Oak Lodge Water District Office
14496 SE River Road
Oak Grove, OR 97267
January 15th, 2019 at 6:00 p.m.

1. Call to Order and Flag Salute

2. Call for Public Testimony

   Members of the public are welcome to testify for a maximum of three minutes on each agenda item.

3. Consent Agenda
   - December 2018 Financial Reports
     - Approval of December 2018 Check Run
   - December 18, 2018 Board Meeting Minutes

4. Annual January Board Selection of Board Officers

5. Resolution 19-01: Annual Design and Construction Standards Update

6. Adoption of Human Resources Policies

7. Human Resource Policies Workshop—Second Set

8. Water Master Plan Project Prioritization Conversation

9. Surface Water Master Plan Communications Strategy Conversation

10. Sanitary Sewer Treatment Agreement between OLWSD and City of Gladstone

11. Department Reports
    - Finance
    - Field Operations
    - Plant Operations

- Technical Services

12. Call for Public Comment
13. Business from the Board

    Adjourn

AGENDA ITEM

Agenda Item: Call for Public Testimony
Item No.: 2
Presenters: N/A

Background:

Members of the public are invited to identify agenda items on which they would like to comment or provide testimony. The Board may elect to limit the total time available for public comment or for any single speaker depending on meeting length.

OAK LODGE
WATER SERVICES

CONSENT AGENDA

To: Board of Directors
From: Sarah Jo Chaplen, General Manager
Agenda Item: Consent Agenda
Item No.: 3
Date: January 15, 2019

Background:
The Board of Directors has a standing item on the regular monthly meeting agenda called "Consent Agenda." This subset of the regular agenda provides for the Board to relegate routine business functions not requiring discussion to a consent agenda where all included items can be acted upon by a single act.

The Consent Agenda includes:

1. December 2018 Financial Reports
    a. Approval of December 2018 Check Run
2. December 18, 2018 Board Meeting Minutes

Board members may request to remove an item from the Consent Agenda to discuss separately.

Options for Consideration:

1. Approve the consent agenda as listed on the meeting agenda.

2. Request one or more items listed on the consent agenda be pulled from the consent agenda for discussion.

Recommendation:
Approve the items listed under the Consent Agenda.

Sample motion: *"I move to approve the consent agenda."*

Approved _____ Date_____

MONTHLY FINANCIAL REPORT

To: Board Directors
From: Kelly Stacey, Finance Director
Agenda Item: December 2018 Financial Reports
Item No.: 3a
Date: January 8, 2018

Reports:

- December 2018 Monthly Overview
- December 2018 Budget Report
- December 2018 Monthly Cash and Investment Balances
- December 2018 Monthly Checks and Electronic Withdrawals Staff Report
- December 2018 Monthly Checks and Electronic Withdrawals System Report

Oak Lodge Water Services
Monthly Overview
December 2018

This report summarizes the revenues and expenditures for December 2018. Also incorporated in this report are account balances, including all cash and investment activity as well as checks and withdrawals.

The District's liquid cash and investment assets equal $12,139,257.87 as of the end of December 2018; consisting of $650,495.05 in checking, and $11,488,762.82 in the State Local Government Investment Pool (LGIP).

The District's checks, electronic withdrawals and bank drafts total $1,191,271.73 for December 2018.

Below is a table identifying the District's three principal sources of service charges in each fund with a comparison between annual budget estimates and year-to-date service charge fees.

GL Account	Service Charge	Budget Estimate	Period Amount	Year-to-Date Amount	Percentage of Budget
10-00-4211	Water sales	$ 3,640,000	$ 189,227	$ 2,078,735	57.11%
10-00-4212	Water sales-CRW	32,000	-	18,166	56.77%
20-00-4212	Wastewater charges	7,947,500	689,772	3,765,231	47.38%
30-00-4213	Watershed protection	1,456,000	124,167	732,572	50.31%
	Subtotal	$ 13,075,500	$ 1,003,165	$ 6,594,705	50.44%

The % of budget is calculated by taking the ending balance and dividing it by the budget. At the end of December the % of budget spent or billed should be around 50.00%. Note for budget law purposes, Wastewater Plant and Wastewater Collection are added together. Certain line items are spent all at once, such as Worker's Compensation, which we pay one time a year in July.

Low Income Rate Relief Program Overview

The District allows eligible customers to obtain a discounted rate on a portion of their bill. The District budgets resources to fund the revenue losses due to the program at the rate of 0.50% of budgeted service charge revenue. The budgeted amount serves as a cap to the program's cost which can only be exceed with approval from the District's Board of Directors.

Below is a table identifying the number of accounts in the program and an estimated monthly discount and year-to-date value based on a single-family residential account with a standard 20 GPM Water Meter and 6 CCF of water consumption per month.

Number of Accounts	Discount	Budget	Estimated Monthly Discount	Estimated Year-to-Date Discount	Estimated Percentage of Budget
161	Low Income Rate Relief	$ 65,378	$ 6,221	$ 37,326	57.09%

Oak Lodge Water Services District

Account Balances As of:			
December 31, 2018	**Interest Rate**		
Account			
Wells Fargo Bank Checking-3552	0.00%	$	650,495.05
LGIP 5289 Water General	2.75%	$	2,494,773.45
LGIP 5790 Watershed Protection General	2.75%	$	2,001,611.91
LGIP 3968 Sanitary GO Bond Debt Svc	2.75%	$	996,943.51
LGIP 3869 Sanitary Revenue Bond Debt Svc	2.75%	$	1,329,654.05
LGIP 5002 Sanitary General	2.75%	$	4,665,779.90
	Total	$	12,139,257.87

General Ledger
Budget to Actual

User: jeff
Printed: 1/8/2019 12:43:58 PM
Period 06 - 06
Fiscal Year 2019

Account Number	Description	Budget	Period Amt	End Bal	% of Budget
10	**Drinking Water**				
	NonDivisional				
	Beginning Fund Balance				
10-00-3500	Fund balance	-2,880,270.00	0.00	-3,238,019.00	112.42
	Beginning Fund Balance	*-2,880,270.00*	*0.00*	*-3,238,019.00*	*112.42*
	Revenue				
10-00-4211	Water sales	-3,640,000.00	-188,276.01	-2,077,784.20	57.08
10-00-4212	Water sales - CRW	-32,000.00	0.00	-18,166.09	56.77
10-00-4215	Penalties and late charges	-25,000.00	-1,376.73	-7,629.54	30.52
10-00-4220	System development charges	-75,000.00	-4,120.00	-146,130.00	194.84
10-00-4230	Contract services	-32,000.00	-4,860.48	-15,054.79	47.05
10-00-4240	Service installations	-15,000.00	-895.00	-11,495.00	76.63
10-00-4280	Rents & leases	-140,000.00	-4,320.70	-91,161.14	65.12
10-00-4290	Other charges for services	0.00	-346.02	-20,732.75	0.00
10-00-4610	Investment revenue	-25,000.00	0.00	0.00	0.00
10-00-4630	Miscellaneous revenues	-15,000.00	-1,565.84	-11,183.28	74.56
	Revenue	*3,999,000.00*	*205,760.78*	*2,399,336.79*	*60.00*
	NonDivisional	**-6,879,270.00**	**-205,760.78**	**-5,637,355.79**	**81.95**
	Drinking Water				
	Personnel Services				
10-20-5110	Regular employees	980,000.00	82,055.68	450,260.52	45.94
10-20-5120	TemporarySeasonal employees	30,000.00	790.39	4,209.56	14.03
10-20-5130	Overtime	48,000.00	2,199.37	8,689.16	18.10
10-20-5210	Employee Ins Expense	225,000.00	13,684.79	80,492.32	35.77
10-20-5230	Social Security	80,500.00	5,853.51	33,697.03	41.86
10-20-5240	Retirement	202,000.00	15,255.17	79,335.53	39.28
10-20-5250	TrimetWBF	9,000.00	644.26	3,513.14	39.03
10-20-5260	Unemployment	12,000.00	0.00	0.00	0.00
10-20-5270	Workers compensation	13,000.00	0.00	13,780.90	106.01
10-20-5290	Other employee benefits	7,300.00	10.77	52.53	0.72
	Personnel Services	*1,606,800.00*	*120,493.94*	*674,030.69*	*41.95*
	Materials & Services				
10-20-6110	Legal services	130,000.00	21,591.98	42,942.97	33.03
10-20-6120	Accounting & audit services	9,000.00	3,687.50	3,687.50	40.97
10-20-6155	Contracted Services	160,500.00	3,377.00	40,823.27	25.44
10-20-6180	Dues & subscriptions	25,000.00	82.18	20,650.93	82.60
10-20-6220	Electricity	45,000.00	3,402.98	18,376.96	40.84
10-20-6230	Telephone	21,000.00	1,054.24	6,930.56	33.00
10-20-6240	Natual gas	4,000.00	0.00	958.68	23.97
10-20-6290	Other utilities	4,000.00	663.77	2,001.00	50.03
10-20-6310	Janitorial services	8,500.00	524.72	5,509.98	64.82
10-20-6320	Buildings & grounds	10,000.00	381.34	1,524.60	15.25
10-20-6330	Vehicle & equipment maint.	27,000.00	5,838.54	18,102.98	67.05
10-20-6340	Distribution system maint	200,000.00	5,420.22	78,720.26	39.36
10-20-6350	Computer maintenance	48,500.00	2,730.06	39,258.68	80.95
10-20-6390	Other repairs &	50,000.00	3,721.61	13,192.35	26.38

Account Number	Description	Budget	Period Amt	End Bal	% of Budget
	maintenance				
10-20-6410	Mileage	1,500.00	0.00	263.33	17.56
10-20-6420	Staff training	17,500.00	376.30	7,515.41	42.95
10-20-6430	Certifications	1,000.00	75.00	615.00	61.50
10-20-6440	Board travel & training	2,500.00	343.25	479.93	19.20
10-20-6510	Office supplies	15,000.00	272.82	6,544.00	43.63
10-20-6520	Fuel & oils	25,000.00	31.37	7,210.05	28.84
10-20-6530	Small tools & equipment	15,000.00	0.00	226.02	1.51
10-20-6540	Safety supplies	12,000.00	849.88	6,015.59	50.13
10-20-6550	Operational Supplies	1,500.00	0.00	274.00	18.27
10-20-6560	Uniforms	4,000.00	0.00	0.00	0.00
10-20-6590	Other supplies	0.00	156.82	772.53	0.00
10-20-6610	Board compensation	700.00	0.00	72.08	10.30
10-20-6710	Purchased water	1,050,000.00	140,701.66	490,518.65	46.72
10-20-6720	Insurance	30,000.00	3,879.35	3,929.35	13.10
10-20-6730	Communications	9,000.00	15.43	213.01	2.37
10-20-6740	Advertising	1,000.00	0.00	0.00	0.00
10-20-6760	Equipment Rental	5,000.00	0.00	720.41	14.41
10-20-6770	Bank charges	30,000.00	-367.10	13,952.02	46.51
10-20-6780	Taxes & fees	20,000.00	0.00	6,512.24	32.56
10-20-6900	Miscellaneous expense	1,000.00	0.00	100.00	10.00
	Materials & Services	*1,984,200.00*	*198,810.92*	*838,614.34*	*42.26*
	Drinking Water	**3,591,000.00**	**319,304.86**	**1,512,645.03**	**42.12**
10	**Drinking Water**	**-3,288,270.00**	**113,544.08**	**-4,124,710.76**	**125.44**
20	**Wastewater Reclam. NonDivisional**				
	Beginning Fund Balance				
20-00-3500	Fund balance	-5,416,603.00	0.00	-5,393,413.85	99.57
	Beginning Fund Balance	*-5,416,603.00*	*0.00*	*-5,393,413.85*	*99.57*
	Revenue				
20-00-4212	Wastewater charges	-7,947,500.00	-689,771.60	-3,765,230.83	47.38
20-00-4215	Penalties & late charges	-25,000.00	-1,257.48	-3,567.22	14.27
20-00-4220	System development charges	-100,000.00	-5,165.00	-170,445.00	170.45
20-00-4240	Service installations	-25,000.00	-5,087.40	-32,851.37	131.41
20-00-4290	Other charges for services	-5,000.00	-4,759.04	-14,299.55	285.99
20-00-4610	Investment revenue	-50,000.00	0.00	0.00	0.00
20-00-4630	Miscellaneous revenues	-15,000.00	-4,801.08	-12,228.70	81.52
	Revenue	*8,167,500.00*	*710,841.60*	*3,998,622.67*	*48.96*
	NonDivisional	**-13,584,103.00**	**-710,841.60**	**-9,392,036.52**	**69.14**
	Wastewater-Plant				
	Personnel Services				
20-21-5110	Regular employees	1,020,000.00	82,575.70	452,196.68	44.33
20-21-5120	TemporarySeasonal employees	30,000.00	856.89	21,204.67	70.68
20-21-5130	Overtime	50,000.00	4,273.08	18,507.02	37.01
20-21-5210	Employee Ins-MDVSTDLTDLf	200,000.00	15,668.34	80,947.67	40.47
20-21-5230	Social Security	80,000.00	6,110.92	36,043.88	45.05
20-21-5240	Retirement	190,000.00	12,348.56	66,575.67	35.04
20-21-5250	TrimetWBF	8,200.00	671.55	3,776.59	46.06
20-21-5260	Unemployment	10,500.00	0.00	0.00	0.00
20-21-5270	Workers compensation	12,000.00	0.00	12,496.59	104.14
20-21-5290	Other employee benefits	6,800.00	11.68	51.02	0.75
	Personnel Services	*1,607,500.00*	*122,516.72*	*691,799.79*	*43.04*
	Materials & Services				
20-21-6110	Legal services	125,000.00	138.27	20,049.23	16.04
20-21-6120	Accounting & audit services	4,500.00	5,457.50	5,457.50	121.28
20-21-6155	Contracted Services	105,300.00	6,605.08	59,054.16	56.08

Account Number	Description	Budget	Period Amt	End Bal	% of Budget
20-21-6180	Dues & subscriptions	15,000.00	104.64	5,263.98	35.09
20-21-6220	Electricity	250,000.00	113,020.19	125,034.48	50.01
20-21-6230	Telephone	24,000.00	1,051.24	8,009.23	33.37
20-21-6240	Natual gas	4,500.00	67.67	181.47	4.03
20-21-6250	Solid waste disposal	75,000.00	5,285.05	25,964.25	34.62
20-21-6290	Other utilities	3,000.00	1,029.58	4,995.80	166.53
20-21-6310	Janitorial services	22,000.00	568.87	9,524.71	43.29
20-21-6320	Buildings & grounds maint.	25,000.00	4,646.55	10,949.83	43.80
20-21-6330	Vehicle & equipment maint.	24,000.00	2,858.09	4,389.58	18.29
20-21-6342	WRF System maintenance	234,000.00	22,703.53	90,466.94	38.66
20-21-6350	Computer maintenance	109,250.00	5,776.64	34,775.49	31.83
20-21-6390	Other repairs & maintenance	0.00	0.00	937.74	0.00
20-21-6410	Mileage	2,000.00	0.00	255.28	12.76
20-21-6420	Staff training	23,000.00	7,377.33	13,079.74	56.87
20-21-6430	Certifications	5,000.00	0.00	0.00	0.00
20-21-6440	Board travel & training	3,000.00	176.80	247.21	8.24
20-21-6510	Office supplies	15,000.00	524.10	6,549.87	43.67
20-21-6520	Fuel & oils	35,000.00	1,499.51	10,446.32	29.85
20-21-6525	Chemicals	25,000.00	217.93	217.93	0.87
20-21-6530	Small tools & equipment	20,200.00	31.98	190.89	0.95
20-21-6540	Safety supplies	20,100.00	665.41	5,804.95	28.88
20-21-6550	Operational Supplies	20,000.00	2,592.80	11,456.00	57.28
20-21-6560	Uniforms	14,000.00	1,196.63	7,289.28	52.07
20-21-6590	Other supplies	20,000.00	572.17	3,573.85	17.87
20-21-6610	Board compensation	1,000.00	0.00	59.36	5.94
20-21-6720	Insurance	90,000.00	4,225.52	4,225.52	4.70
20-21-6730	Communications	4,000.00	16.73	270.58	6.76
20-21-6750	Other purchased services	0.00	1,273.93	6,246.33	0.00
20-21-6760	Equipment Rental	0.00	0.00	27.98	0.00
20-21-6770	Bank charges	25,000.00	0.00	15,945.59	63.78
20-21-6780	Taxes & fees	68,500.00	4,147.12	31,004.58	45.26
20-21-6900	Miscellaneous expense	0.00	0.00	7,550.00	0.00
	Materials & Services	*1,411,350.00*	*193,830.86*	*529,495.65*	*37.52*
	Wastewater-Plant	**3,018,850.00**	**316,347.58**	**1,221,295.44**	**40.46**
	Wastewater-Collections				
	Personnel Services				
20-22-5110	Regular employees	665,000.00	57,608.47	354,155.10	53.26
20-22-5120	TemporarySeasonal employees	22,000.00	349.18	1,859.70	8.45
20-22-5130	Overtime	40,000.00	856.66	5,031.16	12.58
20-22-5210	Employee Ins-MDVSTDLTDLf	130,000.00	10,159.77	65,476.49	50.37
20-22-5230	Social Security	56,000.00	3,974.48	26,383.55	47.11
20-22-5240	Retirement	140,000.00	9,253.67	50,757.24	36.26
20-22-5250	TrimetWBF	6,000.00	452.56	2,786.03	46.43
20-22-5260	Unemployment	9,000.00	0.00	0.00	0.00
20-22-5270	Workers compensation	10,000.00	0.00	10,770.93	107.71
20-22-5290	Other employee benefits	4,800.00	4.75	22.90	0.48
	Personnel Services	*1,082,800.00*	*82,659.54*	*517,243.10*	*47.77*
	Materials & Services				
20-22-6110	Legal services	75,000.00	80.74	8,803.14	11.74
20-22-6120	Accounting & audit services	4,500.00	2,360.00	2,360.00	52.44
20-22-6155	Contracted Services	65,500.00	1,452.94	18,795.27	28.70
20-22-6180	Dues & subscriptions	5,000.00	72.17	2,561.81	51.24
20-22-6220	Electricity	10,000.00	471.85	711.10	7.11
20-22-6230	Telephone	21,000.00	669.47	5,497.48	26.18
20-22-6240	Natual gas	3,500.00	67.68	195.60	5.59
20-22-6290	Other utilities	8,500.00	932.73	9,432.67	110.97
20-22-6310	Janitorial services	6,500.00	231.82	2,895.21	44.54

Account Number	Description	Budget	Period Amt	End Bal	% of Budget
20-22-6320	Buildings & grounds	3,000.00	219.47	1,872.64	62.42
20-22-6330	Vehicle & equipment maint.	6,000.00	21.00	2,367.51	39.46
20-22-6342	Collection system maint.	40,000.00	250.00	32,756.28	81.89
20-22-6350	Computer maintenance	35,250.00	2,122.34	27,656.80	78.46
20-22-6390	Other repairs & maintenance	10,000.00	334.05	3,022.84	30.23
20-22-6410	Mileage	1,500.00	0.00	344.71	22.98
20-22-6420	Staff training	11,000.00	252.38	3,036.11	27.60
20-22-6430	Certifications	900.00	0.00	650.00	72.22
20-22-6440	Board travel & training	1,500.00	176.85	247.26	16.48
20-22-6510	Office supplies	12,000.00	325.93	3,127.02	26.06
20-22-6520	Fuel & oils	7,500.00	328.44	3,579.49	47.73
20-22-6530	Small tools & equipment	10,000.00	0.00	3,303.70	33.04
20-22-6540	Safety supplies	3,000.00	197.47	2,925.83	97.53
20-22-6550	Operational Supplies	6,000.00	0.00	139.09	2.32
20-22-6560	Uniforms	8,000.00	394.87	2,648.96	33.11
20-22-6590	Other supplies	0.00	66.34	281.59	0.00
20-22-6610	Board compensation	500.00	0.00	34.26	6.85
20-22-6720	Insurance	24,000.00	1,723.72	1,773.72	7.39
20-22-6730	Communications	25,000.00	6.82	284.18	1.14
20-22-6750	Other purchased services	0.00	294.75	1,445.22	0.00
20-22-6770	Bank charges	15,000.00	0.00	13,042.37	86.95
20-22-6780	Taxes & fees	5,000.00	0.00	1,802.43	36.05
20-22-6900	Miscellaneous expense	0.00	0.00	7,550.00	0.00
	Materials & Services	*424,650.00*	*13,053.83*	*165,144.29*	*38.89*
	Wastewater-Collections	**1,507,450.00**	**95,713.37**	**682,387.39**	**45.27**
20	**Wastewater Reclam.**	**-9,057,803.00**	**-298,780.65**	**-7,488,353.69**	**82.67**
30	**Watershed Protection NonDivisional**				
	Beginning Fund Balance				
30-00-3500	Fund balance	-3,114,971.00	0.00	-2,663,328.59	85.50
	Beginning Fund Balance	*-3,114,971.00*	*0.00*	*-2,663,328.59*	*85.50*
	Revenue				
30-00-4213	Watershed protection fees	-1,456,000.00	-124,166.55	-732,572.37	50.31
30-00-4215	Penalties & late charges	-5,000.00	-216.70	-702.78	14.06
30-00-4240	Service installations	-40,000.00	-998.30	-42,422.72	106.06
30-00-4290	Other charges for services	-5,000.00	0.00	0.00	0.00
30-00-4300	Grant Revenue	-250,000.00	0.00	0.00	0.00
30-00-4610	Investment revenue	-35,000.00	0.00	0.00	0.00
30-00-4630	Miscellaneous revenues	-5,000.00	-1,513.29	-2,319.86	46.40
	Revenue	*1,796,000.00*	*126,894.84*	*778,017.73*	*43.32*
	NonDivisional	**-4,910,971.00**	**-126,894.84**	**-3,441,346.32**	**70.07**
	Watershed Protection				
	Personnel Services				
30-23-5110	Regular employees	424,000.00	31,597.40	166,782.51	39.34
30-23-5120	TemporarySeasonal employees	10,000.00	531.98	2,833.29	28.33
30-23-5130	Overtime	16,000.00	66.08	315.57	1.97
30-23-5210	Employee Ins-MDVSTDLTDLf	75,000.00	5,395.02	30,648.54	40.86
30-23-5230	Social Security	36,500.00	1,995.84	12,070.83	33.07
30-23-5240	Retirement	90,000.00	5,209.31	26,647.45	29.61
30-23-5250	TrimetWBF	3,900.00	242.07	1,284.96	32.95
30-23-5260	Unemployment	5,000.00	0.00	0.00	0.00
30-23-5270	Workers compensation	5,100.00	0.00	6,029.15	118.22
30-23-5290	Other employee benefits	3,000.00	7.25	36.00	1.20
	Personnel Services	*668,500.00*	*45,044.95*	*246,648.30*	*36.90*
	Materials & Services				
30-23-6110	Legal services	70,000.00	2,011.27	10,171.18	14.53

Account Number	Description	Budget	Period Amt	End Bal	% of Budget
30-23-6120	Accounting & audit services	9,000.00	3,245.00	3,245.00	36.06
30-23-6155	Contracted Services	47,500.00	1,177.02	23,071.57	48.57
30-23-6180	Dues & subscriptions	10,000.00	49.14	3,084.87	30.85
30-23-6220	Electricity	2,000.00	718.88	849.87	42.49
30-23-6230	Telephone	10,000.00	277.03	2,354.85	23.55
30-23-6240	Natual gas	1,500.00	45.12	157.92	10.53
30-23-6290	Other utilities	5,000.00	133.48	818.60	16.37
30-23-6310	Janitorial services	4,500.00	353.17	3,706.47	82.37
30-23-6320	Buildings & grounds	8,000.00	551.58	1,269.22	15.87
30-23-6330	Vehicle & equipment maint.	4,500.00	0.00	2,813.91	62.53
30-23-6340	System maintenance	10,000.00	0.00	0.00	0.00
30-23-6350	Computer maintenance	49,500.00	1,653.47	26,461.96	53.46
30-23-6390	Other repairs & maintenance	5,000.00	0.00	72.98	1.46
30-23-6410	Mileage	2,000.00	0.00	572.83	28.64
30-23-6420	Staff training	9,000.00	1,655.20	5,218.21	57.98
30-23-6430	Certifications	500.00	0.00	405.00	81.00
30-23-6440	Board travel & training	1,500.00	343.25	479.93	32.00
30-23-6510	Office supplies	10,000.00	212.74	4,254.75	42.55
30-23-6520	Fuel & oils	2,500.00	127.11	1,605.30	64.21
30-23-6530	Small tools & equipment	5,000.00	0.00	0.00	0.00
30-23-6540	Safety supplies	2,500.00	172.61	1,131.70	45.27
30-23-6550	Operational Supplies	4,000.00	0.00	160.00	4.00
30-23-6560	Uniforms	1,500.00	75.15	504.19	33.61
30-23-6610	Board compensation	1,000.00	0.00	59.30	5.93
30-23-6720	Insurance	12,000.00	2,621.41	2,621.41	21.85
30-23-6730	Communications	85,000.00	2,149.81	7,800.12	9.18
30-23-6750	Other purchased services	11,000.00	13.67	26.94	0.24
30-23-6770	Bank charges	10,000.00	0.00	6,620.09	66.20
30-23-6780	Taxes & fees	2,000.00	0.00	39.16	1.96
30-23-6900	Miscellaneous expense	100.00	0.00	100.00	100.00
	Materials & Services	*396,100.00*	*17,586.11*	*109,677.33*	*27.69*
	Watershed Protection	**1,064,600.00**	**62,631.06**	**356,325.63**	**33.47**
30	**Watershed Protection**	**-3,846,371.00**	**-64,263.78**	**-3,085,020.69**	**80.21**
40	**WW GO Debt Service**				
	NonDivisional				
	Beginning Fund Balance				
40-00-3500	Fund balance	-782,263.00	0.00	-783,052.64	100.10
	Beginning Fund Balance	*-782,263.00*	*0.00*	*-783,052.64*	*100.10*
	Revenue				
40-00-4610	Investment revenue	-11,885.00	-1,942.57	-12,597.52	106.00
40-00-4701	Interest Subsidy	-121,338.00	-122,728.79	-122,728.79	101.15
	Revenue	*133,223.00*	*124,671.36*	*135,326.31*	*101.58*
	NonDivisional	**-915,486.00**	**-124,671.36**	**-918,378.95**	**100.32**
	Debt Service				
	Materials & Services				
40-24-6811	2010 IFA Loan Principal	360,936.00	360,936.00	360,936.00	100.00
40-24-6812	2010 GO Bond Principal	1,080,000.00	0.00	0.00	0.00
40-24-6821	2010 GO Bond Interest	88,000.00	0.00	44,000.00	50.00
40-24-6822	2010 IFA Loan Interest	290,561.00	290,560.94	290,560.94	100.00
	Materials & Services	*1,819,497.00*	*651,496.94*	*695,496.94*	*38.22*
	Debt Service	**1,819,497.00**	**651,496.94**	**695,496.94**	**38.22**
40	**WW GO Debt Service**	**904,011.00**	**526,825.58**	**-222,882.01**	**-24.65**
50	**WW Revenue Bond**				
	Debt Service				

Account Number	Description	Budget	Period Amt	End Bal	% of Budget
	NonDivisional				
	Beginning Fund Balance				
50-00-3500	Fund balance	-1,214,204.00	0.00	-1,215,130.52	100.08
	Beginning Fund Balance	*-1,214,204.00*	*0.00*	*-1,215,130.52*	*100.08*
	Revenue				
50-00-4610	Investment revenue	-11,074.00	-2,759.37	-13,277.96	119.90
	Revenue	*11,074.00*	*2,759.37*	*13,277.96*	*119.90*
	NonDivisional	**-1,225,278.00**	**-2,759.37**	**-1,228,408.48**	**100.26**
	Debt Service				
	Materials & Services				
50-24-6810	2010 SRF Loan Principal	876,670.00	0.00	436,273.00	49.76
50-24-6813	JPM Bank Loan Principal	0.00	0.00	0.00	0.00
50-24-6820	2010 SRF Loan Interest	370,772.00	0.00	150,725.00	40.65
50-24-6823	JPM Bank Loan Interest	379,326.00	0.00	189,662.50	50.00
	Materials & Services	*1,626,768.00*	*0.00*	*776,660.50*	*47.74*
	Debt Service	**1,626,768.00**	**0.00**	**776,660.50**	**47.74**
50	**WW Revenue Bond Debt Service**	**401,490.00**	**-2,759.37**	**-451,747.98**	**-112.52**
71	**Drinking Water Capital NonDivisional**				
	Revenue				
71-00-4610	Investment revenue	-5,000.00	-5,463.27	-30,671.65	613.43
71-00-4650	Proceeds from borrowing	-1,300,000.00	0.00	0.00	0.00
	Revenue	*1,305,000.00*	*5,463.27*	*30,671.65*	*2.35*
	NonDivisional	**-1,305,000.00**	**-5,463.27**	**-30,671.65**	**2.35**
	Drinking Water				
	Capital Outlay				
71-20-7200	Infrastructure	1,350,000.00	0.00	41,562.02	3.08
71-20-7300	Buildings & improvements	12,000.00	0.00	0.00	0.00
71-20-7400	Improvement other than Bldgs	10,000.00	0.00	0.00	0.00
71-20-7520	Equipment	0.00	0.00	15,955.00	0.00
71-20-7530	Software	0.00	0.00	3,702.90	0.00
71-20-7540	Vehicles	32,000.00	0.00	34,113.02	106.60
71-20-7600	Capital Improvement Projects	300,000.00	16,603.13	87,828.51	29.28
	Capital Outlay	*1,704,000.00*	*16,603.13*	*183,161.45*	*10.75*
	Drinking Water	**1,704,000.00**	**16,603.13**	**183,161.45**	**10.75**
71	**Drinking Water Capital**	**399,000.00**	**11,139.86**	**152,489.80**	**38.22**
72	**Wastewater Reclamation Capital NonDivisional**				
	Revenue				
72-00-4610	Investment revenue	-7,500.00	-10,100.47	-54,670.20	728.94
72-00-4640	Proceeds from sale of capital	-1,500,000.00	0.00	0.00	0.00
	Revenue	*1,507,500.00*	*10,100.47*	*54,670.20*	*3.63*
	NonDivisional	**-1,507,500.00**	**-10,100.47**	**-54,670.20**	**3.63**
	Wastewater-Plant				
	Capital Outlay				
72-21-7300	Buildings & improvements	1,500,000.00	0.00	0.00	0.00

Account Number	Description	Budget	Period Amt	End Bal	% of Budget
72-21-7400	Improvement other than Bldgs	5,000.00	0.00	0.00	0.00
72-21-7520	Equipment	0.00	0.00	2,067.38	0.00
72-21-7530	Software	0.00	0.00	2,249.51	0.00
72-21-7540	Vehicles	31,000.00	0.00	5,370.00	17.32
72-21-7600	Capital Improvement Projects	1,220,000.00	0.00	11,682.04	0.96
	Capital Outlay	*2,756,000.00*	*0.00*	*21,368.93*	*0.78*
	Wastewater-Plant	**2,756,000.00**	**0.00**	**21,368.93**	**0.78**
	Wastewater-Collections				
	Capital Outlay				
72-22-7400	Improvements other than Bldgs	5,000.00	0.00	0.00	0.00
72-22-7520	Equipment	60,000.00	0.00	54,984.00	91.64
72-22-7530	Software	0.00	0.00	1,533.45	0.00
72-22-7540	Vehicles	0.00	0.00	27,679.98	0.00
72-22-7600	Capital Improvement Projects	500,000.00	0.00	0.00	0.00
	Capital Outlay	*565,000.00*	*0.00*	*84,197.43*	*14.90*
	Wastewater-Collections	**565,000.00**	**0.00**	**84,197.43**	**14.90**
72	**Wastewater Reclamation Capital**	**1,813,500.00**	**-10,100.47**	**50,896.16**	**2.81**
73	**Watershed Protection Capital**				
	NonDivisional				
	Revenue				
73-00-4610	Investment revenue	-5,000.00	-4,226.16	-28,449.38	568.99
73-00-4640	Proceeds from sale of capital	-300,000.00	0.00	0.00	0.00
	Revenue	*305,000.00*	*4,226.16*	*28,449.38*	*9.33*
	NonDivisional	**-305,000.00**	**-4,226.16**	**-28,449.38**	**9.33**
	Watershed Protection				
	Capital Outlay				
73-23-7400	Improvement other than Bldgs	10,000.00	0.00	0.00	0.00
73-23-7520	Equipment	71,000.00	0.00	0.00	0.00
73-23-7530	Software	0.00	0.00	3,702.91	0.00
73-23-7540	Vehicles	0.00	0.00	4,913.85	0.00
73-23-7600	Capital Improvement Projects	1,920,000.00	385,041.31	1,484,475.40	77.32
	Capital Outlay	*2,001,000.00*	*385,041.31*	*1,493,092.16*	*74.62*
	Watershed Protection	**2,001,000.00**	**385,041.31**	**1,493,092.16**	**74.62**
73	**Watershed Protection Capital**	**1,696,000.00**	**380,815.15**	**1,464,642.78**	**86.36**

General Ledger
Account Roll up

User: jeff
Printed: 1/8/2019 12:43:34 PM
Period 06 - 06
Fiscal Year 2019

Sort Level	Description	Budget	Beg Bal	Period Amt	End Bal	% Expend Collect
Revenue	Revenue					
4211	Water sales	-3,640,000.00	-1,889,508.19	-188,276.01	-2,077,784.20	57.08
4212	Wastewater charges	-7,979,500.00	-3,093,625.32	-689,771.60	-3,783,396.92	47.41
4213	Watershed protection fees	-1,456,000.00	-608,405.82	-124,166.55	-732,572.37	50.31
4215	Penalties & late charges	-55,000.00	-9,048.63	-2,850.91	-11,899.54	21.64
4220	System development charges	-175,000.00	-307,290.00	-9,285.00	-316,575.00	180.90
4230	Contract services	-32,000.00	-10,194.31	-4,860.48	-15,054.79	47.05
4240	Service installations	-80,000.00	-79,788.39	-6,980.70	-86,769.09	108.46
4280	Rents & leases	-140,000.00	-86,840.44	-4,320.70	-91,161.14	65.12
4290	Other charges for services	-10,000.00	-29,927.24	-5,105.06	-35,032.30	350.32
4300	Grant Revenue	-250,000.00	0.00	0.00	0.00	0.00
4610	Investment revenue	-150,459.00	-115,174.87	-24,491.84	-139,666.71	92.83
4630	Miscellaneous revenues	-35,000.00	-17,851.63	-7,880.21	-25,731.84	73.52
4640	Proceeds from sale of capital	-1,800,000.00	0.00	0.00	0.00	0.00
4650	Proceeds from borrowing	-1,300,000.00	0.00	0.00	0.00	0.00
4701	Interest Subsidy	-121,338.00	0.00	-122,728.79	-122,728.79	101.15
4911	Transfers in from Fund 10	-2,700,000.00	-2,619,190.57	-11,544.20	-2,630,734.77	97.43
4912	Transfers in from Fund 20	-8,303,935.00	-6,045,835.33	-322,585.67	-6,368,421.00	76.69
4913	Transfers in from Fund 30	-3,600,000.00	-3,061,999.94	-76,857.15	-3,138,857.09	87.19
Revenue	Revenue	31,828,232.00	17,974,680.68	1,601,704.87	19,576,385.55	61.51
Expense	Expense					
5110	Regular employees	3,089,000.00	1,169,557.56	253,837.25	1,423,394.81	46.08
5120	TemporarySeasonal employees	92,000.00	27,578.78	2,528.44	30,107.22	32.73
5130	Overtime	154,000.00	25,147.72	7,395.19	32,542.91	21.13
5210	Employee Ins-MDVSTDLTDLf	630,000.00	212,657.10	44,907.92	257,565.02	40.88
5230	Social Security	253,000.00	90,260.54	17,934.75	108,195.29	42.76
5240	Retirement	622,000.00	181,249.18	42,066.71	223,315.89	35.90
5250	Trimet	27,100.00	9,350.28	2,010.44	11,360.72	41.92
5260	Unemployment	36,500.00	0.00	0.00	0.00	0.00
5270	Workers compensation	40,100.00	43,077.57	0.00	43,077.57	107.43
5290	Other employee benefits	21,900.00	128.00	34.45	162.45	0.74
6110	Legal services	400,000.00	58,144.26	23,822.26	81,966.52	20.49
6120	Accounting & audit services	27,000.00	0.00	14,750.00	14,750.00	54.63
6155	Contracted Services	378,800.00	129,132.23	12,612.04	141,744.27	37.42
6180	Dues & subscriptions	55,000.00	31,253.46	308.13	31,561.59	57.38
6190	Other professional & tech svcs	0.00	0.00	0.00	0.00	0.00
6220	Electricity	307,000.00	27,358.51	117,613.90	144,972.41	47.22
6230	Telephone	76,000.00	19,740.14	3,051.98	22,792.12	29.99
6240	Natual gas	13,500.00	1,313.20	180.47	1,493.67	11.06
6250	Solid waste disposal	75,000.00	20,679.20	5,285.05	25,964.25	34.62
6290	Other utilities	20,500.00	14,488.51	2,759.56	17,248.07	84.14
6310	Janitorial services	41,500.00	19,957.79	1,678.58	21,636.37	52.14
6320	Buildings & grounds	46,000.00	9,817.35	5,798.94	15,616.29	33.95
6330	Vehicle & equipment maint.	61,500.00	18,956.35	8,717.63	27,673.98	45.00
6340	Distribution system maint	210,000.00	73,300.04	5,420.22	78,720.26	37.49
6342	Collection system maint.	274,000.00	100,269.69	22,953.53	123,223.22	44.97
6350	Computer maintenance	242,500.00	115,870.42	12,282.51	128,152.93	52.85
6390	Other repairs & maintenance	65,000.00	13,170.25	4,055.66	17,225.91	26.50
6410	Mileage	7,000.00	1,436.15	0.00	1,436.15	20.52
6420	Staff training	60,500.00	19,188.26	9,661.21	28,849.47	47.69
6430	Certifications	7,400.00	1,595.00	75.00	1,670.00	22.57
6440	Board travel & training	8,500.00	414.18	1,040.15	1,454.33	17.11

Sort Level	Description	Budget	Beg Bal	Period Amt	End Bal	% Expend	Collect
6510	Office supplies	52,000.00	19,140.05	1,335.59	20,475.64	39.38	
6520	Fuel & oils	70,000.00	20,854.73	1,986.43	22,841.16	32.63	
6525	Chemicals	25,000.00	0.00	217.93	217.93	0.87	
6530	Small tools & equipment	50,200.00	3,688.63	31.98	3,720.61	7.41	
6540	Safety supplies	37,600.00	13,992.70	1,885.37	15,878.07	42.23	
6550	Operational Supplies	31,500.00	9,436.29	2,592.80	12,029.09	38.19	
6560	Uniforms	27,500.00	8,775.78	1,666.65	10,442.43	37.97	
6590	Other supplies	20,000.00	3,832.64	795.33	4,627.97	23.14	
6610	Board compensation	3,200.00	225.00	0.00	225.00	7.03	
6710	Purchased water	1,050,000.00	349,816.99	140,701.66	490,518.65	46.72	
6720	Insurance	156,000.00	100.00	12,450.00	12,550.00	8.04	
6730	Communications	123,000.00	6,379.10	2,188.79	8,567.89	6.97	
6740	Advertising	1,000.00	0.00	0.00	0.00	0.00	
6750	Other purchased services	11,000.00	6,136.14	1,582.35	7,718.49	70.17	
6760	Equipment Rental	5,000.00	748.39	0.00	748.39	14.97	
6770	Bank charges	80,000.00	49,927.17	-367.10	49,560.07	61.95	
6780	Taxes & fees	95,500.00	35,211.29	4,147.12	39,358.41	41.21	
6810	2010 SRF Loan Principal	876,670.00	436,273.00	0.00	436,273.00	49.76	
6811	2010 IFA Loan Principal	360,936.00	0.00	360,936.00	360,936.00	100.00	
6812	2010 GO Bond Principal	1,080,000.00	0.00	0.00	0.00	0.00	
6813	JPM Bank Loan Principal	0.00	0.00	0.00	0.00	0.00	
6820	2010 SRF Loan Interest	370,772.00	150,725.00	0.00	150,725.00	40.65	
6821	2010 GO Bond Interest	88,000.00	44,000.00	0.00	44,000.00	50.00	
6822	2010 IFA Loan Interest	290,561.00	0.00	290,560.94	290,560.94	100.00	
6823	JPM Bank Loan Interest	379,326.00	189,662.50	0.00	189,662.50	50.00	
6900	Miscellaneous expense	1,100.00	15,300.00	0.00	15,300.00	1,390.91	
6910	Cash overshort	0.00	20.00	0.00	20.00	0.00	
7200	Infrastructure	1,350,000.00	41,562.02	0.00	41,562.02	3.08	
7300	Buildings & improvements	1,512,000.00	0.00	0.00	0.00	0.00	
7400	Improvement other than Bldgs	30,000.00	0.00	0.00	0.00	0.00	
7520	Equipment	131,000.00	73,006.38	0.00	73,006.38	55.73	
7530	Software	0.00	11,188.77	0.00	11,188.77	0.00	
7540	Vehicles	63,000.00	72,076.85	0.00	72,076.85	114.41	
7600	Capital Improvement Projects	3,940,000.00	1,182,341.51	401,644.44	1,583,985.95	40.20	
8140	Transfers out - Fund 40	1,548,123.00	645,051.25	129,010.25	774,061.50	50.00	
8150	Transfers out - Fund 50	1,755,812.00	731,588.35	146,317.67	877,906.02	50.00	
8171	Transfers out - Fund 71	2,700,000.00	2,619,190.57	11,544.20	2,630,734.77	97.43	
8172	Transfers out - Fund 72	5,000,000.00	4,669,195.73	47,257.75	4,716,453.48	94.33	
8173	Transfers out - Fund 73	3,600,000.00	3,061,999.94	76,857.15	3,138,857.09	87.19	
9000	Contingency	3,087,009.00	0.00	0.00	0.00	0.00	
Expense	Expense	37,345,109.00	16,906,538.49	2,258,125.27	19,164,663.76	51.32	
Grand Total		**-5,516,877.00**	**1,068,142.19**	**-656,420.40**	**411,721.79**	**-0.0746**	
Fund Balance		**0.00**	**0.00**	**0.00**	**0.00**	**0**	
Total							
Revenue Total		**31,828,232.00**	**17,974,680.68**	**1,601,704.87**	**19,576,385.55**	**0.6151**	
Expense Total		**37,345,109.00**	**16,906,538.49**	**2,258,125.27**	**19,164,663.76**	**0.5132**	

OAK LODGE
WATER SERVICES

STAFF REPORT

To: Board of Directors
From: Kelly Stacey, Finance Director
Agenda Item: Checks for December 2018
Item No.: 3_av
Date: December 18, 2018

Background

Auditors have requested formal approval of checks by the Board of Directors

Issue

The District needs formal authorization of December checks numbered 41885 through 41991 which include accounts payable and payroll checks as well as electronic withdrawals totaling $1,191,271.73. Attached you will find a report showing all checks and electronic withdrawals for December 2018. There were no voided checks for the month.

Recommendations

It is recommended to the Board that checks numbered 41885 through 41991 and electronic withdrawals be formally approved by the Board.

Background

The District pays expenditures throughout the month.

Facts and Findings

The District auditors require the Board to formally approve monthly payments to conform to Generally Accepted Accounting Principles (GAAP).

Attachments

1. Accela Checks by Date December 2018

Bank Reconciliation
Checks by Date
User: jeff
Printed: 01/08/2019 - 10:53AM
Cleared and Not Cleared Checks
Print Void Checks

Check No.	Check Date	Name	Comment	Module	Void	Clear Date	Amount
ACH Disbursement Activity							
0	12/4/2018	Check Commerce		AP		12/31/2018	147.75
0	12/6/2018	TSYS		AP		12/31/2018	6,668.72
0	12/10/2018	Wells Fargo Remittance Center		AP		12/31/2018	8,189.72
0	12/11/2018	Wells Fargo Banks		AP		12/31/2018	1,575.13
12141418	12/12/2018	Public Employees	PERS Adjustment	BRX		12/31/2018	0.05
0	12/14/2018	Public Employees		AP		12/31/2018	23,969.54
0	12/14/2018	VALIC c/o JP Morgan Chase		AP		12/31/2018	2,490.00
0	12/14/2018	IRS Dept of The Treasury		AP		12/31/2018	29,198.70
0	12/14/2018	Oregon Department Of Revenue		AP		12/31/2018	8,696.83
0	12/14/2018	Nationwide Retirement Solutions		AP		12/31/2018	1,575.00
0	12/15/2018		DD 00001.12.2018	PR		12/31/2018	72,447.56
0	12/27/2018	Public Employees		AP		1/0/1900	2,593.08
0	12/27/2018	Oregon Department Of Revenue		AP		1/0/1900	871.68
0	12/27/2018	VALIC c/o JP Morgan Chase		AP		1/0/1900	200.00
0	12/28/2018	Public Employees		AP		12/31/2018	3,747.74
12281418	12/28/2018	Public Employees	PERS Adjustment	BRX		12/31/2018	0.07
0	12/31/2018	Nationwide Retirement Solutions		AP		1/0/1900	1,475.00
0	12/31/2018	Public Employees		AP		1/0/1900	26,158.47
0	12/31/2018	IRS Dept of The Treasury		AP		12/31/2018	33,288.88
0	12/31/2018	VALIC c/o JP Morgan Chase		AP		1/0/1900	1,290.00
0	12/31/2018	IRS Dept of The Treasury		AP		12/31/2018	3,268.46
0	12/31/2018	Oregon Department Of Revenue		AP		1/0/1900	9,934.72
0	12/31/2018		DD 00002.12.2018	PR		12/31/2018	80,116.84
ACH Disbursement Activity Subtotal							317,903.94
Voided ACH Activity							0.00
Adjusted ACH Disbursement Activity Subtotal							317,903.94
Paper Check Disbursement Activity							
41885	12/3/2018	SCOTT BORISON		AP		12/31/2018	2,358.80
41886	12/14/2018	Employee Paycheck		PR		12/31/2018	637.47
41887	12/14/2018	Employee Paycheck		PR		12/31/2018	1,121.65
41888	12/14/2018	Employee Paycheck		PR		12/31/2018	2,116.73
41889	12/14/2018	A Worksafe Service, Inc.		AP		12/31/2018	60.00
41890	12/14/2018	Ace Hardware #11075		AP		12/31/2018	347.54
41891	12/14/2018	Aerzen USA Corporation		AP		12/31/2018	552.19
41892	12/14/2018	AFLAC		AP		12/31/2018	926.29
41893	12/14/2018	AFSCME Council 75		AP		12/31/2018	861.21
41894	12/14/2018	Apex Labs		AP		12/31/2018	2,516.00
41895	12/14/2018	Apsco, LLC		AP		12/31/2018	13,504.20
41896	12/14/2018	Bachman Paving Company		AP		12/31/2018	3,531.00
41897	12/14/2018	BMS Technologies		AP		12/31/2018	4,070.27
41898	12/14/2018	Brown & Brown Northwest		AP		12/31/2018	12,250.00
41899	12/14/2018	Bullard Law		AP		12/31/2018	23,650.26
41900	12/14/2018	Cascade Print Source		AP		12/31/2018	129.95
41901	12/14/2018	Cascadia Backflow		AP		12/31/2018	1,814.70
41902	12/14/2018	Cintas Corporation		AP		12/31/2018	311.19
41903	12/14/2018	City Of Gladstone		AP		12/31/2018	3,325.46
41904	12/14/2018	City Of Milwaukie		AP		12/31/2018	1,374.68
41905	12/14/2018	Contractor Supply		AP		12/31/2018	424.60
41906	12/14/2018	TOM DUNCAN		AP		1/0/1900	169.16
41907	12/14/2018	Law Office of Eileen Eakins, LLC		AP		12/31/2018	132.00
41908	12/14/2018	Express Services, Inc.		AP		12/31/2018	1,620.00
41909	12/14/2018	Grainger, Inc.		AP		12/31/2018	1,663.80
41910	12/14/2018	HealthEquity		AP		12/31/2018	34.45
41911	12/14/2018	BRET HUNLEY		AP		12/31/2018	188.86
41912	12/14/2018	Impressions Printing Inc		AP		12/31/2018	259.00
41913	12/14/2018	James W Fowler Co		AP		12/31/2018	374,704.70
41914	12/14/2018	TEN BRIDGES LLC		AP		12/31/2018	151.46

Bank Reconciliation
Checks by Date
User: jeff
Printed: 01/08/2019 - 10:53AM
Cleared and Not Cleared Checks
Print Void Checks

Check No.	Check Date	Name	Comment	Module	Void	Clear Date	Amount
41915	12/14/2018	Madison Biosolids, Inc.		AP		12/31/2018	1,387.46
41916	12/14/2018	Mail Finance		AP		12/31/2018	599.43
41917	12/14/2018	McFarlane's Bark, Inc.		AP		12/31/2018	36.13
41918	12/14/2018	Napa Auto Parts - Store #07078		AP		12/31/2018	48.48
41919	12/14/2018	Net Assets Corporation		AP		12/31/2018	462.00
41920	12/14/2018	North Clackamas Parks & Recreation District		AP		1/0/1900	460.89
41921	12/14/2018	Northstar Chemical, Inc.		AP		12/31/2018	535.00
41922	12/14/2018	Northwest Natural		AP		12/31/2018	180.47
41923	12/14/2018	OCD Automation, Inc.		AP		12/31/2018	2,500.00
41924	12/14/2018	ODOT, Right of Way Section		AP		12/31/2018	75.00
41925	12/14/2018	Olson Bros. Service, Inc.		AP		12/31/2018	432.29
41926	12/14/2018	One Call Concepts, Inc.		AP		12/31/2018	567.60
41927	12/14/2018	Oregonian Publishing Company		AP		12/31/2018	113.24
41928	12/14/2018	Portland Engineering Inc		AP		12/31/2018	461.50
41929	12/14/2018	Portland General Electric		AP		12/31/2018	115,646.36
41930	12/14/2018	Relay Resources		AP		12/31/2018	4,730.79
41931	12/14/2018	River Road Garage		AP		12/31/2018	193.95
41932	12/14/2018	Rockwood Water Pud		AP		12/31/2018	500.00
41933	12/14/2018	SDIS		AP		12/31/2018	35,634.53
41934	12/14/2018	SUNRISE AUTO SALES LLC		AP		12/31/2018	749.90
41935	12/14/2018	SUNRISE AUTO SALES LLC		AP		12/31/2018	1,145.87
41936	12/14/2018	Unifirst Corporation		AP		12/31/2018	1,526.42
41937	12/14/2018	US Bank Equipment Finance		AP		12/31/2018	220.00
41938	12/14/2018	Verizon Wireless		AP		12/31/2018	635.81
41939	12/14/2018	Waste Connections		AP		12/31/2018	61.41
41940	12/14/2018	Waste Management Of Oregon		AP		12/31/2018	4,555.02
41941	12/14/2018	Water Environment Services		AP		12/31/2018	146.26
41942	12/14/2018	Greg Wenneson		AP		12/31/2018	156.82
41943	12/14/2018	WW Machine Shop Inc		AP		12/31/2018	1,225.00
41944	12/14/2018	Xerox Corporation		AP		12/31/2018	20.55
41945	12/27/2018	RORY MARTIN		PR		12/31/2018	6,190.50
41946	12/27/2018	Ace Hardware #11075		AP		1/0/1900	202.96
41947	12/27/2018	Aks Engineering & Forestry		AP		1/0/1900	10,336.61
41948	12/27/2018	Barney & Worth Inc		AP		12/31/2018	1,178.53
41949	12/27/2018	BTL NW		AP		12/31/2018	155.68
41950	12/27/2018	Buffalo Welding		AP		12/31/2018	6,000.00
41951	12/27/2018	MICHAEL & VALERIE BUSH		AP		12/31/2018	465.87
41952	12/27/2018	Cascadia Backflow		AP		1/0/1900	1,906.91
41953	12/27/2018	Century Link		AP		12/31/2018	682.85
41954	12/27/2018	Cintas Corporation		AP		1/0/1900	123.06
41955	12/27/2018	Cintas Corporation - 463		AP		1/0/1900	89.54
41956	12/27/2018	Clackamas County		AP		1/0/1900	1,406.74
41957	12/27/2018	Comcast Cable		AP		1/0/1900	424.02
41958	12/27/2018	Convergence Networks		AP		1/0/1900	4,070.48
41959	12/27/2018	Craig Blackman Trucking		AP		1/0/1900	1,246.70
41960	12/27/2018	D&H Flagging Inc.		AP		1/0/1900	782.50
41961	12/27/2018	Detemple Company, Inc.		AP		1/0/1900	1,803.50
41962	12/27/2018	Ditch Witch Northwest Exchange		AP		12/31/2018	734.80
41963	12/27/2018	Express Services, Inc.		AP		12/31/2018	908.44
41964	12/27/2018	Grainger, Inc.		AP		12/31/2018	394.00
41965	12/27/2018	Hach		AP		1/0/1900	6,940.00
41966	12/27/2018	Industrial Hearing Service		AP		1/0/1900	625.00
41967	12/27/2018	J. Thayer Company		AP		1/0/1900	242.99
41968	12/27/2018	John Crane, Inc.		AP		1/0/1900	2,149.14
41969	12/27/2018	Metereaders, LLC		AP		1/0/1900	2,639.79
41970	12/27/2018	Metro Overhead Door		AP		1/0/1900	120.00
41971	12/27/2018	Municipal Code Corporation		AP		12/31/2018	3,200.00
41972	12/27/2018	NCCWC		AP		1/0/1900	140,701.66
41973	12/27/2018	Ness Campbell Crane and Rigging		AP		12/31/2018	840.00
41974	12/27/2018	Nurnberg Scientific		AP		1/0/1900	324.91
41975	12/27/2018	Olson Bros. Service, Inc.		AP		1/0/1900	117.38
41976	12/27/2018	Oregon DEQ		AP		12/31/2018	1,009.00
41977	12/27/2018	Oregon Secretary Of State		AP		1/0/1900	350.00

Bank Reconciliation
Checks by Date
User: jeff
Printed: 01/08/2019 - 10:53AM
Cleared and Not Cleared Checks
Print Void Checks

Check No.	Check Date	Name	Comment	Module	Void	Clear Date	Amount
41978	12/27/2018	Pamplin Media Group		AP		1/0/1900	49.37
41979	12/27/2018	Pape Machinery		AP		12/31/2018	4,861.31
41980	12/27/2018	Pauly, Rogers And Co., PC		AP		1/0/1900	14,400.00
41981	12/27/2018	Platt		AP		12/31/2018	35.19
41982	12/27/2018	Portland General Electric		AP		1/0/1900	1,967.54
41983	12/27/2018	Traver's Cleaning Service Inc.		AP		1/0/1900	35.00
41984	12/27/2018	Unifirst Corporation		AP		1/0/1900	440.36
41985	12/27/2018	United Fire, Health, & Safety		AP		1/0/1900	60.78
41986	12/27/2018	Verizon Wireless		AP		1/0/1900	1,153.62
41987	12/27/2018	Water Systems Consulting, Inc.		AP		1/0/1900	16,603.13
41988	12/27/2018	Western Exterminator Company		AP		1/0/1900	269.14
41989	12/31/2018	Employee Paycheck		PR		1/0/1900	1,941.70
41990	12/31/2018	Employee Paycheck		PR		12/31/2018	1,254.51
41991	12/31/2018	Employee Paycheck		PR		12/31/2018	2,116.78

Paper Check Disbursement Activity Subtotal	873,367.79
Voided Paper Check Disbursement Activity	0.00
Adjusted Paper Check Disbursement Activity Subtotal	873,367.79

Total Void Check Count:	0
Total Void Check Amount:	0.00
Total Valid Check Count:	130
Total Valid Check Amount:	1,191,271.73
Total Check Count:	130
Total Check Amount:	1,191,271.73

OAK LODGE WATER SERVICES
Minutes
Board of Directors – Regular Meeting 6:00 p.m.
December 18, 2018

Board of Directors - Members Present:

Nancy Gibson,	President
Susan Keil,	Vice President/Secretary
Lynn Fisher,	Treasurer
Kevin Williams,	Director
Paul Gornick,	Director,

Board of Directors - Members Absent:
none

Oak Lodge Water Services Staff Present:

Sarah Jo Chaplen,	General Manager
Aleah Binkowski-Burk,	Human Resources and Payroll Manager
Jason Rice,	District Engineer
David Mendenhall,	Plant Superintendent
Kelly Stacey,	Finance Director
Todd Knapp,	Field Operations Superintendent
Tommy Brooks,	District Attorney, Cable Huston LLP
Chris Duckworth,	Labor Attorney,
Rob Moody,	Plan B Consultancy

Visitors Present:

Dave Phelps,	Budget Committee
Eric Hofeld,	Sunrise Water Authority
John Klum	Budget Committee
Peter Winter	Budget Committee Applicant
Michael Gradt	Local Resident
Ron Weigel	Budget Committee Applicant
Fred Swingle	Budget Committee Applicant
Amanda Gresen	Budget Committee Applicant.

Regular Board of Directors Meeting

1. Call to Order and Flag Salute

Board President Nancy Gibson called the meeting to order at 6:00 p.m. and requested that the audience share one thing they are thankful for in lieu of the pledge of allegiance.

2. Call for Public Comment

There were no comments from the public.

3. Interviews for Budget Committee Members

The Board interviewed Budget Committee applicants Peter Winter, Ron Weigel, Fred Swingle, and Amanda Gresen. Interview questions are as follows: 1.) Why do you think you would be a good candidate for the Budget Committee? 2.) Please tell us about your experience working in a volunteer capacity. Where, what, how long? 3.) Please tell us

about your knowledge of water delivery systems, sanitary systems, and surface water management for communities such as ours? 4.) What financial, or analytical background might you bring to the Budget Committee? 5.) A position on the Budget Committee will require usually less than 5 meetings. It is helpful if you are able to attend in addition some Board meetings which happen once a month. There will be reading of documents to prepare for the Budget Committee meetings. Are you aware of that time commitment and can you meet it? The audio recording contains the interviews and all answers outlined and any additional questions.

4. Consent Agenda

- **a. November 2018 Financial Reports**
  - **i. Approval of November 2018 Check Run**
- **b. October 25, 2018 Special Board Meeting Minutes**
- **c. November 15, 2018 Special Board Meeting Minutes**
- **d. November 20, 2018 Board Meeting Minutes**

The Board asked about why the electrical bill still appears as a separate line item and Finance Director Kelly Stacy responded it will be listed differently on coming reports. Electrical charges are where they should be – PGE was not billing us and now they are. Other comments included: the wastewater charges are about $500,000 short for the year – staff is looking into why; the checking account balances are large and were transferred for payments and into other accounts. On the revenue side service installations are higher than originally projected because of more water meter installations, inspections for sewer and storm installations. The revenue for water sales seems high but is correct because it changes seasonally. The general ledger account rollup “miscellaneous expense” percentage is high, and Kelly will follow up on the expenses in this line item and will email the Board. There was a spelling error – page 5 of the Stormwater retreat minutes, paragraph 3, should read “then” not “them”. There was a question about check number 41823, Pacific Truck Colors was for fitting vehicles with tool boxes, etc. It was noted that the check for Tasso Homes was cashed in this check run. There was a question about the $10,000 check for J&M Body Shop, Kelly will follow up and email the Board. They reviewed charges for Relay Resources being for landscaping and janitorial. There were no other comments or questions.

Secretary Keil moved to approve the consent agenda as presented. Director Williams seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

5. Appointment of a Budget Officer

Based on Oregon Budget Law, General Manager Sarah Jo Chaplen requested the Board appoint a finance director as the OLWS Budget Officer for the Fiscal Year 2019-2020.

Treasurer Fisher moved to appoint Finance Director Kelly Stacey as the Oak Lodge Water Services District Budget Officer for FY 2019-2020. Secretary Keil seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

6. Appointment of Budget Committee members 2019-2020

Finance Director Kelly Stacey requested the Board appoint the Budget Committee as part of Oregon Budget Law. There are three positions available, as well as possibly adding an alternate. The Board discussed the strengths of the applicants and agreed that adding Peter Winter as an alternate position would engage him in a way that best meets his abilities and enthusiasm. The other three applicants bring multiple aptitudes to the position and would be strong additions to the Budget Committee.

