State Water Infrastructure Authority
April 14, 2021 Meeting
Agenda Item I – Draft Revisions to Affordability Criteria

Division of Water Infrastructure Staff Report

Background

In March 2016, the Authority approved the affordability criteria methodology used to determine an applicant's eligibility for grant and Principal Forgiveness (PF). The affordability criteria are an important tool in providing a transparent and predictable methodology for determining grant and PF eligibility. It also focuses limited grant and PF funding to smaller communities with project affordability concerns.

The four steps of the affordability criteria are based on population, the local government unit's (LGU) economic situation, whether existing revenues could cover the cost of the project, and a combination of the LGU's monthly utility bill and project cost. If an LGU is eligible, for grant or PF the percent of total funds provided as grant or PF for a specific project is based on the LGU's a monthly utility bills and project cost per connection. Figure 1 shows the affordability criteria steps. Figure 2 shows the current percent eligibility for different ranges of utility bills and project cost per connection.

Figure 1. Affordability Criteria Steps

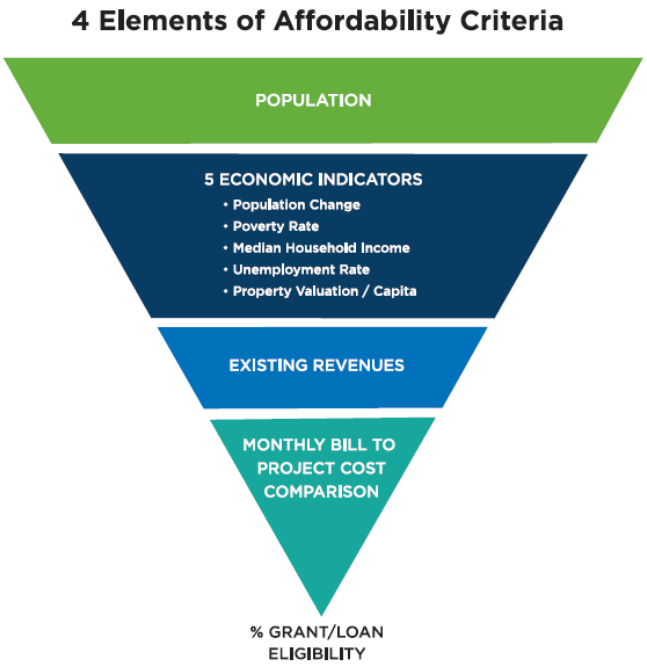
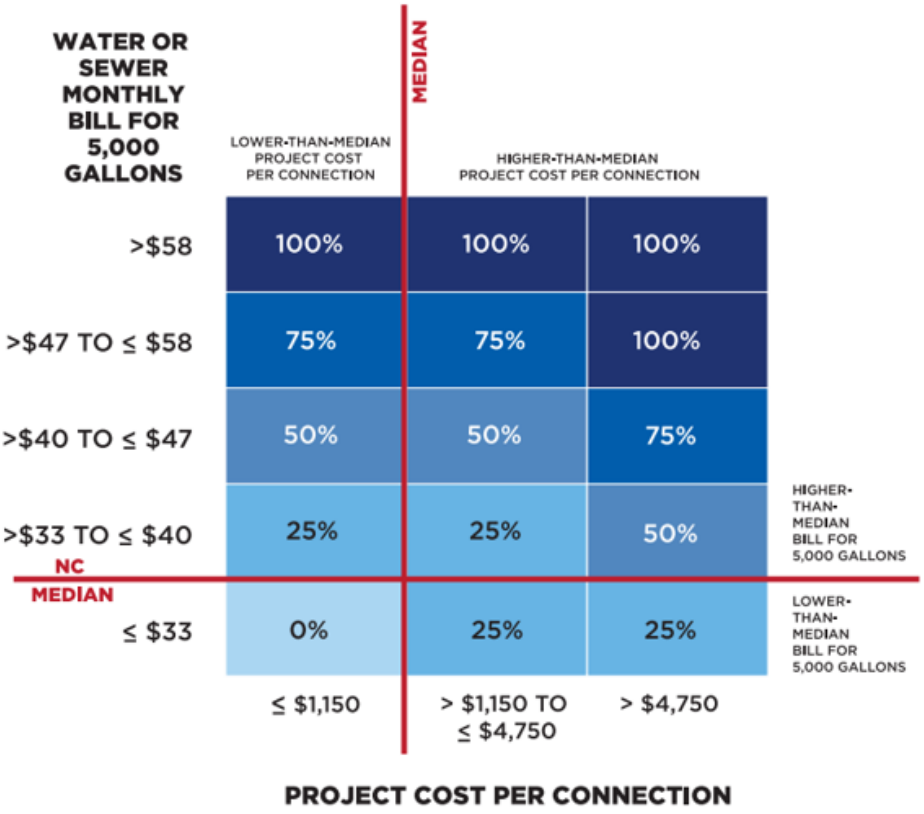


