul> <p>6-04: The italicized and underlined text above was added to Section 4.3, and VMI-19 was revised and now includes language that advocates for more LID project near the town center, and improvements to regulatory language to encourage LID practices.</p>
<p>9.</p>	<p>Specific suggestions:</p> <p>c. In Chapter, section 6.2 discusses "potential pollutant sources"</p> <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</p>	<p>Martin Baker &amp; Donna Klemka</p>	<p>a. The RRR report referenced the Vashon Town Center Stormwater Study for its language pertaining to the effects of development to both Shinglemill and Gorsuch Creek. The edits being suggested to section 6.2 will not be made as 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 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 resources to identify more LID opportunities on the island.</p> <p>6-04: ditto above.</p>

<p>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 from this</p>		
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	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"> <li>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."</li> <li>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"> <li>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</li> </ul> </li> </ul>	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 was 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> <p>6-04: ditto above</p>

	<p>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.</p> <ul style="list-style-type: none"><li>• 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.</li><li>• 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,</li></ul>		
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	<p>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.</p> <ul style="list-style-type: none"> <li>• The risk of continuing or increased proliferation of exempt wells should be identified as another source of risk for groundwater contamination in the RRRR.</li> </ul>		
11.	<p><b>Jeremy Pratt Comments on Vashon RRR Report, Draft January 2004</b></p> <p>a) p. 4-8: first sentence under 4.4 Conclusions and Recommendations reads “be designed consider do the following” – replace “consider” with “to”</p> <p>b) p. 4-8: last bullet, last sentence – “loosing stream reaches” should be “losing stream reaches”</p> <p>c) Table 5-1 (discussion of forest cover and effective impervious area by basin): the text and table merely refer to basin numbers; please show and name the basins by number on a the standard islands base map figure.</p> <p>d) Chapter 6, Tables 6-2 through 6-4: relate the sampling sites to the map</p>		<p>6-04: See responses below.</p> <p>a) Comment accepted and language changed.</p> <p>b) Comment accepted and language changed.</p> <p>c) See Fig. 1-1. A note was added to Table 5-1 directing the reader to Fig. 1-1.</p> <p>d) Comment accepted and mapped sample site location numbers were added next to each respective sample site referenced in Table 6-2, Table 6-3, Table 6-4, Table 6-5, Table 6-6.</p>

<p>e) Table 7-2: again a map showing creeks by name and number would add a great deal to the effectiveness of the presentation. A matrix format would be a much better presentation tool for this table. On Shinglemill Creek, only one set of limiting factors is given, but the creek's subbasins would vary considerably. Where is Judd Creek (and its subbasins) in this table?</p> <p>f) p. 7-12, under Channel Modifications...: is "percent of stream reach enclosed" the right measure? A small percent enclosure can have big effects, depending on where it is located.</p> <p>g) p. 7-15 at end of page: "observations made at major access points and under the assumption that conditions at these locations were representative of the subbasin." Should state that this is a conservative assumption – conditions at access points are likely not representative, as these sites tend to be more degraded and more developed.</p> <p>h) Chapter 7, "Subbasin Alternation" subsections (e.g., Section 7.3.2, 7.4.2 etc.) all this data would be less tedious and more informative in a table</p> <p>i) p. 7-24, under Rating – description of subbasin as "fair" seems an understatement of quality – "fairly good but</p>		<p>e) Figure 7-1, Figure 1-1, Figure 7-2, etc... shows the creek names and numbers.</p> <ul style="list-style-type: none"> <li>● Matrix display of habitat analysis: See appendix G "Venerability Analysis." It contains limited habitat information in a matrix format.</li> <li>● Absence of Shinglemill Creek information: No new data collection was done for this report. The consultants used the "Limiting Factors Report for WRIA 9" to compile this information.</li> <li>● Judd Creek missing in table 7-2: The data source for Judd Creek was not available in the WRIA 9 Limiting Factors report.</li> </ul> <p>f) Percentage of stream reach enclosed is included in channel modification evaluations. Since some enclosure are significant fish barriers.</p> <p>g) No change to the language will be made at this time, because we believe the consultants qualified their statements that it was based on professional judgement using existing data; aerial photos, field visits, and reports.</p> <p>h) Agreed, that information would be less tedious if displayed in a table. Some its elements can be viewed in a table formation in Appendix G, Venerability Analysis.</p> <p>i) "Good, Fair, Poor" are defined in the body of the report. See Section 7.2.4. These qualifying statements are consistent with the</p>
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<p>vulnerable” might be better. Rating discussion somewhat contradicts the preceding paragraphs.</p> <p>j) p. 7-31 compare “low level of flow modification” under Flow Modification subsection with lead sentence under Channel Modification subsection which states “Channel and flow modifications are moderate.” There is a disjunction here.</p> <p>k) p. 7-32, Subbasin Alteration Matrix, first sentence reads “A moderate level of subbasin alteration has occurred...” Here and in many of these subbasins, several of these summary statements somewhat overstate the case – in this case, 6 of 7 criteria are rated “low” and the single criteria rated “moderate” should not drive the entire rating. (See tables 7-17, 7-19. Yet compare Table 7-23, which shows one criteria “high” and two others “moderate” yet the subbasin is given the same overall “moderate” rating that the two subbasins with only one criteria in the “moderate” range!</p> <p>l) p. 7-42, 2<sup>nd</sup> paragraph – repeated reference to “past land use practices” overdoes it a bit.</p> <p>m) p. 7-44, Section 7.11.8 Data Needs, last bullet – it is not at all clear to me why a study of stream conditions above and below the mass wasting is needed to take action on this obvious problem. I have walked the stream in this reach and see little value added in such a study over what can be readily determined by simple reconnaissance.</p> <p>n) Page 10-5, Section 10.2 Watershed Vulnerability Analysis – the classification “sensitive” is somewhat of a misnomer – “existing high quality” is what seems to</p>		<p>Watershed Vulnerability Analysis approach adapted for this effort.</p> <p>j) There is no disjunction here. One refers to flow modifications (hydrologic) and the other to real modifications to the channel.</p> <p>k) Comment accepted. However, the consultants made these determinations based on their evaluation of existing information. Therefore, changes to the subbasin alteration matrix rating will not be made at this time.</p> <p>l) Could not find this reference.</p> <p>m) Comment received, however no change will be made to this bullet because it is a consultant recommendation. VMI-32 is included to address the known mass wasting issue at Shinglemill Creek and the County is currently considering options to address this known problem site.</p> <p>n) Comment received and no response necessary. See Appendix G “Watershed Vulnerability Analysis” the term “sensitive” is defined.</p>
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	be meant by the definition given there of the term.		
12.	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	JHGerstle	See response to comment #7 above.