



State of Oregon
Department of
Environmental
Quality

OREGON DEPARTMENT OF ENVIRONMENTAL
QUALITY

December 2008



Molalla-Pudding Subbasin TMDL
Response to Comments

For more information:

<http://www.deq.state.or.us/wq/TMDLs/willamette.htm#mp>

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Introduction

This Response to Public Comments document addresses comments received regarding the Draft Molalla-Pudding Subbasin Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WQMP) dated August 2008. The Oregon Department of Environmental Quality (DEQ) appreciates the time and effort that all the commenters put into reviewing the document. All comments have been considered by DEQ and, where appropriate, have been addressed in the final document that has been submitted to the Environmental Protection Agency (EPA). EPA will then either approve or disapprove the TMDL.

Background

The public comment period on the proposed TMDL and WQMP opened August 29, 2008. Written and oral comments were received during the public comment period that extended through October 31, 2008. The formal public hearing was in Silverton (City Council Chambers) October 16, 2008.

One commenter provided oral comments at the public hearing in Silverton. Remaining comments received by DEQ were submitted in written (paper and electronic) form or, in two cases, over the telephone. The TMDL and WQMP were available for downloading from ODEQ's website throughout the comment period. Hard copies of the document were also available for viewing at DEQ's offices in Salem and Portland. Copies were also available during the comment period at the Molalla and Silverton libraries and the Marion Soil and Water Conservation District office. Copies of the document were also provided to those individuals who requested copies.

List of Comments provided on the Molalla-Pudding Subbasin TMDL

The following entities provided comments on the TMDL during the Public Comment Period and were received prior to closure of the comment period 5:00 PM October 31, 2008.

Commenter	Number
U.S. EPA Region 10 (Mark Filippini, Region 10)	1
City of Woodburn (Dan Brown, P.E., Public Works Director)	2
City of Molalla (Malcolm Bowie, Public Works Director)	3
City of Salem (Peter Fernandez, P.E., Interim Public Works Director)	4
Oregon Department of Forestry, (Jo Morgan, Private Forests Program)	5
Oregon Department of Geology and Mineral Industries (Nancy E. Collins, Storm Water Specialist)	6
Clackamas County Water Environment Services (Michael S. Kuenzi, Director)	7
Lake Labish Water Control District (Judy McClaughery)	8
City of Wilsonville (Kerry Rappold, Natural Resources Program Manager)	9
City of Keizer (Elizabeth Sagmiller, Stormwater Program Manager)	10
East Valley Irrigation District (Kristina McNitt, Secretary)	11
Native Fish Society (Bill Bakke, Executive Director)	12
U.S. Bureau of Land Management (Chester Novak, District Hydrologist, Salem)	13
City of Silverton (Steve Starner, Public Works)	14

General

In the following section, DEQ provides our responses to the comments received. Comments are first organized by chapter and then by the individual or organization that provided the comment. Most comments are included in their entirety, although some comments quoting or citing information from other studies have been abbreviated in this summary. The number associated with the list of commenters above is used to identify their comment(s) in the following response to comment section.

Comments are on bold type and responses immediately follow each comment are in regular type to avoid confusion. The changes identified in the following responses have been made to the TMDL submitted to EPA.

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Comments on Executive Summary and Chapter 1: Overview	
Comment 1.	<p>Page 1 of the Executive Summary states that there are 11 Temperature listings addressed in this TMDL. Table 1-1 on page 1-2 identifies 14 Temperature listings, three of which were on the 1998 303(d) list. It is suggested that DEQ submit and include these listings for TMDLs in this document if impairments are found in these segments. Several segments on the 1998 Oregon 303(d) list did not get translated over to the revised 2002 or 2004/2006 303(d) lists for a variety of reasons. However, if these segments are determined to not meet the current water quality standards, they can be included in the TMDL submittal as valid TMDLs.</p> <p>For example, the Molalla River from River Mile 0 to 25, Table 2-3 (Page 2-5) indicates that this segment is exceeding the current standards and the TMDL developed would apply to this segment. Silver Creek also shows an exceedance. These and any other segments where the water quality standards are not being met, listed or not, and a TMDL has been (or could be) established, can be identified as a TMDL. Once identified and included in the submittal letter, they can be counted for the purposes of the Consent Decree. It appears that this could be applied to numerous segments for temperature, since the temperature TMDL was established on a watershed scale. (1)</p>
DEQ Response	<p>DEQ made the following changes to Table 1 -1.</p> <ol style="list-style-type: none"> 1. Added a Temperature listing for Molalla River, river mile 0 – 25, previously listed in 1998. Data used in the TMDL analysis (e.g. Table 2 -3 in Chapter 2, Temperature) indicated this reach is still impaired for temperature. 2. Added two listings for DDT, in the Little Pudding River and Zollner Creek based on data review from those locations. These reaches had not been previously listed for these parameters. 3. Added one listing for dieldrin in the Pudding River based on data review from a Pudding River site. This reach had not been previously listed for this parameter. 4. Added a listing for Summer Fecal Coliform on the Pudding River (River Mile 0 – 35.4), previously listed in 1998. Data used in the TMDL analysis, collected between 1996 and 2006, indicate this reach is impaired for bacteria in the summer. 5. Deleted listing for Fall/Winter/Spring Fecal Coliform on the Pudding River (River Mile 0 to 35.4) because there was a more recent <i>E. coli</i> listing for that same season and reach. <p>The text in the Executive Summary was also changed to indicate the following impaired stream reaches addressed. 30 TMDLs are completed, and three listings are proposed for delisting:</p> <ul style="list-style-type: none"> Temperature: 14 Bacteria: 7 DDT: 3 Chlordane: 1 Dieldrin: 2 Iron: 2 Manganese: 2 propose delist Arsenic: 1 propose delist <u>Nitrate: 1</u> Total: 33

	DEQ also changed language in the Executive Summary and Chapter 1 to indicate that a TMDL was completed for the chlordane listing in Zollner Creek.
Comment 2.	Page 1 states that 24 of 25 listings are being addressed in this document. One listing for DO in the West Little Fork Pudding River is not being addressed. The remaining listings are either proposed for delisting, or TMDLs have been developed. Table 1-1 (page 1-2) includes 30 listings. It would be helpful if Table 1-1, or a similar table include the listings that have been delisted (if appropriate, per above), are recommended for delisting, and those for which a TMDL has been developed. (1)
DEQ Response e	DEQ added a column indicating the action taken to address each listing in Table 1.1. A total of 34 stream reaches impaired for a particular parameter in a particular season are included in Table 1-1. A stream reach listed for the same parameter in different seasons (e.g. summer and fall/winter/spring bacteria) is counted as "two" listings. One of those stream reaches impaired for dissolved oxygen (West Fk. Little Pudding River) is not addressed with this TMDL (see Comment 4 and DEQ Response). The total impaired stream reaches addressed with a TMDL or a recommendation for delisting is 33.
Comment 3.	Page 1-2, Table 1-1. This table does not include the listing for the Molalla River 0 to 25 mile Temperature listing which is included in Table 2-3 on page 2-5. (1)
DEQ Response	DEQ has included a listing for Temperature impairment in the Molalla River (River Mile 0 to 25) in Table 1.1.
Comment 4.	We concur with the conclusion that "The dissolved oxygen listing in the West Fork Little Pudding River...is not addressed. The timing of this listing did not allow for incorporation of a dissolved oxygen TMDL in the current work scope, including assessing intergravel dissolved oxygen that would allow more complete interpretation of the dissolved oxygen criteria (Page 1-5)." If a dissolved oxygen TMDL is ultimately needed, it should be developed correctly. (4)
DEQ Response	DEQ is pleased that the City of Salem and DEQ are in agreement.
Comment 5.	Page 1-1 (first paragraph, last sentence) needs to be rewritten. It currently reads: "DEQ has also developed load allocations for heat (temperature), bacteria, DDT, dieldrin, nitrate, and iron for nonpoint sources that apply to all sectors in the subbasin." Our reading of Chapter 4 indicates that the load allocations for dieldrin and nitrate do not apply to either the WF or EF Little Pudding, and thus do not apply to the City of Salem. (4)
DEQ Response	DEQ has changed this statement to say "some or all sectors in the subbasin."
Comment 6.	On page 1-19, you cite only personal communication to substantiate the statement, "The Little Pudding watershed encompasses a portion of the City of Salem and accepts less than 10% of that city's stormwater." You should include the data to indicate where the "10%" came from. (8)
DEQ Response	The City of Salem employee with whom DEQ communicated is the Chief Utilities Planning Engineer in the Public Works Department. DEQ contacted him again in November 2008 and obtained a more accurate estimate of the percent of City of Salem stormwater that drains in the Little Pudding watershed. Based on the area of the City of Salem within the Little Pudding watershed, approximately 15% of the City's stormwater drains to the Little Pudding watershed. DEQ updated the estimate and included the reference as a footnote #15 in Chapter 1.

Comment 7.	<p>Overview, Page 13, Fish Use: Winter steelhead and spring Chinook both rear in the upper part of the Molalla River. Most anadromous fish don't move more than half a mile from where they leave the gravel until the smolt stage unless out of necessity. Since the vast majority of spawning for both these species occurs above river mile 25, the majority of rearing does not occur in the lower river, where temperatures are warmer.</p> <p>We know that the remnant population of Coho in the Molalla River use Milk, Woodcock, Shady Dell, Cedar and Russell Creeks to spawn, and that they also rear upstream of Milk Creek.</p> <p>If DEQ has evidence that shows that Molalla River anadromous fish rear more in the lower river than they do in the upper river, we would like to see it. (12)</p>
DEQ Response	<p>DEQ appreciates and acknowledges the Native Fish Society's expertise in identifying fish use and habitat. DEQ has cited the references in Chapter 1 from which information on fish use was derived. Regarding rearing and migration in the lower Molalla River, DEQ based those statements on the ODFW 1:24 K fish distribution maps available on their website (http://nrimp.dfw.state.or.us/nrimp/default.aspx?pn=fishdistribmaps). The legends on the ODFW maps indicate the data sources, location of additional information, and distribution data descriptions. DEQ does not have additional information regarding anadromous fish rearing in the lower Molalla River.</p>
Comment 8.	<p>Overview, Page 17, North Fork Molalla Watershed: While there is a road paralleling Cougar Creek that creates some sedimentation problems in high flood events, Cougar is a pristine stream with several constructed large woody debris areas that provide excellent habitat for wild winter steelhead and we do not consider it in poor condition.</p> <p>We want to ensure that Cougar Creek and the rest of the North Fork (the only fork not a temperature TMDL concern) does not become an issue due to the next round of timber harvest. (12)</p>
DEQ Response	<p>DEQ clarified in the text of this section the reference from which this statement about Cougar Creek came and also that the statement pertained to the watershed, not the creek particularly. DEQ appreciates NFS's concern about water quality in Cougar Creek and the North Fork Molalla.</p>
Comment 9.	DEQ initiated change.
DEQ Response	<p>Figure 1-10 contained outdated information regarding delineation and identification of hydrologic units. The figure has been updated.</p>

Comments on Chapter 2: Temperature	
Comment 1.	Page 2-ii. Table of Contents. The page number for Figure 2-35 should be right justified. (1)
DEQ Response	This formatting error has been corrected. As well, the figure numbers after Figure 2-20 have been corrected because the August 2008 Draft of Chapter 2 incorrectly skipped Figure 2-21 when numbering figures.
Comment 2.	Page 2-3. Table 2-2 does not agree with Table 1-1 (per above comment). (1)
DEQ Response	Both Tables 2-3 and 1-1 now include 14 temperature listings.
Comment 3.	Page 2-11. Second paragraph, "Table 2 – Table 2" should be corrected. (1)
DEQ Response	This erroneous inclusion has been deleted.
Comment 4.	Page 2-13. Table 2-7. The last column, Excess Loading; for the Pudding River, 476 is not the difference between the first two columns as it is for the Molalla River. (1)
DEQ Response	This was an error and has been corrected in Table 2-7. The corrected Excess Loading as Excess Solar Radiation is 688 million kcal/day.
Comment 5.	Page 2-21. Point Sources of Heat. The last sentence of the first paragraph states that no wasteload allocations are given to stormwater. This could be considered to be a zero WLA, creating confusion for future permit writers. It may be better to consider the WLA to be negligible, though not specified, and included in the analysis based on current conditions. This would be similar to what you have done for the general permits in the next paragraph. (1)
DEQ Response	The last sentence of the first paragraph on page 2-21 has been changed to state, "DEQ has not assigned explicit wasteload allocations (WLAs) for sources discharging only stormwater, but these sources receive implicit heat load allocations sufficient to cover current conditions of discharge.
Comment 6.	Page 2-21. Top paragraph, third line; Table 25 should be Table 2-18. (1)
DEQ Response	DEQ believes this error was on page 2-41. The error has been corrected and "Table 25" now reads "Table 2 – 18."
Comment 7.	Page 2-44. The first paragraph states that only two point sources are permitted to discharge during the critical period. It should be clarified that the Molalla Municipal Water Treatment Plan holds a general permit to discharge as well. (1)
DEQ Response	This paragraph now specifies the two sources for which we evaluated potential temperature increases to the Molalla River (Molalla Drinking Water Plant and Sanders Wood Products). The Canby Utility Board Drinking Water Treatment Plant was deleted from Table 2-21 because DEQ did not calculate a potential heat load from this facility. DEQ had previously concluded that the facility did not have reasonable potential to heat the Molalla River and that the facility would not receive an explicit wasteload allocation for heat. The facility was allocated the negligible heat loading associated with current operating conditions.
Comment 8.	Page 2-44. Same paragraph. It would be helpful to reference where any analysis or the data are to support the cumulative effects determination. This could include an appendix, a table, or a section of the document. (1)

