Report on the Implementation of Affordability Criteria Related to the State Project Grant Program under the State Wastewater Reserve and State Drinking Water Reserve

April 4, 2016

I. Purpose

The purpose of this report is to brief the North Carolina General Assembly on the implementation of the affordability criteria pursuant to Section 14.13.(j) of SL2015-241. Implementation of the affordability criteria relates to changes made to Chapter 159G under SL 2015-241, which eliminated the use of the High-Unit-Cost (HUC) Threshold and provided for the development of this affordability criteria. The affordability criteria will be used to determine grant funding pursuant to 159G-31(b) for the State Wastewater Reserve (SWWR) and State Drinking Water Reserve (SDWR) as found in NCGS 159G-22(d) and (f), respectively.

In SL 2013-360, the General Assembly directed the State Water Infrastructure Authority (the Authority) to report on ways to ensure funds were directed to "rural, economically distressed local governments." As part of the Authority's 2014 annual report, the Authority recommended eliminating the Tier restrictions and replacing the specific HUC Threshold with an affordability definition to better direct funds to rural, economically distressed local governments. The basis of the recommendation focused on three key aspects of the HUC Threshold and the restriction to a Tier 1 or Tier 2 county. First, the restriction to Tier 1 and Tier 2 counties as provided in SL 2013-360 keeps some rural, economically distressed communities from competing for grants. Second, the accuracy of median household income (MHI) values in rural communities caused concern using the HUC Threshold. Finally, changes were needed to reach those that most need grant funding and in some cases limiting grant funds to a percentage of the project costs to reach more communities in need of a grant. With SL 2015-241, the General Assembly acted upon these recommendations, making changes to NCGS 159G, including a definition of affordability (see inset).

> NCGS 159G-20.(1) Affordability – The relative affordability of a project for a community compared to other communities in North Carolina based on factors that shall include, at a minimum, water and sewer service rates, median household income, poverty rates, employment, the population of the served community, and past expenditures by the community on water infrastructure compared to that community's capacity for financing of water infrastructure improvements.

This report will summarize the development of the affordability criteria and briefly discuss each step of the criteria methodology that was adopted on March 4, 2016 by the Authority. The criteria will be implemented with the April 2016 funding round administered by the Division of Water Infrastructure (the Division) in the North Carolina Department of Environmental Quality (NCDEQ).

II. Background of the Changes

Tier designations are focused at the county level, which may or may not be representative of a town's economic situation. As the Authority reviewed the Tier 1 and Tier 2 counties restrictions, it was noted that some economically distressed LGUs located within Tier 3 counties were not eligible for HUC grants while other, less distressed LGUs located within Tier 1 and Tier 2 counties remained eligible for HUC grants. The Authority's 2014 Annual Report provides examples of these situations. The new affordability criteria does not limit grants to certain counties, but focuses on the LGU and the LGU's utility rather than the county as a whole.

Historically, Chapter 159G provided a single criterion for grant eligibility – the HUC Threshold for the SWWR and SDWR. The HUC Threshold was determined by dividing the water and sewer rates by the median household income (MHI). For systems with both water and sewer utilities, the HUC threshold was a rate to MHI level of 1.5 percent or greater. For systems with one utility, the HUC threshold was a rate to MHI level of 0.75 percent or greater.

However, the MHI provided by the American Communities Survey (income data for the U. S Census) is a value that represents the mid-point of the 90 percent confidence range (see Fig. 1). As LGU populations decrease, the reliability of MHI estimates decreases as well, associated with survey estimates. The Authority concluded that MHI considered with user rates was not an appropriate indicator of affordability for the community as a whole because of its inherent unreliability, due to margin of error. Using these values to derive a threshold of 1.5 percent caused concern of the accuracy of the threshold calculation.

