



Oregon

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November 18, 2004

Metropolitan Wastewater Management Commission
225 Fifth St.
Springfield, OR. 97477

Re.: MWMC Draft Wastewater Facilities Plan
Lane County

Dear Commissioners,

Thank you for the opportunity to review and comment on the Metropolitan Wastewater Management Commission (MWMC) Draft Wastewater Facilities Plan prepared by CH2MHill. The Department received the draft in our office on May 26, 2004. The Plan is well written, and follows the outline of the Department's guidelines. The essence of the facility plan (FP) is to increase flow treatment capacity and to manage peak flows associated with the 5-year, 24-hour rainfall events in a way that does not result in sanitary sewer overflows in the collection system. This will be achieved through upgrades in the conveyance system capacities and primary and secondary treatment capacity increases. Department staff offer the following comments:

General

- 1) The draft document should be thoroughly reviewed for typographical errors and the errors corrected in the final document. We have noted several typographical errors as comments following those for Chapter 9.
- 2) The Plan assumes that the existing mass load limitations will remain the same; even though the proposed upgrades include an expansion of the secondary treatment capacity and that the wet season maximum day mass limits will continue to be suspended when the plant flow is equal to or greater than twice the dry season design rating. While this is acceptable, the Plan should also state that OAR 340-041-0061(10)(b) directs DEQ to calculate the mass load limits based on the proposed treatment facility capacities and the highest and best practicable treatment to minimize the discharge of pollutants. If this calculation results in a greater mass load, MWMC may apply for a mass load increase by performing water quality studies and making the required environmental and financial findings. However, it is unknown at this time if these findings can be made.
- 3) Blending: The Plan calls for routing flow around the primary and/or secondary treatment units under certain conditions. The plan should state that while this

proposal is consistent with EPA's proposed blending policy, this policy has not been finalized. Therefore, while the proposal is acceptable at this time, DEQ may be required to reconsider this position at some point in the future.

The Plan needs to more fully incorporate the collection system improvements detailed in the Wet Weather Flow Management Plan (WWFMP) into the Facilities Plan.

- 4) DEQ rules require pump stations to have the capacity to pass the peak hourly flow including domestic, industrial and I/I allowance. DEQ guidance interprets this requirement to mean that the pump station must have the firm capacity to handle the peak flow associated with the 1-in-5 year 24 hour storm event. In general, the Plan needs to be modified such that pump stations will meet these rules and guidelines.
- 5) Temperature. The discussion on temperature needs to be revised to reflect the current temperature standard (revised in early 2004) and the proposed TMDL for temperature.
- 6) There has been much dialog regarding the DEQ Methodology for calculating design flows and loads. We believe that either the projections from the DEQ Methodology should be used or a better justification is needed to use an alternative method. See the discussion below for more details. In addition, further documentation on DLCDC approval of the 20 year population projection is needed.

Executive Summary.

This section should be modified to reflect any modifications made in the later chapters.

Chapter 1. Introduction, Purpose and Need.

- 7) Page 1-7– In the paragraph under CBOD and TSS Limitations, please change “biological” oxygen to “biochemical” oxygen.
- 8) Page 1-8 – Please clarify the DEQ redundancy requirement referred to in the last sentence of the paragraph regarding the hydraulic capacity of the plant.
- 9) Page 1-9– What is the basis of the increase from 103 mgd to 130 mgd of full secondary treatment?

Chapter 2. Study Area Characteristics.

- 10) Page 2-13 – Please explain the causes of the chlorine leaks noted.
- 11) Page 2-19 – The first paragraph is unclear whether we are concerned with the 55° C criteria or the 64° C standard.
- 12) Page 2-19 – The third paragraph under the temperature section should more clearly state that while MWMC staff believe that the current temperature effects are

