



May 1, 2018

City of Victoria, Texas  
Water and Wastewater Cost of Service and  
Rate Design Study

NewGen  
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# Purpose for the Water and Wastewater Cost of Service and Rate Design Study

- Develop a 5-year forecast of the operating and capital costs *(including new reoccurring program costs and capital improvements)*
- Review revenue realized under current rates
- Develop water and wastewater rates that continue to ensure the financial integrity of the utility

# Development of a 5-Year Forecast

- Start with the FY 2018 Budget
- Develop the Capital Improvement Plan (See Schedule 2 of the Report)
  - Cash
  - Debt
  - Reserves

# Capital Improvement Funding

|                         | FY 2018            | FY 2019            | FY 2020            | FY 2021            | FY 2022            |
|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| <b><u>WATER</u></b>     |                    |                    |                    |                    |                    |
| Cash/Budget Reoccurring | \$650,000          | \$650,000          | \$700,000          | \$700,000          | \$862,500          |
| Proposed Debt           | -                  | -                  | -                  | 7,250,000          | 5,500,000          |
| Reserves                | 1,150,000          | 1,015,000          | 720,000            | -                  | 200,000            |
| Other Funding Sources   | 296,910            | -                  | -                  | -                  | -                  |
| <b>Total</b>            | <b>\$2,096,910</b> | <b>\$1,665,000</b> | <b>\$1,420,000</b> | <b>\$7,950,000</b> | <b>\$6,562,500</b> |

|                          | FY 2018            | FY 2019            | FY 2020            | FY 2021            | FY 2022            |
|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| <b><u>WASTEWATER</u></b> |                    |                    |                    |                    |                    |
| Cash/Budget Reoccurring  | \$650,000          | \$650,000          | \$700,000          | \$700,000          | \$862,500          |
| Proposed Debt            | -                  | -                  | -                  | 7,250,000          | 5,500,000          |
| Reserves                 | 2,980,502          | 645,000            | 540,000            | 112,000            | 1,112,000          |
| Other Funding Sources    | -                  | 1,800,000          | 1,800,000          | 1,800,000          | 1,800,000          |
| <b>Total</b>             | <b>\$3,630,502</b> | <b>\$3,095,000</b> | <b>\$3,040,000</b> | <b>\$9,862,000</b> | <b>\$9,274,500</b> |

# Potential Programs & Large Purchases

|                                    | FY 2018    | FY 2019            | FY 2020          | FY 2021          | FY 2022          |
|------------------------------------|------------|--------------------|------------------|------------------|------------------|
| Water Distribution <sup>1</sup>    | N/A        | \$101,100          | \$55,100         | \$55,100         | \$55,100         |
| Wastewater Collection <sup>2</sup> | N/A        | 455,000            | 395,000          | 395,000          | 395,000          |
| Water Treatment <sup>3</sup>       | N/A        | 285,500            | 223,500          | 223,500          | 223,500          |
| Wastewater Treatment <sup>4</sup>  | N/A        | 89,500             | 29,500           | 29,500           | 29,500           |
| Wastewater Treatment <sup>5</sup>  | N/A        | 105,000            | 105,000          | 105,000          | 105,000          |
| <b>Total</b>                       | <b>N/A</b> | <b>\$1,036,100</b> | <b>\$808,100</b> | <b>\$808,100</b> | <b>\$808,100</b> |

1. Includes valve replacement program and capital/O&M costs associated with a ½ ton pick-up truck.
2. Includes manhole rehabilitation program, concrete line rehab program, and vehicle replacement.
3. Includes the rebuilding of 3 river pumps, water well rehabilitation, and capital/O&M costs associated with two new vehicles.
4. Includes the replacement of 3 clarifier drivers, as well as capital/O&M costs associated with two new vehicles.
5. Annual maintenance and lease costs for generators.

# Existing Debt & Proposed Debt

|                     | FY 2018            | FY 2019            | FY 2020            | FY 2021            | FY 2022            |
|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Existing Debt       |                    |                    |                    |                    |                    |
| Principal           | \$6,885,000        | \$7,155,000        | \$7,425,000        | \$6,490,000        | \$5,785,000        |
| Interest            | 2,366,074          | 2,098,991          | 1,809,495          | 1,546,338          | 1,335,088          |
| Total Existing Debt | \$9,251,074        | \$9,253,991        | \$9,234,495        | \$8,036,338        | \$7,120,088        |
| Proposed Debt       |                    |                    |                    |                    |                    |
| Principal           | -                  | -                  | -                  | \$630,000          | \$930,000          |
| Interest            | -                  | -                  | -                  | 499,806            | 1,061,361          |
| Total Proposed Debt | -                  | -                  | -                  | \$1,129,806        | \$1,991,361        |
| <b>Total Debt</b>   | <b>\$9,251,074</b> | <b>\$9,253,991</b> | <b>\$9,234,495</b> | <b>\$9,166,144</b> | <b>\$9,111,449</b> |