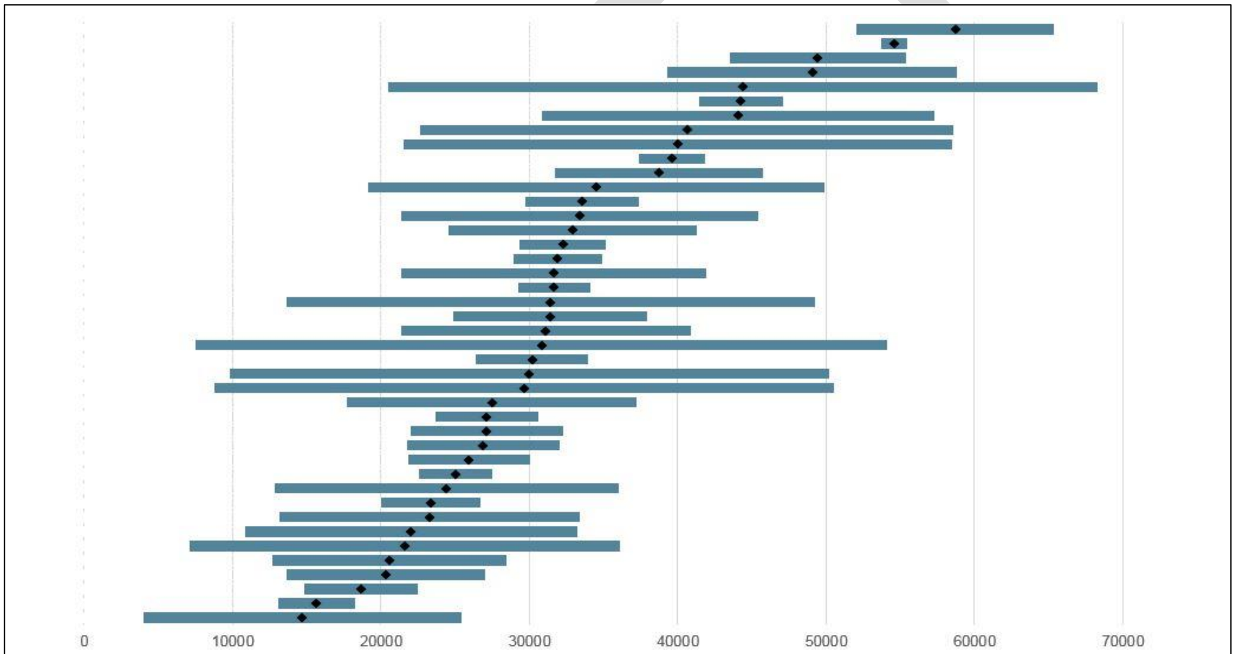

Figure 1. MHI 90% Confidence Range Examples

Finally, the Authority reported to the General Assembly in 2014 that there was significant demand for funding. As part of the recommendation to develop new grant criteria, the Authority recognized the need to direct the limited grant funds to those most in need and where the grant would have the most impact. There was also a recognition that the amount of appropriations for grants would only be able to assist two or three communities without additional limitations on the percent of grant funding. For example, prior to the changes made in SL 2015-241, the maximum award pursuant to NCGS 159G was limited to $3 million over three years. In state fiscal year 2014-15, NCGS appropriated $5 million for these grants for the entire state, drinking water and wastewater projects. If an LGU could afford a percentage of the project, grant funding would be limited to allow another community to also receive grant funding (i.e., one project funded with 100 percent grant versus two projects funded with 50 percent grants).

In North Carolina, many smaller systems face much higher rates than most citizens as extremely high rates generally decrease as system size increases (Fig. 2). The figure also shows that the user rates tend to stabilize around a median value as system size increases. Note that low-income populations within these large systems, which are larger than many total populations of smaller LGUs, pay rates close to the median rate level for the state.

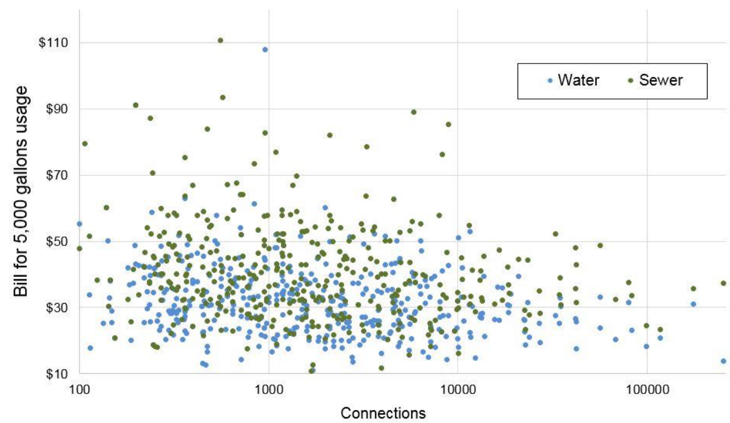

Figure 2. User Rate Variation by System Size

With the HUC Threshold, rates are tied to the communities' MHI. Generally, as MHI decreases, the percentage of low-income users will increase; however, the number of low-income users may not be substantially different. For rural communities that are economically distressed, there will be low-income users of the utility system and, regardless of income levels, residential users must be charged the same rate. Figure 3 shows a comparison of user rates and income for

