Town of Old Lyme WPCA

Sound View Sewer Cost and Benefit Assessment

October 2019

Benefit Assessment Principles

1. Assessment should be fair and commensurate with the expected benefit
2. Every dwelling receives the benefits of sewer regardless of its size
3. Larger sized dwellings (square footage) have larger capability to generate more effluent and therefore should have a higher assessment
4. The maximum to minimum assessment ratio should be reasonable
5. The algorithm should be easy to explain and for all to understand
6. Commercial properties (especially restaurants) have larger capability to generate more effluent relative to their square footage
   - A premium (TBD) should be assessed to the few based on analysis and well established guidelines on capacity with respect to the commercial activity
   - The premium will then be distributed to the residential dwellings to (slightly) lower their final costs

Benefit Assessment Algorithm Baselines

- There are 236 dwellings in Sound View and MTA-B

- The estimated total <u>net</u> cost for sewer is $7,440,000

- Woodward and Currant study documented 270 EDUs using generally accepted guidelines (i.e. dwellings are assigned different EDUs based on capability to generate effluent)

Description of Benefit Assessment Algorithm

- Each dwelling is assigned a base assessment of $21,000 (connection fee included for simplicity)
  - **Base Cost Recovered = $21,000 x 236 = $4,956,000**
- The remaining cost **($2,484,000)** is assigned to all dwellings based on their respective capabilities to generate effluent
- Define a cost adjustment multiplier based on the documented square footage of the dwelling
  - 0 = Area less than or equal to 500 sq. ft (27 dwellings)
  - 1 = Area greater than 500 and less than 1000 sq. ft (93 dwellings)
  - 2 = Area greater than 1000 and less than 2000 sq. ft (89 dwellings)
  - 3 = Area greater than 2000 and less than 3000 sq. ft (15 dwellings)
  - 4 = Area greater than 3000 sq. ft (12 dwellings)
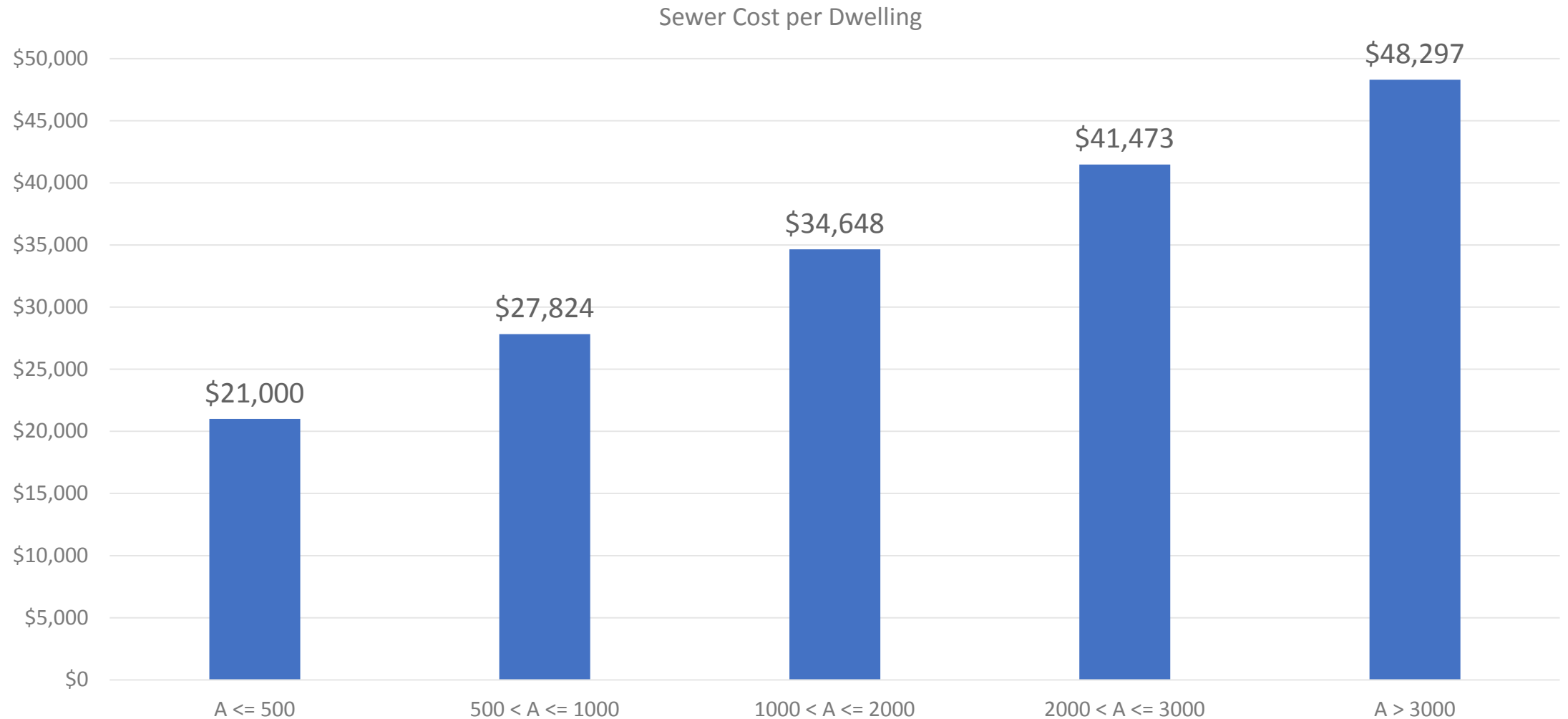- Note: The cost adjustment multipliers are {0, 1, 2, 3, 4}