DEQ Response	DEQ has added a statement to this paragraph explaining that the basis for the decision not to do a cumulative effects analysis for the two sources that discharge to the Molalla River is included in the Wasteload Allocation description for each of the sources. In those descriptions the potential discharge quantities of the sources relative to stream flow is analyzed as is the potential stream heating from each of these sources. Cumulative effects for the Pudding River model are included under the heading "Cumulative Effects Analysis" in the Pudding River Wasteload Allocation section.
Comment 9.	Page 2-44. Table 2-22. Below the bottom of this table has a "Table 2-2-" entry that may be an error. (1)
DEQ Response	This erroneous inclusion has been omitted.
Comment 10.	Page 2-45. The Excess Thermal Load discussions for the each of the dischargers referenced here mention statements such as: "As long as the facility continues to comply with the conditions of their permit and discharge does not exceed approximately __ cfs, DEQ will consider the facility's operation in compliance with the WLA." It is unclear if this is a qualitative statement linked to a numeric WLA later calculated, or if this is to serve as the basis for determining compliance with the WLA. Terms such as 'as long as', 'approximately', and 'considered to be in compliance' are not valid WLA determinations. The dischargers will still have to demonstrate compliance with the WLAs through monitoring or other valid means in the NPDES permit. These statements seem to infer a basis for determining compliance with the WLA and should be rephrased. (1)
DEQ Response	Statements in this section about how facilities (Sanders Wood Products, Molalla Municipal Drinking Water Treatment Plant, Chevron/Texaco Service Station and Sunstone Circuits) can demonstrate compliance with wasteload allocations (WLAs) have been deleted. Means of demonstrating compliance with the wasteload allocations will be included in wastewater permits. DEQ has rephrased the referenced statements to indicate whether or not current discharge conditions appear to be within the WLAs or if operational changes may be needed.
Comment 11.	For each of the dischargers it should also be mentioned if the current limits of their permits will serve as their WLA, or are captured in their WLA formula. The Molalla drinking water plant discussion on page 2-47 mentions the permit by number and better explains the relationship between the permit and the WLA. This would be a better way to present the discussion for all the permitted discharges. It is not clear in any of the discussions if the WLAs were based on, or capture, facility design flows, permitted flows, or current flows/discharges. It would be helpful to explain this relationship to the WLAs as well. It is assumed that the WLAs are flow-based and will capture all potential future expected flows. (1)
DEQ Response	This sentence has been added to the introductory paragraph of the Wasteload Allocation section: <p>In most cases for this TMDL, the WLA is expressed as a flow-based formula (Equation 2). Using the formula as the wasteload allocation captures varying flow conditions, both effluent and in-stream, up to and including the design flow of the facility. This method allows facilities to increase discharge and still be within receiving water requirements.</p> <p>DEQ has also added a paragraph to the description of the WLA for each source that describes how the WLA compares to the heat load limitations (if any) in their current permits.</p>
Comment 12.	Page 2-55. Surrogate Measures. The first sentence is unclear and should be restated for clarification. (1)
DEQ Response	The first sentence of this section has been changed to clarify that the surrogate measure of effective shade is used to express the load allocation for streams that were not modeled. The rephrased section begins, "The Load Allocation (e.g.

	background solar radiation at system potential vegetation) applies to all streams in the Molalla-Pudding subbasin but cannot be expressed explicitly for streams that were not modeled. DEQ uses a surrogate measure to express the load allocation for unmodeled streams. Percent effective shade is a surrogate measure used to represent nonpoint source heat loads.”																			
Comment 13.	Page 2-59. Middle paragraph, fourth line, “Figure 2- ” is left blank. (1)																			
DEQ Response	This figure number was erroneously omitted. A figure number has been added, Figure 2 – 34.																			
Comment 14.	Page 2-69. Reserve Capacity. Table 2-1 on page 2-2 in the Reserve Capacity discussion states “This allows for a maximum Reserve Capacity of 0.25°C.” This sentence should be added on page 2-69 for clarity as to how the reserve capacity is expandable. (1)																			
DEQ Response	The noted sentence has been added to the Reserve Capacity section on page 2-69.																			
Comment 15.	<p>In Table 2-9 and numerous other places in the report, the river mile (RM) location of the Woodburn outfall is identified as 21.4. This river mile position, I believe, was taken from our current NPDES permit. However, the Poplar Tree Effluent and Bio-solids Reuse System Study identifies the WWTP outfall at RM 23.4 and coincides with the outfall location indicated on a USGS map. The outfall for JRL, LLC (Bruce Pac) is identified as 27.0. These locations are not consistent with the river kilometer (RK) locations associated with the modeling (e.g., page A-38 of Appendix A and numerous longitudinal charts). The discrepancies in outfall locations are identified in Table 1 below:</p> <table border="1"> <caption>Table 1. Outfall Location Discrepancies</caption> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Outfall locations in Ch. 2</th> <th>Outfall location</th> </tr> <tr> <th>River Mile</th> <th>River Kilometer</th> <th>River Mile</th> </tr> </thead> <tbody> <tr> <td>JRL</td> <td>27.0</td> <td>43.5</td> <td>28.0</td> </tr> <tr> <td>Woodburn</td> <td>21.4</td> <td>34.4</td> <td>23.8</td> </tr> <tr> <td>Distance between JRL and Woodburn</td> <td>5.6</td> <td>9.1</td> <td>4.2</td> </tr> </tbody> </table> <p>Note: On page 2-36 DEQ notes that the distance between the JRL and Woodburn miles which is not consistent with either of the distances shown above or at the report</p> <p>As shown in Table 1, the outfall locations assumed for the modeling indicate a closer distance between JRL and Woodburn than the locations identified in Chapter 2 (the latter of which are presumably identified in the current permits). The modeling showed that there is no residual effect of JRL discharges at Woodburn if JRL is allocated 0.01 degree C during the TMDL season as proposed by DEQ in this draft TMDL. This is of importance to the City because DEQ notes on page 2-36 that: “If a future decision is made to allocate a larger heat load to Bruce PAC, then the wasteload allocation for the City of Woodburn WWTP will need to be recalculated. For every unit of the human use allowance allocated as heat load to Bruce Pac, at least 2/3 unit reduction would be required in the portion of the HUA allocated as heat load to Woodburn, to account for thermal overlap.” (2)</p>		Outfall locations in Ch. 2		Outfall location	River Mile	River Kilometer	River Mile	JRL	27.0	43.5	28.0	Woodburn	21.4	34.4	23.8	Distance between JRL and Woodburn	5.6	9.1	4.2
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DEQ Response	The JLR (Bruce PAC) and Woodburn outfalls were located in the Heat Source model at River Kilometers 44.15 (RM 27.4) and 38.3 (RM 23.8), respectively. These locations are the distances upstream from the river mouth based on ODEQ’s channel digitization. Since based on ODEQ’s own channel digitization, these locations may differ somewhat from the outfall locations measured by other																			

	<p>organizations. For example, based on the Oregon Water Resource Board river mile index of 1967, which is often used as a reference for river miles, these correspond to RM 27.0 and RM 23.5.</p> <p>The locations of the JLR and Woodburn outfall locations were surveyed by ODEQ in September, 1998 as follows:</p> <table border="1" data-bbox="500 373 1292 499"> <thead> <tr> <th>Facility</th> <th>Permit</th> <th>MTPT name</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>JLR, LLC</td> <td>101253</td> <td>Process Effl 001</td> <td>45.126091</td> <td>-122.820757</td> </tr> <tr> <td>WOODBURN POTW</td> <td>101558</td> <td>Effluent 001A</td> <td>45.150879</td> <td>-122.804024</td> </tr> <tr> <td>WOODBURN POTW</td> <td>101558</td> <td>Effluent 001B</td> <td>45.151131</td> <td>-122.802994</td> </tr> </tbody> </table> <p>The model locations based on this survey are RK 43.8 (RM 27.2) for JLR and model RK 38.0 (RK 23.6) for the City of Woodburn WWTP. Based on this survey, the outfalls are each located about 0.2 miles further downstream than the locations as modeled. While the outfalls are both located 0.2 miles further downstream than the locations as modeled, the distance between the outfalls is still 3.6 miles. Therefore, conclusions presented in the document regarding the impact of JLR on City of Woodburn wasteload allocations are unchanged. DEQ has clarified on the pages identified in the comment, if the facility locations are model river miles or river miles taken from the permit.</p>	Facility	Permit	MTPT name	Latitude	Longitude	JLR, LLC	101253	Process Effl 001	45.126091	-122.820757	WOODBURN POTW	101558	Effluent 001A	45.150879	-122.804024	WOODBURN POTW	101558	Effluent 001B	45.151131	-122.802994
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<p>Comment 16.</p>	<p>Figure 2-23 and related text show a significant overlap at some assumed JRL discharge in August. This is the basis for the “2/3” unit reduction assumption cited above. The report, however, does not identify what the assumed JRL flows and heat loads or temperature was for this figure and conclusion. These assumptions should be stated in the text and substantiated in the modeling appendix. In addition, the text in Chapter 2 should reiterate that this is a purely hypothetical scenario because the JRL facility does not currently discharge in summer and does not have an allocation to do so other than the 0.01 degree C allocation.</p> <p>Given the apparent uncertainty of a potential future increase in the WLA for JRL, it is critical that this outfall location discrepancy be resolved. The City recommends that both the City and JRL outfalls be surveyed to confirm separation distance for temperature modeling.</p> <p>It is apparent that the City cannot adequately plan for future wastewater treatment facilities requirements and compliance with the TMDL unless there is some level of certainty of the City’s WLA. The City strongly recommends that the process for determining how JRL would receive a larger allocation be defined in the TMDL. (2)</p>																				
<p>DEQ Response</p>	<p>For this analysis, the point sources were modeled with pure heat loads by setting effluent flow rates to very low flow rates of 0.0001 cubic meters/second and setting effluent temperatures high enough to produce temperature increases of 0.2°C, based on a mass-balance analysis. Other modeling conditions are summarized in the Cumulative Effects Analysis section.</p> <p>The text has been revised to make it clear that this is a hypothetical scenario, since the JLR, LLC/Bruce Pac facility does not currently discharge in summer and since JLR, LLC/Bruce Pac has been given a wasteload allocation of only 0.01°C, not 0.20°C.</p> <p>The TMDL contains a reserve capacity allocation. Increases for future growth or expanded sources could be allocated from this reserve capacity. If this is insufficient, then revised wasteload allocations could be developed as part of a future TMDL in accordance with rules and methodologies applicable at that time.</p>																				

<p>Comment 17.</p>	<p>The City understands that model calibration error cannot be avoided and that the calibration of the Pudding River model meets reasonable targets for error in the vicinity of the City’s discharge. Nonetheless, the City notes that the model is consistently under-predicting Pudding River temperature in the Woodburn reach by -0.6 to -1.1 degrees C (Figures A-34 and A-38 and Tables A-12 and A-13). Although this error is within the range of what should be expected for river temperature modeling, it certainly has a substantive effect on the WLAs for the City because this under-prediction of the current condition likely translates to some extent to the NTP scenario. The cooler the river is at NTP, the more restrictive the WLAs. The City is not requesting model recalibration at this time, but wishes to have this issue documented and appropriately addressed via the adaptive management process during TMDL implementation. (2)</p>																														
<p>DEQ Response</p>	<p>It is not clear that the model under-predicts temperatures in the Woodburn vicinity. The Woodburn WWTP discharge is located at RK 38.0. Error statistics for hourly temperatures for the continuous monitoring stations upstream and downstream of the discharge are as follows:</p> <table border="1" data-bbox="496 835 1477 1031"> <thead> <tr> <th>Station</th> <th>Location (RK)</th> <th>Mean Error</th> <th>Mean Absolute Error</th> <th>RMS Error</th> </tr> </thead> <tbody> <tr> <td>Node 5: Hwy 214 DEQ Lasar No. 10641</td> <td>43.7</td> <td>-0.5</td> <td>0.8</td> <td>0.9</td> </tr> <tr> <td>Node 6: Hwy 211 (Woodburn) DEQ Lasar No. 10640</td> <td>36.2</td> <td>-0.6</td> <td>0.7</td> <td>0.8</td> </tr> </tbody> </table> <p>Error statistics for 7-day average daily maximum temperatures are as follows:</p> <table border="1" data-bbox="496 1094 1477 1289"> <thead> <tr> <th>Station</th> <th>Location (Rkm)</th> <th>Mean Error</th> <th>Mean Absolute Error</th> <th>RMS Error</th> </tr> </thead> <tbody> <tr> <td>Node 5: Hwy 214 DEQ Lasar No. 10641</td> <td>43.7</td> <td>-0.1</td> <td>0.2</td> <td>0.2</td> </tr> <tr> <td>Node 6: Hwy 211 (Woodburn) DEQ Lasar No. 10640</td> <td>36.2</td> <td>-1.1</td> <td>1.1</td> <td>1.1</td> </tr> </tbody> </table> <p>Model error specifications which ODEQ attempted to achieve when modeling the Pudding River were Root Mean Squared (RMS) error of no greater than 1.0°C and Mean Error within the range +/- 1.0. The error statistics in the vicinity of the Woodburn discharge either meet or only slightly exceed these specifications. Based on these statistics and visual observations of simulated vs. observed temperatures, the model was determined to be well calibrated and accurately calculate temperatures.</p> <p>In the future if the TMDL is revised the wasteload allocations may also be revised. In such case, a revised model could be used for the analyses. If the City of Woodburn improves the model calibration, then the improved model could be used for associated analyses.</p>	Station	Location (RK)	Mean Error	Mean Absolute Error	RMS Error	Node 5: Hwy 214 DEQ Lasar No. 10641	43.7	-0.5	0.8	0.9	Node 6: Hwy 211 (Woodburn) DEQ Lasar No. 10640	36.2	-0.6	0.7	0.8	Station	Location (Rkm)	Mean Error	Mean Absolute Error	RMS Error	Node 5: Hwy 214 DEQ Lasar No. 10641	43.7	-0.1	0.2	0.2	Node 6: Hwy 211 (Woodburn) DEQ Lasar No. 10640	36.2	-1.1	1.1	1.1
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Node 5: Hwy 214 DEQ Lasar No. 10641	43.7	-0.5	0.8	0.9																											
Node 6: Hwy 211 (Woodburn) DEQ Lasar No. 10640	36.2	-0.6	0.7	0.8																											
Station	Location (Rkm)	Mean Error	Mean Absolute Error	RMS Error																											
Node 5: Hwy 214 DEQ Lasar No. 10641	43.7	-0.1	0.2	0.2																											
Node 6: Hwy 211 (Woodburn) DEQ Lasar No. 10640	36.2	-1.1	1.1	1.1																											
<p>Comment 18.</p>	<p>None of the tributaries to the Pudding River were modeled by DEQ. Instead, for the NTP scenario, DEQ assumed that tributary temperatures at the mouth would never exceed 18 degrees C (i.e., always meeting the numeric biological criterion). The City notes that in another sub-basin of similar size (i.e., Tualatin sub-basin), the major tributaries were modeled by DEQ. Recent updates of that tributary modeling completed by CH2M HILL indicates that</p>																														