MHI	Water Rate/5,000 Gallons	Sewer Rate/5,000 Gallons	Total < $20k	% < $20k
$14,688	$23	$29	195	54%
$15,651	$54	$64	329	58%
$23,354	$40	$11	329	43%
$24,423	$24	$37	672	47%
$25,048	$42	$93	290	38%
$25,938	$42	$46	347	40%
$27,132	$52	$77	277	36%
$30,170	$108	$83	273	36%
$31,118	$34	$67	238	28%
$31,387	$25	$78	712	36%
$32,250	$19	$25	1249	37%
$32,898	$36	$67	215	34%
$33,403	$24	$59	365	30%
$33,583	$25	$40	498	26%
$39,578	$25	$35	6661	25%
$54,581	$31	$35	25976	16%

Figure 3. Comparison of User Rates and Income

communities in NC – all of these systems are rural communities except for the last two rows. As stated above, within all of these communities there are low-income users, which face a variety of rates for water and /or sewer service. For the small rural communities that have rates above, and in some cases well above, the state median for water and/or sewer service, the community will have a more difficult path to financing their capital needs and will not be as competitive for economic development.

The affordability criteria attempts to direct grant and loan funding to rural, economically distressed communities where rates are higher than those most citizens pay for either water or sewer service.

III. Affordability Criteria

The elements described in the following section achieve two goals related to the state project grants by determining (1) an LGU's eligibility to receive a grant using a broad definition of "rural, economically distressed" and (2) the percentage of grant which eligible LGUs may receive focusing on the rates the utility must charge to provide water or sewer service.[1] The Division will use the affordability criteria to determine eligibility for grant funding and, if eligible, the percentage of the project that will be funded through grants.

The affordability criteria consist of four elements that are applied sequentially as shown in Figure 4 and are as follows:

- Population
- Local government unit economic indicators
- Existing revenues
- Grant portion for eligible projects

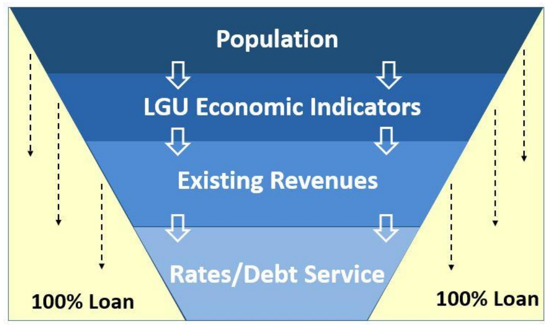

Figure 4. Affordability Criteria Elements

The first two elements account for system-wide characteristics associated with the service area. LGU economic indicators broadly show economic distress in an LGU relative to the state as a whole. The last two elements focus more on a utility's financial characteristics, including potential impacts of constructing the project. Each aspect is discussed in more detail below.

A. Population

As required by the statutory definition of affordability, this criterion is based on the number of residential connections as a surrogate for population. Across the state, there are approximately 2.48 people per household. With each household estimated to have one residential connection, a system with 20,000 residential connections would have approximately 49,600 people.

The Authority approved setting the boundary at 20,000 residential connections, as the cost of a $3 million project (the maximum under statutes) is $0.63 per connection per month (based on a 20-year loan, zero percent interest rate). The level of benefit provided by a grant has a minimal potential impact to a user's monthly bill above this level for larger systems, indicating that the loan funding would be more affordable. Conversely, as the size of a system decreases from this level, the benefit of a grant to a utility customer's bill quickly increases – particularly for those already paying higher rates.