Distribution Based on Dwelling Size
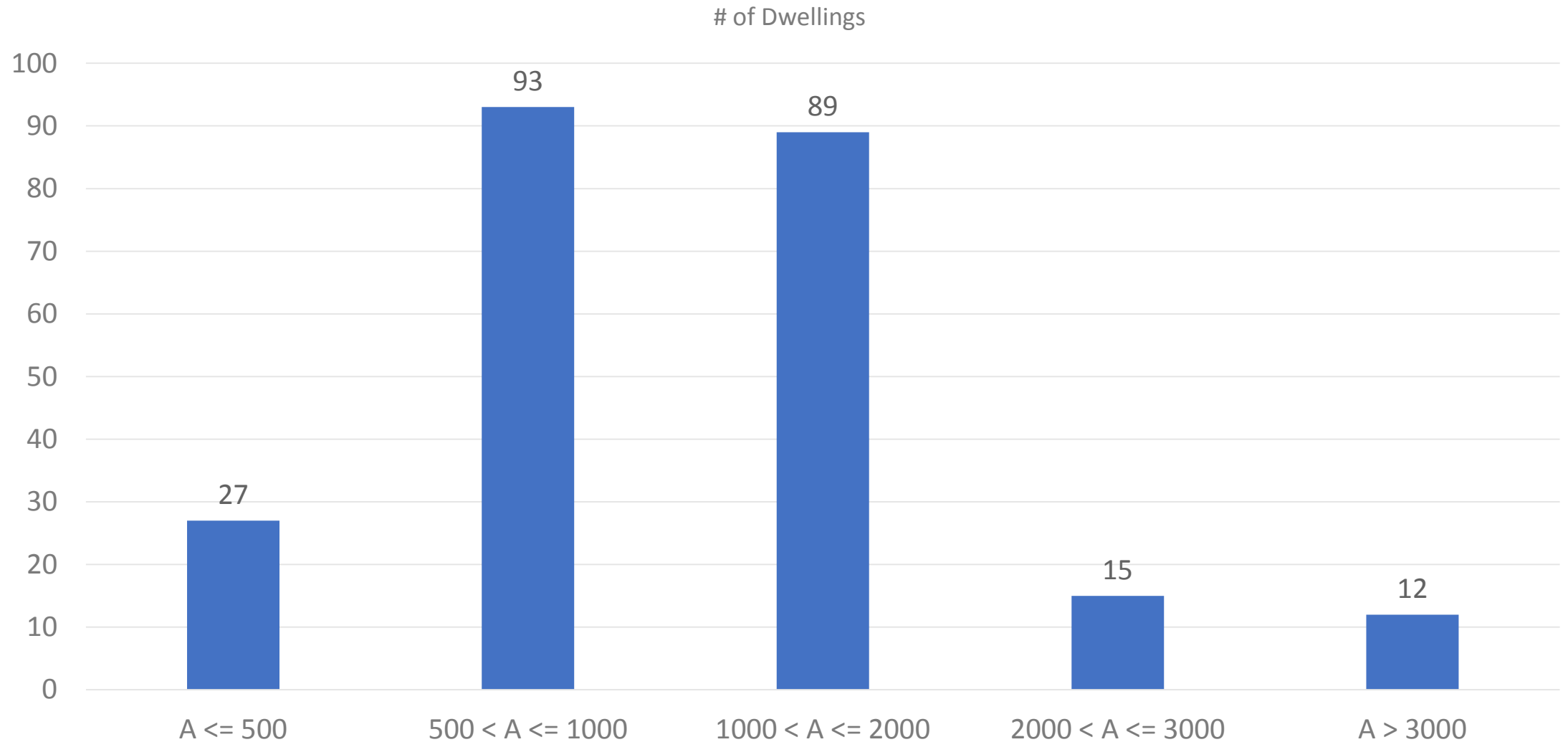
# Description of Benefit Assessment Algorithm (Cont.)

