

**State Water Infrastructure Authority
March 10, 2021 Meeting
Agenda Item H – Draft Revisions to Affordability Criteria**

Division of Water Infrastructure Staff Report

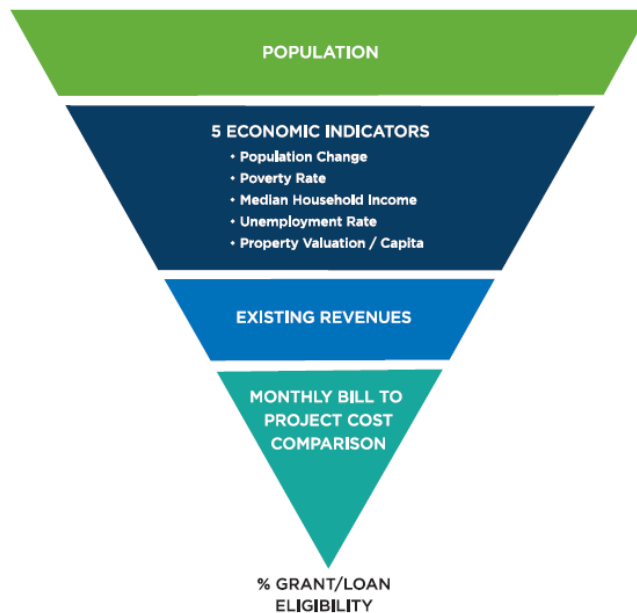
Background

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 first three 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 the LGU’s monthly utility bill and debt. An LGU is eligible based on its population, economic situation, and ability to cover the project cost with existing revenues (see Figure 1).

Initially, if an LGU was eligible, the percent of grant funds provided for a specific project was based on the LGU’s a monthly utility bills and debt service per connection. In 2018, Division staff conducted a review of the affordability criteria methodology. Staff recommended to change debt service per connection to project cost per connection. The Authority approved this recommendation, and the change went into effect during the Fall 2018 application cycle.

**Figure 1. Affordability Criteria Steps
4 Elements of Affordability Criteria**



Once a LGU is determined to be eligible for a grant or PF, the monthly utility bill and project cost per connection are used to determine percent eligibility. Figure 2 shows the current percent eligibility for different ranges of utility rate and project cost per connection.

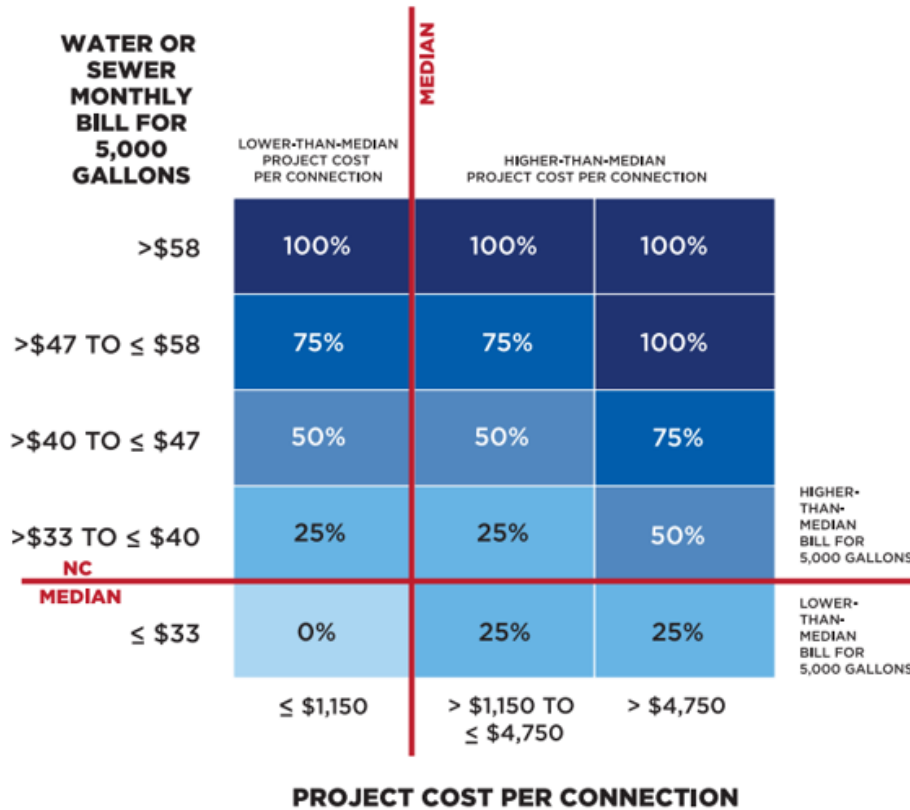


Figure 2. Step 4 of Current Affordability Criteria – Grant Percentage Matrix

Potential Updates

Based on Division staff’s experience implementing the affordability criteria, 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 each year.
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.

