Improvements at Pump Stations 3 and 4

Estimated Capital Construction Cost

Item	*Unit*	*Quantity*	*Unit Price*	*Estimated Cost*
Pump Station No. 4				
Abandon Existing Station	Lump Sum	1	$6,500	$6,500
New Pumps 2@1550gpm each (25HP)	Each	2	$7,500	$15,000
Variable Frequency Drives	Each	2	$25,000	$50,000 *
Wetwell Modifications	Lump Sum	1	$8,500	$8,500
Standby Generator (50Kva)	Each	1	$25,000	$25,000 *
Enclosure/Electrical Connections	Lump Sum	1	$25,000	$25,000 *
Pump Station No. 3				
Abandon Existing Station	Lump Sum	1	$6,500	$6,500
New Pumps 2@1230gpm each (25HP)	Each	2	$7,500	$15,000
Variable Frequency Drives	Each	2	$25,000	$50,000 *
Wetwell Modifications	Lump Sum	1	$8,500	$8,500
Standby Generator (50Kva)	Each	1	$25,000	$25,000 *
Enclosure/Electrical Connections	Lump Sum	1	$30,000	$30,000 *
			Subtotal Both Pump Stations	$265,000
Forcemain				
Phase 1				
8-inch HDPE	Linear foot	170	$35	$5,950 *
Valve Vault	Each	1	$18,000	$18,000 *
Phase 2				
8-inch HDPE	Linear foot	780	$35	$27,300
I-5 Bore Crossing	Linear foot	300	$350	$105,000
Lake Shore Drive Bore Crossing	Linear foot	60	$150	$9,000
			Subtotal Phase 1	$288,950
Construction Contingency @ 35%				$101,133
			Subtotal	$390,083
			Sales Tax @ 7.5%	$29,256
			Subtotal	$419,339
Admin., Survey, Design, Construction Man., and Inspection @ 35% of Construction Budget				136,527 ~~$146,769~~
			Total Construction Cost Phase 1	555,911 ~~$566,107~~
			Total Construction Cost Phase 2	*$276,833*

NT Based on Subtot

Estimated Operation and Maintenance Cost (Phase 1 only)

Item	*Estimated Cost*
Labor to Maintain Pump Station 2 hr/day*260days/yr*$20/hr	$10,400
Materials/Equipment to Maintain Pump Station 2% of Construction Cost/Year	$5,300
Power Cost @ $0.025 per KWH .746 KWH/HP*25HP/pump*2pumps*1680hrs/yr*$KWH	$3,133
Total Yearly Operation and Maintenance Cost	*$18,833*

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

December 7, 1998

RECEIVED
JAN 0 - 1999
Gibbs & Olson, Inc.

Mr. Rob VanderZandan, P.E.
Public Works Director
City of Woodland
100 Davidson Avenue
Woodland, WA 98674

Dear Mr. VanderZandan:

Re: Comments on General Sewer Plan / Facility Plan

Attached are the comments previously transmitted by FAX on November 6, 1998. Please address these comments in the letter transmitting the remaining sections of the plan.

If you have any questions, please call me at (360) 407-6318 or Dave Knight at (360) 407-6277.

Sincerely,

Charles A. Meyer

Charles A. Meyer, P.E.
Water Quality Program
Southwest Regional Office

CM:mf(2/wq)
Enclosure

cc: Dave Knight, Ecology

Chuck Meyer – Comments

Page I-7	Just a few words of caution about a $2,500,000 grant from the Department of Ecology (Ecology). First, grant funds are very limited and competition is considerable. Also, they cannot be used for growth. Based on our latest guidelines, for a Submerged Biological Contactor (SBC) alternative, it appears additional SBC capacity capable of treating existing flow and loading is eligible for grant funding. This is based on reliability criteria. The same applies to primary and secondary clarifier capacity. Additional treatment capacity would be eligible for SRF loan funds. Generally, work necessary to bring the facility up to "Criteria for Sewage Works Design" requirements would be eligible for grant funds. Replacement of a chlorine disinfection system with UV appears grant eligible, assuming the original system was not funded with Ecology funding before. Assuming the plant RBCs were not previously funded by Ecology, it appears an SBR plant would be eligible for grant funds, again subject to the existing flow limitation. Since the UV system would be installed in the existing contact tank, it would likely be grant eligible regardless.
Page I-8	In line 6, I assume this is an application for design funding. Design is eligible for loan funds only. An application for construction funding can be accepted only after the design is approved or "approvable" (existing guidelines).
Page II-2	Last bullet. Add preparation of a State Environmental Review Process (SERP) checklist. This should be bound into the final plan.
Page V-9	Please identify and quantify flows from commercial, industrial and institutional sources. Costs associated with these flows are loan eligible only. Please see our financial assistance guidelines.
Page VII-45	Proposed tankage should be designed for maximum efficiency. Matching existing tankage dimensions should be a secondary consideration.
Page VII-49	The first full paragraph indicated construction of two additional secondary clarifiers in Phase II. Page VII-56 and Figure VII-5 indicates three secondary clarifiers will be built in Phase 2.
Figure VII-5	This drawing does not show the location of the two additional SBC tanks.
Page VIII-2	First full paragraph. Design is eligible for loan funds only.
Page VIII-2	Second full paragraph. Centennial grants will fund existing capacity. Centennial loans will fund an additional 10 percent capacity. SRF will fund projects having capacity for 20 years growth. (existing guidelines, residential flows)

