COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF BLUEGRASS WATER UTILITY OPERATING COMPANY, LLC FOR CERTIFICATES OF CONVENIENCE AND NECESSITY FOR PROJECTS AT THE DELAPLAIN SITE	)))))	CASE NO. 2022-00104

O R D E R

On March 28, 2022, Bluegrass Water Utility Operating Company, LLC (Bluegrass Water) filed an application pursuant to KRS 270.020 and 807 KAR 5:001, Section 15, seeking a Certificate of Public Convenience and Necessity (CPCN) to install a moving bed biofilm reactor (MBBR) treatment system, a solids handling system, security fencing, and a gravel access road at its Delaplain wastewater treatment plant (Delaplain) in Scott County, Kentucky. No party requested intervention in this proceeding. Bluegrass Water responded to four sets of requests for information from Commission Staff. On July 19, 2022, Bluegrass Water requested that this matter be submitted for a decision on the written record. This matter stands submitted for a decision based on the written record.

LEGAL STANDARD

No utility may construct or acquire any facility to be used in providing utility service to the public until it has obtained a CPCN from this Commission.[1] To obtain a CPCN, the utility must demonstrate a need for such facilities and an absence of wasteful duplication.[2]

[1] KRS 278.020(1). Although the statute exempts certain types of projects from the requirement to obtain a CPCN, the exemptions are not applicable.

[2] *Kentucky Utilities Co. v. Pub. Serv. Comm 'n*, 252 S.W.2d 885 (Ky. 1952).

"Need" requires:

> [A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed or operated.
>
> [T]he inadequacy must be due either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business; or to indifference, poor management or disregard of the rights of consumers, persisting over such a period of time as to establish an inability or unwillingness to render adequate service.[3]

"Wasteful duplication" is defined as "an excess of capacity over need" and "an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties."[4] To demonstrate that a proposed facility does not result in wasteful duplication, the Commission has held that the applicant must demonstrate that a thorough review of all reasonable alternatives has been performed.[5] Although cost is a factor, selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication.[6] All relevant factors must be balanced.[7]

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[3] *Kentucky Utilities Co.*, 252 S.W.2d at 890.

[4] *Kentucky Utilities Co.*, 252 S.W.2d at 890.

[5] Case No. 2005-00142, *Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of Transmission Facilities in Jefferson, Bullitt, Meade, and Hardin Counties, Kentucky* (Ky. PSC Sept. 8, 2005), Order at 11.

[6] *See Kentucky Utilities Co. v. Pub. Serv. Comm'n*, 390 S.W.2d 168, 175 (Ky. 1965). *See also* Case No. 2005-00089, *Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for the Construction of a 138 kV Electric Transmission Line in Rowan County, Kentucky* (Ky. PSC Aug. 19, 2005), final Order.

[7] Case No. 2005-00089, *East Kentucky Power Cooperative, Inc.* (Ky. PSC Aug. 19, 2005), final Order at 6.

BACKGROUND

Bluegrass Water is a Class B sewer utility organized and existing under the laws of the Commonwealth of Kentucky.[8] Bluegrass Water acquired Delaplain after the transfer was approved by the Commission in Case No. 2020-00297.[9] Delaplain provides wastewater collection and treatment service in Scott County, Kentucky of 240,000 gallons per day on average.[10]

Bluegrass Water indicated that Delaplain is not currently capable of consistently complying with permitted limits.[11] Specifically, Bluegrass Water provided an Effluent Limit Exceedances Report from the United States Environmental Protection Agency's ECHO compliance website indicating that since July 2019, Delaplain has been cited for a total of 66 exceedances: two associated with ammonia limits, 28 for biochemical oxygen demand (BOD), 18 for total suspended solids (TSS), 11 for *E. coli*, and seven for total residual chlorine.[12]

Bluegrass Water's third-party engineering firm, 21 Design, inspected Delaplain before Bluegrass Water purchased the system and prepared a report that indicated that the maximum monthly average daily flow and peak flows were too great relative to the existing rated capacity and plant size, noted exceedances in ammonia, BOD, and TSS,

[8] Application, Exhibit C.

[9] Application at Case No. 2020-00297, *Electronic Proposed Acquisition by Bluegrass Water Utility Operating Company, LLC and the Transfer of Ownership and Control of Assets by: Delaplain Disposal Company; Herrington Haven Wastewater Company, Inc.; Springcrest Sewer Company, Inc; And Woodland Acres Utilities, LLC* (Ky. PSC Jan. 14, 2021), Order at 16.

