STATE OF NORTH CAROLINA FILED COUNTY OF MECKLENBURG 2021 APR 26 A 9:23 DAEDALUS, LLC, individually and on behalf of all others similarly situated, Plaintiffs, BY v. CITY OF CHARLOTTE, Defendant.	IN THE GENERAL COURT OF JUSTICE SUPERIOR COURT DIVISION 21-CVS- 6852 **CLASS ACTION COMPLAINT**

NOW COMES Plaintiff Daedalus, LLC ("Plaintiffs"), individually and on behalf of all others similarly situated, by and through the undersigned counsel, complaining of Defendant City of Charlotte (the "City"), and allege as follows:

NATURE OF THE ACTION

1. Plaintiff, on behalf of itself and others similarly situated, bring this action to obtain redress for injuries arising from the City's *ultra vires* and unlawful charge and collection of "system development fees" (also sometimes called "capacity fees") as a mandatory condition of providing a new or upsized connection to the City's water and/or sewer systems (hereinafter "SDFs") from July 1, 2020 through the present.

2. The City's SDFs charged and collected from July 1, 2020 through the present violate various provisions of the "Public Water and Sewer System Development Fee Act," Chapter 162A, Article 8 of the North Carolina General Statutes, as well as the City's own adopted Ordinances, policies, and manuals.

3. This is a class action, filed pursuant to Rule 23 of the North Carolina Rules of Civil Procedure, on behalf of Plaintiffs and others similarly situated who have paid SDFs to the City from

July 1, 2020 through the present.

4. This case follows *Daedalus, LLC, et al. v. City of Charlotte*, Mecklenburg County Superior Court No. 18-CVS-21073 (the "Daedalus action"), a certified class action lawsuit challenging the City's SDFs charged during fiscal years 2019 and 2020 (i.e., July 1, 2018 through June 30, 2020).

JURISDICTION AND VENUE

5. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

6. This Court has jurisdiction over the parties and the subject matter of this action pursuant to N.C. Gen. Stat. § 1-253, *et seq.*, and Rule 57 of the North Carolina Rules of Civil Procedure and/or other applicable law, because the rights of Plaintiffs and the Class are directly and adversely affected by the City's violations of the State law and its own adopted Ordinances, policies, and procedures, and Plaintiff and the Class have suffered and will continue to suffer irreparable harm without the relief requested herein.

7. A genuine and justiciable controversy exists in that Plaintiff, on behalf of itself and the Class, allege that the City's System Development Fees charged to Plaintiff and the Class from July 1, 2020 through the present were *ultra vires* and unlawful, while, upon information and belief, the City claims that said fees were lawful.

8. Venue is proper under N.C. Gen. Stat. § 1-82 in that Charlotte is a body politic and a corporate municipality in Mecklenburg County, North Carolina.

9. A copy of this complaint has been served on the Attorney General of North Carolina pursuant to N.C. Gen. Stat. § 1-260.

PARTIES

10. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

11. Plaintiff Daedalus, LLC is a North Carolina limited liability company with a principal place of business in Mecklenburg County, North Carolina.

12. The City is a body politic and a corporate municipality with the capacity to be sued as provided in N.C. Gen. Stat. § 160A-11.

13. The City is not entitled to any governmental or legislative immunity because it undertook functions beyond its governmental and propriety immunities.

14. The City is not entitled to sovereign immunity or any other immunities, and has, to the extent it has purchased insurance or participates in a risk pool arrangement or is self-insured, has waived sovereign immunity and all other immunities.

FACTUAL ALLEGATIONS

THE CITY'S UTILITY EXTENSION POLICY REQUIRES NEW DEVELOPMENT TO CONSTRUCT AND PAY FOR THE COST OF LOCALIZED WATER DISTRIBUTION AND SEWER COLLECTION MAINS NECESSARY TO SERVE THE NEW DEVELOPMENT

15. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

16. Since at least 2010, all properties requiring a new extension to the City's water and/or sewer systems have been required to comply with the City's Utility Extension Policy, adopted by the Charlotte City Council on January 25, 2010, Resolution Book 42, Page 358 (the "Extension Policy"). A copy of the Extension Policy is attached hereto as "Exhibit A" and incorporated by reference herein.

17. The Extension Policy is incorporated as part of the City's Code of Ordinances at Chapter 23, Article IV of the Code of Ordinance.

18. The purpose of the Extension Policy "is to establish the method to be used for the orderly and financially sound extension of the [City's] public water and sewer system." (Ex. A, p. III-1).

19. The Extension Policy is applicable to all developers in the City's water and/or sewer service area, defined as an "individual, firm, or corporation which is improving property or causing property to be improved by the provision of streets, buildings, or other infrastructure or by the assembly or subdivision of property."

20. Pursuant to the Extension Policy, the City will provide new development with the "basic components" of the City's water and sewer systems, being "treatment facilities, water pumping stations, major and/or regional wastewater lift stations, water storage tanks, wastewater interceptors and trunk mains, and major water transmission mains":

> Utilities will provide certain basic components of the water and sewer system. These components include treatment facilities, water pumping stations, major and/or regional wastewater lift stations, water storage tanks, wastewater interceptor and trunk mains, and major water transmission mains. The purpose of these facilities is to treat, store, and convey water and wastewater throughout the service area. These facilities will be constructed and/or improved according to a Capital Improvements Program ("CIP") which is reviewed and approved annual by the Charlotte City Council. (Emphasis added)

21. The Extension Policy defines "transmission mains" as pipes typically being 12-inches or greater in diameter, and which "supply water to smaller street mains."

22. The Extension Policy defines "wastewater interceptors" as "a larger sewer pipe usually constructed along a major creek which collects wastewater flow discharged from trunk mains," sometimes also called "outfalls," and defines "trunk mains" as "a sewer pipe constructed

along a drainage pattern or minor creek to collect flows discharged from sewer street mains."

23. Wastewater interceptors and trunk mains are sometimes also referred to as "conveyance" mains.

24. Pursuant to the Extension Policy, developers are required to construct at their own expense all other water and sewer components necessary to serve the development, including water and sewer "street mains":

> Utilities will not participate in the cost of street main extensions which are required strictly for subdivision of land. All such projects will be financed wholly by the developer of the land. Utilities will agree by contract to own and maintain water distribution and wastewater collection systems if these systems are designed and constructed in accordance with prevailing Utilities standards and specifications and if the existing Utilities system has adequate capacity to sustain the new development. Such contract agreements must be obtained prior to construction of the system. (Emphasis added)

25. The Extension Policy defines a "street main" as "a water or sewer pipe installed along a street, road, or highway primarily for the purpose of providing water or sewer service to the property along that street."

26. Water and sewer "street mains" are sometimes also referred to as "water distribution" and "sewer collection" mains. Water and sewer "street mains" are also known and referred to as "water distribution mains" and "sewer collection mains." *See, e.g.*, American Water Works Association, M1 Manual, *Principles of Water Rates, Fees, and Charges*, 7th Ed. (2017), p. 314 Figure VII.1-1.

27. Pursuant to the Extension Policy and/or other adopted policies and procedures of the City, new development requiring connection to the City's water and/or sewer systems only receives access to the City's existing major water transmission mains and wastewater interceptor and trunk mains, and developers must construct, at their own expense, all water and sewer street mains necessary to serve the property.

THE CITY'S REVENUE MANUAL AND EXTENSION POLICY PROVIDE THAT THE CITY'S "BUY-IN" SYSTEM DEVELOPMENT FEE BE CALCULATED BASED ON THE COST OF THE CITY'S EXISTING WATER AND SEWER "BACKBONE INFRASTRUCTURE," SUCH AS MAJOR WATER TRANSMISSION MAINS AND SEWER INTERCEPTORS AND TRUNK MAINS, AND NOT LOCALIZED WATER DISTRIBUTION AND SEWER COLLECTION MAINS

28. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

29. Since at least 2010, in addition to requiring new development to construct all water distribution and sewer collection mains necessary to serve the new development, the City has also required new development to pay SDFs.

30. The City will not provide a new or upsized connection to its water and/or sewer systems unless the developer pays the SDFs to the City.

31. At all relevant times, as described in the City's adopted revenue manuals, the City's purpose in charging SDFs is for new development to "buy-in" to the cost of the "existing backbone facilities" of the City's water and sewer system at a rate that "reflects the prior investment of existing customers" in this infrastructure.

32. Chapter 23, § 12 of the City Code of Ordinances, titled "Capacity charge," attached hereto as "Exhibit B" and incorporated by reference herein, authorizes the City to charge SDFs as follows[1]:

> Each application for water or sewer service shall pay the applicable capacity charge for the type and size of service connection requested. The capacity charge shall be arrived at in accordance with the water and sewer rate methodology documents as set forth in the schedule of current rate, fees, and charges.

[1] Prior to fiscal year 2020, the City called its SDFs "capacity fees," and changed the name of the SDFs to "system development fees" beginning fiscal year 2020.

33. Chapter 23, § 129 of the City Code of Ordinances, titled "Charges for making service connections," attached hereto as "Exhibit C" and incorporated by reference herein, provides as follows:

> The charges for making service connections of sizes four inches or smaller shall be arrived at in accordance with the water and sewer rate methodology set forth in the Charlotte-Mecklenburg Utility Department Revenue Manual dated November 26, 2012, which is on file with the city clerk. The above documents shall be referred to as the "revenue manual." Such rates, fees and charges as are determined in accordance with the revenue manual and any modifications thereto and any other CMU water or sewer rates, fees or charges determined in accordance with applicable law are referred to as the "schedule of current rates, fees and charges" in this chapter.

34. The Charlotte-Mecklenburg Utility Department Revenue Manual dated November 26, 2012, was adopted by the Charlotte City Council on November 26, 2012, Ordinance No. 5007, Ordinance Book 57, Page 919 (the "2012 Revenue Manual"), and is attached hereto as "Exhibit D" and incorporated by reference herein. The 2012 Revenue Manual provides as follows with respect to the methodology of the City's calculation of SDFs:

> The current capacity fees are calculated using the 'buy-in method which requires new customers to buy in to the existing backbone facilities plants, pump stations, supply reservoirs, large collection and distribution facilities generally at a rate that reflects the prior investment of existing customers per unit of total capacity. (Emphasis added)

35. Pursuant to the 2012 Revenue Manual, the only water and sewer facilities to be included as part of the cost basis of the City's calculation of the SDFs are "plants, pump stations, supply reservoirs, [and] large collection and distribution facilities."

36. The "backbone facilities" described in the 2012 Revenue Manual do not include smaller, localized water distribution and sewer collection pipes, such as the street mains required to be constructed by a developer at its own expense pursuant to the Extension Policy.

37. The City revised its Revenue Manual on June 8, 2015, adopted by ordinance of the Charlotte City Council, Ordinance No. 5949-X, Ordinance Book 59, Page 375 (the "2015 Revenue Manual")[2] The 2015 Revenue Manual contains identical language as the 2012 Revenue Manual with respect to the calculation of SDFs:

> The current capacity fees are calculated using the buy-in method which requires new customers to buy in to the existing backbone facilities plants, pump stations, supply reservoirs, large collection and distribution facilities) generally at a rate that reflects the prior investment of existing customers per unit of total capacity. (Emphasis added)

38. The City revised its Revenue Manual again on June 11, 2018, which was adopted by ordinance of the Charlotte City Council, Ordinance No. 9348-X, Ordinance Book 61, Page 429 (the "2018 Revenue Manual"), a copy of which is attached hereto as "Exhibit E" and incorporated by reference herein. The 2018 Revenue Manual contains identical language as the 2012 Revenue Manual and the 2015 Revenue Manual with respect to the calculation of SDFs:[3]

> CLTWATER's System Development Fees are calculated using the Capacity Buy-In Method which requires new customers to buy into existing backbone facilities - plants, pump stations, supply reservoirs, large collection and distribution facilities - generally at a rate that reflects the prior investment of existing customers per unit of total capacity.

(emphasis added)

39. The 2018 Revenue Manual is the most recently adopted water and sewer revenue manual of the City; however, the City Code of Ordinances still expressly incorporates the 2012 Revenue Manual as the applicable water and sewer revenue manual.

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[2] The City did not amend Chapter 23, § 129 of the City Code of Ordinances to incorporate the 2015 Revenue Manual in place of the 2012 Revenue Manual.

[3] The City did not amend Chapter 23, § 129 of the City Code of Ordinances to incorporate the 2018 Revenue Manual in place of the 2012 Revenue Manual.

40. Consistent with the 2012 Revenue Manual, the 2015 Revenue Manual, and the 2018 Revenue Manual, the Extension Policy likewise defines the City's SDF as a charge "to recover from new customers a portion of the incremental cost of providing capacity in the treatment facilities, transmission mains, major outfalls and sewer trunks which have been constructed to allow for new development and expansion of the system." (Emphasis added)

41. Like the 2012 Revenue Manual, the 2015 Revenue Manual, and the 2018 Revenue Manual, the facilities described in the Extension Policy do not include localized water distribution and sewer collection mains that are the same types of mains that must be constructed by developers pursuant to the Extension Policy.

42. The 2012 Revenue Manual, the 2015 Revenue Manual, the 2018 Revenue Manual, and the Extension Policy all direct that the City only include major water transmission mains and wastewater interceptor and trunk mains as part of its SDF calculation, and not water distribution and sewer collection mains.

THE CITY'S REVENUE MANUALS AND EXTENSION POLICY ARE CONSISTENT WITH GENERALLY ACCEPTED INDUSTRY STANDARDS USED IN CALCULATING SYSTEM DEVELOPMENT FEES, WHICH PROVIDE THAT LOCALIZED WATER DISTRIBUTION AND SEWER COLLECTION MAINS ARE EXCLUDED FROM THE SDF CALCULATION WHEN NEW DEVELOPMENT IS REQUIRED TO CONSTRUCT THESE MAINS AT ITS OWN EXPENSE

43. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

44. The provision of the City's "buy-in fee" methodology allowing only the inclusion of "backbone infrastructure" as part of the SDF is consistent with generally-accepted industry practices used to calculate SDFs, which provide that a SDF should be based on the costs of "major backbone infrastructure components that are necessary to provide service to all customers, including source-of-supply facilities, raw water transmission, treatment facilities, pumping

facilities, storage tanks, and major treated-water transmission mains (e.g., "general benefit" facilities[...])" American Water Works Association, M1 Manual, "Principles of Water Rates, Fees, and Charges" (7th Ed.) (hereinafter "AWWA"), p. 321 (emphasis added).

45. Generally accepted methodologies used to calculate buy-in SDFs, such as the "buy-in fee" methodology stated in the City's 2012 Revenue Manual, 2015 Revenue Manual, 2018 Revenue Manual, and Extension Policy do not include smaller, localized water distribution and sewer collection pipes, such as street mains, as part of the SDF calculation because these pipes are generally constructed by the developer at the developer's own expense, as is the case with the City.

46. To include the value of water distribution and sewer collection pipes as part of the SDF creates a double charge to the developer because a developer must construct its own water distribution and sewer collection pipes for its development and receives no benefit from localized pipes in other parts of the city. The developer is paying for the cost of these pipes twice, once through constructing the pipes necessary for its own development, and then again through the payment of a SDF including these same types of pipes in other parts of the City which provide no benefit to the development. This double charge creates a windfall for the City.

47. Upon information and belief, this "double charge" is the reason the City properly did not include water distribution and sewer collection pipes as part of its SDF methodology in the 2012 Revenue Manual, the 2015 Revenue Manual, 2018 Revenue Manual, and Extension Policy.

48. The provision of the City's "buy-in fee" methodology stated in the 2012 Revenue Manual, the 2015 Revenue Manual, 2018 Revenue Manual, and Extension Policy with respect to the fee being calculated "at a rate that reflects the prior investment of existing customers" is consistent with generally-accepted industry practices used to calculate "buy-in" SDFs, which provide that a "buy-in" SDF is "based on the principle of achieving capital equity between new and

existing customers. [The] approach attempts to assess new customers with [a SDF] to approximate the average equity or debt-free investment position of existing customers." (AWWA, p. 331) (emphasis added)

49. Consistent with the 2012 Revenue Manual, the 2015 Revenue Manual, 2018 Revenue Manual, and Extension Policy, the City did not include water distribution and sewer collection mains as part of its SDFs charged prior to July 1, 2018.

50. Specifically, prior to July 1, 2018, the only pipes that the City included as part of its SDF calculation were water transmission pipes greater than 12-inches in diameter and wastewater interceptor and trunk mains.

51. Excluded from the SDFs charged by the City prior to July 1, 2018 were water distribution mains 12-inches in diameter or less and wastewater collection mains.

THE CITY UNLAWFULLY BEGAN INCLUDING LOCALIZED WATER DISTRIBUTION AND SEWER COLLECTION MAINS AS PART OF ITS SDF IN AN EFFORT TO MAINTAIN ITS SDF REVENUE FOLLOWING THE ENACTMENT OF THE PUBLIC WATER AND SEWER SYSTEM DEVELOPMENT FEE ACT

52. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

53. On July 20, 2017, the North Carolina General Assembly enacted the "Public Water and Sewer System Development Fee Act," N.C. Session Law § 2017-138, House Bill 436, codified at Chapter 162A, Article 8 of the North Carolina General Statutes (the "Act").

54. The Act authorizes municipalities and other local governments to charge water and sewer SDFs to new development, subject to certain conditions and limitations as to how the SDF must be calculated.

55. The Act further provides that the municipalities and other local governments must retain a professional consultant to calculate the SDFs pursuant to the provisions of the Act.

56. In late 2017, the City engaged Raftelis Financial Consultants ("Raftelis") to calculate its new SDFs for the City to adopt effective July 1, 2018.

57. Raftelis had also previously calculated the City's SDFs for fiscal years 2016, 2017, and 2018, when all water distribution mains 12-inches in diameter or less and wastewater collection mains were excluded from the SDF calculation.

58. As reflected in Raftelis' calculations for the fiscal year 2019 fees, the conditions and limitations of the Act (specifically, the Act's requirement that local governments credit the outstanding water and sewer system debt principal in the calculation of the fee) would have resulted in a reduction in SDF amounts by well over 50% of the amounts that were charged by the City prior to the Act.

59. A reduction of the SDFs by 50% or more would result in decreased water and sewer revenues of over $10 million annually to the City.

60. Raftelis prepared for the City two alternative SDF calculations: one that excluded water distribution and sewer collection mains (as was the City's practice before the Act); and another which, for the first time, included water distribution and sewer collection mains. Attached hereto as "Exhibit F" and incorporated by reference herein is an excerpt from the Raftelis' fiscal year 2019 SDF model, where the calculation could be made with water distribution and sewer collection mains included or excluded from the SDF.

61. Upon information and belief, Raftelis was unaware at the time it calculated the City's 2019 SDFs that the City's 2012 Revenue Manual, 2015 Revenue Manual, 2018 Revenue Manual, and Extension Policy all provide that the City's SDF should be based only on the cost of the City's existing "backbone" water and sewer infrastructure and should not include localized water distribution and sewer collection mains.

62. The City elected to adopt the higher SDFs calculated by Raftelis, being the SDF with the water distribution and sewer collection mains included as part of the SDF.

63. Specifically, the City's new SDFs included the cost of water distribution mains of 12-inches in diameter or less and sewer collection mains that were not classified as wastewater interceptor or trunk mains. For example, the City included as part of the SDF the cost of infrastructure as minor as 2-inch sewer laterals, which connect an individual property to the sewer street main.

64. The City's inclusion of water distribution and sewer collection mains as part of the SDF allowed the City to increase its fiscal year 2019 water SDF by approximately $335 (from $274 to $610) and its fiscal year 2019 sewer SDF by approximately $664 (from $1,185 to $1,848). These increases resulted in additional annual revenues of over $10 million for the City which would not have been collected if the street mains had not been included as part of the SDFs.

65. The Act provides that a local government "may adopt a system development fee for water or sewer service only in accordance with the conditions and limitations of [Chapter 162A, Article 8]." N.C. Gen. Stat. § 162A-203(a) (emphasis added).

66. The Act provides that a local government may charge a "buy-in" water and sewer SDF "to recoup costs of existing facilities which serve such new development." N.C. Gen. Stat. § 162A-201(9) (emphasis added).

67. In the case of the City's water and sewer systems, the "existing facilities which serve new development" are, per the Extension Policy, the "basic component" facilities that are provided by the City to new development, being "treatment facilities, water pumping stations, major and/or regional wastewater lift stations, water storage tanks, wastewater interceptor and trunk mains, and major water transmission mains."

68. Water distribution and sewer collection mains are not "existing facilities which serve new development" because the developer must construct its own water distribution and sewer collection mains necessary to serve the development.

69. Further, the Act provides that a SDF must be calculated pursuant to "generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost methods..." N.C. Gen. Stat. § 162A-205(3).

70. Like the City's 2012 Revenue Manual, 2015 Revenue Manual, 2018 Revenue Manual, and Extension Policy, generally-accepted methodologies provide that a SDF is based only on the costs of "major backbone infrastructure components that are necessary to provide service to all customers, including source-of-supply facilities, raw water transmission, treatment facilities, pumping facilities, storage tanks, and major treated-water transmission mains (e.g., "general benefit" facilities[...])." AWWA, p. 321 (emphasis added)

71. Generally accepted methodologies used in calculating SDFs do not allow for the inclusion of water distribution and sewer collection mains when such facilities are not provided by the utility to new development, and when new development must instead construct its own water distribution and sewer collection mains.

72. The City adopted its new SDFs which included the cost of water distribution and sewer collection mains, effective July 1, 2018.

73. Despite the City's inclusion of all water distribution and sewer collection mains as part of the SDFs beginning July 1, 2018, the 2018 Revenue Manual, which was adopted at approximately the same time as the City's new SDFs, keeps the provision stating that the SDF may only be based on the cost of "backbone facilities":

> CLTWATER's System Development Fees are calculated using the Capacity Buy-In Method which requires new customers to buy into existing backbone facilities - plants, pump stations, supply reservoirs, large collection and distribution facilities - generally at a rate that reflects the prior investment of existing customers per unit of total capacity. (emphasis added)

74. Further, the 2018 Revenue Manual provides that the SDFs are designed to "recover a portion of the capital costs associated with providing the capacity to serve the new customer coming on-line." (emphasis added)

75. The City's existing water distribution and sewer collection mains do not provide capacity to serve new development because the new development must construct its own water distribution and sewer collection mains, and thus the cost of existing water distribution and sewer collection mains cannot be included as part of the capital costs used in calculating the SDFs.

76. The City has violated N.C. Gen. Stat. § 162A-201(9), § 162A-203(a), § 162A-205(3), and/or other provisions of North Carolina law by including as part of the SDFs charged on or after July 1, 2018 the cost of existing water distribution and sewer collection mains which do not serve new development, and which are the same facilities that developers are required to construct and donate to the City at their own expense to provide service to a particular new development.

77. The City's has violated City of Charlotte Ordinance Chapter 23-12 and -129, the City's adopted Extension Policy, the City's adopted Revenue Manuals, and/or other adopted Ordinances, policies, and manuals of the City, by including as part of the SDFs charged on or after July 1, 2018 existing water distribution and sewer collection mains that are not the type of facilities furnished to developers by the City and/or are not "backbone facilities" as defined in the Extension Policy and Revenue Manuals.

THE CITY UNLAWFULLY DEDUCTED ONLY A PORTION OF ITS OUTSTANDING WATER AND SEWER DEBT PRINCIPAL IN ITS SDF IN AN EFFORT TO MAINTAIN ITS SDF REVENUE FOLLOWING THE PUBLIC WATER AND SEWER SYSTEM DEVELOPMENT FEE ACT

78. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

79. The Act further requires SDFs calculated based on the "buy-in" methodology to provide a deduction in the amount of outstanding system debt. N.C. Gen. Stat. § 162A-211(b).

80. The "debt credit" requirement of the Act is consistent with the 2012 Revenue Manual, the 2015 Revenue Manual, and the 2018 Revenue Manual, all of which provide that the SDF shall require new development to "buy-in" to the existing backbone infrastructure at "a rate that reflects the prior investment of existing customers."

81. The "prior investment of existing customers" in the water and sewer infrastructure is the existing equity in the infrastructure after deducting outstanding debt principal.

82. The "debt credit" requirement of the Act is also consistent with generally accepted methodologies used in calculating SDFs, as the SDF should "approximate the average equity or debt-free investment position of existing customers." AWWA, p. 331 (emphasis added).

83. However, in calculating its new SDFs beginning July 1, 2018, the City deducted only a portion of the outstanding water and sewer debt principal in calculating the SDFs.

84. Upon information and belief, the City deducted only a portion of the outstanding water and sewer debt principal in calculating its new SDFs because the City contends that SDFs are used to pay the City's water and sewer debt principal, and therefore only the portion of the City's debt principal paid by non-SDF sources of revenue (such as user fees) needs to be deducted from the SDF.

85. However, pursuant to the City's Code of Ordinances, the City's user fees, and not SDFs, are used to pay the City's debt principal. Attached hereto as "Exhibit G" and incorporated by reference herein is Chapter 23, § 41 of the City Code of Ordinances stating that the sewer user fees are calculated to pay the City's outstanding sewer debt service, and attached hereto as "Exhibit H" and incorporated by reference herein is Chapter 23, § 126 of the City Code of Ordinances stating that the water user fees are calculated to pay the City's outstanding water debt service.

86. Further, there is no evidence that the City's SDFs are used to pay the City's outstanding water and sewer debt service.

87. By only deducting a portion of the outstanding water and sewer debt principal, the City's SDFs do not reflect the "prior investment of existing customers." The prior investment of existing customers is the equity in the applicable water and sewer infrastructure, and the equity in the infrastructure is the value of the infrastructure less the outstanding debt principal used to construct the infrastructure, without any "adjustment" to the debt principal.

88. The City has violated N.C. Gen. Stat. § 162A-201(9), § 162A-203(a), § 162A-205(3), § 162A-211(b), and/or other provisions of North Carolina law by, among other potential things, failing to deduct the entire outstanding water and sewer debt principal in calculating the SDFs charged on or after July 1, 2018.

89. The City's has violated City of Charlotte Ordinance Chapter 23-12, -41, -126, -129, the City's adopted Extension Policy, the City's adopted Revenue Manuals, and/or other adopted Ordinances, policies, and manuals of the City, by, among other potential things, charging a SDF that does not reflect "the prior investment of existing customers" through failing to deduct the entire outstanding water and sewer debt principal for SDFs charged on or after July 1, 2018.

THE CITY'S UNLAWFUL SYSTEM DEVELOPMENT FEES CHARGED FROM JULY 1, 2020 THROUGH THE PRESENT

90. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

91. The City has continued to calculate its SDFs charged in each fiscal year since July 1, 2018 in the same unlawful manner as set forth herein; specifically, by including water distribution and sewer collection mains, and by deducting only a portion of the outstanding water and sewer debt principal.

92. A class action lawsuit challenging the City's SDFs charged during fiscal years 2019 and 2020 (i.e., July 1, 2018 through June 30, 2020) on the same grounds as this action has been certified in the Daedalus action.

93. The Daedalus action did not include claims for refunds of the City's fiscal year 2021 SDFs (i.e., July 1, 2020 through June 30, 2021) because the City had not yet adopted its fiscal year 2021 SDFs at the time of the hearing on class certification.

94. The Daedalus action is presently set for trial on August 23, 2021.

95. This case involves the same counsel as class counsel in the Daedalus action.

96. Like the fiscal year 2019 and fiscal year 2020 SDFs, the City engaged Raftelis to calculate its fiscal year 2021 SDFs.

97. Attached hereto as "Exhibit I" and incorporated by reference herein is the report of Raftelis dated January 2, 2020 calculating the City's fiscal year 2021 SDFs.

98. The City adopted the SDFs calculated by Raftelis for fiscal year 2021 effective July 1, 2020.

99. The SDFs adopted by the City for fiscal year 2021 for a single-family home are $845 per lot for water and $2,617 per lot for sewer, with higher fees for larger meter sizes.

100. Attached hereto as "Exhibit J" and incorporated by reference herein is the City's SDF schedule effective July 1, 2020.

101. Like the fiscal year 2019 and fiscal year 2020 SDFs, the City's fiscal year 2021 SDFs include water distribution and sewer collection mains.

102. Like the fiscal year 2019 and fiscal year 2020 SDFs, the City's fiscal year 2021 SDFs deduct only a portion of the water and sewer outstanding debt principal.

103. The City's fiscal year 2021 SDFs violate the Act and generally accepted methodologies used in calculating SDFs for reasons including, but not limited to, (1) including water distribution and sewer collection mains as part of the SDF when such facilities do not serve new development, and (2) failing to deduct all the City's water and sewer outstanding debt principal from the SDF.

104. The City's fiscal year 2021 SDFs violate the City's own Ordinances, policies, and manuals for reasons including, but not limited to, (1) including water distribution and sewer collection mains as part of the SDF when such facilities do not serve new development, and (2) failing to deduct all of the City's water and sewer outstanding debt principal from the SDF.

105. Upon information and belief, the inclusion of water distribution and sewer collection mains as part of the City's fiscal year 2021 SDFs results in an overpayment of approximately $392 in the amount of the single-family home water SDF, and an overpayment of approximately $750 in the amount of the single-family home sewer SDF, with larger overpayments for larger meter sizes.

106. Upon information and belief, the failure to deduct all of the City's water and sewer outstanding debt principal from the SDF in calculating the City's fiscal year 2021 SDF results in an overpayment of approximately $184 in the amount of the single-family home water SDF, and an overpayment of approximately $440 in the amount of the single-family home sewer SDF, with

larger overpayments for larger meter sizes.

107. Upon information and belief, the collective inclusion of water distribution and sewer collection mains and failure to deduct all of the City's water and sewer outstanding debt principal in the City's fiscal year 2021 SDFs results in a total overpayment of approximately $576 in the amount of the single-family home water SDF, and an overpayment of approximately $1,190 in the amount of the single-family home sewer SDF, with larger overpayments for larger meter sizes.