Figure 2. Step 4 of Current Affordability Criteria – Grant Percentage Matrix



Based on Division staff's experience implementing the affordability criteria for several years, the following observations have been made:

1. The population threshold (less than 20,000, Step 1 of the current criteria) remains appropriate for screening out LGUs that are too large.
2. The five Local Government Unit Indicators (Step 2 of the current criteria) remain appropriate metrics. Each year, staff update the state benchmarks values for determining eligibility.
3. The existing revenues threshold (Step 3 of the current criteria) remains appropriate for screening LGUs that should be able take on the additional debt.
4. The monthly bill to project cost comparison (Step 4 of the current criteria) uses rate data from 2015 to determine the State median value and rate ranges for grant eligibility. These values need to be updated to reflect more current utility rates.

5. The Drinking Water State Revolving Fund (DWSRF) program routinely struggles to meet the minimum PF requirements for the DWSRF grant, even after exceeding the $500,000 per project cap for PF. Contributing factors include:
    a. Lower number of drinking water project applications compared to wastewater project applications.
    b. Generally lower drinking water monthly utility bills compared to wastewater monthly utility bills result in lower percent grant and PF eligibilities.

6. Local government units designated as distressed per § 159G-45 may not meet all the affordability criteria in steps 1-3. Units designated as distressed should be eligible for grant and PF eligibility.

Updates to Utility Rate Analysis

To evaluate concerns raised in Items #4 and #5 above, staff used application and project data from Fall 2016 through Spring 2020 (8 application rounds) to better understand the distribution of utility bills reflected in applications and better predict how changes to Step 4 (the matrix) may impact future application rounds.

The Division evaluated the 2015 monthly utility bills to determine if drinking water bills were lower than wastewater bills and if so, by how much. Table 1 shows the resulting distribution of monthly utility bills at different percentiles.

Table 1. Distribution of Utility rates (2015 Data)