- The total cost for each dwelling is the **base cost** plus the **dwelling size variable cost**

- # of adjustment units = Sum of {# dwelling type x cost adjustment multiplier} = {(27 x **0**) + (93 x **1**) + (89 x **2**) + (15 x **3**) + (12 x **4**)}
  = 364 adjustment units

- Additional cost adjustment is calculated using the following formula:
  - Cost Adjustment per unit = remaining cost ($2,484,000) ÷ 364 = **$6,824**

- Cost for specific dwelling = Base Cost + (Cost Adjustment Multiplier x Cost Adjustment per unit)

Total Cost per Dwelling (includes connection fee)

Sewer Cost per Dwelling

$50,000	
$45,000	
$40,000	
$35,000	
$30,000	
$25,000	
$20,000	
$15,000	
$10,000	
$5,000	
$0	

$21,000 — A <= 500
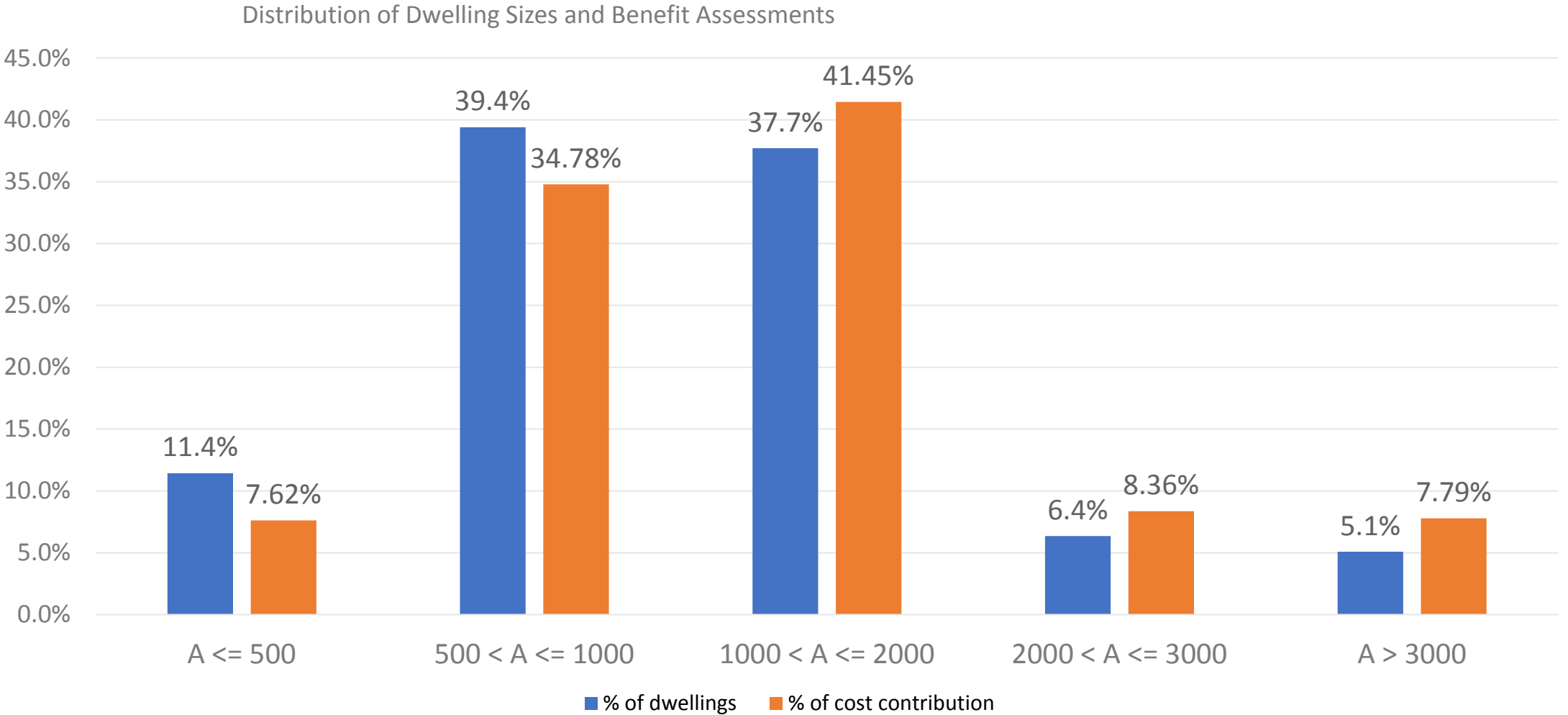$27,824 — 500 < A <= 1000
$34,648 — 1000 < A <= 2000
$41,473 — 2000 < A <= 3000
$48,297 — A > 3000