B. Local Government Unit Economic Indicators

For systems with less than 20,000 residential connections, eligibility is further limited to those that demonstrate more economic distress than others in the state. The Authority approved five indicators as discussed below. For comparison purposes, state benchmarks are used, and systems

[1] The priority systems for the state project grants, asset inventory and assessment grants, and merger/regionalization feasibility grants also utilize portions of the affordability criteria.

with three-out-of-five indicators worse than the state benchmark are generally considered economically distressed and are further considered in the next elements.

- Population change – Many rural communities are not experiencing growth at the same rate as the overall state and may actually be experiencing population declines. A lack of growth may make financing infrastructure more difficult as revenues may be stagnant or even declining. The state benchmark for population change will be the change in population over a five-year period using American Community Survey (ACS) population estimates.
- Poverty rate – The percent of the population living below the poverty rate provides information related to the population living within the lower income ranges within an LGU. The state benchmark for poverty rate will be the five-year estimate determined by the ACS.
- Median household income – Use of the overall income level of the LGU's population is required under the statute. In general, a community's income levels may provide an indication of economic health when combined with other indicators. The state benchmark for MHI will be the five-year estimate determined by the ACS.
- Unemployment rate –A community's unemployment rate is required to be used by statute and is also an indicator of economic stress. The state benchmark for unemployment rate is the state unemployment rate according to the Employment Security Commission. The county's (where the LGU is located) unemployment rate is used since a person's employment opportunities typically extend beyond the LGU in which they reside.
- Property valuation per capita – Each county conducts property valuations that are used to determine property tax. This locally-derived indicator provides an accurate indication of per capita assets in the LGU. Other income-related indicators such as MHI and poverty rates are based on surveys conducted at the national level. The state benchmark is calculated by summing all county valuations and dividing by the state population.

C. *Existing Revenues*

This element marks a shift from looking at LGU characteristics toward an evaluation of the system's ability to finance a project without a grant. This particular criterion evaluates whether the utility already has sufficient revenue to cover the project's debt service. If the utility has 30 percent more revenue than expenses including the debt service for the project, the utility is considered to have sufficient revenue to finance project (i.e., considered for a loan only).

D. *Grant Portion for Eligible Projects*

As noted above, the affordability criteria attempts to direct grant and loan funding to rural, economically distressed communities where rates are higher than those most citizens pay for either water or sewer service. When a utility has high rates, there may be limited ability to raise additional revenue with future rate increases. The LGU's utility bill for 5,000 gallons usage is used to indicate rates and is specific to the type of project (water bill for a water project; sewer bill for a sewer project). The debt service per connection indicates the community's past investment in infrastructure and its ability to finance additional infrastructure, as it also includes the portion of the project that is available in the form of a loan.

The combination of monthly bills and debt service per connection reflects the system's capacity for financing the proposed water infrastructure improvement project, along with past expenditures. More grant funding, as a percentage of the project cost, will be provided for utilities that have the least affordable bills and most debt per connection. Figure 6 below will be used to determine the percentage of grant funding for which a project is eligible.

Monthly Bill for 5,000 Gallons	Lower-than-Median Debt Service per Connection		Higher-than-Median Debt Service per Connection				
>$58	100%	100%	100%	100%	100%	100%	Higher-than-Median Bill for 5,000 Gallons
>$47 to ≤ $58	75%	75%	75%	75%	100%	100%	
>$40 to ≤ $47	50%	50%	50%	50%	75%	75%	
>$33 to ≤ $40	25%	25%	25%	25%	50%	50%	
>$26 to ≤ $33	0%	0%	0%	0%	25%	25%	Lower-than-Median Bill for 5,000 Gallons
≤ $26	0%	0%	0%	0%	0%	25%	
	≤ $110	> $110 to ≤ $210	> $210 to ≤ $350	> $350 to ≤ $550	$550 to ≤ $1,000	>$1,000	Debt Service per Connection

Figure 6. Grant Funding Distribution

IV. Implementation

Once the Authority adopted the affordability criteria on March 4, 2016, Division staff began offering application training sessions for the state grant programs that would either utilize the full affordability criteria (State Project Grants) or aspects of it within their priority systems (State Project grants, Asset Inventory and Assessment grants, and Merger/Regionalization Feasibility grants). Approximately 175 people attended the training events at five locations across the state. Applications are due to the Division on Friday, April 29.