Treasurer Fisher moved that the Board appoint the following people to the Oak Lodge Water Services Budget Committee with the expiration dates outlined below:

Position No. 1. John W. Klum, Chair, June 30, 2020
Position No 2. Amanda Gresen, Secretary, June 30, 2022
Position No 3. Dave Phelps, June 30, 2021
Position No 4. Ron Weigel, June 30, 2021
Position No 5. Fred Swingel, June 30, 2020
Alternate Members: Terry Gibson and Peter Winter

Director Williams seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

7. Adoption of Budget Calendar 2019/2020

Finance Director Kelly Stacey corrected the Budget Calendar to publish the notice of the Budget Committee meeting from Wednesday, April 11, 2018 to Wednesday, April 10, 2019. The Board asked whether it would be possible to add dates for additional discussions about the budget (in particular the Capital Improvement Plan and the forthcoming Surfacewater Master Plan), and Kelly responded adding dates is possible, as long as we respect the rules around discussing details about the budget after the initial Budget Committee meeting. The meeting length has also increased, which will help committee members become knowledgeable about the complexities of the budget. After the January 10th meeting the Budget Committee will have last year's budget in hand to begin orienting themselves, along with an overview of the Capital Improvement Plan.

Secretary Keil moved to approve the Budget Calendar as presented (with the date correction as presented by Finance Director Kelly Stacey) for Fiscal Year 2019/2020. Director Williams seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

8. Budget Amendments 2018-2019 Resolution No. 18-16

Finance Director Kelly Stacey presented the Budget need to transfer between appropriation categories as stated in the Board Packet. The Board asked if the wastewater reclamation fund was the same as the wastewater collection fund and staff responded yes, although they are separated in the budget document. There were no other questions.

Director Gornick moved to adopt Resolution 18-16 approving the transfer of contingency to materials and services in both the Drinking Water Fund and the Wastewater Reclamation Fund and the three capital funds as presented. Director Williams seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

9. Finance Policies Workshop – second set

Finance Director Kelly Stacey presented the second set of finance policies as needed by the District. Ron Moody from Plan B Consultancy attended the meeting to support questions. The Board asked about how the District could "preapprove reimbursement requests" as stated in the policy and Rob Moody suggested taking out the word "reimbursement request" and change the wording to read "travel for the General Manager be preapproved by any member of the Board" and "travel for Board members be preapproved by the Board". The Board and staff agreed with the change. On the Expenditure Policy a suggestion was made to change the wording to "all monies will be paid on the appropriate due date provided by the vendor or negotiated by the vendor". The Board and staff agreed to this change with the addendum that OLWS would not work overtime to meet bill deadlines. The Board asked about whether original receipts would be required for parking fees of $10 or less and the staff concurred with the set policy that receipts are not needed for costs $10 or less. The Board asked about deductions for meals provided as part of conferences from the per diem and staff explained the policy for reducing the per diem is based on state requirements for municipalities. Rob Moody proposed streamlining the "Expenditure Policy" by striking the second sentence of letter D and all of letter E. Rob Moody suggested mitigating controls are in place in various levels of the organization, which provides the needed oversight. The Board discussed the cash control system and agreed the process in place allows for strong oversight. The Board pointed out there is a Human Resource policy with guidelines and parameters in place that support employees reporting inappropriate behavior. Staff recommended adding "proof of receipt for goods and services *where required*" to the travel policy.

A question was asked about periodic inspection of payment devices as described in the PCI Policy, page 4, section IV. The Board suggested using a vendor, like Convergence, to inspect the payment devices. They corrected a typo of the extra period in page 2 of the Employee Credit Card Policy, and another typo under the Travel Policy, page 5 section C, "reimbursing up to the *least* expensive" instead of "most expensive".

No approval is required at this time. The policies attached will be finalized and brought back to a future Board meeting for approval.

10. SDIS Insurance Renewal

Human Resources and Payroll Manager Aleah Binkowski-Burk provided an overview of the District's insurance policy and the required annual changes to it. Changes included requiring two photos for each insured property asset. Insurance costs remained flat from last year based on the lack of claims as well as the longevity credit. She requested Board approval to sign the insurance contract for the next year. The Board asked about the earthquake coverage and staff replied the District is insured for earthquakes up to 10 million dollars and then anything more than that goes to the Federal Emergency Management Agency (FEMA). The Board asked about the loss ratio in the rate comparison from 2013-2017 being 165.23 when typically the loss ratio should be reversed. Staff responded the ratio was not based on actual data because of the consolidation, it is a temporary placeholder until more data is generated. The Board asked about vehicle transportation insurance and whether the District transports students as part of the outreach and education programming. Staff responded the District does not transport students and requires school Districts to cover their own student transportation. Staff added that we are passenger covered and clarified that for unpaid interns the school should provide liability coverage.

Treasurer Fisher moved that the Board authorize the General Manager to renew the District's Property and Liability Insurance with SDIS for the policy term starting January 1st, 2019 and ending on December 31st, 2019. Director Gornick seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

11. Solids Building Refurbishment – Engineering Task Order
District Engineer Jason Rice presented the Solids Building Refurbishment project and clarified the "Belt Filter Press Installation" in this part of the same overall project. The District has compared the costs for replacing our dump trucks used for hauling or contract hauling or for storing material on site. If we mounted a hopper on site, we would have more flexibility in where we keep the dump truck and trailer as well as more storage capacity for biosolids in order to provide more flexibility.

Associated with this project is research on possibly partnering with another entity to dispose of solids closer to home or in a variety of ways as Class B or converting some of the solids to Class A. Having a variation in disposal streams would allow the District to avoid challenges like weather or fire emergencies which affected transportation routes to Eastern Oregon. Staff will present options, including partnership with nearby agencies, at a future Board meeting. The Board asked whether we were producing Class A biosolids and could we also produce a product like struvite. Staff responded the report will investigate these different options and perhaps the option of finding land for biosolids production or other products like struvite will be viable but stressed the importance of the financial viability and cost savings.
Director Williams moved to approve our General Manager to sign a Task Order with Brown and Caldwell to produce the final design of the Installation of a Portable Backup Belt Filter Press at a cost not to exceed $115,075. Secretary Keil seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

12. Department Reports
- **Finance Report:**
  Finance Director Kelly Stacey updated the Board on an administrative change to Resolution No. 18-12 and requested the Board update it to Resolution No. 18-15.

Secretary Keil moved that the Board acknowledges and ratifies a change in the numbering to the Resolution enacted on Nov 20th adopting new purchasing rules from Resolution No. 18-12 to Resolution No. 18-15. Treasurer Fisher seconded the motion.
Ayes: 5
Nays: None
Motion carried: 5-0

Continuing Kelly's staff report, the audit has been completed and will be presented to the Board next month. It was complex but received a "clean opinion" and should be simpler next year now that the two former organizations are one. She has researched financing the water meters and has found the best option for timing to be bank placement. A six-year loan term with Chase is 2.84% and with Zion is 2.84% and Zion

has no penalty on prepayment and no fees so this is the better option. We will take the loan in several draws and only as we need it. The Board asked about if we could prepay if the PERS match does not come through and staff responded yes, we will look at the whole financial picture. The temporary employee has wrapped up a number of utility billing projects and will end service with the District at the end of 2018.

- **Field Operations Report:**
  Field Operations Superintendent Todd Knapp shared the challenges of holiday staffing, cleaning of Zone 2 catch basins, and dealing with leaks and pipe replacement in particular areas. He went over his reports from the packet. Treasurer Fisher commented he had been able to see the field collections crew in action, cleaning, T.V.'ing, and reporting on deficiencies for the sewer mains and encouraged others to take a look in the T.V. van and see the crews in action. There was clarification that the District owns the lateral only to the property line and the expense of lateral repair would be reported on at the end of the fiscal year.

- **Plant Operations Report:**
  Plant Superintendent David Mendenhall illustrated the stark contrast between the dry beginning of November and the wet ending and the Infiltration and Inflow as seen in changes to the flows. The sewer plant responded well, and operators did not exceed the permit. He went over his Board report and pointed out there were some big differences in the timing of the rainfall patterns from other years and this changes how the operations are managed. New pumps have been installed and all pumps and pump stations are being well taken care of by the new maintenance staff, Jason Kahler. Overall plant performance is good.

  David provided an update on the neighbor complaint near Pump Station #2, stating that the issue has been closed by DEQ based on the actions taken by the District and approved by the state. The District installed sound dampening materials and are appropriately venting hydrogen sulfide gas in order to avoid a gas buildup. We are not pumping methane gas into the community. The issue might come up again at the Board level, but he wanted the Board to know that is has been addressed comprehensively and closed at the DEQ level.

- **Technical Services Report:**
  District Engineer Jason Rice mentioned the help he received from Treasurer Fisher's comments on the development spreadsheet. He clarified the types of projects that appear on the tracker and asked for feedback from the Board on the level of project they want to have tracked. The Board responded the level as presented is acceptable except for when staff would like to bring an additional project to the attention of the Board. He mentioned how the addition of Accela for permitting might someday allow customers to view open permits in the District.

Staff and the Board discussed the type of development review that happens and what we should be permitting as compared with Clackamas County. If the District looks at surface water management holistically and incentivized pervious surfaces in our code it could change development. The Board asked about the creation of a stormwater

advisory committee and staff responded we have not finished organizing around what we need from a committee yet, and we still need to hear from the public. The public outreach process needs to involve education on a three-pronged approach for the way we involve the public in surface water management. The Board added how important it was for the Budget Committee to understand this issue in providing advice and oversight to the District. The goal is to keep rate increases at the same level while figuring out what level of service customers want to pay for.

End of staff reports.

Board comment:

The Board brought up the surface water issue on Jennings Road, Boardman Wetland, and along the Trolley Trail. Customers have been approaching the Board about the issue and encouraged staff to raise the issue at the Clackamas County level as well as using the website to inform customers that Boardman was a water quality project and was not intended to solve flooding issues on Jennings Road. Staff commented we put information about the project and the flooding issue in the latest newsletter, and we will monitor activity on NextDoor and respond to customer complaints directly. Management of the site needs to occur, but we have to decide what maintenance will look like. The Board mentioned pushing the OLWS goals at the C4 level and also suggested the possibility of engineering a flooding solution.

13. Call for Public Comment
Eric Hofeld commented on the way Portland addressed the impervious area through the application of a fee per square foot of impervious area for houses and driveways. Staff and the Board discussed how the District charges for stormwater and pointed out that OLWS assigns fees for one-acre parcels, but this formula could be reassessed to account for greater impervious surface.

14. Business from the Board
Treasurer Fisher did not attend the Oak Grove Community Council because the Concord Library Task Force met the same evening, which he attended. The task force got off to an interesting start and he will report on developments as they unfold. He was not able to attend the Clackamas River Water Board meeting.

Secretary Keil attended the North Clackamas Chamber of Commerce and heard a presentation from Clackamas County on the idea of running dark fiber out to every area in the County that still needs fiber coverage. Clackamas County also discussed becoming an internet provider. They are in early stages of exploring the possibility and have yet to provide a cost analysis of the various layers the project would require.

Director Paul Gornick attended the November 28th Board meeting of the Sunrise Water Authority in which they swore in the new Zone 4 Commissioner Andy Code. Later in the meeting it was announced that the Zone 2 Commissioner had resigned his appointed position which will be filled immediately. The Board passed the consent agenda and discussed the maintenance bond requirements on public agency projects. At the recommendation of the outside auditor Sunrise will start recording the loans of money

made from their general fund for capital projects in advance of receiving SDC revenue. He presented the remainder of the items from the agenda listed his Board report.

Director Williams reported on Karen Bjorklund's speaking at the Jennings Lodge CPO meeting, during which she illustrated the drop in participation in the CPO since the development of the Evangelical Retreat Center property. She described the difficulty for the of keeping things going with little support and Director Williams challenged the younger folks to step up and start participating more. He described the County's denial of the Roethe property application for a set-back because it was out of compliance with County code (see Board packet for documentation). Discussion of priorities on the list of six to be submitted to Clackamas County and the surfacewater project went through. The agenda included presentation about livability and problem homes and a map of homes was shared (see Packet); and a presentation about turning Jennings Lodge into a hamlet, which might provide more resources to the area.

President Gibson attended C4 where the main issues are around transportation planning, with a focus on the Abernathy Bridge, tolling, and the widening of Interstate 205 around 2016 (see C4 Packet included in the Board materials). She highlighted page 10 in the packet, which describes the executive committee task of assigning roles on the executive committee and whether they will want to bring in a water or a sewer representative for the alternate seat. She would like to get a caucus of special districts and elected officials together to decide what representation they would like by March. She will volunteer to continue her service on the executive committee.

There was no further Board business.

15. Closed Regular Meeting
President Gibson ended the regular meeting at 9:17 p.m. to move into executive session.

16. Recess to Executive Session
President Gibson recessed the Board to Executive Session at 9:23 p.m. under ORS 192.660 2(f) to consider information or records that are exempt by law from public inspection and 2(h) to consult with counsel concerning the legal rights and duties of a public body with regard to current litigation or litigation likely to be filed.

The General Manager provided an overview of her intended course of action regarding a personnel issue that could potentially result in arbitration or litigation for the District.

Chris Duckworth gave an overview of the personnel issue. He explained various labor and employment law-related legal strengths and risks in the matter and gave an overview of the District's options for addressing the employee's policy violations as outlined in a memo he presented to the Board.

No decision was made during the Executive Session. The General Manager will continue to work with the District's labor and employment attorney and make an independent decision on the personnel issue. If new facts arise that cause the General Manager to reevaluate her position, the General Manager will update the Board.

17. Adjourn Executive Session Meeting
President Gibson adjourned the executive session at 10:02 p.m. with no Board actions.

18. Adjourn Regular Board Meeting
President Nancy Gibson adjourned the regular Board meeting at 10:02 p.m.

Respectfully submitted,

Nancy Gibson President, Board of Directors	Susan Keil Secretary, Board of Directors
Date: _____	Date: _____

OAK LODGE
WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Sarah Jo Chaplen, General Manager
Agenda Item:	Annual January Board Selection of Board Officers
Item No.:	4
Date:	January 15, 2019

Action Requested

Board perform its annual selection of Board Officers for the following positions: President, Secretary/ Vice-President and Treasurer.

Background

As a consolidated special district, Oak Lodge Water Services District (OLWSD) has the powers and authorities granted to both Water Districts and Sanitary Districts pursuant to ORS Chapter 264 and ORS Chapter 450, respectively. Both statues provide that Officer elections shall occur at the first business meeting in January. The Board in a motion on December 19th, 2017 identified and reaffirmed the Board Officer positions to be filled as the following: President, Secretary/ Vice-President and Treasurer.

Suggested Board Motion

"I move that the Board appoint the following Board member as President."
"I move that the Board appoint the following Board member as Secretary/ Vice-President", and
"I move that the Board appoint the following Board member as Treasurer."

OAK LODGE WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Markus Mead, Development Review Specialist
Agenda Item:	Design and Construction Standards Update
Item No.:	5
Date:	January 15, 2019

Action Requested

Board approval of Resolution 19-01 to amend The Design and Construction Standards (Standards).

History

October 2017	The Board approved Resolution 17-14 adopting the District's Design and Construction Standards.

Background

The Standards are an essential component of the District's infrastructure. They implement the District's policies and provide guidance to OLWSD staff, developers and District consultants for new utility installation, repairs, inspections and utility performance substantiation, plan document archival and processing.

Design and Construction Standard documents are routinely amended to reflect updated policies, practices, industry standards and technologies. OLSD and OLWD previously had separate "code" which included their respective Design and Construction Standards

Design and Construction Standards provide guidance on both designing and construction of sanitary sewer, surfacewater, and water. This document is separated into Divisions and Sections. Sections are guidance design-related for design engineers / applicants and staff to apply. Divisions are guidance construction-related for inspectors and contractors to follow. Sanitary sewer and water detail drawings are included.

This document is planned to be revisited with the Board annually to ensure current practices match the document text.

Overview of Proposed Amendments

Most of the proposed amendments are considered housekeeping; however, there are a few substantive items staff would like to highlight to the Board.

The proposed document includes greater detail than previous versions and will greatly increase the Districts' utility systems integrity by providing design engineers with clear standards and reducing error potential by District staff. No service fee, System Development Charge, or revenue changes are included in this document.

Highlights of the changes to the proposed Standards include:

1. 3.0024 and 4.0012 Easements: The proposed amendment requires a public utility line and easement to be extended to furthest property line when a public easement is proposed.

   The District needs the ability to require easements to extend to property lines if the District has a reasonable expectation that the line will need to be extended or accessed from another side of the property for future land development. The existing code describes the utility line placement within the easement and surface construction and access. The current regulations do not describe when a public easement is required nor the easement location or extent of the easement boundary.

2. 4.0082: Water Service Connection: This proposed amendment includes language that an existing service proposed to be deleted is to be dismantled by the owner at the owner's expense. This is an existing practice that would be codified with this amendment.

   The OLWS Board has historically requested that development be self-funded. This requirement is consistent with that principal. This proposal removes many ambiguities in language which implies OLWS will perform this work. The water utility has required this action for several years but was not in the code or supporting documents; this proposed amendment makes the requirement clearer.

3. 2.1005.03.04: Downstream Analysis Exemption: This proposed amendment provides specific objective evaluation criteria for this exemption request. The criteria were composed in conjunction with OLWSD's surfacewater consultant, Brown and Caldwell, and meets or exceeds OLWSD standards

   In the past few years, several developers have requested variances to OLWSD's downstream analysis requirement. Staff have typically approved these variance requests provided certain performance standards were met. The proposed amendment's criteria are recitations of those standards. This proposed amendment enhances efficiency by providing staff with evaluation criteria and

objective criteria for a developer/owner to address. This proposed amendment is consistent with OWLSD's supporting surfacewater management plans and operational permits.

There are six proposed criteria. They require that infiltration test results be provided, that the proposed development infiltrate to the 25-year storm event (for which the County's conveyance system is designed), that a detention-sizing tool is used (used by other MS4 co-permittees), that all the future impervious area is captured and treated, that it is not concurrent with any other waivers or variances and that no riparian area or water resource is disturbed.

4. 2.003 Water Quality Facilities: This proposed amendment clarifies if water quality facilities are required for two-lot partitions (two "child" lots created from one "parent" parcel, or one new lot created from one existing lot). This proposed amendment codifies and existing practice. Water quality is indeed required for all partitions. But water quantity (detention) is not.

   The MS4 permit's premise is to treat redevelopment and new impervious surfaces, particularly those with pollutant-producing potential such as roadways. This development type is quite common, but OLWSD's code is silent on these specific developments. It allows developers/owners/designers to anticipate the District's requirements and design development accordingly. This requirement is consistent with OWLSD's supporting Surfacewater Management Plan (SWMP) and operational permits. This proposed amendment is not a substantive change, it makes explicit an existing requirement.

5. 4.0050 Water Service Lines: This proposed amendment requires all new public water mains to be 8-inches in diameter.

   This change reconciles with feedback from the upcoming Water Master Plan and accommodates the needed fire flow. The Water Master Plan system model assumes 8-inch mains. This proposed amendment may result in some development-related water main installations to be 2-4 inches larger than needed for residential use. The most likely installation examples are peripheral development, small developments such as cul-de-sacs and developments with nearby loop connections. Thus, this does increase development costs for these developments. An anticipated cost increase range from a 4-inch installation to an 8-inch installation is 25-50%. Staff believes that this is a marginal cost and not overly burdensome. Because the requirement is embedded in the Master Plan it is consistent with the District's management plans. Having this standard be conspicuous in the code also increases the exaction transparency and girds the District's position for any challenge.

6. 2.1005.03.05 (Surfacewater) Detention Design Method: This proposed amendment increases treatment area to include public roadway area water quality treatments. The former regulations categorically excluded public roadway

for an unknown reason. This exclusion is unique to Oak Lodge among the other operational stormwater permit (MS4) permit co-permittees and brings the District into greater compliance with that permit. Applicable areas include new or altered public roadway areas and sidewalks and roadway modifications including grind/inlay road maintenance. Designing for this new surface increases the size of water quality facilities and the associated treatment area by capturing all new impervious areas. It is a substantive change requiring more infrastructure from developers and Clackamas County DTD.

The primary mechanism for water quality improvements in an urbanized area is to treat new or altered impervious surfaces. This proposed amendment makes the District more compliant with its stormwater operational permit(s) and makes it consistent with surrounding jurisdictions and agencies. The exaction value is unknown as it is variable depending on the design. An estimated range of water treatment facility cost could be 20-100% increase, again, depending on design and conditions. The requirement has been made by OLWSD for the past two years (approximately) and has been successfully and easily implemented.

7. 2.0005 OLWSD Authority Erosion Prevention / Sediment Control and 1200C: This proposed amendment adds OLWSD's new authority as a 1200CN agent for sites up to five acres.

   This proposed amendment reconciles with updated permit authority changed since the 2017 code adoption. The District has been responsible for administering the Erosion Prevention and Sedimentation Control Program for construction sites within its jurisdictional boundaries since October 1993. OLWSD currently has an erosion control ordinance and performs "small lot" review and inspections for sites less than one acre in size. In the District, an erosion control permit is required for any construction activity including soil disturbance resulting in 500 square feet or greater as described in Section 1.0031 Permit Types of the attached Design and Construction Standards. OLWSD's regulations require submittal of an erosion prevention and sediment control plan containing methods and/or interim facilities to be constructed or used concurrently with land development, clearing, construction or soil disturbance. The Program consists of two components: Plan Review and Field Inspection. The 1200CN would implement the same standards and use the existing process as the small lot permits. The workload is a minimal increase of approximately 10 sites per year and is an inconsequential quantity.

Recommendation

Staff seeks approval from the Board to approve the proposed amendments in this annual update to go into effect February 15, 2019.

Attachments

1. Design and Construction Standards (with track changes).
2. Resolution 19-01

Sample Motion

"I move to approve Resolution No. 19-01 adopting the Design and Construction Standards for the Oak Lodge Water Services District effective February 15, 2019."

DESIGN AND CONSTRUCTION STANDARDS

DESIGN AND CONSTRUCTION STANDARDS

DESIGN AND CONSTRUCTION STANDARDS

This document is intended to be updated annually. If errors are found, please cite them and submit them to Oak Lodge Water Services Technical Services Department:

Phone: (503) 654-7765

Email: permits@olwsd.org

Versions

Current: February 15 2019 adopted by Resolution Number 19- 01 February 15, 2017

OLWSD October 17, 2017 adopted by Resolution Number 17- 14 October 20, 2017 (Oak Lodge Water Services District)

OLSD March 2, 2016 adopted by Ordinance 85 March 8 2016 (Oak Lodge Sanitary District)

SECTION 1—GENERAL DESIGN AND APPLICATION SUBMITTAL REQUIREMENTS

TABLE OF CONTENTS

1.0000 General

1.0010 Authority and Purpose and Alternative Design Proposals

The District's Design and Construction Standards establish and provide specific, technical direction for the design and construction of public sanitary sewer, public water and public and private watershed protection projects. Through the adoption of these standards, the District endorses a comprehensive set of design and construction practices that are designed to deliver high quality improvements to the District's customers.

Infrastructure improvements are conditioned through the Clackamas County development review, and/or building permit, and/or plumbing permit, and/or District-specific permit process, these standards, and other District policies adopted by the District. No relevant utility or infrastructure construction shall commence prior to the District approval of the construction plans. Designs submitted shall be stamped by a Registered Professional Engineer licensed to practice by the State of Oregon.

The purpose of these Design Standards is to provide a consistent policy under which certain physical aspects of public facility design are constructed. Most of the elements contained in these standards are Infrastructure oriented and it is intended that they apply to both public improvements under District contract and public improvements under private contract designated herein.

These Design Standards cannot provide for all situations. They are intended to assist but not to substitute for competent work by design professionals. It is expected that engineers will bring to each project the best of skills from their respective disciplines.

The Design Standards are also not intended to unreasonably limit any innovative or creative effort, which could result in better quality, better cost savings, and/or better life cycles. Any proposed departure from the Design Standards will be judged, however, on the likelihood that such departure will produce a compensating or comparable result in every way adequate for the user and District's customer. Alternate materials, methods or design will be considered for approval by the District's Engineer as the need arises and conditions warrant modification. This consideration will be on a case-by-case basis and require sufficient justification prior to approval. The justification shall be submitted in writing and shall state the standard being changed and the rationale. If the proposed alternative cannot be agreed to, the owner shall submit a variance as described in the District's Rules and Regulations.

The purpose of this Chapter is to describe the permit types, common scenarios activating those permits, common permit review procedures and responsibilities. These are provided as examples and any application may vary depending on relative conditions.

1.0020 Engineering Policy

It shall be the policy of the District to require compliance with all state and federal standards for professional engineers.

All engineering plans, reports, or documents shall be prepared by a registered professional engineer, or by a subordinate employee under the engineer's direction, and shall be signed by the engineer and stamped with the engineer's seal to indicate the engineer's responsibility for them. This engineer is designated by these Standards to be the Design Engineer. Through the permit review process, it shall be the Design Engineer's responsibility to review any proposed public facility extension, modification, or other change with the District prior to engineering or proposed design work to determine any special requirements (conditions) or whether the proposal is permissible.

A "Not Approved For Construction" and/or a "Plans Approved for Construction" stamp of the District on the plans, etc., for any job, does not in any way relieve the Design Engineer of responsibility to meet all requirements of the District or obligation to protect life, health, and property of the public. The plan for any project shall be revised or supplemented at any time it is determined that the full requirements of the District have not been met.

1.0030 Applicability and Permit Types

These Design Standards shall govern all construction and upgrading of all public and privately financed public facilities in the District and applicable work within its service areas.

1.0031 Permit Types

Line Extension Permits are required to install, lengthen, enlarge, amend, repair, replace, upgrade or alter any exiting sanitary sewer main line or other portion of the public system other than a side sewer lateral. Line extensions include vertical alignment changes. Any alteration to a public main line is considered a "line extension" The County equivalent permit numbers are typically "Z….xxx" and/or "SC…..xxx" and include subdivisions, partitions, design review, site clearing and similar applications. Line extension permits are to be garnered for any relevant activity within the District Boundary and / or Service Area.

Utility Service Connection Permits are required to install new, or lengthen, enlarge, amend, repair, replace, upgrade or alter any existing sanitary sewer main line or other portion of the public system other than a sanitary sewer main line or other portion of the public system not a line extension. The County equivalent permits are "Z….xxx" and/or "SC…..xxx" and include design review, tenant improvements, site clearing, building and occupancy permits and similar applications. Utility Connection Permits are to be garnered for any relevant activity within the District Boundary and / or Service Area.

Virtual Connection: Utility service connection permits are required for virtual connections to evaluate the effluent volume and strength (see definition "virtual connection"). Virtual connections do not typically install, lengthen, enlarge, amend, repair, replace, upgrade or alter any existing sanitary sewer main line or other portion of the public system and may not have any sanitary sewer work outside the building envelope at all. The County equivalent permits are "Z….xxx and / or B…xxxx" and include design review, tenant improvements, building and occupancy permits, process changes and similar applications. Utility Connection Permits are to be garnered for any relevant activity within the District Boundary and / or Service Area.

Utility disconnection permits are required for any property(ies), existing service(s) either physical or virtual to be disconnected from the sanitary sewer system. Disconnection permits shall be required when a structure(s) is demolished wholly or may be required at the District's discretion if the structure(s) is partially demolished.

Erosion Control Permit: The District issues Erosion Control/Surface water Management Permits within its jurisdictional area. All construction activities affecting areas 500 square feet or greater within the District shall obtain an Erosion Control/Surface Water Management Permit. Construction activities affecting areas 250 square feet or greater within the undisturbed buffer, sensitive areas, or riparian areas must also obtain an Erosion Control/ Surface Water Management Permit. An Erosion Control/Surface Water Management Permit is also required to discharge to the Districts surface water system.

Water Service: See OLWSD Standards Section 4.

1.0040 Conflicting Codes, Regulations, Rules, Standards

Where these Design Standards conflict with other applicable codes, Regulation or Rule or Standard, the more restrictive code shall prevail.

1.0050 Standard Specifications

All construction design detail, workmanship, and materials shall be in accordance with the current edition of the District Standards.

1.0060 Approval of Alternate Materials Or Methods

Any substitution material or alternate method not explicitly approved herein will be considered for approval as set forth in Subsection 1.0010 (Authority and Purpose and Rules and Regulations Section 111.02 Variances and Exemptions). Persons seeking such approvals shall make an application in writing. Approval of any major deviation from these Design Standards will be in written form. Approval of minor matters will be made in writing if requested.

Any alternate must meet or exceed the minimum requirements set in these Design Standards.

The request must meet the requirements of Rules and Regulations Section 111.02 Variances and Exemptions, and the written application shall include, but is not limited to, the manufacturer's specifications and testing results, design drawings, calculations, and other pertinent information.

Any deviations or special problems shall be reviewed on a case-by-case basis and approved by the District Engineer. When requested by the District, full design calculations shall be submitted for review with the request for approval.

1.0070 Special Design Problems

Special applications not covered in these Design Standards require review and approval by the District Engineer. Submittal of full design calculations, supplemental drawings, and information will be required prior to any approval.

Such applications which may require special review and approval are among, but not limited to, the following.

Sewer Force Mains
Relining of Existing Sewers
Internal Sealing of Existing Sewers
Sewer Regulatory Devices
Sewage Pump Stations
Sewer Siphons
Sewage Treatment Plants
Sewer Flow Measurement/Monitoring Devices
Water Distribution Pump Stations
Relining of Existing Water Mains
Water Pressure Regulating Devices
Energy Dissipaters
Water Reservoirs
Water Treatment Plants
Water Flow Measurement/Monitoring/Telemetry Devices
Storm Sewer

1.0080 Revisions to Design Standards

It is anticipated that revisions to these Design Standards will be made from time to time. The date appearing on the title page is the date of the latest revision. Users should apply the latest published issue to the work contemplated.

Parenthetical notations at the end of sections indicate the most recent change to those sections. All sections without notations are from the original Design Standards as adopted. Some sections may be changed more than once and it shall be the user's responsibility to maintain their copy of these Design Standards with the latest changes.

1.0090 Definitions and Abbreviations

AASHTO
American Association of State Highway and Transportation Officials.

Approved backflow prevention device
A backflow prevention device that has been investigated and approved by the Oregon State Health Division.

As-built plans
Plans signed and dated by the Design Engineer indicating that the plans have been reviewed and revised, if necessary, to accurately show all as-built construction details.

Back Siphonage
Backflow that results from negative pressure (partial vacuum) in the supply piping system.

Backflow
The reverse of flow from its normal or intended direction of flow. Backflow can be caused by back pressure or back siphonage.

Backflow preventer
An approved device or means to prevent backflow into the potable water system.

Building service lateral / sewer lateral
See Rules and Regulations definitions “sewer lateral”

Building sewer
See Rules and Regulations definitions “building sewer”

Building supply
See Rules and Regulations definitions “service line”.

CBE
Crushed based equivalent (CBE) is the number that directly relates the traffic coefficient to the number of inches of rock.

Collection systems
Facilities maintained by the District for the purposes of collecting, pumping, conveying, and controlling of wastewater.

Core
To cut and remove a portion of pipe with a circular hollow drill.

Cross-connection
Any actual or potential physical connection between a potable waterline and any pipe or vessel containing a nonpotable or potable (e.g., well) fluid (suspended solid or gas) so that it is possible to introduce the nonpotable fluid into the potable fluid by backflow.

Curb
The concrete structure indicating the edge of the vehicular roadway within the overall right-of-way.

Cut sheets
Sheets of tabulated data, indicating stationings, structures, fittings, angle points, beginning of curve, points on curve, end of curves, storm drain slope, staking offset, various elevations, offset cuts, and storm drain depths for streets, waterlines, sanitary sewers, and storm drains.

Datum
The vertical elevation control.

Dedication
The legal conveyance of land, typically from a private property owner to the District.

Definition of words
That, whenever, in these Standards, the words "directed", "required", "permitted", "ordered", "designated," or words of like importance are used, they shall be understood to mean the direction, requirement, permission, or order of designation of the District Engineer. Similarly, the words "approved", "acceptable", or "satisfactory", shall mean approved by, acceptable to, or satisfactory to the District Engineer.

Design Engineer
The engineer, licensed by the State of Oregon as a Professional Engineer under whose direction plans, profiles, and details for the work are prepared and submitted to the District for review and approval, or who is in charge of and responsible for construction of the improvement.

Detention
The holding of runoff for a designed period of time and then releasing it to the natural water course.

Development
See Rules and Regulations definitions “development”

Domestic sewage
The liquid and water-borne waste derived from ordinary living processes, free from industrial wastes, and of such character to permit satisfactory disposal without special treatment into the public sewer or by means of a private sewage disposal system.

Double check detector check valve assembly
A line-sized, approved, double check valve assembly with a parallel meter and meter-sized, approved, double check valve assembly. The purpose of this assembly is to provide backflow protection for the distribution system and, at the same time, provide a metering of the fire system showing any system leakage or unauthorized use of water.

Double check valve assembly
An assembly composed of 2 single, independently acting, approved check valves, including tightly closing shutoff valves located at each end of the assembly and fitted with properly located test cocks.

Drainage facilities
Pipes, ditches, detention basins, creeks, culvert bridges, etc., used singularly or in combination with each other for the purpose of conveying or storing storm water runoff.

Easement
Areas located outside of dedicated rights-of-way, which are granted to the District for special uses.

(Private) Easement
An area on a parcel that benefits other parcel(s) by granting special uses.

Erosion control, post construction
The re-establishment of groundcover or landscaping prior to the removal of temporary erosion control measures.

Erosion prevention and sediment control
Measures that are required for construction sites where the ground surface will be disturbed with clearing, grading, fills, excavations, and other construction activities, in order to prevent and/or control eroded material and sediment from leaving the construction site and entering the public storm system and/or a water quality resource area.

Erosion, visible or measurable
Includes, but is not limited to: deposits of mud, dirt, sediment, or similar material, exceeding ½ cubic foot in volume on public or private streets, adjacent property, or into the storm and surface water system, either by direct deposit, dropping discharge, or as a result of the action of erosion.

Fire hydrant assembly
The fire hydrant and attached auxiliary valve from a water main to a hydrant.

Fire protection service
A metered connection to the public water main intended only for the extinguishment of fires and the flushing necessary for its proper maintenance.

Flood or flooding
A general and temporary condition of partial or complete inundation or normally dry land areas from the overflow of inland or tidal waters, and/or the unusual and rapid accumulation of runoff of surface waters from any source.

Grade
The degree of inclination of a road or hillside.

Impervious areas
Those hard surface areas located upon real property which either prevent or retard saturation of water into the land surface and cause water to run off the land surface in greater quantities or at an increased rate of flow from that present under natural conditions preexistent to development.

Industrial waste
Solid, liquid, or gaseous waste resulting from any industrial, manufacturing, trade, or business process due to development, recovery, or processing of natural resources.

Interceptor sewer
The primary public sanitary sewer which conveys wastewater directly into the wastewater treatment plant.

Irrigation service
A metered connection intended for seasonal use and delivering water, which is not discharged to the sanitary sewer.

Lateral sewer
See Rules and Regulations definitions “sewer lateral”.

Longitudinal joint
A joint which follows a course approximately parallel to the centerline of the roadway.

Manager
See Rules and Regulations definitions “administrator”.

Natural drainageway
A natural depression which collects drainage of surface water. It may be permanently or temporarily inundated.

Natural grade
The grade of the land in an undisturbed state.

Natural resource
A functioning natural system such as a wetland or stream.

Natural resource area
The land containing the natural resources to be protected.

On-site detention
The storage of excess runoff on a development site prior to its entry into a public storm drain system. Stored runoff is gradually released after the peak of the runoff has passed.

Owner
The owner of record of real property as shown on the latest tax rolls or deed records of the county or a person who furnishes evidence that they are purchasing a parcel of property under a written recorded land sale contract.

Peak runoff
The maximum water runoff rate (cfs) determined for the design storm.

Person
Individual firm, corporation, association, agency, or other entity.

Plans
Construction plans, including system plans, sewer plans, and profiles, cross sections, detailed drawings, etc., or reproductions thereof, approved or to be approved by the DistrictEngineer, which show the location, character, dimensions, and details for the work to be done, and which constitute a supplement to these standards.

Potable water
Water which is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the health authority having jurisdiction.

Private collection system
A privately owned and maintained lateral sewer system installed to serve multiunit structures on single ownership properties which cannot legally be further divided.

Private storm drain
A storm drain located on private property serving one or more structures or inlets and is not owned or maintained by the District.

Public sanitary sewer
Sanitary main in public right-of-way or easement operated and maintained by the Districtfor carrying sewage and industrial wastes.

Public storm drain
Any storm sewer in public right-of-way or easement operated and maintained by the District.

Release rate
The controlled rate of release of drainage, storm, and runoff water from property, storage pond, runoff detention pond, or other facility during and following a storm event.

Right-of-way
All land or interest therein which (by deed, conveyance, agreement, easement, dedication, usage, or process of law) is reserved for or dedicated to the use of the public for sidewalk, utility, and/or roadway purposes.

Roadway
All of that portion of the right-of-way used or to be used for vehicle movement which exists between the curbs, proposed curb lines, or edges of pavement.

Sedimentation
Deposition of debris and soil.

Sewage
Water-carried wastes from residences, business buildings, institutions, and industrial establishments, except industrial wastes.

Sewer Main
The portion of the public sewerage system which is primarily installed to receive wastewater directly from individual residences and other individual public or private structures.

Silt
Fine textured soil particles, including clay and sand, as differentiated from coarse particles of sand and gravel.

Siltation
Deposition of (silt) fine textured waterborne sedimentation.

Standard drawings
The drawings of structures or devices commonly used on public improvements and referred to on construction plans contained in the OLWSD Design and Construction Standards.

Structures
Those structures designated on the standard plans such as catch basins, manholes, etc.

Transverse joint
A joint, which follows a course approximately perpendicular to the centerline of the roadway.

Trunk sewer
(Interceptor) A sanitary sewer which is primarily intended to receive wastewater from a collector sewer, another trunk sewer, an existing major discharge of raw or inadequately treated wastewater, or water pollution control facility.

Uniform Plumbing Code
The Uniform Plumbing Code adopted by the International Association of Plumbing and Mechanical Officials (current edition), as revised by the State of Oregon, called the "Oregon State Plumbing Specialty Code".

Wastewater
The total fluid flow in the sanitary sewerage system which includes industrial waste, sewage, or any other waste (including that which may be combined with any ground water, surface water, or storm water) that may be discharged into the sanitary sewerage system.

Water distribution system
Water pipelines, pumping stations, reservoirs, valves, and ancillary equipment used to transmit water from a supply source through a service meter.

Water main
A water supply pipe for public use.

Water service line
The pipe connection from the District water main to the users' water meter, hydrant, backflow prevention device, or fire sprinkler double check valve.

Virtual Connection
A change in “service class” or occupancy or operational change which results in an increase in wastewater volume, strength or load using the existing sewer lateral or service line. Typically, these are tenant improvements or accessory dwelling units, but could also be commercial/industrial process changes.

1.1000 CONSTRUCTION PLANS

1.1010 General Information

Prior to any construction work and plan approval, complete construction plans, specifications and all other necessary submittals shall be submitted to the District Engineer for review. Submittal requirements consist of design plans (where required), drainage calculations, and other information as necessary. Conditions of approval from the Development Plan Review process, or as specified by the District, the Planning Commission, Hearings Officer or the Planning Director shall be shown on the design plans.

1.1020 Plan Preparation

Construction plans and specifications shall be prepared by a professional engineer licensed by the State of Oregon, as specified in Subsections 1.1020 (Plan Preparation) and 1.1030 (Required Sheets).

Typical permit submittal items include:

- Complete OLWSD Plan Review Application Form
- Preliminary Site Plan: A site plan containing proposed sanitary sewer and / or surfacewater facilities.
- Details
- Profile plans
- Fee
- Drainage Fixture schedule
- Statement of occupancy(ies) for any and all relevant structures with sanitary sewer connection.
- Note, all submitted Site plans, grading plans, storm drainage plans, and associated calculations must be stamped and signed by a professional engineer licensed by the State of Oregon and meet the standards of the District.
- Engineer's statement (calculation) of disturbed area.
- Engineer cost estimate of sanitary sewer / surfacewater facilities including installation
- Downstream analysis.
- Preliminary and final plat
- Utility maintenance agreement(s)
- Geotechnical Report / Soil Report / Infiltration Analysis (from a professional geotechnical engineer or geologist).
- Storm Report
- Erosion Prevention / Sediment Control plan and details and narrative
- Performance bond
- Warranty bond
- DEQ Approval letter
- As-builts for any site work.

1.1021 Sheet Size

All construction plans shall be clearly and legibly drawn in ink "D"- size sheets. Sheets shall have a 1½-inch clear margin on the left edge and a ½-inch margin on all other edges.

1.1022 Scale of Plans

The following are applicable to engineering drawings for plan review and asbuilts.

When plans are prepared for developer financed projects, the scale of drawings shall be as follows. Horizontal scales shall be 1" = ~~10', 20', 30',~~ 40', or 50', vertical scales shall be 1" = 2', 4', 5', or 10'. For subdivision plans it is preferred that all plan views and profile views of the plan set are drawn at a common scale, if more than one scale is necessary, the difference should be large enough to be

noticeable (e.g. 1” = 20’ & 1” = 50’). When a scale is used which is smaller than 1” = 20’ (e.g. 1” = 40’) intersection details showing fittings and valves shall be provided at a larger scale. Architectural scales (e.g., ¼" = 1'0") are not permitted unless approved. Letter size shall not be smaller than 0.10 inch. Sheets shall contain a maximum of one plan view and one profile per sheet. The stations must align on the plan view and profile view and of a corresponding scale. The sheet coverage ratio should be no less than 60% plan view and 40% profile.

1.1030 Required Sheets

Construction plan submittals shall contain the following minimum sheets: title sheet (unless not required by the District Engineer) plan and profile sheet(s), and detail sheet(s). A title block shall appear on each sheet of the plan set and shall be placed on the lower right-hand corner of the sheet, across the bottom edge of the sheet or across the right-hand edge of the sheet. The title block shall include the names of the project, the engineering firm, the owner, the sheet title, and page number.

The seal and signature of the Design Engineer responsible for preparation of the plans shall appear on each sheet as well as the Design Engineer’s phone number.
The description and date of all revisions to the plans shall be shown on each sheet affected, and shall be approved and dated by the Design Engineer as evidenced by signature or initial.

1.1031 Title Sheet

All subdivision projects and multiple sheet improvement projects shall have a title sheet as the first page of the construction plans. This sheet shall contain the following minimum information.

1. Site plan of entire project with street right-of-way and/or subdivision layout at a 1" = 100' scale. A 1" = 200' scale may be used if project size is too large. The site plan shall also be a composite utility plan showing all properties served by proposed sewer, water, and storm facilities, in addition to the proposed facility.
2. Vicinity map at a 1" = 1000' scale or greater. Map shall show the location of the project in respect to the nearest major street intersection.
3. Index of sheets.
4. Complete legend of symbols used.
5. General and construction notes pertinent to project, space permitting. If space does not permit a separate note page shall be used.
6. Temporary and/or permanent benchmarks used along with their descriptions, elevations of benchmark, and datum.
7. Design Engineer's name, address, phone number, and seal.
8. Developer's/owner's name, address, and phone number for public improvements with private financing.
9. Statement referencing District Infrastructure Design and Construction Specifications.
10. Provide contact phone number for all affected utility companies.
11. Show tax lot numbers or lot and block designations.
12. Conditions of approval.

All plans shall contain revision dates in the title block.

1.1032 Plan Sheet

The plan view of each sheet shall be drawn at the appropriate scale showing the following minimum information.

1. Adjacent street curbs, property lines, right-of-way lines, utility easements referenced to property lines, street centerlines, and intersections. Show property corner and curb elevations to determine water service level, serviceability of lot/property for sanitary sewer, points of disposal for building storm drains, and how new curbs will join to existing curbs.
2. Location of all underground utilities within 100 feet of project (if they are affected by the project), existing power/telephone poles and guy anchors, valves, manholes, catch basins, fire hydrants, meter boxes and vaults, signs, etc.
3. Location of all water courses, railroad crossings, culverts, bridges, large water transmission pipes and gravity sewers, and/or storm drains within 200 feet of proposed gravity sewer and storm drain extensions if they affect the design of the project. All water courses shall show the 100-year flood plain as indicated on the U.S. Army Corps of Engineers and Federal Emergency Management Agency (FEMA) maps.
4. On sewer and storm drain plans, each manhole, catch basin, and cleanout shall be numbered and stationed. Stationing shall tie to existing street monuments, property corners, or manholes. Each separate line shall be separately designated (e.g., sewer line 'A', storm line 'A', etc.).
5. On street plans, horizontal stationing shall show points of tangency and curvature for centerline; curve data shall show tangent length, radius distance, centerline curve length, and delta angle. Centerline intersection stationing, in both directions, shall be shown.
6. Where streets are being widened, edge of pavement elevations shall be shown to determine pavement cross-slope to new curb or pavement edge.
7. On water plans, show all fittings and valves and identify by type (e.g., MJ x MJ, FLG x MJ, etc.); fire hydrants; intersection details for valves and fittings ~~(required when scale of plans is smaller than 1" = 20', e.g., 1" = 40').~~
8. On all plans, show stub-outs and block-outs for future developments.
9. All utilities and associated lines, appurtenances and fittings, and associated callouts and notes must be colored to their utility locate color. For example, sanitary sewer = green, potable water = blue, and pink for stormsewer and surfacewater.
10. All infiltrator locations and facilities or structures shall be shown on plans.
11. All corrections to plan review comments must be identifiable by being "clouded" or otherwise "called out" on the plans.
12. ~~9.~~ All revisions must be labeled with the revision number and associated drawing date.

1.1033 Profile Sheet

Profiles for construction plans shall be the same horizontal scale as the plan sheet. Where profiles are drawn on the same sheet as the plan view, the profile shall be immediately below the plan view. The following minimum information shall be shown.

1. For sewers and storm drains, show locations of manholes, catch basins, and cleanouts, with each numbered and stationed as indicated in Subsection 1.1032 (Plan Sheet) item 4.
2. Existing profile at centerline of proposed utility or street. Profiles at the right-of-way lines will be required if grade differences are significant.

3. Proposed profile grade, as appropriate, for all sewers, storm drains, and waterlines, giving pipe size, length between structures or fittings, slope, backfill and pipe material, sewer inverts, rim elevations, etc. Extension of the profile of streets for future extensions (stub streets) will be extended at least 200 feet for local streets or as required by the District Engineer.
4. Existing underground utilities that cross the alignment of the proposed facility.
5. Beginning of all vertical curves, points of vertical intersection, end of vertical curve, low point of sag curve, and length of vertical curve. Profiles of existing centerline grade shall extend a minimum of 250 feet beyond the end of the improvement.
6. Clearly show all potential conflicts with existing public and private utilities (i.e., pipes, conduits, vaults, cathodic protection systems, etc.) that impact proposed design.
7. Profiles for ditch and creek flowlines shall extend a minimum of 200 feet beyond the project, both upstream and downstream. Typical cross sections at 50-foot intervals shall also be submitted.

SPECIAL NOTE: District as-builts are only to be used as an aid to the engineer. When a potential conflict may occur, the Design Engineer shall field locate, or cause to be located, and verify the alignment, depth, and inverts of all existing facilities shown on the plans that will be crossed by the proposed facility.

1.1034 Detail Sheets

Detailed drawings shall be included with all construction plans where District standard drawings do not exist. If a standard drawing, such as sewer manholes, must be modified to fit existing or unique conditions, the modified drawing shall be shown on the plans. When appropriate, due to required detail complexity, a separate detail sheet shall be drawn. When District standard drawing appurtenances or construction installations are to be used, a reference to the specific standard drawing number shall be made on the title sheet.

1.1040 Supporting Information

The Design Engineer shall submit sufficient supporting information to justify the proposed design. Such information shall include, but not be limited to, the following:

1. Design calculations.
2. Hydrology and hydraulic calculations with basin maps.
3. Alternate materials specifications including manufacturer's design application recommendation.
4. Grading plan support information to include as appropriate.
    a. Soils classification report
    b. Hydrology report
    c. Geotechnical engineer’s report

1.1041 Facility Plan

When designing sanitary or storm sewer facilities, a facility plan shall be submitted with the construction plans when required by the District Engineer. This plan shall be used to identify and analyze the proposed extension of facilities. The topographic plan shall show all upstream and tributary areas within no less than 200 feet of the proposed development.

The plan shall include existing contours at 2-foot intervals, or as approved by the District, including location of existing structures and public and private utilities.

1.1042 Erosion Control Plan

The erosion control plan shall address the measures as required by the Erosion Prevention and Sediment Control Plans, Technical Guidance Handbook (ECTGH) (Clackamas County Department of Utilities, 2001). Construction projects beginning prior to May 1 or those projects anticipating construction activity between November 1 and April 30 will be required to submit a plan addressing "wet weather" measures as outlined in the ECTGH. Construction activity is assumed as "active" until all permanent vegetation and/or erosion protection is established.

The plan shall include existing contours at 2-foot intervals, or as approved by the District, including location of erosion control facilities (i.e., silt fence, straw mulch, sediment ponds, etc.); outlet structures (i.e., catch basins, culverts, creeks, etc.); and existing public and private utilities.

1.1043 Information Required on Erosion Control Drawings

The following items must be depicted on ESCP drawings, as applicable:

a. Total property boundary including surface area of the development.

b. Areas of soil disturbance (including, but not limited to, showing cut and fill areas and pre-and post-development elevation contours);

c. Drainage patterns before and after finish grading;

d. Discharge points;

e. Areas used for the storage of soils or wastes;

f. Areas where vegetative practices are to be implemented;

g. All erosion and sediment control measures or structures;

h. Identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover) and other plantings.

i. Critical riparian areas, sensitive preserved vegetative areas, including trees and their root zones.

j. Runoff controls to minimize erosion and scour. BMPs such as, diversion, slope drains, diversion dikes, check dams and drainage swales.

k. Stabilized site entrances and access roads including, but not limited to construction entrances, roadways and equipment parking areas (for example, using geotextile fabric underlay).

l. Perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers.

m. Stockpile management, including dust control and location.

n. Concrete truck and other concrete equipment washout areas.

o. Impervious structures after construction is completed (including buildings, roads, parking lots and outdoor storage areas);

p. Springs, wetlands and other surface waters on site or adjacent to the site;

q. Temporary and permanent stormwater conveyance systems;

r. Onsite water disposal locations (for example, for dewatering);

s. Storm drain catch basins depicting inlet protection, and a description of the type of catch basins used (for example, field inlet, curb inlet, grated drain and combination);

t. Septic drain fields;

u. Existing or proposed drywells or other UICs;

v. Drinking water wells on site or adjacent to the site

w. Planters;

x. Sediment and erosion controls including installation techniques;

y. Natural buffer zones and any associated BMPs for all areas within 50 feet of a waters of the state;

z. Detention ponds, storm drain piping, inflow and outflow details.

Narrative Site Description: Describe the nature of the construction activity and the final use of the site, that is what will the site be used for at the completion of the construction. The narrative shall also contain the following:

Water Quality Requirements for TMDL and 303(d) Listed Waterbodies. If there is a potential for discharge of stormwater to directly discharge or discharge through a conveyance system to a portion of a waterbody that is listed for turbidity or sedimentation or that has an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity from the construction site, then one or more of the BMPs listed below must be implemented. Identify the selected BMP(s) in the ESCP as one that addresses this condition of the permit, and provide the rationale for choosing the selected BMP(s). The 303(d) list can be found at: the Oregon DEQ website. Search under Category 5 (303(d)) and Category 4a (TMDL approved). If none, state "no water quality requirements." On the narrative.

Inspector Qualification Information: Provide the following information on the Erosion and Sediment Control Inspector. This is a person that works for the applicant and not a government employee. The consultant, general contractor, project manager, or person who prepared the ESCP may be designated with their agreement as the initial or final ESC Inspector. Upon designating an inspector(s), submit to OLWSD their name(s), and contact information including the following:

- Any Erosion Control Certification Information (E.g. CESCL, CPESC or equivalent)
- Application Date:
- Project Name:
- Plan Prepared By:
- Company Name:
- E-mail Address:
- Emergency Phone Number

Natural Buffer Zone
If a "waters of the state" is within the project site or within 50 feet of the project boundary, and a natural buffer exists within 50 feet of the water of the state, the ESCP must delineate and protect this area with orange fencing or flagging and maintain existing buffer until completion of project. All discharge must be filtered prior to entering the natural buffer to avoid sediment build up. If scour is an issue, an energy dissipater may need to be installed.

Natural Buffer means, for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the natural vegetation, exposed rock, and barren ground that existed prior to commencement of earth-disturbing activities.

If project will reduce natural buffer zone under 50 feet of waters of the state, the ESCP must include one or more of the following BMPs to control and treat sediment and turbidity:

- Compost berms, compost blankets, or compost socks;
- Erosion control mats;

- Tackifiers used in combination with perimeter sediment control BMPs;
- Water treatment by electro-coagulation, flocculation, filtration; or
- Other substantially equivalent sediment or turbidity BMP approved by DEQ or Agent

If no natural buffer zone(s) will be affected by the project, on the narrative state the following: “no natural buffer zone impacts will be realized by the proposal.”

Additional Information: The District may also require the applicant to provide additional information as indicated in these Standards or the Rules and Regulations.

1.1050 Plan Submittal and Review Procedures

For utility or erosion control permit review, the property owner shall make a relevant application to the District. This submittal is separate from the Clackamas County or other Agency or District submittal. Other agencies such as Clackamas County do not provide application materials to OLWSD. The applicant or property owner must submit to OLWSD separately.

Construction plans for all privately financed Infrastructure facility improvements shall be submitted to the District Engineer. The District Engineer will coordinate the plan review and approval of all construction plans which will include review for compliance with all District Infrastructure Standard Construction Specifications, rules, and the project conditions of approval.

All plan submittals shall include information required in Subsection 1.1040 (Supporting Information) along with all other information requested by the District Engineer. This information is to include, but not be limited to, construction cost estimates, easement documents, right-of-way dedications, executed agreements, and a plan check and inspection fee. All submittals will be reviewed for completeness and the Design Engineer notified if required information is missing. Submittals should be made in a timely manner as lack of information to the District may impede the review process.

Three (3) sets of completed construction plans shall be submitted for the review. A complete construction cost estimate will be submitted for review and determining review fees. Once the plans are deemed complete, a detailed review will begin on a “first-in, first-out” basis. If the submittal is not complete, notification will be given by the District to the Design Engineer specifying information needed.

Upon completion of the detailed review, the District will notify the Design Engineer, by way of letter, any revisions or “Red-line comments” the District may have. The Design Engineer will revise the plans, addressing all items in the District’s letter, and return three (3) sets of revised plans to the District for approval.

1.1060 As-Built Plan Requirements

For all Infrastructure facility improvements, the Design Engineer shall submit certified As-built drawings for all plans, which were approved for construction and a copy of the recorded plat. One set of As-built drawings shall be submitted for preliminary review. If the first submittal is not acceptable, the District Engineer will notify the Design Engineer of information needed for resubmittal.

As-built drawings and plat drawings shall meet the requirements of Subsections 1.1020 (Plan Preparation), 1.1030 (Required Streets), and 1.1060 (As-Built Plan Requirements) and shall be of archival quality. At a minimum, one (1) hard copy shall be submitted and one (1) electronic copy shall be submitted in PDF file format and one (1) copy of drafting software such as .DWG shall be submitted on disc (with no sticker or attachment to the disc), a USB drive or email. As-built drawings shall include all field changes.

The Design Engineer shall submit, along with the As-built drawings, a statement certifying that all work for which plans were approved has been completed in accordance with the OLWSD Design and Construction Standard Specifications.

The words "as-built drawing" shall appear as the last entry in the revision block along with the month, day, and year the as-built drawing was prepared.

NOTE: Actual location and depth from finish grade of any other utilities encountered during construction shall be shown and noted on both plan and profile of the as-built plans.

1.1061 Storm Drains

The following minimum information shall be noted on storm drain as-built drawings.

- Station of wye or tee into main line. Tie end of branch line to nearest property corner at right-of-way line and distance back from the face of curb.
- Alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a manhole.
- Other change altering the approved plans.
- Other items as determined by the District.

1.1062 Sanitary Sewer

The following minimum information shall be noted on sanitary sewer as-built drawings.

1. Station of wye or tee into main line. Tie end of service lateral to nearest property corner at right-of-way line and distance back from the face of curb.
2. Depth at the end of service lateral measured from existing ground to invert of pipe. When required by the District Engineer, invert elevations shall be noted.
3. Length of service lateral measured from centerline of sewer main to end of pipe.
4. Alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a manhole.
5. Other changes altering the approved plans.
6. Provide complete test results to the District Engineer.
7. Type of pipe, backfill material and location.
8. All rim and invert elevations on manholes, catch basins, and clean outs.
9. Other items as determined by the District.

1.1063 Water Main

The following minimum information shall be noted on water main as-built drawings.

1. Station and/or property line/corner to valves (not at standard location), all fittings, blow-offs, and dead-ended lines.
2. All changes from standard 36-inch depth cover. Limits shall be shown on plan with annotated reason for change. Actual pipe elevation (top of pipe) will be taken at every fitting.
3. Show alignment changes, grade changes, and changes in construction materials. If changed alignment results in station changes, a station equation shall be shown as appropriate at a valve.
4. Identify types of fittings (i.e., MJ x MJ, FLG x MJ, etc.); provide information in the form of an inventory list on construction drawings.
5. Other change altering the approved plans.
6. Provide design calculations and complete test results to the District Engineer.

7. Actual location and depth, from finish grade of street, of any other utilities encountered during construction.

8. Other items as determined by the District.

1.1064 Plan Quality and Miscellaneous Requirements

All submitted items shall be in both hard copy as described in this Section and as electronic documents in PDF format. Plan sheets shall be collated into one single file. Multiple individual sheets will not be accepted. OLWSD and other relevant details, notes and conditions shall be contained on the plan(s). Digital plans shall be vector-based, produced directly from drafting software such as AutoCAD. Scanned documents will be accepted only with prior approval and shall be at 360dpi minimum resolution.

If plans contain excessive linework, layers, have callouts that interfere with interpretation or are otherwise difficult to read, OLWSD shall at its discretion, reject the plans. Any incomplete or rejected submittal shall count as a submittal for inclusion in the review fee order.

Each submittal shall contain responses to the relevant previous comments and/or conditions of approval as satisfied by the plans or submittal as a narrative in a “findings” format. The initial submittal narrative shall contain the land use decision conditions of approval with OLWSD-related items responded to and successive submittals shall contain response(s) to the relevant comments from previous review(s).

Redlines are to be performed by the applicant or owner and shall be performed on all plan copies and shall be incorporated onto the final approved drawing set. Following engineering approval, three sets of final plans and one PDF shall be submitted to OLWSD.

The applicant or owner coordinates with Clackamas County to establish a pre-construction meeting. The applicant shall coordinate with OLWSD to attend this meeting. If OLWSD is unable to do so, OLWSD shall require an individual pre-construction meeting on-site or at the OLWSD office.

Engineering review fees include one engineering review, one revision and plat review for a partition or subdivision. Engineering review fees for design reviews with no plat include one review and two revisions. Additional reviews are paid for with additional fees. Additional reviews are, for fee purposes, considered as new submittals and full review fees are charged.

1.1065 Permit and Approval Vesting and Amendments

All OLWSD permits are valid for six months with an automatic six-month extension upon confirmation from the owner or applicant. Following the extension or non-response from the owner or applicant, a new permit shall be garnered by the owner and be subject to all relevant fees and/or regulations. Upon the date the District deems the application to the District to be complete, the application shall be vested with those current rules, regulations standards and other requirements being current at the date deemed complete. Other agency or jurisdictional approvals do not apply. The following are the vesting time ranges per OLWSD permit. In the following the shortest time period applies if there are multiple permits referenced. Permit vesting shall consider section 1.1067 Permit Amendments in this Chapter.

1.1066 Permit Amendments

Should conditions or plans change from the original or approved conditions, the owner shall immediately apply for and obtain from the District an amendment to the permit prior to conducting any further work other than or different from that approved in the original permit. This includes submittal of updated permit application materials, and payment of amendment charges prior to the start of construction activities or other as determined by the General Manager. Permit amendments would not extend the vesting timeline.

1.1067 Permit Required

A permit is required prior to work commencement. Failure to acquire permit(s) equate to a violation of the Rules and Regulations and Standards. An individual service connection permit and lateral shall be required for each individual house, dwelling, building or other structure or connection (physical or virtual) requiring sanitary sewage disposal. No installer shall install a sewer connection(s) in public rights-of-way or public easements not covered by the District's issued permit. The issuance of a permit by the District will not relieve the permit holder from the responsibility of obtaining such other permits or licenses as may be required by other governmental agencies. Multiple multi-family residential connections to a single service lateral are allowed only if the units are on the same taxlot. Multiple non-residential connections to a single service lateral are allowed only if the units are in a contiguous structure.