- insignificant, they realize that they will have a significant impact in the future if upstream temperature reduction efforts are successful.
- 13) Page 2-20 – Please insert the words “as an indicator organism” in the first sentence of the second paragraph under Bacteria.
 - 14) Page 2-20 – Please note that the bacteria standard is based on E. Coli as an indicator and that the criteria is a 30 day log mean of 126 organisms per 100/ml and no single sample shall exceed 406 organisms per 100 ml.
 - 15) Page 2-20 – The section under Bacteria appears to be directed at impacts from storm water. It should be noted that insufficient disinfection and collection system overflows can also contribute to instream exceedances of the bacteria criteria.
 - 16) Page 2-21 – Please include the source of the statement that anadromous fish do not have high mercury levels in their bodies.
 - 17) Page 2-22 – Please include the sources for the information on phosphorus and nitrogen.
 - 18) Page 2-22 – The first word in the second paragraph should be “nitrite”. NO₃- should be changed to “NO₂-“.
 - 19) Page 2-23 – The section titled “Conclusion” appears to have been extracted from another source and does not seem to be applicable to the Plan.
 - 20) Page 2-28 – The first bullet under Land Use and Zoning should include the designation of the Water Pollution Control Facility.
 - 21) Page 2-29 – “Section 2.3 Socioeconomic Environment” should include a discussion of the demographics of the service population, the percentage of retired vs. employed, tourism, and list major industries (i.e. service vs. industrial).
 - 22) Page 2-31 – The discussion of population growth projections should also include the history and current status of the development of coordinated projected population values.
 - 23) Page 2-31 – “Section 2.3.3 Population Growth Projections” should include the projected growth rate in percent per year. What is the basis for the growth rate assumption employed in the population projections?
 - 24) Page 2-33 – Since coordinated projected population values are not currently available, please include a statement that DLCDC concurs with the population projections in the facilities plan.
 - 25) Page 2-34 – Section 2.4.2 is a repeat of Section 2.2.9. Please delete one of these sections.

Chapter 3. Existing Wastewater Facilities.

- 26) Page 3-1 – Please include a description of the pump stations for both the Springfield and Eugene wastewater collection systems. This information should

conform to the DEQ guidelines for submittal of engineering reports for pump stations.

- 27) Page 3-3 – Please include a table for each pump station with the information detailed in the DEQ guidelines for submittal of engineering reports for pump stations. A review of the EPA reliability classification should be included in the tables.
- 28) Page 3-4 – Please provide a summary of all pump stations that do not currently meet DEQ guidelines.
- 29) Page 3-6 – Please include a process flow diagram for the existing wastewater treatment system.
- 30) Page 3-10, Table 3.2.2-2, last column – please include the units for the primary clarifier capacity.
- 31) Page 3-10 – What is the current operating point for mixed-liquor suspended solids (MLSS)? Has the treatment system staff considered state point analysis to optimize clarifier operation?
- 32) Page 3-11 – Please list the different flow configurations in the aeration basin and the SRT for each of those configurations.
- 33) Page 3-12 – Please include information on flash mixing the chlorine solution (type, number, size, etc.)
- 34) Page 3-13 – Effluent disposal. It would be helpful to include the river mile location of the existing effluent outfall.

Chapter 4. Wastewater Characteristics.

This section contains calculations of current and projected flows based on historical data, collection system modeling and statistical analysis. Please note that section 4.1 incorrectly states that only two methods were used (historical and DEQ method) and omits modeling. DEQ agrees that the use of collection system modeling will provide a better estimate of peak day flows. With regard to the use of historical flows, however, we believe that the DEQ method gives a better estimate of flows than the use of peaking factors derived from historical flow data. This is because the Eugene area has not received a monthly rainfall equivalent to the 1-in-10 year dry season or the 1-in-5 year wet season rainfall and the “historical method” fails to account for this. CH2M Hill has received comments on this section from DEQ regarding the DEQ Method for calculating design flows and has made changes.

Much of the information on wastewater characteristics is contained in Tech Memos 1&3 and then summarized in this Chapter. The following comments address Chapter 4 first, and then the revised Tech Memos (TMs):