108. From July 1, 2020 through the present, the City has received an unlawful windfall of approximately $576 for each single-family home water SDF payment, and an unlawful windfall of approximately $1,190 for each single-family home sewer SDF, with higher unlawful windfalls for SDF payments for larger meter sizes.

109. At all relevant times, the City has been fully aware of the deficiencies which exist with its SDFs, as these issues were raised in the Daedalus action. However, despite being fully aware of these issues, the City has intentionally continued to charge and collect excessive and unlawful SDFs from developers.

110. Upon information and belief, the City has engaged Raftelis to prepare a study which calculates its fiscal year 2022 SDFs, and like the fiscal year 2021 SDFs will include all water distribution and sewer collection mains and fail to deduct all of the City's water and sewer outstanding debt principal.

111. Upon information and belief, for fiscal year 2022 and all future fiscal years, the City intends to continue charging and collecting unlawful SDFs which effectively double-charge developers for the cost of water distribution and sewer collection mains, and which further charge developers more than their fair "buy-in equity" of the existing City water and/or sewer system because of the City's failure to deduct the entire outstanding debt principal.

FACTS SPECIFIC TO PLAINTIFF

112. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

113. From July 1, 2020 through the present, Plaintiff has been required to pay, and has paid, SDFs as set forth herein to the City as a mandatory condition of receiving new water and sewer service to its properties.

114. Specifically, from July 1, 2020 through the present, Plaintiff has been required to pay, and has paid, SDFs to the City as follows:

a. 9/29/2020 – 2409 Marlowe (water and sewer) - $6,397.00

b. 9/30/2020 – 2712 Morson (water and sewer) - $10,402.00

c. 12/23/2020 – 2637 Clydesdale Terrace (water and sewer) - $10,402.00

d. 12/23/2020 - 3022 Carol (water and sewer) - $10,402.00

e. 2/23/2021 – 2716 Morson (water) - $3,779.00

f. 2/23/2021 – 2716 Morson (sewer) - $2,618.00

COMMON CLASS ALLEGATIONS

115. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

116. Pursuant to Rule 23 of the North Carolina Rules of Civil Procedure, Plaintiff brings this action individually and on behalf of a class defined as:

> All natural persons, corporations, or other entities who (a) at any point from July 1, 2020 through the present (b) paid System Development Fees to the City of Charlotte pursuant to the schedule of fees and/or Code of Ordinances adopted by the City of Charlotte.

117. Plaintiff is an adequate representative of the class in that Plaintiff does not have antagonistic or conflicting claims with the other members of the class; Plaintiff has a sufficient

interest in the outcome to ensure vigorous advocacy; and Plaintiff's counsel have the requisite qualifications and experience to conduct the proposed litigation competently and vigorously.

118. Plaintiff's counsel are the same counsel as the Daedalus action involving the City's fiscal year 2019 and fiscal year 2020 SDFs.

119. The City has acted on grounds generally applicable to the proposed class, thereby making appropriate final injunctive and declaratory relief with respect to the Class.

120. The Class members are so numerous that joinder of all is impractical. The names and addresses of potential Class members are readily identifiable through the business records maintained by the City, and the Class members may be notified of the pendency of this action by published and/or mailed notice.

121. Upon information and belief, from July 1, 2020 through the present, Charlotte has collected unlawful SDFs from hundreds, if not thousands, of potential Class members.

122. The requirements of Rule 23 are met in that this class, upon information and belief, consists of hundreds present and former developers, entities and individuals, who have either already paid, or will pay, SDFs to the City.

123. Common questions of law and fact predominate over any individual issues that may be presented, because the City had a pattern, practice, and policy of collecting SDFs from developers and other entities. Common questions include, but are not limited to:

a. Whether the City's SDFs charged on and after July 1, 2020 violate the Act and/or other applicable provisions of North Carolina law;

b. Whether the City's SDFs charged on and after July 1, 2020 violate the City's own adopted Ordinances, policies, and manuals;

c. Whether Plaintiff and the Class have been deprived of their property interests through the City's exaction of the unlawful SDFs charged on and after July 1, 2020;

d. Whether Plaintiff and the Class are entitled to a refund of all SDFs paid to the City on and after July 1, 2020, plus interest at the rate of 6% per annum pursuant to N.C. Gen. Stat. § 160A-363; and

e. Whether Plaintiff and the Class are entitled to their costs, expenses, and attorneys' fees pursuant to N.C. Gen. Stat. § 6-21.7 and/or other applicable law.

124. Plaintiff's claims are typical of the claims of each Class member and all are based on the same facts and legal theories in that the City has a specific policy of collecting an improper SDF from each member of the proposed Class through the Schedule of Fees and pursuant to the Code of Ordinances adopted by the City.

125. Plaintiff has no interests adverse or antagonistic to the interests of other members of the Class.

126. Plaintiff will fairly and adequately protect the interests of the Class and have retained experienced counsel, competent in the prosecution of collection of unlawful municipal fees in the context of class action litigation.

127. Neither Plaintiff nor their counsel have any interests that might cause them not to vigorously pursue this action. Plaintiff is aware of its responsibilities to the putative class and has accepted such responsibilities.

128. The City has acted on grounds generally applicable to the Class, thereby making appropriate final injunctive and declaratory relief with respect to the class as a whole.

129. A class action is superior to other methods for the fair and efficient adjudication of the claims herein asserted. Plaintiff anticipates that no unusual difficulties are likely to be encountered in the management of this class action. Plaintiff further alleges that certification of the Class is appropriate in that:

a. A class action will permit a large number of similarly situated persons to prosecute its common claims in a single forum simultaneously, efficiently, and without the duplication of effort and expense that numerous individuals' actions would

engender;

b. Each and every member of the proposed Class is subject to the schedule of fees as set forth herein;

c. Class treatment will permit the adjudication of relatively small claims by many Class members who could not otherwise afford to seek legal redress for the wrongs complained of herein; and

d. Absent a class action, the Class members will continue to suffer losses of statutorily protected rights as well as monetary damages, and if the City's conduct continues to proceed without remedy, it will continue to reap and retain the proceeds of its ill-gotten gains.

FIRST CLAIM FOR RELIEF
(Declaration that the City's Adoption and Enforcement of System Development Fees on and after July 1, 2020 is *Ultra Vires*)

130. The foregoing allegations are hereby reincorporated by reference as if fully restated herein.

131. Pursuant to N.C. Const. Art. VII, § 1 and N.C. Gen. Stat. § 160A-4, municipalities in North Carolina only have the authority to exercise powers, duties, privileges and immunities conferred upon them by the General Assembly.

132. The City's buy-in SDFs charged on and after July 1, 2020 were calculated and charged in violation of the Act and/or other applicable North Carolina law for reasons including, but not necessarily limited to, the following:

a. The SDFs violate N.C. Gen. Stat. § 162A-201(9) because the SDFs do not "recoup costs which serve new development," as the SDFs i) include the cost of infrastructure which, pursuant to the City's own adopted Extension Policy, do not serve new development, such as water distribution and sewer collection mains; and 2) purport to recoup "costs" which are in excess of the average equity or debt-free investment position in the existing assets included as part of the SDFs and/or through

an improper adjustment of a debt credit when the City's own Ordinances provide that water and sewer debt service is paid through user rates;

b. The SDFs violate N.C. Gen. Stat. § 162A-205(3) because the SDFs were not calculated pursuant to generally accepted accounting, engineering, and planning methodologies, as such methodologies i) do not allow for a buy-in SDFs to include the cost of "local" water distribution and sewer collection mains when such infrastructure provides only a localized benefit to a specific development and does not serve new development and/or when new development must construct and donate to the City is own water distribution and sewer collection mains; and ii) do not provide for the City to "adjust" the outstanding debt credit to include "costs" in excess of the average equity or debt-free investment position in the existing assets included as part of the SDFs and/or when the City's own Ordinances provide that water and sewer debt service is paid through user rates;

c. The SDFs violate N.C. Gen. Stat. § 162A-211(b) because the SDFs do not properly a debt credit when the SDFs fail to deduct all of the City's water and sewer outstanding debt principal and thus do not approximate the average equity or debt-free investment position in the existing assets included as part of the SDFs and/or when the City's own Ordinances provide that water and sewer debt service is paid through user rates;

d. The SDFs violate N.C. Gen. Stat. § 162A-203(a) because the City has adopted the SDFs not in accordance with the conditions and limitation of the Act for the reasons described herein; and/or

e. In such other ways to be shown at trial.

133. The City's SDFs charged on and after July 1, 2020 were calculated and charged in violation of the City's own adopted Ordinance, policies, and manuals for reasons including, but not necessarily limited to, the following:

a. The SDFs violate City Ordinance Chapter 23-12 because the SDFs are not calculated pursuant to the methodology set forth in the Revenue Manuals;

b. The SDFs violate City Ordinance Chapter 23-219 because the SDFs are not calculated pursuant to the methodology set forth in the 2012 Revenue Manual;

c. The SDFs violate City Ordinance Chapter 23-41 and 23-126 because the SDFs assume that SDFs, and not water and sewer user charges as set forth in the Ordinance, are used to pay the City's water and sewer debt service;

d. The SDFs violate the Extension Policy because the SDFs recover from new customers the cost of water and sewer assets that are not "treatment facilities, transmission mains, major outfalls and sewer trunks;"

e. The SDFs violate the Revenue Manuals because the SDFs recover from new customers the cost of water and sewer assets that are not "existing backbone facilities - plants, pump stations, supply reservoirs, large collection and distribution facilities;"

f. The SDFs violate the Revenue Manuals because the SDFs do not recover the cost of existing water and sewer assets "at a rate that reflects the prior investment of existing customers per unit of total capacity"; and/or

g. In such other ways to be shown at trial.

134. In charging and collecting SDFs on and after July 1, 2020, the City illegally exacted a fee not specifically authorized by law.

135. Plaintiff and the Class are entitled to a declaratory judgment pursuant to N.C. Gen. Stat. § 1-253, *et seq.* declaring the City's SDFs charged on and after July 1, 2020 unlawful for the reason that the City violated the Act and/or its own adopted Ordinance, policies, and manuals, and the City thus exceeded its lawful authority by adopting and imposing the SDFs as alleged herein.

SECOND CLAIM FOR RELIEF
(Return of Fees Plus 6% Interest Pursuant to N.C. Gen. Stat. § 160D-106)

136. The foregoing allegations are reincorporated by reference as if fully restated herein.

137. By charging and collecting the unlawful SDFs from Plaintiff and the Class, the City has illegally imposed a tax, fee, or monetary contribution for development not specifically authorized by law.

138. Pursuant to N.C. Gen. Stat. § 160D-106, Plaintiff and the Class are entitled to the return of all unlawfully exacted SDFs charged on or after July 1, 2020, together with interest at the rate of (6%) per annum interest from the date of payment.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff and members of the Class respectfully request that this Court:

1. Declare all SDFs charged and collected by the City from July 1, 2020 through the present *ultra vires* and unlawful;

2. Certify the Class and appoint Plaintiff and its counsel to represent the Class;

3. That Plaintiff and the Class have and recover from the City all SDFs paid by Plaintiff and the Class from July 1, 2020 through the present, together with interest at the rate of six-percent (6%) per annum from the date of each payment pursuant to N.C. Gen. Stat. § 160D-106;

4. That Plaintiff and the Class be awarded their costs, expenses, and reasonable attorneys' fees pursuant to N.C. Gen. Stat. § 6-21.7 and/or other applicable law; and

5. That Plaintiff and the Class have such other and further relief as the Court deems

just and proper.

Respectfully submitted, this the 23rd day of April, 2021.

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III. CHARLOTTE-MECKLENBURG UTILITIES EXTENSION POLICY

A. PURPOSE

The purpose of this policy ("Policy") is to establish the method to be used for the orderly and financially sound extension of the public water and sewer system. This Policy is applicable to the entire Charlotte-Mecklenburg Utilities ("Utilities") service area. All extensions of water and sewer mains shall be dependent on adequate capacity within the existing system, approved funding for Utilities' participation and receipt of all required permits and approvals.

B. FACILITIES PROVIDED BY UTILITIES

Utilities will provide certain basic components of the water and sewer system. These components include treatment facilities, water pumping stations, major and/or regional wastewater lift stations, water storage tanks, wastewater interceptor and trunk mains, and major water transmission mains. The purpose of these facilities is to treat, store, and convey water and wastewater throughout the service area. These facilities will be constructed and/or improved according to a Capital Improvements Program ("CIP") which is reviewed and approved annually by the Charlotte City Council.

Utilities administers several programs described later in this Policy intended to provide smaller water and sewer mains along publicly maintained streets where individual customers may connect to receive service. Water or sewer mains may be constructed along existing, publicly maintained streets within the Utilities service area. *Publicly maintained streets* shall mean NC DOT SR numbered roads, NC or US numbered highways, or municipal streets which are eligible for Powell Bill Funds (For purposes of this Policy, all references to "street" shall be construed to refer to "publicly maintained street," unless otherwise expressly provided). In areas where there are existing, public utilities in streets which do not satisfy this definition and extensions are requested, Utilities shall review each such request on a case-by-case basis taking into consideration the merits of each case, among other factors.

This Policy is intended to provide water and sewer service connections within publicly maintained streets when this is feasible. Except as noted in section III(D)(3), when this is not feasible, water mains or sewer mains and associated service connections may be located within access/water/sewer easements when Utilities determines that the criteria set forth below are satisfied. (The portion of this Policy providing for water or sewer lines in access/water/sewer easements is not a separate or independent extension policy. It is intended to apply only as an alternative to other portions of this Policy which provide for the extension of water or sewer lines within publicly maintained streets. Compliance with all other provisions of the applicable extension policy is required.)

- No suitable publicly maintained street exists or is proposed for construction where the proposed water and/or sewer system can be located and no other practical, acceptable means of providing public water and sewer service to residents exists as determined by Utilities.
- The access/water/sewer easement width is at least 40' plus additional temporary construction easement as needed and is determined by Utilities to be suitable for the construction, re-construction, operation and maintenance of the proposed water and/or sewer system.

EXHIBIT A

- The access/water/sewer easement is in a location and alignment that is most likely to be used as a publicly maintained street should one be built in the future;
- The access/water/sewer easement is donated to Utilities cleared of trees, shrubs, structures, wells, septic systems and any other known obstacles that could conflict with or prevent the design, construction, re-construction, operation, and/or maintenance of the proposed water and/or sewer system and is provided at no cost to Utilities. Otherwise, the grantor(s) of the access/water/sewer easement must agree to pay the full costs to clear the easement and remove the obstacles. Utilities should not be subjected to any costs for the design, construction, re-construction, operation or maintenance of the water or sewer lines in access/water/sewer easements that would not be expected if the lines were to be placed in a publicly maintained street.
- In the event conditions in the access/water/sewer easement are discovered at any time during the project that will result in unreasonable or unusual cost increases, environmental impact, or disruption to the public Utilities may terminate the project without further obligation to provide service.
- Utilities is required only to restore travel surfaces and ground conditions within the access/water/sewer easement and any temporary construction easement to a condition similar to that existing prior to construction/re-construction of the proposed water and/or sewer system and is not required to improve or expand pavement, structures, drainage facilities, or landscaping features at any time during or after the construction of the proposed water and/or sewer system. If work of this type is required by applicable law or to allow water and/or sewer construction, re-construction, operation, and maintenance, the easement grantor(s) must agree to be responsible for the costs of this work.;
- The access/water/sewer easement must expressly provide that public access to the access/water/sewer easement can only be restricted in a manner that is substantially similar to restrictions to the use of publicly maintained streets.
- The access/water/sewer easement grantor(s) must agree to keep the access/water/sewer easement free from structures, fences, gates, barricades, wells, septic systems, trees landscaping, or other conditions or obstacles that could impede or limit vehicular or equipment access required to construct, re-construct, operate or maintain the installed water and/or sewer system.
- The access/water/sewer easement must provide access to water and/or sewer service for multiple, individually owned parcels of land that will have individually metered services.
- Utilities may not be subjected to any requirements or restrictions for the design, construction, re-construction, operation or maintenance of the water and/or sewer system within the access/water/sewer easement that are not typical and customary in publicly maintained streets.
- Waiver and release of liability is provided to Utilities against claims for damages that result from the design, construction, re-construction, operation, or maintenance of the proposed water and/or sewer system in the access/water/sewer easement and any overlying or adjacent travel surfaces, paved or unpaved, or any other features within the easement including damage that may occur from heavy equipment used to construct, re-construct, operate or maintain the water and sewer system;
- Utilities will not be financially responsible for the removal or relocation of the water or sewer mains, services, or appurtenances as may be needed for future changes in land use, roadway construction (including changes in horizontal and/or vertical alignment), regrading the access/water/sewer easement or adjacent lands, or other activity that may conflict with Utilities' continued rights to re-construct, operate and maintain said water or sewer facilities.

- No other utilities, piping or cables, underground or overhead, public or private, will be permitted within the access/water/sewer easement except with prior, written approval by Utilities.
- Public water and sewer facilities constructed within an access/water/sewer easement are owned by the City of Charlotte and subject to the same ordinances, regulations, and policies as other water and sewer facilities.
- The access/water/sewer easement will be in form and substance acceptable to Utilities and shall contain such provisions as Utilities determines are reasonably necessary or convenient to provide for the implementation of this Policy.
- The property subject to the access/water/sewer easement must be the primary vehicular access for all property subject to the easement, provided that this requirement can be waived by Utilities for a parcel that has alternative access but provides necessary access to one or more other parcels

Water or sewer service will not be extended to property located beyond Mecklenburg County without the express approval of the Director of Utilities. Utilities is under no obligation to provide water or sewer service to property located outside Mecklenburg County, except as expressly approved by the Director. Utilities may refuse to extend services to property located outside Mecklenburg County or may choose to provide water or sewer services to such property under such terms and conditions as may be approved by the Director of Utilities.

C. EXTENSION OF SERVICE REQUIRED BY ANNEXATION

All cities or towns must meet certain service requirements for newly annexed areas as prescribed by state law. Since Utilities is a part of Charlotte city government, Charlotte is required to extend major water and sewer facilities to involuntarily annexed areas so that involuntarily annexed property owners can secure water and sewer service as required by applicable law.

The major lines extended as part of involuntary annexation provide water lines for basic fire protection and installation of interceptor, trunk sewer mains, or common force mains required to extend sewer service to each publicly maintained (at the effective date of the involuntary annexation) street for sewer lines. Street main extensions are not provided under this Policy as part of involuntary annexation except as expressly required by law. In addition, water or sewer facilities will not be extended upon involuntary annexation to serve all or any portion of a residential subdivision subject to covenants, conditions, or other restrictions recorded in the Mecklenburg County Public Registry to the effect that sewer service in such subdivision is to be provided exclusively by means (including, but not limited to, septic tank systems) other than sewer service from a governmental authority (including Utilities) or public utility.

D. PROGRAMS FOR EXTENSION OF SERVICE

1. General Provisions

Upon completion and final acceptance by Utilities of all facilities constructed under this Policy, such facilities will become the property of the City of Charlotte ("City") and the City will be responsible for their operation and maintenance.

Utilities funds shall not be used for construction of any Facility which does not offer the reasonable expectation of being feasible unless such Facility is required to fulfill statutory requirements or to maintain service to existing customers. Feasibility is determined based

on the following: the construction of the Facility is expected to generate revenue; service level Improvement; and/or environmental benefits which are in a favorable proportion to the total cost of the project.

All construction of water and sewer facilities must be performed by utility contractors properly licensed in North Carolina and approved by Utilities

All contracts for extension of mains are subject to approval by Charlotte City Council or by the Charlotte City Manager or his designee where allowed by law. All extensions are subject to review approval, and regulation by local, state and/or federal agencies as required by law.

The size, depth, and location of the mains extended will be determined or approved by Utilities based on prevailing industry standards and normal service requirements. In the event facilities designed in this manner will not satisfy the applicant's needs the applicant may withdraw the application. If the application is withdrawn, the applicant forfeits costs incurred by Utilities up to the date of withdrawal..

This Policy is intended to provide sewer mains that are capable of serving the ground floor of most buildings when the ground floor is approximately at street level and where the distance from the structure to the street, topography, other utilities, structures, natural features or other conditions does not make gravity service unfeasible. Utilities does not guarantee that any customer, and particularly customers who have basements or buildings substantially lower than the street, can be served without pumping by the property owner.

This Policy is intended to provide that the water pumping and distribution system be designed and operated to provide flow rates and pressures that meet standard fire protection requirements at the time the water mains are designed and constructed for existing land uses and construction methods. In the event that higher flow rates or pressures are required due to changes in land use, differing construction types, changes in fire code requirements, or other circumstances, Utilities will endeavor to work with the customer to satisfy the new requirements. While each case will be evaluated on its individual merits and public benefits, it may become necessary for the customer to bear some or all of the costs incurred to satisfy the higher level of service.

This Policy is intended to provide for the construction of water and sewer mains sized to provide long term service as described in the CIP. If an extension is requested which conflicts with or is in the same location as a project identified in the CIP or needs assessment, Utilities shall decide whether to extend the facility as described in the CIP/Needs Assessment or a smaller or temporary main. The decision shall be made with the following considerations:

Funding availability from other sources
Impact of expenditure on appropriated funds for this program
Physical space and/or constraints of installation
Quality of service
Time required to provide requested service
Other considerations unique to the circumstances

Installed facilities that are smaller than those identified in the CIP or the Needs Assessment or that are smaller than required for long term service shall be funded solely

by the applicant with no opportunity or consideration for reimbursement from Utilities. However, in all cases, Utilities retains the discretion to require appropriately sized mains be extended to serve the area. Except as otherwise expressly authorized by this Policy, this Policy shall not be construed to authorize refunding the additional cost of mains larger than those needed for the applicant's site.

The applicant must complete an application for service and pay all applicable charges at the time an extension of the system is requested except when the extension is being made exclusively under the provisions of a Reimbursable Program or is being donated to Utilities. An applicant for an extension may not cancel an application for service or extension request once the applicable fees have been paid. Neither connection fees, capacity charges, nor the applicant's share of 50/50 extensions are refundable.

2. Reimbursable Programs

Capital facilities which are normally provided by Utilities (described in section II) but are not in place may be financed by a customer in order to expedite the construction of such facilities. Upon completion and final acceptance of the Facility, the customer will be reimbursed for eligible costs of the project according to the procedures and schedules described below.

If a customer wishes to expedite a project which is included in the Charlotte City Council approved CIP, a 5-Year Reimbursement Program is available. If a customer wishes to expedite construction of facilities which are not included in the CIP but which would normally be provided by Utilities, a 15-Year Reimbursement Program is available. To utilize either of these programs, the customer is required to enter into a contract with the City of Charlotte. This contract provides that Utilities will design, either with staff or by consultant, the requested Facility, acquire any necessary rights of way and permits and construct the facility either with City staff or through public bids in accordance with North Carolina General Statutes. The customer is required to pay a deposit at the time he or she executes the contract. The deposit amount should be sufficient to pay the cost of design and right of way acquisition and shall be established by Utilities. When the construction cost is determined, either from public bids or from Utilities work order, the customer is required to make available to Utilities the balance of funds to construct the project. The customer may make cash payment to Utilities or utilize an approved letter of credit (See section VI).

Under the 5-Year Reimbursement Program, the contracting customer is reimbursed all of the eligible funds he has deposited for the project. The amount reimbursed will not include any interest, carrying charges, financing costs, or other funds other than the actual face value amounts deposited by the customer. The customer will receive 20% of the eligible deposited amount in each of five annual payments. The first annual payment will be made one year from the date Utilities accepts the total project as complete and available for activation.

The customer will be required to pay any acreage fees which are applicable, including those resulting from his project. Acreage fees are not eligible for reimbursement.

Under the 15-Year Reimbursement Program the contracting customer is not guaranteed total reimbursement of eligible deposited funds. The reimbursement payments are made annually beginning one year from the date Utilities activates the total project. The Utilities

activation date begins the 15 year reimbursement period. The amount of each annual reimbursement payment will be the sum of collected acreage fees attributable to the project and 35% of sewer or water user fees which result directly from the project and are collected that year. The acreage fee is equal to the total actual cost of the project divided by the area which Utilities expressly designates at the time the contract is established to be ultimately tributary to the line. Acreage fees are applicable only to wastewater facilities. See section VII-B of this document for information on application of acreage fees to wastewater lift stations.

User fees are the periodic charges to customers for actual service received. User fees do not include connection charges or other one-time charges which are made in order to establish service. Reimbursable user fees on water mains will be based only on customers who have service connections directly off the main extended under the 15-Year reimbursement program and customers on donated mains which connect to that main. If the reimbursable main is extended through any method other than donation, user fees from the new extension will not be reimbursed to the original customer. If donated mains connect a reimbursable water main to an existing main, Utilities will determine the area on which to base user fee reimbursement based on an engineering judgment of the water flow direction under normal circumstances. Reimbursable user fees on sewer mains will be based on service connections directly to the reimbursable main and on service connections on donated sewer mains which connect to that main. If the reimbursable main is extended through any method other than donation, user fees from the new extension will not be reimbursed to the original customer. Annual payments to the customer will continue for 15 years or until the actual eligible face value amount deposited by the customer has been repaid, whichever occurs first.

3. Street Main Extension Program

This Street Main Extension Program ("Street Main Extension") provides for Utilities funded extension of water and sewer mains to serve existing single family residential dwellings or existing vacant lots which are zoned for single family residential construction and that are not regulated through the subdivision development process. Application of the Street Main Extension is subject to availability of funds and other qualifications described below. Applications are accepted and projects initiated on a first come, first served basis.

This Street Main Extension is only available to renters or owners of qualifying residential dwellings or vacant lots. It is not available to child-care facilities, retail establishments, medical buildings, churches, non-profit organizations, other governmental units, commercial buildings, industrial facilities, or any new construction or new development which is not single family residential in nature.

The Street Main Extension is not intended to be used to change the manner whereby an existing customer receives water or sewer service.

Extensions under this Street Main Extension must average at least one applicant per 1000 feet of main.

To ensure fair and equitable use of available funds, Utilities may, at its discretion, limit projects to a maximum of 1000 feet. An applicant can apply for water and sewer extensions simultaneously provided that funds are available and all requirements are satisfied for each extension.

In the event the applicant is determined to require an extension greater than 1000', the portion of the main in excess of the 1000' maximum can be offered under the 50/50 program provided that funds are available in that program and that the applicant meets all requirements of both programs at the time application is made, including the applicants share of the 50/50 cost.

Extensions of mains greater than 1000' for documented public health hazards can be made in combination with this program; for example, this program can be combined with the health hazard program to increase the distance a main is extended to 2000'. The first 1000' will be funded under the Health Hazard Elimination program. See section IV-E.

This program is applicable to low-pressure sewer systems only in zones designated by Utilities to be served in this manner where such systems are previously established.

This program may be combined with 5-year or 15-year reimbursable programs or other extension programs provided that the applicant satisfies all requirements for such programs at the time of application. This option requires the same applicant to apply for both programs simultaneously.

In the event that the funds appropriated for any fiscal year are not adequate to satisfy the requests received by Utilities, City Council may, at its discretion, appropriate additional funds to this program. If adequate funds are not available when an application is made for an extension, the customer will be offered any other available, funded, programs for which the required extension will qualify. If no other programs are available, or if the customer declines to use another program, the customer will be required to reapply when/if additional funds are appropriated.

Funds from this program can be used for planning, design, inspection, construction, and any other necessary expense directly related to the administration and implementation of this program.

If an extension requested under this program is of such a short length that mobilization costs are excessively high and/or the termination of the requested extension is not at an advantageous location, Utilities may at its discretion, continue the extension beyond the distance requested by the applicant. Funding will be from this program.

Procedures for initiating and utilizing this program are described in section G below.

4. 50/50 Extension Program

This program provides for shared funding of water and sewer street main extensions. Under this program, Utilities will fund 50% of the cost of eligible extensions when one or more customers provide the other 50%. Application of this program is subject to availability of funds and other qualifications described below.

The basis for determining the project cost will be the average cost per foot actually incurred during the previous fiscal year for similarly-sized projects.

An applicant can apply for water and sewer extensions simultaneously provided that funds are available and all requirements are met for each extension.

This program is applicable to low-pressure sewer systems only in zones designated by Utilities to be served in this manner where such systems are herein established.

This program may be combined with 5-year or 15-year reimbursable programs or other extension programs provided that the applicant satisfies all requirements for such programs at the time of application.

This program is available for the extension of mains requested by applicants which do not qualify under the provisions of the street main extension program or when funds are not available in that program. The applicant is responsible for determining whether other property owners who could utilize the extension will participate in funding the applicant share. Utilities will not consider the application complete until funds sufficient to cover 50% of the estimated cost are received.

Procedures for initiating and utilizing this program are described in Section G below.

5. Extension Program to Eliminate Public Health Hazards

This program provides for Utilities funding of water and sewer street main extensions for the purpose of providing access to public utilities when the system in place has failed and is resulting in a public safety, environmental or health risk to the occupant and/or the general public.

The applicant will be required to pay applicable connection fees and capacity charges at the time the extension request is made.

The maximum length for extension of mains under this program is 1000 feet.

To ensure fair and equitable use of available funds, subsequent applications for extension of uncompleted mains which will result in a project greater than 1000' funded under this program will not be accepted until the originally requested main is available for use. An applicant can apply for water and sewer extensions simultaneously provided that funds are available and all requirements are met for each extension.

This program is applicable to low-pressure sewer systems only in zones designated by Utilities to be served in this manner where such systems are previously established.

This program may be combined with 5-year or 15-year reimbursable programs or other extension programs provided that the applicant satisfies all requirements for such programs at the time of application and pays all applicable fees.

This program is only available to existing residential dwellings.

The applicant must furnish evidence from County Health officials that a health hazard exists in order to qualify for this program. Failure of mechanical equipment does not constitute a health hazard. Dry wells or unused septic tanks do not constitute a health hazard. This program cannot be used for new construction or when a mobile home or other structure is moved onto a new site. Homes which are not occupied or are not eligible for a certificate of occupancy for any reason other than lack of sanitary sewer service are not eligible for this program. Utilities shall have the authority to determine if the intent of this paragraph is met.