1.1068 Disconnections

Property owners may voluntarily disconnect from the sanitary sewer system. Disconnections shall prevent debris, inflow and other undesired substances into the public sanitary sewer system. The service lateral shall be capped at the property line or edge of public easement and inspected by OLWSD. Main lines may be required to be capped (plugged) at the District's discretion.

1.1069 Replacement Service Lateral Installations

If new service lateral alignment is proposed, the existing lateral shall be removed at main, plugged with a Cherne Plug, and inspected by OLWSD prior to burial. The existing lateral shall be grouted at both the upstream and downstream ends.

If the existing lateral alignment is used, a new side sewer lateral shall be installed. The lateral shall conform to current District standards and requirements. Replacing laterals may be performed by pipe bursting or trenching.

1.1070 Building Sewer Repair

OLWSD's purview is the public sanitary sewer system. Only the Clackamas County Building Official shall permit and / or inspect sewer plumbing on private property (notwithstanding public easements).

1.1071 Connection to Cesspools And Septic Tanks

Direct connection from all plumbing fixtures in the structure(s) to the sanitary sewer system is required. Any connections to a cesspool, septic tank ~~or kitchen grease trap~~ shall be removed and proper connection directly made to the public sewer system. Cesspools and septic tanks shall be abandoned in accordance with Clackamas County and Oregon Department of Environmental Quality requirements.

1.1072 Sanitary Sewer Backflow

The District reserves the right to require backwater valves to be installed on sanitary sewer laterals whenever conditions warrant at the District's discretion. Typically, conditions involve flood-related locations or high-water tables.

1.1073 Ownership and Acceptance And Bonding

Performance and Warranty Bond: See Rules and Regulations 205.50.01. This bond is separate from any other agencies bond such as Clackamas County. The owner shall submit a separate bond document to OLWSD not combined with any other agencies.

Prior to commencement of construction, the owner shall submit a combined performance and warranty bond to the District. The bond or deposit shall be in the amount of 100% of sanitary, surfacewater (private) and public water work to be performed. The performance bond shall automatically transform into

a warranty bond upon completion of the improvement and the approval and acceptance thereof by the District. At that time, the applicant shall execute and deliver to the District a bill of sale or other document in form approved by the District transferring all right and title to the sewer main extension to the District, and a statement of value of the work completed. The warranty portion of the bond shall guarantee the associated infrastructure against any defects of labor and material for a period of one year from the date of acceptance by the District. Upon acceptance by the District of the infrastructure and the security for the one-year guarantee, the relevant infrastructure shall be incorporated in the District's system and be a part thereof and shall be maintained by the District, subject to the guarantee requirement for the first year.

1.1074 Inspections and Authority

Engineering Review / Line Extension: OLWSD inspects public main lines, side sewer laterals and all fittings, manholes, cleanouts and any other facility(ies) in the public right-of-way or easement. These utilities are installed by the owner. OLWSD inspects the pipe zone within six (6) inches surrounding the main line and / or side sewer lateral or other facilities including backfill, bedding, concrete and associated installation. Clackamas County generally inspects all other backfill and compaction and road surfaces.

Engineering Review / Surfacewater facilities on private property (outside the public right-of-way): OLWSD inspects any water quality facility including swales, rain gardens or other pollution control device such as mechanical filter. OLWSD also inspects stormwater detention and/or retention facilities including swales, rain gardens or other pollution control device such as mechanical pipes.

Clackamas County inspects the following:

- all plumbing on private property for sanitary sewer and storm sewer and
- rain drains and stormwtater infrastructure in the public right-of-way.

Utility Connection Permits / Sanitary Sewer: OLWSD inspects public main lines, side sewer laterals and all fittings, manholes, cleanouts and any other facility(ies) in the public right-of-way or easement.

Utility Connection Permits / Water: OLWSD inspects public main lines, side sewer laterals and all fittings, manholes, cleanouts and any other facility(ies) in the public right-of-way or easement. These utilities are installed by the District.

Design Review and Utility Connection Permits and Other Applicable / Erosion Prevention / Sediment Control: OLWSD inspects all applicable sites and associated erosion prevention / sediment control and pollution control measures. These measures are installed by the owner.

1.1075 Inspection Request

The District requires a twenty-four hour notice of inspection request which must be made either in person or via personal phone conversation as prescribed by the District. All relevant installations are to be inspected before their completion and while the installation and connections are still uncovered.

1.1076 Installation Without Inspection

In the event an excavation is backfilled without an inspection first being completed by the District, then the owner shall cause the pipe to be exposed for the required inspection. All costs incurred in excavating a line for inspection shall be borne by the owner.

1.1078 CHARGES FOR ADDITIONAL INSPECTIONS

Excess Inspection Fee (see Fee Schedule) shall apply as follows:

Where the pipe is laid and back-filled and/or connection of the building and/or side sewer made to the sanitary sewer system of the District without prior inspection and approval thereof by an inspector of the District, or the District's delegee.

For each re-inspection and/or retesting of the pipe to be made because of the failure of the installer to comply with the ordinances, rules and regulations of the District and the Oregon State Plumbing Specialty Code and/or failure of the pipe to meet the minimum leakage requirements set by the District upon testing thereof.

Should the owner wish an inspection outside of the regular working hours (7:30 am to 3:30 pm Monday through Friday) of the District, the applicant must apply to the District twenty-four hours in advance and make a deposit of triple the Excess Inspection Fee.

1.1079 Construction Quality

If any work done under a permit granted by the District is not in accordance with the provisions of this code, and if the installer doing the work shall refuse to construct properly and complete such work, notice of such failure or refusal shall be given to the installer stating the nature of the violation and providing a reasonable time for corrections thereof. The installer shall, within the period of time stated in such notice, correct and complete the work. In the event the work is not so corrected and completed within the stated time, the District may cause said work to be completed if, in its opinion, the failure constitutes a hazard to safety or health, and the cost of such work and any materials necessary therefore shall be charged to the installer and shall be payable by the installer immediately upon notice and demand thereof given to the installer.

1.1079 Construction Duration

All work within the limits of any public right-of-way shall be completed with due diligence. If any excavation is left open beyond a time reasonably necessary to complete the same, the District may cause the excavation to be backfilled and the public right-of-way restored. Any costs of such work shall be charged to the property owner and shall be payable immediately to the District upon written notice and demand for the amount thereof given to the installer.

1.1080 Damage

Should any installer or person damage any portion of the system during repair, installation or any other activity, the District reserves the right to charge the property owner for reimbursement of all time, materials and resources allocated to the associated correction, inspection and assessment and any other related work.

1.1081 DEQ Authority and Process

The Oregon DEQ shall approve each sanitary sewer line extension in the District's service area. The Oregon DEQ reviews proposed sanitary sewer installation plans for every line extension and charges associated fees. For this review Clackamas County provides the land Use Compatibility Statement. The Oregon DEQ shall be contacted by the applicant to submit the application and shall assure that the Oregon DEQ has provided the District the Sanitary Sewer Extension Approval.

1.1082 Agency Coordination

The District coordinates with CCDTD on land use development proposals within the County. The County has a policy to coordinate the review of development applications with the District, for proposals within the District's jurisdiction, to ensure that approval is not granted in the absence of adequate utilities or a mechanism to provide them concurrently with development.

END OF SECTION

SECTION 2—STORMWATER AND EROSION CONTROL DESIGN STANDARDS

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2.0000 Stormwater and Surfacewater Design

2.0001 Definitions

The following are definitions of general applicability throughout the Oak Lodge Water Services Rules and Regulations and definitions specific to this Chapter. Additional definitions specific to other Chapters are provided within each specific Chapter.

AWWA
American Water Works Association

Best Management Practices (BMP)
Requirements, methods, measures, practices, or design and performance standards imposed on an owner or operator that facilitate compliance with this Code, applicable water quality standards or with requirements for dredged fill materials. BMPs may cover treatment requirements, operating and maintenance procedures, schedules of activities, prohibitions of activities, and other management practices to control plant site run-off, spillage, leaks, sludge or water disposal, or drainage from raw material storage.

Board
The Board of Directors of Oak Lodge Water Services District.

~~**Bond**~~
~~As required by the District, a surety bond, cash deposit or escrow account, assignment of savings, irrevocable letter of credit or other means acceptable to or required by the District to guarantee that work is completed in compliance with project's surface water plan, in compliance with all District requirements, and for a maintenance period of one year thereafter. The District may require both performance bond and maintenance bond.~~

Bioswale
Landscaped elements designed to remove silt and pollution from surface runoff water. They consist of a drainage course with gently sloped sides (less than six percent) and filled with vegetation.

Buffer
Generally, the zone contiguous with a sensitive area that is required for water quality. The critical functions of a riparian buffer (those associated with an aquatic system) include shading, input of organic debris and coarse sediments, uptake of nutrients, stabilization of banks, interception of fine sediments, overflow during high water events, protection from disturbance by humans and domestic animals, maintenance of wildlife habitat, and room for variation of aquatic system boundaries over time due to hydrologic or climatic effects. The relevant regulatory agency's definition shall supersede this definition.

Business Customer
A person who resides or conducts business or other activities on a parcel zoned for business. Mere ownership and activities that are necessary to prevent or abate nuisance conditions or to avoid deterioration of a business parcel shall not constitute "residing" or "conducting business or other activities.

Business Parcel
A parcel of land, which is zoned for business use.

Conservation Easements
A voluntary agreement that allows a property owner to permanently limit the type and amount of development on their property while retaining private ownership

Construction Activity
Ground disturbance activities including, but not limited to, clearing, grading, excavation, or filling, or activities subject to a building permit.

Contractor
A person duly licensed or approved by the State of Oregon to perform the type of work to be done under a permit or contract issued by the District.

County
Clackamas County, Oregon.

Customer
A residential, commercial business, industrial, or other customer.

Customer Charge
The periodic charges applied to all customers of the District's Surface Water Management system for the cost of planning, program development, public education, operation, maintenance, and replacement; including any other costs, such as but not limited to, debt service, capital improvements, administration, etc. This does not include charges from specific fees related to permits or one-time service fees.

Detention
The release of surface water runoff from a site at a slower rate than it is collected by the drainage system, the difference being held in temporary storage.

Development
Any human-induced change to improved or unimproved real estate, including but not limited to construction, installation, or expansion of a building or other structure; land division; drilling; and site alteration such as that due to land surface mining, dredging, clearing, grading, excavation, filling, construction of earthen berms, paving, or improvements for use as parking or storage.

Discharge
Any addition of water, storm water, wastewater, process water or any pollutant or combination of pollutants to waters of the State, directly or indirectly, by actions of dumping, spilling, disposing or physically connecting to the public storm system or natural drainage conveyance.

District
Oak Lodge Water Services District.

Drainageway
A channel such as an open ditch that carries surface water.

Dwelling Unit
As defined by Clackamas County.

Easement
An interest or right to use or occupy real property for construction and maintenance of facilities.

Engineer
A registered professional engineer licensed to practice in the State of Oregon.

Equivalent Service Unit (ESU)
A configuration of development resulting in impervious surfaces on a parcel, which contributes runoff to the stormwater system. One ESU is equal to 2,500 square feet of impervious surface area.

Erosion
Erosion is the movement of soil particles resulting from the flow or pressure from water, wind, or earth movement. Visible or measurable, construction-related erosion includes, but is not limited to:

1. Deposits of mud, dirt, sediment or similar material exceeding ½ cubic foot in volume on public or private streets, adjacent property, or into the storm and surface water system, either by direct deposit, dropping, discharge, or as a result of the action of erosion during the construction period.

2. Evidence of concentrated flows of water over bare soils; turbid or sediment- laden flows; or evidence of onsite erosion such as rivulets or bare soil slopes, where the flow of water is not filtered or captured on the site.

3. Earth slides, mudflows, earth sloughing, or other earth movement, which results in material leaving the property.

Erosion Control Plan
A plan containing a list of best management practices (BMP) to be used during construction to control and limit soil erosion.

Excavation
The mechanical removal of earth material.

Fences
Structures that consist of concrete, brick, wood, plastic, or metal posts located in the ground, connected by wood, metal, or plastic, and capable of allowing passage of water.

GIS
Geographic Information System is a system of hardware and software used for storage, retrieval, mapping and analysis of geographic data.

Groundwater
Water found underground in the cracks and spaces of soil, sand and rock.

Hazardous Materials
Materials described as hazardous by the Department of Environmental Quality, including any toxic chemicals listed as toxic under Section 307(a) of the Clean Water Act or Section 313 of Title III of SARA.

Hearings Officer
Officer appointed by the General Manager or the Board of Directors, for hearings of appeals of administrative actions.

Highly Erodible
Soils with erosion (K) factors greater than 0.25, as listed in the Soil Survey of Clackamas County Area, Oregon, developed by the Soil Conservation Service.

Impervious Surface
That surface area, which either prevents, or retards the entry of water into the soil mantle and/or causes water to run off the surface in greater quantities or at an increased rate. Impervious surfaces may include, but are not limited to, rooftops, concrete or asphalt paving, walkways, patios, driveways, parking lots, oiled macadam, gravel, or other surfaces which similarly resist infiltration or absorption of moisture.

Industrial Waste
Any liquid, gaseous, radioactive or solid waste substance, or a combination thereof, resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources, or as defined by the Oregon State Department of Environmental Quality or the United States Environmental Protection Agency, exclusive of domestic sewage.

Infiltration System
A drainage facility designed to use the hydrologic process of surface and storm water runoff soaking into the ground, commonly referred to as recharge, to dispose of surface and stormwater runoff.

In-Lieu Fee
A fee paid to the District to cover onsite water quality or water quantity facilities from a site on which stormwater management is not practical.

In-Line Detention
Detention located in a stream channel, a drainageway, or in a regional or subregional piped system. In-line detention mixes flows to be detained with flows from other areas.

Inspector
A person authorized by the District to inspect construction sites and activities affecting surface water.

Metro
The Metropolitan Service District organized and operating under ORS Chapter 268 and its Charter in portions of Washington, Multnomah and Clackamas Counties to provide planning and other services.

Municipal Separate Storm Sewer System (MS4)
A conveyance or system of conveyances (including roads, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a public body. The system is designed and used for collecting storm water, and is not a combined sewer or part of a Publicly Owned Treatment Works (POTW).

National Pollutant Discharge Elimination System (NPDES) Permit
A permit issued pursuant to Chapter 402 of the Clean Water Act (40 CFR 122, 123, 124, and 504).

Non-Single-Family Customer (or User)
A person or property owner who resides or conducts business or other activities on a parcel that is other than a single-family parcel, including multi-family developments, commercial or industrial zoned parcels.

Oak Lodge Sanitary District Plant List
A document maintained by the District that lists native plant and tree species that are allowed and approved by the District in its plan reviews for replanting vegetation.

Open Space

1. Land within a development that has been dedicated in common to the ownership within the development or to the public specifically for the purpose of providing places for recreational uses or scenic purposes.

2. Land designated by local, state, or federal agencies for preservation.

Owner
The owner of record title or the purchasers under a recorded sale agreement and other persons having an interest of record in the described real property.

Parcel of Land
A lot, parcel, block or other tract of land that is occupied or may be occupied by a structure or structures or other use, and includes yards and other undeveloped areas required under the zoning, subdivision or other development ordinances.

Perennial Stream
A permanently flowing (non-intermittent) stream.

Permit
Any authorization required pursuant to this or any other regulation of the District.

Permittee
The person issued a building permit, development permit or any other permit described in this Code is issued.

Person
Any individual, firm, company, corporation, partnership association, entity, public corporation, political subdivision, governmental agency, municipality, industry, or any department or agency thereof.

Pollutant
Any of the following, but not restricted to: oil, grease, soil, mining waste, spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, heavy metals, asbestos, wrecked or discharged equipment, cellar dirt and untreated industrial, municipal and agricultural discharges into water.

Post-developed
Conditions at the site after development.

Pre-developed
Conditions at the site immediately before application for development. Man-made site alterations or activities made without an approved development permit will not be considered as pre-developed conditions.

Pretreatment
The reduction of the total suspended solids, including sediments and turbidity-causing materials and the removal of petroleum hydrocarbons, fats, oils, and grease through physical straining, settling processes or filtering of runoff.

Private Storm System
That portion of the storm system owned and/or maintained by any person or entity other than the District and is located outside the public right-of- way, except as otherwise approved by the District.

Property (or the Site)
The real property undergoing development.

Public Stormwater System
Those portions of the stormwater system that are in the public ROW. Natural waterways are defined under State and Federal regulations.

Public Right-of-Way
Any public highway, road, street, avenue, alleyway, public place, public easement, or public right-of-way.

Rational Method
A formula for estimating maximum discharge of runoff at a point, using flow (Q), runoff coefficient (C), rainfall intensity (I) for selected recurrence interval, and area (A), in the formula: Q=CIA.

Redevelopment
A project that proposes to add, replace, and/or alter impervious surface (for purposes other than routine maintenance, such as resurfacing) on a site that is already developed. Requirements related to redevelopment shall be met when the project impacts greater than 500 square feet of impervious surface area.

Retention
The process of collecting and holding surface water runoff with no surface outflow.

Sensitive Areas
Existing or created wetlands, including all mitigated wetlands, Rivers, streams, sloughs, swamps, creeks and impoundments; limits defined by wetlands reports approved by the U.S. Army Corp of Engineers (USACE), Oregon Department of State Lands (DSL), and/or Clackamas County.

Standard Methods
The examination and analytical procedures set forth in the most recent edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, AWWA, and Water Environment Federation.

Stop Work Order
An Order issued by the District for violation of the Rules and Regulations. All work contributing to the violation must cease when a Stop Work Order is issued and the Stop Work Order will stay in place until such time as removed by the District in writing.

Storm Drain Facility
A constructed or natural feature that conveys surface water flows or runoff during rain events, including but not limited to pipes, streets, ditches, streams, pollution reduction manholes, and detention facilities.

Storm Drainage/Storm Sewer
A pipe, or any method of conveyance that carries stormwater, surface runoff, or drainage.

Stormwater
Waters on the surface of the ground or underground resulting from precipitation.

Stormwater Management
A program to provide surface water quality and quantity controls through nonstructural methods and capital improvement projects. Nonstructural controls include maintenance of surface water facilities, public education, water quality monitoring, implementation or intergovernmental agreements to provide for regional coordination, and preparation of water quality control ordinances and regulations. Also, "surfacewater management"

Stormwater Quality Treatment Facility
Stormwater Quality Treatment Facility refers to any structure or drainageway that is designed, constructed, and maintained to collect, filter, retain, or detain surface water runoff during and after a storm event for the purpose of water quality improvement. It may include, but is not limited to constructed wetlands, water quality swales, and ponds.

Stream
A drainageway that is determined to be jurisdictional by the USACE or DSL. Also referred to as creek.

Top-of-bank
The point closest to the boundary of the active floodplain of a stream where a break in the slope of the land occurs such that the grade beyond the break is flatter than 3:1 at any point for a minimum distance of 25 feet measured perpendicularly from the break.

Treatment
The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in water to a less harmful state prior to discharging to Waters of the State.

Undeveloped Land
Land left in its natural state, free from any structures, roadways, placement of impervious materials or any other man created alteration.

User
Any person or entity in whose name service is rendered as evidenced by the signature on the application or contract for that service, or in the absence of a signed instrument, by the receipt and payment of utility bills regularly issued in his/her/its name. A user, under this system and structure of rates, is either single-family or non- single-family.

User – Non-Single-family
Any user whose impervious surface results from the development of land for purposes of operating a dwelling unit for occupancy by more than one single-family or for other business, industrial, commercial or institutional purposes and to whom utility services are provided at a distinct service location.

Variance
A discretionary decision to permit modification of the terms of any part of this Code based on a demonstration of unusual hardship or exceptional circumstance unique to a specific property.

WES
Clackamas County Water Environment Services is the wastewater and surface water management agency for Clackamas County.

Water Quality Facility
A facility specifically designed for pollutant removal.

Water Quality Standards
The Federal Clean Water Act, the Code of Federal Regulations, ORS Chapter 468 and OAR Chapter 340 Division 41.

Water Treatment Bioswale/Water Quality Swale
A vegetated natural depression, wide shallow ditch, or similar constructed facility used to filter runoff for the purpose of improving water quality.

Waters of the State
Those waters defined in ORS Chapter 468B.005, or as amended, which include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

Wetland
Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are those areas identified and delineated by a qualified wetlands specialist as set forth in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands, January 1987, or by a DSL/COE 404 permit. Wetlands may also consist of:

1. Constructed Wetlands. As defined in Section 404 of the Clean Water Act, constructed wetlands are those areas developed as a water quality or quantity facility, subject to maintenance as such. These areas must be clearly separated from existing or created wetlands.

2. Created Wetlands. Created wetlands are those wetlands developed in an area previously identified as a non-wetland to replace or mitigate wetland destruction or displacement.

3. Existing Wetlands. Wetlands identified and delineated as set forth in the Federal Manual for Identifying the Delineating Jurisdictional Wetlands, January 1987, or as amended, by a qualified wetlands specialist.

Work Area
Areas of disturbance for activities defined under “Development”. Work Area includes areas used for storage of equipment or materials that are used for these activities.

2.0002 Relationship to OLWSD Rules and Regulations

The following standards, procedures and rules are adopted by reference in section 202.05 of OLWSD Rules and Regulations and have the full force and effect of the OLWSD Rules and Regulations.

2.0003 Ownership of Stormwater System

The public storm sewer system is located on or within public and private property. Generally, Clackamas County owns the storm sewer and surfacewater facilities in the public right-of-way (ROW). OLWSD assists in maintaining some infrastructure in the public rights-of-way through various agreements, but does not generally own or is responsible for the drainage function of that system.

Property owners generally own and maintain storm sewer and surfacewater facilities on private property regardless of the authority, ownership or responsibility of the water entering those privately-owned facilities.

2.0004 OLWSD Authority: Storm/Surfacewater System

OLWSD's authority is derived from its compliance responsibilities with the District's MS4 permit. Compliance with this permit includes water quality monitoring, associated reporting, assuring new development and construction adheres to surfacewater standards for volume, rate and quality and erosion prevention / sediment control and to retrofit existing developed areas to improve water quality, perform watershed assessment. The District is a co-permittee with Clackamas County MS4 Permit with authority allocated to each separate jurisdiction.

Clackamas County recognizes that the District has responsibility for operating, planning, and regulating surface water management systems in Comprehensive Plan Chapter Public Facilities and Services Policies 19-26 which requires all new developments to meet the development standards of the appropriate service provider.

2.0005 OLWSD Authority; Erosion Prevention / Sediment Control and 1200C

OLWSD is responsible for "small lot" construction and development on tax lot(s) that are less than one acre (43,560sf). Construction, development and ground disturbing activities on lot(s) greater than one five acres are required to obtain a 1200CN permit from the Oak Lodge Water Services District. Construction, development and ground disturbing activities on lot(s) greater than ~~one~~ five acres are required to obtain a 1200C permit from the Oregon Department of Environmental Quality which performs permit application review and inspection.

2.0006 Connection to the Stormsewer System

Any connection (either piped or release) to the stormwater / storm sewer / surfacewater system must be requested by the Property Owner, at owner's expense to the appropriate regulatory authority, to connect directly with the proper public stormwater in accordance with the provisions of these regulations. Such request shall be made through complete application to connect to the stormsewer system.

2.0007 Permit Applications (the Owner or Installer)

The installer of work covered by these regulations shall make application for a permit on forms provided by the District. The Property Owner or representative must also sign the permit application as acknowledgement of the work proposed to be performed. The permit application shall be supplemented by any plans, specifications or other information considered necessary by the General Manager or designee.

2.0008 Permit Required

An OLWSD-issued permit is required prior to any work commenced. Failure to acquire permit(s) equate to

a violation of the Rules and Regulations. The issuance of a permit by the District will not relieve the permit holder from the responsibility of obtaining such other permits or licenses as may be required by other governmental agencies.

2.0009 Agency Coordination

The District coordinates with CCDTD and DEQ on land use and/or development proposals within the County. In the Clackamas County Comprehensive Plan Chapter 11 Policy 1 of City, Special District and Agency Coordination's Policy 1 authorizes the County to: "*Participate in interagency coordination efforts with federal, state, Metro, special purpose districts and cities. The County will maintain an updated list of federal, state and regional agencies, cities and special districts and will invite their participation in plan revisions, ordinance adoptions, and land use actions which affect their jurisdiction or policies."* The County has a policy to coordinate the review of development applications with the District, for proposals within the District's jurisdiction, to ensure that approval is not granted in the absence of adequate surfacewater management facilities per Clackamas County Zoning and Development Ordinance.

2.009.1 Preliminary Statements of Feasibility: Surfacewater

The District signs preliminary statements of feasibility for surfacewater management as the surfacewater management authority subject to the following conditions: OLWSD requests Clackamas County to co-sign the Statement. OLWSD does not own the stormwater conveyance system and cannot authorize connections to that system. The owner of the system reconciles existing capacity to proposed impacts. Some development proposals may require use of public easements which OLWSD cannot determine access rights. Other conditions may apply depending on the proposal.

2.0010 General Design Requirements

Performance Standards: Storm drainage design within a development area must include provisions to adequately control runoff from all public and private streets and the roof, footing, and area drains of residential, multi-family, commercial, and/or industrial buildings. The design must ensure future extension of the drainage system to the entire drainage basin in conformance with the adopted Storm Drainage Master Plans and Strategic Plans and these Design Standards. These provisions include:

1. Surface or subsurface drainage, caused or affected by the changing of the natural grade of the existing ground or removal of natural ground cover or placement of impervious surfaces, shall not be allowed to flow over adjacent public or private property in a volume or location materially different from that which existed before development occurred, but shall be collected and conveyed in an approved manner to an approved point of disposal.

2. Surface water entering the subject property shall be received at the naturally occurring locations and surface water exiting the subject property shall be discharged at the natural locations with adequate energy dissipaters within the subject property to minimize downstream damage and with no diversion at any of these points.

3. The approved point of disposal for all storm water may be a storm drain or a detention or retention pond or other approved by Clackamas County or other relevant agency. Existing open channels, creeks or streams are approved points of disposal after the stormwater has been treated for water quality. Acceptance of proposed systems will depend upon the prevailing site conditions, capacity of existing downstream facilities, and functional performance of the alternate design.

4. When private property must be crossed in order to reach an approved point of disposal, it shall be the developer's responsibility to acquire a recorded drainage easement. Temporary drainage ditch facilities, when approved, must be engineered to contain the storm water without causing erosion or other adverse effects to the private property.

5. The peak discharge from the subject property may not be increased from conditions existing prior to the proposed development, except where it can be satisfactorily demonstrated by the applicant that there is no adverse impact.

6. Retention/detention facilities will be required where necessary to maintain surface water discharge rates at or below the existing storm peak discharge, except where it can be demonstrated by the applicant that no adverse impact will result from not providing said facilities.

7. Permanent stormwater quality control facilities will be required for all new developments and redevelopments and construction projects including public road expansion projects.

8. Drainage from roofs, footings, and downspouts shall drain to a private stormwater management system. Systems other than residential drywells (or soakage trenches) shall be designed by an engineer and reviewed by OLWSD staff for approval.

9. Vegetation shall be established on areas disturbed by/or on areas of construction, as necessary, to minimize erosion in accordance with OLWSD or DEQ standards.

   All storm drain system designs shall make adequate provisions for collecting all storm water runoff. The system shall accommodate all runoff from upstream tributary areas whether or not such areas are within the proposed development. The amount of runoff to be accommodated shall be based upon ultimate development of all upstream tributary areas.

   Proposed storm drain systems shall not discharge flows into inadequate downstream systems unless approved by Clackamas County or relevant agency.

10. Applicant must obtain all necessary permits (Division of State Lands, Army Corps of Engineers, Oregon Department of Fish and Wildlife, etc.)

2.0011 Site Drainage Plans

A. Existing Drainage Plan

Provide a topographical contour map defining existing conditions to include the following minimum information.

1. 2' contour intervals; slopes over 10% may use 5' intervals; extend contours a minimum of 100 feet beyond property.

2. All structures, buildings, parking lots, and utilities on the property.

3. Locations of all existing drainage facilities and watercourses, including wetlands and floodplain areas and overland drainage, intercepted drainage or areas of high water tables.

4. Locations of all subsurface water outlets (e.g., springs).

5. Arrows to indicate direction of flow for all drainage information.

6. All existing on-site storm and surfacewater infrastructure.

B. Proposed Drainage Plan

Show proposed site grading and drainage facilities on a topographical contour map. Unless the detail for proposed improvements will obscure the conditions shown on the existing drainage plan, proposed site grading and drainage may be shown on the existing drainage plan. The following minimum information shall also be shown.

1. Finished contours of the property, after development, at 2' or 5' intervals as required.

2. Percent grade for graded slopes; elevations, dimensions and locations for all graded slopes.

3. Cut/fill areas; structural fill placement areas; erosion/sedimentation control methods; reseeding areas.

4. All proposed drainage facilities—including but not limited to public and private systems; paved areas, curbs, sidewalks; drainage ditches, culverts.

5. On-site basin plan showing drainage areas with respective treatment facilities. (For example, the drainage area for each proposed swale, and/or catch basin, and/or inlet, and/or mechanical filter, and/or outlet.

C. Drainage Calculations

Furnish such supporting information as required per Subsection 305 of these Design Standards.

2.0012 Minimum Design Criteria

A. Storm Detention Facility

See 2.1005.03.04 Additional Surface Water Management Standards in this chapter.

~~See Appendix 3 in this Chapter for additional standards and guidance.~~

B. Water Quality Facility

All Water Quality Facilities shall meet the design requirements of the current City of Portland, Stormwater Management Manual, as amended and adopted by the District and the requirements of 2.1005 ~~Appendix 3 in this Chapter.~~ Proposed facilities shall be of this design or equivalent. If this design is not used, a variance application shall be submitted.

See 2.1005 ~~Appendix 3~~ in this Chapter for additional standards and guidance.

C. Conveyance Piping

1. Time of Concentration

Overland flow of runoff to the initial catchment point into the storm drain system shall be a minimum of 5 minutes.

2. Velocity and Slope

All storm drains shall be on a grade which produces a mean velocity when flowing full, of at least 2' per second. The slope shall not be less than .0055.

3. Velocity in Natural Channels

Control of discharge from developed areas to natural channels shall be such that the average velocity resulting from all design storms less than or equal to the 10-year event remains below the erosive velocity of the channel.

4. Manning's Equation

When calculating minimum pipe slopes and velocities, the Design Engineer shall use the Manning pipe friction formula.

5. Pipe Coefficient

The storm drainpipe roughness coefficient to be used in the Manning formula shall be not less than 0.013.

6. Design Storm

The minimum design storm is the 100-year event.

2.0020 Stormwater Detention and Retention

2.0021 Development Not Requiring Detention

In general, all developments will be required to provide on-site detention, unless the developer can demonstrate by a hydraulic analysis that proposed development will not significantly increase stormwater runoff volumes or peak discharge.

However, water quality facilities may still be required.

2.0022 Floodplain Information

Floodplain information, delineating the 100-year floodplain limits, shall be shown where it occurs within the development. Floodplain limits shall be based on maps prepared by the U.S. Army Corps of Engineers and the Federal Emergency Management Agency (FEMA). Where better information is available, it shall be used by the Design Engineer.

2.0023 Emergency Overflow

The Design Engineer shall assess the impacts of system failure for on-site detention. Overflow may occur due to rainfall intensity which exceeds the design storm, debris blockage of storm drain system, or some other reason.

The storm drain system shall be designed such that overflows do not cause inundation of neighboring properties. Potential overflow routes shall be adequately protected from erosion.

If surface detention (e.g., pond) is used, an overflow system shall be included to provide controlled discharge of design storm event for developed conditions as required by OLWSD, without overtopping any part of the pond embankment or exceeding the capacity of the emergency spillway. The overflow design shall assume failure of the normal outlet control structure. An emergency spillway shall be able to safely pass all flows over the pond embankment without overtopping the embankment. Sufficient armoring will be required to the toe on each face of the embankment to prevent failure of the embankment from erosion.

2.0024 Detention Facilities

Detention volume storage methods, in order of preference, are the following.

1. Surface storage—pond
2. Combination pond and water quality treatment
3. Roadside swales overflowing to a stormwater system.
4. Underground storage by tank or vault will be approved by the District Engineer only when a pond is impracticable.

2.0025 Infiltration Facilities [Underground Injection Control (UIC)]

Infiltration facilities, also known as Underground Injection Control or UIC facilities (UICs) are governed by the Oregon Department of Environmental Quality (DEQ) pursuant to OAR 340-106-0001 and OAR 340-044-0005 (or equivalent). Stormwater UICs include drywells, storm sumps, french drains, infiltration trenches and galleries, and other devices designed or intended to dispose of stormwater directly below the soil without the benefit of surface infiltration.

Any person seeking to install a UIC within the District must first obtain a permit from DEQ. The OLWSD does not authorize, permit or review UICs. All other UICs, including those that accept stormwater from any residential driveway, commercial parking lot, street, etc., must be registered and permitted or rule authorized by DEQ.

2.0030 Water Quality Facilities

2.0031 Criteria for Requiring Construction of a Water Quality Facility

A water quality facility shall be constructed unless, in the judgment of the District Engineer, any of the following conditions exists. The applicant or owner may use the below to substantiate a variance request to water quality facility installation.

1. The site topography or soils makes it impractical, or ineffective to construct an on-site facility.
2. The site is small compared to the development plan, and the loss of area for the on-site facility would preclude the effective development.
3. There is a more efficient and effective regional site within the sub-basin that was designed to incorporate the development.
4. The development is for the construction of 1-or 2-family (duplex) dwelling(s) on existing lot(s) of record and not part of a subdivision (major or minor), or any partition with water quality treatments required for the subject impervious area(s).

If construction of an on-site facility is not required, then the District Engineer may require that development to construct an off-site treatment facility that will treat an equal or greater volume of stormwater elsewhere within the District. It is the developments responsibility to acquire the land necessary offsite to construct the proposed facility and to provide proof to the District Engineer that land has been acquired prior to the Land Use Application being deemed complete by the District. If the District is not furnished with adequate proof of ownership, then the application will not be deemed complete.

2.0032 Plan Requirements

When construction of water quality facilities is required the following shall be contained on the plan(s):

1. The application shall include a set of construction plans prepared by the Design Engineer that certifies the proposed water quality facilities have been designed in accordance with the criteria required in these Standards.
2. A financial assurance, meeting the requirements of the community development code is provided for the construction of the water quality facility.
3. An operation and maintenance plan shall be prepared showing how the water quality facility is to be maintained.
4. A landscape plan shall be prepared for the proposed facility.
5. A list of recommendations by a Geotechnical Engineer may be required at the discretion of the District Engineer.

2.0033 Facility Design

All Water Quality Facilities shall meet the design requirements of the current City of Portland, Stormwater Management Manual, as amended and adopted by OLWSD. See 2.1005 ~~Appendix 3~~ for additional information.

2.0040 Erosion Control

All relevant construction activities shall provide erosion prevention measures and sediment control practices during all phases of construction to prevent and restrict the discharge of sediments in accordance with the District's Rules and Regulations and OAR 340-41-455(3)[1] (or equivalent). See 2.1005 ~~Appendix 3~~ of this section for Erosion Prevention and Sediment Control standards.

2.0050 Private Drainage Systems

2.0051 Subdivisions

When subdivision lots drain to the rear it may be necessary to provide a private drainage system in private easements. This system shall be for collection of roof drains, footing drains, and surface runoff. This system shall be designed to meet the Uniform Plumbing Code requirements.

2.0052 Subsurface Drainage

Subsurface drains (underdrains) shall be provided at the following locations:

1. Where existing springs and field tile intercepted during construction activity for other facilities; i.e., sewer, water, mains, street excavations, foundations, etc. Subsurface drains are not needed if the tile is removed.
2. Where high ground water exists or when it is necessary to reduce the piezometric surface to an acceptable level to prevent land slippage or underfloor flooding of buildings.

[1] At time of composition

2.1000 SURFACEWATER AND EROSION PERMIT PROCEDURES AND REQUIREMENTS

2.1001 General Notes

The following notes shall be contained in any submitted surfacewater permit application:

1. Erosion Control must be inspected prior to construction commencement. Call OLSD at least 24 hours in advance of needing inspection. No inspections will be scheduled after 1:30PM
2. Additional erosion control measures, and/or permits and/or fees may be required if the project scope changes from the approved plans.
3. Utility Placement Permits (Road Opening) may be required by Clackamas County if work enters the public right-of-way or other applicable area.
4. All hazardous chemicals, which are delivered to or stored at the job site during construction, restoration, or maintenance activities shall be stored, covered, and protected from the weather. None of the materials shall be exposed during storage. Hazardous chemicals shall be disposed of in such a manner that pollution of soil, groundwater, surface water.
5. The use of hazardous chemicals including, but not limited to, pesticides (including insecticides, herbicides, defoliants, soil sterilants) and fertilizers, must strictly adhere to federal, state, and local regulations.

2.1002 Objectives

The District provides surface water management through maintenance of surface water facilities, public education, water quality monitoring, implementation of intergovernmental agreements to provide for interjurisdictional coordination, and preparation of water quality and quantity control ordinances and regulations.

The objectives of this section are to:

1. Prevent or minimize the introduction of pollutants to surface waters;
2. Meet Federal National Pollutant Discharge Elimination System (NPDES) permit requirements;
3. Prevent future pollution and erosion through implementation of Best Management Practices (BMP);
4. Provide for the equitable distribution of the costs of the surface water management program; and
5. Better manage and control surface water within the District.

2.1003 Discharge Regulations

2.1003.01 Purpose

This chapter provides for the regulation of discharge of stormwater, pretreatment facilities, and storm drainage facility connection.

2.1003.02 Discharge Regulations

An Erosion Control/Surface Water Management Permit is required to discharge to the District's sanitary sewer system, any public stormwater system, creeks, or other drainageways. Before discharging to any constructed or natural systems within the District, an Erosion Control/Surface Water Management Permit authorizing such discharge shall first be secured in writing from the District and fees paid. No person shall discharge or cause to be discharged, directly or indirectly,

any quantity of stormwater, pollutant substance, or wash water into the public stormwater system unless an Erosion Control/Surface Water Management Permit is obtained from the District

2.1003.02.01 Discharge to Sanitary Sewer System

Discharge or contribution to the discharge of any stormwater or other unpolluted water is not allowed into the District's sanitary sewer system without specific approval from the District.

2.1003.02.02 Discharge to Public Stormwater System

All discharges to the public stormwater system shall have authorization from the utility's owner; Clackamas County. Prohibited stormwater discharge activities include, but are not limited to, the following:

1. Introduction of pollutants or waters to the public stormwater system containing pollutants or concentrations at levels equal to or in excess of those necessary to protect waters of the State.

2. Failure to abide by the terms of any Erosion Control/Surface Water Management Permit, MS4 permit, NPDES permit, statute, administrative rule, ordinance, stipulated and final order or decree, or other permit or contract.

3. Discharges of non-stormwater or spills or dumping of materials other than stormwater into public storm system unless pursuant to a conditional Erosion Control/Surface Water Management Permit approved by the District and in compliance therewith.

4. Illegal or unpermitted connection or methods of conveyance to the public stormwater system.

5. Any discharge that will violate federal, state, or local water quality standards.

2.1003.02.03 Discharge to Creeks or Drainageway

New storm drains and roof drains are not allowed to drain directly into creeks or drainageways or encroach into the buffer unless an Erosion Control/Surface Water Management Permit is obtained from the District. Encroachment into buffer areas must be approved by the District and will require mitigation. Existing and replacement storm drains shall be constructed according to current state and federal regulations. Non-single family development shall provide an approved water quality facility prior to any discharge from the site to a storm drain system, a creek or drainageway, as approved by the District.

2.1003.02.04 State Discharge Limitations

State requirements and limitations on discharges shall apply in any case where they are more stringent than Federal requirements and limitations or those provided in this chapter.

2.1003.02.05 Local Discharge Limitations

The District retains the right to establish by ordinance more stringent limitations or requirements on discharges if such limitations or requirements are deemed necessary to comply with this chapter.

2.1003.03 Pretreatment Facilities

The District may require that pretreatment facilities are necessary to comply with water quality standards. Before constructing or operating any pretreatment facilities within the District, an

Erosion Control/Surface Water Management Permit authorizing such connection shall first be secured in writing from the District and fees paid.

2.1003.03.01 Plans, Specifications, and Construction

1. The District may require plans, specifications, and other information relating to the construction or installation of pretreatment facilities.

2. Pretreatment facility construction and installation shall not commence until written approval of plans and specifications by the District is obtained.

3. Every facility for the pretreatment and handling of surface water discharged from non-single family residential development sites shall be constructed in accordance with approved plans and specifications.

4. The applicant shall notify the District when the facility is ready for final construction inspection. The inspector shall then inspect the facility construction. If such construction meets the previous permit requirements, a pretreatment facility approval shall be issued.

2.1003.03.02 Facility Operations and Maintenance Agreement

The District may require an Operations and Maintenance Agreement for pretreatment facilities. This agreement may set forth operations and maintenance, sampling, access, and other requirements. This agreement will provide for District access to inspect the facility. This agreement will be recorded in the County records against the affected property.

Every facility for the pretreatment and handling of surface water discharged shall be installed, maintained, and repaired at the expense of the facility owner discharging the surface water. The owner shall be responsible for maintaining and repairing pretreatment facilities using BMPs, as determined by the District or authorized representative.

2.1003.03.03 Sampling and Monitoring Facility

A person constructing a pretreatment facility, as required by the District, shall also install and maintain, at the expense of the facility, owner a suitable sampling access point for checking and investigating the discharge from the pretreatment facility to the public storm system. The sampling point shall be in accordance with specifications approved by the District.

2.1003.03.04 Sampling

Samples discharged into the public surface water system shall be representative of the use and shall be taken after treatment, if any, and before dilution by other water. The sampling method shall be one approved by the District and in accordance with best engineering practices. All sample analysis shall be performed in accordance with the procedures set forth in 40 CFR Part 136[2], as amended.

2.1003.03.05 Reporting Requirements

The District may require the permit holder to submit a compliance report indicating the quantity and quality of surface water discharge, the need for pretreatment to comply with applicable standards, and the operation and maintenance schedule of the pretreatment facility.

[2] Or equivalent

2.1003.03.06 Inspection and Right-of-Entry

The District or authorized representatives may inspect the monitoring facilities of any permittee to determine the compliance with the requirements of this Code. The discharger shall allow the District or authorized representatives to enter upon the premises at any reasonable hour for the purpose of inspection, sampling, or records examination. The District shall also have the right to install on the user's property such devices as are necessary to conduct sampling, inspection, compliance, monitoring, and/or metering operations. The right of entry includes but is not limited to access to those portions of the premises that contain facilities for sampling, measuring, treating, transporting, or otherwise handling surface water and storing records, reports, or other related documents.

2.1003.04 Discharge to a Storm Facility

An Erosion Control/Surface Water Management Permit is required to discharge or drain to any storm drain facility, including but not limited to pipes, streets, ditches, streams, pollution reduction manholes, and detention facilities, whether constructed or natural. Before discharging or draining to any storm drain facilities within the District, an Erosion Control/Surface Water Management Permit authorizing such discharge shall first be secured in writing from the District and fees paid.

2.1003.04.01 Plans, Specifications, and Construction

The District may require plans, specifications, and other information relating to the construction or installation of storm drain facility connections.

1. Storm drain facility connections construction and installation shall not commence until a written permit and approval of plans and specifications by the District is obtained.

2. Every storm drain facility connection shall be constructed in accordance with approved plans and specifications and shall be installed, maintained, and repaired at the expense of the facility owner connecting to a storm drainage facility.

3. The applicant shall notify the District when the connection is ready for inspection. The inspector shall then inspect the connection construction therein, and if such construction meets the previous requirement as approved in the permit, a connection approval shall be issued.

2.1004 Erosion Control and Environmental Protection

2.1004.01 Purpose

This Article provides for the regulation of erosion and pollution control to maintain and protect water quality and natural resources in accordance with federal, state, and local water quality standards.

2.1004.01.01 General Policy

1. To comply with water quality standards set forth in OAR 340-041[3], it is the District's policy to prevent erosion and eliminate or reduce the amount of sediment and other pollutants reaching the public storm and surface water system.

2. The provisions of this Chapter apply during construction activities and until permanent erosion and pollution control measures are in place, or the site is stabilized and/or the District closes the associated permit(s) as described herein, unless otherwise noted.

3. This chapter is intended to regulate construction activities and other activities that accelerate erosion. It is the District's policy to require temporary and permanent measures for all construction projects to lessen the adverse effects of site alteration on the environment.

4. Nothing in this section shall relieve any person from obligation to comply with the regulations or permits of any federal, state, or local authority.

2.1004.02 Erosion Control

2.1004.02.01 Erosion Control Requirements

1. Where the District determines that erosion control facilities are necessary to comply with water quality standards, an Erosion Control/Surface Water Management Permit is required for construction and operation of such facilities. Before constructing any erosion control facilities within the District, an Erosion Control/Surface Water Management Permit authorizing such facilities shall first be secured in writing from the District and fees paid. Erosion control facilities and measures shall meet requirements of the current "*Clackamas County Water Environment Services Erosion Prevention Planning and Design Control Manual*."

2. The permittee or owner is responsible for the cost of installation, maintenance, and repair of all erosion control facilities required by an Erosion Control/Surface Water Management Permit, including both temporary and permanent facilities, as applicable.

3. The permittee or owner shall use BMPs, as determined by the District or Authorized designee.

4. No visible or measurable erosion shall leave the property during any construction or other erosion accelerating activity. The permittee/owner, along with any person who causes such visible or measurable erosion, shall be responsible for cleanup, damages, and fines. Cleanup responsibilities may involve, but are not limited to public facilities, resources, and areas impacted by a project including, but not limited

[3] Or equivalent

to, creeks, drainageways, wetlands, catch basins, storm drains, and sensitive areas.

2.1004.02.02 Plans, Specifications, and Construction

In addition to the requirements of these Standards and Rules and Regulations, the District may require plans, specifications, and other information relating to the construction or installation of erosion control facilities or restoration plans. Erosion control facility construction and installation shall not commence until the permittee receives the District's written approval of erosion control plans and specifications. All erosion control facilities shall be constructed in accordance with approved plans and specifications.

2.1004.02.03 Inspection

The erosion control facilities and measures necessary to meet the requirements of this subsection shall be installed by the owner and shall be inspected by the District prior to the start of any construction activity. The owner shall notify the District when the erosion control facility is ready for final construction inspection. The District's inspector shall then inspect the facility construction prior to final approval.

2.1004.02.04 Maintenance

1. Maintenance of existing facilities shall be the responsibility of the property owner or applicant.

2. The permitee or owner shall maintain the erosion control facilities and BMPs in conformance with the approved erosion control plan.

3. If adequate maintenance is not performed, the maintenance standards and schedule shall be reviewed and enforced by the District and the owner or permitee shall be responsible to the District for costs incurred.

4. Where an erosion control plan is not effective or sufficient as determined by the District through a site inspection, the District may issue a stop work order and the permitee or owner shall be required to submit a revised plan to the District. Upon approval of the revised plan by the District, the permitee or owner shall immediately implement the additional facilities and techniques of the revised plan.

5. In cases where erosion is occurring in violation of this Code, the District may require the owner/permittee to install interim control measures prior to submittal of the revised erosion control plan.

2.1004.02.05 Deposit of Sediment

No person shall drag, drop, track, or otherwise place or deposit, or permit to be deposited, mud, dirt, rock or other such debris on a public street or into any part of the public storm and surface water system, or any part of a private storm and surface water system, which drains or connects to the public stormwater and surface water system. Any such deposit or material shall be immediately removed using hand labor or mechanical means. No material shall be washed or flushed into any part of the storm and surface water system without erosion control measures installed to the satisfaction of the District, and any such action shall be a violation.

2.1004.02.06 NPDES Permit

Any construction activity disturbing one (1) or more acres of land shall obtain an NPDES Stormwater Discharge Permit issued by DEQ and submit a copy of the permit application, plans and associated reports and issued permit to OLWSD.

2.1004.04 2.1004.03 Air Pollution

2.1004.03.01 Dust Control

Dust and other particulate matters containing pollutants that settle on property or are carried to surface waters though rainfall or other means shall be minimized to the maximum extent practicable, utilizing all measures necessary, including but not limited to:

1. Sprinkling with water, haul and access roads and other exposed dust producing areas,
2. Establishing temporary vegetative cover,
3. Placing wood chips or other effective mulches on vehicle and pedestrian use areas;
4. Maintaining the proper moisture condition on all fill surfaces,
5. Pre-wetting cut and borrow area surfaces, and
6. Using of covered haul equipment.

2.1004.05 Water Quality Maintenance

2.1004.04.01 Construction of New Facilities

Construction of new water quality facilities between stream banks shall be pursuant to permits issued by jurisdictional state and federal agencies (i.e., USACE and DSL) and applicable regulations.

2.1004.04.02 Pollutants

Pollutants in the DEQ current toxics standards identified in OAR 340-041[4], such as, but not limited to, fuels, lubricants, asphalt, concrete, bitumens, raw sewage, other harmful materials, and trash or debris, shall not be discharged into rivers, streams, impoundments, wetlands, sensitive areas, undisturbed buffers, or any storm drainage system, or at such proximity that the pollutants flow to these watercourses.

2.1004.04.03 Alterations

The withdrawal of water from a stream, impoundment, wetland, or sensitive area, shall not result in altering or further degradation of the temperature or water quality of the waterbody in violation of OAR-340-041[5].

2.1004.04.04 Construction Activities

All sediment-laden water from construction activities shall be routed through sedimentation basins, filtered, or otherwise treated to remove the sediment load before the water is discharged into the surface water system.

[4] Or equivalent
[5] Or equivalent

2.1004.06 2.1004.05 Natural Resource Protection

2.1004.05.01 Fish and Wildlife Habitat

Construction activities shall be done in a manner that minimizes adverse effects on wildlife and fishery resources pursuant to the requirements of local, state, and federal agencies charged with wildlife and fish protection.

2.1004.05.02 Sensitive Areas

An Erosion Control/Surface Water Management Permit is required for activities disturbing sensitive areas that would affect water quality by altering or affecting sensitive areas and associated buffers. These activities include, but are not limited to:

1. landscaping;
2. construction activities;
3. tree cutting;
4. vegetation removal; and
5. streambank restoration.

Before conducting construction activities in sensitive areas within the District, an Erosion Control/Surface Water Management Permit authorizing such activities shall first be secured in writing from the District and fees paid (see Fee Schedule).

Sensitive Areas applicable to the District include:

1. Existing or created wetlands, including all mitigated wetlands; limits defined by wetlands reports approved by the USACE, DSL, and/or Clackamas County;
2. Rivers, streams, springs, sloughs, swamps, creeks; Impoundments (lakes and ponds).

Sensitive areas, for the purposes of this chapter, do not include water quality facilities, such as constructed wetlands or the undisturbed buffers adjacent to sensitive areas.

2.1004.05.03 Study Requirements

An approved study may be required by the District identifying areas on the parcel which are, or may be, sensitive areas when, in the opinion of the District:

1. An area or areas on a parcel may be classified as a sensitive area; or
2. Designed as a natural resource or equivalent by Clackamas County.

2.1004.05.04 Tree Replacement within Buffer

Existing trees within the sensitive area buffer or riparian area are encouraged to remain in place. If a tree is removed from the buffer area the following conditions apply.

1. Any trees removed a diameter at breast height (DBH) of at least 3-inches shall be

replaced at a ratio of 4:1 (four trees planted for every one removed) within a time frame, location(s), and species identified in the approved site restoration plan.

2. An Erosion Control/Surface Water Management Permit shall first be secured from the District if the tree removal activity causes ground disturbance greater than 250 square feet.

3. Trees removed by or requiring removal as a result of natural causes (e.g. wind storm, disease (requires report from Certified Arborist to validate and document disease), wildlife activities) do not have to be replaced.

4. Types of trees allowed for replacement are those identified in the Oak Lodge Sanitary District Plant List, except as allowed in a plan approved by the District.

2.1004.05.05 Sensitive Area Buffer

The District may require that the buffer be fenced, signed, delineated, or otherwise physically set apart from parcels that will be developed. In any new development or redevelopment, the buffer shall be contained in a tract, and shall not be a part of any parcel to be used for the construction. The District reserves the right to require separate tracts for buffers; however, conservation easements will be considered and allowed if the developer can demonstrate that restrictions for activities on the parcel will protect the resource associated with the buffer. Restrictions may include permanent signage, fencing, documentation with the title of the property, or other methods approved by the District.

2.1004.05.06 Plans, Specifications, and Construction

In addition to requirements in these Standards, the District may require additional plans, specifications, and other information relating to construction within, variances from, and restoration of buffers. Construction and restoration shall not commence until written approval of plans and specifications by the District is obtained and shall occur in accordance with approved plans and specifications.

The applicant shall notify the District when the facility is ready for final construction inspection. The inspector shall then inspect the facility construction therein.

2.1004.05.07 Hazardous Chemicals, Pesticides, Fertilizers

The use of hazardous chemicals including, but not limited to, pesticides (including insecticides, herbicides, defoliants, soil sterilants) and fertilizers, must strictly adhere to federal, state, and local regulations.

All hazardous chemicals, which are delivered to or stored at the job site during construction, restoration, or maintenance activities shall be stored, covered, and protected from the weather. None of the materials shall be exposed during storage. Hazardous chemicals shall be disposed of in such a manner that pollution of soil, groundwater, surface water, or air does not occur. In no case shall hazardous materials be disposed of in drainageways.

2.1005 Additional Surface Water Management Standards

2.1005.01 Purpose

This Article provides for additional treatment design, water quality, quantity, and natural resource protection standards.

2.1005.02 General Standards

2.1005.02.01 Requirements

1. All development shall be planned, designed, constructed, and maintained to:

   (a) Protect and preserve existing streams, creeks, natural drainage channels and wetlands, and to meet state and federal requirements.

   (b) Protect property from flood hazards identified by the District.

   (c) Provide records or show on District stormwater studies a system by which storm/surface water within the development will be controlled without causing damage or harm to the natural environment, or to property or persons.

2. All stream crossings and obstructions must be approved by USACE, DSL, Clackamas County, and other authorized federal, state, and local agencies.

3. In the event a development or any part thereof is traversed by any water course, channel, stream or creek, gulch or other natural drainage channel, adequate easements for purposes of surface water drainage maintenance shall be provided to the District. This does not imply a maintenance obligation by the District.

4. Facilities developed on site, including flow discharge from site, shall be constructed in a manner consistent with "*OLSD Surface Water Master Plan"*.

5. All storm conveyance pipes, vaults, detention facilities, or other water quality or quantity facilities shall be built to specifications of the District.

6. All surface water facilities shall be constructed per specifications of the District.

7. Inspection of surface water facilities and approval of shop drawings shall be provided by the developer's engineer.

8. Following completion of construction, the engineer shall submit a document, stamped by a professional engineer, indicating all surface water systems have been inspected and installed per approved plans and approved changes.

9. Maintenance is required for all onsite surface water facilities. The maintenance program must be approved by the District. The District may require a recorded Operations and Maintenance Agreement for onsite facilities.

10. As-built plans of facilities, easements for all facilities, and approved maintenance plans shall be provided to the District upon completion of construction. Record drawings may be substituted for as-built plans when determined appropriate by the District or authorized representative.

11. Each surface water system shall have adequate easements and access for construction, operation, and maintenance. A commercial or industrial user having ownership or control of onsite detention facilities shall maintain such facilities in compliance with this Code and provide documentation of annual maintenance.

12. All surface water facilities shall be maintained as needed and as approved by the District. Proof of maintenance shall be annually submitted in accordance with a schedule approved by the District. If the facility is not maintained, the District may

perform the inspection, maintenance, and documentation and charge the owner of the facility.

13. Site plans, grading plans, storm drainage plans, and associated calculations must be stamped and signed by a professional engineer licensed by the State of Oregon and meet the standards of the District.

14. Permittees or owners shall provide a performance bond or other surety acceptable to the District prior to recording of the plat for residential developments or the issuance of building permits for commercial or industrial developments. The amount of the performance bond shall be in the amount of 100~~25~~ percent of the engineer's cost estimate for all approved but uncompleted surface water and buffer improvements.

15. A maintenance bond shall be provided to the District prior to release of the performance bond. The maintenance bond shall be in favor of the District, in the amount of ~~25~~ 100 percent of the actual construction cost, for a period of one year from the date of final District inspection and acceptance of all completed buffer mitigation and public surface water facilities. During construction and the guarantee period, the District may perform work if the owner fails to do so, and charge the Bond. At the end of the one-year guarantee period, the residual bond amount shall be released and remitted to the owner. Nothing herein shall limit the owner's responsibility for repair and maintenance to the amount of the bond.

16. The permitee or owner is responsible for complying with federal, state and local regulations.

17. All developments and redevelopments shall provide water quantity, water quality, and infiltration systems to meet requirements of subsection 2.1005.03 and 2.1005.04.

18. Development projects shall not be phased or segmented in such a manner to avoid the requirements of the Code.

2.1005.03 Water Quality Standards

2.1005.03.01 Conveyance Standards

1. Surface water collection systems shall be sized for post-developed conditions in accordance with the following criteria:

   (a) Storm sewers and outfall pipes draining less than 640 acres: 25-yr, 24-hr design storm

   (b) Sewers and outfall pipes draining greater than 640 acres: 50-year, 24-hour design storm

   (c) Creek or stream channels draining less than 250 acres: 25-year, 24-hour design storm

   (d) Creek or stream channels draining greater than 250 acres: 50-year, 24-hour design storm

   (e) Creek or stream channels draining greater than 640 acres: 100-year, 24-hour design storm

2. Drainage areas may use alternate calculation methods such as SBUH, HEC 1, HSPF, or SWMM, or others as approved by the District.

3. Drainage areas smaller than 1 acre shall use a rational method for determining conveyance flows.

4. Exceptions must be documented and approved by the District.

5. Instream or in-line detention can only be used in locations approved by the USACE, DSL, any other authorized federal, state, or local agency, and approval from the District.

6. District may require facilities to bring drainage including off-site drainage from private property to a public facility identified in the District's *Surface Water Master Plan*.

7. Public drainage facilities shall comply with Clackamas County standards, unless amended by the District.

2.1005.03.02 Off-site Flows, Springs, and Groundwater

The property owner shall be responsible to provide a drainage system for all water onsite and for water entering the property from offsite.

1. Surface water, springs, and groundwater shall be incorporated into the drainage design.

2. The owner is also responsible for springs and groundwater that surface during construction and within the warranty period of the drainage system.

3. During development or redevelopment of a property, the District may require the owner to install a drainage system with adequate capacity to convey offsite drainage to meet the needs identified in the adopted capital improvement plan of the *Surface Water Master Plan*.

   (a) The drainage system shall be designed and installed consistent with standards described in subsections 2.1005.03.04 and 2.1005.03.05.

   (b) In such case, the District may contribute a portion of the funding for the conveyance facility when funding is available.

2.1005.03.03 Curb Drains

Where a drainage system of catch basins and pipes is available, all drains that extend to the curb must be connected to the storm system.

2.1005.03.04 Onsite Detention Design Criteria

The District may require that the applicant design and construct a detention and drainage system which will ensure that offsite impacts caused by that development can be mitigated.

1. Onsite storm quantity detention facilities shall be designed to capture and detain runoff as follows:

(a) 2-year, 24-hour post-developed runoff rate to a ½ of the 2-year, 24-hour pre- developed discharge rate;

(b) In areas with limited downstream capacity**, or critical areas identified in the District's Hydromodification Analysis or other adopted documents** ~~that cannot be upgraded, (see Standards for maps of specific areas),~~ detention shall be designed to reduce the 25-year, 24-hour, post-developed runoff rate to a 2-year, 24-hour pre- developed discharge rate, and, from the 2-year, 24-hour, post developed rate, to ½ of the 2-year, 24-hour pre-developed discharge rate.

3. ~~2.~~ Downstream analysis shall demonstrate adequate conveyance capacity to the distance where the project site contributes less than 15 percent of the upstream drainage area OR 1500 feet downstream of the project, whichever is greater. If the downstream analysis crosses the jurisdictional boundary of another surface water management agency, that agency must be notified by the developer or owner and given the opportunity to review and comment on the analysis.