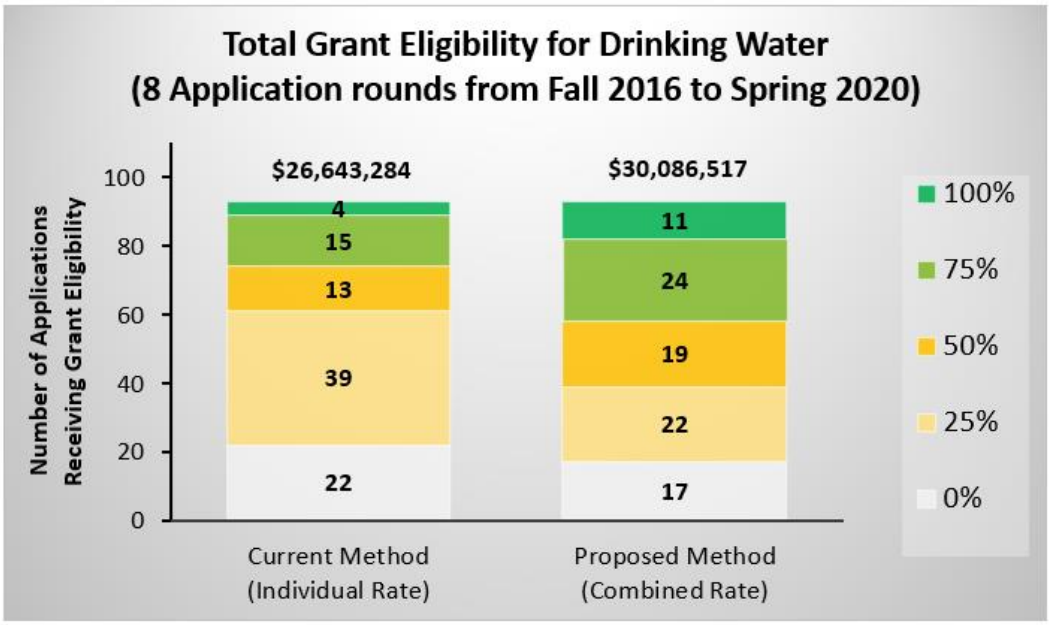
Distribution (% rates less than value)	Monthly Utility Bills ($ per 5,000 gallons)		
	DW [1]	DW and WW[2]	WW [3]
@50 percentile	$32	$33	$39
@70 percentile	$38	$40	$47
@85 percentile	$43	$47	$55
@95 percentile	$51	$58	$68

[1]Distribution based on reported drinking water monthly utility bills for single and combined drinking water utility providers.
[2]Distribution based on all reported monthly utility bills single and combined utility providers. These are the limits used, see Figure 2.
[3]Distribution based on reported wastewater monthly utility bills for single and combined wastewater utility providers.

The median (50th percentile) drinking water monthly utility bill is $32 per 5,000 gallons compared to the median wastewater monthly utility bill of $39 per 5,000 gallons. As a result, the average drinking water projects are less likely to be eligible for grant or PF than the average

wastewater project. More specifically, the median drinking water monthly utility bill of $32/month is just below the 25% PF eligibility threshold of $33. In contrast, the median wastewater monthly utility bill of $39/month is below the 50% PF eligibility threshold of $40/month.

Using a combined water and sewer monthly utility bill when available will elevate much of the inequity in evaluating either drinking water or wastewater utility rate in determining grant or PF eligibility. Division staff recalculated the distribution of rates using 2015 combined water and wastewater rate data set. Staff then evaluated 93 drinking water applications and 173 wastewater applications (eight application rounds from Fall 2016 to Spring 2020), which had both drinking water and wastewater monthly utility bills. Each Applicant's grant eligibility was recalculated using the combined monthly utility bill and the existing $500,000 PF cap. Using the combined monthly utility bills, grant eligibility increased 12.9% for drinking water applications compared to when using the drinking water monthly utility bill only. Grant eligibility decreased 6.4% for wastewater applications. The results support the use of a combined monthly utility bill for a more equitable determination of eligibility (see Figure 3). Figure 3 shows the grant eligibility for drinking water and wastewater projects as separate bar graphs. Each bar graph shows the number of projects that would fall into the five different levels of grant or PF eligibility, and the resulting total grant or PF eligibility in dollars.