- 35) Page 4-2, Figures 4.1.1-1 and 4.1.1-2 – It would be useful to plot rainfall data on the same graph as the flow data. Some discussion of the variation in the seasonal flows from year to year will be helpful in better understanding the components of wastewater flow in the collection system. For example why are the average wet weather maximum month flow and the average maximum month dry weather flow for the year 2000 about the same?
- 36) Page 4-3 – Section 4.1.3 will need to be revised (see below).
- 37) Page 4-3 – More discussion is needed on the rationale for choosing the design flows.
- 38) Page 4-4, infiltration and inflow – Please discuss the impact of groundwater on infiltration in the collection system since the literature indicates a correlation between groundwater elevation and infiltration in the collection system.
- 39) Page 4-7 – Please include the references and rational for using the 2,000 gallons/acre-day criteria for future development.
- 40) Page 4-13 – Table 4.4.1 will need to be revised (see below).
- 41) Tech Memo 1, Page 5, states that there is a significant discrepancy between the model predictions and the measured flows. This discrepancy is greater than 20 percent at some monitoring locations. The memo continues to state that additional flow measurement should be done during the 2004/2005 wet weather season to better calibrate the model. This comment should be noted in the facilities plan along with a plan to collect the additional data and revised the peak flow numbers if warranted.
- 42) Tech Memo 1, Page 6 – Please include the references for determining the magnitude of the storm events.
- 43) Tech Memo 1, Page 9 – Please include the references and rational for using the 2,000 gallons/acre-day criteria for future development.
- 44) Tech Memo 1, Page 11 – The Plan and Technical Memos use several different values for the peak flow. Please provide the rationale used to select the flow value chosen.
- 45) Tech Memo 3, Page 4 – Please note that if the project will be funded using SRF moneys, then the planning period will need to be 20 years from completion of the project.
- 46) Tech Memo 3, Page 5 – Please note that the population projections will need to be approved by DLCD. Please include a copy of the DLCD approval letter as an attachment to the facilities plan.
- 47) Tech Memo 3 Page 7 states that it is unlikely that the increasing population is using less water. This assumption should be verified with data from the Eugene Water Board.
- 48) Tech Memo 3, Page 8 – Please include a list of the 16 industrial contributors with data on quantity and strength of each user. Also, were actual data used to subtract

the industrial sources from the total? Or were these estimates and/or average? Are any of the users seasonal?

- 49) Tech Memo 3, Page 11 – Please note that the DEQ method was not applied properly and needs revision. This has been discussed and we understand that a revised tech memo will be completed soon.
- 50) Tech Memo 3, Page 13 – Please provide the methodology for developing the industrial flow and load projections. The information should also be provided graphically.
- 51) Tech Memo 3, Page 14, Table 12 – Please note that the peak hour wet weather flow projection of 300 mgd differs from what is in the facilities plan.
- 52) Tech Memo 3, DEQ Methodology, Table B-1 – It is difficult to determine how these peaking factors were derived. Please provide a table with the actual estimated values for current flows. Peaking factors can then be derived from this table and applied.

Chapter 5. Basis of Planning.

The discussion on Water Quality Impact (section 5.3) should be moved to the regulatory requirements section. This is because the water quality impacts are critical in determining the effluent limitations in the NPDES permit, which is the basis of design for the treatment plant upgrades.

- 53) Page 5-4 –The discussion on temperature needs to be revised to acknowledge the current temperature standard (revised in early 2004) and the proposed TMDL for temperature.
- 54) Page 5-7 and 8 – As discussed above, the Excess Thermal Load section will need to be revised to reflect the current temperature standard. Also, while this section states that a detailed thermal load analysis was performed, none was provided. Please include this information, which can be a tech memo. Please move figure 5.1.3-5 into the Excess Thermal Load section.
- 55) Page 5-9 – The first bullet under Excess Thermal Load contains the language “a stream that is water quality limited”. We suggest that the sentence specify that the stream is water quality limited “for temperature”.
- 56) Page 5-9 – Please note that it is possible that the federal SSO regulations may not be promulgated during the planning period.
- 57) The Plan discusses the mercury, arsenic and temperature listings. Based on information currently available, have fecal coliform bacteria, DDT, PCB, Aldrin, Dieldrin, PAH's, iron, manganese, and pentachlorophenol been found in the wastewater treatment plant effluent? Based on available information, has the effluent had any effect on biological and dissolved oxygen criteria?

- 58) Page 5- 12 – Please provide a summary of the effluent concentrations for the various parameters discussed (e.g. ammonia, mercury, arsenic, cyanide, metals, phosphorus, etc.). Also, please provide a summary of the whole effluent toxicity tests performed to date.
- 59) Page 5-13 – Please note that the TDS criterion listed is a guide concentration, not a standard.
- 60) Page 5-13 – The Biosolids section should reference the DEQ approved Biosolids Management Plan and the site approval letters.
- 61) Page 5-15 – Please provide a summary of the results from the biosolids metals testing and compare these results to the EPA criteria for unlimited application (Exceptional Quality).
- 62) Page 5-21 – Section 5.1.6. All design criteria should meet DEQ and EPA requirements.
- 63) Table 5.4.2-2, Influent pumping, last column – the 2025 condition of need is the firm capacity with the largest unit out of service, not without the largest unit out of service as noted in the Table.
- 64) Page 5-29 – The purpose of section 5.4.4 is unclear. The permit for the seasonal land irrigation site has been terminated. The site formerly used as the seasonal land irrigation site may now be used for biosolids application and/or reclaimed water. Therefore, we recommend that the information on this site be incorporated into the sections on biosolids and reclaimed water

Chapter 6. Development and Evaluation of Alternatives.