Page IX-1 The schedule will have to be modified as follows based on my understanding. This is the most optimistic schedule I can visualize. Again, no funding is guaranteed and grant funds are very limited.

6.	City submits loan application to Ecology	February 1999
7.	City receives loan from Public Works Trust Fund	May 1999
8.	City receives loan from Ecology	October 1999
9.	Land acquisition complete	September 1999
10.	Design plans and specifications determined "approvable" by Ecology	February 2000
11.	City submits grant/loan application to Ecology	February 2000
12.	Design plans and specifications determined "approved" by Ecology	May 2000
13.	City receives grant from Ecology	August 2000
14.	City receives loan from Ecology	October 2000

Page VIII-2 Last full paragraph. NEPA is not required. Preparation of a SERP checklist is required.

Dave Knight

General Comments (for more detail read the specific comments referenced):

1. Two High Strength Users are consuming a significant portion of the POTW's capacity (up to 56 percent according to the report). We would like to discuss control mechanisms and cost recovery for these users. If these users were to implement pretreatment systems to restore their discharges to domestic strengths, significant capacity for loading from other sources (& development) may be realized at the POTW. This could allow some flexibility to hook up others to the system. (See specific comments A, B, and C)

2. By our analysis, operation of the existing RBC and SBC units in parallel would also provide about 12 percent greater organic capacity at the POTW. We ask you evaluate the feasibility of this as an interim measure. (See specific comment D)

3. The recommendation to add more SBC's seems premature based upon the lack of analysis of alternatives (E). We hope the limitations and operational challenges of SBC's are understood by the City. Operational shortcomings of SBC systems are not described in the report (F). SBC's may not be the more economical choice after considering use of UV disinfection and the possibility of needing to achieve nitrification (G and H).

4. In general, conclusions on the cost effectiveness of the system are not appropriately supported, and Ecology cannot accept the report without more thorough analysis of the cost of alternatives systems and sites. The cost estimates of retaining the current site should include estimates of the property that will need to be purchased and moving the mounded earth berm. The cost estimates of at least one facility at the most promising alternative location should be included for comparison. A tabular format would work well for comparing such data.

5. The sizing analysis of the SBC's is incomplete in some areas, and inconsistent with Ecology's Criteria for Sewerage Works Design in others. Among other things, the analysis needs to show the proposed design complies with Ecology's "peak hour" loading limitation for the first stage of RBC's of 6.0 pounds per day per thousand square feet of media surface area. Our assessment is that this is most likely the limiting criterion. We will allow soluble BOD loading rates to be used for this analysis. The soluble BOD standard for the peak hour is 4.0 pounds per day per thousand square feet of first stage media. (See comments I, J, K, L, and M for specific comments on sizing of the SBC's and comment N on primary clarifier design.)

6. Water quality was addressed by establishing current and projected mixing zone boundaries and ratios at these boundaries. This appear to have been properly done, however, more data is needed on pH to make good conclusions about ammonia limits. The ammonia limits spreadsheet should be revised using a 95 percent worst case pH value and assuming salmonids are present in the receiving environment (see comment O).

7. Ecology criteria require General Sewer Plans to include the locations of any existing domestic and/or industrial wastewater facilities within 20 miles of the general plan area. We did not find that information in the report. We also had some concerns about future development in bordering areas (comment P).

8. A statement regarding compliance with the State Environmental Policy Act is also required for approval or General Sewer Plans. We were unable to locate this statement.