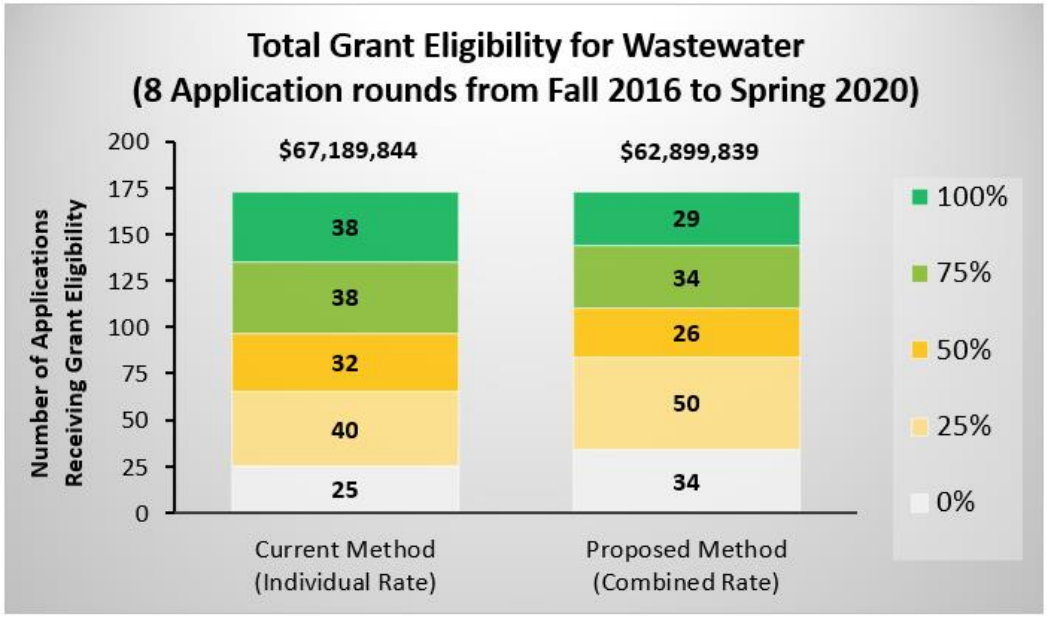


Figure 3. Comparison of Grant Eligibility Using Individual Monthly Utility Bills Versus Combined Monthly Utility Bills

The resulting percent distribution of monthly utility bills comparing 2015 to 2020 data is shown below in Table 3.

Table 3. Distribution of Monthly Utility Bill (2015 and 2020 Data)		
Distribution (% rates less than value)	**2015 Combined Monthly Utility Bills ($/5,000 gallons)**	**2020 Combined Monthly Utility Bills ($/5,000 gallons)**
@50 percentile	$68	$79
@70 percentile	$81	$90
@85 percentile	$91	$107
@95 percentile	$108	$129

Not all utilities provide both water and wastewater services. Single utility providers are not able to share resources between two utilities, and on average, have higher monthly bills when compared to the drinking water portion of a combined drinking and wastewater utility bill. Rate data was available for approximately 120 utilities that provide drinking water services only, and another 40 utilities that provide wastewater services only. Table 4 shows the distribution of monthly utility bills for single utility providers and for combined drinking and wastewater utility providers.

Table 4. Distribution of Monthly Utility Bill (2020 Data)				
	Water Monthly Utility Bill ($/5,000 gallons)		**Wastewater Monthly Utility Bill ($/5,000 gallons)**	
Distribution (% rates less than value)	**Combined Utility Provider (n=387)**	**Single Provider (n=123)**	**Combined Utility Provider (n=387)**	**Single Provider (n=43)**
@50 percentile	$35	$42	$41	$55
@70 percentile	$42	$50	$47	$63
@85 percentile	$52	$56	$56	$67
@95 percentile	$64	$72	$68	$81

Table 4 shows the higher monthly utility bills that are paid by customers of single utility providers. This data would support the creation of different affordability criteria for both single and combined utility providers (three criteria, one for combined and two for water and single provider). However, the higher monthly bills associated with single utility providers would result in those utilities having a higher threshold for the different grant and PF eligibilities when compared to combined utility providers. Additionally, with rate data available for only a few

(43) wastewater single providers, there is larger uncertainty associated with this distribution compared with drinking water only or combined utility rate data distributions. Therefore, staff recommend that a single affordability matrix for combined rates be used, and that single utility providers would adjust their rates to make an estimated equivalent combined rate using the procedure discussed below.