Revenues from user charges can be used to finance bond programs or to fund this program directly. Charlotte City Council shall establish the funding level of this program annually with approval of the Capital Improvement Program and/or operating budget.

Procedures for initiating and utilizing this program are described in Section G below.

6. Applicant Funded Non-Reimbursable Extension Program

This program allows the applicant to fund 100% of the cost of water or sewer extensions which are to be constructed by Utilities forces or by contracts administered by Utilities. This program is applicable to extensions which do not qualify for any other extension programs under this Policy, if an applicant chooses this program in lieu of another, or in the event funds are not available from Utilities for other programs.

This program is applicable to low-pressure sewer systems only in zones designated by Utilities to be served in this manner.

Each applicant is required to pay connection and capacity charges in addition to the applicants cost of the extension.

Procedures for initiating and utilizing this program are described in section G below.

7. Extension of Facilities by other Public Agencies

Any extensions requested by other City departments or by other governmental units within the Utilities service area may be (but are not required to be) processed within the same guidelines as though an individual customer had applied. Previously approved agreements with Mecklenburg County, Davidson, Cornelius, Huntersville, Pineville, Matthews, and Mint Hill created other financing options which these governments may utilize.

8. Extension of Service For New Development

Utilities will not participate in the cost of street main extensions which are required strictly for subdivision of land. All such projects will be financed wholly by the developer of the land. Utilities will agree by contract to own and maintain water distribution and wastewater collection systems if these systems are designed and constructed in accordance with prevailing Utilities standards and specifications and if the existing Utilities system has adequate capacity to sustain the new development. Such contract agreements must be obtained prior to construction of the system.

Utilities has the sole discretion in approving main sizes to meet development and system needs. When larger mains are required for system needs, no portion of the additional cost is eligible for reimbursement from Utilities except for extensions constructed under the 5-Year and 15-Year Reimbursable programs.

Capacity charges are required for each service installed.

Under no circumstances shall construction begin prior to approval of the contract, issuance of all required permits, and proper notification of Utilities. Notification requirements are detailed in the contract.

If the new development contains drainage patterns that will need to be utilized to provide sanitary sewer service to existing streets, roads, or other property, Utilities will require that the owner of the property being developed record permanent rights of ways for such facilities.

E. SERVICE CONNECTIONS

1. General Provisions

All customers desiring water or sewer service are required to make formal application for each service and to pay all applicable fees and/or charges at the time application is made.

Water services larger than 1-inch cannot be installed without payment of a meter deposit and an application to Utilities designating the party who is financially responsible for water used from that service.

A 3/4" or 1" water service connection consists of the connection to a public water main of a service line, a meter box, and stubbed connection point for the applicant's private plumber to connect to. Larger water service connections consist of the connection to a public water main of a service line, a meter box or vault, piping to the property line, and a valve at the property line.

In-ground irrigation systems installed after July 1, 2009, are required by state statute to be separately metered. Utilities offers customers two options for metering residential irrigation systems.

- Separate service option – A new, separate service is installed consisting of the connection to a public water main of a service line, a meter box, and stubbed connection point where the applicant's private plumber or irrigation contractor may connect. An approved backflow prevention device must be installed by the customer on the customer's side of the irrigation meter.Split service option – A new service line is connected from the existing service line on the Utilities' side of the water meter. The new service line will be connected to a separate, dedicated irrigation meter and stubbed connection point where the customer's private plumber or irrigation contractor may connect. An approved backflow prevention device must be installed by the customer on the customer's side of the irrigation meter.

Utilities does not guarantee minimum water pressure or flow rates will be available to operate irrigation and/or plumbing fixtures. The customer should carefully consider the impacts that a split service option may have on available water pressure and flow rates.

A sewer service (or lateral) connection consists of the connection to a public sewer main or manhole of a service line which is extended to the street right of way line or to the sewer right of way line if the public sewer main is not at the street. The applicant is responsible for the cost of connecting their private plumbing system at that point.

All water and sewer service connections shall be constructed in accordance with the Code of Ordinances of the City of Charlotte and with all applicable building and plumbing codes.

Sanitary sewer service connections will be installed at a depth that is practical and alleviates the need for extensive or unusual construction or safety methods. Utilities does not guarantee that the depth of all sewer service connections will allow gravity flow connections. If pumping is required, the pumping equipment and installation is the responsibility of the customer and must be completed in accordance with all applicable regulations and ordinances.

Commercial, industrial, fire line, or irrigation services will be subject to requirements of the City and Utilities including industrial waste and/or backflow provisions.

2. Fees/Charges

Customers applying for a new water or sewer service or extension are subject to one or more of the charges shown below.

a. Connection Charge - This charge is based on the average actual cost incurred by Utilities to construct similar size service connections during the previous fiscal year.

b. Capacity Charge - This charge is to recover from new customers a portion of the incremental cost of providing capacity in the treatment facilities, transmission mains, major outfalls and sewer trunks which have been constructed to allow for new development and expansion of the system. This charge is calculated each year based on the actual book value for these facilities as shown in the City's General Ledger and the system treatment capacity reflected in that value. Dividing the book value by the system treatment capacity yields a system cost per gallon per day. This cost per gallon is multiplied by the average daily consumption of residential customers to obtain the capacity charge for water and sewer separately for customers with 3/4" water services. This charge is then multiplied by the relative capacity of other meter sizes to determine the capacity charge for other size meters. The sewer charge is also based on the relative capacity of the water meter. Wastewater only customers will pay a capacity charge based on the capacity of their private water supply, except that all single family, residential wastewater only customers will pay the same capacity charge as a 3/4" meter customer. Capacity charges apply to separate irrigation meters and to split service irrigation meters and are calculated using methodology similar to that for residential water service connections.

c. Meter deposit - This is a security deposit which varies according to both water meter size and the nature of the customer (i.e; restaurant, warehouse, etc.). Meter deposits are not required of single family residential customers.

d. Discounts available - If a customer applies for water or sewer service in conjunction with a water or sewer extension and the service can be installed on the extension as it is constructed then the connection fee will be discounted 10%. No discount or reductions apply to capacity charges. Utilities will establish a time period prior to the beginning of construction during which other eligible customers may receive the 10% connection fee discount.

e. Acreage fees - Acreage fees are not charged to an individual applying for service to a single, single-family residential dwelling on a lot of 1 acre or less.

Any other type of applicant will be required to pay any acreage fees if they are applicable to their site. Utilities will determine and advise the applicant of the liability for acreage fees and such fees will be paid prior to the work being undertaken. Utilities will not pay acreage fees for any extensions which are made with Utilities funds, nor will acreage fees be assessed for costs of extensions funded solely with Utilities funds.

f. Sewer deposit - A sewer deposit is required when application is made for sewer only service; i.e., the applicant receives water service from a private well, community water system, or source other than Utilities. This is a security deposit similar to the meter deposit required for water service. Sewer deposits are not required of single family residential customers.

The following chart defines when each of the different charges is applicable:

{PRIVATE } TYPE SERVICE	CONNECTION FEE	CAPACITY FEE	DEPOSIT*
New service not installed as part of donated system	Yes Paid at time of application	Yes Paid at time of application	Yes Paid at time of application
New service installed by developer as part of donated system	No	Yes	Yes
Replacement service of same size	Yes Paid at time of application	No	No
Replacement service of larger size	Yes Paid at time of application	Partial - difference between sizes paid with application	Yes
Replacement service of smaller size	Yes Paid at time of application	No No refund of previous charges	No
Fire Line	Yes Paid at time of application	Yes Paid at time of application	Yes
Irrigation Service	Yes Paid at time of application	Yes Paid at time of application	Yes
Partial tap completion ("Paving tap")	Partial based on estimated cost to complete the tap	Yes Paid at time of application	Yes
Fire Hydrant Meter	No	No	Yes

* Note: Deposits do not apply to residential customers

F. LETTER OF CREDIT FOR REIMBURSABLE PROGRAM FINANCING

Customers who are utilizing reimbursable programs to expedite projects may use Letters of Credit as a financing method in lieu of cash payment to Utilities. This method can only be used for projects estimated to cost $100,000 or more. The customer may elect to render to the City a non-recourse, commercial letter of credit from a bank insured by the Federal Deposit Insurance Corporation and having full-service banking facilities in Mecklenburg County in lieu of advancing other funds sufficient to pay for the entire project. Said letter of credit shall unequivocally guarantee payment by said bank to the City at such times and in such amounts as the City shall determine is reasonably necessary or convenient to have the necessary funds on hand for retainage and payments to any contractor awarded the contract to construct the extension requested by the Customer. If such an alternative is selected by the Customer, the following conditions shall apply:

1. This financing alternative must be selected, including the designation of the bank to be used, at the time a Customer requests a contract with the City for an extension.

2. A form provided by City must be used as the letter of credit, with a schedule of payment incorporated therein which is approved by the Director of Utilities. If the Customer proposes to use any variation of the form, the Customer will be required to pay the City's reasonable attorney fees in retaining experienced private counsel to review and advise the City and Utilities on the terms of the proposed letter of credit, and any related documents, and to recommend such changes, alterations or additions thereto as may be in the best interests of the City and Utilities. The City shall have the sole discretion in the selection of said counsel. The Customer shall be required to advance the estimate of such fees, as determined by the City, at the time this financing alternative is selected. Any excess funds advanced by the Customer for attorney fees shall be refunded. If the estimate of attorney fees is insufficient, the Customer shall advance the additional amount required prior to approval by the City of the extension contract. The form and contents of a Customer-proposed letter of credit and any related documents shall be approved by the City Council and shall contain such provisions as the City Council shall determine to be necessary to protect the interests of the City and Utilities. Said proposed letter of credit shall also incorporate a schedule of payment approved by the Director of Utilities. If the Customer does not accept any changes required by the City Council and if the attached form is not acceptable to the Customer, the financing alternative set forth in this sub-section shall no longer apply.

3. The City Manager is authorized to approve changes to the form letter of credit and to the estimated cost of projects qualifying for this alternative financing plan.

4. The Finance Director may refuse to accept a letter of credit from any bank: that has refused or failed for any reason to honor a draft on any letter of credit issued to the City; or if the Finance Director determines in his/her sole and absolute discretion that it is not in the City's best interests to accept a letter of credit from such bank for any reason. By seeking to use this alternative financing plan, a customer and any bank issuing or proposing to issue a letter of credit hereunder agree and acknowledge that: acceptance of a letter of credit is within the City's sole and absolute discretion; no customer is entitled in any manner to use this alternative financing plan as a matter of right; and neither the City nor any employee, officer or agent thereof shall be liable for any damage, loss, injury or claim

of any kind whatsoever arising out of the City's failure or refusal to accept an issued or proposed letter of credit, regardless of the circumstances under which such failure or refusal occurs.

G. INITIATION/UTILIZATION OF EXTENSION PROGRAMS

A customer seeking to obtain water and/or sewer service must follow the procedure outlined below.

1. Request water and/or sewer service from Utilities . The request should identify the specific property to be served, the type of service requested (i.e,, single or multi-family residential, irrigation, commercial, institutional, industrial, etc.), and any special capacity requirements or other specialized needs .

2. If necessary, Utilities will study the availability of the service requested and will respond to the customer with information about costs, schedule, or other issues within a reasonable period of time.

3. The Customer formally initiates application for service by paying applicable extension costs and/or connection and capacity charges.

4. Utilities shall complete design and construction including acquisition of permits, encroachments, and/or rights of way. The expected time for completion of extensions of minor (less than 1000' of 8" or smaller) mains along existing streets is less than 180 days from the receipt of the customer's complete payment. It is recognized, however, that there may be instances when, due to workload or inability to obtain permits, encroachments, or rights of way, or other reasons additional time may be required. In no event is a projected schedule binding upon Utilities or the City of Charlotte.

   The projected schedule for completion of larger extensions will be determined prior to undertaking the extension. The projected schedule is established as a goal and is not binding upon Utilities or the City of Charlotte.

H. WASTEWATER LIFT STATIONS

It is Utilities' policy to minimize the need for wastewater lift stations and to limit their construction within the system. The basis for this policy is that lift stations can cause disproportionate expense to provide service to a limited customer base and that failure of lift stations poses significant environmental risks.

It is recognized, however, that there are situations where lift stations are a feasible solution for providing service. Utilities will consider on a case by case basis requests to accept new lift stations in the situations described below.

1. The lift station can be eliminated by a project or combination of projects, all of which are included for funding in the approved 5-Year CIP.

2. The lift station can be eliminated by a project being done under a reimbursable program and the funds have actually previously been made available to Utilities for construction.

3. The new development is in an area designated by Utilities for service by low pressure sewer systems and the proposed lift station size and location is in accordance with the "Lake Area Sewer Study (1990)" plan.

4. The proposed lift station is at an appropriate location and has adequate capacity or expansion capacity to serve as a permanent or long term facility and gravity service is cost prohibitive or not possible due to other circumstances. Approved locations typically require the ability to serve multiple parcels of land and are not single site lift stations.

5. The construction of the proposed lift station would include elimination of one or more existing lift stations or treatment plants.

6. The construction of the proposed lift station would facilitate significant progress toward achievement of land use goals and strategies described by current, officially approved planning documents and no other reasonable options are available for service.

In all cases, the receiving system must have available transportation and treatment capacity to carry the proposed lift station discharge. Any upgrades required will be the responsibilities of the applicant requesting the lift station.

Construction of a wastewater lift station may require the customer to pay acreage fees. Acreage fees will be charged for the actual basin in which the lift station is located and for the basin which receives the discharged flow from the lift station. In either case, acreage fees are applicable only when sewer mains downstream of the lift station or its discharge point have been constructed through a reimbursable program and the contract has not been paid in full. Acreage fees will be charged to an applicant constructing a lift station when sewer mains further downstream within the same basin as the lift station are not actually receiving the applicant's flow but would be if the applicant would have constructed an extension of these mains instead of constructing the lift station.

I. OTHER CONSIDERATIONS

1. Acquisition of Other Systems

Utilities will, as the opportunity arises, consider the acquisition of other water/sewer systems which can be incorporated into the Utilities system.

2. No Guarantee of Level of Service

Utilities does not warrant nor guarantee that the capacity, volume, pressure, or quantity of service provided will be adequate to meet the needs of any customer other than typical single family residential service. The customer is responsible for judging the adequacy of service for their intents and purposes prior to applying for service from Utilities.

The current level of service provided in any part of the water or sewer system which may be above that required to provide normal, domestic service is not guaranteed for any time in the future.

EXHIBIT A

Utilities accepts customers on a first come, first served basis. Completion of studies or cost estimates for provision of service do not constitute any obligation or intent of Utilities to reserve capacity. The applicant's request for or receipt of such studies does not guarantee the applicant's ability to secure water or sewer service.

3. Financial Assistance

a. The financial assistance program as approved by the City Council as part of this Policy and in effect on January 1, 2010 shall remain in effect until and unless revised by Utilities as authorized in subsection (b) of this section.

b. Utilities is authorized to revise the financial assistance program from time to time and to administer said program for qualified property owners to assist with the cost of connecting to the system. Utilities shall give notice of a revision to said program to the City Council and to the Utilities Advisory Committee at least 10 days in advance of the effective date of such revision. Further approval by the City Council or the Committee is not required for such revisions to take effect. Without limiting the foregoing, Utilities shall have the right to establish and modify the qualifying criteria for any applicable financial assistance. Property owners qualifying for financial assistance are not guaranteed assistance. A copy of the financial assistance program shall be maintained and made available for public inspection and copying in the office of the Director of Utilities and in the office of the City Clerk for the City of Charlotte.

4. Process for Appeal

This policy has been approved by the Utilities Advisory Committee and adopted by the Charlotte City Council for implementation by Utilities and the City Manager. It is City Council's intent that Utilities apply the provisions of this policy equitably to all customers and potential customers. It is recognized that there may be situations where disagreements may develop concerning equitable treatment. In those cases, the customer may pursue the appeal process outlined on the attached chart. The burden is on the customer to demonstrate inequitable application of this Policy.

EXHIBIT A

CHARLOTTE - MECKLENBURG UTILITIES
EXTENSION POLICY APPEAL PROCESS

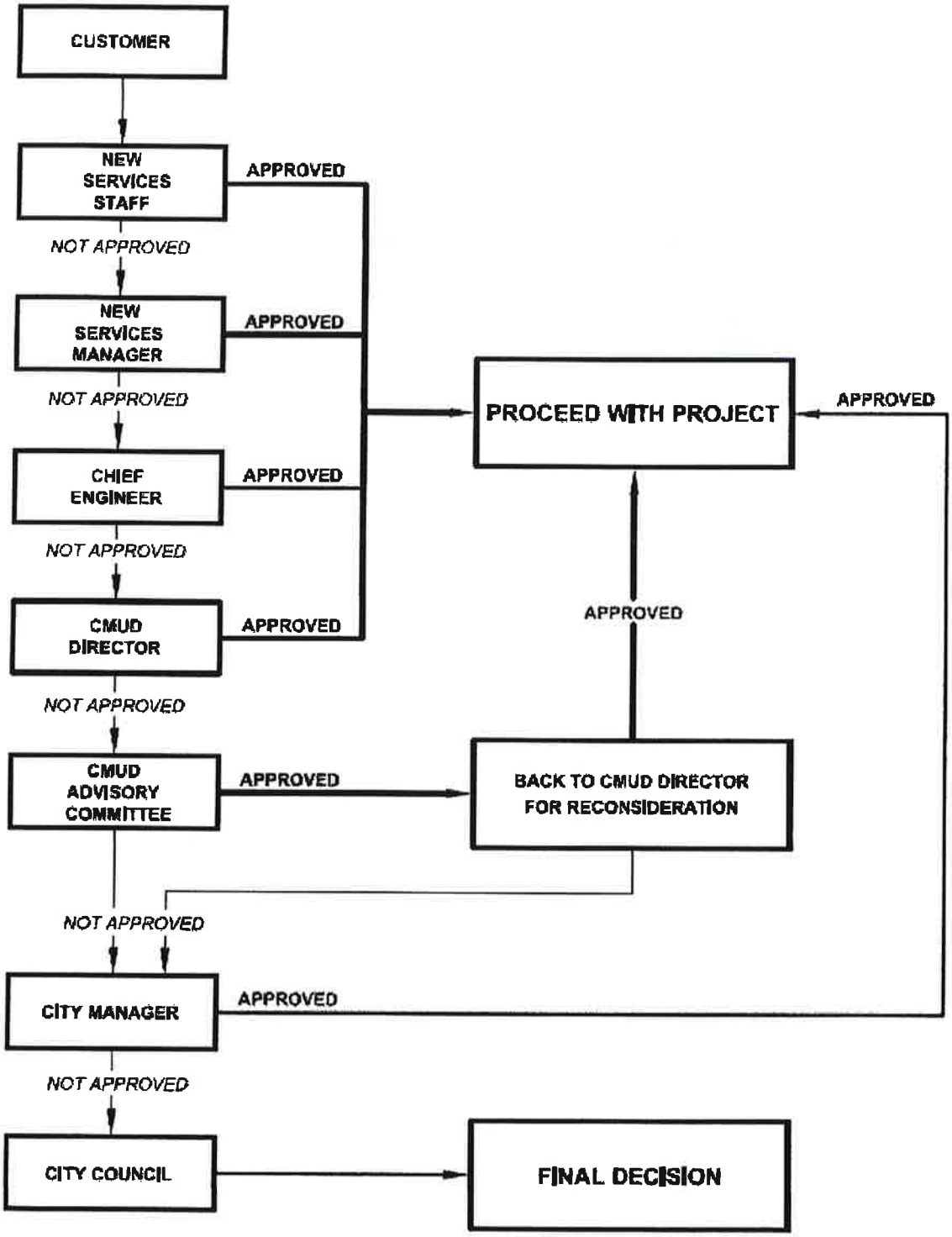

EXHIBIT A

J. DEFINITIONS

Access/water/sewer easement - A permanent easement signed by the owners of all property subject to such easement that provides for: continuous and unrestricted, public vehicular and pedestrian access to the properties subject to said easement; and the construction, re-construction, operation, maintenance and repair of one or more water and/or sewer lines and associated facilities.

Acreage fee - An amount calculated by dividing the total cost of a wastewater project by the number of acres of property which the project has the potential to serve. The number of acres includes all property upstream of the facility and/or which is planned to be pumped to a location where it will be tributary to the project. Acreage fees are only calculated for projects which are completed under a reimbursable program.

Activation - Placing into service a new water or sewer main or other facility. Activation may precede final acceptance.

Backflow - The flow of any substance from a customer's property back into the water distribution system. Backflow can result from improper connection of pressurized equipment to the plumbing system or from accidental pressure drops in the public water system which can be caused by pipe breaks or other equipment failure. Backflow of contaminated water into the public system can create a hazardous situation to other customers.

Capital Improvements Program - A budget plan for provision of infrastructure and other capital needs for the community. This plan is compiled annually and adopted by Charlotte City Council.

CIP - Acronym for Capital Improvements Program.

Utilities forces - Employees of the Charlotte-Mecklenburg Utility Department.

Common force main - In a low pressure sewer system, a pressurized sewer pipe provided for individual customers to connect the discharge lines from their privately owned grinder pumps.

Developer - An individual, firm, or corporation which is improving property or is causing property to be improved by the provision of streets, buildings, or other infrastructure or by the assembly or subdivision of property.

Domestic service - Provision of potable water for the purposes of consumption and hygiene for an individual or family and the collection of wastewater generated from these uses.

Drainage pattern - A ditch, creek, berm, depression or other feature along which water, if present, would accumulate and flow naturally downhill.

Eligible costs - In the context of the reimbursable program for extensions, this is the total actual cost of the portions of the project which qualify for reimbursement.

Encroachment - Agreement with the NC DOT or railroad to place water or sewer facilities within their right of way.

EXHIBIT A

Extension - A new or proposed water or sewer main.

Final acceptance - Documented agreement between Utilities and the contractor or developer of a project that the work is satisfactorily completed and that there are no outstanding claims or deficiencies. Completion of the project may also involve submittal of maps, affidavits, tax statements, or other documents that are required by contractual agreement.

Fire line - A water service requested and installed for the purpose of providing enhanced fire protection to an individual property.

Fire Protection - Provision of adequately sized water mains, water volumes, and fire hydrants at suitable intervals to allow use by fire departments in fighting fires. The level of protection varies with land use and development type.

Gravity sewer system - The normal type of wastewater collection system that relies on the natural, downhill flow of wastewater through pipes constructed along drainage patterns and creeks to a wastewater treatment facility.

Industrial waste - Non-domestic liquid wastes, including but not limited to, process or operational wastewater, groundwater remediation discharges, contaminated storm water or surface water remediation discharges, and any other non-domestic liquid waste from industrial or commercial establishments.

Interceptor - A larger sewer pipe usually constructed along a major creek which collects wastewater flow discharged from trunk mains. Interceptors are sometimes also referred to as "outfalls".

Irrigation service - A water service requested and installed for the purpose of irrigating lawns or property. Water provided through such a service does not return to the wastewater collection system.

Lake Area Sewer Study (1990) - A study completed by an Engineering consultant under contract with Utilities which establishes a plan for provision of wastewater collection from property which naturally drains toward one of the major lakes in the Utilities service area. This study was completed in 1990.

Licensed utility contractor - An individual, firm, or corporation which is licensed by the North Carolina Licensing Board for General Contractors to perform public utility and/or unclassified construction projects which have a contract value not exceeding their license limitation.

Low pressure sewer system - A type of wastewater collection system which utilizes individual pumping by each property owner into a common force main. This type of system is utilized along waterfront property where natural drainage patterns have been disrupted by the creation of a large lake.

Needs Assessment - A planning document formally prepared by each City department every two years which identifies infrastructure and capital needs of the community which are projected for the upcoming 10 year period.

EXHIBIT A

New construction or development - The establishment or substantial improvement of streets, buildings, useable property, or infrastructure where such facilities did not exist or were not suitable for the newly intended purposes.

Permits - Documentation of permission by Federal, State, and/or local agencies which have regulatory jurisdiction over the construction and operation of water and/or wastewater utilities to expand or modify the public water and/or sewer system.

Public water and/or sewer system - The water and/or sewer pipes, storage facilities, pumping stations, lift stations, treatment facilities and appurtenances that are owned by the City of Charlotte and operated and maintained by Utilities.

Residential dwelling - A room or combination of rooms designed for year-round habitation, containing a bathroom and kitchen facilities, and designed for or used as a permanent residence by at least one family.

Right of Way - A non-possessory interest in the land of another for the purpose of constructing, reconstructing, operating and maintaining water and/or sewer facilities.

Street main - A water or sewer pipe installed along a street, road, or highway primarily for the purpose of providing water or sewer service to the property along that street

Subdivision - All divisions of a tract or parcel of land into two or more lots, building sites, or other divisions for the purpose, whether immediate or future, of sale, or building development of any type.

Temporary construction easement – A temporary right in a specific tract of land for which Utilities has entered into an agreement with the owner that grants Utilities the right to use the land for a limited period of time in order to provide space needed to construct water and sewer facilities.

Total cost of project - The total cost of completing a project including planning, design, surveying, drafting, inspection, administration, acquisition of rights of ways, legal services, environmental studies, permits, construction and all other costs necessarily incurred between project initiation and final acceptance.

Transmission main - A water pipe constructed primarily for the movement of water from one area to another. Transmission mains are usually, but not always, 12" or greater in diameter. Transmission mains usually supply water to smaller street mains.

Treatment facility - A plant designed and constructed for the purpose of removing pollutants and/or other impurities from wastewater or from raw water.

Tributary - A stream or pipe which flows by gravity or is pumped into another stream or pipe.

Trunk main - A sewer pipe constructed along a drainage pattern or minor creek to collect flows discharged from sewer street mains.

EXHIBIT A

User fee - Charges which are collected for normal provision of water and/or sewer service. User fees do not include onetime charges such as connection or capacity charges, nor late fees, turn on/off fees or other similar charges.

Utilities – Charlotte-Mecklenburg Utilities. Where action is required or contemplated by Utilities in this Policy, *Utilities* shall refer to the Director or his designee.

EXHIBIT A

Sec. 23-12. - Capacity charge.

Each applicant for water or sewer service shall pay the applicable capacity charge for the type and size of service connection requested. The capacity charge shall be arrived at in accordance with the water and sewer rate methodology documents as set forth in the schedule of current rates, fees and charges.

(Ord. No. 5230, § 1(Exh. A), 10-28-2013)

EXHIBIT B

Sec. 23-12. - Capacity charge.

Each applicant for water or sewer service shall pay the applicable capacity charge for the type and size of service connection requested. The capacity charge shall be arrived at in accordance with the water and sewer rate methodology documents as set forth in the schedule of current rates, fees and charges.

(Ord. No. 5230, § 1(Exh. A), 10-28-2013)

EXHIBIT B

Sec. 23-129. - Charges for making service connections.

(a) The charges for making service connections of sizes four inches or smaller shall be arrived at in accordance with the water and sewer rate methodology set forth in the Charlotte-Mecklenburg Utility Department Revenue Manual dated November 26, 2012, which is on file with the city clerk. The above documents shall be referred to as the "revenue manual." Such rates, fees and charges as are determined in accordance with the revenue manual and any modifications thereto and any other CMU water or sewer rates, fees or charges determined in accordance with applicable law are referred to as the "schedule of current rates, fees and charges" in this chapter. The charges for making partial service connections of three-quarter-inch size shall be calculated and applied in the same manner.

(b) The charges for making complete service connections at sizes larger than four inches shall be made as follows:

(1) At the time of application for a service connection, a design study will be scheduled and made by CMU personnel to determine the cost of construction, material, meter, valves and required appurtenances to furnish the service applied for.

(2) Payment of the determined cost is required prior to the start of any construction work by CMU.

(c) The applicant shall designate with a marker the location of the water service connection along the street right-of-way

EXHIBIT C

within the boundaries of his property prior to the beginning of the work. The location may not be within a driveway.

(d) The applicant or customer shall not operate or disturb any part of the water service other than to turn off water to the premises in an emergency by operating the curb turnoff within the meter box if the service is one inch or smaller or by operating the property line cutoff valve on larger services. All fixtures within the owner's premises must be kept in repair by the customer or property owner.

(Code 1985, § 23-83; Ord. No. 2032, § 1, 3-25-2002; Ord. No. 3875, § 1, 4-7-2008; Ord. No. 4609, § 5, 2-28-2011; Ord. No. 5007, § 2, 11-26-2012)

EXHIBIT C

Charlotte-Mecklenburg Utility Department Revenue Manual

November 26, 2012

Summary

This Charlotte-Mecklenburg Utility Department (CMUD) Revenue Manual was developed to consolidate the CMUD water and sewer rate methodology documents into a single document and will be referred to as the "Revenue Manual" in the City Code.

In addition to this Manual, the reader is also referred to the Red Oak Consulting Reports that were issued February 22, 2011 and January 11, 2012. These reports are on file with the City Clerk and are incorporated into this Manual by reference. The report provides further information and detail for the rate calculations and cost allocations for water and sewer rates found in this Manual. Rates presented herein are presented to aid in the understanding of the calculation and will be changed as deemed warranted, usually annually, based upon actual costs or account data at the time (The reader is referred to the Schedule of Current Rates, Fees and Charges applicable to a specific time for the amounts of such rates, fees and charges that are in effect at that time.). Rate methodologies are documented for Water and Sewer Fixed Monthly Charges, Water and Sewer Monthly Availability Fees, Water Usage Charges, Sewer Usage Charges, Industrial Wastewater Program Charges, Fire line Fees, Water and Sewer Connection Fees, Water and Sewer Capacity Fees and Fire Line Capacity Fees.

Other Fees administered by CMUD are included in this Manual beginning on page 23.