Specific Comments on Woodland General Sewer Plan:

A. HIGH STRENGTH USERS: Page I-1; last paragraph about what the City will do about the high strength wastes coming from the pet food plant and large diner. This topic is revisited in several other locations (page I-6 bullets #1-7), but no committed plans are made to reduce these loadings. Options available to prevent overloading the facility include requesting Ecology to include a loading limitation in each facility's State Waste Discharge Permit or engaging in a contract with these users that sets an upper BOD and TSS discharge rate. In addition, we strongly encourage implementing the surcharge program already passed under WMC 13.06.120D (2 February 1998) as shown in App I.

B. By the strength assumptions of this document on page VII-47, and the rates of .60 per pound of BOD and .35 per pound of TSS, these two users should paying much more than they currently are. Using the conclusion on page VII-47 that 56 percent of the daily load of 1.164 lb/day of BOD is coming from these two users, they should be paying $11,730.00 per month in BOD surcharge fees. For TSS, the POTW's influent is even higher, but assuming the loading rate is proportional, these two users would have to also pay at least $6,850.00 per month in TSS surcharges. This amounts to nearly an extra $18,600 per month that the sewer should be collecting, but to our knowledge is not. This $233,000 per year would mean these surcharges would be about 1/3 of total revenue generated. Similarly, the excess BOD and TSS loadings are about 1/3 of the total load to the POTW. Therefore these rates appear quite equitable and fair. The surcharges would, however, have to increase proportional to sewer rate increases to maintain this fairness. Otherwise, these surcharges would only equal about 1/5 of the revenue required per year in the year 2008 (Table VIII-3), whereas the discharges would still constitute ¼ of the total BOD and TSS loadings.

C. For planning purposes, however, it may not be prudent to count on this source of income as it will likely be far cheaper for these two businesses to remove the excessive BOD and TSS than pay what it costs for it's treatment at the POTW. If these businesses do remove their extra strength components from their wastewater, it will leave a significant amount of loading capacity for others. Binding commitments from these two users during this phase of the planning would be ideal.

D. CURRENT OPERATION OPTIONS: Page VII-8 states that the SBC and RBC have been operated in series since the WBC sent on line in late 1993. The total first stage contact surface is 148,500 sf and total media surface area is 415,700 sf in this mode. Operating the SBC and RBC in parallel would increase first stage media surface to 213,500 sf. Ecology's Criteria for Sewerage Works Design standards allow a maximum of 5 lb/day*1,000sf for first stage and 2 lb/day*1,000sf for total system loading for RBC's. This equates to a current capacity of 742 lb which increases to 831 lb (12 percent increase) when both the RBC and SBC units are operated in parallel. Since the proposal is to operate the SBC's without subsequent treatment units, and since the RBC's had been operating successfully as a first stage prior to the introduction of the SBC unit, this should be feasible. Page VII-21 states that there is "...nothing the operator can do if and when the plant is overloaded during bad weather." We would appreciate addressing the parallel treatment option to give the POTW a 12 percent capacity boost in the near term.

E. ANALYSIS OF ALTERNATIVES: Page I-4 states that a more detailed evaluation of a Sequencing Batch Reactor (SBR) type treatment process will be completed after this review, and the most common system, plug flow activated sludge, is not mentioned. It seems inappropriate at this juncture to have ruled out alternative treatment systems or to have concluded that additional SBC's are the most appropriate treatment system alternative. Tab I contains no cost analyses of the various alternative systems to support the conclusion that more SBC's are the most cost effective alternative versus a conventional secondary activated sludge (AS) or SBR system. Additionally, there is no analysis of the difficulties in using UV disinfection with SBC's. We agree that UV disinfection is in order due to the mixing zone size at the 1.0 MGD flow rate, and the cost and complexity of dechlorination. However, the amount of neutrally buoyant particulate released from SBC's could make reliability of a UV system poor without a UV pre-filter system. This would add expense to the SBC alternative. That expense needs to be estimated as part of the costing out of the SBC option.

F. Given the concerns that are well documented with such systems we do not feel comfortable adjusting this requirement. According to WEF Manual of Practice #8; Design of Municipal Wastewater Treatment Plants; (a.k.a. ASCE Manual of Practice #76) 1991; "Process performance below design expectations, structural problems with shafts and media, excessive biomass buildup on media, uneven shaft rotation for air-driven units, and other process problems have been serious concerns at many installations. These problems have resulted in the process falling out of favor with designers in recent years. Although the process may still apply in some situations, its limitations and potential problems must be understood and accounted for if it is to be used successfully." These limitations and the operational flexibility necessary to overcome them are indicated on page 780 of that manual. The engineering report will need to address each of these as applicable to the system; namely:

- A necessary means for removing excess biofilm growth;
- Variable rotational speeds in first and second stages;
- Removable baffles between all stages;
- Positive influent flow control to each unit or flow train;
- Positive controlled alternate flow distribution systems such as step feed;
- Positive air-flow metering and control to each shaft;
- Recirculation of secondary clarifier effluent;
- DO monitoring equipment in the initial stages.

