

APPENDIX A

Methodology and Procedures to Implement Water System Development Charges

I. Introduction

The calculation of the water SDCs presented in this section are based on the City of Talent (City)'s fixed asset records, planning data and future capital improvements as identified in the City's water master plan, entitled "City of Talent Water Master Plan" prepared by RH2 Engineering, Inc. dated April 2019 (the "Master Plan"). Other financial and accounting information was provided by the City.

To the extent that the cost and timing of future capital improvements change, then the SDCs presented in this section should be updated to reflect the cost of these adjustments.

II. Water Equivalent Units

The number of equivalent residential units (ERUs) for the next 20 years was determined based on the planning criteria from the Master Plan. The Water Master Plan assumes that 31 equivalent residential units (ERUs) develop each year through fiscal year 2025, and 60 ERUs each year thereafter. One ERU is defined as the flow equivalent of a 5/8-inch by 3/4-inch water meter. The City currently has 3,414 ERUs.

Over the next 20 years, an additional 1,113 ERUs are anticipated. Average daily flow is 204 gallons/day/ERU average daily flow. Peak day demand per ERU was calculated by multiplying average daily flow by a peaking factor of 2.66, which is based on historic monthly water consumption. The resulting peak day flow is 542 gallons/day/ERU. Average daily water demand would increase from approximately 0.80 million gallons per day to approximately 1.06 million gallons per day.

A summary of the number of ERUs, average and peak day demands in 2018 are presented in Table 1. Details of the determination of water ERUs are provided in Exhibit 1.

Table 1
City of Talent
Water Equivalent Residential Units

Description	ERUs
Equivalent Residential Units – 2018	3,414
ERU Average Day Demand	204 galls/day/ERU
ERU Peak Day Demand	542 galls/day/ERU

III. Source of Supply

The City purchases all of its water from the Medford Water Commission via the Talent-Ashland-Phoenix (TAP) transmission main. The City's cost for the TAP water mains and associated improvements are included in the calculations of the source-related reimbursement SDC.

Projects identified in the 2019 Water Master Plan are included in the improvement SDC. The calculated SDC for source-related facilities is \$1,446 per ERU. Details of the calculation are provided in Exhibit 2.

IV. Pump Stations

The City currently runs several pump station facilities to ensure adequate supply and water pressure throughout its system. Future improvements are to provide pump station upgrades for increased reliability to service growth. The cost of upgrades to existing pump stations and addition of the Railroad District Master Plan Area pump station results in an SDC for pump stations of \$1,245 per ERU. Details of the calculation are provided in Exhibit 3.

V. Distribution Storage

The City has sufficient storage capacity of 3.5 MG that will serve customers through the year 2040. The total cost of storage is \$0.86 per gallon for existing facilities and \$0.01 per gallon for the abandonment of Wagner Reservoir; applying these costs to the storage requirement per ERU of 773 gallons results in an SDC for distribution storage of \$676 per ERU. Details of the calculation are provided in Exhibit 4.

VI. Transmission & Distribution Mains

To determine the SDC for distribution, an inventory of the existing system was undertaken as well as those planned improvements are identified in the capital improvement program. These costs were subsequently divided by the total number of 2040 ERUs to determine the cost per ERU. Future capital improvements benefitting new development through 2040 and were then divided by the number of new ERUs projected over the planning horizon.

The calculated SDC for existing transmission and distribution mains is \$2,004 per ERU. For future transmission and distribution assets, the calculated SDC is \$181 per ERU. This results in a total SDC for transmission and distribution of \$2,186 per ERU. Details of the calculation are provided in Exhibit 5.

VII. Compliance Costs

As allowed under Oregon law, compliance costs were included as part of the overall SDC. The compliance costs through 2040 were estimated and divided by the total number of projected additional ERUs over the next twenty years. The calculation results in a compliance cost SDC of \$395 per ERU. Details of the analysis are provided in Exhibit 6.

VIII. Debt Service Credits

The debt service credit is included in the total reimbursement SDC calculation because future ERUs will pay the debt service for existing facilities they will benefit from in their rates. As described in the American Water Works Association M1 Manual Seventh Edition, page 340, “One approach for making revenue adjustments and to prevent double recovery of debt-related costs in calculating SDCs is to deduct the outstanding debt principal balance from the cost basis used in the calculation of the unit costs of capacity. By doing so, SDCs do not recover costs that will potentially be collected from the new customer in future water rates (i.e., debt service within the revenue requirements and user rates).”