4. Downstream Analysis Exemption: an exemption to the downstream analysis shall be proposed as an exemption request per OLWSD Rules and Regulations and shall address the following criteria. The exemption is discretionarily-approved by the District as described in the Rules and Regulations.
   a. Prior to Land Use Application, the owner/applicant shall provide infiltration tests results certified by a professional engineer (Oregon) or registered geologist/geotechnical engineer or equivalent. The test locations shall be conducted in areas anticipated for impervious areas and/or infiltration facilities.
   b. The proposed development or redevelopment shall infiltrate up to the 25-year design storm event. If the 25-year storm event infiltration rate cannot be achieved, the 10-year event shall be infiltrated. If that cannot be achieved, the proposal shall match pre-developed peak flow for the 100-year storm event and meet the flow control standard documented in OLWSD Engineering Design and Construction Standards (OLWSD D&C) Section 2.1005.03.034. Flow control should be provided via mechanical means prior to entering the public system or receiving water.
   c. To determine pre-developed runoff, the site should be analyzed using the Water Environment Services BMP sizing tool. [6]
   d. All proposed roof areas and impervious surfaces should be managed consistent with other stormwater generated onsite.
   e. The proposal does not have any other related exemptions, waivers or variances to OLWSD surfacewater standards.
   f. The proposal does not disturb, by development activity or flow, or directly flow into any riparian areas or other water resource.
   ~~a.~~

~~3~~5. Detention is required for residential subdivisions and partitions of parcels with the potential to create more than two additional lots as currently zoned, and for developments and redevelopments. Two lot (creating one additional lot) partitions that cannot be further partitioned under current zoning, detention is not required if

[6] http://impsizingtool.blob.core.windows.net/clickonceinstall/WES-HMPTools.htm

there are no downstream impacts. All subdivisions and partitions must include a drainage plan for each proposed lot. Infiltration facilities are required where soil conditions permit.

6. Open detention facilities shall be planted with vegetation as per the *Oak Lodge Sanitary District Plant List*), available from the District. Planting schedule and maintenance of vegetation shall be approved by the District.

7. Flow Control Exemption

Onsite detention is not required for all development that discharges to surface waters because flow control is not always needed to protect stream morphology from hydromodification impacts.

Based on the flow control exemption criteria and conditions outlined in the *Discharge of Stormwater to High Order Streams; Determining Exempt Reaches* (Herrera Environmental Consultants and Northwest Hydraulic Consultants, April 13, 2004), onsite detention is not needed for direct discharges to the Willamette River.

An exemption to the onsite detention requirement of subsection 2.1005.03.04 will be granted when all of the following conditions apply:

1. The entire development site discharges directly to the Willamette River; and
2. The project site is drained by a conveyance system that is comprised entirely of man-made conveyance elements (e.g., pipes, culverts, outfall protection, etc.) and extends to the ordinary high-water line of the Willamette River; and
3. The flow path distance from the project site to the 100-year floodplain of the Willamette River is less than one half mile;
4. The conveyance system between the project site and the exempt receiving water shall have sufficient hydraulic capacity to convey discharge from future buildout conditions (under current zoning) of the site, and the existing development condition from the remaining drainage area contributing to the conveyance system, based on the conveyance standards outlined in Section 2.1005.03.01; and
5. Any erodible elements of the man-made conveyance system must be adequately stabilized to prevent erosion under the conditions noted above.

2.1005.03.05 ~~Onsite~~ Detention Design Method

1. The procedure for determining the detention quantities is set forth in ***City of Portland Stormwater Management Manual—August 2016*** ~~*Chapter 2, Facility Design, Portland, Oregon, Portland Stormwater Management Manual, 2008*~~[7]. Local rainfall data and information shall apply. The design criteria shall be as noted in the Code. Engineers desiring to utilize a procedure other than as set forth in the Code shall obtain the approval of the District prior to submitting calculations utilizing the proposed procedure.

2. The sizing of stormwater quantity detention facilities shall be based on the impervious area to be created by the development, including structures and all roads and impervious areas. In circumstances of any road improvements, all roadway (public or private) that is altered including grind and inlay and all area that drains or flows to the (re)development site shall also be included in the proposal's treatment detention and treatment.

[7] ~~Or equivalent~~

3. For single family and duplex residential subdivisions or partitions, stormwater quantity detention facilities shall be sized for the impervious areas to be created by the subdivision or partitions, including all residences on individual lots at a rate of one Equivalent Service Unit (ESU) of impervious surface area per dwelling unit, plus all roads. If actual impervious area is to be greater than one ESU per dwelling unit, then the actual impervious numbers shall be used. Such facilities shall be constructed as a part of the subdivision or partition.

4. Redevelopment of sites shall require detention for the areas impacted by construction.

5. Regional detention and water quality facilities are encouraged. Where topography allows, detention and water quality facilities may be sized and constructed to provide detention and treatment for more than one development. Maintenance must be provided for the facility. Easements and access must also be provided.

6. Each development shall address drainage for groundwater and springs. Existing problems shall be addressed in plans submitted for review and approval. Groundwater and springs that are encountered during development shall be the responsibility of the developer to address. Plans for drainage of these waters shall be submitted to the District for review and approval prior to construction.

7. Fees in-lieu of detention and treatment for water quality may be applied under the following conditions:

   (a) Regional detention and treatment downstream is available and has been identified.

   (b) Downstream detention and treatment is constructed or an agreement has been approved by the District on implementation of downstream detention and treatment.

   (c) Fees in lieu of detention and treatment will be applied as a percentage of facility costs, including engineering, maintenance, and administration. Percentage of costs will be based on percentage of use of facility(s).

2.1005.03.06 Infiltration/Retention Systems

Infiltration systems are encouraged for all new developments and redevelopments to infiltrate runoff from storm events up to one-half inch of rainfall in 24 hours.

1. Treatment shall occur prior to or concurrent with infiltration systems in accordance with OLWSD Rules, Regulations and Standards.

2. Infiltration system capacity may be incorporated into the detention system design, in order to reduce the required detention volume. Infiltration facilities shall be sized to infiltrate the design runoff volume within a maximum of 96 hours.

3. Infiltration requirements may be waived, or reduced, if it can be demonstrated by a registered professional engineer that infiltration will destabilize the soil, cause adverse structural or environmental impacts, or due to site constraints such as high groundwater, springs, or impermeable soils.

4. Infiltration will be allowed in the District with consideration of soil and subsurface drainage capacity. Infiltration systems will be designed for 3 inches of rain within a 24-hour period.

5. Use of infiltration systems will require an engineering report documenting the year- round infiltration capacity of the soil/ground as well as a percolation test. DEQ approval is required for use of infiltration.

2.1005.04 Water Quality Standards

All new developments and re-developments shall provide on-site water quality facilities, as required by the District. In circumstances of any road improvements, all roadway (public or private) that is altered including grind and inlay and all area that drains or flows to the (re)development site shall also be included in the proposal's treatment detention and treatment. Water quality facilities shall be designed to capture and treat the first 1-inch of stormwater runoff from a 24-hour storm event.

Accepted types of vegetated treatment facilities include vegetated swales, filter strips, constructed wetlands, wet ponds and extended dry detention ponds. Alternative systems may be used with approval by the District and shall be designed to provide equivalent treatment ~~as is provided with a vegetated system,~~ as described in ~~the July 1, 2013 CCSD#1 Stormwater Standards (*Appendix F - Proprietary Stormwater Treatment Technology Policy, Appendix H - Vegetated Stormwater Quality Facility Design Criteria*~~[8] ~~[9]and~~ the ***City of Portland Stormwater Management Manual—August 2016***~~"Surface Water Quality Facilities Technical Guidance Handbook", developed by Portland and Lake Oswego, Clackamas County, and the Unified Sewerage Agency, now known as Clean Water Services.~~

END OF SECTION

[8] ~~Or equivalent~~Section 2.4.8 and Portland City Code 17.38 at the time of this code adoption (https://www.portlandoregon.gov/bes/article/582086)

SECTION 3—WASTEWATER DESIGN STANDARDS

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3.0000 SANITARY SEWERS

3.0010 General Design Requirements

Performance Standards: Sanitary sewer system design shall meet the policies and guidelines of the adopted OLWSD Rules, Regulations and Design and Construction Standards and its updates.

Sanitary sewer systems shall be designed to provide gravity service to all areas of development unless approved by **District** ~~City~~ Engineer as stated below.

Sanitary sewer system capacity shall be designed for ultimate development density of the tributary area. The system shall allow for future system extension and for future development.

Sanitary sewers shall be designed to remove the domestic sewage from residential, commercial or industrial buildings, and all public and private establishments.

Storm water, including street, roof, or footing drainage, shall not be discharged into the sanitary sewer system but shall be removed by a system of storm drains or by some other method separate from the sanitary sewer system.

Unpolluted or noncontact cooling waters shall not be discharged into sanitary sewers. The overflow drains and filter backwash lines of swimming pools and hot tubs shall drain into a sanitary sewer.

In general, sewer systems shall be designed to allow for future loads and for ultimate development of the specific drainage area or basin concerned.

As a condition of sewer service, all developments will be required to provide public sewers to adjacent upstream parcels in order to provide for an orderly development of the drainage area. This shall include street frontage of the property to adjoining properties when the main is located in the street right-of-way. This shall include trunk sewers that are oversized to provide capacity for upstream development.

All sewer mainlines shall be located within the public right-of-way or public easement as directed by the District Engineer. These lines are placed in the public streets and right-of-way for ease of maintenance and access, control of the facility, operation of the facility, and to provide required replacement and/or repair.

Design shall comply with Oregon Department of Environmental Quality sewer design guidelines[1]), and the requirements of OLWSD.

District Engineer approval will be required for any sanitary lift or pump stations.

3.0011 Pipe Materials and Size

All public sanitary sewers including mains and laterals shall be constructed with PVC SDR 35 pipe as specified in the District's Design and Construction Standards Division 3 (Sanitary Sewer Construction Standards). The District Engineer shall have discretion for requiring alternative pipe materials. Class 50 ductile-iron pipe, C900 PVC pipe, or HDPE SDR 11 (new) or SDR 17 (bursting) pipe may be required with authorization from the District Engineer. Circumstances include but are not limited to areas of unstable soils, high groundwater, shallow rock, railroad crossings or creek crossings.

Private sanitary sewers shall meet the appropriate sections of the Oregon Plumbing Specialty Code.

All sanitary sewer main lines shall be a minimum diameter of 8 inches. A 6 inch diameter sewer will be allowed only with the District Engineer's approval and shall be submitted as a variance request.

New and reconstructed light rail and freight rail construction may require improvements to the sanitary sewer system at utility crossing locations. All existing pipes or pipes on the second half of useful life within the rail zones shall be replaced to current standards. Metallic or conductive pipe materials are not

[1] OAR 340, and Division 52 at time of adoption

approved pipe materials at rail crossings. Pipes are to be centered under rail tracks to avoid joints underneath rail lines. All new pipe installations must identify practical future replacement options for the sewer pipe under rails in case of future failure of utility. All pipes shall be sized for full build-out and future flows. This sizing includes allowance for trenchless technologies. Where lining is anticipated, pipe size shall account for future lining thickness.

3.0012 Minimum Design Criteria

In general, sewer systems should be designed to care for future loads which may reasonably be expected within a period of 30 to 50 years, and for ultimate development of the specific drainage area concerned.

A. Velocity

All sanitary sewers shall be designed on a grade which produces a mean velocity, when flowing half-full or full, of no less than 2.5 feet per second. Where velocities greater than 15 fps are attained, special provisions shall be made to protect against displacement by erosion and shock. The minimum grades for the various sizes of pipe are as follows.

Inside Pipe Diameter (inches)	Grade (feet per 100 feet)
6	0.77
8	0.53
10	0.39
12	0.31
15	0.23
18	0.18
21	0.15
24	0.13
27	0.11
30	0.09
36	0.07

In general, slopes greater than those shown above are desirable and are particularly recommended on sewers which dead end and will not be extended so they have adequate slope to self-clean. Dead-end mains shall have a minimum of 2% slope for all diameter sewers.

B. Manning Equation

When calculating minimum pipe slopes and velocities, the Design Engineer shall use the Manning pipe friction formula.

C. Pipe Coefficient

The minimum pipe roughness coefficient for sanitary sewers shall be 0.013.

3.0020 Alignment and Cover

3.0021 Right-of-Way Location

Sanitary sewer lines shall be located in the street right-of-way, 5 feet north and west of centerline whenever possible. All changes in direction of pipe shall be made at a manhole.

Sewers shall be located in the street right-of-way. If streets have curved alignments, the center of the manhole shall not be less than 6 feet from the curb face on the outside of the curve, nor the sewer centerline less than 6 feet from the curb face on the inside of the curve.

Curved alignments will not be permitted.

3.0022 Minimum Cover

All sanitary sewers shall be laid at a depth sufficient to drain building sewers, to protect against damage by frost or traffic, and to drain basement sewers, where practical. Sufficient depth shall mean the minimum cover from the top of the pipe to finish grade at the sewer alignment. In new residential hillside subdivisions, mainline and lateral sewers shall be placed in the street at a depth sufficient to drain building sewers on the low side of the street.

Sanitary sewers shall be constructed with 5 feet minimum cover in all parts of the public ROW or easement.

Where the topography is relatively flat and existing sewers are shallow (5 feet or less) the minimum cover shall be 3 feet. Where required for additional strength when cover is minimal, ductile-iron pipe or C900 PVC pipe and/or CDF backfill may be required by the District Engineer.

Deviation from the above standards will be considered on a case-by-case basis when one of the following circumstances exists.

1. Underlying rock strata—required: A request in writing to the District Engineer, together with submittal of a soils report, with a plan and profile certifying that bed rock exists 3 feet below the undisturbed ground surface at all investigated alignments.
2. A ditch or stream must be crossed—required: A plan and profile; horizontal scale 1 inches = 20 feet, vertical scale 1 inches = 2 feet.
3. Other circumstances which the installer desires to vary the standards shall be submitted as a variance.

3.0023 Separation with Waterlines

Water mains shall be installed a minimum clear distance of 10 feet horizontally from sanitary sewers and shall be installed to go over the top of such sewers with a minimum of 18 inches of clearance at intersections of these pipes (in accordance with the requirements of OAR [2]Public Water Systems or equivalent). Exceptions shall first be approved by the District Engineer. In all instances the distances shall be measured edge to edge. The minimum spacing between water mains and storm drains, gas lines, and other underground utilities, excepting sanitary sewers, shall be 3 feet horizontally when the standard utility location cannot be maintained.

Where water mains are being designed for installation parallel with other water mains, utility pipe, or conduit lines, the vertical location shall be 12 inches below (or in such a manner which will permit future side connections of mains, hydrants, or services) and avoid conflicts with parallel utilities without abrupt changes in vertical grade of the above mentioned main, hydrant, or service. Where crossing of utilities are required; the minimum vertical clearance shall be 6 inches.

3.0024 Easements

Sewers placed in easements along a property line shall have the easement centered on the property line and the sewer shall be offset 18 inches from the property lines. For sewers placed in easements located other than along a property line, the sewer shall be placed in the center of the easement. The conditions of the easement shall be such that the easement shall not be used for any purpose which would interfere with the unrestricted use for sewer main purposes. Under no circumstances shall a building, wall, fence, or permanent structure be placed over a sanitary sewer main or sewer easement without District approval. This shall include overhanging structures with footings located outside the easement.

Easements for sewers shall have a minimum width of 20 feet. In some instances, larger width easements may be required, such as excessively deep pipes or location of a building near the easement.

[2] Chapter 333, at time of adoption

Easement locations for public sewer mains serving a ~~PUD~~ Planned Unit Development, apartment complex, or commercial/industrial development shall be in parking lots, private drives, or similar open areas which will permit an unobstructed vehicle access for maintenance by District personnel.

All easements must be furnished to the District Engineer for review and approval prior to recording. Easements shall state that the District will not in any way be responsible for replacing landscaping including any shrubs or trees, fencing, or other structures or improvements that may exist or have been placed in the easement.

To service underserved areas, OLWSD may require public utilities and/or associated easement(s) to extend to the furthest property line or the most proximate or logical property line to connect to existing, planned, or potential utility lines.

3.0025 Relation to Watercourses

Generally, the top of all sanitary sewers entering, crossing or adjacent to streams shall be at a sufficient depth below the natural bottom of the streambed to protect the sewer line. 1 foot of cover is required where the sewer is in rock; 3 feet of cover is required in other materials. In paved channels, the top of the sewer line shall be placed at least 6 inches below rock grade of the bottom of the channel, except as provided above.

Sewers located along streams shall be located outside of the streambed and sufficiently removed therefrom to provide for future, possible stream channel widening. All manhole covers shall be watertight at or below the 100-year flood elevation.

Sewers crossing streams or drainage channels shall be designed to cross the stream as nearly perpendicular to the stream channel as possible, and shall be free from change of grade. The minimum cover shall be 36 inches from the bottom of the streambed or drainage channel.

Pipe material shall be ductile iron with an 18-foot length of pipe centered on the stream or drainage channel centerline. The ductile-iron pipe shall extend to a point where a 1-to-1 slope begins at the top of the bank and slopes down from the bank away from the channel centerline and intersects the top of the pipe.

Concrete encasement will be required when the above cover requirements cannot be met. Each deviation from the above requirements will be reviewed on a case-by-case basis and submitted as a variance request.

3.0030 Structures

3.0031 Manholes

Manholes shall conform to ASTM C-478.

Manholes shall be located at all changes in slope, alignment, pipe size, and at all pipe junctions with present or future sanitary sewers.

Manhole spacing shall not be greater than ~~500~~300 feet. Spacing may be increased in special circumstances with District Engineer approval and submitted as a variance.

Manholes outside of vehicle or pedestrian travelways shall have a tamper proof lid.

Designs for manholes are shown in the OLWSD standard drawings. They are suitable for most conditions.

All sanitary manholes shall be of watertight construction. If ground water or surface drainage can be expected, watertight covers shall be used.

New designs or revisions should not be shown on the construction drawings unless the standard designs are not suitable. New or revised designs may be necessary if:

1. 1 or more of the sewers to be connected to the manhole is over 36 inches in diameter (smaller diameters may require a special design if the manhole is at an alignment change.)
2. Several sewers will be connected to the manhole.
3. There is less than 90 degrees between the incoming and outgoing sewer.
4. The manhole will be subject to unusual structural loads.
5. Diversion or other flow control measures are required.

Where one or more of conditions a), b), or c) are encountered, a drawing of the manhole base should be made to determine if it is feasible to use designs shown in the standard drawings. It may be necessary to restrict the options to a specific standard drawing specified by a note on the construction drawings. If a special design is required for any reason, it will be necessary to show the details on the construction drawings and to provide structural calculations as needed.

Some alternate manhole features are shown in the standard drawings. Where these features are required, they must be specified by a note on the construction drawings. Some examples are:

1. Slab tops must be used in lieu of cones where there will be ~~less than~~ 4 feet or less between the manhole shelf and the top of the ~~manhole lid~~ last barrel section.
2. Watertight manhole frames and covers are to be used if floodwaters are expected to cover the manhole top or if the manhole must be located in the street gutter. Such conditions should be avoided wherever feasible.
3. Tamperproof manhole frames (7 inches depth) and covers are required in all areas outside the paved public right-of-way or pedestrian travel ways. Rims shall be 1 ~~feet~~ foot above the finished grade if not in a paved way.

Standards for elevation differences at manholes have been established to compensate for normal energy losses and to prevent surcharging of a sewer by a larger sewer. For purposes of slope calculation and for establishing elevation differences, the elevations are given at the intersection of the sewer centerlines (usually the center of the manhole). The rules for elevation differences at manholes are:

1. The crowns of incoming sewers shall be at least as high as the crown of the outgoing sewer.
2. If the incoming and outgoing sewers are of equal size and are passing straight through the manhole, no added elevation change is required.
3. If sewers intersect or the alignment changes at the manhole, the invert elevation difference shall be at least 0.10 feet for 0°-45° of horizontal deflection angle, and 0.20 feet for over 45° of horizontal deflection angle.
4. The slope of a sewer within a manhole shall be no less than the slope of the same sewer outside of the manhole.
5. Drop connections are required when the vertical distance between flow lines exceeds 2 feet. The diameter of the drop connection must be specified on the construction drawings. The diameter of the drop connection shall be the same size as the diameter of the incoming sewer. Outside drop assemblies only~~,~~ will be permitted, see the standard drawings.
6. All connections must enter the manhole through a channel in the base. This includes drop connections and connections to existing manholes.

Where conditions make compliance with these rules impractical, exceptions will be permitted. It will be necessary, however, for the Design Engineer to provide a complete analysis of the need for such designs.

3.0032 Cleanouts

Cleanouts will not be approved as substitutes for manholes on public sewer lines.

3.0040 Laterals

Laterals are those sewer lines which connect buildings to the sewer mains. They are comprised of the privately-owned part of the lateral located on private property, and the District-owned part of the lateral located in the road right-of-way or District easement.

Each individual building site shall be connected by a separate, lateral connected to the sewer main. Each individual property shall have an individual lateral. Exceptions to this standard shall be applied for as a variance request and approved by the District Engineer or designee.

If a structure is replaced (e.g. demolished and rebuilt or replaced with alternative structure), a new lateral is required.

A new ~~tap and~~ lateral pipe and cleanout is required to be installed. The District will evaluate the tap to determine whether it can be reused for the new lateral. If the existing lateral alignment is re-used, new materials shall be installed. If a different alignment is proposed, the exiting sewer in the public ROW or easement shall be abandoned and disconnected at the main. If there are multiple existing laterals (in use or existing) all unused laterals shall be disconnected at the main.

Where the invert of the lateral entering a manhole is less than two feet above the manhole invert, a formed channel will be constructed utilizing Portland Cement concrete. The sewage entering the manhole will follow a smooth concrete channel transitioning evenly from the invert of the inlet pipe into **the** main channel. Sewage will not be allowed to fall freely to the manhole base.

The minimum inside diameter of a District-owned lateral shall be 4 inches for single family residences and for multifamily complexes of three Equivalent Dwelling Units or less.

A 6-inch diameter District-owned lateral is required for any commercial properties.

A 6-inch diameter District-owned lateral is required for any residential properties or complexes of four Equivalent Dwelling Units or more.

An 8-inch diameter District-owned lateral is required for properties with an 8-inch~~e~~ diameter privately-owned lateral and must have a manhole installed at the property owner's cost at the point of connection to the main line. Laterals shall be built to the same construction standards and of the same materials as the sewer mainline. Laterals ~~in general~~ shall be placed at 90º to the main sewer line to avoid excessive exposure to other utilities during excavation for construction or maintenance of the laterals. ~~The preferred angle is 90º.~~ Other angles may be approved for atypical conditions on a case-by-case basis and submitted as an alternate request described in Section 1. Lateral connections may be made at manholes 90º to sewer mainlineif such placement would not interfere with other present or future connections to the manhole. Laterals will run straight from the tap to the clean out, with no bends and no intentional flexing of the pipe. Manhole taps are allowed when no other alternative exists. ~~If an existing hole is in the manhole, it may be used only after approval by OLWSD.).~~ All manhole taps are to be requested with a variance application.

The minimum slope of sewer service lines shall be 2% (¼ inch per foot), except for unusual conditions, when a slope of 1% (⅛ inch per foot) may be approved. It will be necessary, however, for the Design Engineer to provide a complete analysis of the need for any sewer service lateral slope less than 2%. The maximum slope shall be 100% (45º or 1 foot per foot).

Laterals shall be installed with a clean out located at the edge of the road right-of-way or at the edge of a District easement. If a Public Utility Easement is present, the clean out must still be located in the road right-of-way, not in or behind the PUE. A 4-inch lateral must have a 4 inch clean out and a 6 inch lateral must have a 6 inch clean out. The clean out riser shall extend to 6 inches below final grade, be easily accessible, have a threaded plug, and be contained within a traffic-rated protective box set to final grade. A watertight plug shall be installed in the end of the lateral and a 2x4 wood marker shall be placed at the lateral end from pipe invert to at least 36 inches above the finish grade. The marker top shall be painted green and marked with the depth of the lateral measured from ground to invert of pipe.

3.0050 Connection to Existing Sewer

Connections to, and extensions of, existing sewers will occur to facilitate new development. Certain requirements will be placed on the Design Engineer as to permitted methods and/or locations.

Connections to existing manholes shall be made with the following guidelines.

1. Where the invert of the connecting pipe is more than 2 feet above the manhole shelf, the Contractor will be required to construct an outside drop with the inlet pipe invert being located at the manhole shelf. The sewage entering the manhole will follow a smooth concrete channel transition from the inlet pipe into the main channel.
2. Where the invert is required to enter below the shelf of the manhole, the inlet pipe will not enter below a point where the crown of the new inlet pipe is below the crown of the outlet pipe. The base of the manhole will be rebuilt if damaged in this process. The sewage will enter the main flow in a smooth channel transitioning from the inlet pipe to the main channel.
3. No pipe will enter an existing manhole where the angle between the incoming flow and the outgoing flow is greater than 90°.

New laterals shall be connected by core drilling a hole in the existing main line and installing an Inserta Tee (or equivalent) per the manufacturer's instructions.

In the case where the new lateral diameter is only 2 inches smaller than the existing main diameter (for example, 4-inch tap on a 6-inch main or a 6-inch tap on an 8-inch main), a section of main line shall be removed and a PVC tee shall be spliced in with Fernco Strongback (or equivalent) couplers. After this type of tap is bedded and trench compaction is completed, the main line will be TV inspected at the Contractor's expense to show that the new PVC tee is properly aligned with the existing main line.

If an 8 inches lateral is to be connected to an 8 inches existing main line, then a manhole shall be required at the point of connection.

New and reconstructed light rail and freight rail construction may require improvements to the existing sanitary sewer system at utility crossing locations. All existing asbestos-cement pipes or pipes on the second half of useful life within the rail zones must be replaced to current standards. Existing metallic or conductive pipe materials are not approved pipe materials at rail crossings and must be replaced to current standards.

3.1000 Sewage Pump Station Design Standards

3.1010 General

The pump station shall be a submersible pump type facility.

Station shall include: submersible pumps, wet well, valve vault, associated piping and valves, electrical controls, instrumentation, telemetry, access road, fencing, landscaping, and potable water supply, and shall generally conform to the District rules, regulations and standards.

Pump station shall be designed to pump the peak wastewater flow from the service area. When the service area is not built out, staging of pump station capacity will be allowed.

Where the flow is substantial or where environmental damage may occur due to power failure, the District Engineer may require permanent standby power.

Wet well-mounted or wet well/dry well stations will not be allowed.

3.1020 Design

Pump station shall be designed to meet the minimum requirements and guidelines standards of the Department of Environmental Quality (DEQ), [3] regulations.

Design shall be by registered engineer experienced in design of such facilities.

Service area, peak flow, and pump station calculations shall be submitted to the District Engineer.

Wet well shall be designed to provide 4 hours of storage above high water alarm.

3.1030 Materials

3.1031 Pumps

A minimum of 2 pumps shall be supplied. Each pump shall be capable of pumping the peak wastewater flow. Where more than 2 pumps are used, the station shall be able to pump peak wastewater flow when the largest pump is out of service.

Pumps shall be submersible pumps manufactured by Hydronix (or equal), explosion-proof, suitable for hazardous location, and shall be UL or FM listed.

3.1032 Piping and Valves

Piping and fittings shall be ductile iron.

Valves shall be metal, suitable for wastewater use. Valves shall be designed for wastewater service.

Provide pressure gages on pump discharge piping.

3.1033 Electrical

Electrical controls shall be located above ground mounted in a waterproof enclosure. Electrical panels shall be UL listed. The pump station wet well shall be considered a hazardous location.

3.1034 Controls

Controls may be mechanical relays or programmable logic controllers.

Pumps shall alternate lead-lag position with each pumping cycle.

Bubbler shall control pump start/stop.

Float activated alarm shall indicate high water level.

An auxiliary power connector and manual transfer switch shall be provided.

3.1035 Alarms and Telemetry

Alarms shall be telemetered to the OLWSD SCADA system.

Alarms include:

- Pump failure
- Power failure
- Telemetry failure

[3] OAR Chapter 340, Division 52 at time of adoption

- High water level
- Bypass

3.1036 Landscaping and Fencing

A 6-foot chain link fence with 3 strands of barbed wire and redwood slats shall surround the pump station. Access for easy maintenance shall be incorporated in the design.

3.1037 Additional Features

Provide 1-inch hose bib at valve vault. Potable water shall be provided by reduced pressure backflow preventer.

Provide positive ventilation in valve vault.

Odor control as required.

3.1038 Force Main

Force main shall be designed for a nominal flow velocity in the range of 3 to 5 feet per second.

3.1040 Construction

3.1041 Design Codes

Pump station and related facilities will be constructed to Electrical and Building Codes.

3.1042 Steel Fabrications

Steel fabrications shall be hot dipped galvanized; painting required on valves, piping, and pipe fittings.

3.1043 Operating and Maintenance Data

Compile product data and related information appropriate for District maintenance and operation of products furnished under the Contract.

Prepare operating and maintenance manual.

Instruct District personnel in the maintenance of products and in the operation of equipment and systems.

3.1044 Spare Parts

Supply 2 sets each of all gaskets, bearings, and mechanical seals for rotating equipment.

END OF SECTION

SECTION 4—WATER DESIGN STANDARDS

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4.0000 Water Mains

4.0010 General Design Requirements

Performance Standards: Water distribution systems shall be designed to meet State Water Administrative Rules, AWWA Standards, and guidelines of these Design Standards.

Water system design shall provide adequate flow for fire protection and maximum water usage and consumption. Required water system demands shall be met by maintaining the minimum operating pressures required by the District. For single-family residential areas, the minimum static pressure shall be 35 PSI, and the minimum fire flow shall be 1,000 GPM. For all other developments, the required fire flow shall be as determined by the Fire Marshal.

Water system design shall meet distribution needs for maximum water usage and consumption within a given pressure zone. New water systems shall allow for future extensions beyond present development.

When water systems are designed where velocities are greater than 5 fps, special provisions shall be made to protect against displacement by erosion and shock.

All waterlines shall be located within the public right-of-way or as directed by the District Engineer. These lines are placed in the public right-of-way for ease of maintenance and access, control of the facility, operation of the facility, and to permit required replacement and/or repair. The District Engineer, under special conditions, may allow a public waterline to be located within a public water easement as referenced in Subsection 4.0024 (Easements).

4.0011 Pipe Materials and Size

All public water distribution systems shall be constructed with ductile-iron pipe. All such pipe shall be cement mortar-lined pipe with push-on or mechanical type joints. When a corrosive potential condition is encountered, all ductile-iron pipe and fittings will be polyethylene encased with an 8 mil tubing meeting manufacturer and AWWA standards. Where an active cathodic protection system is encountered as a result of other utilities, a deviation from the normal pipe design/material/installation practice may be required by the District Engineer.

All pipe, valves and fittings shall be pressure rated for 250 or 350 PSI. All fittings shall be factory cement lined and coated.

Water distribution main sizes shall generally conform to the following.

4-inch: May only be used with approval of the District Engineer in residential zones on dead-end streets with a center line distance of less than 250 feet measured from the center of the intersecting street to the radius point of the cul-de-sac; with service to not more than 12 residences; and shall be connected to a looped minimum 6-inch main. Fire hydrants are not permitted on four-inch lines. All 4-inch lines shall terminate with a standard blowoff (standard drawing 413.)

6-inch: Are not generally allowed and only allowed with approval of the District Engineer. ~~Minimum size residential subdivision distribution water main for the grid (looped) system, not to exceed an unsupported length of 600 feet and shall not be permanently dead-ended. Looping of the distribution grid shall be at least every 600 feet.~~

8-inch: Minimum size for primary feeder mains in residential subdivisions. Minimum size residential subdivision distribution water main for the grid (looped) system, not to exceed an unsupported length of 600 feet and shall not be permanently dead-ended. Looping of the distribution grid shall be at least every 600 feet.

10 inches and Up: As required for primary feeder lines in subdivisions, industrial and commercial areas.

Velocity in distribution mains shall be designed not to exceed 5' per second. Velocity in service lines, as defined in Subsection 4.0050 (Water Service Lines), shall not exceed 10' per second. Standard trench section (standard drawing 402) will be utilized for all water pipe installed.

New construction and reconstruction of light rail and freight rail may require improvements to the water system at utility crossing locations. Existing pipes in the second half of their useful life within the rail zones must be replaced to current standards. Metallic or conductive pipe materials are not approved pipe materials at light rail crossings.

All waterlines are to be encased through rail line crossings. Each casing pipe segment is to be positioned under rail tracks to avoid joints underneath rail lines. Metallic or conductive pipe materials are not approved at rail crossings (including pipes used as encasement conduit).

4.0012 Grid System

The distribution system mains shall be looped at all possible locations. All developments will be required to extend mains across existing or proposed streets for future extensions of other developments within the District. All terminations shall be planned and located such that new or existing pavement will not have to be cut in the future when the main is extended. The installation of permanent dead-end mains greater than 250 feet, upon which fire protection depends and the dependence of relatively large areas on single mains, will not be permitted. To create a grid for existing, proposed and any potential connection, OLWSD may require public utilities and/or associated easement(s) to extend to the furthest property line or the most proximate or logical property line to connect to existing, planned, or potential utility lines.

4.0013 Dead-End Mains

Dead-end mains which will be extended in the future shall be provided with a properly sized blowoff (see standard drawings 413).

Permanent dead-end mains shall terminate with a standard blowoff assembly (see standard drawings 413).

4.0014 Restrained Joints

~~Restrained joints shall be required for transmission pipelines which cross unstable land, railroad tracks, freeways, watercourses, or other locations which could either result in unusual ground movements or could result in significant damage to property or life should a leak occur.~~

All fittings such as bends, tees, crosses, solid sleeves, valves, hydrants, blow offs, etc must be restrained by Megalug or Romagrip joint restraint glands. Thrust blocking and / or “rodding” will not be accepted.

Thrust blocking will be accepted only behind tap saddles for new service installations.

All bell & spigot joints must be restrained by Field LOK (or equivalent) gaskets.

4.0020 ALIGNMENT AND COVER

4.0021 Right-of-Way Location

Water systems shall be located south and east from the right-of-way centerline or as directed by the Engineer. Generally, the waterline will be located 4’ from curbline or edge of pavement. Except as provided in Subsection 4.0024 (Easements), all waterlines shall be in the public right-of-way.

Curved alignment for waterlines or mains is permitted and shall follow the street centerline when practical. The minimum allowed radius shall be based on allowable pipe deflection for the pipe diameter and the pipe laying length, but not to exceed 3° joint deflection.

4.0022 Minimum Cover

The standard minimum cover over buried water mains within the street right-of-way shall be 36" from finish grade.

The minimum cover for mains in easements across private property shall be 48" from finish grade.

Finish grade shall normally mean the existing or proposed pavement elevation. Where the main is located in the cut or fill side slope or where mains are located in easements, finish grade shall mean final ground elevation at the water main alignment.

4.0023 Separation with Sewer Lines

Water mains shall be installed a minimum clear distance of 10' horizontally from sanitary sewers, and shall be installed to go over the top of such sewers with a minimum of 18 inches of clearance at intersections of these pipes. When physical conditions render this spacing impossible or impractical, then ductile-iron water pipe with watertight joints or concrete encasements is required for the sewer line. Wherever it is necessary for sewer and water lines to cross each other, the crossing should be at an angle of approximately 90 degrees and the sewer shall either be located 18 inches or more below the water line or be constructed of ductile-iron water pipe with watertight joints for a distance of 9 feet on both sides of the water line. Exceptions shall first be approved by the District Engineer. In all instances, the distances shall be measured edge to edge. The minimum spacing between water mains and storm drains, gas lines, and other underground utilities, excepting sanitary sewers, shall be 3' horizontally when the standard utility location cannot be maintained.

Where water mains are being designed for installation parallel with other water mains, utility pipe, or conduit lines, the vertical separation shall be 12" below or in such a manner which will permit future side connections of mains, hydrants, or services, and avoid conflicts with parallel utilities without abrupt changes in vertical grade of the above mentioned main, hydrant, or service. Where crossing of utilities are required, the minimum vertical clearance shall be 6".

4.0024 Easements

Mains placed in easements along a property line, shall have easements centered on the property line and shall be offset 18 inches from the property line. Mains placed in easements along a right-of-way line shall be offset a minimum 3 feet from the right-of-way line and within a minimum 10-foot-wide easement. For mains placed in easements located other than along a property or right-of-way line, the main shall be placed in the center of the easement. Easements, when required, shall be exclusive and a minimum of 15' in width. The conditions of the easement shall be such that the easement shall not be used for any purpose which would interfere with the unrestricted use for water main purposes. Under no circumstances shall a building or structure be placed over a water main or water main easement. This includes overhanging structures with footings located outside the easement.

Easement locations for public mains serving a Planned Unit Development ~~PUD~~), ~~-~~apartment complex, or commercial/industrial development shall be in parking lots, private drives, or similar open areas which will permit unobstructed vehicle access for maintenance by District personnel.

All easements must be furnished to the District General Manager for review and approval prior to recording.

4.0030 Appurtenances

4.0031 Valves

Valves shall be the same size as the mains in which they are installed. Valve types and materials shall conform to the Design and Construction Standards.

Distribution system valves shall be located at the tee or cross fitting. There shall be a sufficient number of valves so located that not more than 4, and preferably 3 valves, must be operated to affect any one particular shutdown. The spacing of valves shall be such that the length of any one particular shutdown in commercial or industrial areas shall not exceed 500 feet nor 800 feet in other areas.

Valves shall be installed at each cross, tee, or any tap 4 inches or greater in diameter connected to the main line. Intersections shall be valved in at least 2 branches and cross-intersections shall be valved at all branches. Transmission water mains shall have valves at not more than 1,000-foot spacings. Hazardous crossings such as creeks, railroad and freeway crossings, shall be valved on each side.

Distribution tees and crosses for future branch lines on transmission mains may be required at the direction of the District Engineer.

4.0032 Fire Hydrants

The water system shall be designed to provide adequate flow as required. The distribution system shall be designed in commercial/industrial areas to accommodate fire flows up to 1,500 GPM. Minimum fire flow in single-family residential areas shall be 1,000 GPM.

The distribution of hydrants shall be based upon the Oregon Fire Code Section 507.5.1 through 507.5.6. See Appendix C[1]

Residential hydrants shall be located as nearly as possible to the corner of street intersections and not more than 500 feet from any cul-de-sac radius point.

No fire hydrant shall be installed on a main of less than 6" inside diameter. The hydrant lead shall be a minimum 6" inside diameter.

All fire hydrants will be located behind the existing or proposed sidewalk or in the planter strip. Hydrants shall be placed as to not interfere with driveways and curb ramps. If any public hydrant encroaches on private property, an easement will be provided as directed by the District Engineer.

No hydrant shall be installed within 5' of any existing aboveground utility and there shall not be any utility facilities installed closer than 5' from an existing hydrant.

Hydrant installation shall conform to standard drawing 411. Full-depth hydrants will be required in all installations. Installation of hydrant extensions will not be allowed, unless approved by the District Engineer.

Hydrants shall not be located within 20' of any building, and shall not be blocked by parking. The large hydrant port should face the road or travelway.

Guard posts shall adhere to Oregon Fire Code section 507[2].

Use of posts other than at the 4 corners may be approved by the District Engineer.

[1] Or equivalent
[2] Or equivalent

4.0033 Pressure-Reducing and Air Release Valves

The District's water distribution system is divided into several pressure zones. Where water systems cross these zone lines, a pressure-reducing valve station will be required. The specific design and location for such valves will be reviewed and approved by the District's Engineer.

When designated by the District Engineer, air release valves, per standard drawing 413, shall be installed. Such valves will be required on large diameter lines at all high points in grade.

4.0040 Backflow Prevention

Backflow prevention devices shall be required on all non-residential properties and water services equal to or greater than 1½ inches.

4.0050 Water Service Lines

The sizes of water service lines which may be used are ¾", 1", 2", 4", 6", 8", 10", and 12". Water service lines will be reviewed for effects on the distribution system and shall not be greater in size than the distribution main.

For 2" and greater services, a design drawing must be submitted showing the vault and fitting requirements with the expected flow (normal and maximum day flow) requirements and proposed usage.

Domestic service lines 3/4" through 2" shall normally extend from the main to behind the curb, with a meter curb stop and meter box located at the termination of the service connection (standard drawings 420). Meter to be provided and installed by District. Meter boxes are to be provided by the developer. In general, individual service connections shall terminate in front of the property to be served and shall be located 18 inches each side of a common side property line.

When a corrosive potential condition is encountered and the copper service passes over or under an active cathodic protection system, the service will be installed in a Schedule 40 PVC conduit for a distance of 10 feet on each side of the active system. All conduit placements will be as-built.

4.0051 Fire Service

There are 4 categories of private fire services: 1) hydrants, 2) fire sprinkler lines, 3) combination hydrant and fire sprinkler lines, and 4) combination plumbing and fire sprinkler heads.

The water fire service line shall normally extend from the main to the property line and end with a vault metering device and valves. An approved backflow prevention device will be required of the property being served.

4.0052 Fire Vaults

A vault will be required when a development provides fire sprinklers. The vault drawing will be included on construction drawings submitted to the District. The vault shall contain all valves, fittings, meters, and appurtenances required for fire service to the development.

4.0060 System Testing

All new water systems (lines, valves, hydrants, and services) shall be individually pressure tested, chlorinated, and tested for bacteria. All testing shall be performed in accordance with Division 4 (Water Construction Standards) of the Standard Construction Specifications and in the presence of a District Inspector.

4.0070 Water Quality Sampling Stations

Water sampling stations will be required as directed by the District.

4.0080 Water Service/Permit Application Meters

The owner of the premises to be served, or the owner's duly authorized agent, will apply for water service in writing on regular application forms furnished by the District. No service will be provided until the District approves the application and required payments are made.

The District will provide water service only from mains located within public roads, streets, alleys, or public easements, public rights of way, and to property abutting such mains, and to dwellings, and other structures, and premises fronting such thoroughfares with sufficient frontages on the same to provide for appropriate service from such thoroughfares.

All applications will include the signature of the applicant, the location of the premises for which the service is requested, the address to which all bills be sent, and such additional data, as the Board from time to time may require, including a plot plan of the area to be served. District personnel will regard as confidential, additional information furnished by an applicant, at the District's request; provided, however, the District will in no way be responsible for its use of said information, which will be at its direction. Failure to supply such information when requested shall be deemed sufficient cause to deny the application.

Applications for service will be considered merely as a request for service, and will not bind the District or Board, to provide such service. Charges made for the installation of water service will be paid in full, and before installation, by the District.

Each dwelling, or building, or premises must be provided with its own water service connection, and meter. No person will furnish water to any other building, property, or premises, without first obtaining written approval of the District, and then, only according to the specific term of any such authorization that might be granted.

The District will not permit so-called "spider connections" which would provide service from one road or street, to premises abutting, or dwellings fronting, on another road or street. The District will provide each dwelling with a separate service connection, and no other occupant of such dwelling, will furnish water to any other dwelling, or premise.

Meters will be set at property lines, and the service pipe from the main to the meter, as well the meter and the meter box will be the property of the District and not the person owning the premises or paying for the installation.

4.0081 Deposits and Establishment of Credit

At the time a written application is made for water service, the applicant will pay to the District an amount sufficient to cover the cost of the installation according to schedules established by the District.

After such installation is made the facilities will be the property of the District and the cost of installation will not be refunded to the customer or owner of the premises served.

The District may at its discretion require an advance cash deposit for water service, either for new services, new premises, or for turning on (of off) water at an inactive service. An advanced cash deposit may be required if the credit of the applicant is unknown or has not been established or for other good cause. Advance deposits for water service so collected will be applied to bills rendered after one year, until all deposits have been used to pay for water supplied to the premises. The Board may require replenishment of deposits as a prerequisite to continuation of service. Deposits or payments made to cover costs of new service installations will not be considered such deposits, as herein described.

4.0082 Water Service Connection

Unless otherwise requested and approved in writing, service connections will be ¾" and meters will be first quality 5/8" x ¾" meters, with such fittings, connections, yoke, or setter, a meter box, shut off cocks, etc. as the District may require.

When in the judgement of the District personnel, unusual conditions exist which require greater attention, extra fittings, meter boxes, vaults, or other safeguards, to assure adequate volume and pressure of water to an individual service, and or to minimize repair and maintenance problems, inherent in the installation, the District may require the applicant to meet the cost of such additional fittings, meter vaults, or other safeguards, at customary District charges that will be charged to the applicant, and be in addition to the usual meter and service installation charges, and considered a part of it.

When meters are required to be installed in driveways or roadways or under other circumstances, that in the opinion of the District personnel may cause unusual installation or maintenance problems, the District will have the right to require concrete meter vaults, or other devices to likewise be installed. The cost of such vaults or other protective devices will be borne by the owner of the property requesting the service installation.

Services larger than 3/4", may, in the discretion of the Board, be installed when requested in writing, provided the system can adequately serve such larger connections without interfering with the water service of others. The charges made for the installation of larger services will be sufficient to cover all costs thereof, and the minimum or "ready to serve/ charge will be higher than for standard 3/4" service connections.

The Board may require persons requesting large service connections for fire protection, to pay for an equitable portion of the cost of feeder mains needed to supply the required flow. Each such case will be considered separately on its merits and the circumstances applicable to the case. The Board may also enter into special service contracts, in which higher minimum charges are established sufficient to cover the cost of the service rendered.

Replacement services and/or connections are to be dismantled by the property owner and at the owner's expense and inspected by the District.

All District rules, and regulations rates and charges are subject to change or modification by the Board. All special contracts will be in writing, signed by the proper person, or customer and the District.

END OF SECTION

DIVISION 1—GENERAL CONSTRUCTION REQUIREMENTS

TABLE OF CONTENTS

101 Definitions and Abbreviations

Unless otherwise defined in the contract documents the following definitions and abbreviations shall apply wherever used.

The words "directed, required, permitted, ordered, requested, instructed, designated, considered necessary, prescribed, approved, acceptable, satisfactory," or words of like import, refer to actions, expressions, and prerogatives of the District Engineer.

Command type sentences are used, but are not exclusive of other directives, throughout these Standard Specifications. In all cases the command expressed or implied is directed to the Contractor.

The specifications contained herein are divided into categories: (1) Division; (2) Section; and (3) Subsection, and are designated as in the following example:

Division: **DIVISION 3—SANITARY SEWER CONSTRUCTION STANDARDS**

Section: **302 MANHOLES AND CONCRETE STRUCTURES**

Subsections: **302.03 CONSTRUCTION**

302.03.01 General

A. Excavation and Backfill

1. (as needed)

a. (as needed)

101.01 Definitions

Acceptance of work
All work required by the contract documents and/or conditions of approval will be considered accepted upon approval of the Certificate of Completion by District.

Advertisement
The public announcement inviting bids for work to be performed or materials to be furnished.

Attorney
The District's Attorney.

Certificate of Completion
Standard District form, which must be signed by the Contractor.

Certificate of Compliance
Standard District form, which must be signed by the Contractor, stating compliance with the contract documents and/or conditions of approval.

Change Order
A written order issued by the District Engineer to the Contractor directing changes in the work, subject to approval of District.

District
Oak Lodge Water Services District.

District Engineer
The District Engineer, or General Manager, of the District, acting either directly or through authorized representatives.

Contract
The document entitled "contract" or "agreement" which is executed by the Contractor and the District; authorizing ordinance; advertisement calling for bids; bid; instructions to bidder; plans; and all specifications, addenda, permits, performance bond, insurance certificates, and change order for any approved revisions made during the performance of the work to any of the above listed documents, collectively referenced as the "contract documents."

Contract cost
The aggregate amount of price promised to be paid by District to Contractor upon fulfillment of the Contract.

Contract item
A specific unit of work for which a price or basis of payment is provided in the Contract.

Contractor
Any individual, firm, co-partnership, corporation, or any combination thereof who has entered into a Contract with the District for a project. In the case of work being done under permit issued by the District, the permittee shall be construed to be the Contractor.

Day
Calendar day; i.e., any and every day shown on the calendar, Sundays and holidays included.

Easement
The right to use a defined area of property for specific purpose or purposes as set forth in the specifications.

Improvement
General term encompassing all phases of work to be performed under a Contract for a Local Improvement District and synonymous with the terms "project" or "work."

Inspector
The authorized representative of the District.

Lump sum
A method of payment providing for one all-inclusive payment for the work described to be done, complete and accepted without further measurement, as such work is covered under the applicable lump sum pay item.

Notice
A written communication delivered, by hand or by mail, to the authorized individual, member of the firm, or officer of the corporation for which it is intended. If delivered or sent by mail it shall be addressed to the last known business address of the individual, firm, or corporation. In the case of a Contract with two or more persons, firms, or corporations, notice to one shall be deemed notice to all.

OSHD Standard Specification
The latest edition of the Specification Document published by the State of Oregon entitled Standard Specifications for Highway Construction, Oregon State Highway Division. This document is available from the Oregon State Highway Division, Salem, Oregon.

Plans
The official Plans, profiles, cross sections, elevations, details and other working, supplementary and detail drawings, or reproductions thereof.

Project
General term encompassing all phases of the work to be performed under the Contract and is synonymous with the term improvement or work.

Provide
When related to an item of work, the word provide shall be understood to mean furnish and install the work complete in place.

Reference specifications
Bulletins, standards, rules, methods of analysis or test, codes and specifications of other agencies, engineering societies, or industrial associations referred to in the contract documents. All such references specified herein refer to the latest edition thereof, including any amendments thereto which are in effect and published at the time of advertising for bids or of issuing the permit for the project.

Right-of-way
See CCDTD Definition

Roadway
See CCDTD Definition

Shop drawings and submittals
Supplementary plans or data or other information which the Contract requires the Contractor to submit to the District Engineer.

Special Specifications
Requirements peculiar to the project and changes and modifications of the Standard Specifications.

Specified
As used herein, the word specified, or as specified, means as required by the Contract.

Standard plans or drawings
Details of structures, devices, or instructions adopted by District as a standard and referred to in the Contract.

Standard Specifications
The terms, directions, provisions and requirements set forth herein.

Station
A distance of 100 feet measured horizontally along the established centerline of a street, sewer, or other work, unless specified otherwise.

Street
See CC DTD Definition **Subcontractor**
An individual, partnership, firm, corporation, or any combination thereof, to whom the Contractor sublets part of the Contract.

Substantial completion
The work (or a specified part thereof) has progressed to the point where, in the opinion of the District Engineer, it is sufficiently complete in accordance with the contract documents and/or conditions of approval, so that the work (or specified part) can be utilized for the purposes for which it is intended.

Surety
The corporate body which is bound with and for the Contractor, for the acceptable performance of the Contract, and for their payment of all obligations arising out of the Contract.

Unit price
A contract item of work providing for payment based on specific unit of measurement; e.g., linear foot or cubic yard.

Use of pronoun
As used herein, the singular shall include the plural, and the plural the singular; and the term "person" includes natural person or persons, firm, co-partnership, corporation or association, or combination thereof.

Utility
Tracks, overhead or underground wires, pipelines, conduits, ducts, or structures, owned, operated or maintained in or across a public right-of-way or easement.

Work
All material, labor, tools, equipment, and all appliances, machinery, transportation, and appurtenances necessary to perform and complete the Contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good practice to provide a complete and satisfactory system or structure.

Working day
Calendar day, any and every day shown on the calendar, excluding Saturdays, Sundays and legal holidays.

101.02 Abbreviations

AAN	American Association of Nurserymen
ACI	American Concrete Institute
AGA	American Gas Association
AGC	Associated General Contractors of America
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CCDTD	Clackamas County Department of Transportation and Development
CRSI	Concrete Reinforced Steel Institute
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
ITE	Institute of Traffic Engineers
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NLMA	National Lumber Manufacturer's Association
ODOT	Oregon Department of Transportation
OLWSD	Oak Lodge Water Services District
ORS	Oregon Revised Statutes
OSHA	Occupational Safety and Health Administration
OSHD	Oregon State Highway Division
PCA	Portland Cement Association
UBC	Uniform Building Code
UL	Underwriters' Laboratories, Inc.
USASI	United States of America Standards Institute
WWPA	Western Wood Products Association

102 Instructions to Bidders

See Oak Lodge Water Services District Purchasing Rules.

103 Award and Execution of Contract

See Oak Lodge Water Services District Purchasing Rules.

104 Scope of Work

104.01 Plans and Specifications

The contract documents and/or conditions of approval will govern the work to be done. Anything mentioned in the Specifications and not shown on the Plans and detailed drawings, or shown on the Plans and detailed drawings and not mentioned in the Specifications, shall be of like effect as though shown or mentioned in both. Specifications and Plans referred to in any of the contract documents and/or conditions of approval shall be considered as being included in the document in which such reference is made. When a particular standard plan or Specification is referred to, such reference shall be to the standard plan or Specification which is in force at the time of advertising for bids. The phrases, "Contractor shall", "Contractor will", etc. may not always be specifically stated in all paragraphs but is considered understood where not specifically stated otherwise.

104.02 Precedence of Contract Documents

In case of conflict, the order of precedence of the following documents in controlling the work shall be:

1. Contract
2. Addenda
3. Bid
4. Permits from outside agencies required by law
5. Special Specifications (Provisions)
6. Plans
7. Standard plans and standard details
8. Standard/Technical Specifications

Change orders, supplemental agreements and approved revisions to Plans and Specifications will take precedence over contract documents listed above.

104.03 Shop Drawings and Other Submittals

Plans furnished and included with Specifications indicate the work proposed and the intended results.

By approving and submitting shop drawings, product data and samples, the Contractor represents that they have determined and verified all materials, field measurements, and field construction criteria related thereto, and that they have checked and coordinated the information contained within such submittals with the requirements of the work and of the contract documents and/or conditions of approval and that they have checked and coordinated the information contained within such submittals with the requirements of the work and of the contract documents and/or conditions of approval.

All required shop drawings, product data and samples shall be furnished to the District Engineer for their review and any required testing before any of the work or related work is performed or products or material ordered prior to the District Engineer's review and completion of any testing will be at Contractor's risk.

The District Engineer will review all shop drawings, product data and samples and conduct such tests as are required by the contract documents and/or conditions of approval within a reasonable time but in no event will the District Engineer be required to complete such review or conduct such tests in less than 14 days after submission. The Development Review Engineer will mail a letter stating one of the following:

1. Make corrections/additions noted: make the necessary changes and resubmit 1 set for review.
2. Set is ready for approval: send 6 drawing sets and 2 shall be returned to the Designing Engineer.

The review by the District Engineer of any shop drawings, product data, samples, construction methods and equipment or other submittals is only for conformance with the general design concept of the project and does not extend to consideration of structural integrity, safety, detailed compliance with contract requirements, or any other obligation of the Contractor. Any action shown is subject to the requirements of the plans and specifications. The Contractor is responsible for confirming and correlating all

dimensions; fabricating and construction techniques; coordinating their entire work in strict accordance with the contract documents and/or conditions of approval. The review does not relieve Contractor from their obligation fully to perform all Contract requirements, nor shall such review give rise to any right of action or suit in favor of Contractor or third persons, against the District.

104.04 Changes in Work

Without invalidating the agreement and without notice to a surety, District may, at any time, order additions, deletions or revisions in the work: these will be authorized by a written amendment, a change order, or a work directive change.

Upon receipt of any such document, Contractor shall promptly proceed with the work involved that will be performed under the applicable conditions of the contract documents (except as otherwise specifically provided).

104.05 Force Account Work

The Contractor shall perform work on a force account basis upon written notice by the District Engineer. If the District Engineer determines that the work increases the amount due under the Contract, payment will be made pursuant as force account work.

The Contractor must:

> Maintain records in such a manner as to provide a clear distinction between direct cost of work performed on force account basis and costs of all other operations performed in connection with the Contract.
>
> Daily, furnish to the District Engineer signed reports itemizing materials used and setting forth the cost of labor and charges for equipment rental, delineating whether said equipment is Contractor or Subcontractor owned. Provide names, identifications, and classifications of workmen, the hourly rate of pay and hours worked, and the size, type, and identification number of equipment and hours of equipment operation.
>
> Substantiate material charges by vendor's invoices, submit such invoices with the reports; or, if not available, submit with subsequent reports. In the event said vendor's invoices are not submitted within 30 days after completion of the force account work owner reserves the right to establish the cost of such materials.

The District Engineer will compare their records with the reports furnished by the Contractor, make any necessary adjustments, compile the costs of work paid for on a force account basis and issue a change order covering the work.

104.06 Salvage

When shown or specified, carefully salvage and stockpile within the construction area all castings, pipe and any discarded facilities, to be disposed of by owner.

105 Control of Work

105.01 Authority of the District Engineer

The District Engineer will decide all questions which may arise as to quantity, quality, and acceptability of materials furnished and work performed, the rate of progress of the work; interpretation of the Plans and Specifications; the measurement of all quantities; and the acceptable fulfillment of the Contract on the part of the Contractor. The District Engineer's estimates, decisions and approval signify favorable opinion and qualified consent; it does not carry with it certification or assurance of completeness, quality or accuracy concerning details. Such approval does not relieve Contractor from responsibility for errors, improper fabrication, improper construction methods, nonconformance to requirements or for deficiencies within their control.

It is further understood that all work to be done under the Contract will not be considered completed until it has passed final inspection by the District Engineer and is accepted by the District. It is further understood that the authority of the District Engineer is such that the Contractor shall at all times carry out and fulfill the instructions and directions of the District Engineer insofar as they concern the work to be done under the Contract.

The District Engineer shall have the authority to order unacceptable work to be corrected, removed or replaced, and unauthorized work to be removed and, pending completion of such order, to deduct the estimated cost thereof from any monies due, or to become due the Contractor including retainage. This authority shall take precedence over any and all requirements of the specifications for payment set forth elsewhere in the specifications.

At the District Engineer's sole discretion, minor defects in the work may be accepted subject to a reasonable deduction from the Contract price or other credits to the owner. Such determination by the District Engineer shall be final.

The District Engineer is not authorized to waive any written notice required of the Contractor by the Contract.

105.02 Authority and Duty of Inspectors

The District Engineer may appoint assistants to inspect all materials used and all work done. Such inspection may extend to any or all parts of the work and to the preparation or manufacture of materials to be used. Inspectors will not be authorized to revoke, alter, enlarge, or relax the provisions of the Contract. An Inspector is placed on the work to keep the District Engineer informed of progress of the work and the manner in which it is being done. In addition, the Inspector shall call to the attention of Contractor any deviation from the Plans, or Specifications.

An Inspector will not be authorized to approve or accept any portion of the work or to issue instructions contrary to the Plans and Specifications under this Contract. Furthermore, the Inspector is not authorized to waive any written notices required by the Contract. The Inspector will have authority to reject defective material and to suspend any work that is being improperly done, subject to final decision by the District Engineer.

105.03 Responsibility of Contractor

Do all work and furnish all labor, materials, equipment, tools, and machines necessary for the performance and completion of the project in accordance with the Contract. Be obligated to determine and be responsible for the method of construction.

Contractor shall be solely liable for any accident, loss or damage happening to work referred to in the Contract prior to completion and acceptance thereof.

105.04 Notification of Utilities And Agencies

Obtain prior approval from Clackamas County for closing or partial closing of any street. When performing work in streets and easements, whether inside or outside District's legal boundaries, notify all of the affected utilities and local agencies about the operations so as to properly coordinate and expedite the work in such a manner as to cause the least amount of conflict and interference between the operations and those of other agencies.

The Contractor and its Subcontractors must comply with all provisions of ORS and including notification of all owners of underground facilities at least 48 business day hours but not more than 10 business days before beginning work. Notify the following utilities and agencies in writing at least 2 working days before commencing any work on the project.

1. District Technical Services Department
2. Northwest Natural Gas Co.
3. Oregon Department of Transportation
4. Portland General Electric Co.
5. Comcast
6. Century Link
7. Water Environment Services of Clackamas County

Other applicable municipalities, agencies or special districts or providers

The District shall relocate or cause to be relocated all privately or publicly owned utility conduits, lines, poles, mains, pipes, and such other facilities within the jurisdiction and control of the District where such relocation is necessary in order to conform said utility and other facilities with the plans and ultimate requirements of the project. If desirable for specific reasons, or for convenience of field operations, contact the above listed utilities.

105.05 Utilities and Existing Improvements

Information shown as to location of existing water courses, drains, sewer lines, or utility lines is provided for Contractor's information and convenience and is not, in any way, warranted to be accurate by the District. Contractor shall verify all such information and shall deal with varying conditions at its own expense.

Operation of water valves and hydrants by unauthorized personnel is strictly prohibited. Obtain written permission from and pay any fee required from the District prior to using hydrant water.

Provide for the flow of sewers, drains, or water courses interrupted during the progress of the work, and restore such drains or water courses as approved by the District Engineer, at no additional cost to the District.

Be responsible for all costs for the repair of any and all damage to any utility, whether previously known or disclosed during the work, as may be caused by the work. Maintain in place utilities not shown on the drawings to be relocated or altered by others. If Contractor requires temporary relocation, for their convenience or because of their method of construction or as a result of site conditions, Contractor shall bear all costs for said temporary relocation. Maintain utilities which have been relocated by others in their relocated positions in order to avoid interference with structures which cross the project work.