All Alternatives appear to assume that I/I reduction measures will not be effective. While this is discussed further in Chapter 8, some discussion and allowance for I/I reduction should be made in developing the liquid stream treatment alternatives.

- 65) Page 6-4 – Please describe the long-term collection system management programs in the cities of Eugene and Springfield and how these programs address I/I detection activities.
- 66) Page 6-4 – Please explain and support with some data the essence of the statement in the last sentence in section 6.1.1.
- 67) Page 6-5, bullet #2 – Please include a description of the service lateral maintenance program in the summary of the waste water flow management plan.
- 68) Page 6-5 – Please clarify the statement in the second to the last paragraph regarding additional public-only system rehabilitation.
- 69) Page 6-7 – Please summarize in the Facilities Plan the alternative to construct a partial MBR contained in TM 7
- 70) Page 6-12 – How were the secondary clarifier capacity increases noted in the first paragraph arrived at? Please include a reference to TM 8.

- 71) TM 7 – Please include a cost comparison of an alternative that would convert half of the aeration basins to SBR technology.
- 72) TM 7 -19 – Please provide the documentation that MBR systems must nitrify year round to function properly.
- 73) TM 7 – 19 – Please change Table 8 to include the MLSS values used in the model.
- 74) TM 7 – Cost Estimates – Please include the detail for the MBR cost evaluation and provide this information in Table 3.
- 75) Page 6-20 – Should Figure 6.2.6-1 include the label “CBOD” on the right axis?
- 76) Page 6-22 – Please clarify that any proposed filtration technologies used for reduction of TSS would also be capable of meeting the Level IV turbidity requirements.
- 77) Page 6-26 – Please modify the recommendation to reflect the intention of MWMC to select the disinfection system during pre-design at a later date.
- 78) Page 6-26 – It should be noted that for a reuse system, a chlorine residual is desirable for operational and public health considerations. In the future, it is possible that DEQ will require a chlorine residual for all level IV reuse systems.
- 79) Page 6-26 – Please provide language indicating that the filtration system will meet Level IV turbidity reuse requirements.
- 80) Page 6-33 –If the digesters are not currently operated in series, please include an evaluation of operating them in series. Series operation would take advantage of first order kinetics and theoretically provide better VSS destruction.
- 81) Page 6-38 – Was composting considered as an alternative? If not, why not?
- 82) Page 6-51 – Please note that the prohibition of SSOs during rain events less than the 10-year, 24-hour storm is currently in effect.
- 83) TM 1, page 5 – since the collection system modeling has not been calibrated with actual flow data (this is not evident from the text) what is the certainty that peak flows of 277 mgd can be conveyed to the WPCF without overflows? In fact we know from the historical flow data that peak flows may exceed the 277mgd by the design year of 2025. The FP must discuss the scenario in the collection system where the design peak flow is exceeded prior to the design year of 2025

Chapter 7. Recommended Plan.

Note: This section should be revised as necessary based on the comments above.

- 84) Table 7.1.2-2 – Please include the existing and design populations in this Table.

Chapter 8. Financial Strategy.

The FP states that there have been previous evaluations of state and federal

funding sources. Please include a summary of those evaluations in this chapter.

- 85) Page 8-5 Table 8.2.1-- It appears that the decimal point on "\$351,940.000" is incorrect.
- 86) Page 8-6 Tables 8.3.4-1 – Please include the number of EDU's and cost per EDU for easy comparison. If the EDU information can not be included, please provide the rationale for not doing so.

Chapter 9: Environmental Report.

- 87) As noted in this section, the Biocycle Farm is not included in the Environmental Report. Future financing through the Clean Water State Revolving Fund may require the preparation of a separate Environmental Review for the Biocycle Farm.

Typographical Errors

Page ES-4 – FIGURE ES-2 should be TABLE ES-2

Page 2-13 – The word "mile" is missed from the first sentence of the last paragraph.

Page 2-20 – The first sentence of the Bacteria section should say "service area".

Page 2-22. Nitrogen: The third paragraph contains a repeated sentence.

Page 2-25, Table 2.2.7-2, titles of 2nd and 3rd columns is transposed.

Page 3-14 – Biosolids is misspelled in the third paragraph under the heading Facultative Sludge Lagoons.

Page 3-15 – Plant operation and facilities. The second paragraph contains some repeated punctuation.