The City currently has two outstanding bond issues. While it is likely that future bond issues will be necessary for implementation of the City’s long-term capital improvement plan, timing and amounts of those bond issues are not yet known.

The debt service credit is applied to the combined system reimbursement SDC fee (source, pumping, storage, transmission and distribution SDC fee components together). It is therefore appropriate that only a portion of the total outstanding principal be applied in the calculation. In the determination of the debt service credit, outstanding principal for the two existing bond issues was allocated to future ERUs to determine the portion of outstanding principal benefitting future users of the water system. This portion of outstanding principal, calculated to be 17% of the total, was then divided by the number of anticipated ERUs that will develop in the City until all debt service has been retired (the period during which future users will pay for the debt service in rates). A debt service credit of \$762 per ERU is applied to the total water SDCs. Details of the calculation are provided in Exhibit 7.

IX. Total Water System Development Charge

The calculated water SDC per ERU (5/8” x 3/4” meter) is \$5,185. The SDCs for larger meter sizes are determined by multiplying the SDC for a 5/8”x 3/4” meter by AWWA’s weighting factors. The weighting factors are based on AWWA safe operating capacities for displacement type meters for meters 2” and smaller, and compound type meters for meters 3” and larger to reflect the costs incurred by the City in providing water service. Details of the total water SDCs for the City are provided in Table 2 and Exhibit 8. The charge is weighted by meter size to account for the capacity requirements of the customer.

**Table 2
City of Talent
Calculated Water System Development Charges**

Fee Component	SDC Fee Calculation
Source	\$1,446
Pumping	\$1,245
Storage	\$676
Trans. & Distr.	\$2,186
Compliance	\$395
Debt Service Credit	- \$762
Total	\$5,185 per ERU

Meter Size	Meter Capacity Ratio	Water SDC
3/4” x 5/8”	1.0	\$5,185
1”	2.5	\$12,964
1.5”	5.0	\$25,926
2”	8.0	\$41,483
3”	16.0	\$82,967
4”	25.0	\$129,635
6”	50.0	\$259,271
8”	80.0	\$414,832
10”	115.0	\$596,324

The detail of the calculation of the reimbursement fee and improvement fee components is provided in Table 3.

Table 3
City of Talent
Water System Development Charge Summary

Fee Component	Reimbursement	Improvement	Total
Source	\$1,396	\$50	\$1,446
Pumping	\$138	\$1,107	\$1,245
Storage	\$667	\$8	\$676
Trans. & Distr.	\$2,004	\$181	\$2,186
Compliance	\$0	\$395	\$395
Debt Service Credits	-\$762	\$0	-\$762
Total	\$3,443	\$1,742	\$5,185

X. Summary

The 2019 water SDC calculations are based on the engineering design criteria of the City's water system, estimated current costs of existing assets, estimated future capital improvements costs through 2040 and "generally accepted" ratemaking principles. The calculated 2019 water SDCs are presented in Exhibit 8. The current 2018 water SDCs are presented in Exhibit 9.