Make excavations and borings ahead of work, as necessary, to determine the exact location of interfering utilities or underground structures. When this is not feasible or practical or the need for such work was not foreseen, the utility owners or the District shall have the right to enter upon the right-of-way and upon any structure therein for the purpose of making new installations, changes or repairs. Conduct operations so as to provide the time needed for such work to be accomplished during the progress of the improvement, at no additional cost to the owner.

It is understood that there will be interfering utilities, service laterals, and other underground pipes, drains or structures encountered on underground projects that are not shown or are shown incorrectly on the plans and/or have not been previously discovered in the field. Contractor agrees this is a normal and usual occurrence in the construction of underground improvements. Furthermore, bidders understand and agree that work in some cases must be done in close proximity to said utilities and underground pipes, drains, and structures not shown or shown incorrectly on the plans which may require a change in operations and may cause sloughing of the trench, additional traffic control, additional pavement and backfill costs, and time; the Contractor agrees that a reasonable number of these occurrences are usual and ordinary on underground projects and are reflected in the bid and plan of operation.

The District Engineer will require a reasonable amount of time to perform design changes necessitated by directly conflicting utilities and/or the utility owners will require a reasonable amount of time to make necessary utility relocations.

The Bidders agree to provide for these conflicts and interferences and agree to provide for a reasonable amount of time for design changes and/or utility relocations due to said interference in the bid and

understand that no additional compensation for interruption of schedule, extended overhead, delay or any other impact claim or ripple effect or any other costs whatsoever or additional time will be made for these conflicts or interferences.

105.06 Survey Service

Give notice to the District Engineer not less than 3 working days in advance of when survey services will be required in connection with the laying out of any portion of the work.

The District Engineer will furnish appropriate offset lines and grades as they deem necessary for all projects involving trenching operations. Contractor will be responsible for the transfer of the offset lines or grades into the ditch, to batter boards, or any other point within the work. Work done without lines and grades having been established by the District Engineer or work done beyond the lines and grades will be considered as unauthorized and will not be paid for and may be ordered removed, replaced, or corrected at no expense to the District.

105.07 Protection of Survey Markers

105.07.01 Permanent Survey Markers

Notify the District Engineer not less than three working days prior to starting work in order that the District Engineer may take necessary measures to ensure the preservation of survey monuments, stakes, lot stakes, and bench marks. Do not disturb permanent survey monuments, stakes, lot stakes, or bench marks without the consent of the District Engineer, and notify the District Engineer and bear the expense of replacing any that may be disturbed.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, preserve the monument, and adjust the monument cover to the new grade at no expense to District.

105.07.02 Construction and Survey Markers

Preserve construction survey stakes and marks for the duration of their usefulness during construction. If any construction survey stakes are lost or disturbed through negligence of Contractor, and in the judgment of the District Engineer need to be replaced, such replacement shall be by the District Engineer at the expense of Contractor. The cost of replacement shall be charged against, and shall be deducted from payments for Contract work.

105.08 Protection of Property

Protect all public and private property, insofar as it may be endangered by operations and take every reasonable precaution to avoid damage to such property.

Restore and bear the cost of any public or private improvement, facility, structure, or land and landscaping within the right-of-way or easement which is damaged or injured directly or indirectly by or on account of an act, omission, or neglect in the execution of the work. Restore to a condition substantially equivalent to that existing before such damage or injury occurred, by repairing, rebuilding, or otherwise effecting restoration thereof, or if this is not feasible, make a suitable settlement with the District of the damaged property.

Give reasonable notice to occupants of buildings on property adjacent to the work to permit the occupants to remove vehicles, trailers and other possessions as well as salvage or relocate plants, trees, fences, sprinkler systems, or other improvements in the right-of-way which are designated for removal or which might be destroyed or damaged by work operations.

Protect all designated trees, lawns and planted areas within the right-of-way or easements. Restore all on-surface disturbed areas, by methods as set forth in the technical specifications. If conditions are such that the method specified cannot be done, provide erosion control surface covering of such quality and quantity as will prevent erosion from occurring, without adverse impacts to the environment, if required by conditions existing at the site, at no additional cost to the District.

Review with the District Engineer the location, limits and methods to be used prior to clearing work. Clearing and grubbing shall be performed in strict compliance with all local, State and federal laws and requirements pertaining to clearing and burning, and particularly in conformity with the provisions of ORS Chapter 477, and all subsequent amendments, which require, among other things, filing with the State Forester a general description of the right-of-way to be cleared before the start of clearing operations. Obtain the required permit from the State Forester and District and perform clearing work in conformance thereto.

105.09 Use of Work During Construction

The District shall have the right to take possession of and use any completed or partially completed portions of the work. Such use shall not be considered as final acceptance of the work or portions thereof.

Such action by the District will not relieve the Contractor of responsibility for injury or damage to said completed portions of the work resulting from use by public traffic, action of the elements, Contractor's operations, defective work, or negligence, or from any other cause, except for injury or damage resulting from District's negligence. Contractor will not be required to again clean up such portions of the work prior to final acceptance, excepting for such clean up as results from Contractor's operations or defective work. Use of any completed or partially completed portions of the work does not relieve Contractor from the warranty responsibility nor shall the warranty period commence to run until final completion and acceptance of the work.

105.10 Furnishing Temporary Services and Facilities

Install, furnish and maintain temporary light, power, water and any temporary services or facilities complete with connecting piping, wiring, lamps, and similar equipment during construction of the work, including testing and start up. Remove temporary facilities upon completion of work. Obtain all permits and bear all costs in connection with temporary services and facilities. Conform to applicable statues, rules, codes, and other requirements in the use of these facilities.

105.11 Verbal Agreements or Representations

No verbal agreement or conversation by or with any officer, agent or employee of the District, either before or after execution of the Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract. Any such verbal agreement or conversation is in no way binding upon the District.

105.12 Water and Air Pollution Control

During the term of the Contract, Contractor's operations shall conform to applicable laws and regulations of the Oregon DEQ, and other agencies of the State and Federal Government, District Erosion Control Plans, as well as other local ordinances and resolutions designed to prevent, control, and abate water and air pollution.

During all phases of the work, or when directed, protect work sites, storage and disposal areas from washout and erosion, and take precautions to control or abate dust nuisance and air pollution by cleaning up, sweeping, sprinkling, covering, enclosing, or sheltering work areas, and stockpiles, and by promptly removing from paved streets earth or other material which may become airborne or may be washed into waterways or drainage systems.

105.13 Noise

Conform and comply with applicable noise regulations as established in the Clackamas County Code. Work hours are restricted to the hours of 7:00 a.m. to 7:00 p.m. during the weekdays and 8:00 a.m. to 5:00 p.m. on the Saturday.

105.14 Access to the Work

Provide access to the work for representatives of the District, the State of Oregon, the Federal Government, and other entities having jurisdiction in the area.

Allow access to the District Engineer or their representatives to all parts of the work and to plants of manufacturers at all times. Furnish them with every reasonable facility for ascertaining if the work meets requirements and intent of the Contract.

105.15 Defective or Unauthorized Work

All work which does not conform to the requirements of the Contract shall be considered as unacceptable.

Upon discovery immediately remove unacceptable and defective work and replace by work and materials which conform to the Contract. This provision shall have full effect regardless of the fact that the unacceptable work may have been done or the defective materials used with the full knowledge of the Inspector.

106 CONTROL OF MATERIALS

106.01 Preference for Use of Oregon Products

Preference may be given to services, articles or materials produced or manufactured in Oregon, if price, fitness, availability and quality are otherwise equal. These provisions do not apply to Contracts on projects financed wholly or in part by federal funds.

106.02 Quality of Work

Materials, parts, products and equipment which are to be incorporated into the work shall be new and shall conform to the contract documents.

106.03 Sampling and Testing

Tests of the work may be made by the District at any time during construction of the work or during the production, fabrication, or preparation and use of materials, parts, products, and equipment.

District reserves the right to require samples and to test products for compliance with pertinent requirements irrespective of prior certification of the products by the manufacturer.

When such tests of the work are necessary, as determined by the District Engineer, such tests will be made by and at the expense of District unless otherwise specified. Provide such facilities and cooperate as required for collecting and forwarding samples and do not incorporate into the work until tests have been made and found acceptable. In all cases furnish the required samples without charge and in ample time to permit testing prior to use. Provide safety measures and devices to protect those who take the samples.

In the absence of any reference Specification, it shall be understood that materials shall meet the Specifications and requirements of ASTM, as directed by the District Engineer. When there is no pertinent coverage under ASTM, the material concerned shall meet Specifications and requirements of applicable commercial standards of the Commodity Standards Division of the U.S. Department of Commerce. Lacking such coverage, materials shall meet requirements established by reputable industry for a high-quality product of the kind involved.

All testing shall be performed by the testing laboratory, the District Engineer, or as directed by the District Engineer.

In the event the District Engineer requests tests and the work fails, the Contractor shall bear all costs for this test and all subsequent testing necessary to meet specified requirements.

106.04 Certification

The District Engineer may, at their sole discretion and in lieu of any other required sampling and testing, accept from Contractor two copies of the manufacturer's certification with respect to the product involved, under conditions set forth as follows:

1. Certification shall state that the named product conforms to District's requirements and that representative samples thereof have been sampled and tested as specified.
2. Certification shall either be accompanied by a certified copy of test results or certify that such test results are on file with the manufacturer and will be furnished to the District Engineer upon request.
3. Certification shall give the name and address of the manufacturer and the testing agency and the date of tests; and shall set forth the means of identification which will permit field determination of the product delivered to the project as being the product covered by the certification.
4. Contractor shall not be responsible for any costs of certification or for any costs of the sampling and testing of products in connection therewith.

106.05 Inspection by Others

Inspection of work by persons other than representatives of the District will not constitute inspection by the District.

106.06 Storage and Protection of Items of Work

Store items to be incorporated into the work to assure the preservation of their quality and fitness for the work. Stored items, even though approved before storage, may be re-inspected and are subject to rejection prior to being incorporated into the work. Stored items shall be located so as to facilitate their prompt inspection.

106.07 Trade Names, Equals, or Substitutions

In order to establish a basis of quality, certain processes, types of machinery or equipment, or kinds of materials may be specified—either by description of process, by designating a manufacturer by name and referring to their brand or product designation, or by specifying a kind of material. It is not the intent of these specifications to exclude other processes, equipment, or materials of equal value, utility, or merit.

Whenever a process is designated; a manufacturer's name, brand, or item designation is given; or a process or material covered by patent is designated or described; it shall be understood that the words "or equal" follow such name, designation, or description, whether in fact they do so or not. This "or equal" clause is not a warrantee, either expressed or implied, by the District that an equal exists.

The Contractor may offer to furnish materials or equipment of equal or better quality and performance than that specified as a substitute after the Contract is executed. If the offer necessitates changes to, or coordination with, any other portion of the work, the data submitted shall include drawings and details showing all such changes. Contractor agrees to perform these changes as part of the substitution of material or equipment. Acceptance by the District Engineer shall not relieve the Contractor from full responsibility for the efficiency, sufficiency, quality, and performance of the substituted material or equipment in the same manner and degree as the material and equipment specified by name. Any cost differential associated with a substitution shall be reflected in the Contract price and the Contract shall be appropriately modified by change order.

If the bid includes a list of equipment, materials, or articles for which Contractor must name the manufacturer at time of submission of the bid, no substitutions therefore will be permitted.

All materials or equipment of equal or better quality offered by the Contractor for substituting shall be approved by the District Engineer prior to incorporation into the project.

107 LEGAL RELATIONS AND RESPONSIBILITIES

107.01 Laws and Regulations

Comply with all federal and State laws; all local laws, ordinances, and regulations; and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of work. Observe and comply with all such laws, ordinances, regulations, orders, and decrees. Protect and indemnify District and their representatives against any claim or liability arising from, or based on, the violation of any such law, ordinance, regulation, order, or decree—whether by Contractor, their Subcontractors, suppliers of materials or services, or others engaged by the Contractor or their employees.

In addition to those set forth herein, the District's Public Contracting rules and the Statutes of the State of Oregon for public works contracts, ORS Chapters 279A and 279C, are incorporated by reference into the Contract.

107.02 Subcontractors

After Contract award and notice of Contractor/Subcontractor agreements have been submitted, work shall not be transferred or subcontracted without prior consent of the District.

Use of subcontractors, material suppliers or equipment suppliers shall in no way release Contractor from any obligations of contract with the District.

Contractor will provide in all subcontract agreements that the Subcontractor, material supplier and equipment supplier will be bound by the terms and conditions of this Contract to the extent that they relate to the Subcontractor's work, material or equipment. All Subcontractor's agreements will also provide that they are assignable to the District at District's option, in the event this agreement is terminated for default of Contractor.

107.03 No Waiver of Legal Rights

The District shall not be precluded by any measurement, estimate or certificate made either before or after completion and acceptance of work or payment therefore, from showing the true amount and character of work performed and materials furnished by the Contractor, or from showing that any such measurement, estimate or certificate is untrue or incorrectly made, or that work or materials do not conform in fact to the Contract. The District shall not be precluded, notwithstanding any such measurement, estimate or certificate, or payment in accordance therewith, from recovering from the Contractor and their sureties such damages as it may sustain by reason of their failure to comply with terms of the Contract, or from enforcing compliance with the Contract. Neither acceptance by the District, or by any representative or agent of the District, of the whole or any part of the work, nor any extension of time, nor any possession taken by the District, nor any payment for all or any part of the project, shall operate as a waiver of any portion of the Contract or of any power herein reserved, or any right to damages herein provided. A waiver of any breach of the Contract shall not be held to be a waiver of any other breach.

107.04 Other Contracts

The District reserves the right to award other contracts or issue permits for work that may require coordination with the work to be performed under this Contract.

When separate contracts or permits are awarded or issued for different portions of the Project, "the Contractor" in the contract documents in each case shall be the contractor who signs each separate contract.

Mutual Responsibility of Contractors: The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall properly connect and coordinate their work with theirs.

If any part of the Contractor's work depends for proper execution or results upon the work of any other separate Contractor, the Contractor shall inspect and promptly report to the District Engineer any apparent discrepancies or defects in such work that render it unsuitable for such proper execution and results. Failure of the Contractor to inspect and report shall constitute an acceptance of the other Contractor's work as fit proper to receive the work, except as to defects which may develop in the other separate contractor's work after the execution of the Contractor's work.

Should the Contractor cause damage to the work or property of any separate contractor which results in a claim against the District, and if the claim is not satisfied by Contractor and the separate contractor sues the District or initiates an arbitration proceeding on account of any damage alleged to have been so sustained, the District shall notify the Contractor who shall defend if requested such proceedings at the Contractor's expense, and if any judgment or award against the District arises therefrom the Contractor shall pay or satisfy it and shall reimburse the District for all attorney's fees and court or arbitration costs which the District has incurred.

The Contractor shall be responsible for any cutting, fitting and patching that may be required to complete the work except as otherwise specifically provided in the Contract. The Contractor shall not endanger any work of any other contractors by cutting, excavating or otherwise altering any work and shall not cut or alter the work of any other contractor. Any costs caused by defective or ill-timed work shall be borne by the party responsible therefore.

If a dispute arises between the separate contractors as to their responsibility for cleaning up, the District may clean up and charge the cost thereof to the several contractors as the District Engineer shall determine to be just.

107.05 Liability and Indemnification

The Contractor shall assume all responsibility for the work and shall bear all losses and damages directly or indirectly resulting to the Contractor, to the District, to the District Engineer, and to their officers, agents, and employees on account of (a) the character or performance of the work, (b) unforeseen difficulties, (c) accidents, or (d) any other cause whatsoever.

The Contractor shall defend, indemnify, and hold harmless the District, the Design Engineer, and their officers, agents and employees from all claims, loss, damage, and injury of every kind directly or indirectly arising out of this Contract. The Contractor shall assume this responsibility even if (a) fault is the basis of the claim, and (b) any act, omission or conduct of the District connected with the Contract is a condition or contributory cause of the claim, loss, damage or injury.

The Contractor shall not be liable for, nor be required to defend, or indemnify the District or the Design Engineer relative to any claim, loss, damage, or injury resulting solely from acts or omissions by the District, the Design Engineer, or their officers, agents or employees. The Contractor shall not be liable for, not be required to defend, or indemnify the District or the Design Engineer relating to any claim loss, damage, or injury arising from the use of any maps, drawings, reports, surveys, designs, or specifications furnished by the District, Design Engineer, or their officers, agents, or employees.

Any specific duty or liability imposed or assumed by the Contractor, as may be otherwise set forth in the contract documents, shall not be construed as a limitation or restriction of the general liability or duty imposed upon the Contractor by this section.

The Contractor shall assume all responsibility for the work.

107.06 Insurance

107.06.01 General

The Contractor shall provide and maintain during the life of this Contract the insurance coverage designated hereafter. All costs for such insurance shall be borne by the Contractor and shall be included in the Contract price.

Prior to execution by the District and before commencing work under this Contract, Contractor shall furnish the District Engineer with certificates of insurance specified herein showing the name of the insurance carrier, coverage, type, amount (or limits), policy numbers, effective and expiration dates, description of operations covered, and containing substantially the following cancellation provision:

"The insurance covered by this certificate will not be canceled or materially reduced, except after 30 days written notice has been received by the District."

In case of the breach of any provision of this Article, the District, at its option, may take out and maintain, at the expense of the Contractor, such insurance as the District may deem proper. The District may deduct the cost of such insurance from any monies which may be due or become due the Contractor under this Contract.

107.06.02 Review and Approval of Insurance

The Contractor shall not commence work under this Contract nor allow any subcontractor to commence work on a subcontract until the Contractor has obtained all the insurance required hereunder and such insurance has been approved by the Attorney. All policies or insurance and certificates of insurance shall be satisfactory to the District. Approval of the insurance shall not relieve or decrease the liability of the Contractor hereunder.

107.06.03 Workers' Compensation, the Federal Longshoremens' and Harborworkers' Act, and the Federal Jones Act

The Contractor shall provide and shall require all subcontractors to provide workers' compensation coverage for all persons employed under this Contract including the Contractors' partners and any individual regardless of relation to the Contractor's partners and any individual regardless of relation to the Contractor or to the partners who provide work under this Contract. The Contractor shall be required to assure that subject workers will receive the compensation for compensable injuries provided in ORS Chapter 656 either by:

1. a carrier-insured employer; or
2. a self-insured employer as provided by ORS 656.407.

In addition to the statutory benefits outlined above, the Contractor and all Subcontractors shall provide employers' liability insurance with limits of not less than:

1. $2,000,000 each occurrence
2. $2,000,000 disease each employee
3. $2,000,000 disease—policy

Evidence of such coverage, including the guaranty or warrant period, shall be filed with the District and maintained for the duration of the Contract.

The Contractor shall defend, indemnify, and hold harmless, the District and the District's officers, agents, and employees against any liability that may be imposed upon them by reason of the Contractor's or Subcontractor's failure to provide workers' compensation and employers liability coverage.

107.06.04 General Liability and Automobile Liability

The Contractor shall provide a general liability policy that provides coverage for bodily injury including personal injury and property damage liability insurance and automobile liability insurance. Such insurance must protect the Contractor, the District, and their officers and employees from all things or damage which may arise out of this Contract or in connection therewith, including all operations of Subcontractors. Such insurance shall provide coverage for not less than the amounts for which public bodies are responsible as set forth in ORS Chapter 30.260 - 30.300, Tort Actions against public bodies, but in no event less than the following limits of liability:

The policy shall contain an endorsement that the aggregate applies separately to this Contract.

Commercial General Liability Insurance

1. $2,000,000 each occurrence limit
2. $3,000,000 general aggregate
3. $3,000,000 products/completed operations aggregate
4. $3,000,000 personal and advertising injury
5. $2,000,000 limited job site pollution occurrence sublimit

Comprehensive Automobile Liability Insurance Including Coverage for all Owned, Hired, And Non-owned Vehicles.

1. $2,000,000 each occurrence combined single limit
2. $3,000,000 aggregate bodily injury and property damage
   or
   $2,000,000 each person bodily injury
3. $2,000,000 each occurrence bodily injury
4. $2,000,000 each occurrence property damage
5. $2,000,000 each occurrence pollution occurrence sublimit

The insurance shall be written on a comprehensive form which includes broad form property damage on an occurrence basis. Unless excluded by Special Specification, the general liability policy shall include, without deductible, coverage for premises operations, explosion and collapse hazard, underground hazard, products, completed operations, contractual insurance, and independent contractors. Such insurance shall be maintained until the expiration of the guaranty period required by the Contract. Failure to maintain liability insurance as provided above shall, at District's option, because for immediate termination of the Contract.

The Contractor shall provide a letter from the insurance company which states that such insurance shall be without prejudice to coverage otherwise existing.

The District, its officers, agents, and employees, shall be named additional insureds in the Contractor's General Liability Insurance policy.

The policy shall also provide for a Cross Liability Endorsement or Separation of Insureds Endorsement.

The policy shall be endorsed to provide an Amendment - Aggregate Limits of Insurance (per project) specifying that a separate aggregate limit of liability applies to this Contract.

If there are insufficient insurance proceeds and assets of the Contractor to fully indemnify the District , its officers, employees, agents, and the District Engineer, then the District, its officers, employees, and agents would be indemnified first with any remaining insurance proceeds and assets to be used to indemnify the District Engineer.

If set forth in the Special Specifications, additional insureds may be the District Engineer, other governmental bodies with jurisdiction in the area involved in the project, and their officers and employees and such agents as may be specified.

107.06.05 Claims on Project

The Contractor, when notified of a claim by an affected party shall:

1. Refer claim to the Contractor's insurance carrier or claims administrator.
2. Contractor's insurer will copy the District on acknowledgment of claim.
3. Contractor's insurer will copy the District on notice to claimant of disposition of claim.

107.06.06 Builders Risk Insurance

During construction, Contractor shall obtain and maintain for the benefit of the parties to the Contract as their interest may appear, all-risk builder's risk insurance to the extent of 100% of the value of the project. Coverage shall also include: (1) formwork in place; (2) form lumber on site; (3) temporary structures; (4) equipment; and (5) supplies related to the work while at the site. Such insurance shall be endorsed to require 30 days' written notice to the District prior to cancellation or change of the policy. One (1) copy of the policy and 2 certificates of such insurance shall be delivered to the District before commencing work and shall be subject to review and approval by the District. The District may temporarily waive delivery of the copy of the policy. In the event Contractor fails to maintain such insurance, the District may arrange therefore; and any premium incurred shall be to the account of Contractor.

107.06.07 Insurance for Work in Railroad Rights-of-Way

During construction in railroad rights-of-way, Contractor shall obtain and maintain insurance as required by the individual railroads.

107.07 Royalties and Patents

Contractor shall pay all royalties and license fees required to perform the work. Defend and indemnify District, from all loss or damage that may result from the Contractor's wrongful or unauthorized use of any patented article or process.

107.08 Permits

Contractor shall obtain all Municipal, County, State, federal, or other permits or licenses necessary or incident to performance of the work under this Contract. Work within the railroad right-of-way requires permit by the rail authority and railroad operators in addition to the above. Comply with all permit requirements pertaining to the project.

107.09 Compliance with ORS Chapter 279a, B, And C (Public Contracting Code)

Comply, and require all Subcontractors to comply, with the District's Public Contracting Rules, the requirements of the applicable State statutes, and be subject to the applicable liabilities provided in ORS Chapter 279A, B and C, such as, but not limited to, the statutes that are numbered and referenced, and incorporated herein by an abbreviated subject matter, and listed below and the statutes required to be set forth as conditions in public contracts, which follows.

LIST

1. ORS 279C.375 Award of contract; Bond; Waiver of bond in case of emergency.
2. ORS 279C.540 Maximum hours of labor on public contracts; holidays; exceptions.
3. ORS 279C.840 Workers on public works to be paid not less than prevailing rate of wage.
4. ORS 279C.845 Certification of rate of wage by Contractor or Subcontractor.
5. ORS 279C.850 Inspection to determine whether prevailing rate of wage being paid; proceedings to require payment of prevailing rate of overtime.
6. ORS 279C.855 Liability of Violations.

107.10 Labor

Upon notification in writing from the District Engineer, remove immediately from the job for its duration any laborer, workman, mechanic, foreman, superintendent, or other person employed who is found to be incompetent, intemperate, troublesome, disorderly or otherwise objectionable, or who fails or refuses to perform their work properly or acceptably.

Comply with provisions of the District's Equal Opportunity Policy and to ORS Chapter 659 relative to unlawful employment practices and discrimination by employers against any employee or applicant for employment because of race, religion, color, sex, or national origin. Particular reference is made to ORS 659.030, which states that it is unlawful employment practice for any employer, because of the race, religion, color, sex, or national origin of any individual, to refuse to hire or employ or to bar or discharge from employment such individual or to discriminate against such individual in compensation or in terms, conditions or privileges of employment.

107.11 Overtime

In addition to the requirements set forth in Specification 107.09, Contractor shall notify the District Engineer of any overtime operations as soon as possible. The Contractor must provide documentation to the District Engineer's satisfaction justifying the overtime work (ORS 279C.520).

In the event that the Contractor wishes to proceed with an overtime operation, the Contractor must first notify and obtain approval from the District Engineer to do so, prior to commencing such work.

For overtime work requested by the Contractor, the Contractor shall pay the applicable wage rate for the District Engineer's Inspector, engineering and operations personnel, and other staff required at the project during the overtime hours.

This section does not apply to labor performed in the manufacture or fabrication of any material ordered by the Contractor or manufactured or fabricated in any plant or place other than the place where the main Contract is to be performed.

107.12 Safety

107.12.01 Employee Safety

The Contractor shall at all times be responsible for the safety of their employees and their Subcontractor's employees. The Contractor shall maintain the job site and perform the work in a manner which meets the District's responsibility under statutory and common law for the provision of a safe place to work and which complies with the District's written safety regulations, if any.

Conduct the project with proper regard for the safety and convenience of the public. When the project involves use of public ways, provide necessary flag persons and install and maintain means of reasonable access to all fire hydrants, service stations, warehouses, stores, houses, garages, and other property. Private residential driveways shall be closed only with approval of the District Engineer or specific permission of the property owner. Do not interfere with normal operation of public transit vehicles unless otherwise authorized. Do not obstruct or interfere with travel over any public street or sidewalk without approval. At all times provide open trenches and excavations with secured and adequate barricades or fences of an approved type which can be seen from a reasonable distance. Close up or plate all open excavations at the end of each working day in all street areas unless approved otherwise by the District Engineer and in all other areas when it is reasonably required for public safety or as directed by the District Engineer. At night, mark all open work and obstructions by lights. Install and maintain all necessary signs, lights, flares, barricades, railings, runways, stairs, bridges, and facilities. Observe all safety instructions received from the District Engineer or governmental authorities, but following of such instructions shall not relieve Contractor from its responsibility or liability for accidents to workmen or damage or injury to person or property.

107.12.02 Public Safety and Convenience

The Contractor shall at all times conduct their work so as to insure the least possible obstruction to traffic and convenience to the general public and residents in the vicinity of the work and to insure the protection of persons and property. No road or street shall be closed to the public except with the permission of the District Engineer and proper governmental authority. Fire hydrants on or adjacent to the work shall be kept accessible to firefighting equipment at all times. Temporary provisions shall be made by the Contractor to insure the use of sidewalks, private and

public driveways and proper functioning of all gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses. The Contractor will minimize inconvenience to others due to mud and dust.

107.12.03 Safety Program

The Contractor shall adopt a written safety program complying with the requirements of employee and public safety set forth hereinabove and as described in the Special Conditions. The safety program shall also comply with OAR Chapter 437, Division 3, regarding general safety and health provisions.

107.13 Rights-Of-Way, Easements and Premises

Confine construction activities within property lines, right-of-way, limits of easements and limits of construction permits as shown or specified in the contract documents unless arrangements are made with owner(s) of adjacent private property. If additional space or property is needed to accommodate Contractor's method for construction of the work or for the convenience of the Contractor, Contractor shall bear all related costs and responsibilities. Prior to the use of any private property outside the specified boundaries, file with the District Engineer written permission from the property owner(s).

Do not unreasonably encumber the specified work areas with materials and equipment. Obtain and bear the costs of permits for special occupancy and use of the specified work areas from the proper agencies. Comply with all requirements regarding signs, advertisements, fires and smoking.

107.14 12-Month Maintenance and Warranty

In addition to and not in lieu of any other warranties required under the Contract make all necessary repairs and replacements to remedy, in a manner satisfactory to the District Engineer and at no cost to District, any and all defects, breaks, or failures of the work occurring within 12 months following the date of substantial completion due to faulty or inadequate materials or workmanship. Repair damage or disturbances to other improvements under, within, or adjacent to the work, whether or not caused by settling, washing, or slipping, when such damage or disturbance is caused, in whole or in part, from activities of the Contractor in performing their duties and obligations under this Contract when such defects or damage occur within the warranty period. The 12-month maintenance period required shall, with relation to such required repair, be extended 1 year from the date of completion of such repair.

If Contractor, after written notice, fails within 10 days to proceed to comply with the terms of this section, District may have the defects corrected, and Contractor and Contractor's surety shall be liable for all expense incurred. In case of an emergency where, in the opinion of the District Engineer, delay would cause serious loss or damage, repairs may be made without notice being given to Contractor and Contractor or surety shall pay the cost of repairs. Failure of the District Engineer to act in case of an emergency shall not relieve Contractor or surety from liability and payment of all such costs.

In addition to the above provisions, District waterline facilities installed by the Contractor under this Contract that require repair or replacement during the 12-month maintenance period shall be repaired by the District or under the direction of the District and the Contractor and Contractor's surety shall be liable for all expenses incurred.

108 PROSECUTION AND PROGRESS OF WORK

108.01 Contractor's Construction Schedule

Within 30 days of Contract award or 1 week in advance of starting work, whichever is earlier, submit for written approval a proposed construction schedule to the District Engineer. Contractor may not commence work until construction schedule is approved by the District Engineer.

If it is desirable to carry on operations in more than one location simultaneously, submit a schedule for each location at least 1 week in advance of beginning such operations. In the event that the Contractor's proposed construction schedule does not meet the necessary construction program schedule as determined by District, immediately resubmit a schedule that conforms as approved. Contractor shall not commence work until schedule is approved by the District Engineer.

The schedule shall show the proposed order of work and indicate the time required for completion of the major items of work. This working schedule shall take into account the passage and handling of traffic with the least practicable interference therewith and the orderly, timely and efficient prosecution of work. It will also be used as an indication of the sequence of the major construction operations and as a check on the progress of work.

108.02 Preconstruction Conference

Attend a preconstruction conference, if requested, at a time, prior to start of work, designated by the District Engineer. Comply with information and instructions provided at the preconstruction conference as recorded in the minutes of the meeting.

108.03 Notice-to-Proceed

Unless stated otherwise in the Special Specifications, written Notice to Proceed will be given by the District Engineer within 30 days after the performance and payment bond and all required insurances have been filed with and approved by the District and the Contract has been executed. Do not commence work under the Contract until such written notice has been given.

Notice to Proceed may be delayed up to an additional 30 days (for a total of sixty 60 days) from date of Contract by the District Engineer if, in the District Engineer's opinion, necessary easements or permits have not been obtained, or required utility relocation, construction, or reconstruction has not been completed or has not progressed to a degree that will allow initial contract work to commence.

Commence work within 10 working days after the date of the Notice to Proceed, or such other date as may be fixed by the Notice to Proceed, which date shall establish the date for commencement of the Contract time. Notify the District Engineer 48 hours in advance of the time and place work will be started.

108.04 Contract Time

Time shall be considered the essence of the Contract.

Upon commencement of work, Contractor shall provide adequate labor, materials, and equipment, and work shall be performed vigorously and continuously in accordance with a schedule which will ensure completion within the specified time limit. Failure to diligently pursue the work may jeopardize additional contract time.

108.05 Suspension of Work

If the work is suspended for convenience: Temporarily suspend work on the Project wholly or in part for convenience of the District as directed by the District Engineer. In the event of such suspension, the District Engineer shall, except in emergency, and except as hereinafter provided, give Contractor 3 days' notice. Work shall be resumed within 5 days after notice has been given by the District Engineer to Contractor to do so. The District Engineer shall allow Contractor an extension of time for completion corresponding to the total period of temporary suspension, and shall reimburse Contractor for necessary

rental of unused equipment, services of watch persons, and other unavoidable expenses accruing by reason of the suspension, as stipulated in Subsection 108.05 (E), Delays and Extensions of Time.

If work is suspended by the District Engineer: Immediately suspend work on the project, wholly or in part, as directed by the District Engineer, for reasonable periods of time as the District Engineer may deem necessary, when conditions are unsuitable for satisfactory performance of the work. The District shall allow the Contractor an extension of time for completion corresponding to the total period of suspension, but the Contractor shall not be entitled to reimbursement for any costs or damages arising under this clause.

If work is suspended for cause: Immediately suspend work on the Project wholly or in part as directed by the District Engineer for such periods as the District Engineer may deem necessary due to: (1) failure to correct unsafe conditions for working personnel, the general public, or District's employees, (2) failure to immediately correct defective and unacceptable work in accordance with Subsection 105.15, (3) failure to carry out provisions of the contract documents and/or conditions of approval, and (4) failure to carry out orders or directives.

Voluntary suspension by Contractor: There shall be no voluntary suspension or slowing of operations without the prior written approval of the District Engineer and such approval shall not relieve Contractor from the responsibility to complete the Contract work within the prescribed Contract time. Should operations be discontinued, Contractor shall notify, in writing, the District Engineer at least 24 hours in advance of resuming operations.

Responsibilities of Contractor:

1. At the commencement of and during any suspension of work, protect all work performed to prevent any damage or deterioration of the work. Provide temporary protection devices to warn, safeguard, protect, guide, and inform traffic during suspension, the same as though the work had been continuous and without interferences.

2. Bear all costs for providing suitable provisions for traffic control and for maintenance and protection of the work during suspension unless the suspension was for convenience.

In all cases of suspension, except voluntary suspension by Contractor, work will be resumed only upon written order of the District Engineer or District.

108.06 Delays and Extensions of Time

If the Contractor is significantly delayed due to court orders enjoining the prosecution of this Project, unavoidable strikes, acts of God, unusual and extraordinary action of the elements that are of such severity to stop all progress of the work, or act or neglect of the District not authorized by the Contract, the Contractor shall, within 48 hours of the start of the occurrence, give notice to the District Engineer of the cause of the potential delay and estimate the possible time extension involved. Within 10 days after the cause of the delay has been remedied the Contractor shall give notice to the District Engineer of any actual time extension requested as a result of the aforementioned occurrence.

No extension of time will be considered for weather conditions normal to the area and time of year in which the work is being performed. Delays in delivery of equipment or material purchased by the Contractor or their Subcontractors (including District-selected equipment) shall not be considered as a just cause for delay, when timely ordering would have made the equipment available. The Contractor shall be fully responsible for the timely ordering, scheduling, expediting, delivery, and installation of all equipment and materials. Extensions of time will be considered for delayed delivery of the District specified equipment "without equal."

Within a reasonable period after the Contractor submits to the District Engineer a written request for an extension of time the District Engineer will make the decision on each request, for District Manager approval.

An adjustment of Contract time as herein provided shall be the Contractor's sole remedy for any delay in completion of the project arising from causes beyond the control of the Contractor, except for

unreasonable delay caused by acts or omissions of the District or persons acting therefor. In no event shall the Contractor be entitled to collect or recover any damages, loss or expense incurred by reason of such delay, except for an unreasonable delay caused by acts or omissions of the District or persons acting therefor. However, if Contractor is delayed due solely to a breach by the District, Contractor will be entitled to recover damages limited to reimbursement for necessary rental of unused equipment, services of watch persons, documented direct overhead costs, documented direct unavoidable expenses accruing by reason of the suspension, plus 15% of the foregoing damages to cover normal Contractor profit. Contractor shall not be entitled to indirect costs or any other damages arising out of the delay, including but not limited to, interruption of schedules, or any other impact claim or ripple effect. If a delay is caused by the District and Contractor (joint delay), Contractor shall be entitled to a time extension only, by reason of such joint delay.

108.07 Liquidated Damages

Time shall be considered the essence of the Contract. If Contractor fails to complete the project or to deliver the supplies or perform the services within the time specified in the Contract or any extension thereof by the District, the actual damage to District for the delay will be substantial but will be difficult or impractical to determine.

It is therefore agreed that Contractor will pay to District, not as a penalty but as liquidated damages, the per diem amount of 0.5% of the total contract or modification thereof for each and every calendar day elapsed in excess of the Contract time or the final adjusted Contract time applicable to the work required under the Contract.

Permitting Contractor to continue and finish the work or any part thereof after the Contract time or adjusted Contract time, as pertinent, has expired shall in no way operate as a waiver on the part of the District or any of its rights under the Contract.

Payment of liquidated damages shall not release Contractor from obligations in respect to the fulfillment of the entire Contract, nor shall the payment of such liquidated damages constitute a waiver of District's right to collect any additional damages which may be sustained by failure of Contractor to carry out the terms of the Contract, it being the intent of the parties that said liquidated damages be full and complete payment only for failure of Contractor to complete the work on time.

108.08 Contractor's Representative

Designate, in writing before starting work, an authorized representative who shall have complete authority to represent and to act for Contractor, in all directions given by the District Engineer. Contractor, or its authorized representative shall supervise the work, and shall be present on site continually during its progress.

If Contractor or its authorized representative is not present, directions may be given by the District Engineer or their authorized representative to the workmen and such order shall be received and followed. Any direction will be confirmed in writing upon request from the Contractor.

Keep a complete copy of the Plans and Specifications on or near the site at all time.

108.09 Conflicts, Errors, Omissions, And Additional Drawings

Check and compare all Plans and Specifications prior to construction and notify the District Engineer of any discrepancies or omissions in order to permit correction by the District Engineer. Coordination of Plans and Specifications is intended. Furnish labor and materials as required for the work. Should any work or materials be reasonably required or intended for carrying the project to completion which are omitted on the Plans and Specifications, furnish same as fully as if particularly delineated or described. The intent of the Plans and Specifications is to show and describe a complete project within the limits stated. Dimensions shown on Plans shall be followed, rather than scale measurements. Whenever it appears that the Plans are not sufficiently detailed or explicit, the District Engineer may furnish additional detail drawings or written instructions and Contractor shall perform the work in accordance with the additional details or instructions.

108.10 District's Right to Do Work

Failure or refusal to comply with any of the terms or conditions of the Contract will permit the District to supply or correct any deficiency or defect or take other appropriate action without prejudice to any other remedy. Such action by District shall be taken only after 7 days' notice by the District Engineer to Contractor and their surety, unless in the judgment of the District Engineer an emergency or danger to the work or to the public exists, in which event action of the District as set forth above may be taken without any notice whatsoever. The cost of such action by the District shall be deducted from the payment then or thereafter due Contractor. Pay the District any costs in excess of such payment due.

108.11 Termination for Default

If the Contractor should be adjudged bankrupt, or if they should make a general assignment for the benefit of their creditors, or if a receiver should be appointed on account of insolvency, or if they should refuse to or fail to supply enough properly skilled workmen or proper materials for the efficient prosecution of the Project, disregard laws, ordinances or the instructions of the District Engineer, or otherwise be in violation of any provision of the Contract, the District may, without prejudice to any other right or remedy and after giving the Contractor and its surety 7 days' written notice, terminate the services of the Contractor and take possession of the premises and of all materials, tools and appliances thereon as well as all other materials whether on the premises or not, on which the Contractor has received partial payment and finish the work by whatever method it may deem expedient.

In the event action as above indicated is taken by the District, the Contractor, or its surety, shall provide the District Engineer with immediate and peaceful possession of all of the materials, tools and appliances located on the premises as well as all other materials whether on the premises or not, on which the Contractor has received any progress payment. Upon termination, in the event that the surety does not complete the Contract, at the election of the District, Contractor shall assign any and all Subcontractors and material contracts to the District or District's designee. Further, the Contractor shall not be entitled to receive any further payment until the work is completed. On completion of the work, determination shall be made by the District Engineer of the total amount the Contractor would have been entitled to receive for the work, under the terms of the Contract, had Contractor completed the work. If the difference between said total amount and the sum of all amounts previously paid to the Contractor, which difference will hereinafter be called the "unpaid balance," exceeds the expense incurred by the District in completing the work, including expense for additional managerial and administrative services, such excess will be paid to the Contractor, with the consent of the surety. If, instead, the expense incurred by the District exceeds the unpaid balance, the amount of the excess shall be paid to the District by the Contractor or their surety. The expense incurred by the District as herein provided, and the damage incurred through the Contractor's default, shall be as determined and certified by the District Engineer.

In addition to and apart from the above-mentioned right of the District to terminate the employment of the Contractor, the Contract may be canceled at the election of the District for any willful failure or refusal on the part of the Contractor to faithfully perform the Contract according to all of its terms and conditions; provided, however, that in the event the District should cancel the Contract, neither the Contractor nor its surety shall be relieved from damages or losses suffered by the District on account of the Contractor's breach of Contract.

The District may, at its discretion, avail itself of any or all of the above rights or remedies and its invoking of any one of the above rights or remedies will not prejudice or preclude the District from subsequently invoking any other right or remedy set forth above or elsewhere in the Contract.

None of the foregoing provisions shall be construed to require District to complete the work, not to waive or in any way limit or modify the provisions of the Contract relating to the fixed and liquidated damages suffered by District on account of failure to complete the Project within the time prescribed.

108.12 Termination in the Public Interest

It is hereby agreed that the District has the right to terminate the Contract in whole or in part when it is considered to be in the public interest.

In the event the Contract is terminated as being in the public interest the Contractor shall be entitled to a reasonable amount of compensation for preparatory work and for all costs and expenses arising out of the termination excluding lost profits.

The amount to be paid to the Contractor:

1. Shall be determined on the basis of the Contract price in the case of any fully completed separate item or portion of the work for which there is a separate or unit Contract price; and

2. In respect to any other work, the Contractor will be paid a percent of the Contract price equal to the percentage of the work completed.

END OF DIVISION

Division 2 — STORMWATER CONSTRUCTION STANDARDS

301 GENERAL

Stormwater construction standards apply to infrastructure on private property only (outside the public ROW). Construction of this infrastructure is regulated by the Oregon Specialty Plumbing Code and permitted and inspected by the local Building Official which is the Clackamas County Building Department. OLWSD's design standards of water quality and quantity facilities apply; see OLWSD Chapter 2.

END OF DIVISION

DIVISION 3 - WASTEWATER CONSTRUCTION STANDARDS

TABLE OF CONTENTS

301 PIPE AND FITTINGS

301.01 DESCRIPTION

This section covers the following work: (1) gravity and pressure sewer mains, (2) fittings, and (3) laterals and cleanouts and manholes and pump stations.

301.02 MATERIALS

301.02.01 General

Use all sewer pipe and fittings of the size, strength, material and joint type specified on the drawings and/or the proposal. Use jointing material as hereinafter specified for each pipe material. Each piece of pipe shall be clearly identified as to strength, class and date of manufacture. The manufacturer or fabricator shall furnish appropriate certification, based on manufacturers routine quality control tests, that the materials in the pipe and fittings meet the requirements specified herein. Strength, permeability, hydrostatic tests, and pipe joints will be used as the basis of acceptance as described under proof tests herein.

It is not intended that materials listed herein are to be considered equal or generally inter changeable for all applications. The Design Engineer shall determine the materials suitable for the project and so specify.

301.02.02 Ductile-Iron Pipe

Ductile-iron pipe centrifugally cast of 60-42-10 iron shall conform to ANSI A21.51 Class 150 or AWWA C151, with Push-on Joint or Mechanical Joints as specified, conforming to ANSI Specification A21.11/AWWA C111. Ductile-iron pipe shall be lined with cement mortar and seal coated in accordance with ANSI Standard A21.4/AWWA C104.

When specified, tube type polyethylene encasement shall conform to ANSI A21.5/AWWA C105.

301.02.03 PVC Nonpressure Pipe

PVC sewer pipe shall conform to ASTM D 3034 SDR 35 or C900.

301.02.04 HDPE Pipe

HDPE pipe sizing shall conform with ASTM F714 or D3035. HDPE pipe material shall conform to ASTM D 3350. Pipe size and pipe dimension ratio shall be specified in the plans.

301.02.05 Lateral Markers

A 2-inch x 4-inch stake painted green shall extend from the lateral end to a minimum of 3 feet above the ground.

301.02.06 Jointing Materials

Only lubricants for jointing materials approved by the manufacturer shall be used.

Furnish in duplicate a certified statement from the manufacturer of the gaskets, setting forth the basic polymer used in the gaskets and results of the tests of the physical properties of the compound. Gaskets shall be shipped in containers with identification of the batch from which the gaskets were fabricated.

A. Ductile-Iron Pipe

Rubber gaskets shall conform to ANSI A21.11/AWWA C111.

B. PVC Pipe

Rubber gaskets for PVC pipe shall conform to ASTM F 477. Solvent weld (glued) joints will not be allowed.

C. HDPE Pipe

HDPE pipe shall be joined via butt fusion welds in accordance with ASTM F 2620. The technician performing butt fusion welds shall be certified by the manufacturer or other certifying agency. Alternately, electrofusion polyethylene fittings may be used.

301.02.07 Proof Tests

The intent of this requirement is to prequalify a joint system, components of which meet the joint requirements, as to the water tightness capability of that joint system. This proof test shall be understood to apply to all sanitary sewers. Material and test equipment for proof testing shall be provided by the manufacturer. Joints shall meet the requirements of yard testing specified below. The pipe manufacturer shall submit results of the yard tests made, certified by a testing agency acceptable to the District Engineer. In general, each pipe material and joint assembly shall be subject to the following three proof tests at the discretion of the District Engineer.

1. Pipe in Straight Alignment

No more than 5 pipes selected from stock by the District Engineer or the testing agency shall be assembled according to the manufacturer's installation instructions with the ends suitable plugged and restrained against internal pressure. The pipe shall be subjected to 13-PSI hydrostatic pressure for 10 minutes. Free movement of water through the pipe joint or pipe shall be grounds for rejection of the pipe.

2. Pipe in Maximum Deflected Position

A test section shall be deflected as described hereinafter for each pipe material. The pipe shall be subjected to 10-PSI hydrostatic pressure for 10 minutes. Free movement of water through the pipe joint or pipe wall shall be grounds for rejection of the pipe.

3. Joints Under Differential Load

The test section shall be supported on blocks or otherwise as described hereinafter for each pipe material. There shall be no visible leakage when the stressed joint is subjected to 10-PSI internal hydrostatic pressure for 10 minutes.

A. Ductile-Iron Pipe

For deflected position, create a position ½ inch wider than the fully compressed section on 1 side of the outside perimeter.

For differential load, support so that one of the pipes is suspended freely between an adjacent pipe, load bearing only on the joints. Apply a force per the following table along a longitudinal distance of 12 inches, immediately adjacent to 1 of the joints.

PIPE SIZE	FORCE - POUNDS	PIPE SIZE	FORCE - POUNDS
4 inches	1,000	15 inches	3,700
6 inches	1,500	18 inches	4,400
8 inches	2,000	21 inches	5,000
10 inches	2,500	24 inches	5,500
12 inches	3,000	and over	----

B. PVC Pipe

PVC pipe joints shall be tested by and meet the requirement of ASTM C 3212 for gravity sewers and ASTM D 3139 for pressure sewers.

301.02.08 Fittings

Provide tee fittings in the sewer main for lateral connections. Tees for laterals shall be 4 inches inside diameter, unless otherwise specified. All fittings shall be of sufficient strength to withstand all handling and load stresses encountered. All fittings shall be of the same materials as the pipe unless otherwise specified. Material joining the fittings to the pipe shall be free from cracks and shall adhere tightly to each joining surface. Use the same type of joints on all fittings that are used on the main sewer pipe. Tee fittings shall not be closer than 12 inches to any joint or bell of main line sewer which is 12 inches or less in diameter.

A. Ductile-Iron Pipe

Use mechanical joint cast-iron fittings conforming to ANSI A21.10/AWWA C110, and a class of at least equal to that of the adjacent pipe. Use push-on fittings of gray cast iron with body thickness and radii of curvature conforming to ANSI A21.10 and joints conforming to ANSI A21.11/AWWA C111.

B. PVC Pipe

PVC pipe shall be connected to sanitary manholes only thru formed or cored holes using an approved boot type adapter specifically manufactured for the intended service and approved by the District Engineer, such as Kor-N-Seal boots or equivalent. ~~Fernco CMA, Romac LCT, Tylox Manhole Adapters, Vassalo Series 32850, Kor-N-Seal, Sealtite, Z-Lok-XP, or equal commercial product. Field-fabricated waterstops or improvised adapters such as gaskets stretched over the pipe will not be allowed.~~

~~Adapters requiring the use of grout for installation (sanded collars) shall be anchored and finished using an approved nonshrink grout. Mortar is not acceptable.~~ Sanded collars will be accepted only in poured-in-place manhole bases.

C. HDPE Pipe

Polyethylene fittings shall be manufactured in accordance with ASTM D 3261 for molded polyethylene fittings and ASTM F 1055 for electrofusion polyethylene fittings.

301.02.09 Pipe Coupling Adapters

A. PVC Pipe, and Ductile-Iron Pipe

Use flexible mechanical compression joint coupling with stainless steel shear proof bands such as a Fernco Strongback or approved equal.

B. HDPE Pipe

Electrofusion couplers shall be used to join pipe between manholes. Electrofusion couplers shall conform to ASTM F 1055.

301.03 Construction

301.03.01 Excavation and Backfill

Conform to the requirements of Standard Detail 302 for pipe bedding and Section 1 for public easements (Excavation, Embankment, Bedding, and Backfill). All excavation shall be unclassified. Clackamas County public road standards supersede OLWSD standards outside of pipe zone.

301.03.02 Line and Grade for Gravity and Pressure Sewers

Do not deviate from line or grade, as established by the Design Engineer, more than ½ inch for line and ¼ inch for grade, provided that such variation does not result in a level or reverse sloping invert. Measure for grade at the pipe invert, not at the top of the pipe, because of permissible variation in pipe wall thickness. Establish line and grade for pipe by the use of lasers or by transferring the cut from the offset stakes to batter boards at maximum intervals of 25 feet.

A. Line and Grade for Laterals

The Design Engineer will establish line and grade to the tract of land to be serviced by the sewer system. At the preselected location of a lateral a stake will be driven into the ground showing the depth of excavation required at the property line.

The lateral must be laid perpendicular to the main whenever possible. Lay the pipe on a straight line and at a minimum of 2% grade between the tee and the clean out. The lateral shall be installed with the same accuracy as the main sewer and shall be a minimum of 5 feet ~~deep~~ of cover in all parts of the road right of way or easement.

301.03.03 Pipe Distribution and Handling

Distribute material on the job no faster than it can be used to good advantage. Unload pipe only by means recommended by the pipe manufacturer. Do not unload pipe of any size by dropping to the ground. Do not distribute more than 1 week's supply of material in advance of laying, unless approved.

Pipe shall not be unloaded or stored in the public right-of-way or easement unless it has been certified and accepted by the Design Engineer. Inspect all pipe and fittings prior to lowering into trench to ensure no cracked, broken, or otherwise defective materials are used. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after laying.

Use proper implements, tools, and facilities for the safe and proper protection of the work. Lower pipe into the trench in such a manner as to avoid any physical damage to the pipe. Remove all damaged pipe from the job site. Do not drop or dump pipe into trenches.

301.03.04 Pipe Laying and Jointing of Pipe and Fittings

A. General

Proceed with pipe laying upgrade with spigot ends pointing in direction of flow. Place pipe in such a manner as to ensure a continuous and uniform bearing and support for the full length of the pipe between joints. Take care to properly align the pipe before forced entirely home. Upon completion of pipe laying all pipe joints shall be in the " home" position, which is defined as the position where the least gap (if any) exists, when the pipe components that comprise the join are fitted together as tightly as the approved joint design will permit. Gaps at pipe joints shall not exceed that allowed by the manufacturer's recommendations.

Take special care to prevent movement of the pipe after installation when laid within a movable trench shield.

When laying operations are not in progress, protect the open end of the pipe from entry of foreign material and block the pipe to prevent movement or creep of gasketed joints.

Plug or close off pipes which are stubbed out for manhole construction or for connection by others.

When cutting and/or machining the pipe is necessary, use only tools and methods recommended by pipe manufacturer.

When shown or approved to deflect pipe from a straight line, either in the vertical or horizontal plane, or when long-radius curves are shown, the amount of deflection shall not exceed that specified or approved by the District Engineer. The pipe manufacturer's recommendation will serve as a guide, but the decision of the District Engineer shall be final.

The contractor shall at all times provide and maintain ample means and devices to remove and dispose of all water entering the trench excavation during the process of laying the pipe. Water and debris shall not enter into the Districts sewer system. Water and debris shall be disposed of in an approved manner.

301.03.05 Installation of Tees and Laterals

Provide pipe bedding material compacted to a minimum of 90% of maximum density as determined by ASTM D 1557/AASHTO T-180 under all tee fittings, extending to the springline of the fittings. Place pipe bedding material on undisturbed native material or compacted foundation stabilization material.

Use pipe and fittings for laterals of one type of material throughout; no interchanging of pipe and fittings will be allowed. Use 4-inch diameter pipe for residential laterals when not otherwise specified. Commercial and Industrial laterals must be a minimum of 6-inch diameter.

Connect laterals to manholes only when directed. Connections to existing manholes shall be by way of a core drilled hole and use a Kor-N-Seal boot or equivalent.

Provide ends of all laterals with approved watertight plugs, or caps, suitably braced to prevent blow-off during internal air testing. Clean outs must be installed on the laterals prior to air testing.

Any new sanitary sewer tap location(s) must be a minimum distance of two (2) linear feet on either side of the main line from any other existing tap / lateral location.

301.03.06 Lateral Markers

In new subdivisions, undeveloped areas, and where connections will not be made in the Contract, after the service line is installed, block the capped or plugged end and install 2 inch x 4 inch marker. Extend markers at least 3 feet above the ground surface. Paint the top portion of the marker green. Write the depth of the lateral on the marker with permanent ink.

Take precautions during the backfilling operation to ensure the position and location of the marker. If the marker is broken or knocked out of vertical alignment during the backfilling operation, reopen the trench and replace the marker.

~~In new subdivisions, at the time the curbs are poured, an S shall be stamped in the top of curb at each point a lateral crosses beneath the curbline.~~

301.03.07 Testing

A. General

All gravity sanitary sewers shall successfully pass an air test prior to acceptance and shall be free of leakage. Manholes shall be tested as specified in Section 3.0041 (Manholes and Concrete Structures).

All pressure sewer force mains shall be tested in accordance with applicable portions of Division and Section 4, when not otherwise specified.

Lines shall be cleaned prior to any television inspection.

A television inspection of the sanitary sewer pipe shall be performed. Any defects in material or workmanship shall be satisfactorily corrected prior to final acceptance of the work.

No private plumbing can be connected to a new sanitary system installation without District approval. The District will not approve or accept a sanitary system installation if any private plumbing has been connected to it.

B. Cleaning Prior to Testing and Acceptance

Prior to testing and television inspection of the sewer system hydro clean all parts of the system and remove all debris.

Upon the District Engineer's final manhole-to-manhole inspection of the sewer system, if any foreign matter is still present in the system, hydroclean the system a second time as required and remove the debris.

C. Testing Procedure

Perform the tests in a manner satisfactory to the District Engineer. Calibrate gauges for air testing with a standardized test gauge provided by the Contractor at the start of each testing day. The calibration shall be witnessed by the District Engineer; notify the District Engineer 24 hours prior to each test.

D. Time of Test

Make tests of sections of constructed sanitary sewer for acceptance only after all service connections, manholes, backfilling, and compaction are completed between the stations to be tested. The District may require testing of manhole-to-manhole sections as they are completed in order to expedite the acceptance of sections of sewer and allow connections prior to the whole system being completed.

E. Repairs

Repair or replace, in a manner satisfactory to the District Engineer, any section of pipe not meeting the air test requirements, or which has leakage.

Infiltration of ground water in an amount greater than herein specified, following a successful air test as specified, shall be considered as evidence that the original test was in error or that subsequent failure of the pipeline has occurred. Correct such failures occurring within the warranty period in a manner satisfactory to the District Engineer at the Contractor sole expense.

The Contractor, in contracting to do this work, agrees that the leakage allowances as indicated herein are fair and practical.

F. Air Testing

1. General

The District Engineer may, at any time, require a calibration check of the instrumentation used. Use a pressure gauge having minimum divisions of 0.10 PSI and an accuracy of 0.0625 PSI. (1 ounce per square inch.) All air used shall pass through a single control panel.

All plugs used to close the sewer for the air test must be capable of resisting the internal pressures and must be securely braced. Place all air testing

equipment above ground and allow no one to enter a manhole or trench where a plugged sewer is under pressure. Release all pressure before the plugs are removed. The testing equipment used must include a pressure relief device designed to relieve pressure in the sewer under test at 10 PSI or less and must allow continuous monitoring of the test pressures in order to avoid excessive pressure. Use care to avoid the flooding of the air inlet by infiltrated ground water. (Inject the air at the upper plug if possible.) Use only qualified personnel to conduct the test.

Do not coat pipes for sewers internally or externally with any substance of any type in an attempt to improve its performance when air tested.

2. Ground Water

The presence of ground water will affect the results of the test. Determine the average height of ground water over the sewer immediately before starting the test.

In every case, determine the height of the water table at the time of the test by exploratory holes or such other methods satisfactory to the District Engineer. The District Engineer will make the final decisions regarding test height for the water in the pipe section being tested.

3. Method

Use the Time-Pressure Drop Method for all air testing. The test procedures are described as follows:

1. Clean the sewer to be tested and remove all debris where noted.

2. Wet the sewer prior to testing, if desirable.

3. Plug all sewer outlets with suitable test plugs. Brace each plug securely.

4. Check the average height of the ground water over the sewer. The test pressures required below shall be increased 0.433 PSI for each foot of average water depth over the sewer.

5. Add air slowly to the section of sewer being tested until the internal air pressure is raised to 4.0 PSIG greater than the average back pressure of any ground water that may submerge the pipe.

6. After the internal test pressure is reached, allow at least 2 minutes for the air temperature to stabilize, adding only the amount of air required to maintain pressure.

7. After the temperature stabilization period, disconnect the air supply.

8. Determine and record the time in seconds that is required for the internal air pressure to drop from 3.5 PSIG to 2.5 PSIG greater than the average back pressure of any ground water that may submerge the pipe.

4. Acceptance

The sewer shall be considered acceptable when tested as described herein before if the section under test does not lose air at a rate greater than 0.0015 cfm per square foot of internal sewer surface.

For test sections containing over 625 square feet of surface area, the time measured by this method for 1.0 PSI pressure drop shall be calculated according to the following formula:

$$T = d^2L/42$$

T = test duration, seconds
d = pipe diameter, inches
L = section length, feet
42 = conversion factor

For test sections containing less than 625 square feet of internal surface area, the time measured by this method for 1.0 PSI pressure drop shall be calculated according to the following formula:

$$T = 56d$$

The internal surface area of pipeline sections may be calculated using the formula:

$$A = \pi Ld/12$$

The surface areas of lateral lines of differing lengths and diameters may be accommodated in Equations 1 and 2 above by using the sums $d_{1^2}L_1 + ... + d_{n^2}L_n$ and $d_1 + ... + d_n$ in place of d^2L and d, respectively.

301.03.08 Deflection Test for PVC Pipe and HDPE Pipe

In addition to air testing, perform a deflection test for all sanitary sewers constructed of PVC pipe or HDPE pipe after the trench backfill and compaction has been completed. The test shall be conducted by pulling an approved mandrel through the completed pipeline ~~a minimum of 30 days~~ after compaction is completed. The diameter of the mandrel shall be 95% of the internal pipe diameter. Conduct testing on a manhole-to-manhole basis and only after the line has been completely flushed clean with water. Locate and repair any sections failing to pass the test and retest the section, at the Contractor's sole expense.

301.03.09 Subsequent Failure

No infiltration of ground water in the system is allowed. No standing water is allowed.

301.03.10 Rail Lines Crossing Sanitary Sewer

New and reconstructed light rail and freight rail construction may require improvements to the sanitary sewer system at all utility crossing locations. Each utility crossing area is to be minimized. All existing pipes on the second half of useful life within the rail zones shall be replaced to current standards. Metallic or conductive pipe materials are not approved pipe materials at rail crossings. Pipes are to be centered under rail tracks to avoid joints underneath rail lines. All new pipe installations must identify practical future replacement options for the sewer pipe under rails in case of future failure of utility.

301.03.11 Television Inspection of Sanitary Sewers

Upon completion of all sewer construction, repairs, cleaning, and required tests, the Contractor shall notify the District Engineer 24 hours prior to when the television inspection will be performed.