	<p>NTP temperatures are not in all cases lower than or equal to the numeric criterion of 18 degrees C. The City does not have insight into what the NTP temperatures would be for the Pudding River tributaries, but recognizes from DEQ’s sensitivity analyses that this assumption leads to the mainstem river temperature near Woodburn being 0.9 degrees C cooler than with the tributaries set at their current temperatures.</p> <p>The City is not requesting that DEQ model the major tributaries at this time, but desires to have this issue be documented and appropriately addressed via the adaptive management process during TMDL implementation. The combined effect of negative calibration error and the tributary NTP temperature assumption lead to the river being assumed to be 0.6 to 1.5 degrees cooler than it otherwise would be predicted to be. This leads to more restrictive WLAs for the City. (2)</p>
<i>DEQ Response</i>	<p>ODEQ agrees that it would be preferable to model all tributaries. However, resource limitations limit the number of reaches for which data can be collected and modeling performed.</p> <p>Sensitivity analyses showed that reducing tributary temperatures to temperatures which meet 18°C on a 7-day average daily maximum (7 DADM) basis results in 7DADM temperatures up to 1.0°C cooler than current temperatures in the vicinity of the City of Woodburn WWTP discharge. While it is unknown whether the natural thermal potential temperatures of all tributaries would meet the 18°C criterion, it is clear that temperatures would be cooler. Based on the sensitivity analyses, it is not unreasonable to assume that temperatures in the vicinity of the Woodburn outfall would be 1.0°C cooler if NTP temperatures were met in the tributaries. Furthermore, ODEQ rules and EPA guidance require that margins-of-safety (MOS) be utilized to account for uncertainty related to TMDLs. Therefore, in order to comply with MOS requirements, it is appropriate to use 18°C for 7-day average daily maximum temperatures for non-modeled tributaries.</p> <p>As discussed above, in the future if the TMDL is revised the wasteload allocations may also be revised. In such case, a revised model could be used for the analyses. If the City of Woodburn develops calibrated models of tributaries, the improved models could be used as part of the analyses.</p>
Comment 19.	<p>The applicable time period for the Pudding River temperature TMDL was defined by DEQ in this draft TMDL as June 1 through September 30. The monitoring data in the report, however, show that the Pudding River near Woodburn currently meets the numeric biological criterion of 18 degrees Celsius (C) beginning in mid-September and that the river rapidly cools in the final weeks of September to about 15 degrees C (e.g., Figure 2-10 in Chapter 2). The corresponding NTP temperature identified for the river for the last two weeks of September at this location is a flat 18 degrees C. It is evident, however, that if the river had been modeled for September that the predicted NTP temperatures would have been substantially below 18 degrees C, and perhaps so substantially earlier than mid-September. The City recognizes that the NTP temperatures were determined by simply subtracting 4 degrees C from the current temperatures for each of the time periods within the overall TMDL season, based on the temperature difference during the limited model calibration period of 2 weeks in August. This short-cut method oversimplifies the actual situation, of course, and is of more than academic consequence to the City as explained below.</p> <p>The portion of the TMDL period that will be most challenging for the City to</p>

	<p>comply with is the month of September, in large part because the TMDL assumes the NTP temperature is a flat 18 degrees C for the entire month. If on the other hand, NTP temperatures were modeled for September, they would very likely be substantially lower than 18 degrees C, at least for the last couple of weeks and possibly much earlier in the month. When NTP temperatures are lower than the biological criterion, then the biological criterion applies and dischargers are allowed to increase the river temperature up to the criterion (i.e., the human use allowance, HUA, doesn't apply). This may provide substantially less restrictive WLAs for the City when NTP temperatures are well below 18 degrees C. (2)</p> <p>Because of special compliance challenges associated with the September allocations in the draft TMDL, the City requests that DEQ extend the NTP modeling through September. If this request cannot be accommodated, then the TMDL should provide the provision for the City to monitor river temperatures in September and adjust allocations accordingly when river temperatures are far enough below 18 degrees C to allow a larger WLA. (2)</p>
DEQ Response	<p>A determination that NTP temperatures in September are less than 18°C would not change the wasteload allocations for the City of Woodburn WWTP. DEQ standards specify that load allocations limit point and nonpoint sources to a cumulative increase of no greater than 0.3°C above the applicable criteria (340-041-0028(12)(b)). The applicable criterion (T_c in Chapter 2: Equations 1, 3, 3a, and 3b) is the biologically-based numeric criterion, unless it is determined that the natural thermal potential exceeds the biologically-based numeric criterion, in which case NTP becomes the applicable criterion. If NTP temperatures are less than the biologically-based numeric criterion (18°C in this case), it is irrelevant how much less than 18°C NTP temperatures are. Point and nonpoint sources are not allowed to increase stream temperatures up to 18°C simply because NTP temperatures are less than 18°C. They are only allowed to add excess thermal loads and increase stream temperatures as defined by the equations in the TMDL. Therefore, extending modeling through September in order to more accurately determine NTP temperatures would not change the load allocations if NTP temperatures are found to be less than 18°C. An additional correction to the comment above: DEQ has not assumed the NTP is a flat 18 °C for the entire month of September. DEQ's analysis estimated the NTP at the location of the Woodburn WWTP outfall for the first two weeks of September to be 18.2 °C.</p>
Comment 20.	<p>The TMDL is silent on the averaging period that should be included in the City's NPDES permit related to implementing the temperature TMDL. The City, through its consultant, has analyzed river and effluent flow and temperature data as part of the ongoing facilities planning effort. These analyses indicate that a bi-monthly averaging approach would substantially improve the City's capability to comply with the TMDL (i.e., compared to daily or weekly limits). Thus, the City requests that the TMDL document recommend a 2 month averaging period similar to the implementing NPDES permit for Clean Water Services on the Tualatin basin. (2)</p>
DEQ Response	<p>DEQ is committed to working with facilities to allow and encourage innovative strategies for them to comply with wasteload allocations set in a TMDL. The Clean Water Services (CWS) watershed permit, referred to in the comment, is one example of that commitment. Since that permit was written, DEQ has established a Temperature Trading workgroup that is currently developing an internal management directive that will establish guidelines for the kind of calculations referred to in the comment, such as methods for calculating pollutant loads and offsets. While DEQ does not think a TMDL is the appropriate place to make recommendations about permit specifics, there is nothing in the TMDL that would</p>

	prohibit these kinds of discussions from taking place as the Woodburn permit is renewed. The CWS permit refers to a Temperature Management Plan (TMP) in which criteria for compliance are established. While DEQ's Temperature Standard no longer requires TMPs for point sources, there is no reason the City of Woodburn could not develop a management plan as part of their renewed permit. In that management plan, the averaging period for determining compliance and calculating any offsets from trading could be documented.
Comment 21.	The description of the City's facilities in Chapter 2 are generally correct, however some of the specific values quoted are inaccurate. The City currently (2008) serves approximately 25,000 people. The average dry weather design flow of the current facility is 3.3 mgd and the average wet weather design flow is 4.8 mgd. The current facilities planning effort defines the long-term average dry weather design flow as 5.9 mgd and the average wet weather design flow as 8.6 mgd. (2)
DEQ Response	DEQ corrected the number of people the City serves and the average wet and dry weather design flows on page 2-26. DEQ also added a statement about currently facility planning efforts and the long term average wet and dry weather flows.
Comment 22.	The City's planning efforts include continued use of poplar plantation and construction of wetlands for mitigation. The limit of the City's ability to use these measures is a function of area land availability. While the reserve capacity will not meet the City's long term needs, it will defer the expansion of mitigation facilities and the City will look to tap into the reserve capacity as growth continues. (2)
DEQ Response	The City of Woodburn is eligible to apply for reserve capacity. A general description of how and under what circumstances reserve capacity would be allocated is contained in Chapter 7, Water Quality Management Plan, in the section: Temperature TMDL Implementation.
Comment 23.	City staff has been extensively involved with the development of the Willamette TMDL, and strongly concurs with DEQ's conclusion set forth on Page 2-21: "DEQ has generally considered heat load from stormwater to have no reasonable potential to cause temperature criteria violations. For that reason, DEQ has not developed wasteload allocations in the Molalla-Pudding Subbasin temperature TMDL for sources discharging only stormwater." (4)
DEQ Response	DEQ is pleased that the City of Salem and DEQ are in agreement.
Comment 24.	Text on page 2-55 states that the average current shade condition on the Molalla River mainstem is 27%, and that the system potential is 41%. System potential shade for the Pudding River is provided (52%), and the average current shade condition is not. Please include the average current shade percentage on the Pudding River mainstem. (7)
DEQ Response	The statement that "On the Pudding River, effective shading could increase to an average of 52%" is incorrect. Average system potential shade is 58% and average current condition shade is 47%. This has been clarified in the document.
Comment 25.	Figure 2-30 lacks a title. Please include one for clarity. (7)
DEQ Response	Figure 2-30 in Chapter 2 of the August Draft TMDL has been changed to Figure 2-29 in the final TMDL. The title of that figure is "Molalla River current and system potential effective shade, averaged over a 1 km distance."

Comment 26.	<p>On page 17 of a written May 29, 2007 Interim Report on Molalla River stream temperature modeling authored by Karen Font Williams, the following statement is present: “Simulations indicate that shading alone, even a scenario in which mature coniferous forests replace current vegetation on the stream banks, would not achieve temperature decreases allowing the Molalla River to meet the temperature criterion (16°C)”. Increasing stream flow further reduces stream temperatures in the modeled scenarios, though does not achieve reductions sufficient to reach the temperature criterion...the natural thermal potential during the critical low flow period in the lower half of the Molalla River likely ranges from approximately 23°C to 24.5°C.” Is a similar phrase in August 2008 draft TMDL? If not, and if DEQ still believes that the 16°C temperature criteria cannot be met in the Molalla River under any scenario, we recommend that this information be included in the August 2008 draft TMDL. (7)</p>
DEQ Response	<p>DEQ’s modeling and analysis did conclude that the natural thermal potential (NTP) temperatures of the Molalla River between early July and early September exceed the biological temperature criteria. While the August 2008 Draft TMDL and the final TMDL do not include the exact statement referenced in this comment, information about the NTP derived for the Molalla River is included in Table 2-5 (Chapter 2 Section: Water Quality Standards) and Appendix E (Section: Molalla River Natural Thermal Potential Estimation).</p>
Comment 27.	<p>Does DEQ believe that the biologically based numeric temperature criteria can be met in the lower Pudding River under any future scenario? If not, we recommend that this information be included in the August 2008 draft TMDL. (7)</p>
DEQ Response	<p>DEQ’s modeling and analysis did conclude that the natural thermal potential (NTP) temperatures of the Pudding River between early July and mid- September exceed the biological temperature criteria. Information about the NTP derived for the Pudding River is included in Table 2-6 (Chapter Pudding Molalla River Natural Thermal Potential Estimation).</p>
Comment 28.	<p>Chapter 2, Page 55, Surrogate Measures: Lack of riparian vegetation is likely the primary reason for the Molalla’s temperature listings, and we are very concerned about the impacts of timber harvest to the river. Oregon DOF forest practices require only a 20-100 foot riparian buffer depending on stream size and water right allocations. This is much less than the 180-200 foot average required by federal forest practices. Weyerhaeuser (which only has to comply with the state requirement) owns 70,000 acres in the Molalla drainage, and the vast majority of their timber lands are scheduled for cutting in the next 50 years.</p> <p>The measures outlined in the WQMP will have little to no effect (regarding temperature) if timber practices continue to encroach on the water. DEQ, ODFW and other state agencies, as well as USFS, BLM and other federal agencies need to collaborate with DOF to greatly increase the required riparian buffer on private land. DOF programs are discussed in more detail later in these comments.</p> <p>Purchase of private lands could also be a tool to protect critical fish habitat. If one or both of these measures are not done, it is likely the North Fork of the Molalla River will also be listed for temperature in the near future. (12)</p>
DEQ Response	<p>DEQ appreciates NFS concerns regarding forestry practices and its desire to protect the water quality of North Fork Molalla River. Oregon’s TMDL Rule states that the Oregon Forest Practices Act and associated rules are the mechanism to implement the TMDLs. If data show that FPA is not adequate, or if DEQ and ODF agree that additional protection measures are necessary, DEQ and ODF may</p>

	<p>recommend to the Board of Forestry to revise the Forest Practice rules.</p> <p>ODF and DEQ completed the Forest Practices Act Sufficiency Analysis (Sufficiency Analysis) in October 2002 pursuant to our 1998 Memorandum of Agreement. The Sufficiency Analysis identified a series of recommendations to highlight general areas where current forest practices could be improved in order to better meet the goals and objectives of the Forest Practices Act and in turn provide assurance of meeting water quality standards statewide. DEQ and ODF are cooperating on a monitoring project ODF initiated in 2002 designed to evaluate the adequacy of riparian protection rules to protect streams from solar radiation in excess of natural conditions. Once the project is completed, DEQ and ODF will decide how best to address the findings and implement the recommendations in the report.</p> <p>Land acquisition, as well as easements, can indeed be effective strategies for water quality protection.</p>
Comment 29.	<p>Regarding DEQ's statement on page 2-11: <i>DEQ represented system potential vegetation in unmapped areas with an Upland Forest scenario, based on U. S. Forest Service plant associations (Logan, et al., 1987). The Upland Forest scenario represents a mature coniferous forest, but still accounts for some natural disturbance such as forest fires, wind throw, disease, and natural landslides.</i></p> <p>The BLM still considers this an oversimplification of the riparian zone, its diversity, dynamic and disturbance pattern. The USFS associations underrepresent the system potential areas that are most important to temperature. These narrow bands, often with natural hardwood have much shorter system potential heights than your shade curve targets. The ODEQ should consider a UPLAND FOREST UNIT CONIFER and a UPLAND UNIT HARDWOOD, and allow the DMA to determine which is more appropriate to use. (13)</p>
DEQ Response	<p>DEQ acknowledges BLM's concerns about the use of the Upland Forest scenario to represent unmapped areas. For the Molalla-Pudding Subbasin modeling, DEQ chose to be consistent with the methods and procedures used in modeling the subbasins in the Willamette Basin TMDL (completed September 2006). For future TMDL modeling, DEQ is open to working with BLM to derive a more representative scenario for modeling areas not mapped with the "geomorphic coverages" used in the Willamette Basin TMDL. If BLM believes shade targets are not attainable for certain areas in the Molalla-Pudding Subbasin, an explanation and alternative target could be included in the Water Quality Restoration Plan.</p>
Comment 30.	<p>Oral testimony from October 16, 2008, Public Hearing: I'm Steve Starnier, representing the City of Silverton. Regarding the Molalla-Pudding TMDL, our biggest concern is temperature, being able to comply with limits imposed through the TMDL. The City has some capital improvement plans to ensure compliance in the future that involve additional discharge to our secondary outfall at the Oregon Garden wetlands and membrane filtration for additional reuse opportunities. Unfortunately those options also take water away from Silver Creek which usually helps with temperature reduction. It's a balancing act. We'll see over time how it works for the stream. (14)</p>
DEQ Response	<p>DEQ appreciates the City of Silverton's concerns and agrees that in-stream temperature depends not only on heat load received, but the amount of water in the stream. DEQ is committed to working with the City of Silverton and other point sources to explore options, like temperature trading, that address multiple sources of heat to the stream and involve more than simply reducing point source effluent volume.</p>

Comment 31.	Comment submitted by telephone September 17, 2008. I am concerned about the methodology that is used to calculate our ETL that takes into account river flow. Our current ETL is 5.3 million kcal/day. Table 2.17 gives us only 1.79 kcal/day. I'm concerned that we won't be able to discharge more than 100,000 gallons per day. (14)
DEQ Response	The Excess Thermal Load (ETL) calculated in the City of Silverton WWTP current permit is based on a temperature increase of no more than 0.3 °C from the biologically based temperature criterion (18 °C) when the WWTP average weekly dry weather design flow (4 MGD at 24.5 C°) is mixed with ¼ of the 7Q10 flow of Silver Creek. The ETL in the current permit is higher because the current ETL is based on a large effluent flow. The ETL from the Wasteload Allocation in the TMDL is stream and effluent flow based. The ETL in the TMDL is the amount of heat that would increase the stream temperature 0.2 °C when mixed with 100% of the stream flow, and the ETL changes based on the stream and effluent flow. The City will need to consider both effluent flow and effluent temperature when calculating compliance with the ETL. The city will be able to use the natural thermal potential temperature than DEQ estimated for Silver Creek (19.1 °C) when calculating the effect of their effluent mixed with Silver Creek.
Comment 32.	DEQ initiated change.
DEQ Response	The hydrologic unit codes referenced in Table 2-1 were outdated. Table 2-1 has been updated with the correct information.