[10] Bluegrass Water's Response to Commission Staff's First Request for Information (Response to Staff's First Request) (filed June 13, 2022), Item 2, KY2022-00104_BW_0362 to 0373.

[11] Bluegrass Water's Response to Staff's First Request, Item 8.

[12] Bluegrass Water's Response to Staff's First Request, Item 4, KY2022-00104_BW_0374 to 0380.

and identified deficiencies at the plant causing it to exceed permitted limits or otherwise making it unsafe to operate.[13] Bluegrass Water entered into an agreed order with the Kentucky Energy and Environment Cabinet's Division of Water (DOW) that required it to file a Corrective Action Plan (CAP) describing how it would correct any deficiencies at the plant and prevent exceedances.[14] Bluegrass Water submitted a CAP to the DOW on October 20, 2021,[15] and submitted an amended CAP on March 17, 2022.[16] The Moving Bed Biofilm Reactor (MBBR) treatment system and solids handling system for which Bluegrass Water requests a CPCN are consistent with the amended CAP Bluegrass Water submitted to the DOW and are intended to cure Delaplain's exceedances. Although the amended CAP references a second and possibly third phase of improvements at Delaplain, Bluegrass Water has since contended that it does not foresee requiring additional improvements to meet effluent limits.[17]

PROPOSED PROJECTS

Moving Bed Biofilm Reactor (MBBR)

Delaplain currently regulates ammonia and BOD levels by means of a conventional aeration system that uses blowers to aerate and move the wastewater, which then causes

[13] Bluegrass Water's Response to Staff's First Request, Item 2, KY2022-00104_BW_0362 to 0373.

[14] Bluegrass Water's Response to Staff's First Request, Item 24, KY2022-00104_BW_0393 to 0403.

[15] Bluegrass Water's Response to Staff's First Request, Item 24, KY2022-00104_BW_0414 to 0416.

[16] Bluegrass Water's Response to Staff's First Request, Item 24, KY2022-00104_BW_0418 to 0420.

[17] Bluegrass Water's Response to Commission Staff's Fourth Request for Information (Response to Staff's Fourth Request) (filed Jan. 19, 2023), Item 2.

increased biological activity to metabolize the waste.[18] Bluegrass Water asserted that the aeration system currently in place has been unable to handle the current volume of wastewater, resulting in the documented exceedances for ammonia BOD.[19]

Bluegrass Water proposed installing a MBBR treatment system in existing tankage, which dramatically improves aeration treatment by providing significantly more surface area for biofilm to form on, thereby concentrating the amount of biological treatment that can occur and reducing ammonia and BOD.[20] Bluegrass Water estimates a reduction in ammonia 6.3 mg/L of ammonia and 157 mg/L of BOD.[21] The MBBR will also aid in the reduction of TSS by providing more vigorous biological processes in the plant and therefore breaking down a larger portion of the organic component of the sludge.[22] The estimated cost of this project is $311,500.[23] Bluegrass Water does not expect a change in operations and maintenance (O&M) which for the entire facility is $156,961.89.[24]

Bluegrass Water addressed alternative methods of reducing ammonia and BOD levels. One option was to add more conventional aeration tankage. However, this option would be less efficient than attached growth biological treatment and would require more blowers and other aeration equipment, resulting in over $750,000 in initial costs and

[18] Bluegrass Water's Response to Staff's First Request, Item 4.

[19] Application at 3-4.

[20] Application at 3-4.

[21] Bluegrass Water's Response to Staff's First Request, Item 7.

[22] Bluegrass Water's Response to Staff's First Request, Item 10.

[23] Application at 4.

[24] Application at 5; Bluegrass Water's Response to Staff's First Request, Item 19, KY2022-00104_BW_0383.

greater power consumption at the facility.[25] A more conventional integrated fixed-film activated sludge (IFAS) attached growth system was also considered; however, this system is more operationally complex, which makes it prone to treatment failure, and would require additional tankage repairs.[26] The estimated cost of this alternative was in excess of $500,000,[27] and total annual O&M expense would be the same as the proposed MBBR project.[28] Bluegrass Water also explored installation of the MBBR system in separate tanks alongside the existing facility. This option would cost $600,000 due to the additional tankage and piping.[29]

Solids Handling Improvements

Delaplain currently regulates TSS via a conventional clarification system in which flow is slowed to allow solids to settle out and float to the top--settled solids are returned to the aeration chamber via an air lift activated sludge return, are skimmed, and returned to the aeration basin. Cleared water is then captured in a trough protected from floating solids by a weir and routed to disinfection.[30] The present system has been ineffective at removing TSS to the extent necessary to meet permitted limits.