Subsequent to being notified, the District Engineer shall commence examination of lines. Findings will be recorded.

When performing television inspections, water shall be added and a one-inch measuring ball shall be utilized.

Upon correction of deficiencies revealed by television inspection, the Contractor shall notify the District Engineer; the same steps listed above may be repeated until all work is acceptable.

The District may, at its own option, perform a deflection test.

302 MANHOLES AND CONCRETE STRUCTURES

302.01 Description

This section covers the work necessary for the construction of the following items: (1) manholes, (2) drop assemblies, and (3) concrete encasement.

302.02 Materials

302.02.01 Base Rock

¾-inch minus base rock, conforming to the requirements for crushed aggregate material in Detail Drawing 302.

302.02.02 Forms

Forms for exposed surfaces shall be steel or plywood. Others shall be matched boards, plywood or other approved material. Form all vertical surfaces. Trench walls, large rock, or earth shall not be used as form material.

302.02.03 Concrete and Reinforced Steel

Concrete and reinforcing steel shall conform to Section 205 (Materials—Types and Use).

302.02.04 Cement Mortar

When specified for use, cement mortar shall conform to Detail Drawing 305 for concrete equivalencies. Mortar mixed for longer than 30 minutes shall not be used.

302.02.05 Manholes

A. Standard Precast Manhole Sections

Furnish sections as specified conforming to the details on the standard drawings and to ASTM C 478. Cones shall have same wall thickness and reinforcement as manhole section. Provide eccentric cones with precast grooves for all manholes over 6 feet in depth. Flat slab tops with precast grooves reinforced to withstand AASHTO H20 loading shall be provided for manholes 4 feet deep from crown of pipe and less. Top and bottom of all sections shall be parallel.

Prior to the delivery of any size of precast manhole section on the job site, yard permeability tests will be conducted at the point of manufacture. The precast sections to be tested will be selected at random from the stockpiled material that is to be supplied for the job. All test specimens will be mat tested, and shall meet the permeability test requirements of ASTM C 14 and ASTM C 497.

B. Precast Concrete Bases

Manholes shall be constructed using precast, reinforced concrete bases. Construction of precast bases shall conform to the requirements of ASTM C478. The base riser section shall be integral with the base slab.

C. Poured in Place Manhole Bases

The Contractor may use poured in place manhole bases only when pouring a new base over an existing main line. Concrete shall conform to Section 3.0030 (Manholes and Concrete Structures).

D. Manhole Grade Rings

Concrete grade rings for extensions shall be a maximum of 6 inches high.

E. Jointing Materials

Preformed plastic gaskets conforming to the requirements of AASHTO M-198 or joints using confined O-ring with rubber gaskets conforming to ASTM C443 shall be used.

302.02.06 Pipe and Fittings

Conform to requirements of Section 3.

302.02.07 Manhole Frames and Covers

A. General

1. All castings shall be true to size, weight and tolerances shown on the standard drawings. Delivered weight shall be +/- 5% of the specified weight. The bearing seat shall not rock when checked by the test jig. The foundry shall supply all test gauges and shall not subcontract any of the work other than testing procedure, patterns, and machining and cartage. The casting shall not be made by the open mold method and shall be free of porosity, shrink cavities, cold shuts, or cracks, or any defects which would impair serviceability. Repair of defects by welding, or by the use of “smooth-on” or similar material will not be permitted. All castings shall be shot or sandblasted, and the application of paint or other coating will not be permitted. Standard manhole frames are required in state, county and public road right-of-ways. Suburban manhole frames are acceptable in private roads, driveways, and easements. Only 2-hole lids will be accepted. In landscaped easements MH frames must be set slightly above final grade.

2. All manhole frames and covers located outside of the right-of-way shall be tamper-proof.

B. Materials

Conform to ASTM A 48, Class 30B with the following revisions:

Tensile Strength	30,000 PSI
Traverse Strength:	(1.2 inch diam. bar - 18 inch centers)
Load - Pounds	2,600 - 3,000
Deflection - Inches	0.22 - 0.34
Brinell Hardness (as cast)	173 - 200

The foundry shall certify as to the tensile and traverse properties and the Brinell Hardness. The District reserves the right to require a Rough Transverse bar (size of bar 1.2 inch diam. by 20 inch long) and/or a tensile bar as per ASTM A 48 for each 20 castings or heat when less than 20 castings are made.

C. Inspection

Notify the District at least 24 hours in advance of casting the units or bars. At least 24 hours notice shall also be given prior to final gauging and inspection. When directed,

the following strength test shall be made on the manhole cover. The cover, while resting it its frame, shall sustain a concentrated load of 40,000 lbs. applied at its center through a 2½-inch plug. The District Engineer may, at any time, require up to 5% of the job and/or order to be tested in this manner. In case of failure during the test, additional covers shall be furnished until the tests prove satisfactory. Covers that do not pass this test shall not be used.

D. Cap Screws

Cap screws and washers for tamperproof and watertight manhole covers shall be stainless steel with 60,000 PSI minimum tensile strength conforming to ASTM A 453.

302.02.08 Steps for Precast Manholes

Steps for precast manholes shall be of ¾-inch diameter structural steel in conformance with the standard details or be of steel reinforced polypropylene plastic, M.A. Industries, Inc., No PS-2PFS, or Lane No. P-13850, or approved equal. All steps shall be in conformance with ASTM C-478 and shall be aligned vertically. All steps within a manhole shall be of the same design, type and size (mixing of unmatched steps within the same manhole is not permitted). Loose steps shall be cause for rejection of that manhole cone or section.

Steps of ¾-inch diameter structural steel shall conform to ASTM A 36 and galvanized in accordance to ASTM A 123. Steps shall be safety type 12-inch x 8-inch x 2-inch pattern as shown on the standard plans.

Steel reinforced polypropylene steps are to be driven into pre-formed holes in precast concrete manhole cones and sections by the manhole manufacturer prior to delivery to job site and shall be in conformance with the following specifications:

ASTM A-615 Grade 60, ½ inch deformed steel rod
ASTM 2146-78 Type II, Polypropylene

302.02.09 Nonshrink Grout

Nonshrink grout shall be Sika 212, Euco N-S, Five-Star, or equal nonmetallic cementitious commercial grout exhibiting zero shrinkage per ASTM C-827 and CRD-C-621. Grout shall not be amended with cement or sand, and shall not be reconditioned with water after initial mixing. Unused grout shall be discarded after 20 minutes and shall not be used.

Nonshrink grouts shall be placed or packed only with the use of an approved commercial concrete bonding agent applied to all cured concrete surfaces being grouted. The bonding agent shall be compatible with the brand of grout being used. Water as a substitute for commercial bonding agent for nonshrink grout will not be allowed in sanitary sewer construction.

302.03 Construction

302.03.01 General

A. Excavation and Backfill

Conform to applicable provisions in Section 204 (Excavation, Embankment, Bedding, and Backfill). Backfill around manholes shall be of the same quality as the trench backfill immediately adjacent. All excavation shall be unclassified.

B. Base Rock

Place crushed aggregate base rock and thoroughly compact with a mechanical vibrating or power tamper.

C. Foundation Stabilization

If material in bottom of excavation is unsuitable for supporting manholes and other sewer appurtenances, excavate below subgrade as directed and backfill to required grade with rock conforming to Foundation Stabilization in Detail Drawing 304.

302.03.02 Manholes

All manholes, except as otherwise specified, shall be constructed using precast, reinforced concrete base sections, riser sections, and other precast appurtenances conforming to ASTM C478. Base riser sections shall be integral with the base slabs.

Preformed plastic gaskets shall be installed in strict accordance with the manufacturer's recommendation. Only pipe primer furnished by the gasket manufacturer will be approved. When using preformed plastic gaskets, manhole sections with chips or cracks in the joint surfaces shall not be used. Completed manholes shall be rigid and all manholes for sanitary sewers shall pass the vacuum test. Construct manhole inverts in conformance with the standard drawings with smooth transitions to ensure an unobstructed flow through manhole. Cover exposed edges of pipe completely with grout. Trowel all grouted surfaces smooth.

The inside of all manholes will be grouted smooth with all spaces between risers, rings, and cones filled with grout flush with the inside of the manhole.

Holes for installing pipe into precast manhole sections shall be cast in place or core drilled.

Channels shall conform accurately to sewer grade. Channel shall be formed to accept a 7-inch x 30-inch cylinder into the pipes. Construct cast in place channel and shelf, in field, in 1 operation. Finish concrete shelf between channels with a brush.

302.03.03 Drop Assemblies

Construct drop assemblies at locations indicated and as shown on the standard drawings.

302.03.04 Pipe Stubouts and Manholes

Install stubouts from manholes at locations as shown or directed. Pipe connections to the cone section of a manhole are strictly prohibited.

302.03.05 Manhole Grade Rings

In general, manhole grade rings will be used on all manholes in streets or roads or other locations where a subsequent change in existing grade may take place. Extensions will be limited to a maximum height of 12 inches.

Install appropriate combination of grade rings to a height that will accommodate the finish manhole surface elevation as shown on the drawings. Lay grade rings in mortar with sides plumb and tops level. All mortared sanitary sewer manhole necks and all grade ring joints made with mortar shall be constructed using an approved commercial concrete bonding agent applied to all cured concrete surfaces being mortared. No joints, necks, frames, or grade rings on sanitary sewers shall be mortared without an approved bonding agent. Water as a substitute for commercial concrete bonding agent will not be approved. Grade ring extensions shall be watertight. All mortared sanitary sewer manhole necks and all grade ring joints made with mortar shall be constructed using an approved commercial concrete bonding agent applied to all cured concrete surfaces being mortared. No joints, necks, frames, or grade rings on sanitary sewers shall be mortared without an approved bonding agent. Water as a substitute for commercial concrete bonding agent will not be approved.

302.03.06 Adjustment of Manholes and Cleanouts to Grade

The frame and cover will be adjusted to final grade after the first lift of AC has been placed and prior to the final lift. The void between the frame and the first lift of AC will be filled with Type B

grout conforming to Section 205 (Materials—Types and Use). The manhole frame must be flush with the final grade of the roadway without the use of paving rings.

302.03.07 Vacuum Testing

Manholes shall be vacuum tested.

For manholes with poured bases constructed over existing main lines, the top of the existing main shall not be "cut out" until the manhole vacuum test has been witnessed and approved by an OLWSD inspector.

1. Each manhole may be tested immediately after assembly and prior to backfilling for Contractor information and ease of repair if necessary. Acceptance testing will be accomplished after backfilling and final paving is complete.
2. All lift holes shall be plugged with an approved nonshrink grout. Manhole frame to grade ring or cone connection shall use commercial concrete bonding agent and nonshrink grout.
3. All pipes entering the manhole shall be plugged, taking care to securely brace the plug from being drawn into the manhole.
4. The test head shall be placed at the inside of the top of the manhole frame and the seal inflated in accordance with the manufacturer's recommendations. The seal at grade rings and frame shall be subject to the test.
5. A vacuum of 10 inches of mercury shall be drawn and the vacuum pump shut off. With valves closed, the time shall be measured for the vacuum to drop to 9 inches. The manhole shall pass if the time for the vacuum reading to drop from 10 inches of mercury to 9 inches of mercury meets or exceeds the values indicated below.

DEPTH OF MANHOLE (FEET)	ALLOWABLE TIME (SECONDS)		
	48-INCH	60-INCH	72-INCH
8	20	23	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

6. If the manhole fails the initial test, necessary repairs shall be made with an approved nonshrink, quick-setting grout. Retesting shall proceed until a satisfactory test is obtained.

302.03.08 Placing Precast Units

If material in bottom of trench is unsuitable for supporting unit, excavate as directed and backfill to required grade with foundation stabilization material in conformance with Section 204

(Excavation, Embankment, Bedding, and Backfill). Set units to grade at locations shown or directed.

302.03.09 Cleaning

Upon completion, clean each structure of all silt, debris, and foreign matter.

303 WORK ON EXISTING SANITARY SEWERS

303.01 Description

This section covers the work necessary to join new work to existing, the abandoning of sanitary sewer lines, and adjusting existing utility structures to finished grades.

303.02 Materials

Conform to requirements of Section 205 (Materials—Types And Use) and to the requirements for related work referred to herein.

303.02.01 Inside Drops (Oregon Drops)

This type of connection will only be allowed with prior approval by the District Engineer and shall conform to the requirements of the standard drawing.

303.03 Construction

303.03.01 Excavation and Backfill

Conform to requirements of Section 204 (Excavation, Embankment, Bedding, and Backfill). All excavation shall be unclassified.

303.03.02 Manholes Over Existing Sewers

The Contractor shall be totally responsible for maintaining adequate capacity for flow at all times and adequately protecting new and existing work.

Construct manholes over existing operating sewer lines at locations shown. Perform necessary excavation and construct new manholes in conformance with applicable requirements of Section 302 (Manholes and Concrete Structures).

Construct manholes as shown on the detail drawings or standard drawings. Densify the concrete base by vibrating or working as approved and screed to provide a level, uniform bearing for precast sections.

Place the first precast section of manhole in concrete base before concrete has set and deposit sufficient mortar on the base to assure a watertight seal between the base and the manhole wall. First section shall be properly located and plumb. Stacking additional precast manhole sections shall be prohibited until the concrete has cured a sufficient amount to support the additional weight in moist conditions.

Prevent broken material or debris from entering sewer flow. Maintain flow through approved sewer lines at all times. Protect new concrete and mortar for a period of 7 days after placing. All sanitary sewer manholes shall be vacuum tested in accordance with Subsection 302.03.07 (Vacuum Testing).

303.03.03 Connection to Existing Main

Connections of laterals to existing sewer mains shall be made watertight. Transition couplings between dissimilar pipe materials shall be made using approved commercial adapters with stainless steel bands such as Fernco Strongbacks~~, Calder,~~ or equal.

New taps made to existing main lines shall be made by installation of an Inserta Tee or equal unless the tap diameter is within 2 ~~inches~~ inches of the main diameter (such as a 4 inch on 6 inch tap or a 6 inch on 8 inch tap). In those cases, a section of main line must be cut out and a PVC tee fitting spliced into the main with Fernco Strongbacks or equivalent. The Contractor shall be totally responsible for maintaining adequate capacity for flow at all times and for containing all wastewater within the system at all times. A written plan for pump-around or containment of sewage must be approved by the District before work may begin. Special care must be taken to compact bedding material under the new tap to provide proper support of the main. The Contractor must TV inspect the new tap section of main after backfilling and compaction is completed to confirm that the new tap section of the main is properly aligned with the existing main at both ends. This TV inspection is to take place with a District inspector present.

Taps shall be installed without protrusion into or damage to the existing sewer. No compromise of the sewer will be allowed, such as undermining and settlement of the sewer grade, debris in the sewer, or longitudinal or transverse cracking of the sewer pipe.

303.03.04 Removal of Existing Pipes, Manholes, and Appurtenances

Existing pipelines, manholes, and appurtenances which lie in the line of and are to be replaced by the new construction shall be removed from the site and disposed of as provided for in Section 203 (Clearing and Grubbing).

303.03.05 Filling Abandoned Manholes

Existing manholes shown to be abandoned shall be filled with granular material as specified in Section 204 (Excavation, Embankment, Bedding, and Backfill). Compact to at least 90% maximum density as determined by ASTM D1557. Remove manhole frame and cover and plug all pipes with permanent plugs as specified in Section 303.03.07 (Permanent Plugs). Break or perforate the bottom to prevent the entrapment of water.

303.03.06 Existing Manhole Frames and Covers

Manhole frames and covers removed by the Contractor which will not be reused on the project shall become the property of the District. Notify the District Engineer a minimum of 1 day prior to removal to arrange for picking up the removed frames and covers.

303.03.07 Permanent Plugs

Clean interior contact surfaces of all pipes to be cut off or abandoned. For pipe 12” or smaller in diameter, install a gripper-type mechanical plug into the main and grout over it. ~~Construct concrete plug in end of all pipe 18 inches or less in diameter. Minimum length of concrete plugs shall be 8 inches.~~ For pipe 21 inches and larger, the plugs may be constructed of common brick or concrete block. Plaster the exposed face of block or brick plugs with mortar. All plugs shall be watertight and capable of withstanding all internal and external pressures without leakage.

303.03.08 Adjusting Existing Structures to Grade

Existing manholes, and similar structures shall be brought to the specified finished grade by methods of construction, as required in Section 510 (Adjustment of Existing Structures to Grade).

303.03.09 Reconstruct Manhole Base

Conform to applicable requirements of Section 302 (Manholes and Concrete Structures). Exercise caution in chipping out existing concrete base so as to prevent cracking of manhole walls. Prevent all material from entering the sewer flow. Pour new base to a minimum of 6 inches below the lowest projection of the pipe. Construct new channels to the elevations shown. Conform to details for channel construction in the standard drawings. Repair any cracks which occur as a result of work operations with new grout to form a watertight seal.

303.03.10 Manhole Required

If a connection is to be an 8-inch tap on the same size receiving line, then a manhole shall be required to make the connection.

303.03.11 Connection to Existing Manholes

All sanitary sewer pipe connections, including those at invert level and penetrations for drop connectors, conduits, and pass-throughs, shall conform to the requirements of applicable portions of Sections 301(Pipe and Fittings [Sanitary Sewer]) and 302 (Manholes and Concrete Structures).

END OF DIVISION

DIVISION 4—WATER CONSTRUCTION STANDARDS

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401 GENERAL

The following specifications, in conjunction with applicable requirements of other parts of the contract documents, the plans, and addenda, shall govern the character and quality of material, equipment and construction procedures for water work. All work done shall be in compliance with the requirements and restraints of OSHA, the State of Oregon Accident Prevention Division regulations and the Workers' Compensation Board. In addition, all work shall be completed in conformance with State of Oregon, Clackamas County, and/or City of Milwaukie and/or City of Gladstone street opening permits.

402 WATER WORKS MATERIALS

402.01 DUCTILE-IRON FITTINGS

All fittings shall conform to ANSI/AWWA Specification C110/A21.10 or ANSI/AWWA Specification C153/A21.53. All ductile-iron fittings shall be Class 350. Fittings shall be furnished with flanged or mechanical joints as specified on the plans. Fittings shall be ductile-iron fittings conforming to AWWA C110 and for compact C153. Fusion bonded epoxy fittings shall be U.S. pipe Permafuse or equal. Fittings shall be factory lined with cement mortar or cement lined to factory standards. No field coating with cement will be approved, other than for minor repairs. Fittings shall be new and free of defects in coating, body, and lining. During installation, fittings shall be properly aligned and bolted securely to provide watertight joints.

Fittings must be manufactured to conform to ANSI/AWWA standards.

402.02 MECHANICAL JOINTS

Mechanical joints, including accessory glands, gaskets, and bolts, shall conform to the requirements of ANSI/AWWA C111/A21.11, except where specifically modified in AWWA C153 for compact ductile-iron fittings. As stated in AWWA C111, Tbolts shall be made of either highstrength cast iron containing a minimum of 0.50% copper, or highstrength, low alloy, steel. Bolts shall be marked to identify material and producer. Contractor shall provide the District with the bolt manufacturer's specifications, which shall give the following information: manufacturer's name, type of material, and identifying mark. Follower glands for mechanical joints shall be domestic made only.

Mechanical joint gaskets shall be made of vulcanized synthetic rubber and shall be no more than 3 years old.

The recommended installation procedures in AWWA specification C111, Appendix A, "Notes on Installation of Mechanical Joints," including bolt torque ranges, shall be followed.

402.02.01 Megalug/RomaGrip Pipe Restraint

RomaGrip/Megalug glands shall be RomaGrip/Megalug brand, as manufactured by Romac/Ebaa Iron Sales, Inc., only. RomaGrip/Megalug shall be used on ductile-iron pipe and fittings.

402.03 FLANGED JOINTS

Flanges shall conform to ANSI specification B16.1 for Class 125 flanges and shall conform in all other respects to ANSI/AWWA C110/A21.11. Bolts for assembly of flanged joints shall be of the size and quantity shown in Table 10.14 on Page 34 of AWWA C110. As stated in AWWA C110, bolts shall conform to ANSI B18.2.1, Square and Hex Bolts and Screws Inch Series, Including Hex Cap Screws and Lag Screws. Nuts shall conform to ANSI B18.2.2, Square and Hex Nuts. Threads shall conform to ANSI B1.1, Standard for Unified Inch Screw Threads (UN and UNR Thread Form), Class 2A, external, and Class 2B, internal.

Bolts and nuts shall be of low-carbon steel conforming to the requirements of ASTM A307, Standard Specifications for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength, Grade B.

Contractor shall provide the District with the manufacturer's specifications regarding the bolts to be used on the project.

Flange gaskets shall be full face, ⅛" thick, red rubber or approved equal.

402.04 FLANGED PIPE OR SPOOLS

Flanged pipe or spools shall conform to the latest edition of ANSI/ANWA C115/A21.15. Flanges shall conform to requirements as specified in Subsection 402.04 (Flanged Joints). Pipe used shall be Class 53 DI. Pipe shall be furnished with coatings as specified in "Ductile-Iron Pipe". Threads on the flanges and pipe barrel shall be taper pipe threads (NPT) in accordance with ANSI B1.20.1.

When ordering, the following minimum information shall be provided to the manufacturer: Pipe size and finished length (flg. to flg., flg. to p.e.).

Manufacturer shall provide the following information: Length and weight shown on each pipe, flange manufacturer marking, country where cast, and DI or CI stamped on flanges. If fabricator is other than flange manufacturer, fabricator's mark shall be stamped with metal die on each flange after assembly. Also, manufacturer shall provide statement that the flange pipe complies with the specified standards.

402.05 DUCTILE-IRON PIPE

Ductile-iron pipe shall be Class 52. Physical properties shall not be less than 604210 iron and pipe shall conform to the latest revision of ANSI/AWWA specification C151/A21.51. Ductile-iron pipe shall be factory lined with cement mortar and bituminous seal coat and coated outside with asphaltic seal coat. Pushon rubber gasketed joints shall be installed using field-lok or approved equal locking gaskets. Pushon and mechanical pipe joints shall conform to ANSI/AWWA Specification C111/A21.11 and flanged joints shall conform to ANSI/AWWA C115/A21.15.

402.06 POLYETHYLENE ENCASEMENT

Polyethylene film shall conform to ASTM standard specification D124878, having a minimum thickness of 0.008" (8 mil).

Polyethylene sheets shall be used to wrap all mechanical joints and flanged connections. Fittings shall be wrapped in three layers of polyethylene sheet secured with polyethylene tape prior to backfilling.

When required, polyethylene tubing used on mains shall be held in place with 2inch-wide adhesive tape which is compatible with polyethylene, with plastic binder twine, with nylon tie straps, or other method approved by the District Engineer.

402.07 VALVES (GENERAL)

All valves shall be designed to AWWA specifications and shall have standard 2inchsquare operating nut unless otherwise shown on the plans. All pipe valves and fittings shall be pressure rated at 250 to 350 PSI and shall open counter clockwise. All fittings shall be factory cement lined and coated.

402.07.01 Gate Valves

2 inch gate valves shall be resilient wedge double disc, nonrising stem with "O" ring packing, complying with AWWA Class C specifications. Gate valves 4" through 10" shall be resilient wedge, nonrising stem with "O" ring packing, complying with AWWA Class C specifications. The valves shall be designed to withstand water working pressures of 150 PSI or more. All valves shall be furnished with a 2 inch-square operating nut and shall open counter clockwise when viewing valve from above.

Operation of the valve shall permit full withdrawal of the disc from the waterway to provide a clear unrestricted passage when the valve is in the open position. The valve shall be furnished with mechanical joint ends unless otherwise specified. Where flanges are furnished on valves, they shall conform to ANSI Specification B16.1, Class 125.

Valves located within vaults must have both hand wheel and rising stems.

402.07.02 Butterfly Valves

All butterfly valves shall be rubberseat type and bubbletight at 250 PSI pressure with flow in either direction. They shall be designed for direct burial and be satisfactory for application involving valve operation after long periods of inactivity. Valves shall conform to AWWA specification C504. All valves shall be Mueller or approved equal. Operating nut for the valve shall be located on the side of the main shown on the plans.

402.08 FIRE HYDRANT ASSEMBLY

Fire hydrants shall conform to AWWA specification C502. The hydrants shall have a 5¼inch minimum valve opening with a 6inch mechanical joint inlet, a 6inch mechanical joint by flanged resilient wedge auxiliary gate valve, two 2½inch hose nozzles, one 4½" pumper nozzle, a 1½inch pentagon operating nut (opening counter clockwise), and a safety flange. The hydrant color shall be yellow (Miller Safety Yellow OE 40). The fire hydrant depth of bury shall be arranged to match the grade of the surrounding ground. See standard drawing no. 411 for additional requirements.

Fire hydrants shall be Mueller Centurion A-423, M&H 929 Reliant, or Clow Medallion F-2545. No other manufacturer will be accepted by the District.

402.09 CAST-IRON VALVE BOXES

Valve boxes shall be manufactured using domestic cast iron only. Valve boxes shall be the cast iron "Vancouver" pattern (10" or 18” tall casting) with standard lid. Valve riser pipe from the valve to the cast-iron top shall be 6inch PVC sewer pipe or approved equal for the Vancouver box. A self-centering valve cover shall be compatible with 6-inch valve riser pipe, VC212 or approved equal. See standard drawing no. 310.

Valve box castings shall be smooth and uniform. Box lid shall not protrude above the rim and lids shall seat flat without rocking. Boxes of uneven thickness, pitted, or otherwise flawed in the casting will be rejected. PVC sewer pipe shall be cut off smooth with no sharp edges.

402.12 2INCH SERVICE SADDLES

Generally, 2” water services shall be connected with a 2” Ford FB1000-7-Q Corporation Stop or approved equal at the main. Service saddles may be approved by the District Engineer. Where approved, service saddles shall be 2" AWWA/CC threads, double strap, stainless steel. Body of saddle shall be ductile iron coated with nylon, and straps, bolts, washers, and nuts shall be stainless steel.

402.13 COPPER PIPE

Service lines shall be soft temper, copper water tube Type K, meeting ASTM B88 specifications.

402.14 BRASS FITTINGS

All brass components shall be designated “lead-free”, containing no more than .25% lead by a weighted average when used with respect to the wetted surfaces of pipe, fittings, and fixtures.

402.15 CORPORATION STOPS

Corporation stops shall be Ford FB1000-x-Q or approved equal. See standard drawings no. 320 and 323.

402.16 CURB STOPS

Curb stops shall be 3/4” or 1” Ford angle ball valves, or approved equal, with padlock wings (meets ANSI/AWWA C800 Standard).

402.17 COPPER COUPLINGS

Straight couplings, copper to inside iron pipe thread shall be Ford compression or equal. Copper couplings, copper to outside iron pipe threads, shall be Ford compression union or equal.

402.19 WATERLINE MATERIALS AT LIGHT RAIL CROSSINGS

New and reconstructed light rail and freight rail construction may require improvements to the water system at all utility crossing locations. Each utility crossing area is to be minimized. All existing water pipes or pipes within the rail zones shall be replaced to current standards and encased. Metallic or conductive pipe materials are not approved pipe materials at rail crossings. Pipes are to be centered under rail tracks to avoid joints underneath rail lines. All accessible structures must be located a minimum of 15' from the gate arms outside of the rail crossings.

403 CONSTRUCTION

403.01 STORAGE OF EQUIPMENT AND MATERIALS

Unless otherwise noted on the plans or in the special provisions, it shall be the responsibility of the Contractor to locate a storage site for all equipment and materials and gain approval from the District Engineer.

Prior approval shall be obtained from the governing agency for any storage of equipment or materials within the right of way (i.e., stringing of pipe).

403.02 PLACING PIPE AND FITTINGS

The pipe shall be laid true to line, without objectionable breaks in grade and shall be firmly bedded for the entire length of the pipe.

Where conflicts arise between the designed grade of the waterline and an existing underground structure, the depth of the trench may be increased to permit proper installation of the waterline. Payment for over excavation shall begin once the extra depth reaches 18" below the designed grade.

Care shall be taken to clean joints and to keep them free of water during construction. Whenever water is excluded from the interior of the pipe, adequate backfill shall be deposited on the pipe to prevent floating. In the event of any flotation occurring, the pipe so affected shall be removed from the trench, replaced and relaid at the Contractor's expense.

Each section of the pipe and each fitting shall be thoroughly cleaned before it is lowered into the trench. Cleaning of each pipe or fitting shall be accomplished by swabbing out, brushing out, blowing out with compressed air, washing to remove all foreign matter. The most efficient method of cleaning out pipe and fittings will be determined on the job by the District Engineer.

If clean pipe sections and fittings cannot be placed in the trench without getting dirt into the open ends, the District Engineer will require that a piece of tightly woven canvas be tied over the ends of the pipe or fitting until it has been lowered into position in the trench. After the pipe or fitting has been lowered into the trench, all foreign matter shall be completely brushed from the bell and spigot ends before assembly. At the end of each day, or during suspension of the work, the pipe ends shall be securely closed by means of a secure plug or approved equivalent. Water in the trench shall not be allowed to enter the pipe and fittings.

If it is necessary to cut the pipe to lay it on curves or to cause a change in direction, the Contractor shall cut the pipe as required for proper installation. Where the cut length of pipe is to be installed into the bell end of another pipe, the cut end shall be beveled to ensure a proper seal. To set valves and fittings properly, the pipe shall be cut to the exact length required to obtain the designated locations. The cost of cutting the pipe shall be included in the unit prices bid.

Dead end lines, where a standard 2- or 4inch blow-off assembly is not required by the plans, shall be provided with a ¾inch corporation stop 18 inches from the plugged end of the pipe. This will allow for air removal and release of line pressure during future waterline extension. No extra payment shall be made for this installation.

403.03 WET TAPPING EXISTING MAIN

When specified, wet taps on existing water main are required to minimize interruption of service to customers. Typically, wet taps will only be performed under the direction of District personnel. Tapping sleeve and valve shall conform to standard drawing no. 408.

Before attaching tapping sleeve, care shall be taken to clean water main of all debris and defects. Attach sleeve and valve to the main. Then attach proper tapping machine to valve. Pressure test this assembly before making tap. After making tap, remove the tapping machine and inspect fitting and valve for leaks. If any such leaks are found, Contractor shall be required to repair the defect. Attach branch main to valve and install pipe. Tapping sleeve and valve shall be wrapped in 8 mil plastic and tape in accordance with Subsection 403.04 (Polyethylene Encasement of Pipe and Fittings). New connection shall be securely blocked using appropriate size thrust block based on the size and pressure of the water main to be constructed. Taps shall be made no closer than 18" from end of sleeve to nearest joint.

Excavation for tap shall be such as to fully expose main with a minimum depth below main of 12 inches. A minimum of 18" of main shall be exposed from the end of the tapping sleeve. Also, excavate enough area to accommodate tapping machine and workers. Backfilling shall be in accordance with OLWSD backfill standards.

403.04 POLYETHYLENE ENCASEMENT OF PIPE AND FITTINGS

When specified, install polyethylene encasement, tube type, on all pipe and appurtenances. Polyethylene film shall conform to ASTM standard specification D124878, having a minimum thickness of 0.008" (8 mil). Install this encasement in accordance with AWWA C105, Method A, 1 length of polyethylene tube for each length of pipe. The use of polyethylene sheets will not be allowed on pipe segments, only fittings. Sand backfill shall be placed within the pipe zone and bedding area wherever polyethylene encasement is used.

Polyethylene sheets may be used to cover valves and fittings. Valves shall be wrapped up to the bottom of the operating nut. Three layers of polyethylene shall be wrapped snugly around the pipe and held in place by using an adhesive tape compatible with polyethylene, plastic binder twine, or nylon tie straps. Backfill material shall not be allowed to get under the polyethylene, and pockets in the polyethylene which can trap backfill material shall be eliminated.

403.05 PLACING VALVE UNITS

A valve unit shall consist of a valve, bolts, gaskets, followers, self-centering valve cover, PVC riser pipe, and cast-iron valve box, complete with cover.

Valves shall be placed in a vertical position at locations shown on the plans. The Contractor shall check each valve to determine that the valve is properly adjusted to seat securely and open fully. Valves not meeting these requirements shall not be installed. Self-centering valve covers, valve boxes, and PVC riser pipe shall be placed in a vertical position over the valve operating nut and the backfill shall be carefully compacted around the box. Any valve boxes found off center from the valve operating nut shall be removed and replaced into the proper position. The top of the valve box shall be adjusted to meet finish grade. PVC riser pipe shall extend up outside the valve box 7 inches on the Vancouver box to allow future raising of the box. Notches shall be cut into the rim of the valve box on a line passing through the center of the box as detailed on standard drawing no. 313. Valve boxes shall be placed so that the notches line up parallel with the water main below. A collar of concrete with a depth of 4", 24” x 24” square, shall be placed around the top of all valve boxes not in a paved area.

The Contractor shall not operate any valve touching potable water.

403.06 PLACING FIRE HYDRANT ASSEMBLIES

The fire hydrant assembly shall consist of a mechanical joint hydrant, mechanical joint by flange auxiliary gate valve, cast-iron valve box, galvanized bolts, gaskets ~~and tie rods~~.

The fire hydrant shall be placed in a vertical position on a precast concrete slab having a bearing surface of not less than 1 square foot. Hydrant drain holes shall not be blocked. Not less than 4 cubic feet of clean drain rock shall be placed around the base of the hydrant for drainage. See standard drawing no. 313 for other requirements. Fire hydrant extension kits may be installed with approval by the District Engineer. Where approved, fire hydrant extension kits may only be installed by District water crews. In no instance will more than one fire hydrant extension kit per hydrant be installed.

403.07 COPPER SERVICE INSTALLATION

Where indicated on the drawings or as determined in the field, the Contractor will be required to install copper water services. This will require the Contractor to make all taps for the service; install new copper pipe or transfer existing copper pipe to new main and install corporation stops, meter setters (when approved), and meter box; and make connection to customer service pipe. See standard drawings no. 320 and 323 for installation requirements.

Where new 1-inch angle meter stops shall be installed set at the same elevation as the existing angle meter stop with a maximum of 2 inches away from connection point on the existing meter. All new copper pipe and service fittings shall be kept clean and free of debris. Copper service line shall have a flexed "goose neck" installed before the angle stop to prevent pullouts. Contractor will make connection of new angle meter stop or meter setter to existing meter. Contractor shall only have to remove the existing angle meter stop, connect the new angle meter stop, and flush the new service. A dielectric union shall be installed between the check valve and any metal service pipe on the customer side of the water meter.

Where new services are installed, new meter boxes shall be set with the top of the box at finish grade. Meter boxes shall be: (1) located behind the sidewalk where there is sufficient right-of-way; (2) within the planter strip, excluding water quality facilities; and (3) within the sidewalk with the back of the meter box at the back edge of the sidewalk. The longest dimension of the box shall be set perpendicular to the centerline of the street. A new meter box shall be provided where, in the opinion of the District Engineer, an existing meter box is cracked, broken, or has missing parts. Where an existing meter must be relocated, Contractor shall provide and install the new copper service, angle meter stop, and meter box complete and adjusted, to finished grade.

All copper service pipe shall be bedded and covered with ¾" minus crushed aggregate to a depth of 6 inches on all sides.

Service lines shall be located in a direct line between the meter and a point on the main directly opposite the meter. Service lines shall have a minimum cover of 30 inches except where crossing road ditches where the cover may be reduced to 24 inches at said road ditch.

Where existing copper service is to be transferred to new main, and the existing main is to remain live, Contractor shall disconnect corporation stop from old main and install a lead-free brass plug. Contractor shall provide excavation down to old corporation stop, select backfill and compaction. Excavation and backfill shall be considered incidental to the project. Contractor shall perform surface restoration according to the bid item for that work.

All new services crossing existing metal gas lines shall have PVC sleeves as discussed on standard drawings no. 420.

Corporation stops shall be set at a ~~30~~ 45 degree angle up from horizontal. Taps shall be a minimum distance of 18 inches from the bell or spigot end of the main or another service tap.

Where a new section of copper service is to be installed, it shall be Type K, seamless soft annealed copper pipe conforming to ASTM B88. There shall be no splicing of copper unless service is longer than 60 feet or as approved by the District Engineer (unique conditions). When splicing is approved between 2 pieces of copper, it shall be done with a 3 piece copper to copper union. No more than 1 splice per

service shall be made and splicing shall be made outside of the existing or proposed travel lane. Existing galvanized service lines encountered by the Contractor shall be replaced with copper service pipe up to and through the angle meter stop.

Where 1½"-2" services are to be installed, the new main shall be tapped with 1½"-2" corporation stop, 1½"-2" copper tubing, 1½"-2" Ford angle ball valve stop with padlock wings, and Ford meter swivel single check valve shall then be installed to the new meter location. Copper service line shall have a flexed "goose neck" installed before the angle stop to prevent pullouts. See standard drawing no. 321.

Once the new copper services are installed by the Contractor and the new waterline facilities are pressure tested, chlorinated and accepted, Contractor shall relocate existing meters to their new locations and replumb the service. It shall be the responsibility of the Contractor to coordinate this with the District Construction Inspector. Placement of new sidewalks or other surface restoration shall not take place until meters have been installed.

403.08 PLACING PERMANENT BLOW-OFF ASSEMBLIES

A standard blow-off assembly shall consist of a main size x MJ cap tap 2", 2" x 1' brass nipple, 2" resilient wedge gate valve, 2" x 18" galvanized nipple, 2" galvanized 90° bend, 2" galvanized piping, 2 valve boxes, galvanized coupling and brass or PVC plug. The blow-off assembly shall be placed as shown in standard drawing no. 313.

Payment for the blow-off assembly shall include furnishing, transporting, assembling and placing of the complete assembly, blocking, plus backfill and servicing. Main line thrust blocking shall be paid under separate bid item, if needed.

403.10 REMOVING EXISTING WATER WORKS MATERIALS

When the Contractor removes existing pipe, gate valve units, fittings, fire hydrant units or other items to allow installation of the work specified herein, the Contractor shall haul the removed water works material away. Title to the removed materials shall transfer to the Contractor, except when otherwise specified.

The District reserves the right to designate other water works materials to be removed. The Contractor shall remove the designated water works materials and haul them to the District's designated storage yard.

403.11 ABANDONING EXISTING MAINS AND VALVES

Any existing water lines that are abandoned shall be severed and plugged as directed by the District Engineer. All abandoned valve boxes shall be removed, gravel filled, compacted, and asphalt plugged at no additional cost.

403.12 MAINTAINING SERVICE

The Contractor shall schedule construction work specified herein to maintain a continuous water service to existing water users. Where it is necessary to shut down service to make required interties, the Contractor shall notify the District at least five working days prior to a planned water service shut down to allow the District to notify users of the impending loss of water service. Contractor may be required to make necessary service shutdowns of affected businesses after regular business hours at no additional cost to the District.

403.13 FLUSHING

The new pipeline shall be flushed, pressure tested, and disinfected before any connection to the existing water system is made. Temporary blow-offs and chlorination points shall be provided by Contractor at all dead ends and points of connection to the existing system. The new waterline shall be built as close as possible, as determined by the District Engineer, to the existing water system at points where connections are to be made.

All pipe, valves and fittings shall be thoroughly flushed prior to pressure testing and chlorination. Flushing shall be done through blow-off units, hydrants, individual services, and main at a minimum velocity of 2.5 F/S. All water used during flushing operations shall be measured through a Pitot Blade and stop watch. All results shall be reported to the District Engineer on a daily basis.

Prior to any flushing procedures taking place, the Contractor shall issue a flushing plan providing direction of flow, water damage control and a written schedule to the District Engineer for approval. A 48hour notice shall be given to the District Engineer prior to any system shutdown or flushing procedures. Under no circumstance shall the Contractor operate any District valves without prior approval by the District Engineer.

The following chart shows minimum temporary blow-off/inlet sizes which shall be provided by the Contractor. Gate valves shall be provided on blow-off and inlet pipes to pressure test against, and to keep the pipe interior clean when backflow device is removed.

REQUIRED OPENINGS TO FLUSH PIPELINES		
NOMINAL PIPE SIZE (INCHES)	**FLOW REQUIRED TO PRODUCE 2.5 FPS VELODISTRICT(GPM)**	**MINIMUM INLET & OUTLET PIPE SIZE REQUIRED (INCHES)**
4	110	2
6	240	2
8	430	4
10	660	4
12	950	4
14	1290	6
16	1690	6
18	2140	6
20	2640	6
24	3800	6

All flushing and testing water shall be delivered to the new waterline through Oregon State Health Division approved double check valve backflow prevention devices.

The Contractor shall provide or obtain a backflow prevention device. Certified backflow tester shall test device and furnish documentation to District Construction Inspector after device is installed on site.

After flushing, the new system shall be pressure tested and disinfected. Payment for this item shall be included in the price bid for pipeline installation work.

403.14 TESTING AND CHLORINATION

All of the pipe, fittings, services, and individual valves, except the last connection with the existing main, after being placed, must be pressure tested, conforming to AWWA C600 Section 4 specifications. If the Contractor elects to test the line in sections, the lengths of the sections and provisions for testing shall be subject to approval by the District Engineer.

Before testing the pipeline for leakage, the pipeline shall be thrust blocked. The interior of the pipeline shall be thoroughly cleaned to remove all foreign matter.

The Contractor shall furnish necessary thrust blocks, pumps, medium range pressure gauges, means of measuring water loss, and all other equipment, materials and labor required for making the tests.

All air vents shall be open during the filling of the pipeline with water. After a test section is completely filled, it shall be allowed to stand under slight pressure for at least 24 hours to allow the lining to absorb what water it will and to allow the escape of air from any small air pockets. During this period, the

bulkheads, valves and exposed connections shall be examined for leaks. If any are found, they shall be stopped. The pressure shall then be raised slowly to the minimum hydrostatic pressure of 180 pounds per square inch, or 1.5 times the normal working pressure, whichever is higher, measured at the point of highest elevation and shall be maintained for a period of at least 1 hour, beginning at a time of day to be mutually agreed upon between the Contractor and the District Engineer.

Test pressure shall not exceed 150% of pipe pressure rating.

No leakage is acceptable. While the pipe is under pressure and stabilized, an inspection for leaks along the pipeline shall be made by the Contractor. The gauges should be graduated at 2 PSI increments. Any leaks found shall be recorded and shall be repaired by the Contractor. All such repairs shall be made subject to the approval of the District Engineer.

The Contractor, at their own expense, shall perform any excavation required to locate and repair leaks or other defects which may develop under the test. He shall remove backfill and paving already placed, shall replace such removed material, and shall make all repairs necessary to secure the required watertightness. All repairs and retests shall be made at the Contractor's sole expense.

All leakage tests shall be made in the presence of the District Engineer or District Inspector.

The pipeline shall be thoroughly chlorinated and flushed in accordance with the Oregon State Health Division's publication, "Public Water Systems", ORS Chapter 333. All chlorinated water shall be discharged into the public sanitary sewer system. If a sanitary sewer is not available, the Contractor shall employ the use of storage tanks, basins, or other means to transport or treat the chlorinated water for discharge to an approved point of disposal. Adequate quantities of chlorine in a water solution shall be added to the pipeline and shall be allowed to stand a sufficient length of time to sterilize the interior of the pipeline. The chlorinated water shall be flushed from the pipeline and a water sample shall be taken from the pipeline. The water sample shall be tested biologically and an acceptable certification that the water is safe for domestic water consumption shall be obtained before placing the pipeline into service. If the water is not safe, the Contractor shall chlorinate and flush the line and take new samples until an acceptable safe water certification is obtained.

Chlorine may be applied by the following methods: Liquid chlorine gas/water mixture, direct chlorine gas feed, or calcium hypochlorite and water mixture. The chlorination agent shall be applied at the beginning of the section adjacent to the feeder connection and shall be injected through a corporation cock, hydrant, or other connection ensuring treatment of the entire line. Water shall be fed slowly into new line with chlorine applied in amounts to produce a dosage greater than 50 ppm but not more than 200 ppm throughout the system. After 24 hours, a residual of not less than 25 ppm shall be produced in all parts of the line. If the check measurement taken after the 24-hour period indicates a free chlorine residual of less than 25 ppm, the system shall be flushed, rechlorinated, and rechecked until a final residual of 25 ppm or more is achieved and at no additional expense to the District.

During the chlorination process, all valves and accessories shall be operated. All parts of the line and services shall be chlorinated. After chlorination, the water shall be flushed from the line at its extremities until the replacement water tests are equal chemically and bacteriologically to those of the permanent source of supply. Care shall be taken to prevent discharge of chlorinated water directly to running streams. The water should be spread over the ground or held in ditches or seepage ponds. A minimum of 24 hours after dechlorination, the District shall take two consecutive sets of samples, taken at least 24 hours apart. At least one set of samples shall be collected from every 1,200 feet of the new water main, plus one set from the end of the line, and one set from each branch. Water samples will be taken for bacteriological tests by the District.

The Contractor shall furnish and place all necessary fittings required for the testing, chlorinating and flushing of the pipeline. If a corporation stop is removed, the hole shall be filled with a lead-free brass plug.

Water used in testing and flushing the pipeline shall be purchased from the District.

403.15 CUT-IN AND CONNECTION TO EXISTING MAINS

After new waterline is flushed, pressure tested and disinfected, but prior to any cut-in and connects, Contractor shall hold an onsite pre-connection meeting. Those to attend shall include onsite foreman, District Inspector, District Operations Personnel, and District Engineer.

This meeting shall take place prior to each connection and no longer than 1 week prior to the connection. At this meeting, Contractor shall have all fittings, pipe, chlorine swabbing equipment, pumps and hoses, and all equipment needed to make the cut-in connect. Cut-in schedule and shutdown coordination shall be discussed.

Once the bacteria test has been passed, cut-ins and connections to the existing water system shall be made by the Contractor. All fittings necessary for the cut-in and pumps adequate to handle water in the trench shall be on hand and ready for service before connection is commenced. If the new waterline is opened to the air before Contractor and District personnel are ready to proceed with the connection, or if new waterline is contaminated by dirt or dirty water, the new waterline shall be disinfected again.

Fittings and pipe for cut-ins shall be swabbed out thoroughly with a 1% chlorine solution (½ pound of 64% calcium hypochlorite in 4 gallons of water). Swabbing equipment and solution shall be kept clean and fresh.

During each connection, work shall proceed without breaks until the connection is completed and water service is turned back on. Ground water shall not be allowed around any of the existing piping during the connection.

After the connection is completed and water service is turned back on, a visual leak inspection of all fittings shall be done by the Inspector prior to backfilling.

403.16 CLAY DAMS

Where indicated on the plans, or as directed by the District Engineer, the Contractor shall place clay dams to prevent ground water movement along the trench. Dams shall be made of impervious backfill material composed of particles at least 50% of which pass a no. 200 sieve, and with a plasticity index not less than 20, unless otherwise indicated on the plans.

A dam shall fill the trench completely from side to side and top to bottom, except for the volume occupied by the pipeline and any materials required for surface restoration. Pipe in contact with clay dam will be wrapped with 2 layers of 8-mil polyethylene.

Flow shall be considered in design of water and storm drain system.

END OF DIVISION

NOTES:

1. CONSTRUCTION OF IMPROVEMENTS SHALL BE IN ACCORDANCE WITH OAK LODGE WATER SERVICES (OLWS a.k.a. DISTRICT) DEVELOPER EXTENSION AGREEMENT (as applicable), DISTRICT STANDARD DETAILS AND THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, MOST CURRENT EDITION, AS ISSUED BY THE OR. STATE DEPT. OF TRANSPORTATION.

2. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED PRIOR TO CONSTRUCTION AND 48 HOURS ADVANCE NOTIFICATION OF THE LOCAL MUNICIPALITY, OLWS AND ALL AFFECTED UTILITY COMPANIES PRIOR TO THE ACTUAL START OF WORK.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE PROVISIONS OF THE ROAD OPENING PERMIT AS ISSUED BY CLACKAMAS COUNTY.

4. LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY, LOCATE AND PROTECT ALL UTILITIES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING OR REPAIRING ANY UTILITIES DAMAGED DURING CONSTRUCTION. SHOW THESE UTILITIES ON THE AS-BUILTS. IF A UTILITY IS DAMAGED, THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY IMMEDIATELY.

5. SANITARY MAIN TRENCH SECTION AND ALL EXCAVATED AREAS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE STANDARD DETAILS, THE ROAD OPENING PERMIT, AND WITH SECTION 01140.40 OF THE STANDARD SPECIFICATIONS. COMPACTION TESTING SHALL BE REQUIRED DURING BACKFILLING OPERATIONS WITHIN ALL ROADWAYS AND AT THE DISCRETION OF THE DISTRICT. IF TRENCH BACKFILL DOES NOT MEET COMPACTION REQUIREMENTS, CONTRACTOR SHALL EXCAVATE, RECOMPACT AND RETEST MATERIAL AT CONTRACTOR'S EXPENSE.

6. RESTORATION OF DAMAGED ROAD SURFACING SHALL BE IN ACCORDANCE WITH CLACKAMAS COUNTY REQUIREMENTS. ALL OTHER AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR AS DIRECTED BY THE DISTRICT. THIS INCLUDES SHOULDERS, LANDSCAPING, WALLS, DRIVEWAYS, FENCES AND OTHER IMPROVEMENTS.

7. POLYVINYL CHLORIDE PIPE (PVC) SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034, SDR 35, AND JOINT TYPE SHALL BE ELASTOMERIC GASKET CONFORMING TO ASTM D-3212.

8. MANHOLES TO BE PRECAST CONCRETE SECTIONS WITH MINIMUM INSIDE DIAMETER OF 48-INCHES, CONFORMING TO THE REQUIREMENTS OF ASTM C-478, EXCEPT AS NOTED ON THE PLANS.

9. POLYVINYL CHLORIDE PIPE (PVC) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES' RECOMMENDATIONS. PVC SEWER PIPE SHALL BE CONNECTED TO CONCRETE MANHOLES BY MEANS OF A KOR-N-SEAL BOOT (OR EQUIVALENT). SAND COLLARS WILL NOT BE ACCEPTED.

10. AFTER THE CONTRACTOR HAS BACKFILLED THE PIPE ZONE OF THE TRENCH AS REQUIRED, HE SHALL THEN BACKFILL THE BALANCE OF THE TRENCH, WITH THE TYPE OF BACKFILL SPECIFIED, IN ONE FOOT (1') LAYERS, MECHANICALLY COMPACTING EACH LAYER TO 95% OF MAXIMUM DENSITY IN ROADWAYS AND 85% TO 90% IN ALL OTHER AREAS. MAXIMUM RELATIVE DENSITY SHALL BE DETERMINED PER AASHTO T-180. IN PLACE, DENSITY SHALL BE DETERMINED PER AASHTO T-191, T-205 OR T-238. ANY SUBSEQUENT SETTLEMENT OF THE TRENCH OR DITCH DURING THE GUARANTEE PERIOD SHALL BE CONSIDERED TO BE THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE DISTRICT OR THE OWNER.

11. SANITARY SEWER PIPE AND APPURTENANCES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH OLWSD STANDARDS. LEAKAGE TESTS INCLUDE AN AIR TEST OF THE SEWER MAINS AND SERVICE CONNECTIONS AND VACUUM TEST OF THE MANHOLES. ANY PORTION OF THE SEWER WHICH FAILS TO PASS THESE TESTS SHALL BE EXCAVATED, REPAIRED OR REALIGNED, AND RETESTED. IN ADDITION TO LEAKAGE TESTING, SANITARY SEWERS CONSTRUCTED OF PVC SEWER PIPE SHALL BE DEFLECTION TESTED AFTER THE TRENCH BACKFILL AND COMPACTION HAS BEEN COMPLETED. THE TEST SHALL BE CONDUCTED BY PULLING AN APPROVED SOLID POINTED MANDREL 95% OF THE INSIDE DIAMETER THROUGH THE PIPELINE ON A MANHOLE TO MANHOLE BASIS. IN ADDITION, ALL MAIN LINES MUST BE VIDEO INSPECTED, AND A VIDEO RECORD ON A FLASH DRIVE MUST BE SUBMITTED TO OLWSD. NOTE THAT ALL TESTS AND THE VIDEO INSPECTIONS MUST BE PERFORMED IN THE PRESENCE OF THE OLWSD INSPECTOR.

12. UNLESS OTHERWISE SPECIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER, EACH SERVICE CONNECTION SHALL BE LAID IN A SEPARATE TRENCH ON A STRAIGHT LINE AND GRADIENT FROM THE TEE TO THE END OF THE SERVICE CONNECTION. THE SERVICES CONNECTION SHALL BE INSTALLED PERPENDICULAR TO THE MAIN LINE AND MUST HAVE A MINIMUM OF 5 FEET OF COVER IN ALL PARTS OF THE ROAD RIGHT OF WAY AND UTILITY EASEMENT. NO SERVICE CONNECTION SHALL BE LAID ON A SLOPE OF LESS THAN TWO PERCENT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE PLANS. THE ENGINEER WILL PROVIDE A CUT STAKE AT THE TERMINAL POINT OF EACH SERVICE CONNECTION. THE CONTRACTOR WILL USE A PIPE LASER TO ACHIEVE CORRECT GRADE AND ALIGNMENT. EACH SERVICE CONNECTION SHALL BE PLUGGED WITH A RUBBER RING PLUG. A 2 X 4 MARKER PAINTED GREEN SHALL BE PLACED AT THE END OF EACH SERVICE CONNECTION, AND SHALL EXTEND FROM THE END OF THE PIPE TO A POINT THREE FEET (3') OR MORE ABOVE THE SURFACE OF THE GROUND. A DETECTABLE GREEN MAGNETIC TAPE WITH THE WORD "SEWER" AT REGULAR INTERVALS SHALL BE PLACED ALONG THE SERVICE CONNECTION FROM THE MAINLINE TEE TO THE GROUND SURFACE. EACH SERVICE CONNECTION MUST HAVE A CLEAN OUT WITH A TRAFFIC-RATED BOX LOCATED AT THE EDGE OF THE ROAD RIGHT-OF-WAY OR UTILITY EASEMENT.

13. IN EASEMENT AREAS ALL MANHOLES SHALL HAVE TAMPER-PROOF LIDS PER OLWSD SPECIFICATIONS, OR APPROVED EQUAL. IN EASEMENT AREAS MANHOLE FRAMES SHALL BE INSTALLED A MINIMUM OF 6" ABOVE THE SURROUNDING GRADE.

14. THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND DEVICES TO REMOVE AND DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION DURING THE PROCESS OF LAYING THE PIPE. WATER AND DEBRIS SHALL NOT ENTER INTO THE DISTRICT'S SEWER SYSTEM. WATER AND DEBRIS SHALL BE DISPOSED OF IN AN APPROVED MANNER.

15. THERE MUST BE A MINIMUM OF 10 FEET OF CLEAR HORIZONTAL SEPARATION BETWEEN A WATER MAIN AND A SANITARY LINE. THERE MUST BE A MINIMUM OF 5 FEET OF CLEAR HORIZONTAL SEPARATION BETWEEN A WATER SERVICE AND A SANITARY LINE.

OAK LODGE WATER SERVICES

SANITARY SYSTEM STANDARD DRAWING

SANITARY SEWER CONSTRUCTION NOTES

NO.	REVISIONS	DATE	BY
1	TITLE and NOTES 5, 8, 9, 11, 12, 13, 15	1/9/2019	HSO
2			
3			
4			

APPROVED

JASON ICE

DISTRICT ENGINEER

DRAWING NO.

301

DATE: 9/12/2017

SCALE: NTS

1. THE DISTRICT MAY ALLOW INSIDE DROP SERVICE CONNECTIONS AT THE DISCRETION OF THE DISTRICT ENGINEER.

2. INSIDE DROPS MAY BE 4" OR 6" & SHALL BE SIZED TO MATCH THE INFLOW PIPE.

3. THE ENTRY POINT IN THE MANHOLE WALL MUST BE CORE DRILLED.

4. THE SERVICE LATERAL IS TO BE SEALED INTO THE CORED HOLE WITH A KOR-N-SEAL BOOT OR EQUIVALENT.

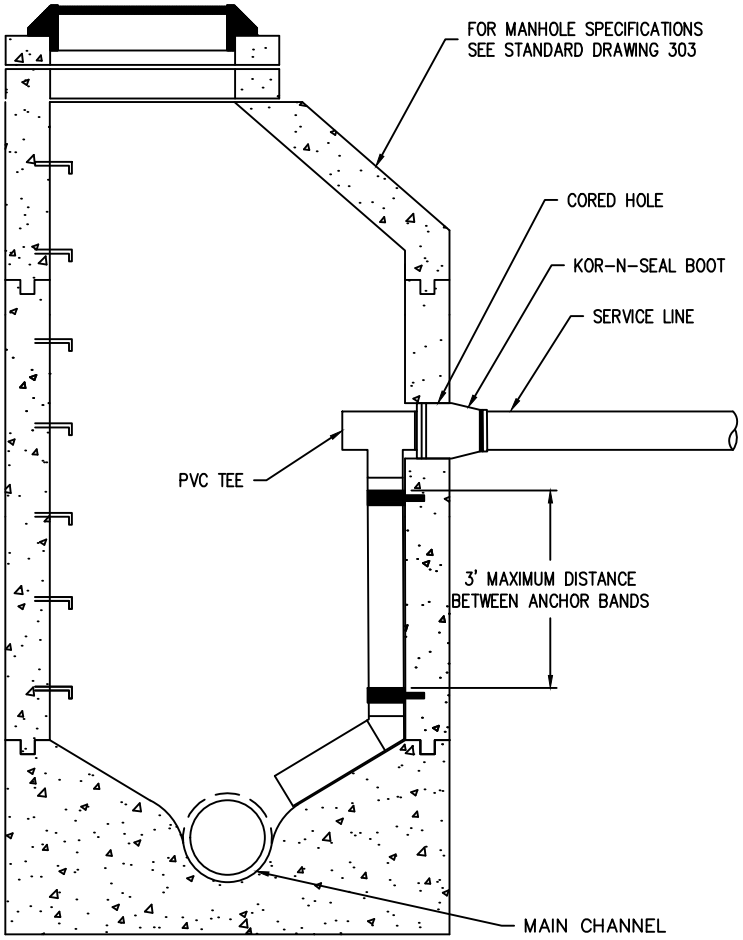
5. THE SERVICE LATERAL WILL COUPLE DIRECTLY TO A PVC SLIP TEE IN THE MANHOLE TO ALLOW THE DROP PIPE TO CONTACT THE MH WALL FOR ITS ENTIRE LENGTH.

6. THE DROP PIPE, 45° BEND, AND EXTENSION PIPE ARE TO HAVE GLUED JOINTS.

7. THE DROP PIPE EXTENSION MUST CONVEY SEWAGE ALL THE WAY TO THE MAIN CHANNEL.

8. THE DROP PIPE IS TO BE SECURED TO THE MANHOLE WALL BY:
STAINLESS STEEL STRAPS MEASURING A MINIMUM OF 1-1/2" WIDE BY 1/8" THICK;
STRAP SPACING WILL BE 3' ON CENTER, WITH A MINIMUM OF 2 STRAPS;
EACH STRAP WILL BE SECURED TO THE WALL BY A PAIR OF 5/16" STAINLESS STEEL WEDGE ANCHORS.