Page 6-21, last bullet – We suggest that "evaluated" be changed to "evaluate".

Additional Clean Water State Revolving Fund (CWSRF) Requirements:

The environmental review chapter should include a summary of public participation.

The Commission should adopt a sewer use ordinance (SUO) prohibiting any new connections from inflow sources. The ordinance should require that all discharges into the treatment works be free of toxins and other pollutants that by virtue of their concentrations, might be detrimental to human health, adversely affect the treatment capability of the facility, or preclude the selection of the most cost-effective alternative for wastewater treatment and sludge disposal (OAR 340-054-0035 (2)(a)).

A Department approved user charge system (UCS) should be in place (OAR 340-054-0035 (2) (b)) designed to produce adequate revenues to provide for operations,

maintenance, debt service and reserves for system replacement costs. The UCS should be based on actual or estimated use and each user must pay its proportionate share of the cost. The UCS must provide that each user be notified annually, in conjunction with a regular bill, of the rate and that portion of the user charge that is attributable to wastewater treatment services.

A land use compatibility statement (LUCS) signed by the appropriate land use planning official is also required by CWSRF rules (OAR 340-054-0035 (1) (b)). In addition, a non-residential user survey identifying significant industrial discharges must be conducted and submitted to the Department (OAR 340-045-0063). Construction projects using CWSRF funding must submit plans and specifications when available and a value engineering study (VE) if the project cost will be over ten million dollars. The VE is completed during the design process.

Please address these comments within six months of the date in this letter. After the Department's comments regarding the Draft Facilities Plan have been addressed, please submit two final copies of the Facilities Plan in a standard (10 x 11.5 in.) three ring binder. The spine of the binder should be labeled with the following information: (1) name of the public agency; (2) title of the document; (3) date (month and year) of the facility plan. If possible, please submit your revised Facilities Plan with print on both sides of each page.

If I can offer further assistance, or if you have any questions regarding this matter, please feel free to contact me at (541) 686-7838 ext. 256.



Gary Artman
Project Officer, CWSRF

cc: Troy McAllister, City of Springfield
Matt Noesen and Shawn Clark, CH2MHILL
Keith Andersen, Jon Gasik, Francis Dzata, Mark Hamlin, DEQ



Oregon

Theodore R. Kulongoski, Governor

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December 1, 2004



Mr. Troy McAllister/MWMC Facilities Plan Project Manager
City of Springfield
225 Fifth Street
Springfield, OR 97477

Dear Mr. McAllister:

This letter is in response to a request from the Oregon Department of Environmental Quality to determine Department of Land Conservation and Development (DLCD) concurrence on the population projections used for the 2004 Metropolitan Wastewater Management Commission Facilities Plan.

Summary

DLCD staff has completed a review of the 2004 MWMC population projections. We asked for and received a memorandum outlining the method used for the determination from your consultant Matt Noesen, CH2M HILL. With that information, we have found that the population projection reflects a sound scientific approach to determine a usable projection and that the department can agree it is appropriate that MWMC utilize that approach at this time. We understand that MWMC has obtained concurrence from Lane County as well, pursuant to ORS 195.036.

Background

On January 15, 2002, DLCD approved the Metropolitan Public Facilities Plan per Order #001359. The population projections in that plan or the method used to calculate them are required to be used until the county coordinates new population projections and/or the cities develop new projections that are concurred with by the county. The Lane Council of Governments is currently working with all Lane County jurisdictions to achieve coordinated population allocations. In addition, our department is clarifying the process currently used by all jurisdictions for developing those allocations (new administrative rules are currently in the hearing process pending adoption). It may be spring or even later in 2005 before a new process is provided and the local coordinated allocations are determined.

In the absence of current coordinated and adopted population projections for the Lane County metropolitan community, the MWMC facility planning team developed projections based on recent historical growth data. The jurisdictions realized that they needed to adjust the population projections to reflect that recent historical population database. The department agrees that it is appropriate to utilize the projections presented in the 2004 Facilities Plan, and that these projections are coordinated with state and local population projections to the fullest extent possible at this time. Please be aware, however, that

once the region-wide allocations have been completed, any subsequent updates to the MWMC Facilities Plan will need to use the coordinated population projection.

If you have questions, please call me at 541-682-3132.

Sincerely,



Marguerite Nabeta
Southern Willamette Valley Regional Representative

cc: Gary Artman/Oregon Department of Environmental Quality
Matt Noesen/CH2M HILL *by email } FAX*