EXHIBITS

WATER SYSTEM DEVELOPMENT CHARGES

EXHIBIT 1 Determination of ERUs

EXHIBIT 2 Source-Related Plant SDC

EXHIBIT 3 Pump Stations SDC

EXHIBIT 4 Storage Plant SDC

EXHIBIT 5 Transmission and Distribution Plant SDC

EXHIBIT 6 Water Compliance Costs

EXHIBIT 7 Water Credit for Debt Service Payments

EXHIBIT 8 Proposed 2019 Water SDCs

EXHIBIT 9 Adopted 2018 Water SDCs

Exhibit 1
Determination of ERUs

Year	Average # of ERUs	Annual Additional ERUs	Avg. Daily Demand	Max. Daily Demand
			mgd	mgd
<i>Avg. GPD per ERU (per 2019 Water Master Plan)</i>			<i>204</i>	
<i>Peak GPD per ERU (per 2019 Water Master Plan)</i>				<i>542</i>
2018	3,414		0.80	2.12
2019	3,445	31	0.81	2.14
2020	3,475	31	0.81	2.16
2021	3,506	31	0.82	2.18
2022	3,537	31	0.83	2.20
2023	3,568	31	0.84	2.22
2024	3,598	31	0.84	2.24
2025	3,629	31	0.85	2.26
2026	3,689	60	0.86	2.30
2027	3,749	60	0.88	2.33
2028	3,809	60	0.89	2.37
2029	3,868	60	0.91	2.41
2030	3,928	60	0.92	2.44
2031	3,988	60	0.93	2.48
2032	4,048	60	0.95	2.52
2033	4,108	60	0.96	2.56
2034	4,168	60	0.98	2.59
2035	4,228	60	0.99	2.63
2036	4,288	60	1.00	2.67
2037	4,347	60	1.02	2.70
2038	4,407	60	1.03	2.74
2039	4,467	60	1.05	2.78
2040	4,527	60	1.06	2.82
Additional ERUs / Water Demand		1,113	0.26	0.69

Source: City of Talent 2018 Water Master Plan Update.

Exhibit 2
Source-Related Plant SDC

Water Supply Assets	2004 Cost	2019 Cost [1]	Percent SDC Eligible	2019 Total SDC Eligible Costs
	<i>Cost Increase</i>	<i>1.53</i>		
TAP Improvements	\$5,644,688	\$8,633,609	100%	\$8,633,609
TAP Capacity (gpd)				3.35
Cost per Gallon				\$2.58
Use per ERU (maximum gallons per day)				541.62
Reimbursement Fee per ERU				\$1,396
Master Plan Projects		Through 2040		
S-1 Telemetry Mapping		\$14,000	50%	\$7,000
S-2 Update SCADA system		\$100,000	50%	\$50,000
S-3 Backup generator at Talent BPS		\$178,000	50%	\$89,000
S-4 Addition of third pump at Talent BPS		\$115,000	100%	\$115,000
S-5 Addition of temporary small pump at Talent BPS		\$50,000	100%	\$50,000
S-6 Relocate TAP pipeline for ODOT bridge project in Phoenix		\$100,000	0%	\$0
Subtotal Master Plan Projects		\$557,000	56%	\$311,000
TAP Capacity (gpd)				3.35
Cost per Gallon				\$0.09
Use per ERU (maximum gallons per day)				541.62
Total 2019 Improvement Fee per ERU				\$50
2019 Calculated Supply SDC Fee				
Reimbursement Fee				\$1,396
Improvement Fee				\$50
Total 2019 Supply Fee per ERU				\$1,446
Source: Ordinance #730 and RH2 Engineering, November 2018.				source
[1] Costs increased by the ENR CCI:	Nov-04	Nov-18		
	7,312	11,184		

**Exhibit 3
Pump Stations SDC**

Pump Station Assets	2004 Cost	2019 Cost [1]	Percent SDC Eligible	2019 Total SDC Eligible Costs
	<i>Cost increase</i>	<i>1.53</i>		
Assets Built before 2004	\$95,918	\$146,708	100%	\$146,708
Assets Built since 2004				
Main Booster PS Upgrade	\$300,000	\$458,853	100%	\$458,853
Variable Speed Drives for PS	\$25,000	\$38,238	50%	\$19,119
Subtotal Assets Built since 2004	\$325,000	\$497,091	96%	\$477,972
Total Existing Pump Station Assets	\$420,918	\$643,798	97%	\$624,680
2040 ERUs				4,527
Pump Station Reimbursement Fee per ERU				\$138
Master Plan Project Number		Through 2040		
PS-2 Railroad District Master Plan Area BPS		\$1,232,000	100%	\$1,232,000
Additional ERUs				1,113
Pump Station Improvement Fee per ERU				\$1,107
2019 Calculated Pump Station SDC Fee				
Reimbursement Fee				\$138
Improvement Fee				\$1,107
Total 2019 Pump Station Fee per ERU				\$1,245

Source: Ordinance #730 and RH2 Engineering, November 2018.