G. Page VII-49 does not include the Sequencing Batch Reactor (SBR) option sizing calculations. Without this work being completed it is impossible to conclude that the SBR option is not the more cost effective in the short and long term. Similarly, at a 2.0 MGD flow rate, a conventional activated sludge facility may be an ideal choice. The comparison of alternatives should consider the ability of the secondary clarifier effluent to be treated by UV disinfection and the ability of the system to nitrify ammonia during the critical season (months where ambient waters have high pH) should that eventually be necessary. The analysis also needs to consider the availability of replacement parts during later stages of the design life of treatment alternatives. What exactly is the design life for the SBC media? Are SBC's a declining technology that could drive replacement media to be unavailable or prohibitively expensive in the future? Could the SBC tanks be designed so they could be converted to activated sludge aeration basins at a future date? Would the POTW be exposed to similar potential costs under other treatment options? These questions need to be resolved.

H. There also needs to be a more detailed analysis of the potential for ammonia limitations, and which systems would be able to most economically achieve nitrification. Ecology's Criteria for Sewerage Works Design does not address nitrification for RBC/SBC systems. To achieve nitrification as a

separate step, RBC loading rates of 0.2 – 0.4 lb NH3/1,000sf*d and hydraulic retention times of 1.2-2.9 hours are desirable according to Wastewater Engineering, Treatment Disposal, Reuse; Metcalf & Eddy, 3ed, p632). To remove 10 mg/l of ammonia at the 1.0 MGD flow rate would therefore require 209,000 to 417,000 sf of media (one or two additional 285,700 sf SBC units). It would also require tankage of 6,700 cf to 16,150 cf to provide the necessary retention time. Because the application is in a cooler climate than the average of U.S. cities, two more units may be necessary.

I. SIZING OF COMPONENTS: Page VII-1 indicates that influent BOD values are 24 percent greater than we would allow under the Criteria for Sewerage Works Design. The conclusion drawn is that either the existing system is conservatively sized or the amount of BOD removed in the primary clarifier is much greater than the 30 – 35 percent typically used as a design parameter. Page VII-13 clears this up by showing that the primary clarifier is actually removing 52 percent of BOD (6/98 & 7/98). Therefore it appears the latter is the case. As a rule of thumb we would assume that domestic strength wastewater would arrive at a strength of about 200 mg/l. The primary clarifier would remove at least 30 percent, leaving at most 140 mg/l for the SBC/RBC system. For Woodland, the initial strength is about 300 mg/l, but at 52 percent removal in the primary clarifier, it leaves about 144 mg/l (as opposed to 140 mg/l) of BOD for the RBC/SBC system. Therefore what is getting to the SBC/RBC system is quite similar to domestic strength wastewater. This conclusion is at odds with the claim on the top of page VII-48 that reduction of industrial loadings will have a large impact on the required SBC capacity. It would, however, be inappropriate to use the assumption that a 52 percent primary removal rate will continue because the high strength users may greatly reduce their loadings when faced with paying appropriate costs for treatment per pound of BOD and TSS. This may return the POTW to a 30 percent – 35 percent primary removal rate for BOD. The design must be sized appropriately to allow this, and the two ways to do this are to either assume a 30 percent - 35 percent removal rate for the new system, or size the system based upon soluble BOD. This will dictate design loadings be expressed in terms of soluble BOD, and evaluation of whether the POTW has reached 85 percent capacity be done in terms of soluble BOD in the influent.

J. Figure IV-12 is somewhat confusing in it's assessment of 95 percent and 99 percent values for BOD. For the two years shown one monthly and seven weekly measurements were above the 99-percentile assumption (1,450 lb/day). Is this the 99 percentile of monthly average values then? The 95-percentile value is listed as 1,300 lb/day.