Comments on Chapter 3: Bacteria	
Comment 1.	Bacteria Units in Tables 3-4, 3-5, and 3-6. Please include the units in these tables. As in later tables, we assume the units are counts of E. coli per 100 mL. (1)
DEQ Response	Units have been added to these tables. The units are <i>E. coli</i> counts/day. This would be equivalent to the <i>E. coli</i> measurement in counts/100 mL multiplied by the stream discharge.
Comment 2.	The TMDL discusses points of compliance for Silver Creek, Zollner Creek, Pudding River and Molalla River. Are these points of compliance at the mouth of the streams or in other locations? (1)
DEQ Response	Compliance points are not necessarily at stream mouths. DEQ added river mile to figures and tables referencing these compliance points. The following explanation was also added to the surrogate measures section: In the following discussion, DEQ refers to some locations as compliance points. These compliance points are not necessarily near the mouths of streams, but are locations where sufficient data have been collected to calculate a percent reduction needed to meet water quality standards.
Comment 3.	Figures 3-8, 3-9, and 3-10 show a 90th percentile value. Are these used for illustrative purposes to compare high bacteria values to the single maximum 406 criterion? Our understanding is that load allocation percent reductions will result in both the 126 log mean criterion and 406 single sample criterion being met, and that the 90th percentile is not being used to determine compliance with the 406 criterion. (1)
DEQ Response	The 90th percentile in the referenced figures is for illustrative purposes only and this has been clarified in the figures. The load allocation percent reductions will result in both the 126 log mean criterion and the 406 single sample criterion being met. The following statement was added to the captions of Figures 3-8, 3-9, 3-10, 3-11, and 3-12: Reductions are based on the 75 th percentile of the data if that is sufficient to meet both the log mean and single sample criteria. The 90 th percentile in the figure is for illustrative purposes.
Comment 4.	Table 3-1 states that 10% of the loading capacity is set aside as reserve capacity. The text on page 3-28 states that there is no reserve capacity. These statements should be reconciled. (1)
DEQ Response	Table 3-1 and Table 3-20 (in Load Allocations Section) have been corrected: No reserve capacity is allotted for bacteria in the Molalla Pudding Subbasin TMDL.
Comment 5.	Changes made to be consistent with tables changed in the Overview Chapter 1. (DEQ initiated change)
DEQ Response	In Table 3-2 the winter fecal coliform for Pudding River was deleted and summer fecal coliform listing for Pudding River was added to be consistent with Table 1-1 in the Overview chapter. Text was changed on page 3-11 (Data Review) to indicate that bacteria violations could still occur during the summer season (June 1- September 30) at some locations on the Pudding River.
Comment 6.	We question the necessity of having an E. coli TMDL apply to the Molalla River from October 1st to May 31st (we agree with the Department's decision to write an E. coli TMDL for the Pudding River). Though the Molalla River was on the 1998 303(d) list for bacteria, this bacteria listing was removed when the 303(d) list was updated in 2004/2006. On page 3-15, the Department's three reasons for writing a TMDL – for example, that sporadic but significant criteria exceedences are possible – are true of nearly every water body in the state. According to table 3-15, which contains bacteria data for the October

	<p>1st to May 31st period from three Molalla River monitoring sites:</p> <ul style="list-style-type: none"> • The log mean from all sites is well below the criteria of 126, and • Data from two of the sites exceeded the 406 colonies/100 ml criteria 0% and 2% of the time, respectively, and • We do acknowledge that data from one of the three sites (Molalla River at Knights Bridge Road) exceeded the 406 colonies/100 ml criteria 11% of the time. <p>Compiling the data from these three sites shows the lower Molalla River exceeded the 406 colonies/100 ml criteria <10% of the time. We recommend that the Department not issue a final bacteria TMDL for the Molalla River, and do encourage the Department to issue recommended Best Management Practices in the TMDL to be voluntarily implemented in the Molalla River's watershed to gain additional improvement in water quality. (7)</p>
DEQ Response	<p>DEQ believes a Molalla River bacteria TMDL is justified for the reasons stated on page 3 – 15, which, in addition to the one reason cited in this comment, include a new point source with the potential to contribute bacteria, and the use of bacteria reduction targets for planning growth and development in the watershed. Figure 3-12, which is based on data collected from the Molalla River site lowest in the watershed (river mile 2.8) illustrates the quantity and magnitude of bacteria criteria exceedances and the flow conditions that coincide with those exceedances. While exceeding the 406 counts/100 mL criteria more than 10% of the time may be used for listing a waterbody as water quality limited, the water quality criteria specifies that no single sample may exceed 406 counts/100 mL. A review of bacteria data from the Molalla River indicated that water quality criteria were exceeded and a TMDL to reduce those exceedances was appropriate. Therefore, DEQ will issue a TMDL for bacteria for the Molalla River.</p>
Comment 7.	<p>A significant challenge in implementing most bacteria TMDLs pertains to the numerous potential sources of bacteria. Many animal species (wild birds, for example) can contribute E. coli to an MS4's discharges, and designated management agencies (DMAs) may have little or no control over these sources. The source of the bacteria in the Molalla-Pudding River watershed is not well understood. We believe that "background" bacteria levels (ie. bacteria from wild birds) in surface waters need to be considered by the Department when setting load allocations... Although these studies provide just two examples, they could be indicative of the conditions in at least certain portions of the Molalla-Pudding River watershed. For E. coli levels in surface water bodies, we believe that DMAs should <u>not</u> be required to reduce the portion of E. coli that's present which was released by wild native and non-native animals. This is due to the fact that end-of-ditch treatment for E. coli in rural areas is difficult and costly to do, and source control, given the free-ranging nature of wild animals, is clearly impractical for DMAs. (7)</p>
DEQ Response	<p>DEQ agrees that DMAs are not responsible for reducing pollutant sources that are not under their control. Part of a DMA's responsibility when developing their TMDL Implementation Plans is to identify sources of pollutants under their control and describe the practices they will employ to reduce those sources. A natural source of bacteria (such as wild birds) may still be transported to water bodies in higher than natural concentrations by anthropogenic activities that increase erosion, sedimentation, and runoff. DEQ analyzed bacteria data from two sites, one in the Pudding watershed (Butte Creek at Butte Creek Road) and one in the Molalla (Molalla River</p>

	upstream of North Fork Molalla), that are upstream of agricultural and urban land uses and did not find evidence of bacteria criteria exceedances, even at the highest stream flows and during precipitation events. Refer to Figures G-22 and G-24 in Appendix G.
Comment 8.	... As was stated in the Department's 1992-1994 Water Quality Standards Review Final Issue Papers (published in June 1995 in association with adoption of the E. coli standard), the data to support a risk-based pathogen standard are so variable that statistical correlations between fecal bacteria and illnesses contracted by human bathers have only been shown to be viable at certain beaches. ...The Department should consider reviewing the bacteria standard in the near future to determine whether a better proxy exists (than E. coli) for predicting the chance of contracting illness for humans that engage in water contact recreation. (7)
DEQ Response	DEQ acknowledges Clackamas County WES's opinion regarding the appropriateness of <i>E. coli</i> as an indicator of pathogens in water containing fecal matter. However, the development of a bacteria TMDL for the Molalla Pudding Subbasin does not include a standards review process. Information about DEQ's standards review process, background documents, and standards currently being considered for review are found at this location on DEQ's website: http://www.deq.state.or.us/wq/standards/review.htm Standards review includes a public process and these forums would be an appropriate place to submit this comment. At the website location above, any party can request to be added to an electronic mail list to be notified about opportunities for public comment.
Comment 9.	The draft TMDL document states that CAFO permit do not allow a discharge from areas of animal confinement and areas where manure is stored and managed. Have the Molalla-Pudding River watershed's CAFO permit holders been recently inspected to ensure that there is no discharge from areas of animal confinement and areas where manure is stored and managed? Are annual inspections required under this permit or is the inspection cycle less frequent? (7)
DEQ Response	CAFO permits are administered by the Oregon Department of Agriculture (ODA). CAFO's registered to the Oregon CAFO Permit (NPDES Permit) receive at least one routine inspection annually by ODA CAFO program staff. ODA also responds to water quality complaints on permitted CAFOs and conducts follow up inspections as necessary to ensure Permit compliance. DEQ maintains frequent communication with ODA's CAFO program and is aware of one CAFO permit violation and associated enforcement in the Molalla Pudding Subbasin.
Comment 10.	In tables 3-21 and 3-22, the term "rural" is used. Please consider using terms like "rural residential" or "rural industrial" to correlate with appropriate land uses. (7)
DEQ Response	The terms "residential" and "industrial" have been added, as appropriate, in Tables 3-21 and 3-22.
Comment 11.	In figure 3-12's caption, please add the phrases "for October 31st to May 31st" and "an 81% load reduction is required". (7)
DEQ Response	This phrase has been added to the caption of Figure 3-12.
Comment 12.	The term "rural residential" is not used in table 3-25. Why? (7)
DEQ Response	The rural residential land use has been noted in Table 3-25 with agricultural

	land use.
Comment 13.	In table 3-25's caption, please state that these reductions apply throughout the entire Molalla-Pudding River watershed where specific reductions were not assigned. The caption in the August 2008 draft TMDL does say "...apply by land use subbasin-wide...", and this phrasing may confuse certain readers. (7)
DEQ Response	The term "subbasin-wide" has been replaced by "within the Molalla Pudding Subbasin" in the caption of Figure 3-25.
Comment 14.	Chapter 3 of the TMDL presents different load allocations for bacteria, varying by each listed stream, tributary, and land use type. The City, being an NPDES Phase 1 MS4 permit holder, interprets the TMDL to require a reduction of in-stream bacteria concentrations by 70 percent. This reduction applies to the waterways that receive MS4 runoff from the City of Salem (both WF and EF Little Pudding River). This conclusion was pulled directly from Table 3-1 of the draft TMDL, referencing urban land use. However, Chapter 3 of the TMDL later indicates a 92 percent bacteria load reduction for the WF Little Pudding River. Please clarify the City's targeted bacteria load reduction. (4)
DEQ Response	DEQ erroneously did not update the load allocation percent reductions in Table 3-1 in the August 2008 Draft TMDL, which should have agreed with those in Load Allocation Section of Chapter 3, Tables 3-21 and 3-22. Table 3-1 has been corrected. The percent reduction that applies to the bacteria contribution from the City of Salem's MS4 is 86%. The 92% reduction in West Fork Little Pudding watershed applies to land uses other than MS4.
Comment 15.	The City questions the ability of the DEQ to utilize flow and bacteria data from Zollner Creek to develop the TMDL for WF Little Pudding River. The two watersheds differ significantly in land use and hydrogeology. Additional consideration is requested to validate the use of Zollner Creek data to justify a WF Little Pudding River TMDL for bacteria. A watershed similarity may hold closer to being true for the overall Little Pudding itself (see Page 3-24), but that similarity does not transfer to the WF Little Pudding, considering the urban and rural residential nature of at least the far western portion of that watershed. Why should urban DMA's be "punished" simply because they are a contributor (a relatively small one at that) to a watershed that is "<i>predominantly agricultural land use.</i>" (Page 3-24)? (4)
DEQ Response	Because the West Fork Little Pudding River was listed after most TMDL sampling had been completed, DEQ did not have sufficient bacteria data to calculate a stream-specific percent reduction. Because few data were available, DEQ believes that a conservative target is appropriate. However, DEQ does acknowledge the more accurate description of land use in the West Fork Little Pudding watershed supplied by the City of Salem and has included that additional information on page 3-24 under the heading "West Fork Little Pudding." In addition, as clarified in the previous response, the City of Salem's load allocation that would apply to its MS4 contribution to this watershed is 86%. This information has also been added on page 3-24.

Comment 16.	The tributary segments of the WF and EF Little Pudding River that are within Salem’s city limits generally run dry during the summer months. Therefore, the validity and reality of a year-round TMDL load allocation for bacteria in these waterways is questioned. This seasonality is reflected by the Table 3-2 303(d) Bacteria Listings which list the West Fork Little Pudding River for fall/winter/spring, not summer. The language in Chapter 3 (e.g., Page 3-21 – “Generally, load allocations apply year-round to all streams in the subbasin.”) should be revised to reflect that seasonality. (4)
DEQ Response	DEQ added the phrase, “Unless otherwise specified with a surrogate measure applicable for a particular time period,” to the beginning of the phrase referenced in the comment. The target reductions in the West Fork Little Pudding watershed apply October 1 – May 31.
Comment 17.	Page 3-16 states: “Watershed managers from the designated management agencies must conduct further investigations of watershed specific bacteria sources in order to develop an effective strategy for bacteria control.” What are these further investigations; what time schedule is expected or stipulated; how will non-point sources (e.g., agriculture) be addressed and by whom; etc.? (4)
DEQ Response	DEQ intended this statement to add context to the preceding statement (“this source assessment is not exhaustive”) by suggesting that additional information may be necessary for a designated management agency (DMA) to understand the bacteria sources under their control and to develop effective strategies for reducing their bacteria contribution. DEQ expects that DMAs will describe sources and strategies in their TMDL implementation plans, completed within 18 months of the TMDL’s issuance. If a DMA already understands their bacteria contributions or if they can rely on previous studies or literature values, no further data collection may be necessary. Examples of “further investigations” that may be helpful in source identification include land use-specific sampling, storm sampling, and DNA analysis. Agricultural non-point source TMDL implementation is the responsibility of the Oregon Department of Agriculture and is carried out through the Agricultural Water Quality Management Planning process.
Comment 18.	Chapter 3, Page 15, Molalla River: NFS appreciates that DEQ created a TMDL for bacteria even though additional data collection completed before the 2004/2006 303(d) list release indicated that the Molalla River did not violate the current <i>E. coli</i> criteria, and we would like to see the environmental regulating agencies develop TMDLs for endocrine disrupters, hormone balancers and other pharmaceutical drugs that go unchecked and unregulated into river systems throughout Oregon. (12)
DEQ Response	DEQ acknowledges the Native Fish Society’s concern with pharmaceuticals in surface water and the lack of regulation of discharging such products. While there are currently no state water quality standards for pharmaceuticals (and a TMDL responds to a violation of a water quality standard), DEQ is responding to the issue of “emerging contaminants” such as pharmaceuticals and personal care products, and does consider monitoring and assessment a priority. Within the last year, DEQ has been able to staff a toxics monitoring program within the Laboratory and Environmental Assessment Division and DEQ’s Source Water and Toxics Coordinators are also providing guidance to a drinking water/source water monitoring effort funded by the Dept. of Human Services Health Division.