Background

CMUD was formed in 1972 by the City of Charlotte and Mecklenburg County to provide the City's and County's residents with drinking water, fire protection and wastewater collection and treatment services. In 2012, CMUD provided water to approximately 253,557 metered water accounts and wastewater to approximately 235,157 accounts. (The description of the CMUD facilities in this section and elsewhere in this Manual is subject to change and is accurate as of June 30, 2012).

The source of the water supplied by CMUD to its customers is the Catawba River, which begins in the North Carolina Mountains and flows through 11 impoundments operated by Duke Energy Company. Two of the impoundments, Lake Norman and Mountain Island Lake, are the source of the CMUD water supply.

The water system consists of the three water treatment plants: the Walter M. Franklin Water Treatment Plant, which is the largest in North Carolina with a treatment capacity of 181 million gallons per day (MGD); the Vest Water Treatment Plant with a treatment capacity of 36 MGD; and the Lee S. Dukes, Jr. Water Treatment Plant has a capacity of 25 MGD.

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Once treated, water is pumped from each of the plants into approximately 4,192 miles of water mains. Five booster stations are used to transfer water to the two high pressure zones in the distribution system. The water system also includes 87 million gallons of clear well storage, 10 elevated storage tanks with a combined capacity of 12.25 million gallons, and two ground level storage facilities with a combined capacity of 10 million gallons.

Sewer treatment is provided by five treatment plants, McAlpine Creek, McDowell, Sugar Creek, Mallard Creek and Irwin Creek. The sewer system includes approximately 4,180 miles of collection systems lines and has a total permitted treatment capacity of 123 MGD. Wastewater from some portions of CMUD's service area is treated at the Rocky River Regional Wastewater Treatment Plant through an interlocal agreement with the Water and Sewer Authority of Cabarrus County.

History

Prior to 1992, both the water and sewer rate structures consisted of a fixed charge and a volumetric charge and wastewater surcharges on industrial customers for high strength wastewater (i.e., higher than domestic strength BOD and TSS).

Tapping Privilege Fees were eliminated after June 30, 1992 and a new fee structure was implemented on July 1, 1992 that included a connection and capacity fee for both water and sewer. Capacity fees are one-time charges to new customers to assist in recovering at least a part of the capital cost of the additional system capacity. Connection fees recover the cost of installing the service connection.

In 1994, CMUD implemented a tiered water structure designed to encourage conservation by water users and recover the additional costs associated with meeting high demand. Water volumetric rates were segregated into three tiers based on volume of water used over the course of the monthly billing period. The first and lowest tier (0–18 ccf per month) covered essential water uses related to health and sanitation (e.g. consumption, bathing, washing clothes, cooking, etc.) The second tier (19–40 ccf per month) was a higher rate and applied to higher water usage normally associated with substantial, outdoor water uses (e.g. irrigation). The third tier (greater than 40 ccf per month) applied the highest rate to the highest levels of water use. In addition, the maximum monthly sewer usage charge, or *sewer cap*, for residential customers was established at 18 ccf. A sewer cap represents the point where, generally speaking, some water use (i.e. outdoor use) does not flow into the sewer system and incur the cost of collection & treatment.

In 2001, CMUD stepped up conservation efforts by revising the usage thresholds of the water rate tiers based on updated consumption data. The revision modified the water rate structure to more accurately allocate the cost of services to the customers creating excessive demand through seasonal, discretionary use of water. The first tier was changed to 0-16 ccf per month, the second tier was revised to 17–32 ccf per month, and the third tier was changed to greater than 32 ccf per month.

Also in 2001, CMUD implemented an industrial high-strength, wastewater charge to cover the cost of removing ammonia, and a new means of charging commercial customers for high

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strength wastewater ($.30 per ccf for Industrial Waste and $.40 per ccf for Commercial High Strength Volume charge) based on the average strength loadings of commercial customers. CMUD phased in the updated methodology over a period of two years.

In 2002, CMUD amended the sewer cap that applied to multi-family customers from 18 ccf of metered water consumption per dwelling unit to 11 ccf per dwelling unit. The revision to the sewer cap recognized that average per capita usage for multi-family customers is lower than typical residential usage.

In 2008, CMUD revised the water tier rate structure to further encourage conservation. Changes that were made included the following:

- The number of water rate tiers within the residential and multi-family rate structure was increased from three to four. The first tier (lifeline) was revised to 0–4 ccf per month to provide low cost water for essential usage, the second was changed to 5-8 ccf per month, the third tier was changed to 9-16 ccf, and the fourth tier changed to greater than 16 ccf per month.

- The water rates charged to bulk customers were changed from Tier 2 residential rates to the Tier 3 residential rates.

- The number of water rate tiers applicable to irrigation meters and swimming pool accounts were revised from three tiers to two tiers (rates starting at the Tier 3 rate and progressing to Tier 4).

- The sewer cap for residential customers was increased from 18 ccf to 24 ccf per month.

- The assumed water usage as the basis for billing sewer only-customers was changed from a usage amount of 11 ccf to 8 ccf per month.

Several changes occurred in 2012; primarily a fixed Availability Fee was added to recover approximately 20% of annual debt service cost. This fee varies and increases by meter size, in accordance with the most recent, published meter capacity ratios of the American Water Works Association. The residential cap for sewer was reduced from 24 ccf to 16 ccf per month; the multi-family sewer cap remained at 11 ccf per month. In addition, the amended methodology of one of the High Strength Surcharges for the Monitored Industries eliminated the charge for cBOD charge, added a charge for COD, the Commercial High Strength Charge was increased from $.40 per ccf to $.50 per ccf for the Non-monitored Industries and the Industrial Waste Charge decreased from $.30 per ccf to $.24 per ccf.

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Introduction

Red Oak Consulting issued a CMUD Water and Sewer Rate Study Report on February 22, 2011 (Red Oak Report, February). A cost of services analysis was used as the basis in documenting the water and sewer rate methodology. The steps in the cost of service analysis consisted of the following:

1. Identification of the annual revenue requirements to be used in the analysis;

2. Categorization of the revenue requirements into water system revenue requirements and sewer system revenue requirements;

3. Allocation of revenue requirements to cost drivers;

4. Distribution of costs to customer classes based on demand and usage characteristics.

The revenue requirements for FY2011 were used in the analysis as the 'test year.' The revenue requirements include operation and maintenance (O&M) expenses, debt service, and capital improvement expenditures. Non rate revenues (e.g., interest earnings, capacity fee revenues, and miscellaneous fee revenues) were subtracted from the budgeted costs to determine the annual water and sewer rate revenue requirements.

The test year revenue requirements were allocated between the water and sewer systems based on discussions with, and information provided by, CMUD in order to evaluate the cost of service of each utility system and establish cost-based rates.

The CMUD rates are summarized for FY2012 and these charges will be evaluated periodically and may be revised as new conditions warrant.

Fixed Monthly Charges

Water and Sewer Fixed Billing Charges

The fixed billing charges for water and sewer recover the cost associated with the servicing of customer accounts, such as the cost to read and maintain the meters, produce invoices and provide customer service. The FY2012 fixed billing charge is $2.40 per billing cycle for water and $2.40 per billing cycle for sewer.

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The fixed billing charge calculation is made as follows: Cost associated with the servicing of customer accounts divided by the number of accounts billed divided by 12 months.

The fixed billing charge is currently charged for each billing cycle and is prorated for number of days in the billing cycle.

The fixed billing charge is charged for each meter included on the account and is assessed even if no water or sewer is used during the billing period.

Water and Sewer Availability Fees

Availability fees were added as part of the Red Oak Report, February, to recover approximately 20 percent of CMUD's annual debt service cost.

To determine the base meter size costs, the availability fee methodology is as follows:

Water Availability Fee

Water Debt Service Costs multiplied by approximately 20% divided by Total Number of Equivalent Meters divided by 12 months.

Sewer Availability Fee

Sewer Debt Service Costs multiplied by approximately 20% divided by Total Number of Equivalent Meters divided by 12 months.

Equivalent meters provide an equitable method for distribution of charging a fixed fee based on the relative capacity of the meter to provide water.

The Availability Fees vary and increase with meter size in accordance with published meter capacity ratios. An example of how the Availability Fee would be scaled from the base meter size cost is provided below (based on 30 days of service). The rates below are as of July 1, 2011 for fiscal year 2012.

Availability Fee Scaling

Meter Size	Equivalency Ratio	Water Fee	Sewer Fee
5/8"	1	$2.25	$4.30
1"	2.5	5.63	10.75
1 1/2"	5	11.25	21.50
2"	8	18.00	34.40
3"	17.5	39.38	75.25
4"	30	67.50	129.00
6"	52.5	118.30	225.75
8"	90	202.50	387.00
10"	157.5	354.38	677.25
12"	170	382.50	731.00

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Water Usage Charges

The below allocation processes were used in the Red Oak Report, February, to calculate the water usage costs.

Water costs were categorized into six different cost categories or cost drivers. A distinction was made for costs that are common to both retail and bulk customers, and costs that are only applicable to CMUDs' retail customers. These categories are identified below:

- Base or average day demand
- Maximum day extra capacity
- Maximum hour extra capacity
- Customer
- Public Fire Protection
- Indirect

The categorization of costs into average demand, maximum day demand, and maximum hour demand involved an analysis of overall system demand peaking and associated system -related costs. For example, some water system components (e.g. size of transmission and distribution lines) are designed to meet maximum day and maximum hour demands, whereas other components, such as the water supply source, are designed to meet average daily demands. Since water system components are designed for various purposes, several cost categories were used.

Factors were developed to allocate capital and O&M costs to base, average daily demand (ADD), maximum day demand (MDD), and maximum hour demand (MHD) cost categories using system demand information. A summary of water system average day, maximum day and maximum hour demands in 2010 is provided below.

Year	Avg Day Demand (MGD)	Max Day Demand (MGD)	Max Day to Avg Day Factor	Avg Hour Demand (MGH)	Max Hour Demand (MGH)	Max Hour to Avg Hour Factor
2010	88.1	138.1	1.6	3.7	9.3	2.5

MGD = million gallons per day. MGH = million gallons per hour.

A summary of functional cost allocation percentages for system components designed to meet base, maximum day and maximum hour demands is provided below.

Allocation Percentages for System Demand Factors

Allocation	ADD	MDD	MHD	Total

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Average Day Demand	100.0%	0.0%	0.0%	100.0%
Maximum Day Demand	63.8%	36.2%	0.0%	100.0%
Maximum Hour Demand	39.7%	22.5%	37.8%	100.0%

The maximum day demand allocation was calculated as follows:

- Average Day Demand = 88.1 / 138.1 x 100 = 63.8%
- Max Day Demand = (138.1 – 86.4) / 138.1 x 100 = 36.2%

The maximum hour demand allocation was calculated as follows:

- Average Day Demand = 86.4 / 222.1 x 100 = 39.7%
- Max Day Demand = (138.1 – 86.4) / 222.1 x 100 = 22.5%
- Max Hour Demand = (222.1 – 138.1) / 222.1 x 100 = 37.8%

Units of service cost are then determined by dividing the cost allocated to each cost category (see tables below) by the total number of units of service projected to be used by each customer class. Additional detail can be found in the Red Oak Report, February.

A summary of the basis of allocating O&M costs to cost drivers is provided below.

O&M Cost Allocation Basis

Functional Costs	Allocation	Rationale
Treatment-Water Treatment	100% Base	Treatment O&M costs are based on amount of water treated, therefore costs were allocated to base demand factors.
Treatment-Pumping	63.8% Base, 36.2% MDD	Pumping O&M costs are primarily electricity costs, which are based on commodity and demand charges.Therefore, costs were allocated to base and max day demand factors.
Transmission	63.8% Base, 36.2% MDD	Provides max day demands to all customers, so costs were allocated to base and max day demand factors.
Distribution	39.7% Base, 22.5% MDD, 37.8% MHD	Provides max day and max hour demands to all customers, so costs were allocated to base and max day factors.
Customer Service	100% Number of Bills	Customer service and billing is based on the number customers in the system and number of bills generated.
Indirect	100% Base	Primarily non departmental and business system costs not related to peak usage.

A summary of the basis of allocating capital costs drivers is provided in the below schedule. Capital cost allocation percentages were developed based on an analysis of fixed asset costs.

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Capital Cost Allocation Basis

Functional Costs	Allocation	Rationale
Source of Supply	100% Base	Source of supply facilities provide water to meet total supply Requirements, so costs were allocated to base demand.
Treatment-Water Treatment	63.8% Base, 36.2% MDD	Treatment plant capacity provided to meet average and maximum day demands, so costs were allocated to base and max day demand factors.
Treatment – Pumping	39.7% Base, 22.5% MDD 37.8% MHD	Provides pumping capacity to meet max hour and max day demands, so costs were allocated to base, max day and max hour demand factors.
Transmission	63.8% Base, 36.2% MDD	Transmission system supports meeting average and max day demands, so costs were allocated to base and max day demand factors.
Distribution	39.7% Base, 22.5% MDD, 37.8% MHD	Distribution system supports delivering water to meet max day and max hour demands, so costs were allocated to base, max day and max hour demand factors.
Storage	39.7% Base, 22.5% MDD,	Storage provided to meet max day and max hour demands, so costs were allocated to base, max day and max hour demand factors.
Customer Service	100% Number of Bills	CMUD billing system and a portion of vehicles support providing customers with service, so costs were allocated to number of bills.
Indirect	100% Base	Primarily non-departmental and business system costs not related to peak usage, so costs were allocated to base demand.

Units of service costs are then determined by dividing the cost allocated to each cost category by the total number of units of service projected to be used by each customer class. Additional detail can be found in the Red Oak Report, February.

Residential Rates

Volumetric usage rates are assessed based on the metered water use per hundred cubic feet (ccf) and are designed to recoup all costs not recovered by means of the Fixed Monthly Charges. Residential and multifamily customers pay usage rates on an inclining four tier schedule that depends on the amount of water used during the monthly billing cycle with established caps.

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The four tier water rate structure is as follows:

	CCF Used	Amount per Tier (FY2012)
Tier 1	0 - 4	$.98
Tier 2	5 - 8	1.96
Tier 3	9 - 16	3.41
Tier 4	over 16	5.32

The tier widths for multi-family residential customers and for master-metered single family residential neighborhoods are scaled based on the number of dwelling units served by the master meter. Volumetric water (tier) rates will be normalized for billing periods greater than 33 days by proportionally increasing the width of each tier. There is no normalization usage under 28 days; the usage will fall into the tiers as is.

A summary of the rate methodology used for determining the tier rates is provided below:

- The lifeline (Tier 1) water rate is set at 50% of the Tier 2 rate. This lower rate is intended to improve affordability of essential domestic consumption (e.g., drinking and sanitation) for all customers.

- The Tier 2 water rate is established to recover average day costs, approximately 25% of maximum day cost, and approximately 50 percent of the rate subsidy provided by the Tier 1 lifeline rate.

- The Tier 3 water rate is established to recover approximately 25% of the maximum day cost, approximately 30% of the maximum hour costs and approximately 50 percent of the rate subsidy provided by the lifeline rate.

- The Tier 4 water rate is established at a rate that will recover approximately 50% of the maximum day costs and approximately 70% percent of the maximum hour costs.

The tier structure applies to the following residential customers: Single Family, Apartment and Master Meter Single Family Attached.

Non Residential (Commercial) Water Rates

Non-residential customers (i.e. commercial, industrial and governmental) are charged $2.20 per ccf (FY2012 rates) for all water used. There are no tiered rates based on usage and no caps applied.

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The uniform usage rate is calculated by dividing the rate revenue requirements allocated to the commercial customer class, determined through the cost of service evaluation process, by the projected total billed commercial water consumption.

Irrigation Meter Charges and Rates

Currently, there are two options available to a residential customer with an existing service connection to add residential irrigation services:

- A dedicated irrigation service line in which the standard connection fee (currently $1,692) applies.

- A split connection where the irrigation service line is attached to the domestic service line ahead of the domestic meter and the customer is required to pay a one-time reduced connection fee of $771 (FY2012 rate) as opposed to the full fee of $1,692 (FY 2012 rate) and no capacity fee is charged for the irrigation service line. The reduced connection fee of $771 is based on the prior year average actual costs to install services of this type.

Rates for separate residential meter irrigation water usage begin at Tier 3 for water usage up to 16 ccf per month, and progress to Tier 4 for usage above this amount.

For master metered irrigation accounts used only for residential lawn watering, such as might be found in communities with private streets, rates are scaled based on the number of dwelling units. Irrigation meters serving common areas, landscaped street medians, neighborhood parks, or other similar areas are not subject to tier scaling. Rates begin at Tier 3 for water usage up to 16 ccf per dwelling unit, and progress to Tier 4 for usage above this amount.

Beginning July 1, 2012 if a separate irrigation meter in addition to a backflow device and smart irrigation controller are installed and maintained in accordance with CMUD's standards and requirements, then the Tier 3 rates will apply to all irrigation usage. Also, the capacity fee will be waived and customers can pay the connection fee over twelve months.

Water conveyed through irrigation meters is not to be discharged to the sanitary sewer system and is therefore not subject to sewer usage charges.

Bulk Water Customer Rates

Public water systems outside of Mecklenburg County (for example, York County and Concord) served by CMUD are charged the Tier 3 residential rate of $3.41 for all water used. This rate is beyond the average residential usage and represents where discretionary usage begins and where added costs were incurred to provide added capacity. This is a policy decision based on fairness and equity to all CMUD customers including wholesale customers.

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Sewer Usage Charges

The below allocation processes were used in the Red Oak Report, February to calculate the sewer usage costs.

The sewer revenue requirements were categorized into four different cost categories. These categories are identified below.

- Flow Based Costs – Includes costs that vary by the volume of wastewater collected and treated (primary costs are chemical and electricity costs).
- Strength Based Costs – Includes costs associated with the treatment of COD, TSS and Ammonia.
- Customer Costs – Include costs that vary in proportion to the number and type of customers served.
- Industry Specific Costs – Includes costs associated with providing wastewater strength monitoring and laboratory analysis for permitted industrial customers.

O & M costs were allocated to functional components of flow, COD, TSS, NH3-N (ammonia), customer and industry specific categories to recognize the costs incurred to process the wastewater flow and strength characteristics.

The resulting overall O&M cost allocation factors are summarized below.

Flow	COD	TSS	NH3-N	Customer	Industry Specific	Total
55.8%	16.7%	6.0%	8.4%	10.6%	2.4%	100%

Capital costs were allocated into the same cost categories to recognize that the wastewater capital facilities were designed to accommodate both the flows and the strength of wastewater. The cost allocation process included allocating fixed asset costs to functional components and identifying an overall percentage of capital facilities dedicated to each category. The method used to complete the fixed asset cost allocation consisted of the following steps:

1. Development of a list of fixed sewer assets, original costs, service lives and dates placed in service;
2. Depreciation of the components over their useful life to reflect each asset's service life;
3. Allocation of the net asset value to functional cost components; and

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4. Development of average capital cost allocation percentages from the functional cost allocation results.

Net asset values were provided by CMUD's fixed asset records. Net asset values were allocated to flow, COD, TSS, NH3-N based on a combination of the design basis and predominant purpose of the facilities. A summary of the basis for the capital cost allocations is provided below.

System Component	Allocation Basis
Wastewater Collection	Costs were assigned 100% to the flow component.
Flow Equalization	Costs were assigned 100% to the flow component.
Screening and Grit Removal	Flow rates determine sizing, therefore, costs were assigned 100% to the flow component.
Pumping	Costs were assigned 100% to the flow component.
Primary Clarification	Primary purpose is the removal of TSS and flow rates determine equipment sizing. Therefore, costs were assigned 10% to flow and 90% to TSS.
Roughing Filters	Primary purpose is the removal of organic carbon. Therefore costs were assigned 100% to the COD component.
Activated Sludge	Primary purpose is BOD removal. Therefore, costs were assigned assigned 60% to COD and 40% to NH3-N based on the tank area design criteria.
Secondary Clarification	Process designed based on flow rates and loadings and process supports solids removal and denitrification. Therefore, costs were assigned 50% to flow, 40% to BOD, 5% to TSS and 5% to NH3-N.
Secondary Filtration	Process designed based on flow rates and loadings and process supports solids removal. Therefore, costs were assigned 90% to flow, 5% to COD and 5% to TSS
.Disinfection	Costs were assigned 100% to flow.
Thickening	Process generates solids through the oxidation of COD and the collection of inert solids that pass through the treatment process. Therefore, costs were assigned 80% to COD and 20% to TSS.
Dewatering	Costs were assigned 40% to COD, 40% to TSS and 20% to NH3-N, based on influent loadings and solids removal.

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Sludge Digestion	Costs were assigned 40% to COD, 40% to TSS and 20% to NH3-N, based on influent loadings and solids removal.
Septic Receiving	Costs were assigned 25% to flow, 25% to COD, 25% to TSS and 25% to NH3-N based on discharge loadings.
Water Reuse	Costs were assigned 100% to flow.
Customer Accounts	Costs were assigned 100% to the customer component.

Capital cost allocation factors were determined based on applying the fixed asset cost allocations to the net fixed asset values of each of the system components. The resulting overall capital cost allocation factors are shown below.

Flow	COD	TSS	NH3-N
74%	14%	7.1%	4.9%

Sewer customer classes consisted of residential, multifamily, commercial, industrial and high strength commercial and industrial customers. Service requirements associated with these classes are based on billed water usage and wastewater strength loadings. Loadings data were obtained from monitoring data provided by the CMUD staff. Average loading concentrations for all customers' classes were estimated based on wastewater flow received at the plant and loadings reported in the Industrial Waste Charge Study Final Report that that was prepared in 2004 and are displayed below. Monitored customers are charged a surcharge for their metered flow over the below domestic averages. These averages are used in the steps to calculate the Industrial Waste surcharges on page 14.

	Domestic Averages MG/L
COD	500
TSS	250
NH3-N	20

The total estimated units of service by customer class was estimated based on the wastewater treatment plant influent data and customer data provided by CMUD and updated as deemed appropriate.

The unit cost of service was calculated for each of the sewer cost categories by dividing the cost allocated to each cost category by the total number of estimated units of service that were estimated for FY2011.

The sewer volumetric rates for residential, multifamily, commercial and industry customers are $4.14 per ccf (FY2012). Residential sewer usage is capped at 16 ccf and customers do not pay sewer usage rates for flows beyond this amount. Multi-family (apartment) sewer usage is capped

at 11 ccf of water per dwelling unit, and customers do not pay sewer usage rates for flows beyond this amount.

The sewer caps for residential and multi-family customers will be eliminated and be replaced with the implementation of the average winter consumption methodology under a phased in approach. Using this approach, residential sewer charges will be capped based on the average, actual monthly winter consumption for each customer. Currently, the average winter consumption data is being gathered and processes developed to facilitate this change. This policy change will be publicized before implementation.

For commercial and industrial customers that use water from the CMUD water distribution system but do not discharge all of the water back into the CMUD sewer system, the quantity of water used and not discharged into the sewer system is excluded from the sewer service charge, provided the quantity of water is measured by a device which is approved by CMUD and is installed and maintained at the owner's expense. (These adjustments are described on page 33, for Private Meters for In-Product, Make-Up and Other.)

Several customers in 2001 were grandfathered into the above methodology which excludes the amount of water that is evaporated and not discharged into the CMUD sewer system. These customers pay sewer on an established percentage of water used based on CMUD's calculations or an independent consultant's recommendation since the amount of evaporated water not added back to the sewer is not metered separately.

Industrial Wastewater Program Charges

Industrial Waste Charge

Industrial and commercial customers that discharge high strength wastewater, requiring increased costs to treat relative to residential wastewater are assessed an industrial waste charge that recovers treatment costs and a portion of the System Protection Division costs. The current industrial waste charge of $.24 (FY2012) is assessed on the basis of volume flow. There are approximately 3,100 accounts that receive Industrial Waste Charges. Both monitored customers (who have average daily flow greater than 25,000 gallons or who have special discharge permits) and non-monitored industrial customers (such as restaurants, auto and body shops and laundries that have strong effluent but have insufficient flow to require continuous monitoring) receive this charge.

CMUD identifies industries that discharge industrial waste by the SIC code they were assigned when they obtained their business license. The classification code assists CMUD in determining the type of wastewater discharged by similar businesses.

Industrial High Strength Surcharges for Monitored Customers:

Industrial customers that discharge wastewater with a concentration of COD, TSS and NH3-N at a strength higher than the domestic strength pay a surcharge on the amount of pounds of each parameter that is discharged over the domestic loading rate.

To determine the surcharge, the following steps are followed. The monthly average of each parameter is calculated and the average domestic loadings (as shown on page 9) are subtracted to determine the surplus. The surplus is multiplied by the National Standard of .0062355 to determine the factor and it is reported on the customer's monthly invoice. The parameter charge and formulas to determine the surcharge is summarized below:

	Charge (FY2012)	Formula to Determine Surcharge Invoice
COD	$.10	Factor X sewage flow X $.10
TSS	$.16	Factor X sewage flow X $.16
NH3-N	$1.80	Factor X sewage flow X $1.80

The parameter charges for TSS and NH3-N are based on recovering the entire cost to CMUD to treat these wastes. The charge for COD will increase 20% per year until the charge equates to full cost recovery and then will be increased by whatever percentage is required to achieve and maintain charges to full cost recovery.

These surcharges are levied in addition to the sewer service charges.

Commercial High Strength Volume Charges for Non Monitored Customers

The commercial high strength volume charge is assessed to non-monitored customers in the industrial waste program that discharge waste loading concentrations that are greater than the domestic loading concentrations. The high volume charge is calculated by determining the average loadings for these customers over the domestic loading, and calculating a volumetric charge that includes the costs of high strength loadings. There are approximately 2,100 accounts that receive this charge as of June 30, 2012.

Customers serviced by multi-user meters (master-metered customers) are not charged the High Strength, surcharge, although a similar business that has a separate or stand-alone meter receives both the Industrial Waste Charge and the High Strength Surcharge. Typical tenants behind master meters include shopping centers, strip malls and office buildings and usually there are no records to determine the water usage of individual tenants. Subsequently, this wastewater is returned to the sewer system and it is impossible to measure the precise impact that each individual tenant has on the system,

The current charge is $.50 per ccf (FY2012) and is multiplied by the volume of incoming water. The charge will increase 20% per year until the charge equates to full cost recovery and will be adjusted by whatever percentage is required to achieve and maintain charges to Full Cost Recovery on an annual basis as is necessary.

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Fire Line Fees

The below allocation processes were used in the Red Oak Consulting Report dated January 11, 2012 to calculate the water usage costs. Refer to that document for additional detail.

The estimated cost associated with fire line service was calculated using the base extra capacity methodology, as described by American Water Works association (AWWA). Using this methodology, the maximum day and maximum hour fire flow demands were estimated and used to determine the relative proportion of the system maximum day and maximum hour demands attributable to fire flow demands. The annual revenue requirement associated with providing fire line service was then estimated using by allocating certain costs identified as related to meeting maximum day or maximum hour water demands proportionally to fire line service. The total annual revenue requirement associated with fire line service was then divided by the number of 6-inch fire line meter equivalents to derive the unit cost of fire line service under this method.

The maximum day and maximum hour fire flow demands were estimated based on assumptions contained in CMUD's 2009 Water Distribution System Master Plan, prepared by Black & Veatch, Inc. ("the Master Plan"). The performance criteria used in the Master Plan to evaluate the distribution system for fire flow requirements was a flow of 3,500 gallons per minute (gpm) for three hours. For the purposes of this analysis, the maximum day and maximum hour fire flow demands were calculated using the assumption of two non-simultaneous fires in a day. The resulting base, maximum day and maximum hour allocation factors used in the analysis are summarized below:

Cost Allocation Demand Factors - Base Extra Capacity Method

	Cost Allocation				
Cost Factor	**Base**	**Max Day**	**Max Hour**	**Fire Flows**	**Total**
Average Day Demand	100.0%	0.0%	0.0%	0.0%	100.0%
Maximum Day Demand	63.8%	35.3%	0.0%	0.9%	100.0%
Maximum Hour Demand	39.7%	22.5%	35.5%	2.3%	100.0%

Each cost category of CMUDs' FY2012 budget was assigned to one of the cost factors. For any costs assigned to the direct fire, maximum day or maximum hour costs factors as shown in the above table, a portion of these costs were allocated to fire protection. A summary of the budget categories and associated percentages of costs that were assigned to fire protection are shown below.

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Fire Line Cost Allocation - Base Extra Capacity Method

Functional Costs	Fire Flow Allocation	Rationale
Treatment-Water Treatment	0.0%	Treatment O&M costs are based on amount of water treated, therefore costs were allocated to base demand factor.
Treatment-Pumping	2.3%	Pumping O&M costs are primarily electricity costs, which are based on commodity and demand charges. Therefore, costs were allocated to base, max day and max hour demand factors.
Transmission	0.9%	Provides max day demands to all customers, so costs were allocated to base and max day demand factors.
Distribution	2.3%	Provides max day and max hour demands to all customers, so costs were allocated to base and max day factors.
Distribution Storage	50.0%	Distribution storage designed for two purposes: (1) to meet maximum hour demands and (2) to provide adequate pressure for fire flows, so costs were assigned 50% to fire flows.
Direct Fire	100.0%	Costs associated with hydrant and fire meter maintenance allocated 100% to direct fire protection.
Engineering	5.0%	Assumed due to a portion of the system designed to meet fire protection needs.
Customer Service	1.0%	Assumed considering a portion of the system designed to meet fire protection needs.
Administrative, Business Systems and Non-Departmental Costs	2.0%	Allocated to fire protection as an indirect allocation.

Using the base extra capacity method, the total fire line service revenue requirement in FY2012 was estimated to be approximately $2,137,000 which was calculated by multiplying the CMUD cost center budgets to the above Fire Flow Allocation with the exception of the for Debt Service, CIP and Other Non Operating Expenses and Other Revenue which included interest income, capacity fees, miscellaneous revenue and sources/uses of funds). The Debt Service, CIP and Other Non Operating Expenses was allocated at 2.4% and was based on the average allocation of fixed capital costs to base, maximum day, maximum hour and fire protection cost categories. The Other Revenue was allocated at 1.8% and was based on the weighted average of capital costs allocated to fire protection of 2.4% and operating costs allocated to fire protection of 1.6%.