To potentially address concerns raised in Items #4 and #5 above, staff have obtained updated utility rates for 2020, and conducted an evaluation of application and project data from Fall 2016 through Spring 2020 (8 application rounds), to better understand the distribution of applications and how changes to Step 4 (the matrix) may impact future rounds.

First, the Division evaluated the 2015 monthly utility bills to verify if drinking water bills were generally 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 Only	DW and WW	WW Only
@50 percentile	\$32	\$33	\$39
@70 percentile	\$38	\$40	\$47
@85 percentile	\$43	\$47	\$55
@95 percentile	\$51	\$58	\$68

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, and on average the wastewater projects will receive a higher grant percentage or PF amount than drinking water projects.

There was consensus among staff that using a combined water and sewer utility monthly utility bill will reflect the affordability of a project. Overall monthly utility bills for residential customers in 2015 with the same thresholds current used are as below in Table 2.

Table 2. Distribution of Utility Rates (2015 Data)	
Distribution (% rates less than value)	Combined Monthly Utility Bill (\$/5,000 gallons)
@50 percentile	\$68
@70 percentile	\$81
@85 percentile	\$91
@95 percentile	\$108

Using historical data (eight application rounds from Fall 2016 to Spring 2020), Division staff evaluated 93 drinking water applications and 173 wastewater applications which had both drinking water and wastewater monthly utility bills. Each Applicant’s grant eligibility was recalculated using 2018 EFC updated combined monthly utility bill thresholds, then total grant eligibility was calculated considering a \$500,000 grant cap. Using the combined monthly utility bills, grant eligibility increased 12.9% for drinking water applications compared to when using the drinking water utility 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).