pump

[1] Costs increased by the ENR CCI:	Nov-04	Nov-18
	7,312	11,184

**Exhibit 4
Storage Plant SDC**

Storage Assets	2004 Cost	2019 Cost [1]	Percent SDC Eligible	2019 Total SDC Eligible Costs
Belmont 1	<i>Cost Increase</i> \$1,176,717	1.53 \$1,799,801	100%	\$1,799,801
Assets Built Since 2004				
1.5 MG Reservoir	\$1,500,000	\$2,294,266	50%	\$1,147,133
Rapp Rd (pipeline - new tank)	\$96,000	\$146,833	50%	\$73,416
Subtotal Assets Built Since 2004	\$1,596,000	\$2,441,099	50%	\$1,220,549
Total Existing Storage Facilities	\$2,772,717	\$4,240,899	71%	\$3,020,350
2040 Storage Capacity (mgd)				3.5
Calculated Storage Reimbursement Fee per Gallon				\$0.86
Storage Requirement per ERU				773
Storage Reimbursement Fee per ERU				\$667
Master Plan and Other Future Projects Through 2040				
Abandon Wagner Reservoir	\$50,000	\$76,000	50%	\$38,000
Total Master Plan and Other Future Projects				\$38,000
Year 2040 Storage Capacity (mgd)				3.5
Calculated Storage Improvement Fee per Gallon				\$0.01
Storage Requirement per ERU				773
Storage Improvement Fee per ERU				\$8
2019 Calculated Storage SDC Fee				
Reimbursement Fee				\$667
Improvement Fee				\$8
Total 2019 Storage Fee per ERU				\$676

Source: Ordinance #730 and RH2 Engineering, November 2018.

store

[1] Costs increased by the ENR CCI:

Nov-04	Nov-18
7,312	11,184

Exhibit 5 Water Transmission and Distribution SDC

Transmission Assets	2004 Cost	2019 Cost [1]	Percent SDC Eligible	2019 Total SDC Eligible Costs
	<i>Cost Increase</i>	<i>1.53</i>		
Transmission & Distribution Facilities Built Prior to 2004	\$5,224,912	\$7,991,557	100%	\$7,991,557
Facilities Built Since 2004				
N. Pacific Hwy	\$184,690	\$282,485	56%	\$158,192
N. Pacific Hwy - Suncrest Rd	\$11,360	\$17,375	100%	\$17,375
Rapp Rd	\$103,200	\$157,845	75%	\$118,384
N. Pacific Hwy @ Rapp Rd	\$3,600	\$5,506	56%	\$3,083
Lithia Way & Creel Rd	\$3,600	\$5,506	75%	\$4,130
Talent Ave (Creel Rd - Joy Dr)	\$40,800	\$62,404	44%	\$27,458
Talent Ave (Rapp Rd)	\$29,600	\$45,274	44%	\$19,920
Creel Rd (Talent Ave - Lithia Way)	\$52,000	\$79,535	44%	\$34,995
Gibson St (Colver Rd)	\$41,600	\$63,628	75%	\$47,721
Front St RR Xing	\$65,250	\$99,801	100%	\$99,801
Connection to Deborah Dr	\$9,600	\$14,683	100%	\$14,683
SE Road Project (Rapp Rd)	\$288,640	\$441,478	100%	\$441,478
West St resize - 4" to 8"	\$30,840	\$47,170	50%	\$23,585
Wagner St - 8" D.I. pipe	\$56,141	\$85,868	50%	\$42,934
Gibson Neighborhood Improvements	\$35,622	\$54,484	50%	\$27,242
Subtotal Facilities Built since 2004	\$956,543	\$1,463,042	74%	\$1,080,981
Total Transmission and Distribution Facilities	\$6,181,455	\$9,454,600	96%	\$9,072,539
2040 ERUs				4,527
Reimbursement Fee per ERU				\$2,004
Master Plan Project Number Through 2040				
p-1	Fire Flow Improvements: Various low priority pipe			
through	improvements for increased fire flow criteria or future fire flow			
p-7	deficiencies. To be addressed as development occurs or as pipe			
		needs replacement.	\$728,500	0%
				\$0
T-1a	W Valley View Road Transmission Line: Relocate existing pipe in			
	truck stop property north of Valley View		\$146,000	0%
				\$0
T-1b	W Valley View Road Transmission Line: Install pipe in Valley View			
	Road and Wagner Creek crossing		\$95,000	0%
				\$0
T-1c	W Valley View Road Transmission Line: Install pipe from Valley			
	View Rd along west side of Wagner Creek and tie into existing			
	pipe in Hwy 99		\$279,000	0%
				\$0
T-2	Gateway Pipeline: Connect pipe in Gangnes Rd to pipe in the			
	Roundabout with 8-in DI pipe.		\$202,000	100%
				\$202,000
T-3	2nd St and Bain St Pipelines: Connect Main St. to Bain St on 2nd.			
	Connect 1st St to Wagner St on Bain St with 8-in DI pipe.		\$322,000	0%
				\$0
Total Master Plan Pipelines		\$1,772,500	11%	\$202,000
Additional ERUs				1,113
Improvement Fee per ERU				\$181
2019 Calculated Transmission and Distribution SDC Fee				
Reimbursement Fee				\$2,004
Improvement Fee				\$181
Total 2019 Transmission and Distribution Fee per ERU				\$2,186