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The calculated fire line service fees utilizing the base extra capacity method are shown below.

Fire Line Size	New Fire Line Availability Fee
3"	$2.40
4"	4.81
6"	9.61
8"	14.42
10"	24.03

(Currently there are no fire line sizes smaller than 3 inches.)

The above fee will replace the existing Fire line Fee and the Fire Line Availability Fee.

In situations where combination meters have zero usage on the high flow size meter over the past calendar year, the high flow size meter is considered for fire protection. Therefore, the availability fee will be based on the low flow size meter. This condition is evaluated and adjusted periodically.

Water and Sewer Connection Fees

The water and sewer connection fees are one time charges for anyone desiring a new connection to the water and sewer system. These fees are paid in advance with the new service application. The 5/8" or 1" water service connection involves the construction of a lateral from the public water main to a service line on the customer's property, a meter yoke, a meter box and required appurtenances. Water service connections for larger than one inch meters involve the construction of a lateral from the public water main to a service line on the customer's property, a meter box or vault, a valve at the property line and other required appurtenances.

The sewer service connection involves the construction of a lateral from the sewer main to the customer's property.

Water and sewer connection fees for small taps (5/8" to 4" meter sizes and 4" sewer connections) are established annually based on the average actual cost from the prior year to install service connections. Included in the cost calculation are actual labor, parts and a mobilization fee which includes overhead and the trip charge to install. These small taps are installed by either a contractor selected by low bid or depending on workload; some are installed by CMUD crews.

Connection fees for larger services are based on CMUDs' estimated cost after reviewing the construction design plans and a site visit. The cost includes labor, parts, pavement cuts, restorations, and a mobilization fee.

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In addition, the connection fee only (not the capacity fee) is discounted 10% if the connection is installed during construction of a public water or sewer main. This discount is limited to 5/8" water and 4" sewer services.
The connection fees do not apply to services installed by the developer during the construction of water /sewer systems under contract with and donated to CMUD.

Lastly, there is financial assistance available for single family residential residences with household incomes that are 80% or less of the Charlotte area's median income, consisting of a special deferred payment plan for 12 months or no interest loan payments. The median income is determined from the annually updated Census data and is based on the most current Family Income for the Metropolitan Statistical Area for Charlotte, Gastonia and Rock Hill. The chart is based on the Median Income and Family Size; see Schedule A for further details. To receive this discount, the customer is required to submit his/her most recent tax return to substantiate family size and income.

Water and Sewer Connection Fees (FY2012) by meter size and type are summarized below (sewer connections are only available in the following sizes: 4", 6", 8", 10" and 12").

Connection Fees for Water & Sewer by Size and Type

Water Meter Size/Type	Water Connection Fee	Sewer Connection Fee
5/8" Connection	$1,692	
1" Connection	2,224	
1.5" Connection	6,352	$2,323 (low pressure sewer service)
2" Connection	6,444	At Cost
3" Connection	12,090	At Cost
3" Con-Compound	14,224	
4" Connection	12,777	2,323
4" Con-Compound	15,033	
6" Connection	At Cost	At Cost
8" Connection	At Cost	At Cost
10" Connection	At Cost	At Cost

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12" Connection	At Cost	At Cost

Other Water Connection Fees that are billed with the customer's application are listed below:

Water Service Connection 5/8" Split/Dual Check

This charge of $771 (FY2012) is based on the average costs that include labor, parts and a mobilization fee.

Water Service Connection 3/4" Dual Check

This charge of $1,815 (FY2012) is based on the costs that include labor, parts and a mobilization fee.

Water Service Connection 1" Dual Check

This charge of $2,569 (FY2012) is based on the costs that include labor, parts and a mobilization fee.

Industrial, commercial and multi-family customers that install fire sprinkler systems or private fire hydrants will incur additional connection fees for the Fire Lines, as described below:

Fire Line Connection Fees

Costs of fire lines (consisting of 2", 4", 6", 8", 10" or 12" connections) are based on prior year actual averages for of labor, materials, parts and pavement cuts or contractor bids. These fees are paid at the time application is made for the connection.

Water and Sewer Capacity Fees

Capacity fees are one time fees paid at the time of application for a new service and are charged to pay for a portion of the capital costs associated with providing capacity to serve new growth. The CMUD water and sewer capacity fee increases with meter size.

The current capacity fees are calculated using the 'buy-in method which requires new customers to buy in to the existing backbone facilities plants, pump stations, supply reservoirs, large collection and distribution facilities) generally at a rate that reflects the prior investment of existing customers per unit of total capacity.

The following steps are used to calculate the water and sewer capacity fees:

- The original cost less accumulated depreciation (net book value) of existing facilities is compiled from the CMUD fixed asset records.

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- The unit capacity cost is determined by dividing the net book value by the total water and sewer treatment capacity ($ per gallon per day).

- The capacity fee for the base 5/8" meter size is calculated by multiplying the unit capacity cost by a usage/demand factor of 250 gallons per day.

- The capacity fees for water meter sizes larger than 5/8" are determined using published meter equivalency ratios. Costs for compound meter sizes are modified to reflect expected water usage rates.

If a different size meter is requested to replace an existing meter, the original capacity fee will be refunded (see below example of upgrade for 5/8", referencing a refund for water of $433 (FY2012) and for sewer of $1,715 (FY2012) upon payment of the new capacity fee.

Current Water and Sewer Capacity Fees by meter size and type are summarized below:

Water and Sewer Capacity Fees

Water Meter & Sewer Lateral Size/Type	**Water Capacity Fee**	**Sewer Capacity Fee**
5/8"	$433	$1,715
1"	1,082	4,287
1.5"	2,163	8,575
2"	3,460	13,720
3" Compound	7,516	29,800
3" Cap-Compound	6,920	27,440
4" Compound	12,620	50,035
4" Cap-Compound	10,813	42,875
6" FMCT	27,032	30,012
8" FMCT	38,925	51,450
10" FMCT	62,713	107,188
12" FMCT	92,988	248,675
Upgrade	(433)	(1,715)

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Fire Line Capacity Fees

The capacity fees are determined using meter equivalency ratios.

Fire Line Capacity Fees (FY2012)

Size	Capacity Fee
4"	$6,488
6"	13,516
8"	19,463
10"	31,357
12"	46,494
Upgrade	(6,488)

After installation if an upgrade is requested, once the new capacity fee is paid, the original capacity fee will be refunded (see above example of upgrade from 4", referencing a refund for ($6,488). These fees are based on meter equivalency ratios.

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Other Fees Administered by CMUD

The CMUD Director is authorized to establish and administer fees for other specific services provided by CMUD. These fees are intended to recover the actual costs of providing services.

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The below fees are based on cost and are updated as deemed necessary to reflect cost changes.

Miscellaneous Fees

Swimming Pool Water Rates

Swimming pool rates for residential customers are charged starting with the Tier 3 rate and progress to Tier 4 for usage greater than 16 ccf.

Commercial swimming pools are charged for the full metered usage.

Charges for sewer are incurred based on the amount of water used.

Reclaimed Water

In certain locations, CMUD provides treated wastewater effluent to customers for approved re-use. Charges for this product are negotiated with each customer based on the costs and benefits in each location.

Sewer Monthly Rates

CMUD provides sewer service to some customers who do not receive water service. In those cases where water service is not metered, CMUD provides sewer service for a monthly flat-rate amount. The Sewer Monthly Flat Rate of $39.82 (FY2012) is based on an average usage of 8 ccf multiplied by the commercial sewer rate of $4.14 (rate from page 11) plus the Sewer Fixed Charge of $2.40 (see page 4) and the $4.30 sewer availability fee (see page 5). The formula is as follows: 8 ccf x $4.14 +2.40 + 4.30 = $39.82. Actual amounts are adjusted when changes to the variables in the formula are approved.

Sewer, Metered, Union County

This charge is established by interlocal agreement and is currently $.56 (FY2012) per ccf based on McAlpine's Sewer Treatment Plant's budget plus overhead divided by the estimated gallons to be treated divided by the conversion factor of 1.3368. The amount is determined each year according to the methodology approved in this interlocal agreement.

Sewer, Mobile Home Parks

This charge is the flat rate of $39.82 (FY2012) per month multiplied by the number of units. The $39.82 (FY2012) is based on an average usage of 8 ccf multiplied by the commercial sewer rate

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of $4.14 (rate from page 11) plus the Sewer Fixed Charge of $2.40 (see page 4) plus the $4.30 sewer availability fee (see page 5). The formula is as follows: (8 ccf x $4.14 +2.40 + 4.30 = $39.82.)

Sewer, Multi-Units

This charge is the flat rate of $39.82 (FY2012) per month multiplied by the number of units. The $39.82 is based on an average usage of 8 ccf multiplied by the commercial sewer rate of $4.14 (rate from page 11) plus the Sewer Fixed Charge of $2.40 (see page 4) plus the $4.30 sewer availability fee (see page 5). The formula is as follows: (8 ccf x $4.14 +2.40 + 4.30 = $39.82.)

Sewer, Septic Waste

CMUD accepts wastewater from permitted septage waste haulers at designated receiving stations. Haulers are charged a fee of $.035 (FY2012) per gallon, which is based on an allocation of the treatment plant costs such as chemicals and power, an allocation of administrative costs for the Environmental Division and lab charges. These costs and the fee are reviewed and adjusted annually.

Sewer, Commercial, Ground Water Remediation

In certain situations, CMUD receives and treats contaminated groundwater. User fees are charged based on metered flows. The commercial sewer rate ($4.14 per ccf in FY2012) applies. Sampling at the discharge point into the sanitary sewer could be required and an additional high strength charge and industrial control charge may apply based on the flow volume and the sampling results.

Environmental Laboratory Services' Analytical Fees

The Charlotte Mecklenburg Utility Department's Environmental Laboratory Services is a full service environmental laboratory that supports CMUD's analytical needs and those of Mecklenburg County. The laboratory is certified to provide commercial analytical services for drinking water, wastewater, industrial discharges, ground, surface and storm waters. External customers are billed monthly or quarterly. Fees are based on benchmark surveys of commercial laboratories and the cost components are an allocation of salaries, benefits and supplies.

Fees are charged to Mecklenburg County in accordance with approved agreements.

Backflow Prevention and Hydrant Fees

CMUD manages non Fire Department use of hydrants when customers request various types of water use. The intent of the fees applied is to recover actual costs incurred for establishing and maintaining the connection and to charge for the water used in accordance with prevailing rates.

Hydrant Program Service Charge

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This charge is reimbursement for a response trip that includes an allocation for the average salary costs of a field technician plus mileage cost for an assumed 20 miles round trip plus equipment cost. For FY2012, this charge is $36 per trip. This charge is sometimes a component of other service charges listed below and is normally a charge that occurs when a field trip is requested by a customer.

3/4" Fire Hose Thread Connection - 30 days

This charge is comprised of an assumed use of 90 ccf of water over 30 days multiplied by the commercial water rate of $2.20 per ccf (FY2012), plus a service charge of $36 (FY2012) in addition to an equipment use charge of $15.89. The primary components for the equipment charge are as follows for FY2012:

Backflow preventer & parts (based on 6)	$8.97
Rubber rebuild kit (based on 6 uses)	4.17
Stainless steel cable seal (per use cost)	1.42
3/4" check valve disk holder (based on 6 uses)	1.33
Total	$15.89 (FY2012)

3/4" Fire Hose Thread Connection - 60 days

This charge is comprised of an assumed usage of 180 ccf of water (twice the 30 days usage) multiplied by the commercial water rate of $2.20 per ccf (FY2012) plus a service charge of $36 (FY2012) in addition to an equipment-per-use charge of $15.89 (FY2012) multiplied by 2 for the extended usage of 60 days (see the list of equipment cost for the 5/8" Fire Hose Thread Connection - 30 days).

2 ½" Fire Hose Thread Connection – 7 days

This charge applies when a customer utilizes a hydrant with a 1 ½ inch meter for a seven day period. This charge is for seven day allocation for same charge for 30 days plus a service charge in addition to the equipment per use charge. The formula is as follows: (146 ccf divided by 30 days x 7 days) x $2.20 commercial water rate + $36 for a service charge (FY2012) + 29.35 (FY2012) for equipment cost = $140.30, rounded to $142.)

2 ½" Fire Hose Thread Connection – 30 days

This charge is comprised of an assumed usage of 146 ccf of water multiplied by the commercial water rate of $2.20 per ccf (FY2012), plus a service charge of $36 (FY2012) in addition to an equipment-per-use charge of $29.35 (FY2012) for a 1 1/2" meter. The primary components for the equipment charge are as follows:

Backflow preventer & parts (based on a 6 yr life)	$18.50
Rubber rebuild kit (based on 6 uses)	7.50
Stainless steel cable seal (per use cost)	1.42
3/4" check valve disk holder (based on 6 uses)	1.93

Total $29.35 (FY2012)

Equipment charges are determined by dividing the cost of the equipment by the expected number of uses before it is replaced.

2 ½" Fire Hose Thread Connection – 60 days

This charge is comprised of an assumed use of 292 ccf of water (twice the amount of the 30 days usage) ccf of water multiplied by the commercial water rate of $2.20 per ccf (FY2012), plus a service charge of $36 (FY2012) in addition to an equipment per use charge of $29.35 (FY2012) multiplied by 2 for the extended usage for 60 days (see list of equipment costs with the 2 ½" Fire Hose Thread Connection - 30 days).

Hydrant Meter, Residential Swimming Pool Fill

This charge applies to the use of a hydrant for filling or adding water to swimming pools. This charge includes two service charges (one to set up equipment and one to disassemble equipment) in addition to the volume of ccf used multiplied by the 3rd tier rate for usage between 0 and 16 ccf and the 4th tier rate for usage over 16 ccf.

Hydrant Meter, Over Usage Charge

This charge applies to the metered water usage over the allotted amount associated with 5/8" or 2 ½" hoses multiplied by the commercial rate of $2.20 per ccf (FY2012).

Hydrant Meter Device Damage

This charge is assessed when a customer damages hydrants or hydrant meter installations. For example, if a customer breaks the backflow preventer or ruins the hydrant threads, the customer is invoiced the cost for any necessary repairs or replacements based on actual costs.

Hydrant Device, Mtr 3/4"- 30 days

This charge applies when a customer rents backflow equipment. This charge is for a service request plus extra equipment and a stand to connect CMUD equipment to customer's piping (usually incurred at a construction site where there is a meter but a fire hydrant is not available). For FY2012 the charge is $68 for 30 days.

Hydrant Device, Mtr 2 ½"- 30 days

This charge is for a service request plus extra equipment and a stand to connect CMUD's equipment to the customer's piping (an example of this charge would be at a construction site where there is a meter and a fire hydrant is not available). The formula is a follows: a service charge of $36 (FY2012) x 2 + $29.35 (FY2012) = $101.35, rounded to $101).

Sterilize Connection/CMUD Lab Services

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This service is provided when a customer desires to connect to a fire hydrant to provide temporary potable water. The $150 (FY2012) charge includes the salary and benefits costs for a CMUD Engineering Services Investigator for 1.5 hours for cleaning and flushing connections in addition to the lab fees described below.
Engineering Services Investigator, salary & benefit costs for 1.5 hrs $50.34 (FY2012)

Laboratory Fees:	
Site visit	$40.00
Bacteria Testing	26.00
Chlorine Testing	10.00
Turbidity Testing	10.00
Temperature Testing	5.00
PH Testing	7.00
Total	$148.34 (rounded to $150) (FY2012)

Hydrant Meter, 4" with Trailer Mounted Backflow Prevention Device

This charge applies when a customer requests a large amount of water in a short period of time, for testing of a large tank for example. This charge is based on the full salary and benefits cost for 1.5 hours for two CMUD Engineering Services Investigators and one Construction Inspector to set up a 4" meter connection and backflow prevention device and later disassemble the equipment. The water usage is metered and usage is charged the commercial rate as described in Hydrant Meter, Over Usage Charge. The calculation includes allocations of the three full salaries multiplied by 1.5 hour or (3 x1.5 x cost)= $154.37, rounded to $150 (FY2012).

Emergency 1" Unmetered Water Service

This charge is $15 (FY2012) per day for the use of unmetered water after CMUD has removed the meter and installed a backflow device. The charge applies when a customer has a contaminated water line and has not corrected the problem. CMUD replaces the customer's meter with an un-metered backflow prevention device. After the customer has corrected the problem and CMUD Lab Services has verified the water is clean, the metered connection will be restored.

Water Used to Fill Tank Trucks

This charge applies to the amount of metered water used multiplied by the commercial water rate of $2.20 per ccf (FY2012).

Tanker Truck Monthly Permit Fee

This charge includes a $3 (FY2012) administrative fee (for receipt of fax, entering permit in data base, communication, collecting and processing water billing) per month per permit.

Sweeper Truck Charge

This charge applies to water used by a sweeper truck that holds less than one ccf of water. The water received is unmetered, therefore, these customers are charged for one ccf of water per business day per month at the commercial water rate, plus the $3 (FY2012) administrative fee per permit.

Vacuum Truck Charge

This charge applies to a vacuum truck that has large tank capacity and uses a high pressure hose. The fee per permit per business day is $10 and is based on the estimated water used. In addition there is a $3 (FY2012) for an administrative fee per permit per billing period.

Tanker Permit Decal Replacement

This is a charge for the re-application of a permit decal that has been destroyed in a period of less than two years which is considered normal wear and tear. The cost includes the individual decal cost plus an administrative cost to cover the estimated time to enter the permit into CMUD's data base and correspond with the customer. The cost is based on the following formula: (FY2006 individual decal cost of $4.40 + 1/2 hour full salary cost plus benefits = $21.18, CMUD's rounded charge to equal $20.00) (FY2012). The salary cost is based on an Engineering Service Investigator's position.

Backflow Administrative Penalty

This penalty is to recoup the salary cost for the man hours associated with investigating a contamination when a customer has been negligent, the rental of equipment and an estimate of the water used.

Other Miscellaneous Fees, Charges and Penalties

Security Deposits for Commercial Users

Refundable deposits are required from all commercial users at the time of application for new services. The deposit due is determined by customer type and meter size and required deposits are listed on Schedule B. If a payment for services provided is not received, the City may discontinue water and/sewer service and charge the unpaid amount against the deposit. The remaining deposit will be credited on the last water services bill.

Bad Check Fee

This charge is applied when a customer pays their Utility bill with a check that is returned for insufficient funds. The $25 fee is based on state statute.

Service Charge, New Services

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This is an administrative fee applied when a customer request to turn on or transfer water/sewer service from one service location to another. This $32 (FY2012) charge is included on the customer's first water services bill. The fee is based on the actual average costs incurred by a seven minute telephone call to enter the new customer request into the City system.

Meter Turn Off/On Fee

This $58 (FY2012) charge is applied to a customer's account when the customer payment becomes delinquent past 36 days. This charge recovers the average cost for a field service technician's labor for one half hour in addition to assumed travel of 20 miles and equipment costs.

Meter Removal /Re-Install

This charge will be assessed when a field services technician confirms there has been an unauthorized turn-on. This charge will also apply (and the meter will be physically removed) if the meter is assigned to a designated service location in the system but is found at another service location. This $69 (FY2012) charge is based on the average cost for a field service technician's labor for an estimated ¾'s hour, in addition to assumed travel of 20 miles and equipment costs.

Miscellaneous Fees

This $200 (FY2012) fee is applied when a customer moves a water meter to multiple addresses instead of purchasing separate meters. It is an unauthorized device fee. The amount is based on two trip charges plus $100.

Yoke Removal/Re-Install

This charge is applied when a customer has inappropriately restored their water service and CMUD physically removes the yoke and any unauthorized device, located inside the meter box. This $74 (FY2012) charge is based on the average field service technician's salary plus assumed travel costs of 20 miles and rental of equipment.

Disconnecting Service at the Water Main

This charge will be assessed when CMUD disconnects a water service from the water main. This generally requires significant work including excavation, paving, etc. This work may be required when customers use inappropriate means to obtain water service. The $835 (FY2012) charge consists of the costs of the assumed use of backhoes, dump trucks, jack hammers and full salaries for a crew of four to physically disconnect the waterline at the water main.

Meter Lock/ Unlock Fee

This charge is applied when CMUD installs a lock to the water meter to prevent usage of the water service. This $69 (FY2012) charge recovers the average cost of a field service technician's labor for one half hour, assumed travel cost of 20 miles and equipment costs.

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Late Payment Variable Charge

This late payment charge is assessed on the unpaid balance for water, sewer and storm water charges when the City has not received the payment within 6 days after due date. The 1.5% late charge is added to the next water services bill.

CMUD Unlawful Water Connection

This civil penalty is assessed if there has been an unauthorized modification to the CMUD water system. The City/County is authorized to charge a maximum civil penalty of $10,000 per violation per day for as long as the violation continues. The penalty is based on the circumstances and the extent of harm caused by the violation.

Water Connection or Meter Damage

This fee is for reimbursement charges for damages to meters. The charge is based on the reasonable cost for the necessary repairs estimated from a previous similar invoice.

Unlawful Sewer Connection

This is a civil penalty assessed when a customer modifies the sewer system. The civil penalty is $200 (FY2012) based on primarily two trip charges plus $100.

Water, Private Meter, In Product

Some commercial and industrial customers (for example, larger buildings and banks) have private meters installed to measure water used that is not returned to the Sewer System. This occurs when water is used for mechanical purposes to cool the building instead of using a heat pump. The usage on the meter is subtracted from the main meter to calculate the monthly sewer charge. The meters are required to meet CMUD standards and have read compatibility with an electronic radio transmitter (ERT).

Water, Private Meter, Make-Up

Commercial and industrial customers (for example, large hospitals) have private meters installed to measure water going into the tower that is not returned to the Sewer System. This occurs when water is used for mechanical purposes to cool the building instead of using a heat pump. The usage on the meter is subtracted from the main meter to calculate the monthly sewer charge. The meters are required to meet CMUD standards and have read compatibility with an electronic radio transmitter (ERT).

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Water, Private Meter, Bleed-Off

The Private Meter, Make-up customers have private meters installed to measure drain water from the tower that returns back into the Sewer System. This design is associated with the Private Meter, Make-up and the total usage for the sewer charge is calculated as follows: the water usage minus the Make-up usage plus the Bleed-off usage.

Water, Private Meter, Other

Commercial customers (for example, older buildings) have private meters installed to measure water that is not returned to the Sewer System. This occurs when water is used for mechanical purposes to cool the building instead of using a heat pump. The usage on the meter is subtracted from the main meter to calculate the monthly sewer charge. The meters are required to meet CMUD standards and have read compatibility with an electronic radio transmitter (ERT).

Civil Penalties Set by City Council

Wastewater Discharge Restrictions (currently codified as Article III of Chapter 23 of the City Code)

These civil penalties are assessed to users of the CMUD sewer system for violations of wastewater discharge restrictions in applicable provisions of the City Code (currently codified as Article III of Chapter 23 of the City Code) and permits and orders issued pursuant thereto. Examples of violations include the following: Reports submitted up to 10 days late; transcription error; improper of sampling procedures; failure to sample for a required parameter; failure to notify CMUD of any planned significant changes to the operations or system at least 90 days before the change; failure to report a slug load discharge; prohibited or unauthorized discharge that may result in damage to a Publically Owned Treatment Works (POTWs); illegally discharging grease; falsification of maintenance, pumping or cleaning reports; and discharge of pollutants that have not been previously approved. The maximum civil penalty is $25,000 per violation per day. Assessed civil penalties are determined from factors set forth in the City Code and include but are not limited to the following: Extent of harm caused, magnitude and duration of the violation, the cost of enforcement, whether the violation was committed willfully or intentionally and history of violation(s).

Backflow Prevention (currently codified as Article V of Chapter 23 of the City Code)
The purpose of these civil penalties is to protect the CMUD water system from contamination originating in private plumbing systems. Examples of violations include the following: Unprotected cross connection involving a private water system which is an imminent, high or moderate hazard, failure to submit complete and accurate reports and failure to test or maintain backflow-prevention assemblies as required. Maximum civil penalties for violations of

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applicable provisions of the City Code range from $100 to $1,000 per violation per day. Assessed civil penalties are determined from factors set forth in the City Code, including timeliness of correcting the violation and history of violation(s).

Unpermitted Modifications to CMUD Water and Sewer System (currently codified as Article VI of Chapter 23 of the City Code)

The purpose of this civil penalty is to prevent alterations to the CMUD water and sewer system that have not been permitted. The maximum civil penalty is $10,000 per violation per day.

Water Conservation (currently codified as Article VII of Chapter 23 of the City Code)

The purpose of this civil penalty is to maintain and protect the water resources available to the City/County for essential and community and business water uses during a declared water shortage. There are the following three phases of water conservation that can be implemented:

1. Phase l, restricted – Restrictions on the manner, day of the week and/or time of day of one or more discretionary water uses and/or complete prohibitions on one or more such uses.

2. Phase ll, banned - Restrictions on the manner, day of the week, and/or time of day of one or more discretionary or community and business water uses and/or complete prohibitions on one or more of such uses.

3. Phase lll, emergency- Restrictions on the manner, day of the week, and/or time of day of one or more discretionary, community and business or essential water uses; and/or complete prohibitions on one or more of such uses.

Any customer that violates the mandatory water conservation control in Phase l shall be subject to a civil penalty according to the following schedule.

	1 ½" service connection or less	2" service connection or more
First offense	$100	$200
Second offense	200	400
Third & Subsequent offenses	300	600

Any customer that violates the mandatory water conservation control in Phase ll or Phase lll shall be subject to a civil penalty according to the following schedule.

	1 ½" service connection or less	2" service connection or more
First offense	$200	$400

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Second offense	400	800
Third & Subsequent offenses	600	1,200

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CHARLOTTE WATER

Charlotte Water Revenue Manual

July 2018 Revision

Charlotte Water is a department of the City of Charlotte

EXHIBIT E

Contents

EXHIBIT E

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Purpose

This Charlotte Water (CLTWATER) Revenue Manual consolidates CLTWATER's water and sewer rate methodology documents into a single document referred to as the "Revenue Manual" in the City Code.

The reader should consult the Schedule of Current Rates, Fees and Charges applicable to a specific time for the amounts of such rates, fees, and charges that are in effect at that time.

Background

The City of Charlotte and Mecklenburg County formed Charlotte Mecklenburg Utility Department in 1972 by to provide City and County residents with drinking water, fire protection and wastewater collection and treatment services. Interlocal agreements with the other six Mecklenburg County municipalities in the 1980's brought their residents into Charlotte Mecklenburg Utility Department as direct, retail customers and provided for them to pay the same rates and fees as other customers and to receive services as prescribed in the agreements. In 2015, The Charlotte Mecklenburg Utility Department changed its name to Charlotte Water (CLTWATER) in 2015. CLTWATER provides water and wastewater treatment services to more than 250,000 accounts.

The source of the water supplied by CLTWATER to its customers is the Catawba River, which begins in the North Carolina Mountains and flows through 11 impoundments operated by Duke Energy Company. Two of the impoundments, Lake Norman and Mountain Island Lake, are the source of the CLTWATER water supply.

The water system consists of the three water treatment plants: the Walter M. Franklin Water Treatment Plant, the largest in North Carolina with a treatment capacity of 181 million gallons per day (MGD); the Vest Water Treatment Plant with a treatment capacity of 36 MGD; and the Lee S. Dukes, Jr. Water Treatment Plant has a capacity of 25 MGD.

Water, once treated, pumps into more than 4,000 miles of water mains. Booster pumping stations transfer water to the high-pressure zones in the distribution system. The water system also includes 87 million gallons of clear well storage, 10 elevated storage tanks with a combined capacity of 12.25 million gallons, and 2 ground level storage facilities with a combined capacity of 10 million gallons.

Five treatment plants, McAlpine Creek, McDowell, Sugar Creek, Mallard Creek and Irwin Creek, provide wastewater treatment. The wastewater system includes more than 4,000 miles of collection systems lines and has a total permitted treatment capacity of 123 MGD.

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History

Prior to 1992, both the water and sewer rate structures consisted of a fixed charge and a volumetric charge and wastewater surcharges on industrial customers for high strength wastewater (i.e., higher than domestic strength BOD and TSS).

CLTWATER eliminated Tapping Privilege Fees for new service connections after June 30, 1992 and a new fee structure implemented on July 1, 1992 that included a connection and capacity fee for both water and sewer. Capacity fees are one-time charges to new customers to assist in recovering at least a part of the capital cost of the additional system capacity. Connection fees recover the labor and materials cost of installing the service connection.

In 1994, CLTWATER implemented a tiered water structure designed to encourage conservation by water users and recover the additional costs associated with meeting high demand. CLTWATER segregated water volumetric rates into three tiers based on volume of water used over the course of the monthly billing period. The first and lowest tier (0–18 CCF per month) covered essential water uses related to health and sanitation (e.g. consumption, bathing, washing clothes, cooking, etc.) The second tier (19–40 CCF per month) was a higher rate and applied to higher water usage normally associated with substantial, outdoor water uses (e.g. irrigation). The third tier (greater than 40 per month) applied the highest rate to the highest levels of water use. In addition, CLTWATER established the maximum monthly sewer usage charge, or sewer cap, for residential customers at 18 CCF. A sewer cap represents the point where, generally speaking, some water use (i.e. outdoor use) does not flow into the sewer system and incur the cost of collection & treatment.

In 2001, CLTWATER stepped up conservation efforts by revising the usage thresholds of the water rate tiers based on updated consumption data. The revision modified the water rate structure to allocate the cost of services to the customers creating excessive demand through seasonal, discretionary use of water. The first tier changed to 0-16 CCF per month, the second tier changed to 17–32 CCF per month, and the third tier changed to greater than 32 CCF per month.

Also in 2001, CLTWATER implemented an industrial high-strength, wastewater charge to cover the cost of removing ammonia, and a new means of charging commercial customers for high strength wastewater ($.30 per CCF for Industrial Waste and $.40 per CCF for Commercial High Strength Volume charge) based on the average strength loadings of commercial customers. CLTWATER phased in the updated methodology over a period of two years.