Max/Min Ratio is 2.3

Bi-Annual Payment (20-year loan @ 2% interest) and Monthly Amount Reference

Bi-Annual Payment (20 years, 2%)

Monthly Amount Reference
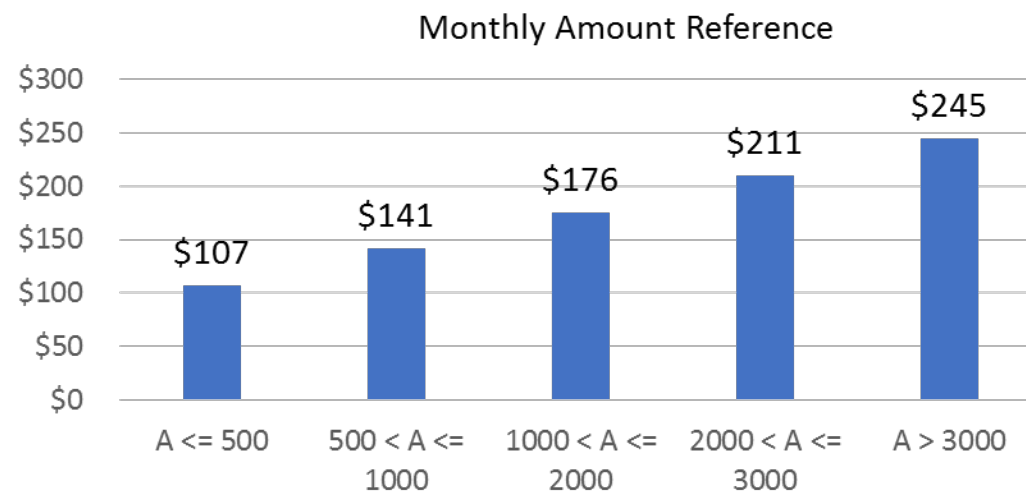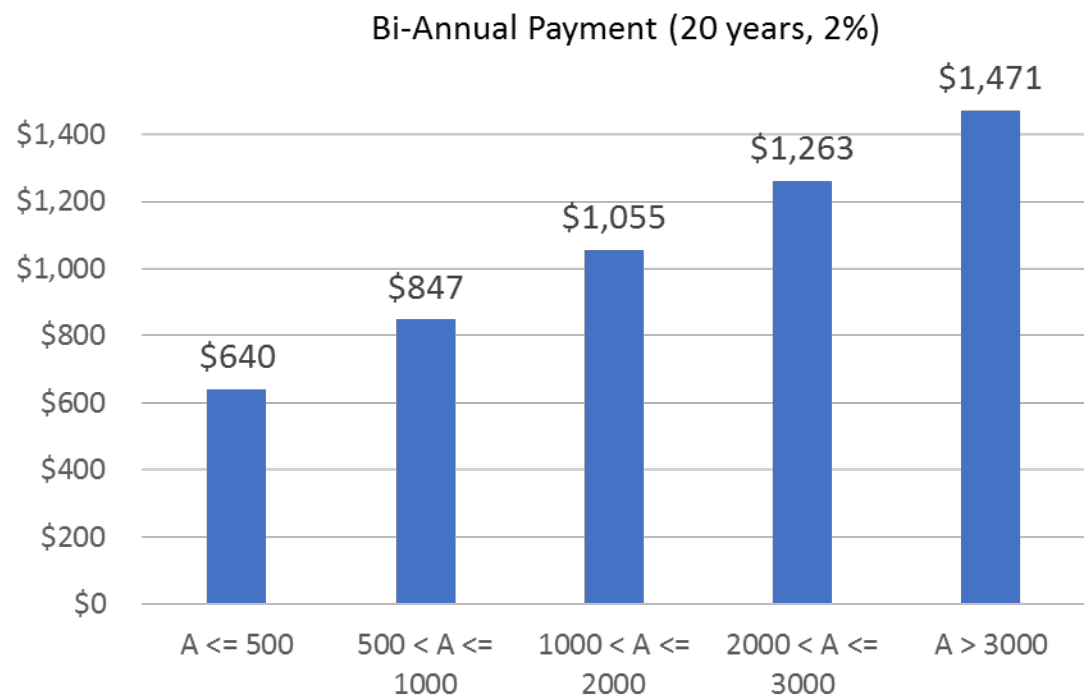
Distribution of Dwelling Size and Sewer Cost Assessments

Distribution of Dwelling Sizes and Benefit Assessments

Conclusion

- Assessments based on property value and estimated volume or capacity of volume are the most popular methods

- This method is consistent with existing methods considered over the years

- We have some unique properties that do not fit this model and will be assessed separately, but based on capacity estimates

- This method narrows the spread between properties