9. THE ANNULAR SPACE AT THE CORED HOLE IS TO BE GROUTED NEATLY AFTER ASSEMBLY.



SECTION

OAK LODGE WATER SERVICES

SANITARY SYSTEM STANDARD DRAWING

SERVICE CONNECTION TO MANHOLE - INSIDE DROP

DRAWING NO. 321

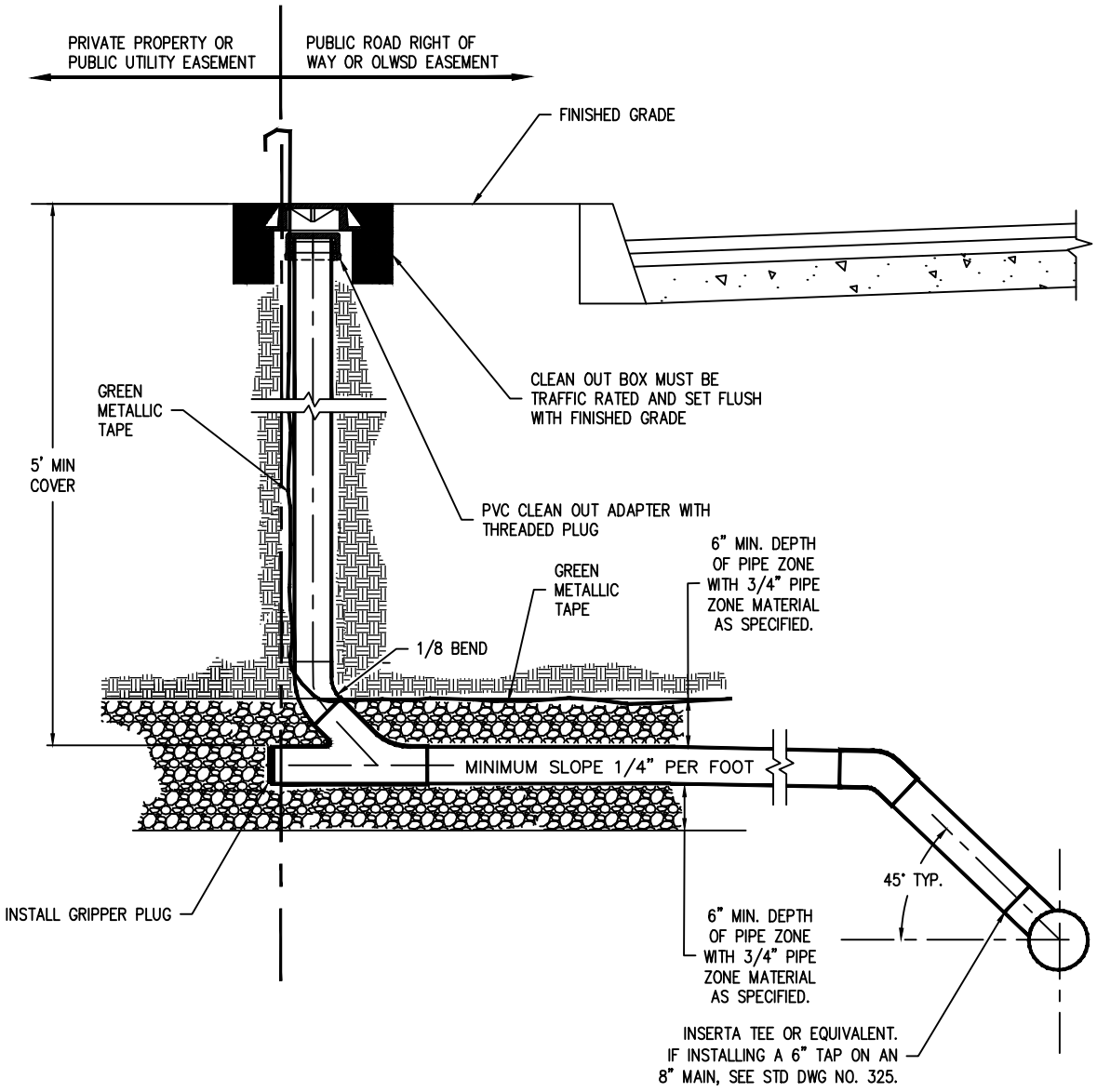
NO.	REVISIONS	DATE	BY
1	MISC CALLOUTS	1/9/2019	HSO
2			
3			
4			

APPROVED

DISTRICT ENGINEER

DATE: 9/12/2017

SCALE: NTS



NOTES:

1. 4" LATERALS MUST HAVE 4" CLEAN OUT RISERS, AND 6" LATERALS MUST HAVE 6" CLEAN OUT RISERS.
2. THE CLEAN OUT RISER MUST BE LOCATED WITHIN 6" OF THE PROPERTY LINE AND JUST INSIDE THE ROAD RIGHT OF WAY OR THE OLWSD EASEMENT. THE CLEAN OUT RISERS MAY NOT B LOCATED ON PRIVATE PROPERTY OR IN A PUBLIC UTILITY EASEMENT.
3. THE LATERAL MUST BE INSTALLED WITH A MINIMUM GRADE OF 2% AND MUST RUN PERPENDICULAR FROM THE MAIN TO THE CLEAN OUT.
4. THE CLEAN OUT RISER MUST BE TOPPED WITH A PVC CLEAN OUT ADAPTER WITH A THREADED PLUG.
5. THE CLEAN OUT MUST BE PROTECTED BY A TRAFFIC RATED BOX. EITHER A CAST IRON UNIT OR A COMBINATION CONCRETE AND CAST IRON UNIT IS ACCEPTABLE.
6. OLWSD MAY REQUIRE THE TV INSPECTION OF A LATERAL AFTER BACKFILL AND COMPACTION.

OAK LODGE WATER SERVICES

SANITARY SYSTEM STANDARD DRAWING

SERVICE LATERAL

NO.	REVISIONS	DATE	BY
1	MISC CALLOUTS, DIMS, AND NOTES	1/9/2019	HSO
2			
3			
4			

APPROVED

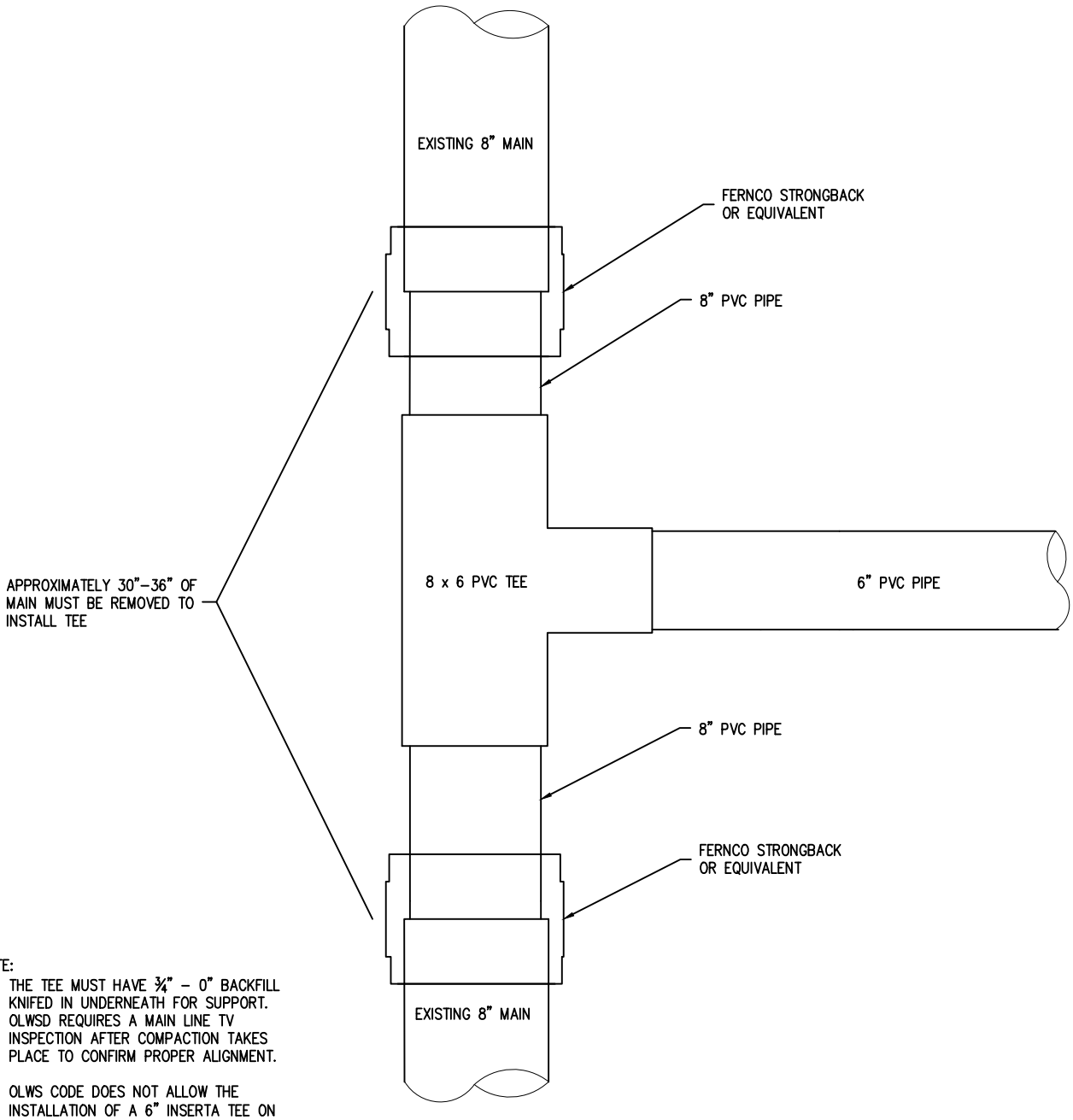
DISTRICT ENGINEER

DRAWING NO.

323

DATE: 9/12/2017

SCALE: NTS



NOTE:

1. THE TEE MUST HAVE ¾" – 0" BACKFILL KNIFED IN UNDERNEATH FOR SUPPORT. OLWSD REQUIRES A MAIN LINE TV INSPECTION AFTER COMPACTION TAKES PLACE TO CONFIRM PROPER ALIGNMENT.

2. OLWS CODE DOES NOT ALLOW THE INSTALLATION OF A 6" INSERTA TEE ON AN 8" MAIN LINE AS IT WEAKENS THE STRUCTURAL INTEGRITY OF THE MAIN LINE. INSTEAD, A SECTION OF MAINLINE MUST BE REMOVED AND AN 8"x 6" PVC TEE SPLICED IN TO PROVIDE THE NEW TAP. NOTE THAT THIS OPERATION WILL REQUIRE THE SUBMISSION OF A WRITTEN "PUMP AROUND PLAN" FOR DISTRICT REVIEW.

OAK LODGE WATER SERVICES

SANITARY SYSTEM STANDARD DRAWING

6" TAP ON AN EXISTING 8" MAIN LINE

NO.	REVISIONS	DATE	BY
1	REMOVED COUPLER JOINT ON TEE	1/9/2019	HSO
2			
3			
4			

APPROVED

JASON ICE

DISTRICT ENGINEER

DRAWING NO.

325

DATE: 9/12/2017

SCALE: NTS

OAK LODGE WATER SERVICES

RESOLUTION NO. 2019-01

A RESOLUTION ADOPTING DISTRICT DESIGN AND CONSTRUCTION STANDARDS.

WHEREAS, construction in the District occurs on a regular basis; and

WHEREAS, Design and Construction Standards promote consistency and describe expectation about improving sanitary, stormwater and water infrastructure; and

WHEREAS, District Staff developed a set of Design and Construction Standards incorporating local, state and federal government practices; and

WHEREAS, the Design and Construction Standards are updated as needed to incorporate changes in best practices.

WHEREAS, the Design and Construction Standards will be kept on file and on the District's website for public inspection.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF OAK LODGE WATER SERVICES:

Section 1. The Board hereby adopts Attachment "A" to this Resolution that is the District's Design and Construction Standards.

Section 2. Staff shall publicly post the document for 30 days from adoption prior to implementation.

Section 3. Staff shall keep the Design and Construction Standards on file and on the District's website for inspection.

INTRODUCED AND ADOPTED THIS 15th DAY OF JANUARY 2019

OAK LODGE WATER SERVICES DISTRICT

By:_____
Nancy Gibson, Board President

By:_____
Susan Keil, Secretary

OAK LODGE
WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Aleah Binkowski, Human Resources and Payroll Manager
Agenda Item:	Adoption of Human Resource Policies
Item No.:	6
Date:	January 15, 2019

Background

Up to date Employee Handbook policies are central to a strategic, long-term approach to personnel management. They help to ensure consistency and outline the District's expectations of conduct and performance.

Formal policies promote stability and continuity. They also prevent the need to re-invent responses to recurring issues. The Employee Handbook needs to be viewed as a living, breathing document that must be kept up-to-date as laws, technology and the employment environment change and evolve. Our handbook strives to among other things:

1. Define boundaries and communicate important information to employees
2. Set performance expectations
3. Treat employees consistently and fairly
4. Outline federal and state employment laws
5. Provide an overview of benefits

Overview

In October the board was presented with two Employee Handbook policies. After the Board's initial review, the suggested edits to the policies were made and the polices were then set to the Union for review. Attached you will find final drafts of these policies. The Cybersecurity Policy will help the District mitigate risks by protecting the District from malicious external and internal users. It lays out a framework and a set of conduct for employees using District devices and software. The OLWS Ethics Policy summarizes acceptable and unacceptable behavior as outlined in the Oregon State Government Ethics laws. This policy is a more robust version of the existing Ethics policy that outlines how our employees should conduct themselves as a public employee.

Recommendation

"I move to approve to replacement the current Ethics Policy with the attached Policy and the addition of the Cyber Security Policy to the Oak Lodge Water Services' Employee Handbook."

Attachments:

1. Ethics Policy
2. Cyber Security Policy

Oak Lodge Water Services District

Cybersecurity Awareness Policy

Adopted xxxxxxx
Resolution xx-xxxx

This document supersedes any and all previous cybersecurity policies.

I. Purpose

The purpose of this policy is to inform the District's users (employees, contractors, Board members) of their obligatory requirements for protecting the technology and information assets of the District.

II. Policy Statement

It is the obligation of all users of District systems to protect technology and information assets from unauthorized access, theft, and destruction.

III. Definitions

Confidential Information

- Personnel information
- Classified financial information
- Customer data
- Data about partners
- Data about vendors
- Patents, formulas, or new technologies

Operational Information

- All non-confidential information

IT Representative

- Either the District's in-house Technical Services Coordinator or the agency holding the District's managed IT contract (IT Contractor)

District Technology and Information Assets

- Computer hardware, CPU, Email, web, application servers, PC systems, application software, system software, cell phones, tablets, etc.
- System software including: operating systems, database management systems, backup and restore software, and communications protocols.
- Application software used by various District departments including custom written software applications and commercial off-the-shelf software packages.
- Communications network hardware and software including: routers, routing tables, hubs, modems, multiplexers, switches, firewalls, private lines, and associated network management software and tools.
- Electronic records, data, information or communications (Email, messaging, social media, etc.) including information in any form created, processed, stored, or transmitted under the District's purview.

IV. Data Use and Ownership

A. All data created using District electronic assets are the property of the District. Any employee personal information stored on any electronic asset belonging, including, but not limited to cell phones, tablets laptops and personal computers to the District shall have no presumption of privacy or confidentiality.

B. Employees may use District electronic assets provided that the use adheres to this policy and to all other relevant District policies, state and federal laws, does not impose additional costs on the District, or does not interfere with their normal duties. Personal use of the District's electronic assets resulting in increased District expenses may result in reimbursement owed to the District and could result in disciplinary action.
C. Employees that have access to and use of electronic assets as part of their duties must have basic skills in the proper use of the asset.
D. All employee interactions with social media on behalf of the District or representing the District in any way shall follow any relevant Social Media policy.
E. All electronic assets that are the property of the District shall be managed by the District's IT Representative under the direction of the General Manager:
    1. Employees will not add, move, or remove assets without the prior approval of the IT Representative.
    2. Employees may be issued electronic assets and accessories as part of their job responsibilities. In this event:
        a. The employee will be issued assets at the request of their manager.
        b. Employees are responsible to know and follow the appropriate protection, use, and care of this District property.
        c. All replacements for loss or damage must be approved by the employee's manager.
        d. In the event of loss or damage, the lost item must be immediately reported to the employee's manager and the District's IT Representative.
        e. The IT Representative will maintain an inventory of authorized electronic assets and the employee authorized to use the asset.
F. For security and maintenance purposes, the General Manager may authorize the monitoring or modification of electronic assets, systems, and network traffic at any time.
G. The IT Representative may be requested to audit electronic assets on a periodic basis to ensure compliance with this policy.
H. The IT Representative, through approval from the General Manager, may restrict any external and internal access of any employee for the protection of the District.
I. External access methods are limited to those provided by the District and authorized by the General Manager for the specific application.
J. With General Manager approval, authorized individuals may access, retrieve, read, and delete any electronic record, data, information, or communication that is created on, received through, or sent by any means using District resources in accordance with the District's records management policy.

V. Security and Proprietary Information

A. Employees should take all reasonable precautions to prevent unauthorized access to District electronic assets and information.
B. Authorized users are responsible for the security of their accounts and their means of authentication.
C. Employees must immediately report any and all suspected security breaches or threats to management or the District's IT representative.

VI. Unacceptable Use

A. Employees shall not engage in any activity that is illegal under local, state and federal law, or in violation of any District policy, while utilizing District-owned resources.
B. Employees shall not violate the rights of any person or company protected by copyright, trade secret, patent or other intellectual property, or similar laws or regulations.
C. Employees shall not travel outside of the U.S. with District information or electronic assets without prior approval of the General Manager.

VII. Prohibited Uses

Employees are prohibited from:

A. Introducing malicious programs or allowing unauthorized users access to the computing environment;
B. Circumventing, or attempting to circumvent, the security measures of any District electronic asset;
C. Transporting or transferring confidential information outside of the District network unless using an authorized system;
D. Saving confidential District information to a personal computer or device;
E. Installing or distributing software products on or from District resources for which the District does not have an active license;
F. Purchasing or installing software during their employment without the approval of the General Manager, or his/her designee;
G. Installing for personal use any software licensed to the District;
H. Accessing online entertainment, pornography, illicit or illegal material, games, or playing games using District resources
I. Attempting to obscure or forge the source of communications originating from the District (spoofing);
J. Participating in any form of harassment via a District resource, whether through content, frequency, or number of communications;
K. Effecting security breaches that include, but are not limited to, accessing data which the employee is not an intended recipient or logging into a server or account that the employee is not expressly authorized to access;
L. Effecting disruption of service or network monitoring; and
M. Port scanning or security scanning
N. Employees may be exempted from these restrictions during the course of their required job responsibilities with the express approval of the General Manager.

VIII. Enforcement

Any employee found to have violated this policy may be subject to disciplinary action, up to and including termination of employment.

IX. Interpretation

Any questions regarding the intent or application of this policy should be directed to Human Resources or the General Manager.

Oak Lodge Water Services District

Ethics Policy

Adopted xxxxxxx
Resolution xx-xxxx

This document supersedes any and all previous ethics policies.

I. Purpose

The purpose of this policy is to establish a culture of openness, trust and to emphasize the employee's and consumer's expectation to be treated to fair business practices. This policy will serve to guide business behavior to ensure ethical conduct. Effective ethics is a team effort involving the participation and support of every District employee.

II. Scope

This policy applies to officials, employees, contractors, consultants, and other workers at the District, including all personnel affiliated with third parties as well as family members of employees and officials.

III. Objectives

To adhere to legal, moral, and professional standards of conduct in the fulfillment of professional responsibilities. Standards of professional conduct as set forth in this policy are promulgated in order to enhance the performance of all persons engaged in District functions.

IV. Policy Statement

A. Personnel Standards

State law prohibits any public official, a term that includes all District employees, from using or attempting to use their official position or office to obtain a personal financial gain or to avoid a personal financial detriment that would not otherwise be available but for the public official's holding of the official position.

However, as exceptions to the rule, state law allows public officials to accept the following:

- Official compensation
- Allowed honorarium
- Reimbursement of expenses by an employer
- Gifts of less than $50 in a calendar year from sources with a legislative or administrative interest
- Unlimited gifts from sources with no legislative or administrative interest
- Items that are expressly excluded for the state's definition of gift

State law imposes additional limits on personal gain and avoidance of personal financial detriment that would not otherwise by available by the employee's holding of a position with the District. The law further imposes additional limits on personal gain and avoidance for family members of the employee. District employees are responsible for ensuring that their actions comply with state law. Please refer to the state's Guide for Public Officials. The Oregon Government Ethics Commission may be contacted for additional resources.

1. District staff and officials shall demonstrate and be dedicated to the highest ideals of honor and integrity in all public and personal relationships to merit the respect, trust, and confidence of governing officials, other public officials, employees, and of the public.

2. Employees are expected to conduct themselves in a manner to avoid the appearance of impropriety. Conduct that could appear dishonest to a reasonable observer will undermine the public trust even if the conduct is not illegal.
3. Employees and officials shall devote their time, skills, and energies to their office both independently and in cooperation with other professionals.
   Employees and officials shall abide by approved professional practices and recommended standards.
4. Employees are expected to recognize the possibility of a potential or actual conflict of interest they may have and disclose the conflict, in writing, to their supervisor/manager and the HR Manager. The HR Manager and/ or the General Manager shall acknowledge the potential or actual conflict in writing and determine whether such conflict can be resolved if appropriate. A copy of the disclosure and subsequent acknowledgement shall be placed in the District personnel file.
5. Employees must not take any official action, the effect of which would be to the employee's private financial gain or loss, without first notifying the General Manager and immediate supervisor in writing of the actual or potential conflict of interest and obtaining approval prior to taking such action. Nor may an employee allow the purchase by the District of any goods and services from a business with which the employee is associated, except when the purchase is expressly authorized by the Board through proper procedure.

B. Employees may not solicit private business from fellow employees or from citizens while on duty and/or in uniform or otherwise readily identifiable as a District employee, such as while in a District vehicle. Responsibility as Public Officials
   1. District staff and officials shall recognize and be accountable for their responsibilities as officials in the public sector.
   2. Employees and officials shall be sensitive and responsive to the rights of the public and its changing needs.
   3. Employees and officials shall strive to provide the highest quality of performance and counsel.
   4. Employees and officials shall exercise prudence and integrity in the management of funds in their custody and in all financial transactions.
   5. Employees and officials shall uphold both the letter and the spirit of the constitution, legislation, and regulations governing their actions and report violations of the law to the appropriate authorities.

C. Professional Development
   1. District staff and officials shall be responsible for maintaining their own competence, for enhancing the competence of their colleagues. Staff and officials shall maintain relevant knowledge or competence and share expertise with other governmental entities and members of the community when applicable. All staff and officials shall promote excellence in public service.

D. Professional Integrity – Information
   1. District staff and officials shall demonstrate professional integrity in the issuance and management of information.
   2. Employees and officials shall not knowingly sign, subscribe to, or permit the issuance of any statement or report which contains any misstatement, or which omits any material fact.

3. Employees and officials shall prepare and present statements and financial information pursuant to applicable law and generally accepted practices and guidelines.
4. Employees and officials shall respect and protect privileged information to which they have access by virtue of their office.
5. Employees and officials shall be sensitive and responsive to inquiries from the public and the media, within the framework of District policy and direct media inquiries to the appropriate District representative
6. Employees may not use information received because of District employment for private gain, or to avoid financial detriment if the information is confidential or not readily available to the public. Information that is public may not be readily available to the public if a special request is required to obtain the information or, special knowledge, such as that acquired as a District employee, is needed to take advantage of the information.
7. Employees must not use their employment in any way to obtain financial gain or avoid financial detriment for the employee, their household, or family members or for any business, not-for-profit organization, or other separate legal entity, which the employee or a member of the employee's household or family is associated.
8. No employee may directly supervise an employee who is a member of their household or an employee with whom they are romantically involved. It is the responsibility of the supervisor or manager in the relationship to promptly disclose, in writing, the existence of the relationship to the HR Manager, or the General Manager or to the President of the Board of Directors in order to resolve the conflict.

E. Professional Integrity – Relationships
1. District staff and officials shall act with honor, integrity, and virtue in all professional relationships.
2. Employees and officials shall exhibit loyalty and trust in the affairs and interests of the District, within the confines of this policy.
3. Employees and officials shall not knowingly be a party to or condone any illegal or improper activity.
4. Employees and officials shall respect the rights, responsibilities, and integrity of their colleagues and other public officials with whom they work and associate.
5. Employees and officials shall manage all matters of personnel within the scope of their authority so that fairness and impartiality govern their decisions.
6. Employees and officials shall promote equal employment opportunities, and in doing so, oppose any discrimination, harassment, or other unfair practices.

F. Conflict of Interest
1. District staff and Border Members and District officials shall actively avoid the appearance of or the fact of conflicting interests.
2. Employees and officials shall discharge their duties without favor and shall refrain from engaging in any outside matters of financial or personal interest incompatible with the impartial and objective performance of their duties.
3. Employees and officials shall not, directly or indirectly, seek or accept personal gain, which would influence, or appear to influence, the conduct of their official duties.
4. Employees must not award business to a member of their household or family regardless of the mechanism used to provide that business. This prohibition includes the use of limited purchase orders or procurement cards to provide business to a household

or family member.

5. Employees and officials shall not use public property or resources for personal or political gain.
6. All Board Members, Budget Committee Members and key District officials shall sign a Conflict of Interest statement annually.

STAFF REPORT

To: Board of Directors
From: Aleah Binkowski, Human Resources and Payroll Manager
Agenda Item: Review of Additional Employee Handbook Policies Second Set
Item No.: 7
Date: January 15, 2019

Overview

Over the next several months, we will be submitting additional Employee Handbook Polices for Board review. The employee handbook sets the policies pertaining to all District employees. After the Board's initial review and any corresponding edits have been completed, the policies will be presented to the AFSCME Union. The National Labor Relations Act requires us to give the Union a minimum of 14 days to review the policies and decide whether to demand to bargain with the District over the changes the policies could implement. Once Union review is concluded we will bring the finalized policies to the Board of Directors who is the approval authority for this publication.

Background

The attached handbook polices are to be added to the existing Oak Lodge Water Services District Handbook. The policies found below set a further roadmap for employees, set expectations and communicate important information.

Recommendation

No action is required. This month will be for discussion. The policies attached will be finalized with any Board input and brought back to a future Board meeting for approval once the Union has been given an opportunity to review the policies.

Attachments

1. Time Keeping Policy
2. Inclement Weather Policy
3. Social Media Policy
4. Smoke Free Workplace Policy
5. Personal Protective Equipment
6. General Safe Workplace Practices
7. Workers' Compensation and Return-to-Work Policy

TIME KEEPING

PURPOSE:

This policy provides time reporting requirements.

SCOPE:

This policy applies to all Oak Lodge Water Services District employees.

POLICY STATEMENT:

Accurately reporting time worked is the responsibility of every OLWSD employee. The District must keep an accurate record of time worked in order to calculate employee pay and benefits.

PROCEDURE:

TIME KEEPING

Accurately reporting time worked is the responsibility of every non-exempt employee.

PAYROLL PERIODS

Employees are paid twice per month. Paychecks for the pay period ending on the fifteenth (15th) of the month are distributed on the fifteenth (15th) day of the month, and paychecks for the pay period ending on the last day of the month are distributed on the last day of the month. In order to pay employees on the fifteenth (15th) and last day of the month, employees must make a good faith estimate of future work time when submitting their time records. If the regular pay day falls on Saturday, Sunday or a holiday, employees will be paid on the preceding Friday or day preceding the holiday.

EMPLOYEE RESPONSIBILITIES:

- Employees will submit their time record twice per month as directed by their supervisor, in hard copy.

- Time records must account for all regularly scheduled hours worked, all overtime worked in addition to the regularly scheduled hours (and whether those overtime

hours will be paid out or taken as compensatory time), and all regularly scheduled hours not worked during the pay period (i.e. vacation time used, sick time used, compensatory time used, unpaid time taken, etc.) .

- Employees must maintain an accurate daily record on his/her time record of hours worked and use the correct charge codes. All absences from an employee's regular work schedule must be appropriately recorded and coded. Entries should be made daily.

- Approval for any overtime or premium pay adjustments to be made in the workweek must be obtained in advance.

- Approval for using any accrued vacation or compensation time must be obtained in advance.

- The employee must complete and sign in ink the time record and submit the completed time record in the format required to the direct supervisor in the time period required for approval.

- As employees must make good faith estimations of time, at times occasional incorrect coding may be submitted (i.e. missed overtime or sick leave, etc.). All employees are to submit an updated time record reflecting the correct coding with the next pay period's time record.

- Non-exempt employees are prohibited from performing any "off-the-clock" work. "Off-the-clock" work means work you may perform but fail to report on your time card. Any employee who knowingly fails to report or inaccurately reports any hours worked will be subject to disciplinary action, up to and including discharge.

SUPERVISOR RESPONSIBILITIES:

- Ensure that employees have correctly completed their timesheets for their assignments.

- Ensure that all employees maintain accurate time records.

- Provide approval for overtime or premium pay.

- Approve time records and submit documentation to Payroll.

PENALTIES:

Employees who are found to repeatedly submit inaccurate time records may be subject to disciplinary action.

Altering, falsifying, tampering with time records or recording time on another employee's timesheet may result in disciplinary action up to and including termination.

INCLEMENT WEATHER

PURPOSE:

This policy provides guidelines to be followed in the event that weather or other circumstances hamper transportation such that employees are late in arriving to work or unable to report to work.

SCOPE:

This policy applies to all Oak Lodge Water Services District employees.

POLICY STATEMENT:

As a service organization, the District's policy is to remain open during normal business hours. Inclement weather is defined as a weather condition when snowstorms, ice, heavy rain or similar weather hazards cause unsafe driving conditions for both public and private transportation and when unsafe driving warnings are issued by appropriate agencies, i.e., city, county or state police, sheriff's department, etc. An unsafe driving warning is defined as a request to refrain from driving unless absolutely necessary. Employees are expected to make every reasonable effort to report for work during inclement weather conditions. However, no employee should risk danger or possible injury in order to report to work. Each employee must make his or her own informed and reasonable decision as to whether to report to work during inclement weather. If employees are unable to report for work on time because of inclement weather conditions, the following procedures apply.

PROCEDURE:

Any employee who is unable to report to work due to inclement weather must contact his or her immediate supervisor and/or the General Manager as soon as practical but no later than 15 minutes prior to the start of the employee's work shift.

The District's practice is to allow employees up to two (2) hours to report to work in inclement weather without time being deducted against the employee's accrual banks. The time must be recorded on your timesheet as late arrival to work due to inclement weather conditions. The District will determine on a case-by-case basis, considering the

weather conditions, how absences or punctuality relating to weather will count against the employee's attendance record.

The General Manager is the only person authorized to modify business working hours due to weather conditions that arise.

Facility Closed

Only the General Manager (or the manager acting in his/her capacity) may authorize a closure. Every effort will be made to notify the local media and list the closure on the District website of the closure prior to the start of work shifts. Employees should call in to their immediate supervisor prior to leaving for work on a potential inclement weather day to determine if the District is closed.

No regular compensation will be paid for the facility-closed inclement weather day, *unless* the employee reports to work prior to the closure decision and is asked to wait for a closure decision or the employee performs work. Employees may use available vacation or comp time if the District is closed. In this case the employee will be compensated for the time waiting and/or working, respectively. Any non-exempt employee required to work during a closure will be paid at 1.5 times their regular pay. Exempt employees with approval from their direct manager, may work from home and receive regular pay.

The scheduled on-call representative from each department must answer calls as usual during inclement weather. If the employee assigned to be on-call during inclement weather will not be able to respond to calls, they must contact their immediate supervisor as soon as practical.

Facility Open

If the facility remains open during adverse weather, employees who report to work will receive their normal pay for the day. If an employee decides not to report to work or is more than two (2) hours late to work during potentially inclement weather on a facility-open day, the employee must 1) use accrued vacation or compensatory time for the absence or 2) take unpaid leave if such accrued paid leave is exhausted. Exempt employees who are unable to report to work may work from home and received normal pay for the day with approval from the direct manager.

SOCIAL MEDIA

PURPOSE:

Establish policy and requirements for official and personal use of social media by District employees. This policy applies to employees' use of all forms of social media.

SCOPE:

This policy applies to all Oak Lodge Water Services District employees.

POLICY STATEMENT:

Certain employees may be authorized to create or maintain District social media profiles to promote the District's mission.

Employees may start or maintain any type of personal social media presence. However, it is the right and duty of the District to protect itself and its affiliates from unauthorized or damaging personal use of social media by employees.

PROCEDURE:

For purposes of this policy social media includes, but is not limited to, the use of all interpersonal data sharing platforms, such as blogs, listservs, websites, chat applications, instant messaging applications, collaborative editing sites (e.g. wikis), on-line or networked communities, photo-sharing sites, social networks, or other similar technologies, including, but not limited to, Facebook, Instagram, Twitter, YouTube, Snapchat, Reddit and all other similar platforms.

Certain District employees' job duties may require the use of social media on the District's behalf on sites or accounts created and/or maintained by the District. Authorized employees may use District devices during work time to complete assigned work provided all of the following requirements are met:

- Information shared is for authorized District purposes only.
- The privacy of customers, partners, vendors, and other employees is protected and respected—get permission to use the name or likeness of District employees

and get a signed release or email approval to use the name or likeness of anyone outside of the District unless pictures to be posted were taken at a public event.

- The information shared complies with all applicable laws including but not limited to all public records, copyright retention, fair use, privacy and financial disclosure laws.

- All District policies are followed in posting the information public records.

- Information shared is not confidential in nature.

- The information shared is within the employee's area of expertise and knowledge or the employee gathered knowledge from the appropriate District Representative.

- Facts are checked, sources are cited, balanced viewpoints are presented and errors are quickly corrected.

District employees may engage in personal social media activities. The District generally will not monitor or limit employees' personal social media use outside of work hours and on personal devices except when, on balance, the District's interests in operating efficiently outweigh the employee's right to freedom of expression. Employees who use social media for personal purposes are prohibited from engaging in certain activities:

- Employees may not engage in personal social media activities using District equipment, including all District computers, devices and software.

- Employees may not engage in personal social media activities during work hours.

- Employees may not use their District email account or password for personal social media activities.

- Employees may not share social media content that claims to represent or appears to represent the position, viewpoint, statements, opinions or conclusions of the District, its customers, service providers or vendors. Employees who identify themselves as District employees while using social media should be careful to avoid giving the impression that their content represents the views of the District, its customers, service providers or vendors.

- Employees may not use social media to threaten, intimidate, harass or slander the District's customers, employees, service providers and vendors based on any status protected by state, municipal, or federal law or in any manner that violates the District's policies against harassment and discrimination, or in any manner that otherwise creates liability for the District.

- Employees may not use social media to post intellectual property, trademarks, logos, or copyrighted materials owned by the District or any customers, service providers or vendors of the District for the purpose of commercial gain or in any manner that creates liability for the District.

- Employees may not use social media to disclose attorney-client privileged information, trade secrets, or proprietary and confidential business information, such as private and/or confidential information about District customers, employees, service providers and vendors.

- Employees may not link a social media forum to the District's internal website, broadcast domain or computer network.

- Employees may not make false, damaging statements about the District.

- Employees may not use social media in a manner that interferes with another District employee's ability to perform his or her job.

Employees who violate this policy are subject to disciplinary action up to and including termination. Nothing in this Social Media Policy is intended to interfere with, restrain, or prevent employee communications regarding wages, hours, or other terms and conditions of employment or infringe upon employee protected free speech rights. Employees have the right to engage in or refrain from such activities.

SMOKE FREE WORKPLACE POLICY

PURPOSE:

The District is committed to providing a safe and healthy workplace and to promoting the health and well-being of its employees. As required by Oregon State Law, and through our desire to provide a healthy work environment for our employees, the District restricts smoking in the workplace as described by this policy.

SCOPE:

This policy applies to all employees of Oak Lodge Water Services District, temporary employees, student interns, customers and vendors, contractors, consultants and their employees working on District properties.

POLICY STATEMENT:

It is the policy of Oak Lodge Water Services District to prohibit smoking on all District properties (except in designated smoking areas) in order to provide and maintain a safe and healthy work environment for all employees. For purposes of this policy, smoking means inhaling, exhaling, burning, or carrying any lighted cigar, cigarette, electronic smoking device, pipe, or hookah; or any other smoking or vaping of tobacco, nicotine, tobacco-like product, plant or substance.

PROCEDURE:

Smoking is **prohibited** anywhere on District properties except in designated smoking areas. The definition of District property for the purpose of this policy includes all land, buildings, structures, parking lots and means of transportation owned by or leased to Oak Lodge Water Services District and any area, including customer property, where a staff member is engaged in District business.

Smoking during working hours is limited to normal break periods in the mornings, afternoons, and lunch periods. If an employee is working in the field and takes a break from work, the employee must smoke outside the company work vehicle, out of public view, and away from non-smokers.

The District will reimburse a portion of the program fees for any employee who elects to participate in a recognized program designed to help that employee quit smoking up to $250. Reimbursement will be paid only after documentation of successful program completion is received. Inquire with Human Resources for more information.

The District's health plan may also offer a smoking cessation program. The State of Oregon also offers additional resources with a stop smoking program.

PERSONAL PROTECTIVE EQUIPMENT

PURPOSE:

This policy provides guidance regarding appropriate safety equipment necessary to protect employee health and safety.

SCOPE:

This policy applies to all Oak Lodge Water Services District employees.

POLICY STATEMENT:

Oak Lodge Water Services District provides a variety of clothing and other equipment necessary to protect the health and safety of employees. Employees must use the assigned equipment in the manner in which they are trained and/or instructed. Employees must notify their supervisor of any equipment in disrepair or in need of replacing and are encouraged to make suggestions regarding additional equipment needs which may improve safety.

PROCEDURE:

The type of personal protective equipment required differs from job-to-job. Employees are required to wear specific equipment as instructed by their supervisor and/or as instructed in training. Protective equipment may include, but is not limited to:

- Hard hat
- Gloves
- Boots or specific footwear (See policy on Protective Footwear)
- Safety glasses or goggles
- Ear protection
- Respiratory masks

Failure to use safety equipment as instructed may lead to disciplinary action up to and including termination.

Failure to use safety equipment as instructed may limit workers compensation coverage in the event failure to appropriately use the equipment caused or exacerbated an industrial injury.

All treatment plant employees are required to wear protective clothing and/or protective devices while performing assigned duties where exposure to hazardous conditions or materials exists Employees who are visiting the facilities of the District outside of their regular assignment for the purposes of touring or observing operations on a limited and infrequent basis may be required to wear personal protective equipment.

Employees who wear District provided protective clothing will be given the last ten (10) minutes of their shift to change their clothes. Employees who have been in direct, substantial contact with sewage must change clothes and shower as soon as reasonably possible.

Specific policies governing safety related practices include Confined Space Entry, Traffic Control, Chlorine Safety, Hazard Communication, and Accident Reporting. These are not included here but are available from your supervisor. If you need copies of these or any other policy ask your supervisor immediately. We value your health and safety and are dependent upon your ability to perform your duties safely.

GENERAL SAFE WORKPLACE PRACTICES

PURPOSE:

This policy outlines the District's commitment to safety and provides guidance to all employees on the standards the organization expects of its employees. More information is available from Human Resources.

ACCIDENT PREVENTION IS EVERY DISTRICT EMPLOYEE'S RESPONSIBILITY, REGARDLESS OF HIS OR HER JOB.

SCOPE:

This policy applies to all Oak Lodge Water Services District employees.

POLICY STATEMENT:

The District is vitally interested in maintaining its facilities and work sites as safe places to work and that the District's equipment and tools are functioning in a safe manner. All employees must work safely at all times and follow any applicable District Safety Plans or Standard Operating Procedures, and applicable state, federal, Occupational Health and Safety (OSHA) regulations pertaining to positions and duties.

PROCEDURE:

General Safety Rules:

Our employees perform a wide range of functions in various locations. Although some safety rules apply only to specific positions, all employees are expected to comply with the rules in this procedure, including but is in no regard limited to the following:

- Use common sense and always consider safety while performing your duties.
- Immediately report any work injury/illness to your supervisor.
- Immediately report unsafe conditions, practices or equipment to your supervisor or safety committee member.
- Do not use any equipment, vehicles or materials when overly tired, nauseated, feverish or under the influence of any substance that may affect your judgment.
- Keep your work area neat and tidy.
- Use mechanical devices or request assistance when lifting heavy loads.

- Wear seat belts when operating any District or rented vehicle or driving your own personal vehicle while on company business.
- Be sure that aisles or exits are kept clear; do not let cords interfere with walkways.
- Keep paper clips, tacks, pins, and other objects off the floors.
- Store all sharp objects properly when not in use.
- Open and close doors cautiously and use extra caution at blind hallway intersections.
- Open only one file cabinet drawer at a time to avoid tip-overs. Cabinets should also be loaded from bottom to top and emptied in the reverse order.
- Report or clean up all spills immediately.
- Use stepstools, platforms, or ladders for climbing. Never use chairs.
- Report or replace frayed electrical cords.
- Always use required personal protective equipment.

Any employee who observes any dangerous work practices, equipment defects, cleanliness problems, or any other safety hazard of any kind must immediately report the issue to his/her supervisor. No employee who in good faith reports a perceived safety hazard will be subject to retaliation of any kind for having made such a report.

Unauthorized employees should never try to fix broken equipment or machinery.

From time to time, the District will conduct formal safety training for employees in positions that require safety practices in accordance with state, and /or federal requirements. Attendance at such safety training sessions is mandatory.

Specific policies governing safety related practices include Confined Space Entry, Traffic Control, Chlorine Safety, Hazard Communication, and Accident Reporting. These are not included here, but are available from an employee's supervisor. If an employee needs copies of these or any other policies, he/she is to notify his/her supervisor immediately. We value our employees' health and safety, and are dependent upon employees' ability to perform their duties safely.

Fires and Other Emergencies

The facility where an employee is assigned has emergency procedures and evacuation plans to follow in the event of a fire or other disaster. These are posted prominently in common areas and on bulletin boards. Exits, fire extinguishers, and first aid kits are available in the event of an emergency. All employees are expected to familiarize themselves with the location of such equipment.

In emergency situations, an employee (when available, a supervisor or manager) should call 911 for emergency services. All employees and visitors should immediately be notified to vacate the building in case of fire or other threats. Emergency exits are clearly marked and should be used for evacuation.

Emergency Evacuation Plans and Re-Entry

In any emergency, employees should follow alarms or other alerts to evacuate the building and/or area near the premises. Always follow the basic evacuation procedures, but remember that personal safety is paramount and takes precedence.

- Check work area for anything needing to be secured and store it quickly.
- Secure locks on all secured containers and cabinets.
- Leave your work area and report to your designated assembly area.

The General Manager will coordinate with fire, police, or other emergency preparedness personnel to determine when the building may be re-entered. This information will then be passed through managers and Safety Committee members.

Safety Data Sheets (SDS):

The District will keep Safety Data Sheets on all hazardous substances and materials on its premises. Employees should help ensure that SDS are kept in their respective areas or report missing ones to their supervisor or Safety Committee representative.

Improper Health and Safety Practices

All employees are expected to abide by safe work practices and adhere to general safety rules. Infractions of organizational health and safety practices may result in disciplinary action up to and including termination.

WORKERS' COMPENSATION AND RETURN-TO-WORK POLICY

PURPOSE:

This policy outlines employee rights and responsibilities regarding industrial injury or illness.

SCOPE:

This policy applies to all Oak Lodge Water Services District employees.

POLICY STATEMENT:

The District insures employees against accidental injuries under the workers' compensation laws of Oregon. Employees must report any injury sustained on the job to a supervisor immediately or as soon thereafter as possible.

PROCEDURE:

The District has developed a return-to-work policy. Its purpose is to return workers to employment at the earliest date following any injury or illness. The District desires to speed recovery from injury or illness and reduce insurance costs. This policy applies to all workers and will be followed whenever appropriate.

The District defines "light-duty" work as temporary modified work assignments within the worker's physical abilities, knowledge, and skills.

Where feasible, transitional positions will be made available to injured employees in order to minimize or eliminate time loss.

The physical requirements of transitional/temporary work will be provided to the attending physician. Light duty/temporary positions are then developed with consideration of the worker's physical abilities, the business needs of the District, and the availability of transitional work.

In case of an on-the-job accident

If there is a work-related injury and are missing time from work, contact the Human Resources Department or the District's Health Insurance Provider for details regarding time loss.

Light Duty work assignment

The District will determine appropriate work hours, shifts, duration, and locations of all work assignments. The District reserves the right to determine the availability, appropriateness, and continuation of all transitional assignments and job offers.

Communication

It is the responsibility of the worker to immediately notify Human Resources of any changes concerning a transitional/temporary work assignment. Human Resources will then communicate with the insurance carrier and attending physician as applicable.

Employee responsibilities

Accident reporting

- An accident is any unplanned event that disrupts normal work activities and may or may not result in injury or property damage. All work-related accidents, injuries, and near misses must be reported immediately to Human Resources.

- If an accident occurs, but does not require professional medical treatment, the supervisor should immediately be informed so that an accident analysis can be completed. If first-aid treatment is needed, it should be sought on-site.

- If an accident occurs which requires professional medical treatment, the worker should follow the emergency response plan. The worker must fill out a workers' compensation 801 form as soon as possible.

Worker's physical condition

- If professional medical treatment is sought, the worker should inform the attending physician that the District has a return-to-work program with light duty/modified assignments available.

- The worker should obtain a Release to Return-to-Work form and completed Job Description form (if available) from Human Resources. This should be provided to the treating physician and should be returned to Human Resources following the initial medical treatment.

- After the first medical treatment, the Release to Return-to-Work form must be completed and returned to Human Resources. If one is not, Human Resources will request one from the attending physician.

- The completed Release to Return-to-Work form will be reviewed by Human Resources. A temporary/transitional Job Description form will be prepared from information obtained from the attending physician for review and approval.

Worker able to return to work

- If the attending physician releases the worker to return to work, as evidenced by completion of a Release to Return-to-Work form and Job Description Form, the form(s) must be returned to Human Resources for assignment of light duty/modified work before temporary light duty can begin.

- The worker cannot return to work without a release from the attending physician.

- A job offer letter will be prepared by the District after receiving a signed temporary/transitional Job Description form from the attending physician

- If the worker returns to a transitional/temporary job, the worker must make sure that he or she does not go beyond either the duties of the job or the physician's restrictions. If the worker's restrictions change at any time, he or she must notify Human Resources at once and turn in a copy of the new medical release.

Worker unable to return to work

- If the worker is unable to report for any kind of work, the worker must call in at least weekly to report medical status.

- While off work, it is the responsibility of the worker to supply Human Resources with a current telephone number (listed or unlisted) and an address where the worker can be reached.

- The worker will notify Human Resources within 24 hours of all changes in medical condition.

Employer responsibilities

Accident reporting

- The supervisor will conduct an accident analysis on all accidents, regardless of whether an injury occurs.

- When an accident occurs which results in injury requiring professional medical treatment, Human Resources will forward a completed workers' compensation 801 form to the insurance carrier within five (5) calendar days of knowledge of the injury or illness.

- Other information will be forwarded as soon as developed, including:

    - Name of worker's attending physician

    - Completed Release to Return-to-Work Form from attending physician and medical documentation, if appropriate

    - Completed transitional/modified or regular Job Description

- Job Offer letter and responses

- Human Resources will notify the insurance carrier of any changes in the worker's medical or work status as soon as possible.

- Human Resources and the employee's Supervisor will monitor the worker's performance to ensure the worker does not exceed the worker's physician release.

- When light duty assignments are outside of the employee's normal job functions or tasks, the employee will report to Human Resources while assigned to light duty.

- Human Resources and the employee's Supervisor will monitor the worker's recovery progress through regular contact to assess when and how often duties may be changed and will assess the District's ability to adjust work assignments upon receipt of changes in physical capacities.

-

Job Offer letter

- Upon receipt of a signed temporary/transitional Job Description form from the attending physician, a written Job Offer letter will be prepared by the District. It will be mailed by both regular and certified mail to the worker's last known address or presented to the worker.

- The letter will note the doctor's approval and will explain the job duties, report date, wage, hours, report time, duration of transitional work assignment, phone number, and location of the transitional assignment.

- The worker will be asked to sign the bottom of the Job Offer letter indicating acceptance or refusal of the offered work assignment.

- Copies of the Job Description, Work Releases, and Job Offer letters will be forwarded to the insurance carrier.

OAK LODGE
WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Jason Rice, District Engineer
Agenda Item:	Water Master Plan Project Prioritization
Item No.:	8
Date:	January 2, 2019 for January 15, 2019 Board Meeting

Action Requested

No formal action is being requested. Staff would like to gauge the Board's interest in prioritizing a study for, and construction of, an interconnection with a water provider that does not collect from the Clackamas River.

History

June 2018	The Board approved a FY19 Budget along with a Capital Improvement Plan that included monies to complete a Water Master Plan.
February 2018	The Board approved a Contract with Water Systems Consulting (WSC) for the completion of a Water Master Plan.
June 2017	The Board approved a FY18 Budget along with a Capital Improvement Plan that included monies to begin a Water Master Plan.

Background

Since the beginning of the Water Master Plan in February 2018, one of the tasks District Staff along with WSC have been working on is gathering data related to: system resiliency, District soil types and conditions, and asset ages and current conditions. The available data was then put into modeling software and as deficiencies were found, projects were created, cost estimated and put on a project list. How this project list is prioritized, is the cause for this discussion.

Foreshadowing the Final Draft of this document, the District has done a great job at keeping up with earthquake resiliency standards; so, this was not a major driver in the prioritization of the project list.

Currently, the project list consists of fire-flow deficiencies. As many Fire Departments are starting to rely more heavily on internal fire suppression, demand in those events has gone up; especially in schools and health care facilities and commercial buildings. In order to

keep up with these new standards a complete list of these types of deficiencies was added to the list.

Pipe age was impossible to gather prior to July 1972, as the District did not retain records of installation dates. However, in planning for prioritization, projects with unknown age were prioritized over newer pipes.

A final review by Water Operations Staff is currently underway. Todd and the Water Crew are reviewing the project list generated by the model and adding condition-based projects they are aware of. Some of these projects will also have fire-flow deficiencies and be prioritized on the project list. Other projects are being weighed against meeting fire-flow in order to best spend the money that will be available at the time. Todd expects this task will be done on January 7th for WSC to perform their final review and send the data to FCS Group for financial modeling. However, there is one more piece of information needed before sending the OLWS data to FCS Group.

During WSC's research into our system they found a puzzling and concerning piece of data, although the District at one time had an interconnection with the City of Portland's water system, it no longer does. This inter-connection was important because in the event of the Clackamas River having a contamination, the District is left with no alternatives to serve water other than storage in its own system. The District could use our reservoirs to pass water to Gladstone, Clackamas River Water and even Sunrise, but it cannot receive water from these agencies without further pumping due to elevation.

Analyzing the District's options in the event of the Clackamas River being contaminated was not in the scope of work for WSC; although it could be. In initial talks with WSC, a very rough cost for this effort would cost the District between $50,000 and 100,000. The scope would include talks with the City of Milwaukie, the City of Portland (because they are the only adjacent water providers that do not pull water from the Clackamas River), and the Board. Alternatively, if the Board wishes, the District does not have to prioritize this project over others described above and can add it as an additional future project.

Staff Recommendation

There has been an increase in the number of toxic algae blooms in Oregon and luckily this has not occurred in the Clackamas River; however, it only seems to be a matter of time before the District faces a possible Clackamas River constraint issue. Staff recommends working with WSC to add this project to their Master Planning Scope of Work to quickly determine how it can best receive water in the event of a Clackamas River Contamination.

Once the alternative water strategy project was determined, a cost estimate could be generated, and it could be rolled into the overall Master Plan Project list (and financial analysis) which ultimately would be before the Board for final approval. This final approval will include options for an overall schedule of projects that will drive the rate separate from inflation, insurance, PERS or the consolidation.

OAK LODGE
WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Jason Rice, District Engineer
Agenda Item:	Surface Water Master Plan Communications Strategy
Item No.:	9
Date:	January 4, 2019 for January 15, 2019 Board Meeting

Action Requested

Board approval of the preliminary strategy discussed below that includes a Steering Committee for further refining the process as it advances.

History

October 2018	Special Board Meeting to discuss the Watershed Protection Program. This report is generated on much of the feedback received during this meeting.
June 2018	The Board approved a FY19 Budget along with a Capital Improvement Plan that included monies to begin a Stormwater Master Plan.

Background

There have been a few conversations between Staff and the Board regarding how the District's Stormwater Master Plan might be created. However, before a concept for moving forward is presented, I would like to address the notion that Oak Lodge might not be getting the appropriate level of services related to Stormwater from the County.

It is true that a majority of stormwater runoff is generated from the Right-of-Way. It is also true that Clackamas County Department of Transportation and Development (CCDTD) "owns" and "manages" both the road surface and stormwater infrastructure within the Right-of-Way. However, this is where OLWSD and CCDTD vary from most typical city stormwater management areas. Currently, the District carries a Municipal Stormwater (MS4) Permit to manage the water quality within OLWSD service District. During a previous OLSD MS4 Permit renewal, it was brought to the attention of DEQ that there was a conflict in that OLSD was managing the water quality of systems they don't "own". DEQ tried to address this by requiring an MOU between the two agencies to bring clarity to this issue. An MOU was then created and signed by both parties.

Currently, the Memorandum of Understanding (MOU) agrees that OLSD will clean all catch basins and pipes in the District in 5 zones over a 5-year period (and as needed) until the agreement is amended or cancelled (no current expiration). The agreement also places the responsibility of street sweeping within those 5 zones over the same 5-year period on CCDTD. I can say with 100% confidence that both parties are exceeding the terms of this agreement. Catch basins and pipes are cleaned as needed and all streets with curbs are swept multiple times per year. However, both OLWSD Staff and CCDTD Staff agree the MOU could use even more clarity around who is responsible for plan review, inspection and maintenance of these facilities within the Right-of-Way. Both sets of staff also agree that it would be best to wait to update this MOU until after OLWSD finds out from its rate payers what they are willing to pay for in terms of service levels; hence the Stormwater Master Plan we are discussing.

One could argue that because CCDTD generates the run-off with its roadways and the catch basins are necessary to capture and clean that runoff, that CCDTD is ultimately responsible for everything needed to maintain the system. However, one could also argue that CCDTD does not have the funding (or sources of funding) to keep up with road maintenance let alone installing and maintaining stormwater infrastructure.

In order to solve this issue within CCDTD and Water Environment Services (WES') overlapping services areas, WES has agreed to with their rates, install and maintain the stormwater infrastructure. What this does, in WES service areas, for WES customers, is place the responsibility of stormwater maintenance on a stormwater rate and frees up street funding for maintaining road surfaces. The money is coming from the same people, it is just being collected as an amalgamation of gas tax revenue, taxes and a stormwater rate.

Outside of WES (and OLWSD), but still in CCDTD jurisdiction these people are not receiving stormwater services to speak of. There is no governing MS4 permit and stormwater is generally managed with ditches and culverts.

To summarize the paragraphs above, citizens within OLWSD are getting their "fair share" of services based on the rates and fees they are paying. However, the question remains, are OLWSD rate payers prepared to pay additional Watershed Protection rates in order to add or enhance services? Staff believes the following schedule of events will help answer this the question:

Proposed Schedule of Events

January 2019 Expansion of the Project Team

The current project team (Libby Barg-Bakke, Sarah Jo Chaplen, and Jason Rice) believe the team would benefit from the addition of at least one Board member and at least one member of the public with experience in watershed protection conversations. Once the

	team is developed, meetings would be held as needed and would drive the overall schedule for the Master Plan.
Feb. - March 2019	Qualitative Opinion Research In the past, Oak Lodge Sanitary District was successful in gathering qualitative options of the public to help drive the process. In fact, last time a mailer was used to gauge rate payer's knowledge and interest in the Watershed Protection program, approximately 1/8 of the District responded. Results from this proposed survey would help drive the creation of the Master Plan Request for Proposal's and ultimately the work the consultant will focus on.
March-April 2019	Create Request for Proposal and Identify Master Plan Consultant
May 2019	Request Board Approval for Master Planning Contract Signature
June 2019	Begin Master Plan During this process, the Project Team expects that public input would be received to help focus the project list in areas that the public would potentially be willing to pay for.
November 2019	Check-in with Board on Plan Findings
December 2019-January 2020	Meet with Public to discuss Plan findings and rate implications for individual program enhancements or additions
January 2020	Meet with Board to discuss findings and select Funding Strategy for FY21 Programs. (Please note if there is any project timing slippage beyond February, given the budget time-line, we would not be able to use the Master Plan information to inform the FY21 Budget. The data would be used for the FY22 budget)

OAK LODGE
WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Sarah Jo Chaplen, General Manager and Tommy Brooks, District Attorney
Agenda Item:	Sanitary Sewer Treatment Agreement between OLWSD and City of Gladstone
Item No.:	10
Date:	January 7, 2019 for January 15, 2019 Board Meeting

Action Requested

Authorize the Board Chair or the General Manager to sign the interim sanitary sewer treatment agreement between OLWSD and the City of Gladstone.

History

1971	Oak Lodge Sanitary District and the City of Gladstone executed an Interim Agreement.
January 8, 2019	City of Gladstone's City Council approved a revised Interim Agreement between OLWSD and the City of Gladstone. In addition, the Council approved Ordinance 1494- amending Chapter 13.12.040 of the Gladstone Municipal Code—Connection Fee Designation (see attachment) to ensure it can implement the Interim Agreement.

Background

In this new Interim Agreement, Oak Lodge Water Services District and the City of Gladstone's staff have worked together to memorialize the manner in which they will continue to implement the 1971 Interim Agreement and to establish the methodology by which they will determine the charges required by the 1971 Interim Agreement.

The 1971 Interim Agreement is the agreement that governs the interconnection between OLWSD's and Gladstone's sanitary systems. A portion of Gladstone's system is connected to OLWSD's system and flows to the treatment plant. The 1971 Interim IGA established two charges OLWSD would impose on Gladstone for providing that service and anticipated that the specific amount of each charge would change over time. The agreement, however, did not establish a specific methodology for determining the new amount of each charge. The new proposed Interim Agreement memorializes how the parties calculate those charges, which is consistent with the rate schedules the Board

enacted last year. The City of Gladstone's City Council approved the agreement at its January 8, 2019 Council meeting.

This new Interim Agreement would be for a term of twelve months unless both parties agree to extend it. Both Gladstone and OLWSD are committed to having a new global intergovernmental agreement that will address both water service delivery and sanitary service delivery in terms of the general ownership and management. The intent is to have the global agreement done before this updated interim intergovernmental agreement expires and it would replace the 1971 agreement for Sanitary and the agreement for Water.

Suggested Board Motion

"I move to authorize the General Manager to sign the Sanitary Sewer Treatment Agreement between Oak Lodge Water Services District and the City of Gladstone."

Attachments:

1. Gladstone City Council Board Packet, January 8, 2019 which includes the proposed Interim Agreement.

GLADSTONE CITY COUNCIL MEETING
CITY HALL COUNCIL CHAMBERS
January 8, 2019 – 6:30 PM

6:30 p.m.
CALL TO ORDER
ROLL CALL
FLAG SALUTE

AGENDA ADDITIONS OR CORRECTIONS

SWEARING IN OF NEW CITY COUNCIL: Randy Ripley, Council Position #1; Matt Tracy, Council Position #3; Tracy Todd, Council Position #5 and Mayor Tammy Stempel

SWEARING IN OF INTERIM POLICE CHIEF: Kim Yamashita

ELECTION OF CITY COUNCIL PRESIDENT

PRESENTATION: State of Homelessness in Clackamas County – Vahid Brown, Clackamas County Health, Housing & Human Services

CONSENT AGENDA:
1. Approval of December 11, 2018 Regular Meeting Minutes
2. Approval of November Bank Balances
3. Budget Report for Period ending 11-30-2018
4. Approval of November Check Register
5. Legal Costs on Projects
6. Department Head Monthly Reports for December 2018
7. Resolution No. 1154 – Updating the Master Fee Schedule to include Small Cell Deployment Fees

CORRESPONDENCE – none

REGULAR AGENDA:

8. **GLADSTONE DOWNTOWN REVITALIZATION PLAN: STRATEGY FOR IMMEDIATE IMPLEMENTATION** – John Southgate, Consultant
   Consider approving the Gladstone Downtown Revitalization Plan: Strategy for Immediate Implementation

9. **RINEARSON NATURAL AREA AGREEMENT**
   Consider authorizing the City Administrator to sign the Declaration of Covenants, Conditions and Restrictions (CC&R's) and grant of irrevocable right of entry for the Rinearson Natural Area

10. **UPDATED OAK LODGE WATER SERVICE DISTRICT (OLWDS) SANITARY SEWER AGREEMENT AND ORDINANCE 1494 – AMENDMENTS TO GLADSTONE MUNICIPAL CODE (GMC) CHAPTER 13.12.040 – CONNECTION FEE DESIGNATION**
    a. Consider approving a Sanitary Sewer agreement between the City of Gladstone and OLWSD
    b. Consider approving Ordinance 1494 – amending Chapter 13.12.040 of the GMC - Connection Fee Designation

11. APPOINTMENTS TO CITY BOARDS, COMMITTEES AND COMMISSIONS:

a. Audit Committee (2 applications received for one position)
b. Budget Committee (3 applications received for three positions)
c. Library Advisory Board (1 application received for one position)
d. Planning Commission (3 applications received for one position)

12. CITY COUNCIL LIAISON APPOINTMENTS

BUSINESS CARRIED FORWARD

BUSINESS FROM THE AUDIENCE

Visitors: This is an opportunity for members of the audience to bring to the Council's attention any item not otherwise listed on the Agenda. Comments will be limited to three (3) minutes per person. Speakers may not yield their time to others and must fill out a speaker card available in the back of the room prior to making a comment.

