



Water and Wastewater Utility Rate Model Tool

City Council Presentation
July 30, 2019

What is a utility rate model?

- Compares revenues to the operating and capital costs to determine if the existing rates are adequate to recover all costs (Revenue Requirement Analysis)
- Allocates the revenue requirements to customer classes in a fair and equitable manner (Cost-of-Service Analysis)
- Considers current or proposed rate structures and how revenues would be collected across customer classes (Rate-Design Analysis)

Rate Model Tool – Inputs

- Water consumption
- Expenditures (three years actuals, one year budgeted)
- Debt service
- Capital Improvement Projects
- Water loss

| | A | B | C | D | E | F | G | H | I | J |
|-----|----------------------------------|---|---|---|---|---|--------------|--------------|--------------|--------------|
| 163 | TABLE | | | | | | | | | |
| 164 | WATER UTILITY | | | | | | | | | |
| 165 | RAW WATER RATES | | | | | | | | | |
| 166 | CITY OF CORPUS CHRISTI | | | | | | | | | |
| 167 | Item | | | | | | 2016 | 2017 | 2018 | 2019 |
| 168 | | | | | | | | | | |
| 169 | Operating Expenses | | | | | | | | | |
| 170 | O&M Expenses (w/o minor capital) | | | | | | | | | |
| 171 | | 30200 Lake Corpus Christi Reservoir Costs | | | | | \$ 1,071,151 | \$ 1,028,336 | \$ 1,180,031 | \$ 1,214,218 |
| 172 | | 30205 Sunrise Beach | | | | | \$ 325,935 | \$ 274,633 | \$ 307,041 | \$ 358,885 |
| 173 | | 30210 Choke Canyon Reservoir | | | | | \$ 953,525 | \$ 897,266 | \$ 971,186 | \$ 992,247 |
| 174 | | 30250 Lake Texana Pipeline | | | | | \$ 835,661 | \$ 876,356 | \$ 1,125,472 | \$ 1,059,888 |

| | | | | | | | | | | |
|------|--|--|--------------------|----------------------------|--------------------------|-------------|-------------|-------------|-------------|--|
| 1282 | TABLE | | | | | | | | | |
| 1283 | CAPITAL IMPROVEMENTS PROJECTS (000) | | | | | | | | | |
| 1284 | WATER FUND | | | | | | | | | |
| 1285 | CITY OF CORPUS CHRISTI | | | | | | | | | |
| 1286 | | | | | | | | | | |
| 1287 | | | | | | | | | | |
| 1288 | | Project Name | Cost Center | Fund Project? (Y/N) | Source of Funding | 2018 | 2019 | 2020 | 2021 | |
| 1289 | | Nueces River Raw Water Pump Station | Raw Diversic | Yes | Debt | | \$ - | \$ 67 | | |
| 1290 | | Nueces River Raw Water Pump Station Transmission Main | Raw Diversic | Yes | Cash | | | | | |
| 1291 | | Nueces River Raw Water Pump Station Transmission Main | Raw Diversic | Yes | Debt | \$ 2,000 | | | | |
| 1292 | | ONSWTP High Service Building No. 3 | Treatment | Yes | Cash | | | | | |
| 1293 | | ONSWTP High Service Building No. 3 | Treatment | Yes | Debt | \$ 9,500 | \$ 2,000 | | | |
| 1294 | | ONSWTP Fluoride Feed System Improvements | Treatment | Yes | Cash | | | | | |
| 1295 | | ONSWTP Raw Water Influent and Chemical Facilities Improvements | Treatment | Yes | Debt | \$ 10,141 | \$ 14,000 | \$ 3,500 | | |
| 1296 | | ONSWTP Maintenance Building Relocation | Treatment | Yes | Cash | | | | | |
| 1297 | | ONSWTP Intermediate Sludge Removal Phase 1 | Treatment | Yes | Cash | | | | | |
| 1298 | | ONSWTP Solids Handling and Disposal Facilities | Treatment | Yes | Debt | \$ 4,900 | \$ 6,500 | | | |
| 1299 | | ONSWTP Site Infrastructure Improvements | Treatment | Yes | Debt | \$ 837 | | | | |
| 1300 | | ONSWTP Replacement of Sedimentatin Basin Sludge Collectors | Treatment | Yes | Cash | | | | | |
| 1301 | | ONSWTP Replacement of Sedimentatin Basin Sludge Collectors | Treatment | Yes | Debt | \$ 2,000 | \$ 2,000 | | | |
| 1302 | | ONSWTP Chlorine Storage and Handling Facilities Improvements | Treatment | Yes | Debt | \$ 3,329 | \$ 4,500 | | | |
| 1303 | | ONSWTP Electrical Distribution Improvements | Treatment | Yes | Debt | \$ 1,000 | \$ 2,500 | | | |
| 1304 | | ONSWTP Clearwell No. 3 | Treatment | Yes | Debt | \$ 1,000 | \$ 2,000 | \$ 8,000 | \$ | |
| 1305 | | Citywide IDIQ Program | Network | Yes | Debt | \$ 5,007 | \$ 6,000 | \$ 4,000 | \$ | |
| 1306 | | Elevated Water Storage Tanks - Phase 2 | Network | Yes | Cash | | | | | |
| 1307 | | Elevated Water Storage Tanks - Phase 3 | Network | Yes | Cash | | | | | |
| 1308 | | Elevated Water Storage Tanks - Phase 3 | Network | Yes | Debt | \$ 3,000 | \$ 7,000 | \$ 7,000 | | |
| 1309 | | Staples Street Pump Station Improvements | Network | Yes | Cash | | | | | |
| 1310 | | Padre Island Water and Gas Line Extension | Network | Yes | Cash | | | | | |
| 1311 | | Water System Process Control Reliability Improvements | Network | Yes | Cash | | | | | |
| 1312 | | Water Transmission Infrastructure Cathodic Protection Improvements | Network | Yes | Cash | | | | | |