Figure 4 below shows the distribution of individual water or sewer rates (Y axis) versus combined utility rates (X axis). This chart considers utilities that have combined water and sewer rates and includes data from 370 utilities over a period of 2015 - 2020. These data show that, on average, a combined utility bill is comprised of 40% water and 60% sewer charges. This average water/sewer ratio (40%/60%) will be used to estimate the combined utility bill for single utility providers. For instance, a single water utility provider with a water rate of $50 would be equivalent to a combined utility provider with combined rate estimated to be $50 / 0.4 = $125.

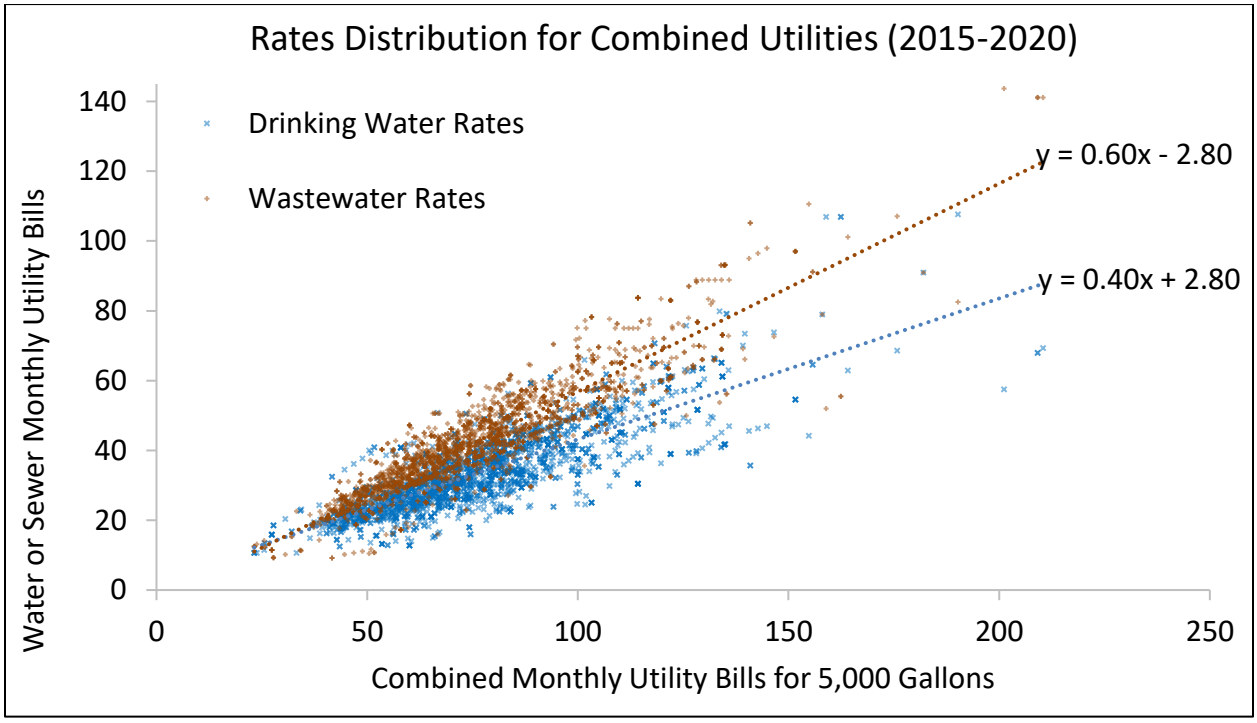


Figure 4. Monthly Utility Bill Distribution for Combined Utilities

Eligibly of Distressed Systems.

To address the possibility of LGUs designated as distressed not being eligible for grant or PF, staff recommend that a provision be added to the criteria such that all units designated as distressed per § 159G-45 will be eligible for grant or PF as calculated using the affordability matrix in Step #4 (Affordability Matrix), regardless of any ineligibility under Steps #1 through #3.