# Inflation & Growth Factors

| Inflation/Growth Factor Description <sup>1</sup> | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|--------------------------------------------------|---------|---------|---------|---------|
| General <sup>2</sup>                             | 2.30%   | 2.30%   | 2.30%   | 2.30%   |
| Personnel <sup>3</sup>                           | 2.30%   | 2.50%   | 3.00%   | 3.00%   |
| Benefits <sup>3</sup>                            | 1.00%   | 1.00%   | 1.00%   | 1.00%   |
| Chemicals <sup>3</sup>                           | 1.00%   | 5.00%   | 5.00%   | 5.00%   |
| Electric <sup>3</sup>                            | 1.00%   | 1.00%   | 1.00%   | 1.00%   |
| Repairs & Maintenance <sup>3</sup>               | 2.00%   | 3.00%   | 3.00%   | 3.00%   |
| Customer Growth <sup>3</sup>                     | 0.50%   | 0.50%   | 1.00%   | 1.00%   |

1. Inflation factors apply to the cost of service forecast beginning in FY 2019.  
The City's fiscal year starts October 1<sup>st</sup> and ends September 30<sup>th</sup>.
2. Blue Chip Economic Indicators, CPI
3. Per City Staff

# Five-Year Revenue Requirement

|                                                 | FY 2018              | FY 2019              | FY 2020              | FY 2021              | FY 2022              |
|-------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Water Net Revenue Requirement <sup>1</sup>      | \$14,371,478         | \$14,839,922         | \$15,215,838         | \$14,781,192         | \$13,781,015         |
| Wastewater Net Revenue Requirement <sup>1</sup> | 10,517,916           | 11,530,664           | 11,342,617           | 12,077,523           | 13,726,029           |
| <b>Total Net Revenue Requirement</b>            | <b>\$ 24,889,394</b> | <b>\$ 26,370,586</b> | <b>\$ 26,558,455</b> | <b>\$ 26,858,715</b> | <b>\$ 27,507,044</b> |

1. Revenue Requirement – the amount of revenue that the Utility System must collect/receive from its customers to cover its operating cost, in order to provide adequate service to its customers.

# Projected Revenue Performance Under Current Rates<sup>1</sup>

|                                  | FY 2018              | FY 2019              | FY 2020              | FY 2021              | FY 2022              |
|----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>Water</b>                     |                      |                      |                      |                      |                      |
| Total Annual Revenue             | \$12,910,042         | \$12,971,008         | \$13,032,459         | \$13,161,779         | \$13,292,067         |
| Net Revenue Requirement          | 14,371,478           | 14,839,922           | 15,215,838           | 14,781,192           | 13,781,015           |
| <b>Over / (Under)</b>            | <b>(\$1,461,436)</b> | <b>(\$1,868,914)</b> | <b>(\$2,183,379)</b> | <b>(\$1,619,413)</b> | <b>(\$488,948)</b>   |
|                                  |                      |                      |                      |                      |                      |
| <b>Wastewater</b>                |                      |                      |                      |                      |                      |
| Total Annual Revenue             | \$12,479,206         | \$12,534,837         | \$12,590,949         | \$12,709,235         | \$12,828,483         |
| Net Revenue Requirement          | 10,517,916           | 11,530,664           | 11,342,617           | 12,077,523           | 13,726,029           |
| <b>Over / (Under)</b>            | <b>\$1,961,290</b>   | <b>\$1,004,173</b>   | <b>\$1,248,332</b>   | <b>\$631,712</b>     | <b>(\$897,546)</b>   |
|                                  |                      |                      |                      |                      |                      |
| <b>Over / (Under)</b>            | <b>\$499,854</b>     | <b>(\$864,741)</b>   | <b>(\$935,047)</b>   | <b>(\$987,701)</b>   | <b>(\$1,386,494)</b> |
| <b>Cumulative Over / (Under)</b> | <b>\$499,854</b>     | <b>(\$364,887)</b>   | <b>(\$1,299,934)</b> | <b>(\$2,287,635)</b> | <b>(\$3,674,129)</b> |

1. The current rates are not anticipated to generate sufficient revenue through FY 2022 to recover the costs of providing water and wastewater service, if the Utility incorporates the new reoccurring program expenses and capital improvements intended for system rehabilitation.