In 2002, CLTWATER amended the sewer cap that applied to multi-family customers from 18 CCF of metered water consumption per dwelling unit to 11 CCF per dwelling unit. The revision to the sewer cap recognized that average per capita usage for multi-family customers is lower than typical residential usage.

In 2008, CLTWATER revised the tier rate structure to encourage conservation. Changes made included the following:

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- Increased the number of water rate tiers within the residential and multi-family rate structure from three to four. The first tier (lifeline) changed to 0–4 CCF per month to provide low cost water for essential usage, the second changed to 5-8 CCF per month, the third tier changed to 9-16 CCF, and the fourth tier changed to greater than 16 CCF per month;

- Changed the water rates charged to bulk customers for use outside of Mecklenburg County from Tier 2 residential rates to the Tier 3 residential rates;

- Revised the number of water rate tiers applicable to irrigation meters and swimming pool accounts from three tiers to two tiers (rates starting at the Tier 3 rate and progressing to Tier 4);

- Increased the sewer cap for residential customers from 18 CCF to 24 CCF per month; and

- The assumed water usage as the basis for billing sewer only-customers changed from a usage amount of 11 CCF to 8 CCF per month.

Several changes occurred in 2012; primarily the addition of a fixed monthly Availability Fee to recover approximately 20% of annual debt service cost. This fee varies and increases by meter size, in accordance with the most recent, published meter capacity ratios of the American Water Works Association (AWWA). The residential cap for sewer reduced from 24 CCF to 16 CCF per month; the multi-family sewer cap remained at 11 CCF per month. In addition, the amended methodology of the High Strength Surcharges for the Monitored Industries eliminated the surcharge for carbonaceous biochemical oxygen demand (CBOD) and added a charge for chemical oxygen demand (COD). The Commercial High Strength Charge increased from $.40 per CCF to $.50 per CCF for the Non-monitored Industries and the Industrial Waste Charge decreased from $.30 per CCF to $.24 per CCF. The methods for calculating rates and fees, which had been in numerous and various documents prior, were consolidated into a "Revenue Manual" and City Code references were changed to reflect this document.

In 2015, CLTWATER revised the revenue manual to include several changes to programs. First, the rate methodology no longer subsidizes costs in Tier 1. Second, the Availability and Capacity fees increased to stabilize revenues. Third, CLTWATER began a program to install meters on temporary hydrant connections to accurately measure water used rather than use an estimated flat fee for those connections. In addition, with this manual revision, development user fees were included for the first time to reflect the methodology used to collect costs associated with plan review, permitting and inspection. CLTWATER also updated several other miscellaneous customer-billing fees to reflect changes in costs and policies.

In 2018, CLTWATER revised the revenue manual to comply with North Carolina General Statute § 162A Article 8, which provided for the uniform authority to implement System Development Fees for public water and sewer systems in North Carolina. For consistency

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with § 162A Article 8, all references to Capacity Fees were also modified to read System Development Fees.

Water and Sewer Fixed Billing Charges

The fixed billing charges for water and sewer recover the cost associated with the servicing of customer accounts, such as the cost to read and maintain the meters, produce invoices and provide customer service.

The fixed billing charge calculation is as follows: Cost associated with the servicing of customer accounts divided by the number of accounts billed divided by 12 months. The calculation occurs separately for water and sewer services.

CLTWATER currently charges the fixed billing charge for water and for sewer service, each billing cycle prorated for the number of days in the billing cycle.

The fixed billing charge applies to each meter included on the account and assessed even if no water or sewer usage occurred during the billing period.

Water and Sewer Availability Fees

CLTWATER added Availability fees following the February 2011 "Water and Sewer Rate Study Report" by RedOak Consulting to recover approximately 20 percent of CLTWATER's annual debt service cost. While the initial target was the recovery of 20% of CLTWATER's annual debt service costs, the target now reflects a long-term goal to recover 40% of annual debt service costs through this fee. CLTWATER will recommend adjusting the recovery percentage each year as needed and appropriate until achieving the 40% recovery goal.

To determine base meter size costs, the availability fee methodology is as follows:

Water Availability Fee

Annual Water Debt Service Costs multiplied by the recovery percentage (20% to 40%) divided by the total number of equivalent meters divided by 12 months. Using the equivalent meter approach simplifies the calculation by converting meters larger than a typical 5/8 inch residential meter to an equivalent number of 5/8 inch meters that have the same capacity as the larger meter. The conversion's basis is the AWWA's published meter capacity ratios.

Sewer Availability Fee

Annual Sewer Debt Service Costs multiplied by the recovery percentage (20% to 40%) divided by total number of equivalent meters divided by 12 months.

Equivalent meters provide an equitable method for distribution of charging a fixed fee based on the relative capacity of the meter to provide water.

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Availability Fees vary and increase with meter size in accordance with published meter capacity ratios.

Water Usage Charges

CLTWATER categorizes water costs into six different cost categories or cost drivers. A distinction exists between costs that are common to both retail and bulk customers, and costs only applicable to CLTWATER's retail customers. Below are these categories.

- Base or average day demand
- Maximum day extra capacity
- Maximum hour extra capacity
- Customer
- Public Fire Protection
- Indirect

The categorization of costs into average demand, maximum day demand, and maximum hour demand involved an analysis of overall system demand peaking and associated system - related costs. For example, the design of some water system components (e.g. size of transmission and distribution lines) must meet maximum day and maximum hour demands, whereas the design of other components, such as the water supply source, must meet average daily demands. Since water system components are designed for various purposes, several cost categories were used.

Factors allocate capital and Operating and Maintenance (O&M) costs to base, average daily demand (ADD), maximum day demand (MDD), and maximum hour demand (MHD) cost categories using system demand information. Below is a summary of water system average day, maximum day and maximum hour demands in 2014.

WATER COST DRIVERS						
Year	Average Day Demand (MGD)	Max Day Demand (MGD)	Max Day to Average Day Factor	Average Hour Demand (MGH)	Max Hour Demand (MGH)	Max Hour to Average Hour Factor
2014	100.4	135.9	1.4	4.2	10.5	2.5

MGD = million gallons per day. MGH = million gallons per hour.

Below is a summary of functional cost allocation percentages for system components is designed to meet base, maximum day and maximum hour demands.

ALLOCATION PERCENTAGES FOR SYSTEM DEMAND FACTORS				
Allocation	ADD	MDD	MHD	Total
Average Day Demand	100.0%	0.0%	0.0%	100.0%
Maximum Day Demand	73.8%	26.2%	0.0%	100.0%
Maximum Hour Demand	41.4%	14.7%	43.9%	100.0%

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The calculation for the maximum day demand allocation is as follows:

- Average Day Demand = 100.4 / 135.9 x 100 = 73.8%
- Max Day Demand = (135.9 – 100.4) / 135.9 x 100 = 26.2%

The calculation for the maximum hour demand allocation is as follows:

- Average Day Demand = 100.4 / 242.1 x 100 = 41.4%
- Max Day Demand = (135.9 – 100.4) / 242.1 x 100 = 14.7%
- Max Hour Demand = (242.1 – 135.9) / 242.1 x 100 = 43.9%

Rates are then determined by dividing the cost allocated to each cost category (see tables below) by the total number of units (CCF) of service projected to be used by each customer class.

Below is a summary of the basis of allocating O&M costs to cost drivers.

O&M COST ALLOCATION BASIS		
Functional Costs	**Allocation**	**Rationale**
Treatment-Water Treatment	100% Base	Treatment O&M costs based on amount of water treated; therefore, costs allocated to base demand factors.
Treatment-Pumping	40.0% Base 14.2% MDD 43.8% MHD 2.0% Fire	Pumping O&M costs are primarily electricity costs, which are based on commodity and demand charges; therefore, costs were allocated to base and max day demand factors.
Transmission	73.9% Base 25.2% MDD 0.9% Fire	Provides max day demands to all customers, so costs allocated to base and max day demand factors.
Distribution	40.0% Base 14.2% MDD 43.8% MHD 2.0% Fire	Provides max day and max hour demands to all customers, so costs allocated to base and max day factors.
Customer Service	100% Number of Bills	Customer service and billing is based on the number customers in the system and number of bills generated.
Indirect	100% Base	Primarily non-departmental and business system costs not related to peak usage.

A summary of the basis of allocating capital costs drivers is provided in the below schedule. Capital cost allocation percentages are based on an analysis of fixed asset costs.

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WATER CAPITAL COST ALLOCATION BASIS		
Functional Costs	**Allocation**	**Rationale**
Source of Supply	100% Base	Source of supply facilities provide water to meet total supply requirements, so costs allocated to base demand.
Treatment - Water Treatment	73.9% Base 25.2% MDD 0.9% Fire	Treatment plant capacity provided to meet average and maximum day demands, so costs allocated to base and max day demand factors.
Treatment – Pumping	40.0% Base 14.2% MDD 43.8% MHD 2.0% Fire	Provides pumping capacity to meet max hour and max day demands, so costs allocated to base, max day and max hour demand factors.
Transmission	73.9% Base 25.2% MDD 0.9% Fire	Transmission system supports meeting average and max day demands, so costs allocated to base and max day demand factors.
Distribution	40.0% Base 14.2% MDD 43.8% MHD 2.0% Fire	Distribution system supports delivering water to meet max day and max hour demands, so costs allocated to base, max day and max hour demand factors.
Storage	20.4% Base 7.2% MDD 22.4% MHD 50.0% Fire	Storage provided to meet max day and max hour demands, so costs allocated to base, max day and max hour demand factors.
Customer Service	100% Number of Bills	CLTWATER billing system and a portion of vehicles support providing customers with service, so costs allocated to number of bills.
Indirect	100% Base	Primarily non-departmental and business system costs not related to peak usage, so costs allocated to base demand.

Units of service costs are then determined by dividing the cost allocated to each cost category by the total number of units of service projected to be used by each customer class.

Residential Rates

CLTWATER's assesses volumetric usage rates based on the metered water use per hundred cubic feet (CCF) and are designed to recoup all costs not recovered through other revenue sources. Residential and multi-family customers pay usage rates on an inclining four-tier schedule that depends on the amount of water used during the monthly billing cycle with established caps.

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TIERED STRUCTURE	
Tier	**CCF Used**
1	0 - 4
2	5 - 8
3	9 - 16
4	over 16

The tier widths for multi-family, residential customers and for master-metered single-family residential neighborhoods are scaled based on the number of dwelling units served by the master meter. CLTWATER normalizes volumetric water (tier) rates for billing periods greater than 33 days by proportionally increasing the width of each tier. There is no normalization usage under 28 days; the usage will fall into the tiers as is.

Below is a summary of the rate methodology used for determining the tier rates.

- The Tier 1 water rate recovers the majority of average daily costs.
- The Tier 2 water rate recovers a portion of average daily costs and maximum day cost.
- The Tier 3 water rate recovers a portion of average daily costs, maximum day costs, and maximum hour costs.
- The Tier 4 water rate recovers a portion of average daily costs, approximately half of the maximum day costs and the majority of the maximum hour costs.

The tier structure applies to the following residential customers: Single Family, Apartment and Master Meter Single Family Attached.

Non Residential (Commercial) Water Rates

CLTWATER charges the non-residential customers (i.e. commercial, industrial and governmental) the same rate (uniform usage rate) for each unit of water used during the billing period. There are no tiered rates based on usage and no sewer caps applied. The uniform usage rate is calculated by dividing the rate revenue requirements allocated to the commercial customer class, determined through the cost of service evaluation process, by the projected total billed commercial water consumption (CCF) projected for non-residential customers (i.e. commercial, industrial and governmental).

Irrigation Meter Charges and Rates

CLTWATER bills water used for irrigation according to the residential or non-residential rate schedules unless the customer obtains a separate meter dedicated only to irrigation service. The department bills water used through a separate irrigation meter according to the irrigation rate schedule and is not billed for sewer service.

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Currently, there are two options available to a residential customer with an existing service connection to add residential irrigation services.

- Option 1 is a dedicated irrigation service line in which the standard connection fee (established annually) applies.

- Option 2 is a split connection where the irrigation service line attaches to the domestic service line ahead of the domestic meter. The customer is required to pay a one-time reduced connection fee as opposed to the full fee and pays no System Development Fee for the irrigation service line. The prior year average actual cost is the basis for the reduced connection fee to install services of this type.

Rates for separate residential meter irrigation water usage begin at Tier 3 for water usage up to 16 CCF per month, and progress to Tier 4 for usage above this amount.

For master metered irrigation accounts used only for residential lawn watering, CLTWATER scales rates based on the number of dwelling units. Irrigation meters serving common areas, landscaped street medians, neighborhood parks, or other similar areas are not subject to tier scaling. Rates begin at Tier 3 for water usage up to 16 CCF per dwelling unit, and progress to Tier 4 for usage above this amount. Irrigation meters are subject to availability and fixed fee charges each month.

If a separate irrigation meter, in addition to a backflow device and smart irrigation controller, is installed and maintained in accordance with CLTWATER's standards and requirements, then the Tier 3 rates will apply to all irrigation usage. In addition, CLTWATER waives the System Development Fee and customers can pay the connection fee over twelve months. This incentivizes customers to install smart irrigation controllers, which can significantly reduce irrigation water usage.

Water conveyed through irrigation meters is not discharged to the sanitary sewer system and; therefore, is not subject to sewer usage charges.

Bulk Water Customer Rates

By policy, public water systems outside of Mecklenburg County (for example, York County and Concord) which purchase water from CLTWATER for resale are charged the Tier 3 residential rate for all water used unless a separate rate is negotiated and approved by Charlotte City Council.

Sewer Usage Charges

The below allocation processes are used to calculate the sewer usage costs.
CLTWATER categorizes the sewer revenue requirements into four different cost categories identified below.

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- Flow Based Costs – Includes costs that vary by the volume of wastewater collected and treated (primary costs are chemical and electricity costs).

- Strength Based Costs – Includes costs associated with the treatment of chemical oxygen demand (COD), total suspended solids (TSS) and Ammonia (NH3-N).

- Customer Costs – Include costs that vary in proportion to the number and type of customers served.

- Industry Specific Costs – Includes costs associated with providing wastewater strength monitoring and laboratory analysis for permitted industrial customers.

O&M costs are allocated to functional components of flow, chemical oxygen demand (COD), total suspended solids (TSS), ammonia (NH3-N) , customer and industry specific categories to recognize the costs incurred to process the wastewater flow and strength characteristics.

Summarized below are the resulting overall O&M cost allocation factors.

SEWER COST DRIVERS						
Flow	**COD**	**TSS**	**NH3-N**	**Customer**	**Industry Specific**	**Total**
63.0%	13.0%	2.9%	6.3%	12.6%	2.1%	100%

CLTWATER allocates capital costs into the same cost categories to recognize that the wastewater capital facilities were designed to accommodate both the flows and the strength of wastewater. The cost allocation process included allocating fixed asset costs to functional components and identifying an overall percentage of capital facilities dedicated to each category. The method used to complete the fixed asset cost allocation consisted of the following steps:

1. Development of a list of fixed sewer assets, original costs, service lives and dates placed in service;

2. Depreciation of the components over their useful life to reflect each asset's service life;

3. Allocation of the net asset value to functional cost components; and

4. Development of average capital cost allocation percentages from the functional cost allocation results.

CLTWATER's fixed asset records provided the net asset values. Net asset values are allocated to flow, COD, TSS, NH3-N based on a combination of the design basis and predominant purpose of the facilities. Below is a summary of the basis for the capital cost allocations.

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SEWER CAPITAL COST ALLOCATION BASIS	
System Component	**Allocation Basis**
Wastewater Collection	Costs assigned 100% to the flow component.
Flow Equalization	Costs assigned 100% to the flow component.
Screening / Grit Removal	Flow rates determine sizing, therefore, costs assigned 100% to the flow component.
Pumping	Costs assigned 100% to the flow component.
Primary Clarification	Primary purpose is the removal of TSS and flow rates determine equipment sizing. Therefore, costs were assigned 10% to flow and 90% to TSS.
Roughing Filters	Primary purpose is the removal of organic carbon. Therefore, costs assigned 100% to the CBOD component.
Activated Sludge	Primary purpose is BOD removal. Therefore, costs were assigned 60% to CBOD and 40% to NH3-N based on the tank area design criteria.
Secondary Clarification	Process designed based on flow rates and loadings and process supports solids removal and denitrification. Therefore, costs assigned 50% to flow, 40% to CBOD, 5% to TSS and 5% to NH3-N.
Secondary Filtration	Process designed based on flow rates and loadings and process supports solids removal. Therefore, costs assigned 90% to flow, 5% to CBOD and 5% to TSS.
Disinfection	Costs assigned 100% to the flow component.
Thickening	Process generates solids through the oxidation of COD and the collection of inert solids that pass through the treatment process. Therefore, costs were assigned 80% to CBOD and 20% to TSS.
Dewatering	Costs assigned 40% to CBOD, 40% to TSS and 20% to NH3-N, based on influent loadings and solids removal.
Sludge Digestion	Costs assigned 40% to CBOD, 40% to TSS and 20% to NH3-N, based on influent loadings and solids removal.
Septic Receiving	Costs assigned 25% to flow, 25% to CBOD, 25% to TSS and 25% to NH3-N based on discharge loadings.
Water Reuse	Costs assigned 100% to the flow component.
Customer Accounts	Costs assigned 100% to the customer component.

Capital cost allocation factors were determined based on applying the fixed asset cost allocations to the net fixed asset values of each of the system components. Shown below are the resulting overall capital cost allocation factors.

SEWER CAPITAL COST ALLOCATION FACTORS				
Flow	**COD**	**TSS**	**NH3-N**	**Customer**
77.3%	12.1%	6.2%	4.3%	0.1%

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Sewer customer classes consist of residential, multi-family, commercial, industrial and high strength commercial and industrial customers. Service requirements associated with these classes are based on billed water usage and wastewater strength loadings. Loadings data are obtained from monitoring data provided by the CLTWATER staff. Average loading concentrations for all customer classes are estimated based on wastewater flow received at the plant and loadings reported in the Industrial Waste Charge Study Final Report that that was prepared in 2004. Monitored customers are charged a surcharge for their metered flow in excess of domestic average concentrations in the table below.

SURCHARGE LOADING	
Cost Drivers	**Domestic Averages MG/L**
COD	500
TSS	250
NH3-N	20

The total estimated units of service by customer class is estimated based on the wastewater treatment plant influent data and customer data provided by CLTWATER and updated as deemed appropriate.

The unit cost of service is calculated for each of the sewer cost categories by dividing the cost allocated to each cost category by the total number of estimated units of service the prior year

CCF Residential sewer usage caps at 16 CCF and customers do not pay sewer usage rates for water used beyond this amount each billing period. Multi-family (apartment) sewer usage is capped based on an average of 11 CCF of water usage per dwelling unit per billing period, and customers do not pay sewer usage rates for flows beyond this amount.

Commercial and industrial customers using water from CLTWATER's water distribution system, but not discharging all of the water back into the sewer system, have the quantity of water used and not discharged back into the sewer system excluded from the sewer service charge. However, this is predicated on the quantity of water being measured by a CLTWATER approved device installed and maintained at the owner's expense.

Several customers were grandfathered into the above methodology in 2001 that excludes sewer charges for an amount of water that is evaporated and not discharged into the CLTWATER sewer system without the installation of a measurement device. These customers pay sewer charges based on an established percentage of total water used based on CLTWATER's calculations or an independent consultant's recommendation since the amount of evaporated water not added back to the sewer is not metered separately.

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Industrial Wastewater Program Charges

Industrial Waste Charge

Industrial and commercial customers that discharge high strength wastewater requiring increased costs to treat relative to residential wastewater are assessed an industrial waste charge that recovers treatment costs and a portion of the System Protection Division costs. CLTWATER asses these charges based on flow volume. There are approximately 3,200 accounts in FY15 that are required to pay Industrial Waste Charges. Both monitored customers (who have average daily flow greater than 25,000 gallons per day or who have special discharge permits) and non-monitored commercial customers (such as restaurants, auto and body shops and laundries that have strong effluent but have insufficient flow to require continuous monitoring) are required to pay this charge.

CLTWATER identifies industries that discharge industrial waste by the Standard Industrial Classification (SIC) code assigned to them when they obtained their business license. The SIC code assists CLTWATER in determining the type of wastewater discharged by similar businesses.

Industrial High Strength Surcharges for Monitored Customers

Industrial customers that discharge wastewater with a concentration of chemical oxygen demand (COD), total suspended solids (TSS) and ammonia-nitrogen (NH3-N) at a strength higher than domestic strength are billed a surcharge on the number of pounds of each parameter discharged in excess of the domestic loading rate.

To determine the surcharge, the following steps occur. The monthly average of each parameter discharged by the particular industrial customer is calculated and the average domestic loadings (as shown on page 15) subtracted to determine the pounds of surplus loading. The pounds of surplus loading value are multiplied by the factor of .0063832 to determine the pounds of pollutant surcharged. The factor is a conversion factor of the National Standard pounds formula (Wastewater Flow in Million Gallons per Day (MGD) X 8.34 (weight in pounds of 1 gallon of water X pollutant concentration in mg/l) which accounts for the fact that CLTWATER bills its customers in CCFs instead of gallons. Use of this factor reduces the number of steps involved in calculating a customer's bill and the chance for errors.

The pollutant surcharges for COD, NH3-N, and TSS recover the entire cost to CLTWATER to treat these wastes. The surcharges for all pollutants are increased by the percent required to achieve and maintain surcharges equivalent to full cost recovery of treating each pollutant. The customer's monthly invoice shows the pounds of pollutant surcharged.

These surcharges are in addition to other sewer charges.

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Commercial High Strength Volume Charges for Non-Monitored Customers

The commercial high strength volume charge is assessed to non-monitored customers in the industrial waste program that discharge waste water concentrations that are greater than the domestic loading concentrations. CLTWATER calculates the high strength charge by determining the average pollutant loadings for these customers in excess of domestic loading, and calculating a volumetric high strength charge that includes the costs of treating these high strength loadings. There are approximately 2,200 accounts that receive this charge in FY2015.

Customers serviced by multi-user meters (master-meters), that also serve other customers not discharging high strength wastewater, are not charged the High Strength surcharge, although a similar business that has a separate or stand-alone meter receives both the Industrial Waste Charge and the High Strength Surcharge. Typical customers served by master meters include shopping centers, strip malls and office buildings and usually there are no records to determine the water usage of individual tenants. Subsequently, this wastewater returns to the sewer system and it is impossible to measure the precise impact that each individual tenant has on the system.
The amount billed is determined by multiplying the high strength charge/CCF by the volume of metered water used by the customer.

When the high strength charge was established, it was determined that the implementation would be phased in to minimize impact on customers. The phasing plan is to increase the high strength charge rate by 20% per year until the charge equates to full cost recovery and then to adjust the charge on an annual basis as required for achieving and maintaining charges equivalent to full cost recovery.

These surcharges are in addition to other sewer charges.

Fire Line Fees

CLTWATER calculates the cost associated with fire line service using the base extra capacity methodology, as described by the AWWA. Using this methodology, the maximum day and maximum hour fire flow demands are estimated and used to determine the relative proportion of the system maximum day and maximum hour demands attributable to fire flow demands. The annual revenue requirement associated with providing fire line service is then estimated by allocating certain costs identified as related to meeting maximum day or maximum hour water demands proportionally to fire line service. CLTWATER then divides the total annual revenue requirement associated with fire line service by the number of 6-inch fire line meter equivalents to derive the unit cost of fire line service under this method.

The maximum day and maximum hour fire flow demands are estimated based on assumptions contained in CLTWATER's 2009 Water Distribution System Master Plan, prepared by Black & Veatch, Inc. ("the Master Plan") or the most recent update available.

The performance criteria used in the Master Plan to evaluate the distribution system for fire flow requirements was a flow of 3,500 gallons per minute (gpm) for three hours. For the purposes of this analysis, CLTWATER calculates the maximum day and maximum hour fire flow demands using the assumption of two non-simultaneous fires in a day. Summarized below is the resulting base, maximum day and maximum hour allocation factors used in the analysis.

COST ALLOCATION DEMAND FACTORS - BASE EXTRA CAPACITY METHOD					
Cost Factor	**Base**	**Max Day**	**Max Hour**	**Fire Flows**	**Total**
Average Day Demand	100.0%	0.0%	0.0%	0.0%	100%
Maximum Day Demand	73.9%	25.2%	0.0%	0.9%	100%
Maximum Hour Demand	40.0%	14.2%	43.8%	2.0%	100%

Each cost category of CLTWATER's budget is assigned to one of the cost factors. For any costs assigned to the direct fire, maximum day or maximum hour costs factors as shown in the above table, a portion of these costs are allocated to fire protection. Shown below is a summary of the budget categories and associated percentages of costs assigned to fire protection.

FIRE LINE COST ALLOCATION - BASE EXTRA CAPACITY METHOD		
Functional Costs	**Allocation**	**Rationale**
Treatment - Water Treatment	0.9%	Treatment O&M costs based on amount of water treated, therefore costs allocated to base demand factor.
Treatment - Pumping	2.0%	Pumping O&M costs are primarily electricity costs, based on commodity and demand charges. Therefore, costs allocated to base, max day and max hour demand factors.
Transmission	0.9%	Provides max day demands to all customers, so costs allocated to base and max day demand factors.
Distribution	2.0%	Provides max day and max hour demands to all customers, so costs were allocated to base and max day factors
Distribution Storage	50.0%	Distribution storage designed for two purposes: (1) to meet maximum hour demands and (2) to provide adequate pressure for fire flows, so costs assigned 50% to fire flows.
Direct Fire	100.0%	Costs associated with hydrant and fire meter maintenance allocated 100% to direct fire protection.

Using the base extra capacity method, the total fire line service revenue requirement is calculated by multiplying the CLTWATER cost center budgets to the above Fire Flow Allocation with the exception of the Debt Service, CIP and Other Non-Operating Expenses and Other Revenue which included interest income, System Development Fees, miscellaneous revenue and sources/uses of funds). The Debt Service, CIP and Other Non-Operating Expenses is allocated at 2.4% and is based on the average allocation of fixed

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capital costs to base, maximum day, maximum hour and fire protection cost categories. The Other Revenue is allocated at 1.8% and is based on the weighted average of capital costs allocated to fire protection of 2.4% and operating costs allocated to fire protection of 1.6%.

In situations where combination meters have zero usage on the high flow size meter over the past calendar year, the high flow size meter is considered a substitute for a separate, dedicated fire line connection. Therefore, the monthly availability fee is based on the low flow size meter. This condition is evaluated and adjusted periodically.

Water and Sewer Connection Fees

The water and sewer connection fees are one-time charges for anyone desiring a new connection to the water and sewer system. These fees are paid in advance with the new service application. The 5/8 inch or 1-inch water service connection involves the construction of a lateral from the public water main to a service line on the customer's property, a meter yoke, a meter box and required appurtenances. Water service connections for larger than 1 inch meters involve the construction of a lateral from the public water main to a service line on the customer's property, a meter box or vault, a valve at the property line and other required appurtenances.

The sewer service connection involves the construction of a lateral from the sewer main to the edge of right of way.

Water and sewer connection fees for small taps services (5/8 inch to 4-inch meter sizes and 4-inch sewer connections) are established annually based on the average actual cost from the prior year to install service connections. Costs include labor, materials, pavement cut fees, site restoration and mobilization charges associated with installation of these particular service connection sizes. In addition, fees associated with CLTWATER staff performing inspection of these installations are included. Included in the cost calculation are actual labor, parts and a mobilization fee that includes overhead and the trip charge to install. These small taps services are installed by a CLTWATER contractor or, are installed by CLTWATER crews, depending upon the department's standard operating procedures.

Connection fees for larger services (greater than 4-inch water and 4-inch sewer) are based on CLTWATER's estimated cost after reviewing the submitted construction design plans and site conditions. Costs include labor, materials, pavement cut fees, site restoration and mobilization charges associated with installation of these particular service connection sizes. In addition, fees associated with CLTWATER staff performing inspection of these installations are included. The cost includes labor, materials, pavement cuts, restoration, and a mobilization fee.

In addition, the connection fee only (not the System Development Fee) is discounted 10% if the connection is installed during construction of a public water or sewer main built under the department's Street Main Extension Policy. This discount is limited to 5/8 inch water and 4-inch sewer services.

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The connection fees do not apply to services installed by a developer during the construction of water /sewer systems under contract with and donated to CLTWATER because in this case CLTWATER does not incur a direct installation cost.

Financial assistance may be available for single-family residential residences with household incomes that are 80% or less of the Charlotte area's median household income, consisting of a special deferred payment plan for 84 months or no interest loan payments. The median household income is determined from the most recently available Census data and is based on the most current household income for the Metropolitan Statistical Area for Charlotte, Gastonia and Rock Hill. To receive this discount, the customer must submit their most recent tax return to substantiate family size and income.

Fire Line Connection Fees

Costs of fire lines are based on CLTWATER's estimated cost after reviewing the submitted construction design plans and site conditions. Costs include labor, materials, pavement cut fees, site restoration and mobilization charges associated with installation of these particular service connection sizes. In addition, fees associated with CLTWATER staff performing inspection of these installations are including the costs of labor, parts and mobilization. These fees are paid at the time application is made for the connection.

Industrial, commercial and multi-family customers that install fire sprinkler systems or private fire hydrants will incur a separate connection fee for each fire line.

Water and Sewer System Development Fees

North Carolina General Statute 162A Article 8 provides for the uniform authority to implement System Development Fees for public water and sewer systems in North Carolina. System Development Fees are one-time fees paid at the time of application for a new service to recover a portion of the capital costs associated with providing the capacity to serve the new customer coming on-line. System Development Fees are levied for all new water and sewer connections, regardless of whether they are installed as a part of a donated developer project or otherwise and regardless of the process used to construct or fund them.