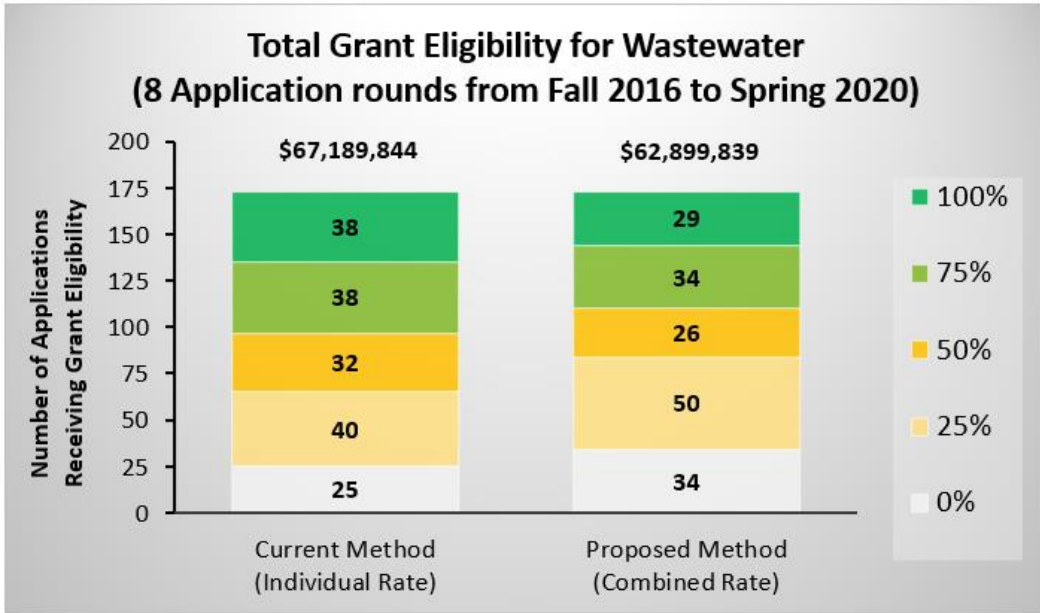
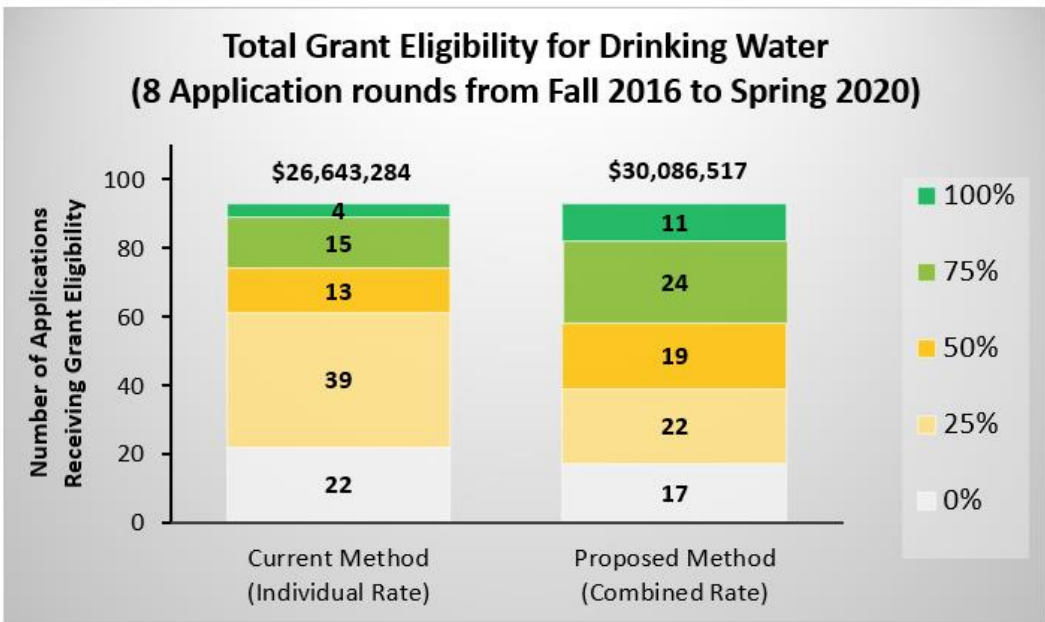


Figure 3. Results of Revised Bright Line Analysis

In both comparisons above (current method using individual monthly utility bills and proposed method using combined utility monthly utility bills), we did not take into account any inflation and rate increases.

The resulting percent distribution of monthly utility bills comparing 2015 to 2020 data is shown below in Table 3. The final bright lines will be based on 2020 monthly utility bill data.

Table 3. Distribution of Monthly Utility Bills (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

To allow single utility providers to determine eligibility for the limited grant and PF funding, Division staff evaluated statewide monthly utility bill data provided by the UNC Environmental Finance Center (EFC). On average, a combined monthly utility bill is comprised of 40% water rate and 60% sewer rate. This analysis provides a simple and transparent method for calculating a theoretical combined rate for single utility providers to use in determine grant eligibility.

Other Considerations

Division staff evaluated the effectiveness of keeping project cost per connection as a second factor to determine grant eligibility. 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 but realized there were 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 the homeowner.

Division staff recommend using project cost per connection per month since this is a more understandable value in 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 affordability calculator uses combined monthly utility bill at incremental rate ranges based on 2019 data, and the combined monthly utility bill plus the project cost per customer per month to calculate percent grant of PF eligibility. An Applicant would be eligible for the maximum grant based either on their monthly utility bill or their monthly utility bill plus project cost per connection per month. The methodology provides higher grant eligibility to applicants that have previously established higher rates to continue to incentivize utilities taken 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 4). Figure 4 shows a graphical representation of Table 4 and includes data points for previously funded wastewater and drinking water projects.

Combined Rates (\$/5000 gallons)	% Grant or PF	Combined Rates + Project cost per customer per month (\$/5000 gallons)	% Grant or PF
> \$148	100%	> \$148	100%
\$129 - \$148	100%	\$129 - \$148	75%
\$107 - \$129	75%	\$107 - \$129	50%
\$90 - \$107	50%	\$90 - \$107	25%
\$79 - \$90	25%	\$79 - \$90	0%
\$0 - \$79	0%	\$0 - \$79	0%

Graphical Representation of the Proposed New Step 4 (8 Application rounds from Fall 2016 to Spring 2020)