# Current Water Rates

## Volumetric Rate Structure

| Tier             | FY 2018 |
|------------------|---------|
| 0 - 2,000        | -       |
| 3,000 – 7,000    | \$1.92  |
| 8,000 – 18,000   | \$2.08  |
| 19,000 – 50,000  | \$2.40  |
| 51,000 – 75,000  | \$2.65  |
| 76,000 – 100,000 | \$2.80  |
| 100,000+         | \$2.95  |

1. Rate per 1,000 Gallons

## Monthly Minimum Bill Rates

| Meter Size | FY 2018    |
|------------|------------|
| 3/4"       | \$18.21    |
| 1"         | \$45.55    |
| 1.5"       | \$91.07    |
| 2"         | \$145.72   |
| 3"         | \$291.44   |
| 4"         | \$455.37   |
| 6"         | \$910.73   |
| 8"         | \$2,913.33 |
| 10"        | \$4,553.64 |

# Recommended Water Rates

- NewGen would not recommend any increases to the monthly base rate at this time, which includes up to 2,000 gallons of water consumption.
- NewGen would recommend the City adopt a 4-block rate structure for their volumetric water rates.

## 4-Block Rate Structure

| Tier            | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|-----------------|---------|---------|---------|---------|---------|
| 0 - 2,000       | N/A     | -       | -       | -       | -       |
| 3,000 – 10,000  | N/A     | \$2.25  | \$2.25  | \$2.25  | \$2.25  |
| 11,000 – 25,000 | N/A     | \$2.50  | \$2.50  | \$2.50  | \$2.50  |
| 25,000+         | N/A     | \$3.15  | \$3.15  | \$3.15  | \$3.15  |

1. Rate per 1,000 Gallons

# Recommended Water Rates *(continued)*

- *If the City does not adopt a 4-block rate structure, NewGen would recommend the City adopt the following volumetric rates.*

## 7-Block Rate Structure

| Tier             | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|------------------|---------|---------|---------|---------|---------|
| 0 - 2,000        | -       | -       | -       | -       | -       |
| 3,000 – 7,000    | \$1.92  | \$2.15  | \$2.15  | \$2.15  | \$2.15  |
| 8,000 – 18,000   | \$2.08  | \$2.35  | \$2.35  | \$2.35  | \$2.35  |
| 19,000 – 50,000  | \$2.40  | \$2.70  | \$2.70  | \$2.70  | \$2.70  |
| 51,000 – 75,000  | \$2.65  | \$3.00  | \$3.00  | \$3.00  | \$3.00  |
| 76,000 – 100,000 | \$2.80  | \$3.20  | \$3.20  | \$3.20  | \$3.20  |
| 100,000+         | \$2.95  | \$3.40  | \$3.40  | \$3.40  | \$3.40  |

1. Rate per 1,000 Gallons

# Current Wastewater Rates

## Volumetric Rate Structure

| Tier             | FY 2018 |
|------------------|---------|
| 0 - 2,000        | -       |
| 3,000 – 7,000    | \$2.47  |
| 8,000 – 18,000   | \$2.52  |
| 19,000 – 50,000  | \$2.57  |
| 51,000 – 75,000  | \$2.62  |
| 76,000 – 100,000 | \$2.77  |
| 100,000+         | \$2.92  |

1. Rate per 1,000 Gallons

## Monthly Minimum Bill Rates

| Meter Size | FY 2018    |
|------------|------------|
| 3/4"       | \$22.68    |
| 1"         | \$56.71    |
| 1.5"       | \$113.44   |
| 2"         | \$181.48   |
| 3"         | \$362.97   |
| 4"         | \$567.13   |
| 6"         | \$1,134.25 |
| 8"         | \$3,629.61 |
| 10"        | \$5,670.27 |

# Recommended Wastewater Rates

- NewGen would not recommend any increases to the monthly base rate at this time, which includes up to 2,000 gallons of wastewater usage.
- NewGen would recommend the City adopt a 4-block rate structure for their volumetric wastewater rates.