BUSINESS FROM THE COUNCIL

ADJOURN

Upcoming Meeting Dates:

- January 25 and 26, 2019 City Council Strategic Planning Session – time to be determined. Location: Senior Center. This will be a public meeting.
- January 30, 2019 Annual Volunteer Orientation for Boards, Committees and Commissions, 5:30 p.m. - City Hall
- February 12, 2019 Regular City Council Meeting, 6:30 p.m. City Hall Council Chambers

City of Gladstone
Staff Report

Report Date: January 2, 2019
Meeting Date: January 8, 2019
To: Gladstone City Council
From: Jacque M. Betz, City Administrator

AGENDA ITEM

Approve an updated Oak Lodge Water District (OLWDS) Service Agreement and ordinance 1494- amendments to Gladstone Municipal Code (GMC) Chapter 13.12.040- connection fees

Proposal

City Attorney Ashley Driscoll prepared a memo regarding updates to the intergovernmental agreement between the City of Gladstone and the OLWDS and the proposed amendments to the GMC Chapter 13.12.040- Connection Fees.

There are two actions required;

a. Consider approving a Sanitary Sewer agreement between the City of Gladstone and OLWSD.

b. Consider approving Ordinance 1494- amending Chapter 13.12.040 of the GMC- Connection fees.

Cost Impact

There is no cost impact to approving both items.

Recommended Staff Action

Staff recommends the City Council

a. Approves the Sanitary Sewer agreement between the City of Gladstone and OLWSD.

b. Approves Ordinance 1494- amending Chapter 13.12.040 of the GMC- Connection fees.

Department Head Signature Date

City Administrator Signature Date

Beery Elsner & Hammond LLP

MEMORANDUM

TO: Gladstone City Council

FROM: Ashley O. Driscoll (AOD)

SUBJECT: Updated Oak Lodge IGA and Amendments to GMC subchapter 13.12

DATE: December 27, 2018

Intergovernmental Agreement with Oak Lodge

The City and Oak Lodge each own and operate a sanitary sewer collection system within their respective territorial jurisdictions. Portions of the City's sanitary sewer collection system (the "Gladstone System") and Oak Lodge's sanitary sewer collection system (the "Oak Lodge System") are interconnected. Sanitary waste from both the Gladstone System and the Oak Lodge System flows to Oak Lodge's wastewater treatment plant, where Oak Lodge treats the waste.

In 1971, the City and a predecessor to the Oak Lodge Water Service District ("OLWSD") executed an Interim Agreement to address how Oak Lodge would impose its monthly service charges and hook-up fee. Recently it has become apparent that the parties need to memorialize the manner in which they will implement the Interim Agreement and to establish the methodology by which they will determine the charges required by the Interim Agreement.

The City and Oak Lodge also recognize the need to draft a global intergovernmental agreement regarding the general ownership and management of the Gladstone System and Oak Lodge System. The parties hope to produce a permanent agreement within the next year.

Amendments to Gladstone Municipal Code Chapter 13.12

GMC chapter 13.12.040 imposes on property owners within the City of Gladstone who have their sanitary waste treated by Oak Lodge a requirement to pay a hook-up/connection fee to Oak Lodge. Previously, chapter 13.12.040 required property owners to produce a paid receipt from Oak Lodge to the City disclosing payment of the hook-up/connection fee.

The proposed amendments to Chapter 13.12.040 require property owners that have their sanitary waste treated by Oak Lodge to pay the hook up/connection fee directly to the City. The City would then remit the fee to OLSWD.

Other properties in the City have their sanitary waste treated by one of two other service districts: Clackamas Service District and the Tri-City Service District. These property owners pay the connection fee required by the service district directly to the City. See GMC 13.12.040(1). The proposed amendments bring Oak Lodge in-line with the City's other providers.

BEH

Sanitary Sewer Treatment Agreement

Between

City of Gladstone

and

Oak Lodge Water Services District

This Sanitary Sewer Treatment Agreement (the "Agreement") is made as of the date of the final signature below, by and between the City of Gladstone, an Oregon municipal corporation ("City") and Oak Lodge Water Services District, a consolidated Oregon water district and sanitary district organize under ORS Chapters 264 and 450 ("Oak Lodge"). The City and Oak Lodge are referred to herein individually as a "Party" and collectively as the "Parties".

RECITALS

A. The City and Oak Lodge each own and operate a sanitary sewer collection system within their respective territorial jurisdictions.
B. Portions of the City's sanitary sewer collection system (the "Gladstone System") and Oak Lodge's sanitary sewer collection system (the "Oak Lodge System") are interconnected.
C. Sanitary waste from both the Gladstone System and the Oak Lodge System flow to Oak Lodge's wastewater treatment plant where Oak Lodge treats the waste.
D. The City, Oak Lodge Sanitary District, and Oak Lodge Sanitary District No.2 executed that certain Interim Agreement, dated September 14, 1971, attached hereto as Exhibit A (the "Interim Agreement").
E. Oak Lodge is the successor district to Oak Lodge Sanitary District and Oak Lodge Sanitary District No.2 with respect to the Interim Agreement.
F. The Parties desire to memorialize the manner in which they will implement the Interim Agreement and to establish the methodology by which they will determine the charges required by the Interim Agreement until such time the Interim Agreement is amended or until such time the Parties execute a new agreement for a similar purpose.

AGREEMENT

Based on the foregoing Recitals, which are incorporated here by this reference, and the mutual covenant of the Parties herein, the Parties agree as follows:

1. Monthly Service Charge
    a. The Parties hereby confirm that the City has not installed a metering system to measure the volume of sewage passing from the City into Oak Lodge System as contemplated in Paragraph 1 of the Interim Agreement.
    b. Pursuant to Paragraph 1 of the Interim Agreement, the Parties have determined that the Monthly Service Charge will be the "Wastewater Collection and

Treatment" service charge established by Oak Lodge as part of its fee schedule in Resolution 18-12, attached hereto as Exhibit B.

c. Oak Lodge will provide written notice to the City at least sixty (60) days prior to any potential increase in Oak Lodge's Wastewater Collection and Treatment service charge applicable to any municipality that uses Oak Lodge as the service provider for sanitary wastewater treatment.

2. Hook-Up Fee
   a. For the purposes of this Agreement, the Parties agree that the amount of the Hook-Up Fee should be determined using the same methodology Oak Lodge uses for establishing its system development charge, which is currently based on the cost to Oak Lodge of providing the treatment service to each "equivalent dwelling unit" and which does not take into account any costs associated with conveying sanitary sewage to the wastewater treatment plant. Notwithstanding the foregoing, Oak Lodge reserves the right to modify its system development charge to include a conveyance component, will notify the City prior to any such changes, and provide an opportunity to the City to comment on such changes.
   b. The Parties agree that the specific amount of the Hook-Up Fee will be the amount identified as the "Connection Fee / Hook-up Fee" established by Oak Lodge as part of its fee schedule in Resolution 18-12, attached hereto as Exhibit B.
   c. Oak Lodge will provide written notice to the City at least sixty (60) days prior to any increase in Oak Lodge's Connection Fee / Hook-up Fee applicable to any municipality that uses Oak Lodge as the service provider for sanitary wastewater treatment. Unless otherwise agreed to by the Parties, any such increase must be based on a similar methodology used for the current fee.

3. City Pass Through of Charges
   a. The Parties acknowledge that the City has, and will continue to, pass the charges established by the Interim Agreement and this Agreement through to the specific customers in the City whose use of the Gladstone System results in the charges paid to Oak Lodge.
   b. The City has the authority to impose all charges by virtue of Gladstone Municipal Code Chapter 13.12.
   c. Oak Lodge shall defend and indemnify the City against any third party claim :
      i. related to Oak Lodge's Wastewater Collection and Treatment service charge; and
      ii. related to Oak Lodge's Connection Fee / Hook-up Fee.
      iii. Subsection (i) and (ii) include, but are not limited to, Oak Lodge's ability or authority to charge the amounts in subsection (i) or (ii) to the City.

   Notwithstanding the foregoing, the defense and indemnity required by this section shall not extend to the portion of any claim challenging the City's authority to pass through any charges or fees to a specific customer.

4. Miscellaneous
    a. Except as set forth in the express terms of this Agreement, nothing herein shall be deemed to amend or otherwise modify the terms of the Interim Agreement.
    b. This Agreement shall be subject to the laws of the State of Oregon.
    c. This Agreement may be signed in counterparts.
5. Term.

This Agreement is effective upon execution and shall remain in effect until the parties execute a global intergovernmental agreement regarding ownership and management of the Gladstone System and the Oak Lodge System, or twelve (12) months from the effective date of this Agreement, whichever is sooner, unless the parties agree in writing to extend the Agreement.

6. Effect of Expiration

    If this Agreement expires, the sole document governing the relationship between the parties regarding the matter discussed herein is the Interim Agreement.

IN WITNESS WHEREOF, the Parties having read the foregoing and intending to be legally bound hereby, have executed this Agreement as of the date this Agreement is fully executed.

CITY OF GLADSTONE	OAK LODGE WATER SERVICES DISTRICT
By:	By:
Print Name:	Print Name:
Print Title:	Print Title:
Date:	Date:

ORDINANCE NO. 1494

AN ORDINANCE AMENDING CHAPTER 13.12.040 OF THE GLADSTONE MUNICIPAL CODE

WHEREAS, the City and Oak Lodge Sanitary Water District (OLSWD) each own and operate a sanitary sewer collection system within their respective territorial jurisdictions; and

WHEREAS, portions of the City's sanitary sewer collection system (Gladstone System) and Oak Lodge's sanitary sewer collection system (Oak Lodge System) are interconnected; and

WHEREAS, sanitary waste from both the Gladstone System and the Oak Lodge System connect to Oak Lodge's wastewater treatment plant where Oak Lodge treats the waste; and

WHEREAS, chapter 13.12.040 imposes on property owners within the City of Gladstone who have their sanitary waste treated by the OLSWD a requirement to pay a hook-up/connection fee to OLSWD; and

WHEREAS, previously, chapter 13.12.040 required property owners to produce a paid receipt from the OLSWD to the City disclosing payment of the hook-up/connection fee; and

WHEREAS, the City now wishes to collect the hook up/connection fee directly from the property owners.

NOW, THEREFORE, THE CITY OF GLADSTONE ORDAINS AS FOLLOWS:

Section 1. The Gladstone City Council amends Section 13.12.040 of the Gladstone Municipal Code as described in Exhibit A to this ordinance, which is attached and incorporated by reference. Additions to the code are underlined and deletions are shown as ~~struck-through~~.

Section 2. All remaining provisions of Chapter 13.12.040 of the Gladstone Municipal Code are reaffirmed.

Approved by the Gladstone City Council this __ day of _____, 20__.

ATTEST:

Tamara Stempel, Mayor

Tami Bannick, City Recorder

Ordinance No. 1494
Exhibit A

13.12.040 CONNECTION FEE DESIGNATION

(1) Any person, firm or corporation shall obtain a permit to the sanitary sewer system or to install a subsurface disposal system by making written application therefore to the city. Such application shall be accompanied by a connection fee required by Clackamas Service District or Tri-City Service District in an amount conforming to the connection fee at the time of application for sewer connection. The Tri-City Service District has established by Clackamas County Commission Order No. 97-310 that the sewer connection charge commencing July 1, 1997 shall be the sum of two-thousand and twenty dollars ($2,020) for a single-family dwelling unit or its equivalent as defined in Table I of Clackamas County Commission Order No. 97-310, which is attached to the ordinance codified in this section, and incorporated in this section by reference in its entirety. The Clackamas County Service District and Tri-City Service District are service districts under jurisdiction for the Clackamas County Commission, which has sole authority to establish sewer connect fees. In the event of future revision in the connection fee by the Clackamas Service District and Tri-City Service District, applications for sewer connections submitted after the effective date of such revised sewer connection fees.

(2) Property owners in the city required to connect to the sanitary sewer system of the Oak Lodge Water Service ~~Sewer~~ District or its successors-in-interest (OLWD), including all property owners that have sanitary waste treated by OLWD ~~its successors in interest~~ shall ~~produce a paid receipt from said sewer district disclosing a payment of the~~ pay the connection charged by said district at the time of connection.

(3) In addition to the provisions of subjection (1) and (2) of this section, each property owner shall pay a sewer inspection fee for each connection as specified by a Master Fee Resolution.

OAK LODGE
WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Kelly Stacey, Finance Director
Agenda Item:	Finance Department Report
Item No.:	11a
Date:	January 15, 2019

Below is an update of various efforts of the Finance/Administration department for December 2018:

Yearend and Budget

Most of the administration staff had some time off during December to enjoy the holidays with their family and friends. Work time was spent finishing the last of the audit, preparing budget templates, cleaning up the billing system and other such cleanup items. The audited financial reports will be coming to the Board in February for acceptance. Matt was able to complete most of the tasks we set for him and now staff can move forward with getting the billing system ready for the new meter project starting soon. This includes getting all the kinks worked out with the meter reading software. We have also asked PlanB to do an audit of our billing system to confirm we are billing appropriately. This will help us determine why the wastewater revenue is coming in under budget. It may be that it was forecasted inaccurately.

By the time of this meeting we will have had our budget orientation meeting. We are hoping to engage the budget committee in the District and have plans for meetings throughout the year to keep the District moving forward. Management has begun having internal meetings to give ample time to bring the best budget possible to the budget committee in a few short months.

Other Items:

The round of policies from last month are awaiting union review with the hopes of bringing them back to the board for adoption in February. As financial policies are adopted, I am putting into place practices and procedures to meet the requirements of the policies.

We have scheduled some report training with Springbrook in January to help the finance team get the most from the system. Please let me know if there is anything you would like to see reported on that you are not currently receiving.

Finance is in the process of implementing a lockbox system for our payments. This would change the remit to address on our invoices to a post office box that would be retrieved by the bank to be deposited directly into our checking account. They would send us a file at the end of each day to be uploaded into our financial system to record the payments. This process efficiency will free up front line staff to focus on other customer service items.

Per the finance overview in the consent agenda, I want to point out that we are positioned to go over the Board allowed amount on the Low-Income Rate Relief Program. This is due in part to our promotion of the program during our switch to joint billing which increased enrollment by more than 60%. If there were no more approved applications through June, the program will be overspent by around $10,000. Since we will be sending letters out at the end of January, reminding everyone to reapply in March, there is a possibility the amount could go down, or it go up. I do not foresee a large swing in either direction. This program helps the low-income in our district, many of whom are senior citizens. The amount mentioned would have only a small effect on our overall budget and so I recommend that you approve an additional $15,000 to continue the program as is. The other alternative would be to increase the income cap, thereby disqualifying many that are currently on the program in order to reduce the demand on the program.

OAK LODGE
WATER SERVICES

STAFF REPORT

To: Board of Directors
From: Todd Knapp, Operations Manager Field
Agenda Item: Field Operations Report
Item No.: 11b
Date: January 15, 2019

Background

The Board has requested updates at the Regular Meetings of the Board on the status of the District's Operations.

Operations Administration

With the Holiday season this past month and many absentees from both sides, I'm very proud of the crews this past month, with collections having completed 148% of the cleaning and 123% of the TVing.

Map showing remaining line segments needing cleaning within sewer basin A. approximately 7,900 feet out of a total of 42,481.

Water crews were also busy dealing with breaks and leaks and continuing the basin cleaning of Zone 2.

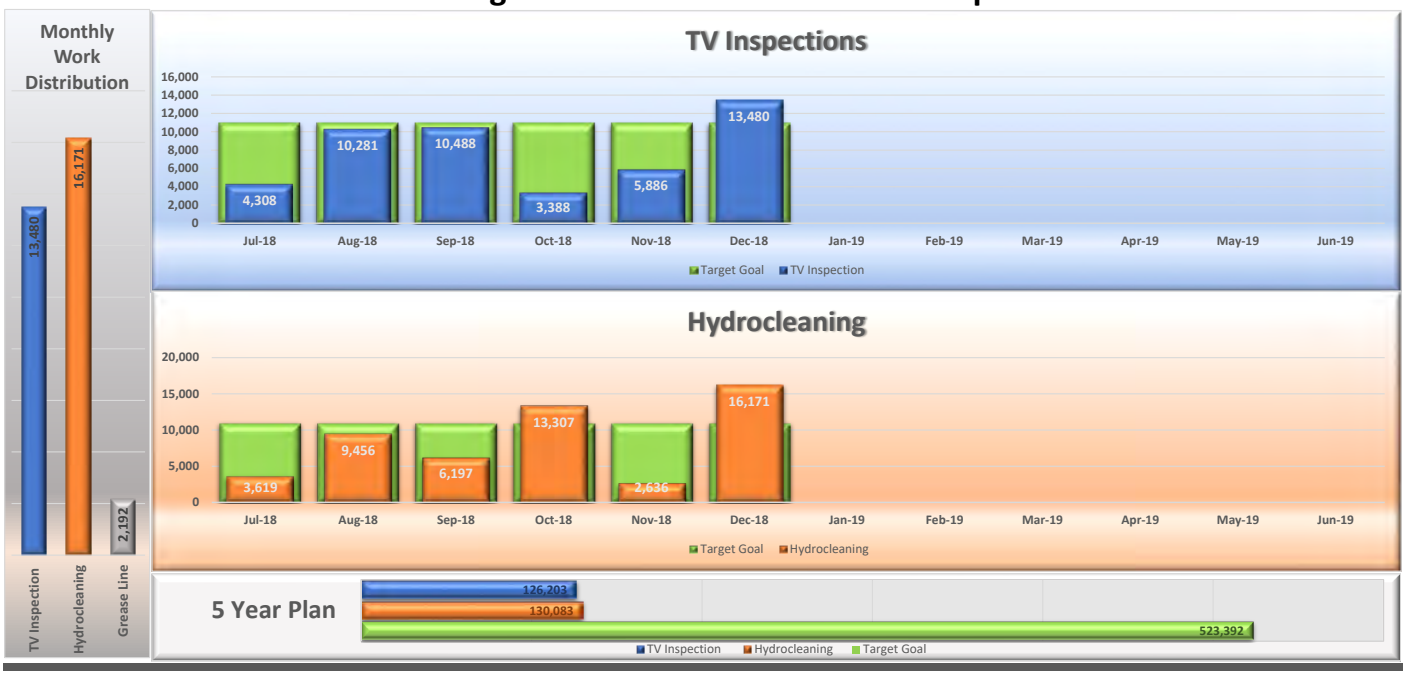
Water Consumption for the calendar year 2018, was 1,142,723,000 gallons with an average daily demand of 3.13 million gallons, that is a 4.16% average increase, making 2018 the second highest demand in a decade.

Field Operations Monthly Report for December 2018

Highlights for the month:

- Meters replaced, new services added, and leaks repaired (See chart)
- Storm Cleaning by Water team.
- Water consumption for **December: 79,690,000 Gallons** (above the 10-year average of 75,049,214) (See metered monthly consumption chart)

Oak Lodge Water Services Collections Report



FY 2017-2018

Month	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Current Month %	To Date Totals	Year 1 % Complete	5 Year %	Total Feet Remaining
TV Inspection	2,512	11,906	13,532	8,961	4,566	4,987	5,092	1,548	1,942	9,212	7,875	6,239	71.52%	78,372	74.87%	14.97%	445,020
Hydrocleaning	6,967	8,539	13,085	10,206	4,472	2,328	4,723	513	4,906	8,953	8,638	5,367	61.53%	78,697	75.18%	15.04%	444,695
Target Goal	8,723	8,723	8,723	8,723	8,723	8,723	8,723	8,723	8,723	8,723	8,723	8,723	100.00%	104,678	100.00%	20.00%	418,714
Grease Line	3,625	5,105	3,276	3,625	10,227	3,859	3,625	4,757	3,625	3,276	11,061	4,225		60,286			

FY 2018-2019

Month	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Current Month %	To Date Totals	Year 2 % Complete	5 Year %	Total Feet Remaining
TV Inspection	4,308	10,281	10,488	3,388	5,886	**13,480**							123.65%	47,831	36.56%	24.11%	397,189
Hydrocleaning	3,619	9,456	6,197	13,307	2,636	**16,171**							148.33%	51,386	39.28%	24.85%	393,309
Target Goal	10,902	10,902	10,902	10,902	10,902	**10,902**							100.00%	65,412	50.00%	32.50%	353,302
Grease Line	3,276	4,757	3,625	3,625	3,625	**2,192**								21,100			

FY 2019-2020

Month	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Current Month %	To Date Totals	Year 3 % Complete	5 Year %	Total Feet Remaining
TV Inspection																	0
Hydrocleaning																	0
Target Goal																	0
Grease Line																	

FY 2020-2021

Month	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Current Month %	To Date Totals	Year 3 % Complete	5 Year %	Total Feet Remaining
TV Inspection																	0
Hydrocleaning																	0
Target Goal																	0
Grease Line																	

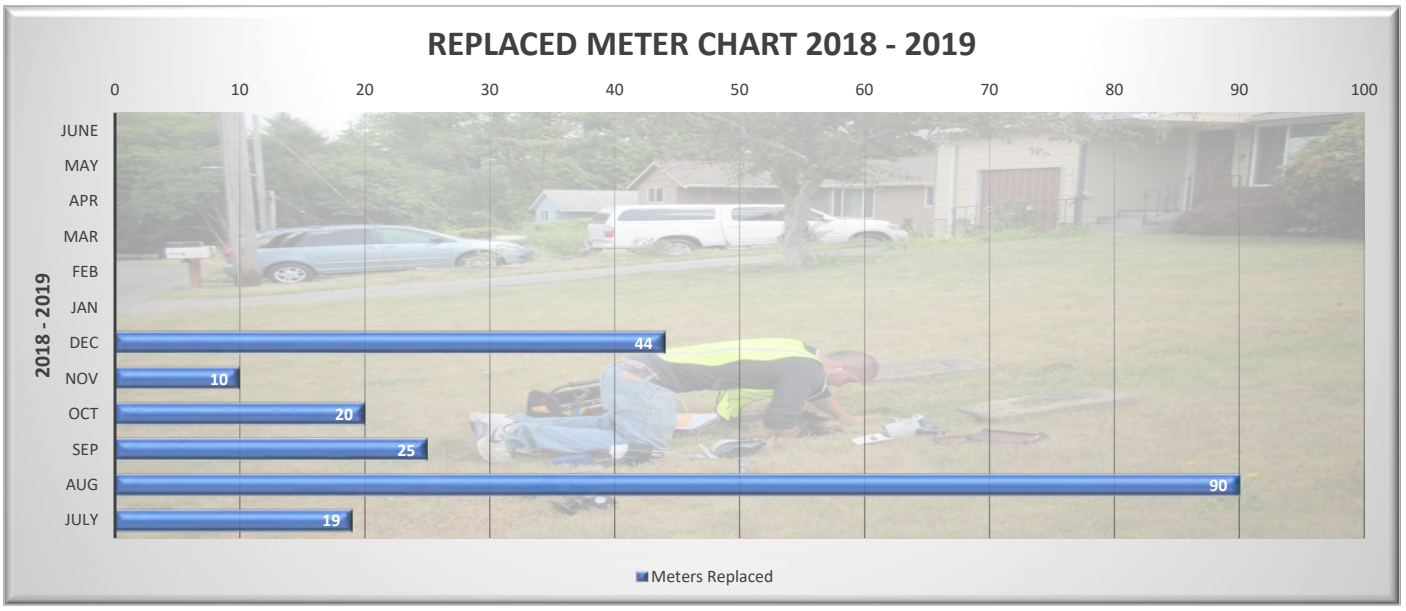
FY 2021-2022

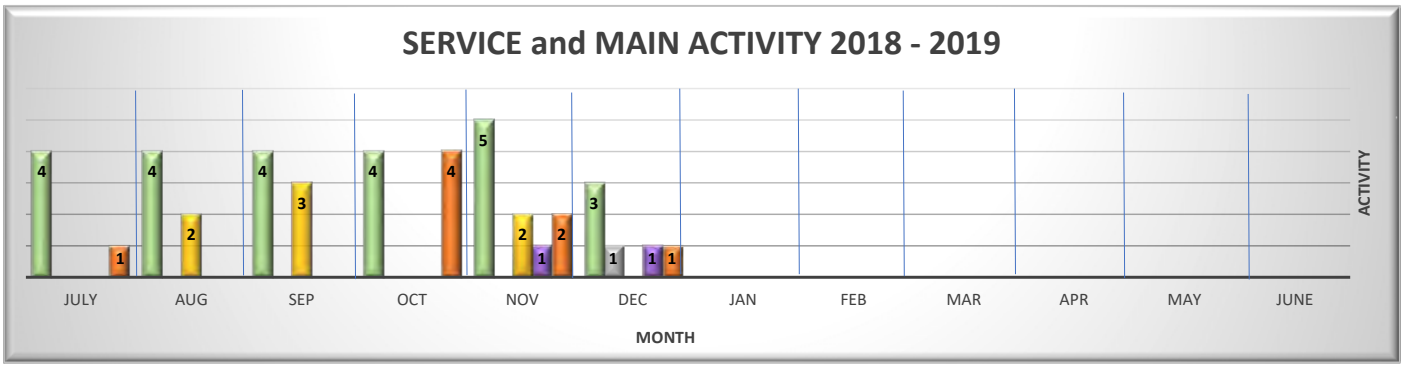
Month	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Current Month %	To Date Totals	Year 3 % Complete	5 Year %	Total Feet Remaining
TV Inspection																	0
Hydrocleaning																	0
Target Goal																	0
Grease Line																	

	Year 1	Year 2	Year 3	Year 4	Year 5	Remaining
Total Feet	523,392	523,392	523,392	523,392	523,392	
Target Per Year	104,678	104,678	104,678	104,678	104,678	
Target Per Month	8,723	10,902				
Actual Per Year TV	78,372	47,831				**397,189**
Actual Per Year Hyd	78,697	51,386				**393,309**
Make up	26,144					
Percent Completed	75%	47%	0%	0%	0%	

Current Basin: A

Oak Lodge Water Services Water Report

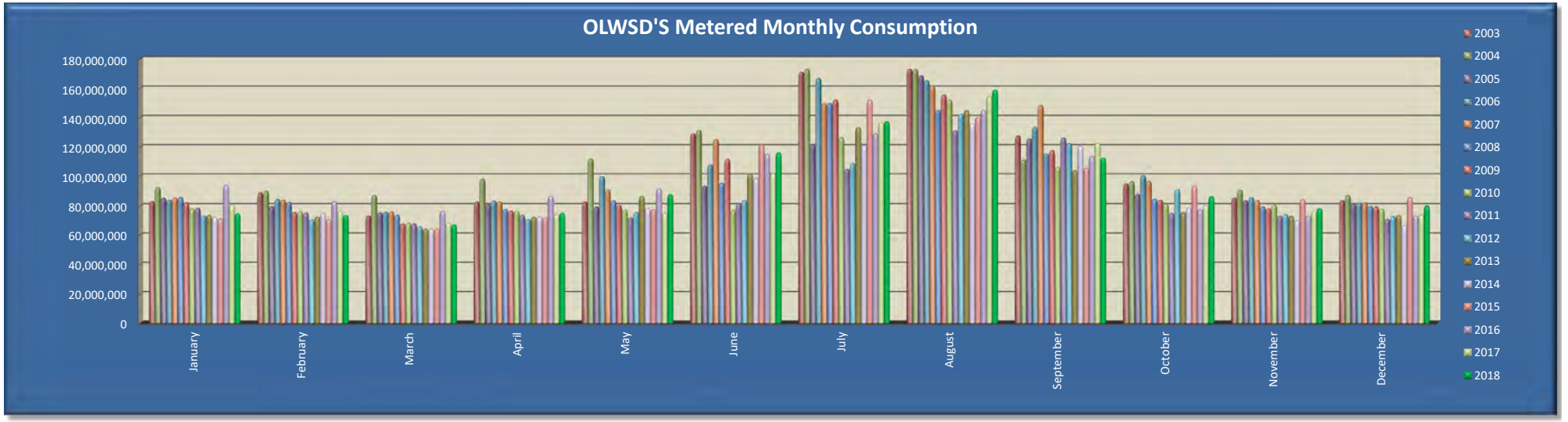




Fiscal Year 2018 - 2019	Month	Meters Replaced	New Services	Iron Services Renewed	Plastic Services Renewed	Service Leaks Repaired	Main Leaks Repaired
2019	June						
2019	May						
2019	Apr						
2019	Mar						
2019	Feb						
2019	Jan						
2018	Dec	44	3	1		1	1
2018	Nov	10	5		2	1	2
2018	Oct	20	4				4
2018	Sep	25	4		3		
2018	Aug	90	4		2		
2018	July	19	4				1
Yearly Total		208	24	1	7	2	8

Consumption By Year

Year	Month												Total	Average	10 Year
	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Con	Daily Demand	% Ave
2003	82,674,600	88,370,400	72,820,000	82,357,000	82,416,000	128,520,000	170,652,000	172,726,000	127,198,000	94,416,000	85,037,000	83,285,000	1,270,472,000	**3.48**	
2004	91,933,000	89,441,000	86,755,000	97,665,000	111,392,000	130,863,000	172,883,000	172,499,000	110,696,000	95,973,000	90,079,000	86,823,000	1,337,002,000	**3.66**	
2005	84,976,000	79,415,000	74,996,000	80,616,000	79,088,000	92,885,000	120,871,000	168,248,000	125,172,000	87,512,000	83,230,500	80,773,500	1,157,783,000	**3.17**	
2006	83,697,000	84,098,667	75,580,333	83,028,000	99,436,000	107,501,000	166,449,000	164,957,000	132,989,000	100,180,000	85,350,000	81,587,000	1,264,853,000	**3.47**	
2007	85,179,000	83,766,000	75,622,455	82,508,545	90,129,000	124,696,000	149,207,000	161,512,000	147,980,000	96,159,000	83,445,000	81,921,000	1,262,125,000	**3.46**	
2008	85,466,000	82,200,000	73,405,000	77,221,722	83,162,278	94,885,000	149,422,000	144,592,000	114,830,000	84,307,000	79,094,000	79,319,000	1,147,904,000	**3.14**	104.63%
2009	82,042,000	75,196,000	67,364,000	76,238,000	79,968,000	111,127,286	151,804,000	155,069,000	117,099,000	83,457,000	77,782,000	79,107,000	1,156,253,286	**3.17**	105.39%
2010	77,735,000	75,975,000	67,986,000	75,943,000	76,903,000	76,720,000	125,996,000	151,590,000	105,880,000	81,052,000	80,389,000	77,515,000	1,073,684,000	**2.94**	97.87%
2011	78,266,000	74,983,000	67,462,000	73,285,000	71,613,000	81,189,000	104,328,000	130,684,000	125,733,000	74,646,000	72,657,000	70,555,000	1,025,401,000	**2.81**	93.47%
2012	73,041,000	70,104,000	65,501,000	70,380,000	75,148,000	83,256,000	108,236,000	142,023,000	121,981,000	90,545,000	73,672,000	72,454,000	1,046,341,000	**2.87**	95.38%
2013	73,277,000	72,051,000	63,866,000	71,906,000	86,085,000	101,278,000	132,837,000	144,354,000	103,403,000	75,217,000	72,624,000	73,180,000	1,070,078,000	**2.93**	97.54%
2014	72,052,000	74,566,000	63,886,000	72,171,000	77,889,000	97,978,000	120,411,000	135,271,000	120,008,000	78,257,000	69,534,000	66,200,143	1,048,223,143	**2.87**	95.55%
2015	70,840,857	70,318,000	63,972,000	71,515,000	77,173,000	121,185,000	151,728,000	139,696,000	105,238,000	92,781,000	83,966,000	85,368,000	1,133,780,857	**3.11**	103.35%
2016	93,522,000	82,637,000	76,044,000	86,443,000	90,989,000	114,745,667	128,722,333	144,599,000	113,212,000	77,196,000	72,766,000	72,839,000	1,153,715,000	**3.16**	105.16%
2017	80,205,000	75,867,000	68,040,000	73,822,000	74,515,000	101,310,000	136,262,000	154,085,000	122,113,000	79,860,000	75,718,000	73,584,000	1,115,381,000	**3.06**	101.67%
2018	74,389,000	73,219,000	66,754,000	74,713,000	87,263,000	115,543,000	136,887,000	158,433,000	112,001,000	86,062,000	77,769,000	**79,690,000**	1,142,723,000	**3.13**	104.16%
2019															
2020															
	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average	10 Year Average		10 Year ADD	Winter Ave
	78,644,686	74,491,600	67,087,500	74,641,600	79,754,600	100,433,195	129,721,133	145,580,400	114,666,800	81,907,300	75,687,700	75,049,214		**3.01**	76,061,833
															Summer Ave
															129,989,444



OAK LODGE
WATER SERVICES

Staff Report

To: Board of Directors
From: David Mendenhall, Plant Superintendent
Agenda Item: Plant Operations
Item No.: 11c
Date: January 15, 2019

Background:
The Board has requested updates at the Regular Meetings of the Board on the status of the District's Operations.

Water Reclamation Facility Operations

There were four main rain events in December. With the configuration of 3 aeration basins and 3 clarifiers and the absence of any rapid flow increases the plant responded very well during the high flows. We had a high suspended solids result on the 3rd when everything else looked great. We attribute that to a composite sample that must have picked up some algae slough off. Our regular base flow is higher showing that we have ground water saturation. For the largest rainfall event, we had a good forecast that we would get some significant rain. The operators decided to go in to contact stabilization in anticipation of the situation. This is a mode that has been performed over the years at the plant to "store" some solids to be able to take higher hydraulic loads. This maneuver did keep blankets in the clarifiers contained and the results were good. The downside of contact stabilization is that it can take up to a week to come back from it and return the plant to normal operation. During rainy times you may not get that long and can get into a loop of going in and out of contact stabilization. We have continued to reduce solids throughout December and our sludge age is in the 12-day range. We are in good shape to try some different scenarios.

We got a couple of odor complaint calls due to a blower problem feeding our aerobic digesters. While making adjustments to stabilize the air, David Hawkins found a leaking gasket. This was quite a find because the leak could only be heard under the conditions David set up. Jayson made a gasket and installed it and the problem was resolved in about an hour. The odor was eliminated by the end of the day. In other collaborations, Chuck, Matthew, and Jayson cleaned out UV channel #1 to help avoid sampling problems. Paul and Jayson later worked on cleaning Channel #2. During that exercise the influent gate broke again. The gear box that was machined for us was finished just days after this but we need to wait to install that in less wet times. The odor control solution pump is being rebuilt. Obtaining parts has been spotty but work

progresses. This pump is made of special anti-corrosive materials to handle the caustic soda solution it moves around. Buffalo welding completed the drum screen crack repair. The fix looks good and we will continue to monitor the drum for any additional cracking. We are soliciting prices to get an idea of what this would cost if we needed to replace the drum entirely. The pump stations are running well. We did have one problem after the higher flows. A 2 x 4 was caught in the channel monster at pump station #2. The machine had a good start at munching it up but the overload settings are set to protect the equipment and an alarm was generated. John and Jayson removed the wood, and all is well again. Cleaning and fixing the UV bulb modules continues as flows permit. And our resident Rembrandt continues his floor painting mission. 264 cubic yards of biosolids were taken to Madison Farms compared with 156 last month. In addition to Randy this required extra drivers on occasion and Todd's crew delivers.

We did not have any permit violations for calendar year 2018 so we will be applying for the NACWA Platinum 6 award. The Platinum 6 recognizes 6 consecutive years of permit compliance. Each year is the culmination of the effort by the whole District to deliver the best service to our customers but is especially the responsibility of the Operations and Maintenance staff at our plant.

Attachments:

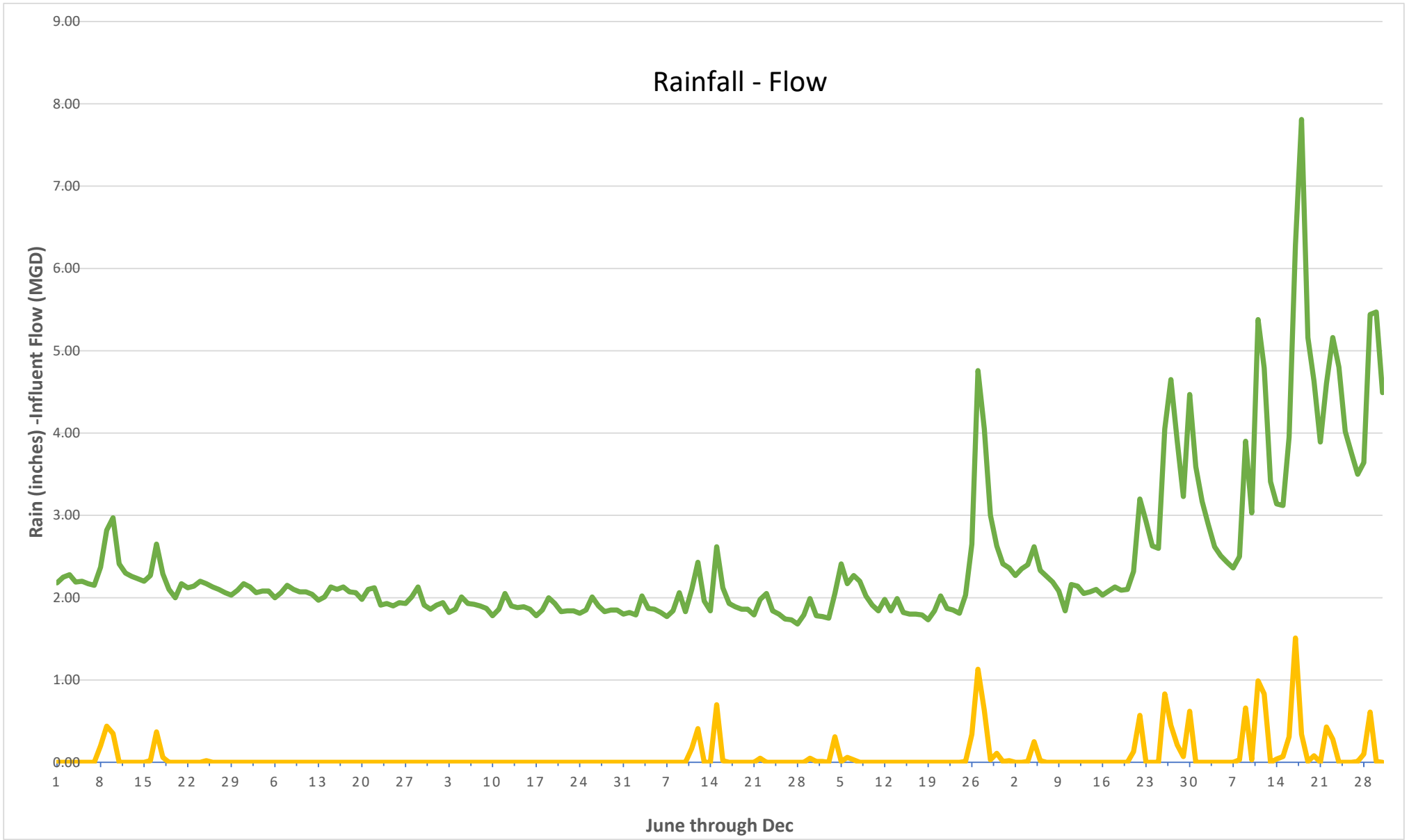
10C (i) – Operations Staff Report Rainfall vs Flow data correlation
June 2018 - December 2018
10C (ii) – Plant Performance BOD-SS graph June-December 2018

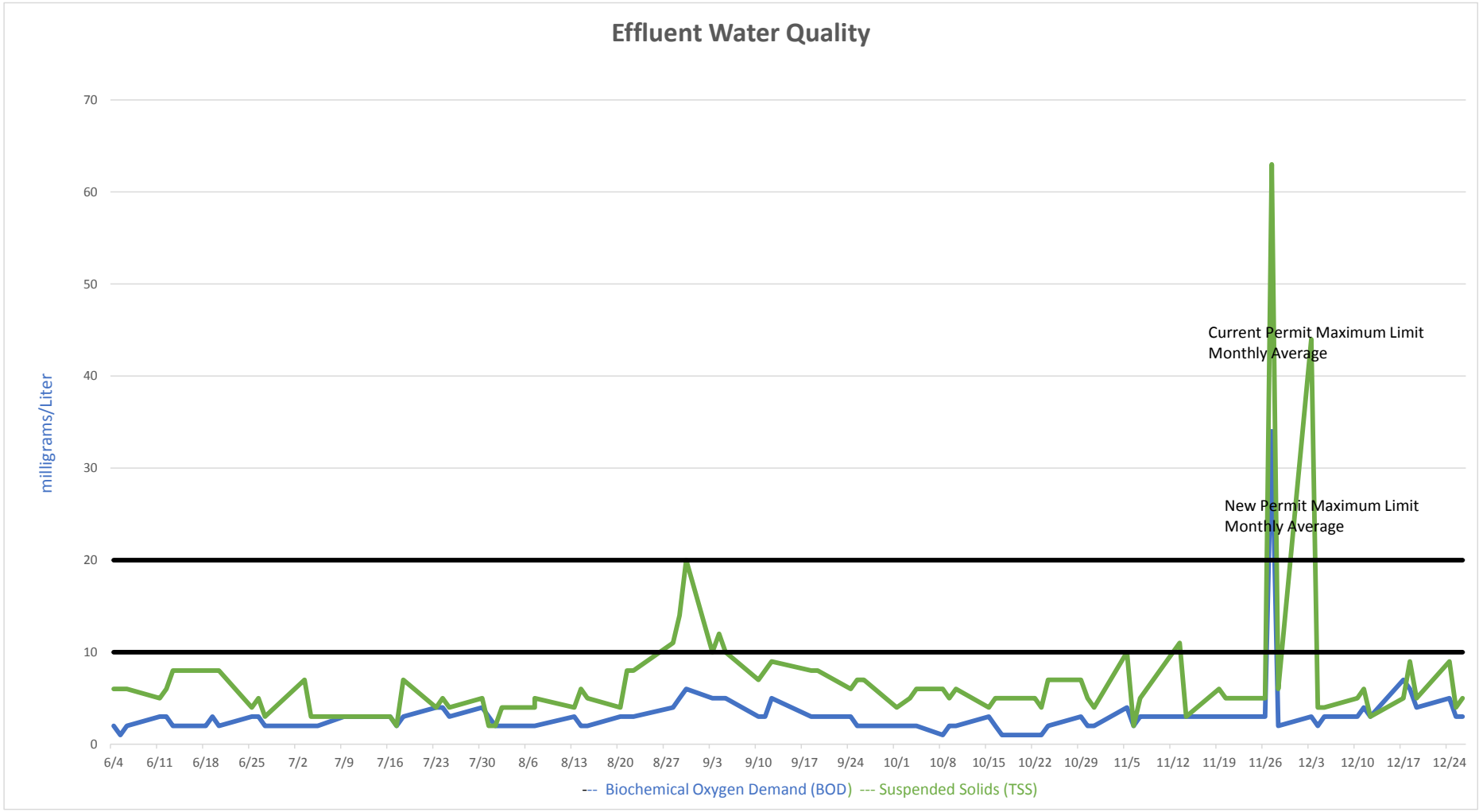
The unlucky 2 X 4 in Pump Station #2

Drum Screen Welds

UV Equipment Cleaning

Building 15 Motor Control Center


Rainfall - Flow
Rain (inches) -Influent Flow (MGD)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1 8 15 22 29 6 13 20 27 3 10 17 24 31 7 14 21 28 5 12 19 26 2 9 16 23 30 7 14 21 28
June through Dec


Effluent Water Quality
milligrams/Liter
70
60
50
40
30
20
10
0
Current Permit Maximum Limit
Monthly Average
New Permit Maximum Limit
Monthly Average
6/4
6/11
6/18
6/25
7/2
7/9
7/16
7/23
7/30
8/6
8/13
8/20
8/27
9/3
9/10
9/17
9/24
10/1
10/8
10/15
10/22
10/29
11/5
11/12
11/19
11/26
12/3
12/10
12/17
12/24
--- Biochemical Oxygen Demand (BOD)
--- Suspended Solids (TSS)

OAK LODGE WATER SERVICES

STAFF REPORT

To:	Board of Directors
From:	Technical Services Team
Agenda Item:	Technical Services Monthly Report
Item No.:	11d
Date:	January 4, 2018 (for January 15, 2018 Meeting)

Below is an update of various Technical Services Program efforts:

Outreach and Education

OLWS wrapped up 2018 with outreach and education planning for 2019. This included the beginning of budget season for the full range of outreach work in FY20.

The committees for the two large children's events are in the final stages of planning by selecting schools, finalizing budgets, and making sure there are enough classroom presenters, exhibiters, and volunteers. Two committees of municipalities work together to put on these events: the Clackamas County Water Education Team (CCWET) and the Regional Coalition for Rivers and Streams (RCCRS). This year students will visit the Clackamas Community College campus and the Portland Community College Sylvania campus and will investigate whole water awareness, investigating drinking water, stormwater, and water reclamation.

The North Clackamas Urban Watersheds Council held a Christmas Tree sale fundraiser and sold out of trees in just 30 minutes. Reminder: your Christmas Tree can be recycled through NCUWC also – this year the tree collection happened on January 12th and trees will be placed into the Willamette River on February 23rd to support fish habitat (see flier image). Before being installed, trees will be evaluated for elongate hemlock scale, a tiny non-native insect, which came into the state this fall on Fraser fir trees harvested in North Carolina. Although the insect was found early, some of the infected trees were distributed to big box stores for sale in Oregon.

This year in April, OLWS will partner with the Oak Lodge Community Emergency Response Team (OLCERT) and the Clackamas Fire District #1 to conduct an Emergency Water Distribution Exercise. The event has been announced in the OLWS January/February newsletter and will be shared widely as soon as specifics are clarified

Permitting - December 2018 Development Activity

	This Month	*Last Month*	*Fiscal Year-to-Date*	*This Month Last Year*	*Last Year-to-Date*
Pre-applications Conferences	0	3	15	0	10
Hours Spent on Development Review*	60	30	390	104	739
Hours spent on Utility Permits*	10	40	215	69	448
Development Permits Issued	1	2	14	2	9
Utility Permits Issued	2	6	38	3	49
New Sewer Connections***	1	3	22	5	52
New Water Services	1	6	-	-	-
Active Erosion Control Permits	45	44	265	37	153
Total Erosion Control Permits Inspected	45	44	265	37	153
Active Construction Permits	19	20	142	19	62
Sanitary SDC Fees Received	$5,165.00	$28,825	$173,445	25,825	263,415
Water SDC Fees Received**	$5,015.00	$40,600	$126,465	-	-
Plan Review Fees Received*	$2,943.70	$1,858	$51,116	-	-
Inspection Fees Received*	$3,142.00	$3,888	$54,227	-	-

Attachments

1. Capital Project Tracker
2. Development Review Status Tracker

Capital Project Tracker

Project Name	Fund	Project Manager	Total Budget	Design Contract	Construction Contract	Total Spent (Minus Retainage)	% Spent of Budget	Status	Next Task	Expected Completion Date
Solids Handling Bldg. Refurbishment and Process Improvements	SS	Rice	$ 300,000.00	$ 115,075.00	$ -	$ -	0%	Planning	Review of 60% Plans	6/30/2019
Secondary Clarifier Refurbishment	SS	Ogbeide	$ 500,000.00	$ -	$ -	$ -	0%	Planning	Contract with Design Engineer	6/30/2019
Aeration Control Strategy Evaluation	SS	Ogbeide	$ 50,000.00	$ -	$ -	$ -	0%	Planning	Contract with Design Engineer	6/30/2019
Mainline Repair Program	SS	Rice	$ 200,000.00	$ -	$ -	$ -	0%	Planning	Contract with Design Engineer	6/30/2019
Stormwater Master Plan	SW	Rice	$ 125,000.00	$ 21,440.00	$ -	$ -	0%	Planning	Board Approval of Project Strategy	12/31/2019
Water Master Plan	W	Rice	$ 185,720.00	$ 185,720.00	$ -	$ 94,418.00	51%	Active	Review Draft Chapters	3/31/2019
Water Meter Replacement Program	W	Ogbeide	$ 1,350,000.00	$ -	$ -	$ -	0%	Contract Awarded	Installations expected to begin this month.	4/30/2020
WRF Decant Expansion	SS,SW,W	Ogbeide	$ 510,000.00	$ 38,400.00	$ -	$ 10,336.00	0%	Planning	Finalizing Plan. Then bid the work.	6/30/2019
Boardman Wetland Complex	SS,SW	Rice	$ 3,167,665.75	$ -	$ 3,167,666.00	$ 1,541,335.00	49%	Under Construction	Sanitary Sewer testing and Finish Boardwalk	3/1/2019

Last Updated 1/4/2018

Project Status	Address	Type of Development	Notes	Last Updated
Warranty Period	3127 SE Concord Rd. (Concord Oaks, formerly Concord Vineyards II)	6-acre development (32 residential lots.)	Development Inspections complete. Warranty inspections scheduled. Warranty period expires July 2018 (punchlist items incompete - minor - awaiting completion)	1/3/19
Warranty Period	13012 SE Oatfield	Proposed subdivision; 9 potential lots. Z0407-16	Warranty period expires Sept. 2019	1/3/19
Warranty Period	4281 SE Manewell Lane	A four-lot SFR minor subdivision.	Z0640-16 erosion control ongoing. Utility inspections complete. Warranty period ends June 2019.	1/3/19
Warranty Period	SE Manewal at SE Towery LN. 4-lot subdivision	Z0157-17_Manewal_South	OLWSD Inspection approval. Z0156-17 (for original tax lot 2300) is now void. Plans approved. Warranty expires June 2019	1/3/19
Warranty Period	Taxlots 2000 & 2100 located behind 15026 & 15018 SE Linden Ln. (Tilia Ln) Originally "Wanderlust Lane"	3-parcel partition	Z0305-15-M Pubic Main Line Extenstion. Development approval. Sanitary warranty period ends March 2019. Erosion inspections ongoing. Expires Oct 2018	1/3/19
Under Construction	18121 SE River Rd. (Jennings Lodge Estates)	72-lot Subdivision	Sanitary, Water and Surfacewater inspections ongoing. OLWSD Permit expires Sept. 2019	1/3/19
Under Construction	3816 SE Hill Rd	Z0428-16 8-lot subdivision	Water and Sewer Inspections ongoing. Permit expires March 2019. 1200C permit for erosion control. County timeline.	1/3/19
Under Construction	13715 SE River Road	Z0399-17 Rose Villa - 28 Homes. Garden Grove and North Pocket Development	Also Z0066-17. OLWSD approval for engineering plans. Sanitary, water and stormwater inspections ongoing. Expires June 2019 (extension).	1/3/19
Under Construction	17908 and 17900 SE Addie Street.	Z0200-17-D_BOARDMAN_WETLAND	OLWSD CIP Project. No Expiration.	1/3/19
Under Construction	14501 SE Laurie Ave	Z0050-17 2-lot partition	EC Inspections ongoing. Expire April 2019	1/3/19
Under Construction	Willamette View	Riverview Dining Facility Replacement / Expansion; Z0239-17	Plans approved. Expires March 2019 (extension)	1/3/19
Under Construction	SE Courtney at SE Rupert	Z0061-17-D 10-unit apartment	OLWSD inspections ongoing. Permit expiration October 2019	1/3/19
Under Construction	3260 SE Oak Grove Blvd	130000+ mini storage facility	Inspections ongoing: sanitary and water. 1200C for erosion control. OLWSD permits expire May 2019	1/3/19
Under Construction	18107 SE Blanton	3-lot partition	3-lot minor subdivision. OLWSD permit expires July 2019	1/3/19
Under Construction	15314 SE RUPERT DR	7-lot subdivision Z0426-17-SS	OLWSD permits expire March 2019	1/3/19
Under Construction	13809 SE Linden Ln.	Replace existing home with duplex.	Erosion control ongoing. Sanitary and water inspections ongoing. OLWSD permits expire May 2019	1/3/19
Under Construction	Z0620-17-D 16885 SE McLoughlin	Design Review - Les Schwab	County expiration timeline.	1/3/19
Under Construction	13755_SE_Schroeder	Rose Villa Units	"The Oaks" PHASE 2B' NET ZERO ENERGY POCKET NEIGHBORHOOD Z0489-17. OLWSD approval for engineering plans. Sanitary, water and stormwater inspections ongoing. Expires June 2019 (extension). Z0489-17	1/3/19
Under Construction	Willamette View	Multi-family	North Pointe; Z0656-17	1/3/19
Under Construction	SE Torbank	(RIVER RD – TROLLEY TR) SIDEWALKS PUBLIC IMPROVEMENTS	Clackamas County Project Number: 22243. County expiration timeline.	1/3/19
Plan Review	15510 SE Wallace Street	Z0593-16 13 lot subdivision	OLWSD Water-only. Drains to WES for SS and SWM.	1/3/19
Plan Review	19421 SE KAY ST	4-10 lots: Subdivision	Plans approved; awaiting administrative items. OLWSD permit not yet issued. County expiration timeline.	1/3/19
Plan Review	17624 SE RIVER RD	Z0471-17 : three (3) 2-family_ dwelling units and two (2) three family dwelling units	Land use comments submitted. Awaiting engineering plans. County expiration timeline.	1/3/19
Plan Review	22E07CA03003 (SE Allan Rd @ SE Worthington)	Partition: 2-lots	Engineering approval. Awaiting administrative items for Site Development Permit issuance. County expiration timeline.	1/3/19
Plan Review	4322 SE Pinehurst Ave	Subdivision	Z0594-17 Water utility only. Awaiting Engineering Plans and building permit. County expiration timeline.	1/3/19
Plan Review	13630 SE Laurie Avenue	Design Review - Rose Villa	Engineering approval. Awaiting administrative items for Site Development Permit issuance. County expiration timeline.	1/3/19

Project Status	Address	Type of Development	Notes	Last Updated
Plan Review	14107 SE Lee Ave	Partition: 2 lots Z0648-17	Plan Review submitted. County Expiration Timeline.	1/3/19
Plan Review	16800 SE McLoughlin	Design Review / Commercial	ZPAC0016-18-DR. Auto dealership design review / façade improvements. Pre-app comments submitted. Clack. Co. expiration timeline.	1/3/19
Plan Review	3622 SE Pinehurst	4-lot subdivision	Water utility only. County expiration timeline.	1/3/19
Plan Review	14601 SE Rupert	Variance application and a two-family dwelling (duplex).	Not a developmnet per OLWSD definition. This is construction on a single lot of record. Variance n/a for OLWSD. County expiration timeline.	1/3/19
Plan Review	14497 SE River Rd	3-lot partition	Land Use Comments sent. County expiration timeline.	1/3/19
Plan Review	14868 SE LEE AVE	Temp. Permit: Hardship Care with RV Dwelling Unit	Land Use Comments sent. County expiration timeline.	1/3/19
Plan Review	14905 SE RIVER FOREST DR	SFR Addition: Willamette River Greenway	Land Use Comments sent. County expiration timeline.	1/3/19
Plan Review	4410 SE pinehurst	Residential Subdivision	In OLWSD water service area; Development spans OLWSD boundary; water utility only. County expiration timeline.	1/3/19
Plan Review	14710 SE Lee Ave	DESIGN REVIEW – Nonconforming use	OLWSD attended pre-app. County Timeline.	1/3/19
Plan Review	18225 Portland Ave	Residential Subdivision	Awaiting first planset. In Gladstone and OLWSD. County tlimeline.	1/3/19
Plan Review	17025 SE Oatfield Rd	two-parcel partition	OLWSD attended pre-app. County Timeline.	1/3/19
Plan Review	2615 SE VINEYARD WAY	two-parcel partition	Attended pre-app. Awaiting Land Use application. County expiration timeline.	1/3/19
Pre-Application	16908 SE Oatfield	3-lot partition	Pre-app. Attended. County expiration timeline.	1/3/19
Pre-Application	14010 SE Douglas Fir Ct	Partition: duplex and SFD	ZPAC0069-18 Water utility only. Submitted Pre-app comments. County expiration timeline.	1/3/19
Pre-Application	2614 se tarbell Ave	3-lot partition	ZPAC0049-18 Submitted Pre-app Notes. County expiration timeline.	1/3/19
Pre-Application	15303 SE Lee Ave	2-lot partition	OLWSD attended pre-app and provided notes. Expires Jan 2019	1/3/19
Pre-Application	None; south side of SE Maple St. midway between River Rd. and Laurie Ave., Oak Grove area. Legal Description Map 2-1E-11AB, Tax Lot(s) 1100	Subdivision. A 6-7 lot minor subdivision for six home sites and one cell tower site (possible future home site).	OLWSD attended pre-app. Previous Planning File No. Z0298-06-SS, (expired) Expires Jan 2019	1/3/19
Pre-Application	14824 SE Kellogg Ave	Minor Subdivision: two-parcel partition for two home sites / zone change	OLWSD attended pre-app and provided notes. Expires Jan 2019.	1/3/19
Pre-Application	16100 SE Harold	Minor Subdivision: our-lot minor subdivision for new home sites.	OLWSD attended pre-app and provided notes. Expires Jan 2019.	1/3/19
Pre-Application	14919 SE Woodland Way	Partition / Zone Change. Two-lot partition for one existing and one new home.	OLWSD attended pre-app and provided notes. Expires Jan 2019	1/3/19
Pre-Application	14063 SE Oatfield Rd	Design PreApp - Shipping Container Condo	Design PreApp - Shipping Container Condos - ZPAC0119-18	1/3/19
Pre-Application	No address: SE Cedar at SE Courtney	Duplex	OLWSD attended pre-app. County Timeline.	1/3/19
Pre-Application	17025 SE Oatfield Rd.	two-parcel partition	OLWSD attended pre-app. County Timeline.	1/3/19

OAK LODGE
WATER SERVICES

AGENDA ITEM

Agenda Item: Call for Public Comment
Item No.: 12
Presenters: N/A

Background:

Members of the public are invited to address the Board on any relevant topic. The Board may elect to limit the total time available for public comment or for any single speaker depending on meeting length.

A regular meeting of the Sunrise Water Authority Board of Commissioners will be held on **Wednesday, December 19, 2018 at 6:00 p.m**. at Sunrise Water Authority, 10602 SE 129th Avenue, Happy Valley, Oregon, 97086.

AGENDA

CALL REGULAR MEETING TO ORDER

Pledge of Allegiance
Approval of Agenda
Outstanding Items

PUBLIC COMMENT

Please sign the attendance sheet. Members of the public are welcome to speak for a maximum of three minutes. Public comment provided at the beginning of the agenda will be reserved for comment on special presentations, letters and complaints. Public comment related to specific agenda items must be held until the board addresses that item.

1. CONSENT AGENDA

1.1 Approval of Minutes of November 28, 2018

1.2 Approval of Intergovernmental License Agreement for Use of Real Property

1.3 Acceptance of Water Mains and Related Facilities for Mountain Gate Phase 2 Subdivision

1.4 Acceptance of Water Mains and Related Facilities for Misty Drive Office Building Commercial Development

2. DISCUSSION ITEMS

2.1 Appointment Vacant Board Position (Zone 2)

2.2 Financial Statements – November 2018

3. STAFF REPORTS

3.1 Manager's Update

3.2 Engineering & Construction Reports

3.3 Operational Reports

4. BOARD BUSINESS

4.1 Board Calendar

4.2 Liaison Reports

4.3 Information Items

4.4 Future Agenda Items

POSTED PER REQUIREMENTS, FRIDAY, DECEMBER 14, 2019.

The meeting site is accessible to persons with disabilities. Requests for an interpreter for the hearing impaired should be directed to Cindy Wolff at 503-761-0220 or cwolff@sunrisewater.com at least 48-hours in advance.

Sunrise Water Authority
December 19, 2018 Board Meeting
Paul Gornick's Notes

- **Gary Barth was selected and sworn in as the new Zone #2 commissioner.**

- **Board passed the consent agenda which included acceptance of two completed construction projects and approval of an intergovernmental license agreement with Clackamas River Water for mounting a CRW owned microwave communications antenna on a SWA elevated reservoir. SWA uses a different emergency radio system than CRW, and CRW will provide two radios to SWA as compensation, which will give SWA some redundancy in their emergency communication system.**

- **Board approved financial statements for the prior period.**

- **General Manager gave his update report – Reservoir #11 excavation is complete and concrete floor pours for the reservoir will be complete by the end of December. The acquisition of property for future Reservoir #12 is proceeding, with parties working through their respective legal representatives to arrange final details regarding the purchase/lease back of the residence. Staff is working on preliminary details related to site planning and layouts, for a new office/operations yard on our property off SE 172nd Ave.**

- **The engineering manager gave engineering and construction reports.**

- **Board discussed the future calendar and gave their liaison reports.**

OAK LODGE WATER SERVICES

AGENDA ITEM

Agenda Item: Business from the Board
Item No.: 13
Presenters: N/A

Background:

The Board of Directors appoints District representatives from time to time to serve as liaisons or representatives of the District to committees or community groups.

Directors assigned specific roles as representatives of the District are placed on the agenda to report to the Board on the activities, issues, and policy matters related to their assignment.