Bluegrass Water proposed the installation of a polymer feed and tertiary filter to improve the facility's ability to settle fine solids.[31] Polymer feeds cause increased

[25] Bluegrass Water's Response to Staff's First Request, Item 8.

[26] Bluegrass Water's Response to Staff's First Request, Item 8.

[27] Bluegrass Water's Response to Staff's First Request, Item 8.

[28] Bluegrass Water's Response to Staff's Third Request for Information (Response to Staff's Third Request) (filed Nov. 7, 2022), Item 1.

[29] Bluegrass Water's Response to Staff's First Request, Item 8.

[30] Bluegrass Water's Response to Staff's First Request, Item 13.

[31] Application at 4.

coagulation of solids, resulting in larger and more easily settled clumps of solids particles. A tertiary filtration system physically removes solids prior to disinfection and discharge.[32] These proposals are estimated to reduce TSS to under 10 mg/L, within permitted limits.[33] Reduction of TSS levels will also reduce other levels, such as *E.coli*, because any suspended solids allowed to leave the system carry large amounts of bacteria and nutrients.[34] The estimated cost of the polymer feed is $20,000 and the estimated cost of the tertiary filter is $263,000.[35] Bluegrass Water does not anticipate any change to O&M cost based on this upgrade.[36]

Bluegrass Water considered other alternatives to the proposed projects for treatment of solids. One alternative would be to build a larger, secondary clarifier in additional tankage at an estimated cost of over $500,000.[37] Bluegrass Water's CAP mentions that this option may be necessary eventually depending on growth in the area but is not necessary at this time for the current flow level.[38] Another option would be a differently sized tertiary filter. Bluegrass Water stated that the filter proposed was selected because an essentially new piece of adequately sized equipment became

[32] Bluegrass Water's Response to Staff's First Request, Item 13.

[33] Bluegrass Water's Response to Staff's First Request, Item 16.

[34] Bluegrass Water's Response to Staff's First Request, Item 17.

[35] Application at 4-5.

[36] Application at 5. Though, Bluegrass Water discussed the O&M expense in net terms. It later explained that the MBBR project would result in a reduction in sludge hauling costs whereas the solids handling project, on its own, would result in an increase in chemical costs and sludge hauling costs that would net out against the decreases arising from the MBBR project. Bluegrass Water's Response to Staff's First Request, Item 1.

[37] Bluegrass Water's Response to Staff's First Request, Item 17.

[38] Bluegrass Water's Response to Staff's First Request, Item 24, KY2022-00104_BW_0419.

available to Bluegrass Water at a used price of $165,200, compared to $300,000 for new equipment, such that using different sized filters would increase the total capital cost of the solids handling project to $418,000.[39]

City of Georgetown Sewer System

Bluegrass Water investigated the possibility of shutting down the Delaplain site and connecting to the wastewater treatment system operated by the city of Georgetown, which has a main leading to Delaplain, but was not interested in participating voluntarily. This option was rejected because the main located on the site is already receiving enough flow that it could not handle flow from the Delaplain facility and would require construction of a new pumping station and two miles of main at an estimated cost of $1,340,000.[40] Bluegrass Water also estimated a yearly treatment cost of $735,000.[41]

Other Projects

Bluegrass Water also seeks to install security fencing at an estimated cost of $9,200 for safety purposes and a gravel access road at an estimated cost of $6,000 for safe, all-weather access to the site.[42] Bluegrass Water's CAP indicated the need for a second phase of improvements, including an equalization tank and an influent pumping system to minimize the peak flows sent to the system.[43] The CAP also indicated the possible need for a third phase of improvements, adding a second stage clarifier if

[39] Bluegrass Water's Response to Staff's First Request, Item 17.

[40] Bluegrass Water's Response to Staff's Third Request, Item 1.

[41] Bluegrass Water's Response to Staff's Third Request, Item 1.

[42] Application at 6.

[43] Bluegrass Water's Response to Staff's First Request, Item 24, KY2022-00104_BW_0419.

necessary to meet growth.[44] The costs associated with these potential improvements, combined with the present proposals, are not expected to exceed the costs of connecting to the city of Georgetown.[45]

DISCUSSION AND FINDINGS

Having considered the application and all evidence in the record, the Commission finds that the CPCN should be granted. The evidence indicates that the Delaplain system has exceeded permitted limits for the past three years with respect to ammonia, BOD, TSS, and *E.coli*, and that action is needed to ensure compliance with applicable laws. In fact, as noted above, Bluegrass Water entered into an Agreed Order with the DOW that, among other things, required it to file a CAP describing how it would cure the deficiencies causing the system to exceed permit limits. The proposed projects, which are consistent with Bluegrass Water's CAP, are necessary to meet permitted effluent limits for ammonia, BOD, TSS, and *E.coli*. Thus, the Commission finds that there is a need for the proposed projects.