K. Page VII-39 presumes the future loading will be consistent with the existing loading rates. We feel that the case has been well made that there are high strength users that are affecting influent BOD and TSS levels. Therefore, projecting this strength for new hookups is more conservative than necessary. While existing loadings cannot be presumed to be reduced without firmer plans for high strength dischargers, new loadings from domestic sources can be presumed to be consistent with standard assumptions in terms of per capita loading, flow, and strength predictions. The use of Soluble loading design criteria is provided for by Ecology's Criteria for Sewerage Works Design. Since soluble BOD has not been greatly impacted by the high strength discharges, and that it is now commonly accepted as the ideal parameter for sizing of RBC/SBC systems, we will accept a design that specifies the maximum soluble BOD loading capacity for the POTW. On the other hand, Page VII-46 uses a soluble BOD: total BOD ratio of 0.5. According to the Criteria for Sewerage Works Design, the minimum ratio that can be presumed is 0.6. While these adjustment will tend to offset each other to a degree, they need to be addressed.

L. CONSIDERATIONS FOR PEAK HOURLY FLOW: The capacity analysis on page VII-47 does not consider the "peak hourly flow" loading limit of 6.0 lb/day*1,000sf for stage 1 RBC's given on page 105 of Ecology's Criteria for Sewerage Works Design. We feel that applying this standard is

necessary given the performance concerns with SBC's and RBC's. We feel this would be more appropriate than the average dry month daily flow and 90 percentile BOD loading (table VII-24). For purposes of sizing SBC's, please compute the 95 percent BOD loading rate for a day and adjust it to the peak hour during that day using existing daily flow patterns and analyze the system required to meet the peak hourly loading limit of 6.0 lb/day*1,000 sf.

M. We can approximate the impact of applying this criteria by making a couple of assumptions. First we might presume that the maximum hour to daily average flow ratio is 3:1 (Metcalf & Eddy p45). Secondly, we may presume that the 90 percentile loading rate of 372 mg/l at the average wet weather flow of 0.77 MGD equates to the 95 percentile BOD loading. Given these assumptions and at the phase 1 design flows; the peak hourly loading will be 7,166 lb/day. To maintain a 6.0 lb/day*1,000sf loading rate would require 1,194 (X1,000) sf of stage 1 surface area, or 4.2 of the units described in Table VII-25.

N. PRIMARY CLARIFIER SIDEWATER DEPTH: While Ecology's Criteria for Sewerage Works Design does not specify a minimum depth for primary clarifiers, the range of minimum acceptable primary clarifier sidewater depths from design manuals is 2.1 to 4 meters (7' to 13'). While the proposed 8.6' (page VII-46) is within this range, it is towards the low end. The high strength and unusually high primary removal rate (52 percent) will mean higher primary clarifier solids removal rates. This merits considering increasing sidewater depth.

O. WATER QUALITY CONSIDERATIONS: On page III-13, it estimates mixing zones at the 2.0 MGD max month flow rates to be 7.4 (acute) and 52.9 (chronic). At these mixing zone ratios, the ammonia standard could be more of a consideration than estimated if pH has not been adequately considered. The pH at the edge of the mixing zone is critical to the analysis. POTW effluents ammonia is estimated on page V-11 at 30 mg/l of ammonia-N (90 percentile). When no nitrification is achieved, effluent concentrations will be similar. Since currently the RBC is operated in series after the SBC, nitrification achieved now cannot be expected to continue when SBC's are operated in parallel, and the 10 mg/l value will be atypical of future performance. Assuming a 30 mg/l value, and assuming that salmonids ARE present revises the assumptions in the ammonia spreadsheet in appendix B. The resultant total ammonia criterion decreases with increasing pH in the ambient environment. To illustrate this consider that at an ambient pH of 7.4 the effluent would only be 30 percent of the maximum allowable ammonia loading rate at mixing zone boundaries. However, were the river to have a pH of 8.1 the effluent would be at the limit of its' maximum discharge concentration. If river pH reached 9.0 the POTW would have to reduce ammonia to 5.0 mg/l or less prior to discharge. Therefore better data on ambient pH during the critical low flow periods is needed before ruling out the possibility of ammonia limits. If, however, ambient pH does not exceed 7.4 SU, the POTW will not have to nitrify up to the 2.0 MGD flow rate to meet water quality standards.