	DEQ's toxics monitoring program has 20 surface water sites in the Willamette Basin, including one site on the Pudding River at Highway 211. Sampling has occurred or is planned for both low and high flow scenarios and fish tissue is also being analyzed. The list of analytes includes pharmaceuticals such as estrogenic compounds. Next year, additional sampling is planned in Willamette subbasins, including source assessments. Results from this work will be published in a report in 2009 or 2010.
Comment 19.	In Table 3.19, the Dry weather design flow of the City of Silverton WWTP is 2.5 MGD, not 3.5 MGD. (14)
DEQ Response	The average dry weather flow for the facility has been corrected in Table 3.19, and the estimate of the dry weather wasteload allocation (<i>E. coli</i> counts/day) has been recalculated.
Comment 20.	In Table 3.19, explain that the last column is informational (to compare current discharge with the permit limit), not an allocation. (14)
DEQ Response	Table 3.19 and associated text has been changed to clarify that the <i>E. coli</i> counts in the last column are recent average effluent concentrations, not wasteload allocations.
Comment 21.	DEQ initiated change.
DEQ Response	The hydrologic unit codes referenced in Table 3-1 were outdated. Table 3-1 has been updated with the correct information.

Comments on Chapter 4: Pesticides	
Comment 1.	Because the data indicates that the Little Pudding River and Zollner Creek are impaired for DDT these impairments need to be addressed with load capacities and load allocations that will address DDT impairment in those streams, even though they are not on the 303(d) list as impaired for DDT, as well as the Pudding River. (1)
DEQ Response	<p>The document has been revised to include load capacities and load allocations for DDT and its metabolites for Little Pudding River and Zollner Creek, in addition to the Pudding River</p> <p>DEQ has revised Tables 4 – 2 and 4 – 3 to include Little Pudding and Zollner Creek reaches impaired by DDT and included a new summary table of TMDL components, Table 4-1. DEQ revised text in the “Summary of Recent Data Review” section to indicate that the TMDL also addresses the DDT impairment in Zollner Creek and Little Pudding River. DEQ calculated flow based load capacities for DDT in Zollner Creek and Little Pudding River and displayed them in Figures 4-18 and 4-19.</p>
Comment 2.	Though the Pudding River is not listed for dieldrin the USGS data included detections above the human health criteria (though not the chronic aquatic life criteria). The text does not discuss the number of detections and whether they would be sufficient to support an impairment listing, but it would be good to be more explicit about this to understand why no load capacity or allocation for dieldrin was calculated for the Pudding River. (1)
DEQ Response	<p>The document has been revised to include loading capacities for dieldrin for the Pudding River, Little Pudding River and Zollner Creek and to include load allocations for dieldrin for the Pudding River and Zollner Creek. Load allocations have not been provided for the Little Pudding River since this stream is not 303(d) listed for dieldrin and since available data indicates that the stream does not violate water quality standards for dieldrin.</p> <p>Dieldrin was detected in two samples collected from the Pudding River at Aurora, which would be sufficient to support an impairment listing. DEQ has added text regarding dieldrin impairment of the Pudding River to Tables 4 – 2 and 4 - 3.</p>
Comment 3.	The TMDL does not explicitly state what action DEQ proposes for the chlordane listing. It appears that Zollner Creek was listed in error, as neither the original data nor subsequent data collected in the stream indicates impairment. (1)
DEQ Response	<p>The document has been revised to include loading capacities for chlordane for the Pudding River, Little Pudding River and Zollner Creek and to include load allocations for chlordane for Zollner Creek. The load allocations for chlordane for Zollner Creek are based on required reductions for fish tissue concentrations (since there have been no water column detections of chlordane).</p> <p>DEQ has included revisions to explain the inconsistency between the chlordane 303(d) listing, the lack of water column detections, and the fish tissue detections in greater detail in the sections “Chlordane Water Column Concentrations” and “Chlordane Fish and Shellfish Concentrations.” While it is likely that the 2002 listing was in error, based on the fish tissue detections that exceed the Oregon Department of Human Services action level of 27</p>

	<p>µg/kg, DEQ has made the conservative decision to calculate the Zollner Creek chlordane loading capacity and use a surrogate measure to set a load allocation based on a 57% reduction in fish tissue concentrations.</p>
Comment 4.	<p>Though the report states on page 4-20 that Zollner Creek is impaired for dieldrin no allocations are given for this contaminant (though load capacities are shown). Without load allocations and a margin of safety there is no TMDL for this contaminant. It would be good to explain in the text if that is the intent. (1)</p>
DEQ Response	<p>The document has been revised to include load allocations for dieldrin for the Pudding River and Zollner Creek.</p>
Comment 5.	<p>It appears that the high levels of DDT in Zollner Creek, the Little Pudding River and the Pudding River make it impossible to address these impairments adequately (down to the DDT human health criterion) through turbidity reductions alone. This situation is very similar to DDT issues in the Yakima basin. One approach that would result in an approvable TMDL in this situation is to proceed with the TSS allocations as a partial measure that would be augmented in the implementation plan by further research on potential hot spots and source reductions in the Little Pudding and Zollner Creek. Load allocations for DDT in the tributaries would need to be set to meet the human health criterion for DDT. (1)</p>
DEQ Response	<p>The document has been revised to include load capacities and load allocations for DDT and its metabolites for Little Pudding River and Zollner Creek, in addition to the Pudding River. These have been based on allocations needed to meet both human health and aquatic life based criteria.</p> <p>TSS allocations have been provided as partial measures to meet the load capacities and load allocations for DDT and its metabolites. In addition, discussion has been added regarding the need for further research on potential hot spots and source reductions and the Water Quality Management Plan has been revised to describe such further research on potential hot spots and source reductions.</p>
Comment 6.	<p>Page 4-2 paragraph 2: References cited in this paragraph are not listed in the reference section at the back of this chapter, including: Bonn et al, 1995 Rinella and Janet, 1998(1)</p>
DEQ Response	<p>References have been added.</p>
Comment 7.	<p>Page 4-9, Table 4-9: This table indicates two footnotes labeled "1" & "3". I cannot find these footnotes in this chapter. (1)</p>
DEQ Response	<p>The footnotes should have been as follows: 1 – One estimated concentration for 4,4'-DDT of 0.002 µg/L exceeded criteria. 3 – One of 12 samples exceeded DL with a concentration of 0.002 µg/L (> ODEQ criteria of 0.001 µg/L) The document has been revised to address these omissions</p>
Comment 8.	<p>Page 4-10, 3rd paragraph: The term "integrator site" is used here but is not explained until page 4-11. It would help to explain the term when it is first used. (1)</p>

DEQ Response	The document has been revised to explain the term when it is first used.
Comment 9.	Page 4-18, last paragraph: It would be clearer if the text explained that the chronic criteria is for protection of aquatic life. (1)
DEQ Response	The following statement was added to the section titled "Water Column Criteria." "Chronic and acute aquatic life criteria are intended to protect aquatic life. The human health criteria are intended to minimize adverse human health effects from ingestion of water and organisms residing in the waterbody."
Comment 10.	Page 4-21, 1st full paragraph, "A review of this data showed that, in fact, none of the samples exceeded the 0.46 ng/l human health based criteria since chlordane was detected in none of the samples": This statement is misleading. There is not enough data to determine whether or not the 0.46 ng/l criteria is exceeded because of the high detection limits used in sampling. It would be more accurate to state that a review of the USGS and ODEQ data does not indicate that the stream is impaired by chlordane and that the listing was an error. (1)
DEQ Response	DEQ removed the statement identified in this comment and replaced it with, "A review of the data did not confirm these results, but rather found five Zollner Creek samples collected by USGS in which chlordane was not detected above 0.1 µg/L." In addition, DEQ has clarified in this section that a TMDL has been developed to address potential exceedance of the chlordane criteria based on fish tissue concentrations.
Comment 11.	Page 4-21, Figure 4-14 & page 4-23 paragraph 2: Combining the human health criteria for DDD, DDE and DDT to determine a loading is not sufficiently protective, especially given that the DDT criterion is an order of magnitude more stringent than the DDD and DDE criteria. It is necessary to use the most stringent criterion among the metabolites to ensure that the human health criteria are met. (1)
DEQ Response	The document has been revised to include load capacities and load allocations for 4-4'-DDT, 4-4'-DDE, and 4-4'-DDD, in addition to Total DDT, for the Pudding River, Little Pudding River and Zollner Creek. These allocations target the most stringent criteria in Tables 20 and 33A.
Comment 12.	Page 4- 25, Table 4-14: The averaged loads modeled for the Little Pudding River and Zollner Creek show that the reductions are not sufficient for them to meet the water quality criteria for DDT or DDE or DDD. The Pudding River is also still above the combined DDE+DDD+DDT criteria used in the TMDL, which, in itself, is not sufficiently protective to meet the DDT human health criteria. (1)
DEQ Response	Modeling was performed to determine total suspended solids concentrations targets designed to meet Total DDT targets in the Pudding River, reduce fish tissue concentrations in the Pudding River and tributaries, and ensure that DHS assumed actions levels for Pudding River fish tissue concentrations are not exceeded in the future. The modeling indicates that achievement of these TSS targets will result in Total DDT targets being met in the Pudding River, but will not result in the 4-4'-DDT human health based criteria being met in the Pudding River. The TSS targets will also not be sufficient to meet Total DDT targets in the Little Pudding River or Zollner Creek or meet human health criteria in these streams. Therefore, the document has been revised to include load capacities and load allocations for 4-4'-DDT, 4-4'-DDE, and 4-4'-DDD, in addition to Total DDT, for the Pudding River, Little Pudding River and Zollner Creek. These allocations target the most stringent criteria in Tables 20 and 33A.

Comment 13.	Page 4-26, Margin of Safety: The conservative assumptions and procedures used in the TMDL should be listed here. (1)
DEQ Response	Additional margins-of-safety have been incorporated in the TMDL, including applying an explicit margin-of-safety when basing long-term average pollutant percent reduction allocations on fish tissue data. Discussion of these measures and a description of other conservative assumptions and procedures used in the TMDL has been added to the Margin of Safety section.
Comment 14.	Appendix I Current Use Pesticides Analysis and Discussion Page I-21 and 22, Parameters to be Evaluated for TMDLs in the Future: This section discusses data that could be the basis for future listings and recommends that these waterbodies not be listed in the near future, but to wait and see if the Pesticide Stewardship Partnership (PSP) effort in the basin reduces levels of these pollutants in the watershed. It would be good to have a brief discussion of these listings in the main body of the TMDL, perhaps near the table of listings. (1)
DEQ Response	DEQ placed a discussion of these two parameters under the heading Water Quality 303(d) Listed Waterbodies in Chapter 1.
Comment 15.	On page 4-24, the following statement is present: "In order to be consistent with other TMDLs for DDT in the Willamette Basin, the target TSS maximum concentration for all streams was first set to 15 mg/L..." The target TSS maximum concentration for the Pudding River in Table 4-13 is set at 15 mg/L. Since the TSS target for nonpoint sources in Johnson Creek is also set at 15 mg/L (see table 5.45 in the Willamette TMDL), please add a phrase on page 4-24 which clarifies that: a) the 15 mg/L TSS maximum concentration for the Pudding River was calculated using Pudding River watershed DDT data, and b) this figure (15 mg/L) wasn't merely borrowed from another watershed and applied to the Pudding River. (7)
DEQ Response	The 15 mg/L TSS target was a starting point in the mass balance model. DEQ has added the following statement to clarify this: "Further reductions in the TSS targets were made in the model so that the chronic and human health t-DDT criteria would be met in the Pudding River. The 15 mg/L TSS target in the Pudding River and Zollner Creek was sufficient to accomplish this but a further reduction in the Little Pudding River TSS target was necessary.
Comment 16.	We recognize that the in-stream Total Suspended Solids (TSS) target is based upon DEQ's analysis for DDT. However, regarding dieldrin, we believe that DEQ is establishing unrealistic expectations for the amount of its reduction by using as a similar surrogate for dieldrin. Page 4-18 states that "unlike DDT, dieldrin was not found by USGS to correlate with suspended solids." In addition, page 4-23 states that "although dieldrin does not associate nearly as strongly with sediment as does DDT, it is anticipated that the significant TSS reductions ... and ongoing decay of dieldrin over time should result in the achievement of both chronic toxicity and human health based criteria for dieldrin." We agree that TSS reductions will inherently reduce some dieldrin, but again, we believe that DEQ is being unrealistically optimistic in its projections. (4)
DEQ Response	The TSS targets were set to attain DDT criteria. Assuming coincident dieldrin reduction (or not) has no effect on the TSS targets (in other words, if