There are alternatives that could potentially address the needs to be satisfied by the proposed projects, but the evidence indicates that those alternatives would be more costly without providing added benefits. Using the useful lives provided by Bluegrass Water[46] in this matter and the weighted average cost of capital (WACC) established in

[44] Bluegrass Water's Response to Staff's First Request, Item 24, KY2022-00104_BW_0419.

[45] Bluegrass Water's Response to Staff's First Request, Item 17 indicates approximately $500,000 capital cost for new clarifier.

[46] Bluegrass Water's Response to Commission Staff's Second Request for Information, Item 1; Bluegrass Water's Response to Staff's Third Request, Item 1.

Case No. 2020-00290,[47] the estimated first year revenue impact of the proposed projects is lower than any of the alternatives discussed herein, and the first year revenue impact of the combined projects is lower than the alternative of connecting to the city and eliminating the wastewater treatment plant. Specifically, the first year revenue requirement impacts of the options to remedy ammonia and BOD limits are as follows:[48]

	Proposed Project	IFAS Alternative	Aeration Alternative	Tankage Alternative	Connect to City
Construction Costs	$ 311,500	$ 500,000	$ 750,000	$ 600,000	$ 1,340,000
Multiply by: WACC	7.95%	7.95%	7.95%	7.95%	7.95%
Rate Base Effect	$ 24,764	$ 39,750	$ 59,625	$ 47,700	$ 106,530
Depreciation	$ 15,184	$ 25,000	$ 37,500	$ 30,000	$ 31,953
Annual O&M Expense	$ 156,961	$ 156,961	$ 192,311	$ 192,311	$ 735,000
Total Revenue Requirement	$ 196,909	$ 221,711	$ 289,436	$ 270,011	$ 873,483
Less: Current Annual O&M Expense	$ 156,961	$ 156,961	$ 156,961	$ 156,961	$ 156,961
Total Revenue Requirement Impact	$ 39,948	$ 64,750	$ 132,475	$ 113,050	$ 716,522

The first year revenue requirement impacts of the options to remedy TSS and *E.coli* limits are as follows:

[47] *See* Case No. 2020-00290, *Electronic Application of Bluegrass Water Utility Operating Company, LLC for an Adjustment of Rates and Approval of Construction* (Ky. PSC Aug. 2, 2021), Order at 110 (establishing a WACC of 7.95%).

[48] As noted above, Bluegrass Water discussed the O&M expense for the proposed projects in net terms. It later explained that the MBBR project would result in a reduction in sludge hauling costs whereas the solids handling project, and the polymer feed system in particular, would result in an increase in chemical and sludge hauling costs that it estimated would roughly net out against the decreases arising from the MBBR project. In the future, Bluegrass Water should provide the specific capital costs and the O&M expense effects of each project and realistic alternatives as part of its proof that a project will not result in wasteful duplication, or it may fail to meet its burden. However, since all of the alternatives here either included a polymer feed system or had capital costs, and therefore depreciation and carrying costs, significantly higher than the proposed projects, Bluegrass Water's failure to break out the O&M expense for each proposed project likely would not have affected the cost benefit analysis in this case.

	Proposed Project	Tertiary Filters	Separate Tankage Alternative	Connect to City
Construction Costs	$ 283,200	$ 418,000	$ 500,000	$ 1,340,000
Multiply by: WACC	7.95%	7.95%	7.95%	7.95%
Rate Base Effect	$ 22,514	$ 33,231	$ 39,750	$ 106,530
Depreciation	$ 12,749	$ 20,900	$ 25,000	$ 31,953
Annual O&M Expense	$ 156,961	$ 156,961	$ 156,961	$ 735,000
Total Revenue Requirement	$ 192,224	$ 211,092	$ 221,711	$ 873,483
Less: Current Annual O&M Expense	$ 156,961	$ 156,961	$ 156,961	$ 156,961
Total Revenue Requirement Impact	$ 35,263	$ 54,131	$ 64,750	$ 716,522

Further, the revenue requirement impact would not be lower during the life of the projects, because the projects would have the same or higher O&M expense, higher depreciation, and rate base effects (or returns), even though the difference between the rate base effects will decrease over time as the projects depreciate. Finally, although Bluegrass Water's amended CAP indicated a possible need for further improvements in the future, particularly in the event of significant population growth, the need for those improvements is not certain and the cost of further improvements is unlikely to exceed the cost of connecting to the Georgetown system, given the significant annual O&M expense that would be associated with Georgetown transporting and treating Delaplain's wastewater.