CLTWATER's System Development Fees are calculated using the Capacity Buy-In Method which requires new customers to buy into existing backbone facilities – plants, pump stations, supply reservoirs, large collection and distribution facilities – generally at a rate that reflects the prior investment of existing customers per unit of total capacity. As described below, CLTWATER's water and sewer System Development Fees increase proportionally with the water meter size requested by the customer since larger meters consume a greater share of built capacity. The following steps were completed to calculate the fees under the Capacity Buy-In Method:

1. The replacement value of existing system facilities was calculated and adjustments were made to derive a net replacement value estimate in accordance with 162 A

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Article 8. Adjustments to the calculated replacement value included deducting accumulated depreciation, developer contributions, and a portion of outstanding debt.

2. The unit cost of system capacity was estimated by dividing the net replacement value of existing system facilities by the current capacity of the system.
3. The amount of capacity associated with a service unit of new development was estimated. One equivalent residential unit ("ERU") was defined as the smallest service unit of new development.
4. The System Development Fee for one service unit of development was calculated by multiplying the cost per unit of system capacity by the capacity associated with one ERU, as defined below.
5. The calculated System Development Fee for one ERU was scaled for different categories of demand. Meter capacity ratios were used to scale System Development Fees from a base meter size from the smallest unit of new development (one ERU) to different categories of demand, defined by different customer meter sizes.

Fire Line System Development Fees

Fire Line System Development Fees are calculated using the Capacity Buy-In Method for a 5/8-inch water meter multiplied by the meter manufacturer's flow data divided by 2 to account for the 50% return flow change concept.

After installation, if an upgrade is requested, the original System Development Fee is refunded once the new System Development Fee is paid.

Miscellaneous Fees

The CLTWATER Director is authorized to establish and administer fees for other specific services provided by CLTWATER. The below fees are intended to recover the actual costs of providing services.

Swimming Pool Water Rates

Swimming pool rates for residential customers are charged starting with the Tier 3 rate and progress to Tier 4 for usage greater than 16 CCF. Commercial swimming pools are charged for the full-metered usage. Charges for sewer are incurred based on the amount of water used. Environmental regulations prohibit discharge of water from swimming pools to surface waters or storm drainage systems in anticipation that water drained from the pool will be discharged to the wastewater system; sewer usage charges are levied for water used to fill pools.

Reclaimed Water

In certain locations, CLTWATER provides treated wastewater effluent to customers for approved re-use. Charges for this product are negotiated with each customer based on the

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costs and benefits in each location. In some cases, negotiated agreements may be subject to approval by Charlotte City Council.

Sewer Monthly Rates

CLTWATER provides sewer service to some customers who do not receive water service. In those cases where water service is not metered, CLTWATER provides sewer service for a monthly flat-rate amount. The Sewer Monthly Flat Rate for residential customers is based on an average usage of 7 CCF multiplied by the commercial sewer rate plus the sewer fixed charge plus the sewer availability fee. Actual amounts are adjusted when changes to the variables in the formula are approved.

Sewer, Metered, Union County

An interlocal agreement established this charge and it is calculated based on the volume of flow received from Union County times the treatment cost at McAlpine Creek Wastewater Treatment Plant. Treatment cost at McAlpine Wastewater Treatment Plant is determined by that facility's annual budget plus overhead divided by the total estimated gallons to be treated divided by the conversion factor of 1.3368 (conversion factor applies when Union County flows are measured in CCF instead of gallons). The amount is determined each year according to the methodology approved in this interlocal agreement.

Sewer, Septic Waste

CLTWATER accepts wastewater from permitted septage waste haulers at designated receiving stations. Haulers are charged a fee per gallon accepted, which is based on an allocation of the treatment plant costs such as chemicals and power, an allocation of administrative costs for the Environmental Division and lab charges. These costs and the fee are reviewed and adjusted annually.

Sewer, Commercial, Ground Water Remediation

In certain situations, CLTWATER accepts and treats contaminated groundwater. User fees are charged based on metered flows. The commercial sewer rate applies. Sampling at the discharge point into the sanitary sewer may be required and an additional high strength charge and industrial control charge may apply based on the flow volume and the sampling results. CLTWATER will designate the location and may limit the discharge rate where contaminated groundwater is accepted.

Environmental Laboratory Services Analytical Fees

CLTWATER's Environmental Laboratory Services is a full service environmental laboratory that supports CLTWATER's analytical needs and those of the laboratory's external customers. The laboratory is certified to provide commercial analytical services for drinking water, wastewater, industrial discharges, and ground, surface and storm waters. External customers

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are billed monthly or quarterly. Fees are based on benchmark surveys of commercial laboratories and the cost components are an allocation of salaries, benefits and supplies.

Fees are charged to external customers in accordance with approved agreements with the intent to fully offset the laboratory's cost components.

Backflow Prevention and Hydrant Fees

CLTWATER manages non-Fire Department use of hydrants when customers request various types of water use from hydrants. The intent of the fees applied is to recover actual costs incurred for establishing and maintaining the connection and to charge for the water used in accordance with prevailing rates. Customers are charged in a manner similar to Commercial water and sewer accounts.

Hydrant Program Connection Charge

This charge includes allocation for the average salary and benefits cost of a field technician to respond, set-up, dissemble, and maintain a connection, mileage cost for an assumed 20 miles round trip, and prevailing equipment costs.

Additional Hydrant Program Charges

With the intent to mimic commercial accounts, temporary hydrant connection customers will be charged the following rates and/or fees when applicable.

- Water use at the current Non Residential (Commercial) Water Rate
- The applicable water availability fee
- The applicable sewer availability fee
- The applicable fixed fee(s)
- Administrative Charge at the creation of a customer account
- The applicable commercial account security deposit

Customers using this service are subject to late fees, delinquency charges, penalties, and other applicable charges according to the same procedures as customers with standard connections.

Hydrant Meter, Residential Swimming Pool Fill

This charge applies to the use of a hydrant for filling or adding water to swimming pools. This charge includes two service charges (one to set up equipment and one to disassemble equipment) in addition to the volume of water used multiplied by the third tier rate for

usage between 0 and 16 CCF and the 4th tier rate for usage over 16 CCF. Appropriate sewer charges may be levied.

Hydrant Meter Device Damage

This charge is assessed to the customer based on damages to hydrants or hydrant meter installations while the customer is/was in possession of the temporary hydrant connection assembly. The customer is invoiced the cost for any necessary repairs or replacements based on actual costs.

Hydrant Device, Meter ¾ Inch- 30 days

This charge applies when a customer rents backflow equipment. This charge is for a service request plus extra equipment and a stand to connect CLTWATER equipment to customer's piping (usually incurred at a construction site where there is a meter but a fire hydrant is not available).

Hydrant Device, Meter 2 ½ Inch- 30 days

This charge is for a service request plus extra equipment and a stand to connect CLTWATER's equipment to the customer's piping (an example of this charge would be at a construction site where there is a meter and a fire hydrant is not available).

Sterilize Connection/CLTWATER Laboratory Services

This service is provided when a customer desires to connect to a fire hydrant to provide temporary potable water. The charge includes the salary and benefits costs for a CLTWATER Engineering Services Investigator for 1.5 hours for cleaning and flushing connections in addition to the prevailing lab fee(s) established by the Charlotte Water Laboratory Services Division.

Hydrant Meter, 4 Inch with Trailer Mounted Backflow Prevention Device

This charge applies when a customer requests a large amount of water in a short period, for testing of a large tank for example. This charge is based on the full salary and benefits cost for 1.5 hours for two CLTWATER Engineering Services Investigators and one Construction Inspector to set up a 4-inch meter connection and backflow prevention device and later disassemble the equipment. The water usage is metered and usage is charged the commercial rate as described in Hydrant Meter, Over Usage Charge. The calculation includes allocations of the three full salaries multiplied by 1.5 hour.

Emergency 1 Inch Unmetered Water Service

This charge is per day for the use of unmetered water after CLTWATER has removed the meter and installed a backflow device. The charge applies when a customer has a contaminated plumbing system or private water line without backflow protection and requires water service prior to eliminating the private contamination hazard. CLTWATER replaces the customer's meter with an un-metered backflow prevention device. After the customer has corrected the problem and CLTWATER Lab Services has verified the water is clean, the metered connection can be restored.

Water Used to Fill Tank Trucks

This charge applies to the amount of metered water used multiplied by the commercial water rate.

Tanker Truck Monthly Permit Fee

This charge includes an administrative fee (for receipt of fax, entering permit in database, communication, collecting and processing water billing) per month per permit.

Sweeper Truck Charge

This charge applies to water used by a sweeper truck that holds less than one CCF (748 gallons) of water. The water received is unmetered, therefore, these customers are charged for one CCF of water per business day per month at the commercial water rate, plus the administrative fee per permit.

Vacuum Truck Charge

This charge applies to a vacuum truck that has large tank capacity and uses a high-pressure hose. The fee per permit per business day is $10 and based on the estimated water used. In addition, there is the administrative fee per permit per billing period.

Backflow Unpermitted Connection Penalty

This penalty is levied when an unpermitted connection is made to a CLTWATER fire hydrant. The user will be charged the salary and benefit costs associated with investigating the unpermitted connection and a fee based on the estimated usage for one month. User will also be set-up as a temporary hydrant connection customer. User equipment connected/attached to the hydrant will be confiscated and held as collateral until payment of penalty is made.

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Customer Service and Bill Fees

Security Deposits for Commercial Users

Refundable deposits are required from all commercial users at the time of application for new services. The deposit due is according to published rates and is based on customer type and meter size. If a payment for services provided is not received, the City may discontinue water and/sewer service and charge the unpaid amount against the deposit. The remaining deposit will be credited on the final water services bill.

Bad Check Fee

This charge is applied when a customer pays their water services bill with a check that is returned for insufficient funds. The amount of the fee is based on state statutes.

Service Charge, New Services

This is an administrative fee applied when a customer requests to turn on or transfer water/sewer service from one service location to another. This charge is included on the customer's first water services bill. The fee is based on the actual average costs to enter the new customer request into the City system and to activate the water service.

Late Payment Variable Charge (Late Charge)

This late payment charge is assessed on the unpaid balance for water, sewer and storm water charges when the City has not received the payment within 6 days after due date. The 1.5% late charge is added to the next water services bill pursuant to Section 23-5 of the Charlotte City Code.

Meter Turn-off Delinquent Fee (Disconnection Fee)

This fee is to recover the costs associated of a field technician to physically turnoff a water service due to non-payment. The fee is calculated by the previous year's Customer Service Division budget divided by the total number of service orders completed for that year.

Meter Turn-on Delinquent Fee (Reconnection Fee)

This fee is to recover the costs associated of a field technician to physically turn-on a water service after the account is eligible for reconnection. The fee is calculated by the previous year's Customer Service Division budget divided by the total number of service orders completed for that year.

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Meter Lock/ Unlock Fee

This charge is applied when CLTWATER installs a lock to the water meter to prevent usage of the water service. The fee is calculated by the previous year's Customer Service Division budget divided by the total number of service orders completed for that year.

Unauthorized Device Fee

This fee applies when a customer moves a water meter to another address instead of purchasing separate meters. It is an unauthorized device fee. The fee is calculated by the previous year's Customer Service Division budget divided by the total number of service orders completed for that year. The amount is based on two trip charges plus $100.

Yoke Removal/Re-Install Service Line Plug / Un-Plug Fee

This charge is applied when a customer has inappropriately restored their water service and CLTWATER physically removes the yoke, plugs the service, and removes any unauthorized device, located inside the meter box. The fee is calculated by the previous year's Customer Service Division budget divided by the total number of service orders completed for that year plus $25.

Disconnecting Service at the Water Main

This charge is assessed when CLTWATER disconnects a water service from the water main. This generally requires significant work including excavation, paving, etc. This work may be required when customers use inappropriate means to obtain water service. The $835 (FY2012) charge consists of the costs of the assumed use of backhoes, dump trucks, jackhammers and full salaries for a crew of four to physically disconnect the waterline at the water main. If the customer requests the service to be restored, both the disconnect fee and the cost of a new service connection must be paid at the time of the request.

Delinquent Processing Charge

If full payment of the unpaid balance for water, sewer, and storm water charges is not received between the specified deadline and the close of business on the workday preceding scheduled termination, a charge is levied to recover costs associated with identifying the late payment and cancelling the termination order. This charge must be paid before the turnoff order will be rescinded pursuant to Section 23-5 of the Charlotte City Code.

Unlawful Water Connection

This civil penalty is assessed if there has been an unauthorized modification to the CLTWATER water system. The City/County is authorized to charge civil or other penalties in accordance with local, state, and federal regulations.

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Water Connection or Meter Damage

This fee is for reimbursement charges for damages to meters. The charge is based on the reasonable cost for the necessary repairs estimated from a previous similar invoice.

Unlawful Sewer Connection

Civil or other penalties may be assessed in accordance with local, state, and federal regulations in the event unlawful sewer connections are made to the CLTWATER system.

Water, Private Meter, In Product or for Make up

Some commercial and industrial customers have private meters installed to measure water used that is not returned to the Sewer System. This occurs when water is incorporated into a product or is used for evaporative processes to cool the building or equipment. The usage on the meter is subtracted from the main meter to calculate the monthly sewer charge. The meters are required to meet CLTWATER standards and have read compatibility with an electronic radio transmitter (ERT) as specified by CLTWATER.

Water, Private Meter, Bleed-Off

The Private Meter, Make-up customers have private meters installed to measure drain water from cooling towers or other equipment that returns back into the Sewer System. This design is associated with the Private Meter, Make-up and the total usage for the sewer charge is calculated as follows: the water usage minus the Make-up usage plus the Bleed-off usage.

Expedited Reconnection Fee

After a service is terminated for non-payment, and once the account is eligible for reconnection, standard service level is to make reasonable efforts to restore the service within 24 hours. Where a customer requires expedited or after-hours reconnection, an expedited or after-hours reconnection fee may be paid and extra effort will be made to restore service within 4 hours of the request and payment. After hours is defined between 5 p.m. and 7 a.m. The regular business hours expedited fee is calculated by the previous year's Customer Service Division budget divided by the total number of service orders completed for that year. The after-hours expedited reconnection fee is calculated based on the actual cost of an on-call field service representative (FSR) to perform the service request. The FSR time used to calculate the fee is 2 hours pay.

Meter Obstruction Fee

Water service meter installations must be accessible at all times. It is the customer's responsibility to ensure the meter remains clear and free from obstructions and debris at all times. A trip fee is charged for every field visit where the necessary work cannot be completed due to an obstruction. The customer is notified by door hanger should such an

obstruction be present. The trip fee is calculated by the previous year's Customer Service Division budget divided by the total number of service orders completed for that year.

Meter Testing Fee

Should a customer dispute the accuracy of their water meter, the meter can be removed and tested in accordance with AWWA specifications. Should the meter test within AWWA specifications or under-register usage, the customer will be charged a meter-testing fee. Should the meter test reveal the meter was over-registering usage, the customer will be not be charged a testing fee and the applicable usage refund will be issued.

Unauthorized Fire Line Usage

Should a dedicated fire line record usage for purposes other than a fire or fire system testing, the estimated water usage and applicable sewer charges are billed to the account.

Land Development User Fees

Charlotte Water's Installation and Development Services section is the plan review, plan approval; permitting and inspection agent of proposed public potable water, sanitary sewer, and reclaimed wastewater infrastructure designed, proposed, constructed or requested by private entities, including developers throughout Charlotte Water's service area. Charlotte Water will charge project or plan review and inspection fees using the City of Charlotte's approved methodology for cost recovery of staff salary based on percent of time spent on different tasks associated with plan review and project inspection.

These are new fees, which will become effective July 1, 2016. To minimize impact of the fee on projects already in various stages of planning, design and construction, CLTWATER will phase in the fees over time. Initially, fees will be set at rates intended to recover 50% of the costs incurred by CLTWATER. On July 1, 2017, fees will be set at rates intended to recover 75% of costs, and on July 1, 2018, fees will be set to recover 100% of costs.

Fees are proposed for the following services.

Backflow Prevention Review

This fee applies to plan review necessary to assure backflow prevention requirements are satisfied. Typically refers to commercial or non-single-family development. This fee would be paid when project plans requiring a backflow review are submitted for approval.

Backflow Prevention Device Inspection

This fee applies to site inspection required for new backflow prevention device installation or inspection and testing of existing backflow prevention devices. Typically refers to

commercial, non-single-family development or customers with dedicated irrigation service connections.

Subdivision Initiation

This flat fee is assessed when a new project initiation occurs. It applies to various aspects of work that typical water and/or sewer projects require, regardless of size or scope. Typically refers to new residential subdivisions, commercial projects, non-single-family developments requiring water and or sewer infrastructure construction, or their relocations. This fee is paid when plans for an extension or relocation of water and/or sewer infrastructure are submitted for review.

Subdivision Review

This fee applies to construction plan review required for new development including new residential subdivisions, commercial projects, or non-single-family developments requiring water and or sewer infrastructure construction, abandonment, replacement, or relocation. This fee is paid when plans are submitted.

Subdivision Inspection

This applies to construction related activity of new public water and sanitary sewer infrastructure. Projects included in these fees are new residential subdivisions, commercial, industrial, and institutional projects, non-single-family developments requiring water and or sewer infrastructure construction, abandonment, replacement, or relocation. This fee is paid when plans are approved and permitted prior to construction, abandonment, replacement or relocation of water and/or sewer infrastructure when the land developer / project owner sign a contract.

Civil Penalties Authorized

Wastewater Discharge Restrictions
(Article III of Chapter 23 of the City Code)

These civil penalties are assessed to users of the CLTWATER sewer system for violations of wastewater discharge restrictions in applicable provisions of the City Code (currently codified as Article III of Chapter 23 of the City Code) and permits and orders issued pursuant thereto.

Examples of violations include, but are not limited to, the following:

- Reports submitted up to 10 days late;
- Transcription error;
- Improper of sampling procedures;

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- Failure to sample for a required parameter;
- Failure to notify CLTWATER of any planned significant changes to the operations or system at least 90 days before the change;
- Failure to report a slug load discharge;
- Prohibited or unauthorized discharge that may result in damage to a Publically Owned Treatment Works (POTWs);
- Illegally discharging grease;
- Falsification of maintenance, pumping or cleaning reports; and
- Discharge of pollutants that have not been previously approved.

The maximum civil penalty is $25,000 per violation per day. Assessed civil penalties are determined from factors set forth in the City Code and include, but are not limited to, the following: Extent of harm caused, magnitude and duration of the violation, the cost of enforcement, whether the violation was committed willfully or intentionally and history of violation(s).

Backflow Prevention
(Article V of Chapter 23 of the City Code)

The purpose of these civil penalties is to protect the CLTWATER water system from contamination originating in private plumbing systems. Examples of violations include the following: Unprotected cross connection involving a private water system, which is an imminent, high or moderate hazard, failure to submit complete and accurate reports and failure to test or maintain backflow-prevention assemblies as required. Maximum civil penalties for violations of applicable provisions of the City Code range from $100 to $1,000 per violation per day. Assessed civil penalties are determined from factors set forth in the City Code, including timeliness of correcting the violation and history of violation(s).

Unpermitted Modifications to Water and Sewer System
(Article VI of Chapter 23 of the City Code)

The purpose of this civil penalty is to prevent alterations to the CLTWATER water and sewer system that have not been permitted. The maximum civil penalty is $10,000 per violation per day.

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Water Conservation
(Article VII of Chapter 23 of the City Code)

The purpose of this civil penalty is to maintain and protect the water resources available to the City/County for essential and community and business water uses during a declared water shortage. There are the following three phases of water conservation that can be implemented:

1. Phase I, restricted – Restrictions on the manner, day of the week and/or time of day of one or more discretionary water uses and/or complete prohibitions on one or more such uses.

2. Phase II, banned - Restrictions on the manner, day of the week, and/or time of day of one or more discretionary or community and business water uses and/or complete prohibitions on one or more of such uses.

3. Phase III, emergency- Restrictions on the manner, day of the week, and/or time of day of one or more discretionary, community and business or essential water uses; and/or complete prohibitions on one or more of such uses.

Any customer that violates the mandatory water conservation control in Phase I shall be subject to a civil penalty according to the following schedule.

PHASE I		
Offense	**1 ½ Inch Connection or Less**	**2 Inch Connection or More**
First	$100	$200
Second	$200	$400
Third & Subsequent	$300	$600

Any customer that violates the mandatory water conservation control in Phase II or Phase III shall be subject to a civil penalty according to the following schedule.

PHASE II OR PHASE III		
Offense	**1 ½ Inch Connection or Less**	**2 Inch Connection or More**
First	$200	$400
Second	$400	$800
Third & Subsequent	$600	$1,200

EXHIBIT E

Charlotte Water
Water Capacity Fee Calculation
Buy-In Method

The calculation for the Water Capacity Fees are shown below with assets values calculated using (1) original cost, (2), original cost less depreciation, (3) replacement cost new, and (4) replacement cost new less depreciation. The associated values for all contributed assets are excluded from the calculation.

The design capacity of the plants is 242 million gallons per day (total of all plants) and the maximum day demand associated with one ERU was assumed to be 269 gallons per day.

Include Distribution / Collection System Assets? Yes

Description	Original Cost	Original Cost Less Depreciation	Replacement Cost New	Replacement Cost New Less Depreciation
W ROW	$ 5,641,471	$ 5,641,471	$ 9,514,321	$ 9,514,321
W Land	16,735,698	16,735,698	38,880,514	38,880,514
Source of Supply	60,288,885	31,342,700	177,458,899	51,500,760
W Treatment	240,007,540	138,255,988	501,797,716	206,767,676
W Pumping	33,053,845	19,354,558	78,817,297	30,287,470
Transmission	492,856,127	304,265,283	970,458,629	434,070,452
Distribution ROW	21,137	21,137	45,090	45,090
Distribution	723,511,211	483,140,799	1,164,559,163	670,279,759
Storage	26,691,783	15,619,070	67,074,180	22,423,870
Total Value	$ 1,598,807,698	$ 1,014,376,705	$ 3,008,605,808	$ 1,463,769,912
Less: Developer Contributed Assets	(464,312,913)	(298,927,369)	(721,324,713)	(434,322,643)
Net Value	$ 1,134,494,785	$ 715,449,335	$ 2,287,281,096	$ 1,029,447,269
System Capacity (MGD)	242.0	242.0	242.0	242.0
Unit Cost (per gallon, per day)	$4.69	$2.96	$9.45	$4.25
Capacity of 1 ERU (gallons per day)	269.0	269.0	269.0	269.0
Water Capacity Fee per ERU (5/8" meter)	$1,261.07	$795.27	$2,542.47	$1,144.30
Net of Outstanding Debt:				
Asset Value	$ 1,598,807,698	$ 1,014,376,705	$ 3,008,605,808	$ 1,463,769,912
Less: Developer Contributed Assets	(464,312,913)	(298,927,369)	(721,324,713)	(434,322,643)
Less: Outstanding Water System Debt Credit	(595,242,126)	(595,242,126)	(595,242,126)	(595,242,126)
Add: Adjustment to Debt Credit	114,225,085	114,225,085	114,225,085	114,225,085
Net Value	$ 653,477,745	$ 234,432,295	$ 1,806,264,055	$ 548,430,228
System Capacity (MGD)	242.0	242.0	242.0	242.0
Unit Cost (per gallon, per day)	$2.70	$0.97	$7.46	$2.27
Capacity of One ERU (gallons per day)	269.0	269.0	269.0	269.0
Water Capacity Fee per ERU (5/8" meter)	$726.39	$260.59	$2,007.79	$609.62

Section 3 of Charlotte Water's Water Distribution System Master Plan, Demand Projections Technical Memorandum (FILE: FINAL_CLT_Water_Demands_TM_Chapter3_032116.pdf) noted that the average consumption per account per day for single-family residential customers from 2008 to 2014 was 188 gpd (y intercept of linear regression line).

Based on the cost of service model, the Residential max day peaking factor (1.44) is noted to be the same as the system's max day peaking factor. Section 3 of the Water Distribution System Master Plan / Demand Projections Technical Memorandum states that the system's average max day peaking factor was 1.43 from 2007 to 2014.

Therefore, the max day demand associated with one ERU is calculated as:

188 gpd x 1.43 = 268.84 or 269 gpd.

The "check" below is to ensure that assets values included in the capacity fee calculation are correct.

Check:	
W Total	$ 1,598,807,698
S Total	2,596,113,236
Adjustments (Add):	
W Other	8,070,861
Distribution	-
Distribution ROW	-
S Other	649,982
Collection	-
Collection ROW	-
Other	75,398,433
Total	$ 4,279,040,210
Total from Assets tab	4,279,040,210
Check	Ok

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Charlotte Water
Water Capacity Fee Calculation
Buy-In Method

The calculation for the Water Capacity Fees are shown below with assets values calculated using (1) original cost, (2), original cost less depreciation, (3) replacement cost new, and (4) replacement cost new less depreciation. The associated values for all contributed assets are excluded from the calculation.

The design capacity of the plants is 242 million gallons per day (total of all plants) and the maximum day demand associated with one ERU was assumed to be 269 gallons per day.

Include Distribution / Collection System Assets? No

Description	Original Cost	Original Cost Less Depreciation	Replacement Cost New	Replacement Cost New Less Depreciation
W ROW	$ 5,641,471	$ 5,641,471	$ 9,514,321	$ 9,514,321
W Land	16,735,698	16,735,698	38,880,514	38,880,514
Source of Supply	60,288,885	31,342,700	177,458,899	51,500,760
W Treatment	240,007,540	138,255,988	501,797,716	206,767,676
W Pumping	33,053,845	19,354,558	78,817,297	30,287,470
Transmission	492,856,127	304,265,283	970,458,629	434,070,452
Distribution ROW	-	-	-	-
Distribution	-	-	-	-
Storage	26,691,783	15,619,070	67,074,180	22,423,870
Total Value	$ 875,275,350	$ 531,214,768	$ 1,844,001,556	$ 793,445,063
Less: Developer Contributed Assets	(68,643,898)	(48,081,153)	(98,904,878)	(65,571,085)
Net Value	$ 806,631,452	$ 483,133,614	$ 1,745,096,678	$ 727,873,977
System Capacity (MGD)	242.0	242.0	242.0	242.0
Unit Cost (per gallon, per day)	$3.33	$2.00	$7.21	$3.01
Capacity of 1 ERU (gallons per day)	269.0	269.0	269.0	269.0
Water Capacity Fee per ERU (5/8" meter)	$896.63	$537.04	$1,939.80	$809.08
Net of Outstanding Debt:				
Asset Value	$ 875,275,350	$ 531,214,768	$ 1,844,001,556	$ 793,445,063
Less: Developer Contributed Assets	(68,643,898)	(48,081,153)	(98,904,878)	(65,571,085)
Less: Outstanding Water System Debt Credit	(401,959,252)	(401,959,252)	(401,959,252)	(401,959,252)
Add: Adjustment to Debt Credit	114,225,085	114,225,085	114,225,085	114,225,085
Net Value	$ 518,897,285	$ 195,399,448	$ 1,457,362,511	$ 440,139,810
System Capacity (MGD)	242.0	242.0	242.0	242.0
Unit Cost (per gallon, per day)	$2.14	$0.81	$6.02	$1.82
Capacity of One ERU (gallons per day)	269.0	269.0	269.0	269.0
Water Capacity Fee per ERU (5/8" meter)	$576.79	$217.20	$1,619.96	$489.25

Section 3 of Charlotte Water's Water Distribution System Master Plan, Demand Projections Technical Memorandum (FILE: FINAL_CLT_Water_Demands_TM_Chapter3_032116.pdf) noted that the average consumption per account per day for single-family residential customers from 2008 to 2014 was 188 gpd (y intercept of linear regression line).

Based on the cost of service model, the Residential max day peaking factor (1.44) is noted to be the same as the system's max day peaking factor. Section 3 of the Water Distribution System Master Plan / Demand Projections Technical Memorandum states that the system's average max day peaking factor was 1.43 from 2007 to 2014.

Therefore, the max day demand associated with one ERU is calculated as:

188 gpd x 1.43 = 268.84 or 269 gpd.

The "check" below is to ensure that assets values included in the capacity fee calculation are correct.

Check:	
W Total	$ 875,275,350
S Total	1,508,468,140
Adjustments (Add):	
W Other	8,070,861
Distribution	723,511,211
Distribution ROW	21,137
S Other	649,982
Collection	1,086,367,089
Collection ROW	1,278,008
Other	75,398,433
Total	$ 4,279,040,210
Total from Assets tab	4,279,040,210
Check	Ok

EXHIBIT F

Charlotte Water
Sewer Capacity Fee Calculation
Buy-In Method

The calculation for the Sewer Capacity Fees are shown below with assets values calculated using (1) original cost, (2), original cost less depreciation, (3) replacement cost new, and (4) replacement cost new less depreciation. The associated values for all contributed assets are excluded from the calculation.

The design capacity of the plants is 123 million gallons per day (total of all plants) and the maximum day demand associated with one ERU was assumed to be 269 gallons per day.