	<p>DEQ did not assume that TSS reductions would also allow the dieldrin criteria to be met, the TSS targets would remain 7 and 15 mg/L). In response to comments received by the U.S. EPA, DEQ has made significant additions to the load allocations section of this chapter. DEQ acknowledges that TSS targets will be only a partial means to meet water quality standards for DDT and dieldrin. In addition, DEQ added updated information and an associated reference in the Sources or Source Categories Section, under Dieldrin Water Column Concentrations, that indicates a stronger relationship between dieldrin and suspended sediment that the reference cited in the August 2008Draft.</p>
Comment 17.	<p>As a surrogate for pesticide loads, the City interprets Total Suspended Solids (TSS) to be assigned an in-stream TSS target of 7 mg/L for the WF and EF Little Pudding River, as they are tributaries to the Little Pudding River. Please verify if this interpretation is correct. (4)</p>
DEQ Response	<p>This interpretation is correct, but note that the target is a 96-hour average. The target was a 24-hour average in the August 2008 Draft, but DEQ revised the target to agree with the averaging period for the chronic aquatic life criteria.</p>
Comment 18.	<p>The TMDL does not provide discussion regarding the amount of pesticide (DDT) existing in the in-stream substrate, versus the amount entering through runoff and erosion. Pesticide sample data were not analyzed in relation to rainfall events (as was done for metals). This deficiency is further highlighted on page 6 of Appendix J, “Kruskal-Wallis test for seasonality (WQHydro) indicated that there are no seasonal differences in the DDT data when data values are compared on either a monthly (Figure J- 5) or quarterly basis (Figures J- 6 and J-7) ($p > 0.10$)”. This analysis did not indicate seasonal variability in DDT levels. In addition, Page 4-26 states that “additional study is needed to determine the sources of DDT loads to the Little Pudding River and determine actions necessary to address them.” What is the nature of these studies; who is going to conduct them; and when? (4)</p>
DEQ Response	<p>DDT concentrations were analyzed in relation to rainfall events and that information is found on pages J-8 and J-9 in Appendix J. The lack of evidence of seasonality mentioned in the comment may be attributed to a small set of detectable DDT concentrations, as noted in the final sentence of the paragraph partially quoted in the comment. DEQ’s analysis shows a relationship between DDT and TSS. The source of that TSS may be runoff, but may also be bank erosion at higher stream flows. This is one example of an area in which further study could inform implementation strategies. DEQ expects that further studies, sampling, and analysis would be done by DEQ in partnership with designated management agencies in the subbasin, and conducted over the next 5 to 10 years.</p>

Comments on Chapter 5: Nitrate	
Comment 1.	Page 5-10. Load Allocations. This section should state that specific LAs were not identified for each non-point source but all sources are responsible for meeting the Load Allocation. (1)
DEQ Response	DEQ has added the recommended statement to the Load Allocation section of Chapter 5.
Comment 2.	DEQ initiated change.
DEQ Response	The hydrologic unit code referenced in Table 5-1 was incorrect. Table 5-1 has been updated with the correct information

Comments on Chapter 6: Metals and Appendix M	
Comment 1.	Page 6-14 Wasteload Allocations: Though it is likely true that point sources are not a significant source of impairment in these waterbodies it is still necessary to give wasteload allocations to point sources that are likely to be discharging iron. This can be done using an equation or group of equations if necessary. Giving no allocation to a point source can be construed as a zero allocation. (1)
DEQ Response	DEQ has given wasteload allocations to point sources sufficient to cover their current conditions of discharge and required that sources conduct monitoring so that DEQ can determine if the sources cause or contribute to water quality violations. If this analysis indicates a potential increase in receiving water iron concentrations from the permitted point source activities or processes, DEQ would calculate effluent limits at that time.
Comment 2.	Page 6-15, 2nd paragraph last sentence: “show” should be replaced with “shown”. (1)
DEQ Response	This correction has been made.
Comment 3.	Page 6-17, 1st paragraph last sentence: The second “a” should be removed from the sentence. (1)
DEQ Response	This correction has been made.
Comment 4.	Page 6-20, last paragraph: Are the manganese listings being recommended for delisting? It would be helpful to have a statement to that effect here. (1)
DEQ Response	Yes, DEQ recommends delisting manganese and has included such a statement.
Comment 5.	Page 6-21, last paragraph: Is the arsenic listing being recommended for delisting? It would be helpful to have a statement to that effect here. (1)
DEQ Response	Yes, DEQ recommends delisting arsenic and has included such a statement.
Comment 6.	Washington State Department of Ecology published a report entitled “Results and Recommendations from Monitoring Arsenic Levels in 303(d) Listed River in Washington”. In case you have not looked at it this link: http://www.ecy.wa.gov/pubs/0203045.pdf (1)
DEQ Response	Information from this report has been included in the section titled, “Arsenic, Iron and Manganese in Surface and Groundwater,” and cited in the References of Chapter 6.
Comment 7.	Appendix M Metals Analysis Page M-1 Paragraph 3, first sentence: The word “are” seems to be missing from this sentence. (1)
DEQ Response	This error has been corrected. In addition, Appendix references, inadvertently omitted from this paragraph in the August draft, have been added.
Comment 8.	Paragraph 5: This paragraph largely duplicates the first complete paragraph on page M-2. (1)

DEQ Response	The duplicated paragraph has been deleted.
Comment 9.	Last paragraph: The paragraph that begins “Table M – 1.” seems to be missing something, perhaps part of a sentence or several sentences. (1)
DEQ Response	This formatting error has been corrected.
Comment 10.	Page M-13, end of paragraph 2: The parentheses should read “(too high to.....” (1)
DEQ Response	This error has been corrected.
Comment 11.	Page M-18, Figure M-18 caption: The caption refers to iron concentrations; this should probably be manganese concentrations. (1)
DEQ Response	This error has been corrected.
Comment 12.	For both the WF and EF Little Pudding River, the City interprets the TMDL to assign an in-stream TSS target of 6 mg/L (as a surrogate for iron). Please verify if this interpretation is correct. (4)
DEQ Response	The 6 mg/L is an in-stream target TSS concentration for the Pudding River, and since East Fork and West Fork Little Pudding are tributaries to the Little Pudding, which is a tributary to the Pudding River, the 6 mg/L TSS target would apply to the W.Fk. and E. Fk. Little Pudding. The TSS target, however, is not the load allocation. DEQ assigned the load allocations for iron as flow-based percent reductions.
Comment 13.	The sample size of data presented for Iron is particularly small. “Total iron data sets are generally too small to lead to definitive conclusions. Still, the limited data do indicate either statistically similar or higher mean total iron concentrations in surface water than mean total iron groundwater concentrations (Figures M-13 and M-16)” pp 6-11. A closer look at Figure M-13 reveals that 19 of 35 groundwater samples exceeded the 300µg/L criteria for Total Iron. Additionally, data available do not exhibit variability between land use types (Figures M-1, M-2, and M-3) pp 6-11. Nor is it conclusive if Iron concentrations are a direct result of anthropogenic activities [“...may be (emphasis added) contributed in unnatural concentrations through runoff and erosion” p 6-12]. These statements further highlight the small data set for Iron, and that sources for Iron remain inconclusive. (4)
DEQ Response	DEQ agrees with the City of Salem’s observation that many iron groundwater concentrations exceed the water quality standard. This is one reason that DEQ concluded that the iron source was probably natural. DEQ also agrees the TSS/iron data set was small, and, for this reason DEQ did not assign a load allocation based on a TSS surrogate. Still, the TSS/total iron correlation is quite strong. While it may not be conclusive that iron concentrations are a direct result of anthropogenic activity, iron concentrations in surface water, both dissolved and total, that exceed water quality criteria tend to be more common at high flows or when it’s raining. These relationships suggest erosion or runoff. These relationships were not observed with manganese, which is one reason DEQ proposed delisting manganese.
Comment 14.	It appears that Table 6-3 warrants correction. The ODOT East Salem Complex drains to either Shelton Ditch or Mill Creek (and ultimately the Willamette River), and not the Molalla-Pudding Subbasin. Also, does the Marion County Disposal Facility include the abandoned Woodburn Landfill; and what about the abandoned Marion County Macleay Landfill east of Salem? (4)

DEQ Response	DEQ has removed the ODOT East Salem Complex from Table 6-4 (Table 6-3 in the August 2008 draft is Table 6-4 in the final TMDL). The ECSI database lists the North Marion Disposal Facility site as "in the vicinity of Woodburn, ½ mile northeast of Marion county 1973 landfill." This appears not to include the abandoned Woodburn landfill referenced in the comment. This table included sites that were in DEQ's ESCI (Cleanup) database and had documented or suspected iron, manganese, or arsenic contamination. The Macleay Landfill was not in the database.
Comment 15.	The TSS allocations (as a surrogate for metals) appear to be strongly dependent on a line of regression that contains very few data points. This small dataset could be strongly affected by the removal or addition of a single data point. Additional statistical analyses may be necessary to demonstrate that the data are normally distributed and not significantly influenced by outliers. (4)
DEQ Response	The TSS targets are not allocations. The load allocations for iron are flow-based percent reductions. DEQ acknowledged this was a small data set and, for that reason, did not assign load allocations via a TSS surrogate. While the City is correct that additional statistical analysis could provide more information about the dataset, since the TSS targets are intended only to help guide and assess implementation efforts, DEQ does not agree that additional analysis is needed at this time.
Comment 16.	Salomons & Stol 1995 cite that as pH decreases, the rate of adsorption of metals to solid surfaces also decreases. City of Salem in-stream monitoring data indicate that pH levels can decrease from 0.5 to 1.0 pH units during rain events. Much of the data used by DEQ in the TMDL were correlated to rain events. However, analyses within the TMDL do not appear to have considered the influence of a change in pH (during rain events) on in-stream Iron concentrations. (4)
DEQ Response	The City is correct that DEQ did not evaluate the effect of pH on iron concentrations, but such an analysis would probably not have substantially changed DEQ's conclusion. DEQ would expect the dissociation of iron from solids at lower pH to tend toward higher dissolved iron concentrations. DEQ found that standard exceedances were more likely to be total iron concentrations during rain events and high stream flows.
Comment 17.	The tributary segments of the WF and EF Little Pudding River that are within Salem's city limits generally run dry during the summer months. Therefore, the validity and reality of a year-round load allocation for iron (p 6-19) in these waterways is questioned. (4)
DEQ Response	DEQ's analysis showed iron exceedances across seasons and correlated with streamflow and precipitation. The load allocation, which applies to Zollner Creek and Pudding River and tributaries year round, is meant to be protective at all times when the loading capacity could be exceeded. If there is no flow in a smaller tributary, then in-stream measurements cannot be collected, but the practices that reduce erosion and runoff containing sediment should still be in place.
Comment 18.	In consideration of this TMDL, the City appreciates DEQ's use of TSS as a surrogate measure of in-stream pollutants (DDT and Metals). The City views this as a cost-effective and efficient method for acquiring useful data. (4)
DEQ Response	The use of iron TSS targets was intended to help guide and assess implementation efforts. In the case of the DDT TMDL, DDT was subjected to a more rigorous analysis of the relationship with TSS, and the TSS actually is a partial load allocation.
Comment 19.	The City concurs with DEQ's conclusion that TMDLs for manganese and arsenic are not necessary at this time. (4)

DEQ Response	DEQ appreciates the City's concurrence.
Comment 20.	In figures 6-7 and 6-8, blue dots are labeled as "Fe concentration (mg/L)". Other dots on these figures are for total iron. If the blue dots are intended to be for dissolved iron data points, please change the label to indicate this. (7)
DEQ Response	The legends in Figures 6-8 and 6-9 have been changed to indicate that the blue dot is a dissolved iron concentration.
Comment 21.	DEQ initiated changes in Table 6-10 (Table 6-9 in August 2008 Draft), and Reserve Capacity.
DEQ Response	DEQ allocated 10% of iron loading capacity to reserve capacity. This is a change from the August 2008 Draft. This change responded to EPA's comment regarding wasteload allocations to point sources, and the recognition that sources have not been required to monitor iron concentrations in effluent. Sources will monitor for iron and if wasteload allocations are needed in the future, they could come from reserve capacity. DEQ also clarified that only sources discharging downstream of the listed portion of the Pudding River (river mile 35.4) or to a tributary that enters the Pudding River downstream of river mile 35.4 receive the wasteload allocation of current conditions and have a monitoring requirement. This resulted in two sources (Silverton WWTP and Silverton Water Treatment Plant) being removed from Table 6.10. DEQ also added Table 6-1 (TMDL components) to the final document, so tables are one number greater than in the August 2008 Draft.

Comments on Chapter 7: Water Quality Management Plan	
Comment 1.	<p>The description of the City's current activities and potential mitigation measures is consistent with the City's current efforts.</p> <p><i>Adaptive Management Language</i></p> <p>The City believes that the most effective means available to meet our water quality goals and to accomplish them without unnecessary financial penalties to the residents of Woodburn is to emphasize an adaptive management strategy in fulfilling the TMDL. The WQMP (Chapter 7) does not include language recognizing the significant uncertainties inherent in the modeling for this temperature TMDL. The City has attempted to bring these uncertainties in a constructive, supportive, and collaborative manner. The City does have significant concern that the WQMP references the May 2007 DEQ TMDL implementation Internal Management Directive (IMD) for more details on implementation policies. The absence of language in the IMD as to acknowledgement of modeling uncertainties and how they may be addressed through an adaptive management process is of concern. This regulatory compliance approach is in contrast to other DEQ TMDLs which have included more explicit language regarding scientific and modeling uncertainties, and recognizing that the implementation process must include adaptive management policies in response to these. Examples include the Tualatin Sub-basin TMDL in 2001 and the Snake River-Hells Canyon TMDL in 2004. The City requests that similar language be included in this Pudding River TMDL. (2)</p>
DEQ Response	<p>DEQ has added additional adaptive management language (similar to that included in the Tualatin 2001 and Snake River 2004 TMDL WQMPs) to Section (p), beginning on page 26 of Chapter 7, Water Quality Management Plan. This language acknowledges modeling uncertainty and how implementation of TMDLs can progress incrementally, with interim benchmarks and adaptations.</p> <p>DEQ corrected the reference on Page 7-26 to a "TMDL Implementation Plan Internal Management Directive (IMD)." Implementation Plan guidelines and tools were completed in May 2007 as Guidance, not an IMD. The TMDL Implementation Plan Guidance is intended to assist cities, counties and other designated management agencies required to submit TMDL Implementation Plans.</p> <p>While modeling uncertainty is not discussed in the Implementation Plan Guidance, the Temperature Water Quality Standard IMD (April 2008) does cover this topic. The Temperature Water Quality Standard can be found here: http://www.deq.state.or.us/wq/pubs/pubs.htm#mds</p> <p>The 2008 IMD does have a section called Modeling Considerations which explains how model uncertainty and error should be characterized and how that error is relatively small when the model is used to evaluate a change in temperature between two scenarios rather than absolute temperatures.. This IMD also contains a methodology for putting temperature wasteload allocations into permits and rationale for using weekly averages for compliance.</p>