## 4-Block Rate Structure

| Tier            | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|-----------------|---------|---------|---------|---------|---------|
| 0 - 2,000       | N/A     | -       | -       | -       | -       |
| 3,000 – 10,000  | N/A     | \$2.50  | \$2.50  | \$2.50  | \$3.00  |
| 11,000 – 25,000 | N/A     | \$2.55  | \$2.55  | \$2.55  | \$3.05  |
| 25,000+         | N/A     | \$2.75  | \$2.75  | \$2.75  | \$3.25  |

1. Rate per 1,000 Gallons

# Recommended Wastewater Rates *(continued)*

- *If the City does not adopt a 4-block rate structure, NewGen would recommend the City adopt the following volumetric rates.*

## 7-Block Rate Structure

| Tier             | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|------------------|---------|---------|---------|---------|---------|
| 0 - 2,000        | -       | -       | -       | -       | -       |
| 3,000 – 7,000    | \$2.47  | \$2.47  | \$2.47  | \$2.47  | \$2.97  |
| 8,000 – 18,000   | \$2.52  | \$2.52  | \$2.52  | \$2.52  | \$3.02  |
| 19,000 – 50,000  | \$2.57  | \$2.57  | \$2.57  | \$2.57  | \$3.07  |
| 51,000 – 75,000  | \$2.62  | \$2.62  | \$2.62  | \$2.62  | \$3.12  |
| 76,000 – 100,000 | \$2.77  | \$2.77  | \$2.77  | \$2.77  | \$3.27  |
| 100,000+         | \$2.92  | \$2.92  | \$2.92  | \$2.92  | \$3.42  |

1. Rate per 1,000 Gallons

# Projected Revenue Performance Under Proposed Rates (4-Block Rate Structure)

|                                      | FY 2018              | FY 2019              | FY 2020              | FY 2021            | FY 2022          |
|--------------------------------------|----------------------|----------------------|----------------------|--------------------|------------------|
| <b>Water</b>                         |                      |                      |                      |                    |                  |
| Total Annual Revenue                 | \$12,910,042         | \$13,838,137         | \$13,903,883         | \$14,041,945       | \$14,181,051     |
| Net Revenue Requirement <sup>1</sup> | 14,371,478           | 14,839,922           | 15,215,838           | 14,781,192         | 13,781,015       |
| <b>Over / (Under)</b>                | <b>(\$1,461,436)</b> | <b>(\$1,001,785)</b> | <b>(\$1,311,955)</b> | <b>(\$739,247)</b> | <b>\$400,036</b> |
|                                      |                      |                      |                      |                    |                  |
| <b>Wastewater</b>                    |                      |                      |                      |                    |                  |
| Total Annual Revenue                 | \$12,479,206         | \$12,523,186         | \$12,579,236         | \$12,697,396       | \$13,788,749     |
| Net Revenue Requirement <sup>1</sup> | 10,517,916           | 11,530,664           | 11,342,617           | 12,077,523         | 13,726,029       |
| <b>Over / (Under)</b>                | <b>\$1,961,290</b>   | <b>\$992,522</b>     | <b>\$1,236,619</b>   | <b>\$619,873</b>   | <b>\$62,720</b>  |
|                                      |                      |                      |                      |                    |                  |
| <b>Over / (Under)</b>                | <b>\$499,854</b>     | <b>(\$9,263)</b>     | <b>(\$75,336)</b>    | <b>(\$119,374)</b> | <b>\$462,756</b> |
| <b>Cumulative Over / (Under)</b>     | <b>\$499,854</b>     | <b>\$490,591</b>     | <b>\$415,255</b>     | <b>\$295,881</b>   | <b>\$758,637</b> |

1. Revenue requirement incorporates the new reoccurring program expenses and capital improvements intended for system rehabilitation.

# Projected Revenue Performance Under Proposed Rates (7-Block Rate Structure)

|                                      | FY 2018              | FY 2019              | FY 2020              | FY 2021            | FY 2022          |
|--------------------------------------|----------------------|----------------------|----------------------|--------------------|------------------|
| <b>Water</b>                         |                      |                      |                      |                    |                  |
| Total Annual Revenue                 | \$12,910,042         | \$13,788,250         | \$13,853,749         | \$13,991,307       | \$14,129,906     |
| Net Revenue Requirement <sup>1</sup> | 14,371,478           | 14,839,922           | 15,215,838           | 14,781,192         | 13,781,015       |
| <b>Over / (Under)</b>                | <b>(\$1,461,436)</b> | <b>(\$1,051,672)</b> | <b>(\$1,362,089)</b> | <b>(\$789,885)</b> | <b>\$348,891</b> |
|                                      |                      |                      |                      |                    |                  |
| <b>Wastewater</b>                    |                      |                      |                      |                    |                  |
| Total Annual Revenue                 | \$12,479,206         | \$12,534,837         | \$12,590,949         | \$12,709,235       | \$13,800,715     |
| Net Revenue Requirement <sup>1</sup> | 10,517,916           | 11,530,664           | 11,342,617           | 12,077,523         | 13,726,029       |
| <b>Over / (Under)</b>                | <b>\$1,961,290</b>   | <b>\$1,004,173</b>   | <b>\$1,248,332</b>   | <b>\$631,712</b>   | <b>\$74,686</b>  |
|                                      |                      |                      |                      |                    |                  |
| <b>Over / (Under)</b>                | <b>\$499,854</b>     | <b>(\$47,499)</b>    | <b>(\$113,757)</b>   | <b>(\$158,173)</b> | <b>\$423,577</b> |
| <b>Cumulative Over / (Under)</b>     | <b>\$499,854</b>     | <b>\$452,355</b>     | <b>\$338,598</b>     | <b>\$180,425</b>   | <b>\$604,002</b> |