Rate Model Tool - Outputs

- Analysis of water usage by customer type
- Cost of service for each segment of water system
- Proposed rate structures and rates
- 'True Up' calculations

| 5 | Item | 2016 | 2017 | 2018 | 2019 |
|-----|--|----------------|---------------|----------------|----------------|
| 95 | | | | | |
| 96 | METERED WATER USE - TREATED WATER (mg) | | | | |
| 97 | CC Retail | | | | |
| 98 | Inside City Limits (ICL) Retail | | | | |
| 99 | Residential | 5,968.1 | 5,912.2 | 5,997.5 | 6,027.5 |
| 00 | GC Irrigation | 2.3 | 2.5 | 2.0 | 2.049 |
| 01 | Commercial & Other | 4,499.6 | 4,628.8 | 4,598.3 | 4,621.3 |
| 02 | Large Volume Users | 786.8 | 797.9 | 675.8 | 675.3 |
| 03 | Unbilled City Use | 307.0 | 65.2 | 233.6 | 234.8 |
| 04 | Total Metered | 11,563.8 | 11,406.6 | 11,507.2 | 11,561.0 |
| 05 | | | | | |
| 450 | WATER TREATMENT RATE | | | | |
| 06 | CITY OF CORPUS CHRISTI | | | | |
| 07 | Item | 2016 | 2017 | 2018 | 2019 |
| 08 | | | | | |
| 09 | 475 Volume Rate Revenue Requirement (preliminary) | \$ 19,866,098 | \$ 22,432,051 | \$ 22,020,094 | \$ 23,000,000 |
| 10 | 476 | | | | |
| 11 | 477 Gallonage Leaving System Component | 19,124.0 | 19,888.7 | 19,704.0 | |
| 12 | 478 Volume Rate (preliminary) | \$ 1.039 | \$ 1.128 | \$ 1.118 | \$ 1.118 |
| 13 | 479 | | | | |
| 480 | Operating Revenue (preliminary) | \$ 19,883,580 | \$ 22,449,532 | \$ 22,037,834 | \$ 23,000,000 |
| 481 | Operating Expenses | \$ 15,154,364 | \$ 16,272,372 | \$ 20,039,862 | \$ 18,000,000 |
| 482 | Net Operating Revenue Available for Debt Service | \$ 4,729,216 | \$ 6,177,160 | \$ 1,997,973 | \$ 5,000,000 |
| 483 | | | | | |
| 484 | Priority Coverage Requirement @ 1 | \$ 4,139,856 | \$ 3,976,967 | \$ 3,171,909 | \$ 3,000,000 |
| 485 | Priority Coverage Surplus (Deficit) | \$ 589,360 | \$ 2,200,193 | \$ (1,173,937) | \$ 1,000,000 |
| 486 | | | | | |
| 487 | Subordinate Coverage Requirement @ 1 | \$ 7,163,224 | \$ 7,107,800 | \$ 6,429,449 | \$ 9,000,000 |
| 488 | Subordinate Coverage Surplus (Deficit) | \$ (2,434,008) | \$ (930,640) | \$ (4,431,476) | \$ (3,000,000) |
| 489 | | | | | |
| 490 | Recovery of Costs for Water Loss not Previously Billed | \$ 837,008 | \$ 780,703 | \$ 804,704 | \$ 800,000 |
| 491 | Volume Rate Revenue Requirement (adjusted) | \$ 23,137,114 | \$ 24,143,393 | \$ 27,256,274 | \$ 28,000,000 |
| 492 | Treatment Volume Rate (adjusted) | \$ 1.210 | \$ 1.214 | \$ 1.383 | \$ 1.383 |
| 493 | | | | | |

