



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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December 4, 2017

Ms. Tracy Coleman P.E.
City Engineer
PO Box 9, 300 E. Scott Ave
Woodland, WA 98674

Re: Approval of City of Woodland **General Sewer Plan**, July 2017 (prepared by Gray & Osborne Consultants)

Dear Ms. Coleman:

In accordance with RCW 90.48.110 and Chapters 173-98 and 240 WAC, and on behalf of the Department of Ecology (Ecology), the **General Sewer Plan** submitted July 21, 2017 is hereby **APPROVED**. One copy of the approved document is being returned for your records.

Please be advised that this approval does not satisfy other applicable federal, state or local statutes, ordinances or regulations.

Our review of this document did not include an assessment of eligibility for funding under the State Revolving Fund and Centennial Clean Water Funds for any particular project. If you have questions regarding Ecology funding programs, please call Dave Dougherty, our Financial Assistance Engineer, at (360) 407-6278.

If you have any other questions, please contact Dave Knight, P.E., Facility Manager, at (360) 407-6277, or myself at (360) 407-6271.

Sincerely,

Rich Doenges
Southwest Region Manager
Water Quality Program

Enclosure: 1 copy of approved GSP

cc: Ken Alexander, Gray & Osborne
Derek Amburgey, City of Woodland



Southwest Regional Office
Water Quality Program

Recommendation to Approve or Deny General Sewer Plan

TO: Greg Zentner, P.E., Municipal Operations Unit Supervisor
FROM: David J. Knight P.E., Design Review Engineer
DATE: November 20, 2017

The following Plans and Specifications were submitted to the Department of Ecology for review and approval as required by Chapter 173-240 of the Washington Administrative Code:

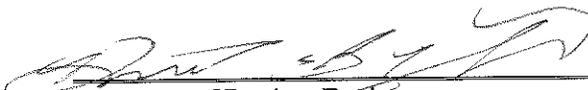
NAME OF REPORT: City of Woodland, General Sewer Plan, July, 2017, Gray & Osborne, Inc.
OWNER/OPERATOR: City of Woodland, Ms. Tracy Coleman P.E., City Engineer
PREPARED BY: Ken Alexander of Gray & Osborne Engr.
DATE SUBMITTED: July 21, 2017

As a licensed engineer in the State of Washington, I reviewed the report against the following review standards:

To be approved, General Sewer Plans must demonstrate conformance with content required under WAC 173-240-050, WAC 173-240-160, and WAC 173-240-170 and include the content required under section G1-3.2 of the Criteria for Sewage Works Design. Where Ecology funding is sought, conformance with all requirements of the State Revolving Fund (see SRF guidelines) or Centennial Clean Water Fund is also required.

Detailed findings, comments, or questions, if any, are attached to this memo. I hereby recommend the following disposition:

RECOMMENDATION: [Approve] [Deny]



Signature of Review Engineer

35186

01-25-19

License Number

Expiration Date



Capacity:	MMA Flow	Instantaneous Peak Flow	BOD loading	TSS loading	NH3+NH4-N
Current cap. (Phase 1):	2.0 MGD (unchanged)	3.2 MGD (unchanged)	3,107 (unchanged)	3,160 (unchanged)	356 lb/d (unchanged)

RE: Woodland General Sewer Plan Review

Summary of the plan:

The city of Woodland submitted a General Sewer Plan for review and approval on July 21, 2017. The plan describes their current system, needs, and proposes improvements to the collection and treatment system needed to meet these needs. The last major upgrade to the treatment works was conversion to a sequencing batch reactor treatment facility (commissioned in 2001). The only near term facility project is a screw press for sludge dewatering. The plan anticipated being able to fund projects with sewer fees and USDA-RD loans, but preserved the option to solicit Ecology funding and use revenue bonds, ULID's and developer financing where appropriate.

Current situation:

1. **COLLECTION SYSTEM:** The City of Woodland collection system consists of fourteen pump stations each serving a distinct collection "basin". Each pump station is equipped with at least two pumps (for redundancy) ranging in size from 3-20 hp each. The City's collection system consists of 27.6 miles of sewer mains.
2. **POPULATION AND GROWTH:** The present facility serves 1,850 domestic ERU's, and approximately 1,070 commercial ERU's, and 556 industrial ERU's. Population growth from 200-2013 averaged 3.14%/anum. Projected growth rate for this plan is 2.25% (table 3-5). Sewer rates have increased significantly over the last five years and are now stable at \$55.36/ERU.
3. **CURRENT SYSTEM:** Present design maximum monthly flow and loading capacities are shown in the table at the bottom of the preceding page. The design service population is about 12,089 people (~4,800 ERU's at 2.5 PE/ERU). Increased capacity is not being granted with this approval. NOTE: The plan asserts "design" rated loading capacities at Table 4-3 of 3,720 lb/d BOD (20% increase), 4,142 lb/d TSS (30% increase), and 320 lb/d ammonia-N (10% decrease), but these were not what Ecology approved in 1999 or what are recognized in the current NPDES permit. The plan provides no support for these assertions, and thus they were dismissed. To gain additional capacity, the facility would need to submit a rerating study and describe how the facility's features meet the current CSWD (e.g. including selectors).
4. **HISTORICAL LOADING RATES:** The facility has historically been consistently below 33% of its rated capacity for flow (0.66 MGD) with peak daily flows under 1.0 MGD (indicative of low I/I). Historical peak monthly BOD has ranged up to 1,715 lb/d (55% of rated capacity) and while peak monthly TSS has been up to 2,140 lb/d TSS in 2009, (68% of rated capacity), since tributary user "Walt's Meats" improved its pretreatment system, and over the last eight years TSS has not been over 1,645 lb/d (52% of capacity).
5. **CURRENT TREATMENT PROCESSES:** The facility consists of three sequencing batch reactors although only two have ever been employed at any given time to date. Waste sludge is gravity thickened in a settling tank, and digested in one of two sludge digestion tanks. The treated wastewater is disinfected through UV and discharged to the Lewis River approximately five miles upstream from its confluence with the Columbia River. The Columbia River reverses at this point, but potential for reversal of flows in the Lewis River has not been studied to date. Thickened sludges are hauled for off-site disposal at facilities not owned by the City. The City had been using a farmer for this service, but within the last 18 months there were several deficiencies noted with the storage and management of biosolids at that facility and the City was forced to explore other options on a temporary basis.
6. **CAPITAL IMPROVEMENTS** are listed on Table 8-3 and below. They include nine collection system projects c/o six lift station projects, one relining project, one SCADA upgrade, and one gravity sewer pipe project. Improvements at the treatment plant include (over the next year) adding biosolids dewatering (two phases – the first costing ~\$700K), replacing the UV system (in three years ~\$500K), and replacing SBR Equipment and blowers (in ten years). This list also includes a mixing zone study to be done in the coming year (\$~75K).
7. **IMPACT ON RATES:** No increase in monthly rates or commercial rates is anticipated from the 2017 levels by this plan (although rates have increase significantly between 2012 and 2017). The biosolids project and mixing zone study are anticipated being funded out of sewer reserve fund (Table 8-5B) in the coming year with no increase in rates. The City anticipates paying off their P WTF loan from 1999 in 2019, and the City forecasts their sewer fund to be at +\$4.9M by the end of 2022 (Table 8-5A). By my assessment, the City is well positioned to address its biosolids treatment and disposal needs.

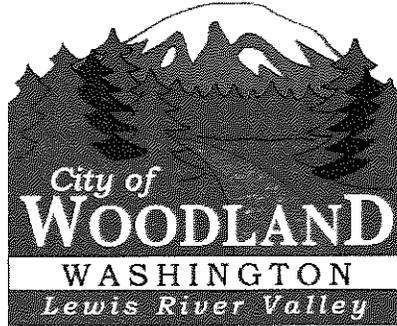
Project #	Description (From Table 8-3 of the GSP)	Estimated Cost	Year
	COLLECTION SYSTEM		
1	Relining of old collection system	\$221K	TBD
2	SCADA System Improvements	\$190K	2017
3	Lift Station #6 Improvements	Developer Funded	TBD
4	Lift Station 5 Replacement	\$341K	2018
5	Gravity Collection System Improvements	\$293K	2025
6	Lift Station 1 Replacement	\$341K	2025
7	Lift Station 2 Replacement	\$341K	2025
8	Lift Station 3 Replacement	\$341K	2030
9	Lift Station 8 Replacement	\$341K	2030
	WASTEWATER TREATMENT SYSTEM		
1	Mixing Zone Study	\$75K	2017
2	Biosolids Dewatering Equipment	\$700K	2017
2	Replace UV System	\$483K	2020
3	Replace SBR Equipment and Blowers	\$1,456K	2027
4	Biosolids Dewatering Equipment – Phase II	\$1,200	2033

ADDITIONAL: The City has submitted a design for a screw press for biosolids under separate cover. This project is acknowledged in the facility chapter (page 7-44) as being consistent with the City's plan, and included in the summary of projects at table 8-3 (table includes both the first phase for \$700K and the second phase which increases capacity and adds a separate building for the devices, but not storage.)

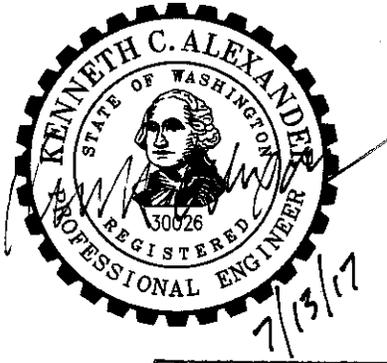
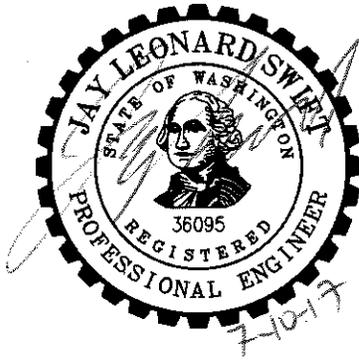
CITY OF WOODLAND

COWLITZ AND CLARK COUNTIES

WASHINGTON



GENERAL SEWER PLAN



G&O #14230
JULY 2017

REVIEWED BY:	APPROVED BY:
<i>David J. Knight</i> David J. Knight P.E.	<i>Deanna</i>
12/4/2017	DATE 12/5/17

DEPARTMENT OF ECOLOGY
WATER QUALITY PROGRAM
SOUTHWEST REGIONAL OFFICE



Gray & Osborne, Inc.

CONSULTING ENGINEERS