Other Considerations

Staff felt that project cost and the resulting impact to customers is an important consideration for affordability but had concerns that cost per connection was not easily related to the impact seen by the residential user. Staff re-considered using debt service per connection as a metric; however, there remain too many concerns with the consistency of data submitted within an application to ensure a transparent and verifiable calculation. Debt service per connection is also a difficult metric to relate to an existing utility monthly bill for the customers.

Division staff recommend using project cost per connection per month because this is a more understandable measurement of the impact of the project to residential users. Also, it can be easily used in conjunction with the current monthly utility bill to project a future monthly utility bill per connection. Project cost per connection per month can be calculated by converting cost per connection to a monthly bill with a 20-year payback (Cost per connection/(20x12).

Summary

The resulting proposed Step #4 uses a combined monthly utility bill at incremental rate ranges based on 2020 data and the potential impact to the current utility bill from the proposed project to calculate percent grant or PF eligibility. Applicants would be eligible for the maximum grant or PF based either on their monthly utility bill or their monthly utility bill plus project cost per connection per month. The methodology provides increased grant eligibility to applicants that have previously established higher rates to continue to incentivize utilities to take a proactive approach in setting rates. The ranges of monthly utility bills for the different percent grant eligibilities were determined using 2020 combined monthly utility bill data (see Table 5).

Table 4. Proposed Step 4 (Affordability Matrix)				
Percentile Ranges for grant eligibility categories	**Combined Monthly Bills* based on 2020 data ($/5000 gallons)**	**% Grant or PF**	**Combined Monthly Bills + Project cost per customer per month based on 2020 data ($/5000 gallons)**	**% Grant or PF**
> 99 Percentile	> $148	100%	> $148	100%
95 - 99 Percentile	$129 - $148	100%	$129 - $148	75%
85 - 95 Percentile	$107 - $129	75%	$107 - $129	50%
70 - 85 Percentile	$90 - $107	50%	$90 - $107	25%
50 - 70 Percentile	$79 - $90	25%	$79 - $90	0%
0 - 50 Percentile	$0 - $79	0%	$0 - $79	0%
*Single utility providers may divide by 0.4 for water or 0.6 for sewer applicant for calculating a combined monthly bill.				

Figure 5 shows a graphical representation of the proposed Affordability Matrix shown in Table 4 and includes data points for previously funded wastewater and drinking water projects.
Figure 6 shows a graphical representation of the affordability matrix using the current system that provides % grant eligibility increases for defined rages of project cost per connection.

Staff recommend that the proposed affordability criteria updates be approved to go to public notice.

- Updates to Step #4
  - Use of combined utility bills to determine grant and PF eligibility
  - Use of conversion factor to allow single utility providers to calculate grant and PF eligibility
  - Use of project cost per connection per month to determine grant and PF eligibility
- Provision to allow designated distressed units to move directly to Step #4