Rate Model Tool

PROS

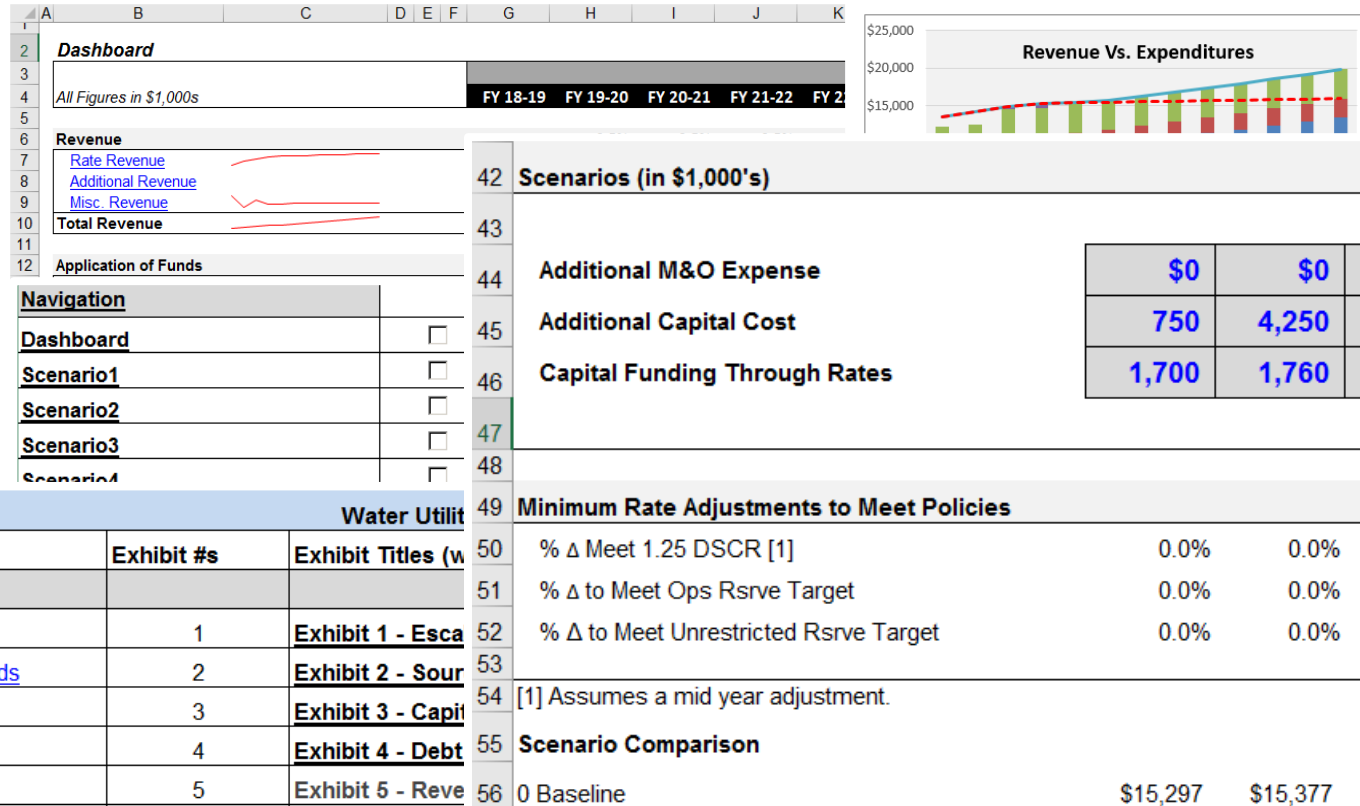
- Not a software application, is an Excel workbook
- Flexible, customizable
- Meets contractual obligations for wholesale customers
- Follows AWWA (American Water Works Assn) best practices

CONS

- Complex and cumbersome
- Not user-friendly

Rate Model Tool – Sample enhancements

- Dashboards
- Navigation
- Visuals
- Exhibits
- Scenarios



Timeline and Next Steps

November 2018

An RFQ was issued through Engineering Services, to analyze, evaluate and improve the City's utility rate structure and implement a new model in a more user-friendly application. HDR was the selected contractor

January 2019

A small contract for with HDR was executed to begin the 2019 rate review and rate model update

July 30, 2019

Proposed amendment to the contract with HDR to upgrade the current rate model tool with additional 'user-friendly' enhancements such as screens to run scenarios and graphical output, as well as development of a reference manual and training for staff on its use