For the reasons discussed above, the Commission finds that the construction activities described in Bluegrass Water's CPCN application are needed and will not result in wasteful duplication. Therefore, the Commission finds that Bluegrass Water's request for a CPCN should be granted. However, in order to protect customers from unforeseen costs, the Commission finds that any material deviation from the construction approved by this Order should be undertaken only with the prior approval of the Commission.

Finally, Bluegrass Water indicated in its application that it would fund the proposed projects with equity capital, but also stated in its application that it expected to request approval for debt financing in 2022 and that it may then utilize debt to finance all or part

of the proposed projects.[49] In Case No. 2019-00104, in which Bluegrass Water was first authorized to acquire systems in Kentucky, Bluegrass Water supported its request by indicating its intent to maintain a capital structure with at least 50 percent debt financing,[50] and it later stated that it would meet that commitment, on which its acquisitions have been conditioned,[51] by financing plant additions with a mix of debt and equity to achieve a capital structure with at least 50 percent debt.[52] While this Order should not be construed as approving or disapproving the use of any particular financing mix for the proposed projects, it also should not be interpreted as eliminating any conditions established in Case No. 2019-00104 and other cases.

IT IS THEREFORE ORDERED that:

1. Bluegrass Water's request for a CPCN for the proposed projects described in its application is granted.

2. Bluegrass Water shall immediately notify the Commission upon knowledge of any material changes to the project, including, but not limited to, a material increase in costs and any significant delays in construction.

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[49] Application at 5.

[50] Case No. 2019-00104, *Electronic Proposed Acquisition by Bluegrass Water Utility Operating Company, LLC and the Transfer of Ownership and Control of Assets by P.R. Wastewater Management, Inc., Marshall County Environmental Services, LLC, LH Treatment Company, LLC, Kingswood Development, Inc., Airview Utilities, LLC, Brocklyn Utilities, LLC, Fox Run Utilities, LLC, Brocklyn Utilities, LLC, and Lake Columbia Utilities, Inc.* (Ky. PSC. Aug. 14, 2019), Order at 18.

[51] *See* Case No. 2020-00297 *Electronic Proposed Acquisition by Bluegrass Water Utility Operating Company, LLC and the Transfer of Ownership and Control of Assets by: Delaplain Disposal Company; Herrington Haven Wastewater Company, Inc.; Springcrest Sewer Company, Inc; and Woodland Acres Utilities, LLC* (Ky. PSC Jan. 14, 2021), Order at 10; Case No. 2019-00360, *Electronic Proposed Acquisition by Bluegrass Water Utility Operating Company, LLC and the Transfer of Ownership and Control of Assets by Center Ridge Water District, Inc.; Joann Estates Utilities, Inc.; and River Bluffs, Inc.* (Ky. PSC Feb. 17, 2020), Order at 12; Case No. 2019-00104, *Bluegrass Water Utility* (Ky. PSC. Aug. 14, 2019), Order at 18.

[52] Case No. 2019-00104, *Bluegrass Water Utility* (filed Oct. 31, 2019), Notice and Plan Re: Capital Structure.

3. Any material deviation from the construction approved by this Order shall be undertaken only with the prior approval of the Commission.

4. Bluegrass Water shall file with the Commission documentation of the total costs of the projects, including the cost of construction and all other capitalized costs, (e.g. engineering, legal, administrative, etc.) within 60 days of the date that construction authorized under this CPCN is substantially completed. Construction costs shall be classified into appropriate plant accounts in accordance with the Uniform System of Accounts for sewer utilities as prescribed by the Commission.

5. Bluegrass Water shall file a copy of the "as-built" drawings, if any, and a certified statement that the construction has been satisfactorily completed in accordance with the plans and specifications within 60 days of the substantial completion of the construction certificated herein.

6. Any documents filed in the future pursuant to ordering paragraph 2 through 5 shall reference this case number and shall be retained in the post-case correspondence file for this proceeding.

7. The Executive Director is delegated authority to grant reasonable extensions of time for filing any documents required by this Order upon Bluegrass Water's showing of good cause for such extension.

8. This case is closed and is removed from the Commission's docket.

PUBLIC SERVICE COMMISSION

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Chairman

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Vice Chairman

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Commissioner

ENTERED

MAR 30 2023

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KENTUCKY PUBLIC SERVICE COMMISSION

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