	DEQ has also documented the uncertainty of both the Pudding River and Molalla River temperature models in Appendix A under Model Calibrations and Sensitivity Analyses.
Comment 2.	We question the criteria listed in Table 7-1 for the Molalla River from river mile 19.4 to 44.7 as 13 degrees C from August 15 to June 15. Average temperature in the late summer early fall month of September is around 18 C which exceeds both the spawning and non spawning criteria identified in Table 7 – 1. (3)
DEQ Response	The City of Molalla is correct that the current temperatures in this section of the Molalla River violate the spawning and non-spawning temperature criteria. DEQ's temperature modeling of the Molalla River (described in Chapter 2, Appendix A and Appendix E) estimated natural thermal potential (NTP) (i.e. a simulation of the river temperature if there were no human disturbance to the system) for this reach of the Molalla River. When NTP temperatures exceed biologically based numeric criteria, the Water Quality Rule (340-041-0028) allows the NTP temperatures to become the applicable criteria. At river mile 21.6, DEQ's modeling estimated the NTP at 19.7 °C between August 1 and 15, 18.1 °C between August 16 – 31, 16 °C between September 1 – October 14, and 13 °C from October 15 until June 15.
Comment 3.	Please remove the following paragraph that refers to the City 2006 court settlement found on page 7-22. (3)
DEQ Response	This paragraph has been deleted.
Comment 4.	We believe it may be relevant to mention in the report that the City of Molalla provides irrigation water to Coleman Ranches. Starting in 2007 the City provided irrigation water to portions of the ranch previously irrigated from the Molalla Irrigation Company's canal. By the City providing such reclaimed water for irrigation water, the demand for Molalla River water has been lessened during those low flow periods when temperatures are likely of greater concern. (3)
DEQ Response	DEQ has included a reference on page 7-14 to the City being permitted to supply reclaimed wastewater as irrigation water to a local ranch. DEQ agrees this use of reclaimed water may reduce withdrawal from the Molalla River during low flow periods.
Comment 5.	In Table 7-2, the phrase "various agriculture practices" should be added to the General Strategies under Pesticides and Iron. Also, what is the "MOA" cited in the 4th bullet under Planning, Permitting, Zoning and Development Codes? Under Construction Stormwater Quantity and Quality Control Activities, what does DEQ consider to be "pre-development"? (4)
DEQ Response	DEQ did not include the phrase "various agricultural practices" as a general strategy for reducing legacy pesticides and iron, because agricultural practices do not generate these pollutants, as they do for bacteria, for example (i.e. manure management). Practices on agricultural land as well as other land uses that reduce erosion and runoff will be important to reducing legacy pesticide and iron concentrations in streams. DEQ believes this idea is captured by the general strategy to "reduce sediment delivered to streams." The memorandum of agreement (MOA) referenced was signed in 2006 by DEQ, Oregon Department of Agriculture, Oregon Department of Forestry, Oregon Department of State Lands, Oregon Department of Fish and Wildlife, Oregon Parks and Recreation Department, and the Oregon Department of Land Conservation and Development. The MOA describes the responsibilities of and coordination among the various agencies when

	land is converted from forestry use to other uses, such as agricultural or residential. "Pre development" in the context of this section of Table 7-2 generally refers to the hydrologic characteristics of an area before a particular project is built.
Comment 6.	Page 7-7, (D) (a). "Pollution" should read "Pollutant." (4)
DEQ Response	This correction has been made.
Comment 7.	The City agrees with DEQ's statement on page 7-8 that "... as a general principle, DMAs are not responsible for controlling pollution arising from land use activities occurring outside of their jurisdictional authority." This principle should be carried over into items 7 and 8 on Page 7-27 which suggest that an individual DMA's TMDL Implementation Plan and associated BMPs are to target "attaining water quality standards." Our target should be to meet our respective wasteload and/or load allocations. We cannot be held accountable to meet water quality standards for the very reason set forth by the page 7-8 general principle cited above. (4)
DEQ Response	DEQ agrees with the City of Salem and has modified the text, now on page 7-28, under the title "TMDL Implementation Plan Requirements and Guidance." Implementation plan requirements listed are those specified in OAR 340-042-0025 and do not include attainment of water quality standards.
Comment 8.	Page 7-10, listing of Cities. We do not believe that Brooks is an incorporated city, but instead is governed land use wise by Marion County. Also, we do not believe that the City of Keizer is within the Molalla-Pudding Subbasin, but is instead in the mid-Willamette Subbasin via direct stormwater discharges to the Willamette River, Claggett Creek, or Labish Ditch (which flows westward through Keizer). (4)
DEQ Response	DEQ confirmed with Marion County that Brooks is not an incorporated city and falls under the jurisdiction of Marion County for land use. DEQ removed Brooks as a DMA. DEQ addresses the comment regarding the City of Keizer through a response to the City of Keizer. The City of Keizer also submitted a comment and documentation regarding the City's lack of stormwater contribution to the Molalla-Pudding Subbasin.
Comment 9.	Page 7-11, top paragraph. It is our understanding that the "... inspection and permitting of septic systems..." is either a DEQ responsibility, or the County's if it is an authorized DEQ agent. That responsibility does not rest with a city. (4)
DEQ Response	The City of Salem is correct (for the cities in the Molalla Pudding Subbasin) and DEQ has removed this phrase from the referenced paragraph.
Comment 10.	Page 7-15, fourth paragraph. The reader is referred to "... the following section describing mercury implementation requirements ...", but we could find no such discussion. (4)
DEQ Response	This phrase has been deleted.
Comment 11.	Page 7-18, last paragraph. The City of Salem installs interpretive signs in "parks," not "parts." (4)

DEQ Response	This correction has been made.
Comment 12.	Page 7-28 Load Allocations. This paragraph warrants clarification. Advocating for “a narrowed stream channel” implies or could seemingly encourage increased channelization and less stream sinuosity. In addition, the phrase “... water conservation would improve summer stream flows...” is not universally true. In Salem’s case, the North Santiam River is our principal water source, and Salem’s water conservation program will not improve summer stream flows in the Molalla-Pudding Subbasin. (4)
DEQ Response	DEQ clarified in this paragraph that reducing channel width would reduce the stream surface area exposed to solar radiation. DEQ is not referring to channelization with this statement and believes this is clear because the statement specifies “stream restoration” and “improving the effectiveness of vegetation to shade the stream.” DEQ also clarified in this paragraph that “water conservation” refers to that conservation that would reduce water withdrawals from the Molalla or Pudding Rivers or their tributaries.
Comment 13.	The statute 527.662(d) on page 7-20 under the heading “Oregon Department of Forestry” should be changed to 541.423. (5)
DEQ Response	This correction has been made.
Comment 14.	As a Designated Management Agency, DOGAMI will work with DEQ to implement management strategies to achieve the goals outlined in the TMDL/WQMP. Under the DEQ/DOGAMI MOA, we are already working together on water quality issues. In addition to administering the 1200A and 1000 water permits at mine sites, we also can implement by the BMPs we require in the permitting process and by specific reclamation requirements. Some of our permitted mine sites would even have the potential to enhance water quality by discharging their pit water (under a 1200A permit) to streams in periods of low flow. DOGAMI's only area of concern is the mine sites with 1200A permits in the subbasin. The conditions of the 1200A permit currently say that permittees only have to do additional monitoring if the TMDL or 303d lists the watershed for turbidity or sedimentation. This draft TMDL doesn't list turbidity or sedimentation as concerns, so we are assuming the 1200A permit holders would have no additional requirements. (6)
DEQ Response	DEQ recommends that DOGAMI consider submitting a statewide TMDL Implementation Plan that would reference the existing permit programs as well as best management practices (BMPs) and reclamation requirements that would prevent sediment delivery to streams and may also be related to stream temperature. DOGAMI is correct that in the Molalla-Pudding Subbasin, neither sedimentation nor turbidity is a listed parameter and DEQ does not intend to require additional monitoring as part of the 1200A permits. However, certain mining-related activities that may reduce surface water-groundwater exchange in the hyporheic zone or increase channel width may be related to stream temperature increases. DEQ would like to work with DOGAMI to understand if such a relationship exists and if so, what practices would minimize stream temperature increases.

Comment 15.	MS4 permits are addressed on page 7-15, yet no mention is made here of the Oregon Dept. of Transportation's (ODOT) MS4 permit. Please mention that ODOT also has MS4 permit obligations in the Molalla-Pudding watershed. (7)
DEQ Response	DEQ added a reference to ODOT as an MS4 permit holder on page 7-15. ODOT's TMDL implementation responsibilities are also described on pages 7-9 and 7-10 and their monitoring on page 7-21.
Comment 16.	<p>The purpose of the Lake Labish Water Control District (District) on page 7-11 has been misstated. The purpose of the District is "to control flood waters on the Lake Labish bottom lands from the center of that bottom to the water control structure and pumping station at the northeast of the bottom."</p> <p>The amount of acreage in the Little Pudding watershed is huge and the District does not control all of it. The District has 900 acres in its control. The District is effectively lowering the water in the drainage channels during cropping season when we have rain events so those low lying farmlands will drain. A rain event triggers the need to operate the pumping facility. (8)</p>
DEQ Response	DEQ changed the description of the Lake Labish Water Control District on Page 7-11 to agree with the information the District submitted in their comment.
Comment 17.	<p>The City of Wilsonville is currently under an MS4 Phase 1 permit number 101348, and has been since 1995. All City of Wilsonville stormwater discharges are conveyed to the Willamette River, which includes areas south of the river. Please see the attached map of the Charbonneau area in southern Wilsonville. The map shows the stormwater pipe system in Charbonneau, which conveys stormwater to the north and west and ultimately to the Willamette River. No stormwater drainage from any source within Wilsonville enters the Molalla River, Pudding River or any of their listed tributaries or watersheds.</p> <p>There are no current plans to expand the UGB area south of the Willamette River, and the City has gone on record as not supporting any expansion in this area. The City of Wilsonville requests that we be removed from the list of DMAs in Chapter 7 of the proposed Water Quality Management Plan (draft, August 2008). (9)</p>
DEQ Response	DEQ accepts the information supplied by the City of Wilsonville and agrees they should not be a DMA for the Molalla Pudding Subbasin TMDL. DEQ has removed the City of Wilsonville from the list of DMAs in Chapter 7.
Comment 18.	<p>The purpose of this letter is provide documentation that the City of Keizer does not contribute surface water to the Molalla Pudding Subbasin and therefore, should not be included as a Designated Management Agency as indicated in Chapter 7 of the Draft Molalla-Pudding Subbasin TMDL.</p> <p>On October 3, 2008, City of Keizer Stormwater personnel verified flow in Labish Ditch as it enters the City of Keizer from Marion County....Through field verification the City has determined that all mapped drainages and waterways flow into the City of Keizer and primarily exit at the Willamette River...Staff verified on October 3, 2008, that flow in Labish was to the west, and into Keizer, from upstream of Highway 99...Flow in Labish at Highway 99 is regulated by an elevated box culvert. Low flows pass through a pipe below the culvert to the</p>

	west. The design of the culvert makes it very apparent that during high flow events, the water in Labish can only flow to the west and into Keizer. (10)
DEQ Response	DEQ accepts the thorough information supplied by the City of Keizer and agrees that at low flows, the City of Keizer would not contribute stormwater to the Little Pudding River watershed. DEQ also agrees that at high flows, it is likely that the box culvert at Highway 99E would direct flow westward into Keizer. However, DEQ would like the City of Keizer to confirm during a high flow event that, indeed, flow in Labish Ditch is westward from the box culvert at Highway 99E. At this time and based on the information the City of Keizer has submitted, DEQ will remove the City of Keizer from the list of Designated Management Agencies in Chapter 7, Water Quality Management Plan. If the City of Keizer finds that during a high flow event, the flow in Labish Ditch is eastward from the box culvert at Highway 99E toward the Molalla-Pudding Subbasin, DEQ will again designate the city of Keizer as a DMA in the Molalla-Pudding Subbasin.
Comment 19.	The East Valley Water District is a new irrigation district organized and operated in Marion County...These comments are to advise the Department about the unique status of this District. Currently, the District does not deliver water or have associate water works (including canals and drains), does not own land or water rights, does not own equipment, and does not have any employees or assets. Stated another way, the District does not divert, deliver or discharge any waters of the state. Further, we believe the District does not have legal and statutory authority to implement likely provisions meant to ensure TMDL requirement are met, such as authority to manage riparian areas to meet a temperature standard by increasing shade cover, for example, through a tree planting program on private property. In summary the district is not engaged in the management or delivery of any quantity of water. The District respectfully requests it no loner be identified as a Designated Management agency for water quality purposes as it can not implement a program on water quantity that it does not manage or control. (11)
DEQ Response	DEQ understands and agrees that currently the newly-formed East Valley Water District does not currently convey water and currently does not control or contribute to a pollutant source. If the district were successful in the future in establishing additional water storage in the subbasin and distributing that water, through existing channels or by piping, the district would have control over a source of pollutants (e.g. heat, sediment). OAR 340-042-0025 defines a designated management agency (DMA) as "a federal, state, or local governmental agency that has legal authority over a sector or source contributing pollutants." This rule also defines a "source" as "any process, practice, activity, or resulting condition that causes or may cause pollution or the introduction of pollutants to a waterbody." These definitions recognize potential sources of pollutants (...that <i>may</i> cause pollution...) and entities that will control those potential sources. For those reasons, DEQ believes that East Valley Water District should remain a DMA in the Molalla-Pudding TMDL. Because the District does not currently manage water storage or conveyance in the subbasin, DEQ would expect that the District's TMDL Implementation Plan could simply be a letter describing the current status and activities of the District. If and when the District does manage water storage and conveyance in the subbasin, a more detailed TMDL Implementation plan would be required describing how the District would

	manage pollutant sources under their control.
Comment 20.	<p>Chapter 7, Page 5, General Strategies: The general strategies outlined in the WQMP are excellent and right on target, although NFS does not believe working inside the existing framework will achieve increased riparian restoration and protection, restore natural stream flow, increase stream flow, reduce sediment delivered to streams, manage fertilization runoff, and manage irrigation.</p> <p>A 2005 EPA letter to ODFW regarding the Oregon Coastal Coho Plan stated similar concerns... <i>“Continued implementation of the existing regulatory framework in Oregon does not adequately address widespread water quality problems and will not meet the goals in the CCP”.... “there is a significant body of science demonstrating that regulatory programs in Oregon do not adequately protect water quality and associated beneficial uses (e.g., salmonid spawning and rearing, public water supply).”</i></p> <p>New frameworks that place a priority on water quality rather than stream use must be created to ensure these strategies are effective. (12)</p>
DEQ Response	DEQ agrees that TMDL Implementation and ultimately water quality improvement will require innovative strategies and cooperation among parties representing diverse interests, as well as traditional, regulatory approaches. DEQ can assist with these strategies in several ways such as providing technical assistance, providing grant and loan funding, and directing entities to other funding sources.
Comment 21.	<p>Chapter 7, Page 7, Relationship of Management Strategies to Attainment of Water Quality Standards: DEQ needs to ensure that point sources of pollution abide by their permits. On way too many occasions in the past, DEQ has allowed point sources to exceed their permits with little or no action taken against the violator. The numerous Clean Water Act violations by the city of Molalla in the past at Bear Creek are a prime example, as are the cities of Hubbard and Aurora’s wastewater treatment plants. (12)</p>
DEQ Response	DEQ has the responsibility to regulate wastewater discharge through permitting and enforcement programs. As DEQ states in an on-line introduction to the Compliance and Enforcement Division, “DEQ uses a combination of tools to ensure compliance, from public education and technical assistance to compliance inspections, investigation of complaints, assessment of civil penalties and compliance orders. First, DEQ emphasizes education and technical assistance because most businesses and individuals voluntarily comply with the laws.” DEQ has taken compliance and enforcement actions in each of the three cases mentioned in this comment including warning letters, inspections, requiring actions, and mutual agreements and orders.
Comment 22.	<p>Chapter 7, Page 15, City of Molalla Drinking Water Plant: DEQ’s permits for the City of Molalla Drinking Water Plant should be adequate for controlling outflow temperature at the plant, but intake was not adequately addressed in the report. While the plant currently does not exceed its intake permit, due to population growth, it is likely that it will in the future. Lack of stream flow is another main reason for temperature listings, and the plant’s design flow rates are enough to</p>

