

EASTSIDE UTILITY DISTRICT

MUNICIPAL WATERWORKS

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John Mullin

January 14, 2021

Mr. Jim McAdoo
Department of Environment and Conservation
Division of Water Resources
William Snodgrass-Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor

**Re: NPDES Permit No. IWT 000002
Eastside Utility District**

Dear Mr. McAdoo,

Please find enclosed the information for the above mentioned permit renewal. If you have any questions, please feel free to call me at 423-490-9537.

Sincerely,

Eastside Utility District



Jay Mullin

Enclosure



Eastside
Utility District

EASTSIDE UTILITY DISTRICT
2020 INTER-BASIN TRANSFER RENEWAL APPLICATION

- a. The volume of proposed withdrawal and the proposed transfer stated in gallons per day that the applicant seeks to be authorized:

The proposed permit will be for 5 million gallons per day. Ocoee Utility District (OUD) and Dalton Utilities (DU) will be the major recipients of the transferred water.

- b. Identification of all of the withdrawal, return, and transfer points:

The withdrawal point is Eastside Utility District's (EUD) river intake (see Map #1) located contiguous to Booker T. Washington State Park along the Tennessee River, on the Chickamauga Reservoir.

For OUD there will be three transfer points (see Map #2), all of which are 6-inch meters. The first on Mitchell Road is approximately 500 feet east of State Highway 60 (Dalton Pike); the second at the intersection of Dalton Pike and Johnson Road; and the last is on Dalton Pike approximately 650 feet north of Hungry Hollow Road. These locations will transfer water from the Lower Tennessee River Basin into the Conasauga River Basin. None of it is expected to return to its basin of origin.

DU has one transfer point located on Dalton Pike on the Tennessee/Georgia border. It is an 8-inch meter. All the water passing through this point is expected to stay in the Conasauga River Basin.

- c. The volume of water that will be returned to the basin of origin or a downstream basin:

The water sold to neither OUD (0.5 MGD) nor DU (3 MGD) is expected to return to its river basin of origin.

- d. The peak capacity of each major component in the proposed withdrawal and transfer facilities:

The peak withdrawal capacity is dictated by the current configuration of EUD's filtration plant. This capacity stands at a maximum of 26 MGD. No changes will be necessary at the filtration plant to accommodate the water needed for the transfer.

For OUD, the peak capacity of transferred water is 0.5 MGD. DU is allocated 3 MGD. The requested amount of 5 MGD is merely a precautionary measure to allow for any unexpected high demands that may occur during a time of drought.

- e. Engineering and economic justification for the capacity of each major component of the proposed withdrawal and transfer facilities:

The water being transferred comes from EUD's river intake located on the Chickamauga Reservoir along the Tennessee River. It is pumped to the filtration plant where it is treated and made suitable for potable water. High service pumps located in the finished water building outside the filtration plant then send the water into EUD's water distribution system. It will be delivered to the transfer points through a series of pipes ranging in size from 6 to 30 inches. The water may also pass through several tanks and booster stations along its route; however, there will be no changes necessary at the filtration plant to deliver the water to the transfer points.

A 2.2 million gallon tank located just inside Bradley County on State Highway 317 (Weatherly Switch) is the demarcation point where the majority of the transferred water will be supplied. A

16-inch main runs from the tank along Weatherly Switch to State Highway 60 (Dalton Pike) then south to the Tennessee/Georgia border where DU's meter is. Two OUD meters are located on Dalton Pike while the third is approximately 500 feet east of it.

- f. An assessment of the hydraulic and environmental impacts of the withdrawal on the losing river:

EUD presently has a withdrawal permit for the water taken from the Tennessee River. The transferred water will still be covered within the boundaries of the current permit. The hydraulic and environmental impacts on the Tennessee River must have been sufficiently addressed during the prior application process.

- g. An engineering, environmental, and economic assessment of the feasibility of utilizing alternate water sources by the water system in the receiving basin:

The option of purchasing water from EUD has been chosen as OUD's best option to supplement the current water supplies due to economic and operational feasibility. OUD will continue to utilize the Wildwood Springs Water Treatment Plant as the primary water source for its customers in the Conasauga River Basin. A back-up connection with Cleveland Utilities (CU) is available at the Wildwood Springs Water Treatment Plant. However, CU's connection is inferior to EUD's connections due to the following reasons:

- 1. It requires the Wildwood Springs Water Treatment Plant's high service pumps to distribute the water purchased from CU. This limits the water available due to the capacity of the pumps and the spring flow at any given time. The pumps are designed to pump less than the peak flows for the Wildwood Springs, so in most cases the extra available water would not benefit the distribution system to any appreciable degree.*
- 2. The water is not as easily distributed to the southern portion of Bradley County. In the case of an emergency, conversely, EUD's connections will be available in the area most likely to need water from another water source.*
- 3. Economically, EUD's connections are the best options for OUD's customers. The rate of purchase - \$1.20 per thousand gallons is much more feasible than the \$1.51 per thousand gallons rate charged by CU. This rate difference translates into a monthly savings of \$961.00 at 100,000 gallons per day and \$4,805.00 at the maximum of 500,000 gallons per day. EUD's connections will not require additional pumpage to serve OUD's distribution system, which will result in the District lowering its overall electrical usage. It will also eliminate the cost associated with purchasing water from CU.*

DU performed a yield analysis on existing water sources in August 2005. Based on this analysis, DU has maximized the raw water withdrawal capability from existing raw water sources.

Current permits restrict the withdrawal of water when streamflow levels fall below predetermined values, and future permits will further restrict the withdrawal of water from existing sources when the streamflow levels fall below the 7Q10 average. The finished water provided by EUD since year 2002, is the best source for current and future customer in the North Whitfield County area, from an engineering, economic, and environmental perspective. The source is necessary for DU's service area which is comprised of the City of Dalton, Whitfield County, and portions of Murray, Gordon, and Catoosa Counties.

- h. A listing of conservation programs or practices occurring or proposed of the system in the receiving basin:

OULD has implemented several programs to encourage water conservation among its customers. It has in place a flat rate structure for water usage instead of a tiered system with decreasing rates as a customer uses more water. This structure does not discount water to customers who use large amounts, thus promoting conservation. OUD also encourages conservation through customer awareness mailings, reminders on its water bills, and materials available at its office.

DU currently has a Water Conservation and Drought Contingency Plan that details water conservation measures including, but not limited to, a water loss reduction program, leak detection and elimination program, storage tank overflow detection system, flushing program, unauthorized water usage restrictions, and continuous meter maintenance, testing, and calibration program. In addition, the Drought Contingency Plan was updated in 2016 due to new Georgia state regulations and outlines the measures that are initiated in times of drought or low streamflow conditions.

DU continues to maintain its drought hotline so that customers can update themselves on water conservation measures and restrictions currently in place. DU provides water conservation information and tips to customers in a newsletter, the Infoline, with customer bills, and on their website at www.dutil.com. DU currently has water conservation gardening and drought resistant planting recommendations available on their website as well. Additionally, DU has developed water conservation programs in conjunction with Whitfield County Schools and Dalton Public Schools to educate all area 3rd and 4th grade students about the importance of water conservation and preservation of drinking water sources through a program called "I'm In The Know About H2O", and has also developed "e-Smart Kids" on DU's website to offer same level learning opportunities online to all children. To date more than 4,500 students have been through the program.

DU has an ongoing water distribution rehabilitation program to reduce leaks and the associated maintenance cost. Information about leaks and the location of leaks is tracked using their Geographic Information System (GIS). For each leak, the location, type of leak, pipe material, condition of the pipe, and other general information is recorded. As a preventative mechanism information from the leak database and general data on the age and condition of the different areas of the distribution system is utilized in establishing a capital budget each year to address aging water lines or lines originally constructed from materials that have shown a tendency to leak. In addition, DU has established an active leak detection program. This program will evaluate the entire system over a 10-year period and prioritize leak repairs for leaks which have not otherwise surfaced. To date, approximately 33% of the 1,256 miles of water lines have been evaluated for leaks.

DU monitors customer usage through the billing system. If abnormally high usage occurs, the cause is investigated to ensure the meter is working properly and that there is not a leak. Additionally, DU's Supervisory Control and Data Acquisition (SCADA) system is instrumental in identifying leaks in remote areas through changes in pump pressure and water levels. DU also investigates reports of unexplained surface water. The utilities laboratory personnel analyze the surface water for chlorine and fluoride to determine if the surface water is from a leak. All water leaks are repaired immediately and the estimated volume of water unbilled due to the leaks is tracked to help in the evaluation of the non-revenue for the system.

In 2006 DU implemented the American Water Works Association's (AWWA) water audit software as an evaluation tool for non-revenue water monitoring. In accordance with Georgia law, water loss audits have been conducted annually and submitted for state review and results are being used to identify apparent and real losses to help reduce non-revenue water.