GMA CONSIDERATIONS: Figure IV-3 shows the existing land use within the Urban Growth Boundary. To project future needs and expansions through 2028, it may well be important to examine the classifications of the lands bordering the urban growth boundary as well. Properties to the East of the Lewis River (Cardai Hill) would appear highly desirable. Is there any potential need for sewerage in this area? Are there plans to offer service to other populated areas close to the City (e.g. along Whalen Road) that are not presently sewered? Why aren't the wetlands shown on Figure IV-5 protected by a land use classification for wetlands?

since 1950

October 19, 1998

Mr. Rob VanderZanden, P.E.
Director of Public Works
City of Woodland
P.O. Box 9
Woodland, WA 98674

RE: City of Woodland Draft General Sewer Plan

Dear Mr. VanderZanden:

Gibbs & Olson is pleased to submit ten (10) copies of the draft Woodland General Sewer Plan (GSP) for City review and comment. Two copies of this draft GSP has also been submitted on behalf of the City to Chuck Meyer at DOE for review and comment. The draft plan has been prepared in accordance with WAC 173-240-050. Ultimately this GSP will contain the required information so that it will comply with WAC 173-240-060 Engineering Report requirements as well as the federal requirements for a Facility Plan (FP).

Additional work which needs to be completed to satisfy the FP requirements is a complete technical evaluation of both an SBR liquid treatment process alternative and an autothermal thermophilic aerobic digestion (ATAD) solids treatment process alternative. Once these evaluations are completed a detailed cost analysis will be completed to determine whether these alternatives are more cost-effective than the preliminary recommendations contained in the draft GSP.

Gibbs & Olson looks forward to working with the City and DOE in the near future to complete a final GSP/FP report that is approvable by DOE. Gibbs & Olson would like to request that after the City has reviewed the draft GSP that all ten copies be returned to us. This will save on printing costs associated with preparing the final document.

If you have technical questions, please call either myself or Dick Riley at (360) 425-0991.

We look forward to receiving your input on the draft GSP. Thank you.

Sincerely,

Richard A. Gushman

Richard A. Gushman, P.E.
Project Manager

File: 876.44.10
Attachments

1405 17TH AVENUE • SUITE 300 • P.O. BOX 400 • LONGVIEW, WA 98632

100 Davidson Avenue • P.O. Box 9
Woodland, Washington 98674

October 20, 1998

Mr. Jim McCauley
Department of Health
Southwest Drinking Water Operation
2411 Pacific Avenue
P.O. Box 47823
Olympia, WA 98504-7823

RE: City of Woodland Draft General Sewer Plan

Dear Mr. McCauley:

The City of Woodland is pleased to submit a draft copy of the Woodland General Sewer Plan (GSP) for Department of Health (DOH) review and comment. The draft plan has been prepared by our engineering consultant, Gibbs & Olson, Inc., in accordance with WAC 173-240-050.

If you have technical questions, please call Mr. Dick Riley, P.E. or Mr. Rich Gushman, P.E. with Gibbs & Olson at (360) 425-0991.

We look forward to receiving your input on the draft GSP. Thank you.

Sincerely,

Robert A VanderZanden/RAD

Robert A. VanderZanden, P.E.
Director of Public Works

Attachments
Cc: Rich Gushman, Gibbs & Olson, Inc.

(206) 225-8281 • Fax (206) 225-7336

100 Davidson Avenue • P.O. Box 9
Woodland, Washington 98674

October 19, 1998

Mr. Chuck Meyer, P.E.
Washington State Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

RE: City of Woodland Draft General Sewer Plan

Dear Mr. Meyer:

The City of Woodland is pleased to submit a draft copy of the Woodland General Sewer Plan (GSP) for Department of Ecology (DOE) review and comment. The draft plan has been prepared by our engineering consultant, Gibbs & Olson, Inc., in accordance with WAC 173-240-050. Ultimately this GSP will contain the required information so that it will comply with WAC 173-240-060 Engineering Report requirements as well as the federal requirements for a Facility Plan (FP).

Additional work which needs to be completed to satisfy the FP requirements is a complete technical evaluation of both an SBR liquid treatment process alternative and an autothermal thermophilic aerobic digestion (ATAD) solids treatment process alternative. Once these evaluations are completed a detailed cost analysis will be completed to determine whether these alternatives are more cost-effective than the preliminary recommendations contained in the draft GSP.

The City of Woodland and Gibbs & Olson look forward to working with you in the near future to complete a final GSP/FP report that is approvable by DOE. If you need additional information please let us know. If you have technical questions, please call Mr. Dick Riley, P.E. or Mr. Rich Gushman, P.E. with Gibbs & Olson at (360) 425-0991.

We look forward to receiving your input on the draft GSP. Thank you.

Sincerely,

Robert A. VanderZanden /RAB

Robert A. VanderZanden, P.E.
Director of Public Works

Attachments
Cc: Rich Gushman, Gibbs & Olson, Inc.

(206) 225-8281 • Fax (206) 225-7336