Include Distribution / Collection System Assets? Yes

Description	Original Cost	Original Cost Less Depreciation	Replacement Cost New	Replacement Cost New Less Depreciation
S ROW	$ 14,239,330	$ 14,239,330	$ 33,473,352	$ 33,473,352
S Land	5,668,238	5,668,238	22,795,590	22,795,590
Collection ROW	1,278,008	1,278,008	2,907,735	2,907,735
Collection	1,086,367,089	667,896,572	1,879,455,929	986,249,872
Conveyance	666,364,764	458,454,973	1,244,810,494	594,215,749
S Pumping	102,540,853	62,751,600	168,298,743	94,838,876
WW Treatment	719,654,954	415,814,310	1,415,498,864	631,847,365
Total Value	$ 2,596,113,236	$ 1,626,103,032	$ 4,767,240,707	$ 2,366,328,539
Less: Developer Contributed Assets	(777,459,577)	(484,116,755)	(1,241,012,690)	(721,916,739)
Net Value	$ 1,818,653,659	$ 1,141,986,278	$ 3,526,228,017	$ 1,644,411,800
System Capacity (MGD)	123.0	123.0	123.0	123.0
Unit Cost (per gallon, per day)	$14.79	$9.28	$28.67	$13.37
Capacity of 1 ERU (gallons per day)	269.0	269.0	269.0	269.0
Sewer Capacity Fee per ERU (5/8" meter)	$3,977.38	$2,497.51	$7,711.83	$3,596.32
Net of Outstanding Debt:				
Asset Value	$ 2,596,113,236	$ 1,626,103,032	$ 4,767,240,707	$ 2,366,328,539
Less: Developer Contributed Assets	(777,459,577)	(484,116,755)	(1,241,012,690)	(721,916,739)
Less: Outstanding Sewer System Debt Credit	(950,113,874)	(950,113,874)	(950,113,874)	(950,113,874)
Add: Adjustment to Debt Credit	150,762,587	150,762,587	150,762,587	150,762,587
Net Value	$ 1,019,302,372	$ 342,634,991	$ 2,726,876,730	$ 845,060,512
System Capacity (MGD)	123.0	123.0	123.0	123.0
Unit Cost (per gallon, per day)	$8.29	$2.79	$22.17	$6.87
Capacity of One ERU (gallons per day)	269.0	269.0	269.0	269.0
Sewer Capacity Fee per ERU (5/8" meter)	$2,229.21	$749.34	$5,963.66	$1,848.14

EXHIBIT F

Charlotte Water
Sewer Capacity Fee Calculation
Buy-In Method

The calculation for the Sewer Capacity Fees are shown below with assets values calculated using (1) original cost, (2), original cost less depreciation, (3) replacement cost new, and (4) replacement cost new less depreciation. The associated values for all contributed assets are excluded from the calculation.

The design capacity of the plants is 123 million gallons per day (total of all plants) and the maximum day demand associated with one ERU was assumed to be 269 gallons per day.

Include Distribution / Collection System Assets? No

Description	Original Cost	Original Cost Less Depreciation	Replacement Cost New	Replacement Cost New Less Depreciation
S ROW	$ 14,239,330	$ 14,239,330	$ 33,473,352	$ 33,473,352
S Land	5,668,238	5,668,238	22,795,590	22,795,590
Collection ROW	-	-	-	-
Collection	-	-	-	-
Conveyance	666,364,764	458,454,973	1,244,810,494	594,215,749
S Pumping	102,540,853	62,751,600	168,298,743	94,838,876
WW Treatment	719,654,954	415,814,310	1,415,498,864	631,847,365
Total Value	$ 1,508,468,140	$ 956,928,452	$ 2,884,877,044	$ 1,377,170,932
Less: Developer Contributed Assets	(38,953,896)	(23,053,079)	(64,332,388)	(36,146,544)
Net Value	$ 1,469,514,244	$ 933,875,373	$ 2,820,544,655	$ 1,341,024,388
System Capacity (MGD)	123.0	123.0	123.0	123.0
Unit Cost (per gallon, per day)	$11.95	$7.59	$22.93	$10.90
Capacity of 1 ERU (gallons per day)	269.0	269.0	269.0	269.0
Sewer Capacity Fee per ERU (5/8" meter)	$3,213.82	$2,042.38	$6,168.51	$2,932.81
Net of Outstanding Debt:				
Asset Value	$ 1,508,468,140	$ 956,928,452	$ 2,884,877,044	$ 1,377,170,932
Less: Developer Contributed Assets	(38,953,896)	(23,053,079)	(64,332,388)	(36,146,544)
Less: Outstanding Sewer System Debt Credit	(776,969,011)	(776,969,011)	(776,969,011)	(776,969,011)
Add: Adjustment to Debt Credit	150,762,587	150,762,587	150,762,587	150,762,587
Net Value	$ 843,307,820	$ 307,668,949	$ 2,194,338,232	$ 714,817,964
System Capacity (MGD)	123.0	123.0	123.0	123.0
Unit Cost (per gallon, per day)	$6.86	$2.50	$17.84	$5.81
Capacity of One ERU (gallons per day)	269.0	269.0	269.0	269.0
Sewer Capacity Fee per ERU (5/8" meter)	$1,844.31	$672.87	$4,799.00	$1,563.30

EXHIBIT F

Sec. 23-41. - Systems operations.

The sewage treatment and disposal facilities and sewage collection system shall be operated as, and considered to be, a single, integrated system. The amount necessary to meet the annual interest payable on the debt incurred for construction of the sewer system; the amount necessary for the amortization of the debt; and the amount necessary for repairs, maintenance and operation of the system shall comprise the user charge for sewer service collected by the city.

(Ord. No. 5230, § 1 (Exh. A), 10-28-2013)

EXHIBIT G

Sec. 23-126. - Water system operation.

The water treatment facilities and water distribution system shall be operated as, and considered to be, a single, integrated system. The amount necessary to meet the annual interest payable on the debt incurred for construction for the water system; the amount necessary for the amortization of the debt; and the amount necessary for repairs, for fire protection, maintenance and operation of the system shall comprise the rate for water service collected by the city.

(Code 1985, § 23-80)

EXHIBIT H

RAFTELIS

4 British American Boulevard Latham, NY 12110
www.raftelis.com

January 2, 2020

Thurman Chad Howell
Chief Financial Officer
Charlotte Water
4222 Westmont Drive
Charlotte, NC 28217

RE: Calculation of Water and Sewer System Development Fees for FY 2021

Dear Mr. Howell:

Raftelis Financial Consultants, Inc. ("Raftelis") has completed an evaluation to develop cost-justified water and sewer system development fees for fiscal year ("FY") 2021 for consideration by Charlotte Water. This letter documents the results of the analysis, which is based on an approach for establishing system development fees set forth in North Carolina General Statute 162A Article 8 – "System Development Fees." As one of the largest and most respected utility financial, rate, management, and operational consulting firms in the U.S., and having prepared system development fee calculations for utilities in North Carolina and across the U.S. since 1993, Raftelis is qualified to perform system development fee calculations for water and sewer utilities in North Carolina.

Background

System development fees are one-time charges assessed to new water and/or sewer customers for their use of system capacity and serve as an equitable method by which to recover up-front system capacity costs from those using the capacity. North Carolina General Statute 162A Article 8 ("Article 8") provides for the uniform authority to implement system development fees for public water and sewer systems in North Carolina and was passed by the North Carolina General Assembly and signed into law on July 20, 2017. According to the statute, system development fees must be adopted in accordance with the conditions and limitations of Article 8, and those fees in effect as of October 1, 2017 must conform to the requirements set forth in the Article no later than July 1, 2018.[1] In addition, the system development fees must also be prepared by a financial professional or licensed professional engineer, qualified by experience and training or education, who, according to the Article, shall:

- Document in reasonable detail the facts and data used in the analysis and their sufficiency and reliability.
- Employ generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost approaches for each

[1] Charlotte Water's FY 2019 and FY 2020 water and sewer system development fees, which were put in effect on July 1, 2018 and July, 2019, respectively, were prepared by Raftelis in accordance with the requirements set forth in Article 8.

EXHIBIT I

service, setting forth appropriate analysis to the consideration and selection of an approach appropriate to the circumstances and adapted as necessary to satisfy all requirements of the Article.

- Document and demonstrate the reliable application of the methodologies to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee and the aggregate thereof.
- Identify all assumptions and limiting conditions affecting the analysis and demonstrate that they do not materially undermine the reliability of conclusions reached.
- Calculate a final system development fee per service unit of new development and include an equivalency or conversion table for use in determining the fees applicable for various categories of demand.
- Consider a planning horizon of not less than 10 years, nor more than 20 years.

This letter report documents the results of the calculation of water and sewer system development fees for FY 2021 in accordance with these requirements. In general, system development fees are calculated based on (1) a cost analysis of the value of existing or planned infrastructure that is in place, or will be constructed, to serve new capacity demands, and (2) the existing or additional capacity associated with these assets. Article 8 is relatively explicit in the identification of infrastructure assets that may be included as part of the system development fee calculation, as the Article defines allowable assets to include the following types, as provided in Section 201:

> *"A water supply, treatment, storage, or distribution facility, or a wastewater collection, treatment, or disposal facility, including for reuse or reclamation of water, owned or operated, or to be owned and operated, by a local government unit and land associated with such facility."*

Therefore, the method used to calculate system development fees for Charlotte Water included system facility assets that satisfy this definition.

Article 8 references three methodologies that could be used to calculate system development fees. These include the buy-in method, the incremental cost method, and the combined cost method. A description of each of these methods follows:

Capacity Buy-In Method:

Under the Capacity Buy-In Method, a system development fee is calculated based on the proportional cost of each user's share of existing system capacity. This approach is typically used when existing facilities are able to provide adequate capacity to accommodate future growth. The cost of capacity is derived by dividing the estimated value of existing facilities by the current capacity provided by existing facilities. Certain adjustments to the value of existing facilities are made for developer contributed assets, grant funds, and the amount of outstanding debt.

EXHIBIT I

Incremental Cost Method:

Under the Incremental Cost (or Marginal Cost) Method, a system development fee is calculated based on a new customer's proportional share of the incremental future cost of system capacity. This approach is typically used when existing facilities have limited or no capacity to accommodate future growth. The cost of capacity is calculated by dividing the total cost of growth-related capital investments over a period of time by the additional capacity provided as a result of the investments.

Combined Method:

Under the Combined Method, a system development fee is calculated based on the blended value of both the existing and expanded system capacity. As such, it is a combination of the Capacity Buy-In and Incremental Cost methods. This method is typically used when existing facilities provide adequate capacity to accommodate a portion of the capacity needs of new customers, but where significant investment in new facilities to address a portion of the capacity needs of future growth is also anticipated, or where some capacity is available in parts of the existing system, but incremental capacity will be needed for other parts of the system to serve new customers at some point in the future.

The Capacity Buy-In method was used to calculate the water and sewer system development fees for Charlotte Water, since in general, Charlotte Water's existing water and sewer treatment facilities have adequate capacity to accommodate the anticipated future growth over the near term. The following steps were completed to calculate the fees under the Capacity Buy-In Method:

1. The replacement value of existing system facilities was calculated, and adjustments were made to derive a net replacement value estimate in accordance with Article 8. Adjustments to the calculated replacement value included deducting accumulated depreciation, developer contributions, and a portion of outstanding debt.
2. The unit cost of system capacity was estimated by dividing the net replacement value of existing system facilities by the current capacity of the system.
3. The amount of capacity associated with a service unit of new development was estimated. One equivalent residential unit ("ERU") was defined as the smallest service unit of new development.
4. The system development fee for one service unit of development was calculated by multiplying the cost per unit of system capacity by the capacity associated with one ERU, as defined below.
5. The calculated system development fee for one ERU was scaled for different categories of demand. Meter capacity ratios were used to scale system development fees from a base meter size from the smallest unit of new development (one ERU) to different categories of demand, defined by different customer meter sizes.

EXHIBIT I

System Development Fee Calculation

Step 1 – Estimate the Replacement Value of System Facilities and Apply Adjustments

A listing of fixed assets provided by Charlotte Water, as of June 30, 2019 was reviewed and each individual asset was categorized into one of the categories shown in Table 1. General assets, such as those related to administrative buildings, certain rolling stock, and certain equipment items were not directly attributable to either the water or sewer system. As a result, these assets were categorized as "Other – General."

Table 1. Fixed Asset Categories by System

Water System	Sewer System
Right-of-Way	Right-of-Way
Land	Land
Source of Supply	Collection
Treatment	Conveyance
Pump Stations	Pump Stations
Transmission	Treatment
Distribution	Other - Sewer
Storage	
Other – Water	
Other – General	

Note: Assets not directly attributable to either the water or sewer system were categorized as "Other – General".

The value of assets in categories identified as "Other - Water", "Other - Sewer", and "Other - General" were excluded from the calculation of system value as these asset categories were not specifically mentioned as allowable under Article 8. Excluded assets included those relating to administrative and other miscellaneous buildings, rolling stock, and various types of equipment.

Next, the replacement value of existing assets in allowable categories was estimated. Each asset's original cost, as contained in the fixed asset listing provided by Charlotte Water, was escalated to 2019 dollars based on the year the asset was purchased and the corresponding escalation factor for that year. Escalation factors for each year were developed using the Engineering News Record's Construction Cost Index ("ENR CCI"), which provides an annual index value representing the relative change in construction costs for each year from 1908 to 2019. Using the ENR's CCI to estimate an asset's current replacement cost is an industry accepted method by which to value system facilities.

The replacement costs of the assets were adjusted by their indexed accumulated depreciation value to derive the replacement cost new less accumulated depreciation ("RCNLD") value. The estimated RCNLD values for water and sewer system assets allowable under Article 8 are provided in Tables 2 and 3, respectively.

EXHIBIT I

Table 2. Water System Value (RCNLD)

Description	RCNLD Value
Right-of-Way	$10,181,371
Land	41,410,968
Source of Supply	87,223,758
Treatment	208,754,489
Pump Stations	35,473,266
Transmission	450,014,662
Distribution	748,815,261
Storage	22,679,975
Total	$1,604,553,750

Table 3. Sewer System Value (RCNLD)

Description	RCNLD Value
Right-of-Way	$39,103,974
Land	30,989,513
Collection	1,074,440,198
Conveyance	770,971,100
Pump Stations	99,524,919
Treatment	706,644,568
Total	$2,721,674,272

As shown in Table 2, the RCNLD value of the water system was estimated to be approximately $1.6 billion, and, as shown in Table 3, the RCNLD value of the sewer system was estimated to be approximately $2.7 billion. Several additional adjustments were made to the estimated water and sewer system RCNLD values in accordance with Article 8, which included adjustments for developer contributed assets, and a portion of outstanding debt, as described below.

Developer Contributed Assets:

The listing of fixed assets was reviewed to identify assets that were contributed or paid for by developers, and these assets were subtracted from the RCNLD value, as these assets do not represent an investment in system capacity by Charlotte Water. The total RCNLD value of contributed water and sewer system assets was estimated to be approximately $464 million and $767 million, respectively.

Debt Credit:

A credit was applied to the RCNLD value to reflect that a portion of the outstanding debt associated with system facilities may be repaid with water and sewer user charges. The amount of the credit was calculated by first estimating the amount of existing outstanding debt attributable to both the water and sewer systems. Then, the amount of existing outstanding debt anticipated to be funded with system development fee revenues and water and sewer user charges was estimated. The portion of outstanding debt anticipated to be funded with water and sewer user charges was credited in the system development fee calculation.

EXHIBIT I

Charlotte Water's outstanding debt is comprised of General Obligation Bonds, Revenue Bonds, Federal Revolving Loans, and State Revolving Loans. The total outstanding debt was approximately $1.5 billion as of June 30, 2018 according to the City of Charlotte's FY 2018 Comprehensive Annual Financial Report, which included audited financial information for Charlotte Water. The total amount of outstanding debt was allocated between the water and sewer systems in proportion to the net book value (original cost, less accumulated depreciation) of each system, excluding developer contributed assets and non-infrastructure assets, such as administrative buildings, rolling stock, and equipment. The net book value of assets was used to reflect the actual cost incurred to acquire the asset and to exclude assets that are fully depreciated, as the debt used to finance such assets has likely been repaid and is no longer outstanding. A summary of the outstanding debt allocation is provided in Table 4.

Table 4. Allocation of Outstanding Debt to the Water and Sewer Systems

Description	Amount
Total Outstanding Debt	$1,505,187,000
Water System NBV	$789,525,958
Sewer System NBV	1,387,385,672
Total	$2,176,911,630
Water System NBV (%)	36.3%
Sewer System NBV (%)	63.7%
Total	100.0%
Estimated Water System Outstanding Debt	$545,903,743
Estimated Sewer System Outstanding Debt	959,283,257
Total Outstanding Debt	$1,505,187,000

The historical annual system development fee revenues collected by Charlotte Water over a five-year period from FY 2014 through FY 2018 were compared to the historical annual principal payments made by Charlotte Water over the same time-period. This information was obtained from Comprehensive Annual Financial Reports for the City of Charlotte, which included audited financial information for Charlotte Water. The system development fee revenues collected over this time-period were assumed to be used to make principal payments on the outstanding debt. Any principal payments made over this time period in excess of the amount of system development fee revenues collected were assumed to be funded with water and sewer user charges.

Based on this approach to calculating the debt credit, it was calculated that water system development fee revenues from FY 2014 to FY 2018 were sufficient to pay for 30.4 percent of principal payments on outstanding water system debt over this time period. The remaining portion, approximately 69.6 percent, was assumed to be funded with water user charges. Therefore, the water system's revenue credit for outstanding debt was estimated to be 69.6 percent of the outstanding water debt, or approximately $380 million (69.6% × $545,903,743).

EXHIBIT I

Similarly, it was calculated that sewer system development fee revenues from FY 2014 to FY 2018 were sufficient to pay for 21.0 percent of principal payments on outstanding sewer system debt. The remaining portion, approximately 79.0 percent, was assumed to be funded with sewer user charges. Therefore, the sewer system's revenue credit for outstanding debt was estimated to be 79.0 percent of the outstanding sewer debt, or approximately $758 million (79.0% × $959,283,257). The resulting adjustments to the water and sewer RCNLD values for developer contributions and a portion of outstanding debt are shown in Table 5.

Table 5. Calculation of Net Water and Sewer System Value

Description	Amount
Water System:	
System Facilities RCNLD	$1,604,553,750
Less: Developer Contributed Assets	-463,602,627
Less: Credit for Outstanding Debt	-380,100,527
Net System Value (RCNLD)	$760,850,596
Sewer System:	
System Facilities RCNLD	$2,721,674,272
Less: Developer Contributed Assets	-766,678,096
Less: Credit for Outstanding Debt	-758,076,847
Net System Value (RCNLD)	$1,196,919,329

Step 2 – Calculate the Unit Cost of System Capacity

The cost per unit of system capacity was calculated by dividing the adjusted RCNLD values (derived in Step 1) by the water and sewer system capacities. The combined treatment capacity of the water system (including the Dukes, Franklin, and Vest WTP's) is currently 242 million gallons per day ("MGD"). Therefore, the cost per unit of system capacity for the water system was calculated to be $3.14 per gallon, per day ($760,850,596 ÷ 242.0 MGD).

The treatment capacity of the sewer system is 123 MGD, based on the known individual treatment capacities of Charlotte Water's five wastewater treatment plants (Irwin Creek, Mallard Creek, McAlpine Creek, McDowell Creek, and Sugar Creek). Therefore, the cost per unit of system capacity for the sewer system was calculated to be $9.73 per gallon, per day ($1,196,919,329 ÷ 123.0 MGD).

Step 3 – Estimate the Amount of Capacity Per Service Unit of New Development

The smallest service unit of new development was defined as one ERU. One ERU of peak day capacity was defined to be 269 gallons per day ("GPD"). This amount was estimated based on information contained in Charlotte Water's Water Distribution System Master Plan.[2] The Master Plan noted that the average consumption per account, per day for single family residential customers from 2008 to 2014 was estimated to be 188 GPD, using a linear regression analysis. Furthermore, the Master Plan notes that on average, from 2007 to 2014, the system's maximum day level of demand was 1.43 times the level of its average day demand. Therefore, the peak day

[2] Water Distribution System Master Plan - Demand Projections Technical Memorandum, Black & Veatch, March 21, 2016.

EXHIBIT I

capacity requirement associated with one service unit of new residential development was estimated to be 269 GPD based on the following calculation:

- Residential average day consumption per account of 188 GPD × System peak day factor of 1.43 = 269 GPD

Step 4 – Calculate the System Development Fee for One ERU

The system development fee for one ERU was calculated by multiplying the unit cost of capacity from Step 2 by the capacity associated with one ERU from Step 3. The calculations are provided in Table 6.

Table 6. Calculation of Water and Sewer System Development Fees for Base Meter Size

Description	Amount
Water System:	
Net System Value	$760,850,596
System Capacity (MGD)	242.0
Unit Cost of Capacity ($ / gallon per day)	$3.14
Capacity Required for 1 ERU (gallons per day)	269.0
System Development Fee (5/8-inch meter)	$845.74
Sewer System:	
Net System Value	$1,196,919,329
System Capacity (MGD)	123.0
Unit Cost of Capacity ($ / gallon, per day)	$9.73
Capacity Required for 1 ERU (gallons per day)	269.0
System Development Fee (5/8-inch meter)	$2,617.65

Step 5 – Scale the System Development Fees for Various Categories of Demand

The system development fees for various categories of demand were scaled using water meter capacity ratios. The scaling factors were based on rated meter capacities for each meter size, as published by the American Water Works Association in *Principles of Water Rates, Fees, and Charges*.[3] For private fire line meters, the meter capacity ratings were obtained from manufacturer ratings, and Charlotte Water policy on scaling for these meters. The meter scaling factors are shown in Table 7.

[3] Manual of Water Supply Practices (M1), Principles of Water Rates, Fees, and Charges, American Water Works Association, 7th Edition, Table VII.2-5 on p. 338.

EXHIBIT I

Table 7. Meter Capacities and Scaling Factors by Meter Size

Meter Size	Rated Meter Capacity (gpm)	Scaling Factor
5/8" Displacement	20	1.0
1" Displacement	50	2.5
1-1/2" Displacement	100	5.0
2" Displacement	160	8.0
3" Singlejet	320	16.0
3" Compound, Class I	320	16.0
3" Turbine, Class I	350	17.5
4" Compound, Class I	500	25.0
4" Singlejet	500	25.0
4" Turbine, Class I	630	31.5
4" x 1" FMCT	Water - 700; Sewer - 50	Water - 35; Sewer - 2.5
6" Singlejet	1,000	50.0
6" Compound, Class I	1,000	50.0
6" Turbine, Class I	1,300	65.0
6" x 1.5" FMCT	Water - 1,600; Sewer - 100	Water - 80.0; Sewer - 5.0
8" Compound, Class I	1,600	80.0
8" Turbine, Class II	2,800	140.0
8" x 2" FMCT	Water - 2,800; Sewer - 160	Water - 140.0; Sewer - 8.0
10" Turbine, Class II	4,200	210.0
10" x 2" FMCT	Water - 4,400; Sewer - 160	Water - 220.0; Sewer - 8.0
10" x 12" x 2" FMCT	Water - 5,000; Sewer - 160	Water - 250.0; Sewer - 8.0
12" Turbine, Class II	5,300	265.0
2" Fire Line	160	8.0
4" Fire Line	400	20.0
6" Fire Line	900	45.0
8" Fire Line	1,800	90.0
10" Fire Line	2,250	112.5
12" Fire Line	3,525	176.3

gpm = gallons per minute

Note: The rated meter capacities for the private fire lines were based on manufacturer ratings that were adjusted based on Charlotte Water policies for scaling of private fire line meters.

The system development fees for various meter sizes were calculated by multiplying the system development fee for one ERU by the meter scaling factors shown in Table 7. The resulting water and sewer system development fees for all meter sizes are shown in Table 8. The system development fees for private fire lines are also shown in the table.

EXHIBIT I

Table 8. Water and Sewer System Development Fees by Meter Size

Meter Size	Water Fee	Sewer Fee
5/8" Displacement	$846	$2,618
1" Displacement	$2,114	$6,544
1-1/2" Displacement	$4,229	$13,088
2" Displacement	$6,766	$20,941
3" Singlejet	$13,532	$41,882
3" Compound, Class I	$13,532	$41,882
3" Turbine, Class I	$14,800	$45,809
4" Compound, Class I	$21,143	$65,441
4" Singlejet	$21,143	$65,441
4" Turbine, Class I	$26,641	$82,456
4" x 1" FMCT	$29,601	$6,544
6" Singlejet	$42,287	$130,883
6" Compound, Class I	$42,287	$130,883
6" Turbine, Class I	$54,973	$170,147
6" x 1.5" FMCT	$67,659	$13,088
8" Compound, Class I	$67,659	$209,412
8" Turbine, Class II	$118,403	$366,471
8" x 2" FMCT	$118,403	$20,941
10" Turbine, Class II	$177,605	$549,707
10" x 2" FMCT	$186,063	$20,941
10" x 12" x 2" FMCT	$211,435	$20,941
12" Turbine, Class II	$224,121	$693,678
2" Fire Line	$6,766	n/a
4" Fire Line	$16,915	n/a
6" Fire Line	$38,058	n/a
8" Fire Line	$76,116	n/a
10" Fire Line	$95,146	n/a
12" Fire Line	$149,104	n/a

The water and sewer system development fees shown in Table 8 represent the maximum cost justified level of system development fees that can be assessed by Charlotte Water, as stated in Article 8. If Charlotte Water chooses to assess fees that are less than those shown in the table, the adjusted fee amounts should still reflect the scaling factors by meter size, as shown in Table 7.

EXHIBIT I

We appreciate the opportunity to assist Charlotte Water with the calculation of its water and sewer system development fees. Should you have questions or need any additional information, please do not hesitate to contact me at 518-391-8944.

Very truly yours,

RAFTELIS FINANCIAL CONSULTANTS, INC.

John M. Mastracchio

John Mastracchio, CFA
Vice President

EXHIBIT I

Water & Sewer Connection and System Development Costs

Water Connection & Water/Sewer System Development Fees

Water Meter Size/Type	Water Connection Fee	Water System Development Fee	Sewer System Development Fee
5/8" (Domestic Only)	$2,933	$846	$2,618
1" (Domestic Only	$3,751	$2,114	$6,544
1 ½"	$13,208	$4,229	$13,088
2"	$12,442	$6,766	$20,941
3" Compound**	$24,349	$13,532	$41,882
4" Compound**	$29,213	$21,143	$65,441
6" Compound**	At Cost*	$42,287	$130,883
8" Compound**	At Cost*	$67,659	$209,412
4" FMCT	At Cost*	$29,601	$6,544
6" FMCT	At Cost*	$67,659	$13,088
8" FMCT	At Cost*	$118,403	$20,941
10" FMCT	At Cost*	$186,063	$20,941
12" FMCT	At Cost*	$211,435	$20,941
2" Fire Line	At Cost*	$6,766	N/A
4" Fire Line	At Cost*	$16,915	N/A
6" Fire Line	At Cost*	$38,058	N/A
8" Fire Line	At Cost*	$76,116	N/A
10" Fire Line	At Cost*	$95,146	N/A
12 Fire Line	At Cost*	$149,104	N/A
5/8" Split Irrigation (Residential Only)	$1,500	N/A	N/A
5/8" Irrigation (Dual Check Dedicated Service Line)	$2,933	$846	N/A
1" Irrigation (Dual Check)	$3,751	$2,114	N/A

Sewer Connection Fees

Sewer Service Size	Sewer Connection Fee
4"	$4,005
6" & Larger	At Cost*
1 ½" LPSS	$4,005
2" LPSS & Larger	At Cost*

Common Residential Connections Estimated
(Public main available)
¾" water: $2,933 + $846 = **$3,779**
4" sewer: $4,005 +$2,618 = **$6,623**
Combined total = **$10,402**

Common Residential Connections
(Public main extension required/in progress)
¾" water: $2,640 + $846 = **$3,486**
4" sewer: $3,605 +$2,618 = **$6,223**
Combined total = **$9,709**

*At cost pricing is determined after a Site Utility Plan is submitted for review. Please ask for a Utility Plan Review Checklist.

** 3", 4", 6" and 8" water services are Compound Type. High flow 3" and 4" Turbine meters are available upon request and review.

*** 4" and 6" FMCT services may be used for Fire or Combined Fire & Domestic use only; flow calculations and site review may be required.

A Capacity Assurance Review is needed for all 1 ½" meter requests prior to receiving a quote or making payment. Please contact New Services for an application form.

Fire Meter Compound Type (FMCT) sewer system development fees are based on the small domestic meter. If the large meter is used for any use other than fire protection, additional sewer system development fees will apply

General Notes for Residential and Commercial Customers

1. To make application for water and/or sewer service, an application must be completed and returned to Charlotte Water (CLTWater) with payment in full (check or money order). Additionally, a backflow prevention service application must be completed for all commercial and irrigation water services. It is the responsibility of the applicant to clearly mark, with a flag or stake, the preferred service location at the edge of right-of-way along their property.
2. Security deposits are required for all water services, except 5/8" residential. See the next page for schedule of security deposit charges.
3. System Development fees are required for every new connection to the water or sewer system including irrigation services, additional services, and those in a new development. The water and sewer system development fee is based on water meter size.
4. The connection fee (not system development fee) is discounted 10% if the connection is installed during construction of a public water or sewer main. The discount is limited to 5/8" water and 4" sewer services.
5. Applicants for commercial sewer only accounts cannot be accepted until a private meter, approved by CLTWater, has been installed on the applicants' private water service.

Residential and Commercial Irrigation Services

1. There are two options for 5/8-inch residential irrigation services: 1) Split connection - Irrigation connection split off the domestic service line is available at a reduced connection fee. 2) Dedicated service line; normal connection fees apply.
2. Commercial irrigation services have only one option; dedicated service line; normal connection fees apply.
3. If the meter box is located in the driveway, the split connection option is not available for residential connections; a full connection fee will be required.
4. All irrigation services require a backflow preventer on the customer's side of the irrigation.

Temporary Water and Fire Hydrant Connections

Fire Hydrant connections for temporary water are available for rental. Please call 311 or 704-336-7600 for pricing and additional information.

Developer Installed Service Connections by Subdivision Developer Funded Contract Process

1. Connection fees do not apply to services installed by the developer during the construction of water/sewer systems under contract with and donated to CLTWater.
2. Meter charges ($161.00 for 5/8" meter, $244.00 for 1") and system development fees are due for each new water service installed in the new development. Meter charges and system development fees can only be paid when the project/phase has received final approval from CLTWater. System Development fees will be the current effective rate when they are paid. Example: developer installed 5/8" water and 4" sewer, $846 + $2,933 + $161 = $3,941.
3. Meter charges, system development fees and meter deposits for 1½-inch and larger water services must be paid as part of the final project approval process. Such services will automatically be activated in the name of the person or company paying the fees.

EXHIBIT J