Further, DU uses its full system water model for system pressure management among other functions. Based on system modeling results, pressure reducing stations are utilized in strategic locations to reduce system pressure and consequently leakage flow rates and water main and service failures, while still providing adequate service pressures.

DU continues its program to replace all residential water meters within the system as well as its maintenance, testing and calibration plan to ensure that all system meters are properly tested, calibrated, and replaced in accordance with manufacturer's recommendations. Meter replacement is prioritized by area and also by evaluation of the billing system data.

DU maintains an active water flushing program to ensure that customers receive quality, safe drinking water. In 2007, DU installed a chlorine booster pump station which has successfully shown to reduce the volume of water lost during flushing by approximately 97.4%. Use of this equipment continues to today to minimize losses of water due to flushing required to maintain free chlorine residuals.

DU routinely monitors all critical aspects of its system regardless of drought status. During periods of drought, DU uses a daily drought update reviewed by the Chief Watershed Services Officer and the Chief Executive Officer. This update provides a daily status on the drought triggers and other essential information to assist in evaluation of the system on a daily basis and is also utilized for forecasting when additional measures will become necessary to maintain the overall system integrity.

In 2017, DU converted all residential and commercial classes to inverted block rates to provide financial incentive to the customers to conserve water. These rates are reviewed and adjusted as necessary on an annual basis.

Through the collaborative efforts between DU and the carpet industry manufacturers, reductions in the amount of water used for manufacturing purposes have been achieved. Water usage has decreased from a high of 38 MGD 10 years ago to approximately 23 MGD achieved 5 years ago. Water usage today remains around 25 MGD. Carpet manufacturers are currently using around 7 gallons per yard of carpet produced versus approximately 21 gallons per yard, prior to implementing these water conserving programs. DU continues to work with local industry to farther reduce water use through programs like the pretreatment program where industrial users may utilize mass based limits in order to further encourage water conservation measures.

DU continues its wastewater reuse program for potential industrial customers. The first user was a 1240 Megawatt combined cycle natural gas fired power generation plant which has utilized treated wastewater instead of potable water or surface water from the Conasauga River, for cooling. This reuse project which has been in effect since 2002 reclaims up to 13.5 MGD of treated wastewater which is used in lieu of surface water withdrawals.

- i. The proposed date upon which the transfer is to commerce:

The transfers occur presently as this is a renewal application.

- j. The purpose and justification for the proposed transfer:

Purchasing water from EUD will help OUD meet the demands of providing water for a rapidly growing customer base. In addition to the growth in customer base, OUD has experienced a growth in the per customer usage of about 7% over the past 10 years. This is attributable in great part to the addition of new and/or expansion of existing poultry operations in the system. Nearly 80% of the poultry houses in the distribution system are located in the southwest portion of the OUD service area where EUD connections are. This portion of OUD's distribution system is the most recent one needing service due to the poor well quality. With the exception of the service areas on the fringe of Cleveland city limits, this is the fastest growing area in the OUD encompassing over 1,302 of the 2,645 new customers added since 2002. On a county-wide basis, it actually includes 20% of the subdivision lots approved by Bradley County over the past 5 years. EUD's connections will provide the most viable solution for providing water where it is most needed.

DU needs the inter-basin transfer to continue for several reasons. They have contributed monetarily through investments in upgrades to EUD's distribution system in order to provide the water transfer to serve residents of northern Whitfield County that had previously relied on wells with poor water quality. The transfer has been place and occurring for approximately 10 years and these same customers have become reliant on this source of safe drinking water. Other options for serving these customers would bring about negative economic impact by requiring additional investments in additional reservoir capacity and infrastructure and would also serve as a negative impact environmentally.

DU will be conducting over the next 5 years an overhaul of the water treatment plant resulting in as much as 25 MGD loss of treatment capacity, during equipment replacement. During this period it is imperative to have EUD's inter-basin transfer capacity of 5 MGD be available to meet DU customer water demand.

Furthermore, this transfer is necessary for DU to meet water demand during periods of drought conditions for those customers who are served by the interconnection with EUD. DU's distribution system in the north service area of Whitfield County has become totally dependent upon the interconnection with EUD over the last 10 years of new service connections. The Conasauga River is a much smaller and biologically diverse system than the Tennessee River which can withstand drought conditions much easier. Finally, the water supplied by the interconnection with EUD is more consistent in terms of supply and pressure and not normally subject to restrictions during Georgia droughts.