Figure 5

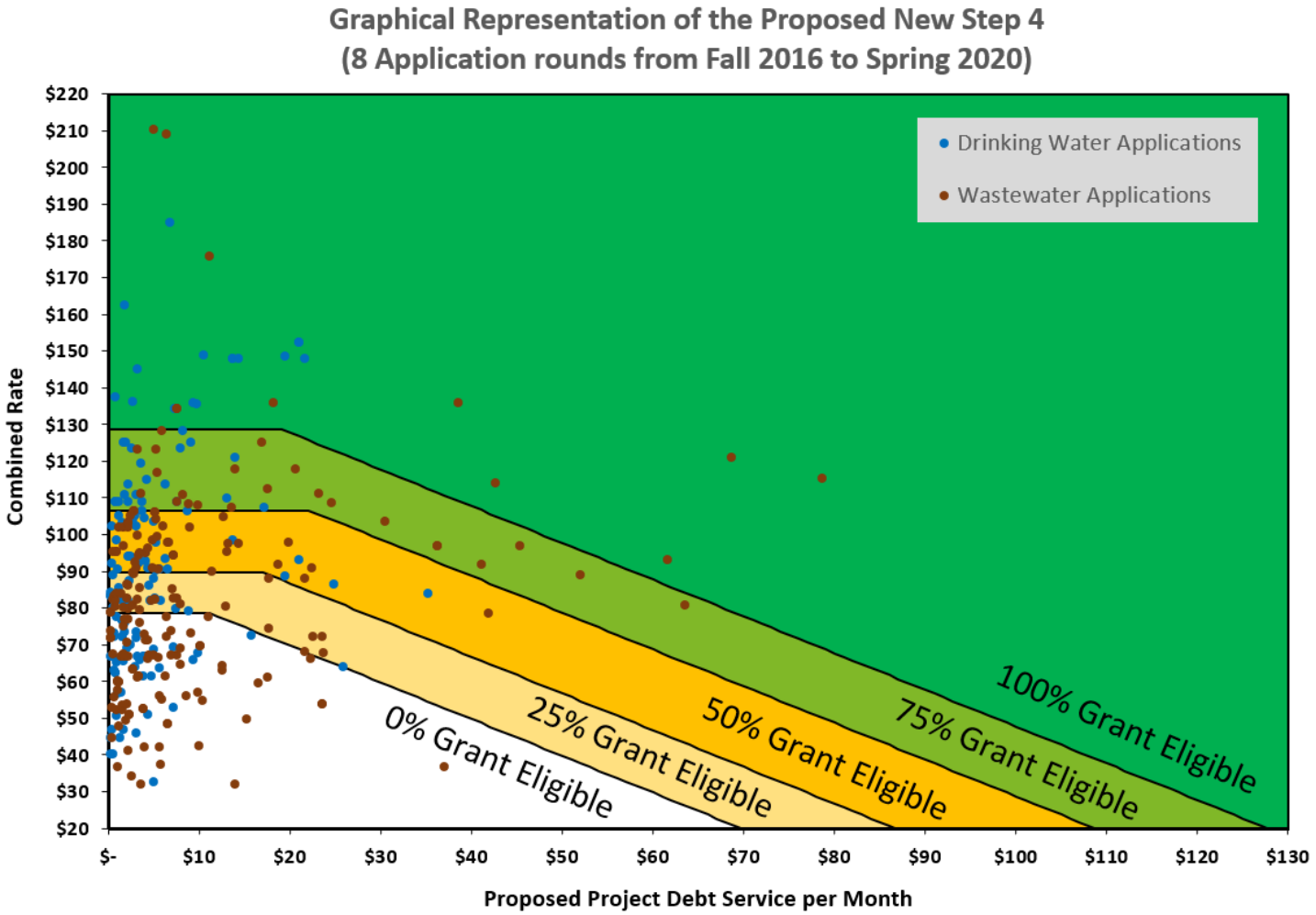
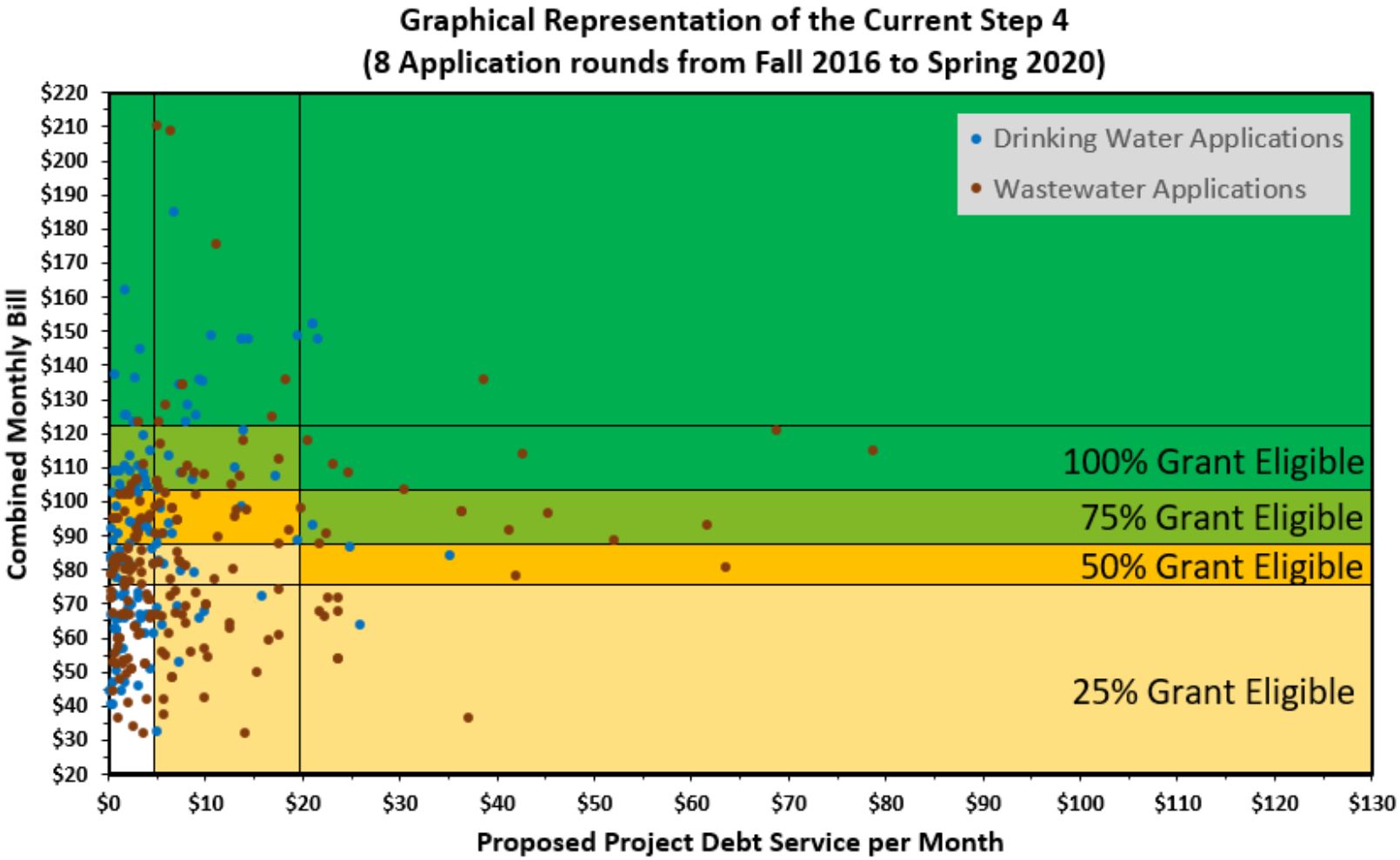

Graphical Representation of the Proposed New Step 4
(8 Application rounds from Fall 2016 to Spring 2020)
Drinking Water Applications
Wastewater Applications
100% Grant Eligible
75% Grant Eligible
50% Grant Eligible
25% Grant Eligible
0% Grant Eligible
Combined Rate
$220
$210
$200
$190
$180
$170
$160
$150
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$-
$10
$20
$30
$40
$50
$60
$70
$80
$90
$100
$110
$120
$130
Proposed Project Debt Service per Month

Figure 6


Graphical Representation of the Current Step 4
(8 Application rounds from Fall 2016 to Spring 2020)
Drinking Water Applications
Wastewater Applications
100% Grant Eligible
75% Grant Eligible
50% Grant Eligible
25% Grant Eligible
Combined Monthly Bill
$220
$210
$200
$190
$180
$170
$160
$150
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$0
$10
$20
$30
$40
$50
$60
$70
$80
$90
$100
$110
$120
$130
Proposed Project Debt Service per Month