1. Revenue requirement incorporates the new reoccurring program expenses and capital improvements intended for system rehabilitation.

# Monthly Average Customer Impact (4-Block Structure)

- The table below presents the projected monthly impact for an average residential customer with a 3/4" meter, using 11,000 gallons of water and 8,000 gallons of wastewater per month.

|                | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|----------------|---------|---------|---------|---------|---------|
| Water          | \$36.13 | \$38.71 | \$38.71 | \$38.71 | \$38.71 |
| Wastewater     | 37.55   | 37.68   | 37.68   | 37.68   | 40.68   |
| Total Bill     | \$73.68 | \$76.39 | \$76.39 | \$76.39 | \$79.39 |
| Variance       | \$0.00  | \$2.71  | \$0.00  | \$0.00  | \$3.00  |
| Percent Change | 0.00%   | 3.68%   | 0.00%   | 0.00%   | 3.93%   |

# Monthly Average Customer Impact (7-Block Structure)

- The table below presents the projected monthly impact for an average residential customer with a 3/4" meter, using 11,000 gallons of water and 8,000 gallons of wastewater per month.

|                | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|----------------|---------|---------|---------|---------|---------|
| Water          | \$36.13 | \$38.36 | \$38.36 | \$38.36 | \$38.36 |
| Wastewater     | 37.55   | 37.55   | 37.55   | 37.55   | 40.55   |
| Total Bill     | \$73.68 | \$75.91 | \$75.91 | \$75.91 | \$78.91 |
| Variance       | \$0.00  | \$2.23  | \$0.00  | \$0.00  | \$3.00  |
| Percent Change | 0.00%   | 3.03%   | 0.00%   | 0.00%   | 3.95%   |

# Monthly Average Customer Impact (4-Block Structure)

- The table below presents the projected monthly impact for a commercial customer with a 1” meter, using 35,000 gallons of water and 30,000 gallons of wastewater per month.

|                | FY 2018  | FY 2019  | FY 2020  | FY 2021  | FY 2022  |
|----------------|----------|----------|----------|----------|----------|
| Water          | \$118.83 | \$132.55 | \$132.55 | \$132.55 | \$132.55 |
| Wastewater     | 127.62   | 128.71   | 128.71   | 128.71   | 142.71   |
| Total Bill     | \$246.45 | \$261.26 | \$261.26 | \$261.26 | \$275.26 |
| Variance       | \$0.00   | \$14.81  | \$0.00   | \$0.00   | \$14.00  |
| Percent Change | 0.00%    | 6.01%    | 0.00%    | 0.00%    | 5.36%    |

# Monthly Average Customer Impact (7-Block Structure)

- The table below presents the projected monthly impact for a commercial customer with a 1” meter, using 35,000 gallons of water and 30,000 gallons of wastewater per month.

|                | FY 2018  | FY 2019  | FY 2020  | FY 2021  | FY 2022  |
|----------------|----------|----------|----------|----------|----------|
| Water          | \$118.83 | \$128.05 | \$128.05 | \$128.05 | \$128.05 |
| Wastewater     | 127.62   | 127.62   | 127.62   | 127.62   | 141.62   |
| Total Bill     | \$246.45 | \$255.67 | \$255.67 | \$255.67 | \$269.67 |
| Variance       | \$0.00   | \$9.22   | \$0.00   | \$0.00   | \$14.00  |
| Percent Change | 0.00%    | 3.74%    | 0.00%    | 0.00%    | 5.48%    |

# Recommendations

- Implement the proposed water and wastewater rates
- Maintain current water and wastewater monthly bill rates, which includes up to 2,000 gallons of water consumption / wastewater usage
- Maintain the current wastewater industrial surcharging formula
  - Assuming that customers BOD/TSS levels remain fairly constant, the Utility should observe a slight increase in surcharge revenues as the wastewater volumetric rates increase (in Year 5)
- Monitor both water and wastewater revenues to continue ensuring the financial integrity of the Utility over the five-year forecast



## Questions and Discussion

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