Source: Ordinance #730 and RH2 Engineering, November 2018.

pipes

[1] Costs increased by the ENR CCI:

Nov-04	Nov-18
7,312	11,184

**Exhibit 6
Water Compliance Costs**

Item	2019 Cost	Percent SDC Eligible	2019 Total SDC Eligible Costs
	Through 2040		
City Water Master Plan Updates	\$200,000	100%	\$200,000
Water Management and Conservation Plans	\$80,000	100%	\$80,000
Seismic Resilience Plan	\$20,000	47%	\$9,400
TAP Water Master Plan Update	\$150,000	100%	\$150,000
Total Compliance Cost	\$450,000	98%	\$439,400
Estimated Additional EDUs through 2040			1,113
2019 Compliance Cost per EDU			\$395

Source: Ordinance #730 and RH2 Engineering, November 2018.

comp

Exhibit 7
Water Credit for Debt Service

Item	Calculation
LOCAP Principal	\$2,930,000
OECD Principal	\$940,319
Total Outstanding Principal	\$3,870,319
Allocation to Future ERUs (see below)	17%
Future ERU Portion of Outstanding Principal	\$665,862
Growth in ERUs until Debt Retirement (2036)	874
Credit for Debt Service per ERU	\$762

Fee Component	Reimbursement Fee per ERU	Growth in ERUs	Reimbursement Fees	Total Reimbursement Costs
Source	\$1,396	874	\$1,219,331	\$8,633,609
Pumping	\$138	874	\$120,539	\$624,680
Storage	\$667	874	\$582,809	\$3,020,350
Transmission & Distribution	\$2,004	874	\$1,750,644	\$9,072,539
Total	\$4,205		\$3,673,323	\$21,351,177
Share of Reimbursement Costs paid by Growth in ERUs				17%

Source: Ordinance #730 and City debt schedules provided November 2018.

sdc debt

Exhibit 8
Proposed 2019 Water SDCs

Fee Component	Fee Portion per ERU		
	Reimbursement	Improvement	Total Fee
Source	\$1,396	\$50	\$1,446
Pumping	\$138	\$1,107	\$1,245
Storage	\$667	\$8	\$676
Transmission & Distribution	\$2,004	\$181	\$2,186
Compliance Costs	\$0	\$395	\$395
Debt Service Credit	(\$762)	\$0	(\$762)
Total Fee	\$3,443	\$1,742	\$5,185
<i>Percentage of Total Fee</i>	<i>66%</i>	<i>34%</i>	

Source: City of Talent 2018 Water Master Plan Update and HEC.

Meter Size	Ratio	Water SDC
3/4" x 5/8"	1.0	\$5,185
1"	2.5	\$12,964
1.5"	5.0	\$25,927
2"	8.0	\$41,483
3"	16.0	\$82,967
4"	25.0	\$129,635
6"	50.0	\$259,271
8"	80.0	\$414,833
10"	115.0	\$596,324

Exhibit 9
Adopted 2018 Water SDCs

Meter Size	Reimbursement Fee	Improvement Fee	Ratio	Water SDC Effective March 1, 2018
	75%	25%		
3/4" x 5/8"	\$2,406	\$815	1.0	\$3,221
1"	\$6,017	\$2,037	2.5	\$8,054
1.5"	\$12,033	\$4,074	5.0	\$16,107
2"	\$19,253	\$6,518	8.0	\$25,771
3"	\$38,507	\$13,036	16.0	\$51,543
4"	\$60,167	\$20,368	25.0	\$80,535
6"	\$120,335	\$40,736	50.0	\$161,071
8"	\$192,536	\$65,177	80.0	\$257,713
10"	\$276,772	\$93,692	115.0	\$370,464

Source: City of Talent, November 2018.

curr sdc

Note: The SDC schedule was adopted at one-half the calculated fees.