	<p>considerably reduce stream flow.</p> <p>In addition, the city of Molalla has a permit to withdraw water from Trout Creek, and should this be allowed to happen, it would be a disaster for temperature in the river. Trout Creek contributes significantly to flow in the Molalla River and its confluence is the main thermal refuge for spring Chinook.</p> <p>DEQ needs to work with the City of Molalla to minimize intake at its current location, and should do everything in its power to ensure the city of Molalla does not withdraw water from Trout Creek. (12)</p>
DEQ Response	<p>DEQ acknowledges that stream flow is an important variable influencing stream temperature. Water withdrawals are regulated and permitted by the Oregon Department of Water Resources, but DEQ does have an opportunity to comment on the potential water quality effects of surface and groundwater withdrawals and make recommendations, and will continue to do so. However, DEQ does not have the authority to regulate water withdrawals.</p>
Comment 23.	<p>Chapter 7, Page 16, DMAs Not Covered by an MS4 Permit: Storm water control measures should be required for cities over 1,000 not 10,000. Expecting DMAs with populations under 10,000 to give consideration to storm water control measures will not work. Oregon should also look at establishing regional facilities for stormwater management such as sedimentation ponds and constructed wetlands. (12)</p>
DEQ Response	<p>NFS is correct that stormwater from communities with fewer than 10,000 residents is not currently regulated with an MS4 permit. However, smaller cities are still designated management agencies (DMAs) and are required to submit and monitor the success of a TMDL Implementation Plan and report annual progress to DEQ. TMDL Implementation plans should include strategies for controlling and reducing pollutants in stormwater. DEQ's work in the Willamette Basin resulted in a nearly 100% on-time submission of Implementation Plans, including those from communities with fewer than 10,000 residents. DEQ acknowledges the NFS comment regarding regional stormwater treatment facilities but such a strategy seems more likely to fall under the jurisdiction of a municipality or county.</p>
Comment 24.	<p>Chapter 7, Page 16, Management Strategies for Nonpoint Sources: As stated earlier, NFS does not agree that current DOF forest practices are good examples of forestland water protection best management practices. Better practices would be for DOF to adopt federal forest practices and ensure that private lands comply with these practices. Furthermore, listing "maintain riparian vegetation with a 20-foot no harvest zone of trees and 10-foot zone no disturbance of all understory vegetation ..." as a "best management practice" is actually harmful as this only applies to streams listed as small and is nowhere near an adequate amount of riparian buffer.</p> <p>The following are quotes from the 12/05 letter from EPA on the Coastal Coho Plan, and we believe it applies to the Molalla-Pudding TMDL area. "... there is a substantial body of science demonstrating that Oregon's existing forest practice rules and best management practices do not consistently meet water quality standards or fully provide riparian functions important to water quality, public water supplies and fish. Expert reviews and research have identified the need for increased protection of riparian management areas and landslide prone slopes in</p>

	<p><i>Oregon for both fish and non-fish streams to provide functions important for fish and water quality. ... additional revisions to the rules are needed to ensure water quality standards will be met and that beneficial uses such as salmonid spawning and rearing will be fully protected.</i></p> <p><i>“EPA does not believe the CCP’s use of the existing Oregon Forest Practice Act regulations (FPA) will achieve the desired status goal for the Coastal Coho ESU.”</i></p> <p><i>“... EPA believes the existing FPA and SB 1010 plans do not adequately support the desired CCP goals for Coastal Coho habitat.”</i></p> <p>(12)</p>
DEQ Response	<p>DEQ appreciates NFS concerns regarding forestry practices. Oregon’s TMDL Rule states that the Oregon Forest Practices Act and associated rules are the mechanism to implement the TMDLs. If data show that FPA is not adequate, or if DEQ and ODF agree that additional protection measures are necessary, DEQ and ODF may recommend to the Board of Forestry to revise the Forest Practice rules.</p> <p>ODF and DEQ completed the Forest Practices Act Sufficiency Analysis (Sufficiency Analysis) in October 2002 pursuant to our 1998 Memorandum of Agreement. The Sufficiency Analysis identified a series of recommendations to highlight general areas where current forest practices could be improved in order to better meet the goals and objectives of the Forest Practices Act and in turn provide assurance of meeting water quality standards statewide. DEQ and ODF are cooperating on a monitoring project ODF initiated in 2002 designed to evaluate the adequacy of riparian protection rules to protect streams from solar radiation in excess of natural conditions. Once the project is completed, DEQ and ODF will decide how best to address the findings and implement the recommendations in the report.</p>
Comment 25.	<p>Chapter 7, Page 17, Agriculture Lands: The ODA needs to go beyond trying to monitor for damage caused by fertilizers, herbicides and pesticides and prohibit the use of agriculture products that harm water quality before they become a problem to the watershed. There are cost-effective green alternatives that should be mandated.</p> <p>Too many times, NFS has heard of fish kills in entire streams due to runoff and dumping from agriculture, and this would have been less likely if ODA had outlawed the use of the product that caused the fish kill before it became a serious problem. (12)</p>
DEQ Response	<p>While it does not mandate or ban the use of particular products, ODA does have a program that regulates pesticide and fertilizer use (http://www.oregon.gov/ODA/PEST/index.shtml) and the Molalla-Pudding-French Prairie-North Santiam Subbasins Agriculture Water Quality Area Management Plan also contains enforceable water quality rules (OAR 603-095-1940) regarding prohibited conditions, including Chemigated Irrigation Water. As well, the Marion and Clackamas SWCDs have coordinated several pesticide collections and provided education and technical assistance to landowners regarding responsible use of and alternatives to pesticides.</p>

<p>Comment 26.</p>	<p>Chapter 7, Page 17 Agriculture Lands: ODA and DEQ should take a harder look at DDT, Chlordane, Dieldrin, and all other banned pesticides. Voluntary turn in of banned chemicals is a great idea, and we appreciated the efforts made by DEQ and Marion SWCD to collect banned chemicals. Those efforts should be followed up with inspections, especially of nurseries. DEQ should conduct an extensive survey to determine what remnant populations of these pesticides still exist. Another tool that could be used to help find legacy pesticides is to establish a citizen monitoring program. This program could be used to not only monitor banned pesticides, but could also be used to document non-point source violations, and runoff, over-development and erosion issues. A good model for this program is Clackamas County's Dump Stoppers program, which has made great strides to stop dumping in the Molalla River Recreation Corridor.</p> <p>Many local citizens already use their camera to document pollution and other problems. They need to be encouraged, and DEQ needs to provide a phone number, e-mail and primary contact for the citizen monitoring program. DEQ could also provide training to better ensure accurate data and help alleviate trespassing issues. (12)</p>
<p>DEQ Response</p>	<p>Legacy pesticide collection events have been funded with grants but there is no sustained source of funding for follow-up inspections. The Oregon Department of Agriculture's Pesticide Division does have a compliance monitoring and enforcement component with authority to conduct investigations and inspections in response to reports of loss.</p> <p>DEQ does provide volunteer monitoring training and more information about that program can be found at this web address (http://www.deq.state.or.us/lab/wqm/volmonitoring.htm) or by calling (503) 693 – 5700 and asking for the Volunteer Monitoring Coordinator.</p>
<p>Comment 27.</p>	<p>Chapter 7, Page 18, Urban and Rural Lands: As the overseer of state agencies regarding land use, the Oregon Department of Land Conservation and Development and the Land Conservation and Development Commission need to put a lot more muscle behind ensuring improved fish runs, less water quality impairment from land development and practices, and more water flow. The DLCD, in conjunction with DEQ needs to have enforceable requirements and then ensure the regulating agencies, i.e. the local jurisdictions, implement and enforce those requirements.</p> <p>The LCDC has the ability to designate areas of special concern, but they have not designated a new one for decades and have designated no watersheds that drain to special waters for our declining native anadromous and resident salmonids. For example, the entire Molalla River Drainage above Glen Avon Bridge is a very special place and should be given the highest protection offered by the State. (12)</p>
<p>DEQ Response</p>	<p>DEQ acknowledges this comment and encourages NFS to communicate with the Department of Land Conservation and Development, as well as DEQ. DEQ's experience suggests that TMDL Implementation Plans can be an effective place to link land use decisions to water quality and document strategies that the designated management agency (DMA) will implement (such as ordinances for riparian protection or low impact development) to protect sensitive areas and reduce or prevent pollution sources from</p>

	development.
Comment 28.	Chapter 7, Page 19, Plan to Monitor and Evaluate Progress Toward Achieving TMDL Allocations and WQS: NFS looks forward to reading this plan. (12)
DEQ Response	This section of the WQMP describes the monitoring and reporting responsibilities of several entities, including DEQ. These entities will each evaluate their progress in implementing pollution reduction strategies and achieving water quality improvement and report to DEQ, all of which will be public information. This section does not refer to one comprehensive monitoring and evaluation plan that will be available for review.
Comment 29.	Chapter 7, Page 21, Cities and Counties: NFS encourages DEQ to regularly monitor the in-stream data collected from the four sites of the Molalla River by the City of Molalla in order to ensure permit compliance and to ensure proper data collection. (12)
DEQ Response	DEQ will be reviewing this data.
Comment 30.	Chapter 7, Page 28, Waste Load Allocations: While trading and mitigation can be an effective tool, DEQ should not rush to allow point and non-point sources to continue to hurt water quality at the source by mitigation at another site. Another effective tool would be to require point and nonpoint sources already in place to not violate TMDL standards, and if they don't, require mitigation. (12)
DEQ Response	DEQ acknowledges the NFS opinion regarding water quality trading. DEQ has no intention to rush implementation of trading and has established a work group to develop clear internal guidelines for this strategy. DEQ will require point sources to meet their wasteload allocations and non-point sources, not addressed with an existing agreement, to submit Implementation Plans that identify pollutant sources under their control and strategies to reduce those sources so that load allocations can be achieved.
Comment 31.	<p>General Comments:</p> <ul style="list-style-type: none"> • Should be focused on no impact rather than low impact. "Low" is very subjective. • An erosion hazard study should be conducted to determine where sheet and mass erosion are most likely to occur throughout the drainage. • More research needs to be done to determine with certainty where nitrates are entering the watershed. • In the head waters, we need to be talking about decommissioning roads not restoring and building them. • ATVs impact in the watershed should be studied further. (12)
DEQ Response	<p>"Low-impact development "(LID) has become shorthand for practices that reduce or eliminate adverse environmental effects. DEQ advocates this as one strategy among several for a designated management agency (DMA) to achieve pollutant reduction targets.</p> <p>One or more DMAs in the Molalla River drainage may find an erosion study helpful in identifying sources of sedimentation and sites likely to benefit from riparian restoration. DEQ is familiar with a proposal to conduct such a study and has encouraged parties in the basin to pursue funding for such a study.</p>

	<p>DEQ is not aware of a nitrate contamination problem in the Molalla River watershed. Nitrate data collected at DEQ's regularly monitored (bimonthly) site at Knights Bridge does not indicate a nitrate problem.</p> <p>Road decommissioning can be one effective strategy for reducing sedimentation to surface water. Parties in the basin should work with BLM to discuss this strategy as well as ATV use, as BLM develops the Water Quality Restoration Plan for their lands in the Molalla River watershed.</p>
Comment 32.	<p>page 7 - 10 paragraph 4: I would suggest a rewrite so that the specific names of the management plans each of the federal agencies are using is stated. (13)</p>
DEQ Response	<p>This paragraph has been changed so that the name of the management plan for each agency is stated.</p>
Comment 33.	<p>page 7 - 16 paragraph 5: I would suggest a rewrite so that it is clear that the current planning effort in the BLM is not tied to the NWFP. I would use the same working language we used in our BLM Willamette Basin Implementation Plan. (13)</p>
DEQ Response	<p>This paragraph has been changed to the wording suggested by BLM, which is consistent with the Willamette Basin Implementation Plan.</p>
Comment 34.	<p>page 7 - 22 paragraph 4: I would suggest adding to the BLM and USFS statement about monitoring: The BLM Salem District is responsible for developing Water Quality Restoration Plans (WQRP) which include identification of monitoring activities to be conducted. BLM WQRP's in the Willamette basin have identified restoration and project specific BMP implementation monitoring as the primary focus for reporting. Shade retention effectiveness monitoring would be also be completed in riparian management areas. Future monitoring will also comply with parameters and timelines established in the revised RMP. (13)</p>
DEQ Response	<p>This statement has been added.</p>
Comment 35.	<p>page 7 - 28 paragraph 6: The Salem BLM would like to see a sentence or statement that relates reserve capacity to potential minor increases in temperature which could occur due to active riparian restoration. We have many riparian areas in need of restoration which include release of conifer from an overstory of hardwood. This will get the site to system potential quicker. It would be helpful in this document to have a statement to the effect that reserve capacity allows these minor actions. (13)</p>
DEQ Response	<p>DEQ does not agree that Reserve Capacity is an appropriate way to allow for a short term loss in riparian shade as part of a broader project to improve riparian area health. However, DEQ does acknowledge that adaptive management allows for interim targets and strategies that target or hasten attainment of load allocations. DEQ suggests that BLM's WQRP describe how this strategy would apply to TMDL implementation in the Molalla-Pudding Subbasin.</p>
Comment 36.	<p>DEQ initiated change.</p>

<i>DEQ Response</i>	The U.S. Fish and Wildlife Service was named as a designated management agency in the 2008 Draft. DEQ has since confirmed the U.S. Fish and Wildlife service has no wildlife refuges in the Molalla-Pudding Subbasin and therefore no management responsibilities in the Subbasin. DEQ has removed the U.S. Fish and Wildlife Service as a DMA for the Molalla-Pudding Subbasin TMDL.
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