CITY OF HENDERSONVILLE
WATER SEWER ADVISORY COUNCIL

Operations Center - Assembly Room | 305 Williams St. | Hendersonville NC 28792
Monday, July 24, 2023 – 6:00 PM

MINUTES

Present: City of Hendersonville Council Member & Chair Jerry Smith, County Commissioner & Vice Chairman Daniel Andreotta, City of Hendersonville Council Member Debbie Roundtree, City of Hendersonville Water/Sewer Customer Representative Chuck McGrady, Henderson County Water/Sewer Customer Representative Andrew Riddle, Village of Flat Rock Council Member David Dethero, Town of Fletcher Council Member Sheila Franklin, Town of Laurel Park Council Member Paul Hansen, City of Saluda Council Member Stan Walker, Town of Mills River Mayor Pro-Tem Randy Austin

Absent: Partnership for Economic Development Representative Carsten Erkel

Staff Present: City Manager John Connet, Assistant City Manager Brian Pahle, Budget Manager Adam Murr, City Engineer Brent Detwiler, Utilities Director Lee Smith and Utilities Engineer Adam Steurer and others.

1. CALL TO ORDER

Chairman Jerry Smith called the meeting to order at 6:00 p.m. and welcomed those in attendance.

2. APPROVAL OF AGENDA

Paul Hansen moved to approve the agenda as presented. A unanimous vote of the Council Members present followed. Motion carried.

3. APPROVAL OF MINUTES

A. Approval of the April 24, 2023 Minutes.

Andrew Riddle moved to approve the minutes of April 24, 2023 as presented. A unanimous vote of the Council Members present followed. Motion carried.

4. NEW BUSINESS

A. Approval of Amended Annual Schedule of Regular Meetings - *John Connet, City Manager*

City Manager Connet explained that due to construction at the City Operations Center, we had to move our meetings to City Hall. As a result, we must adopt an amended annual schedule of regular meetings.

Daniel Andreotta moved that the Water and Sewer Advisory Committee approve the Amended Annual Schedule of Regular Meetings. A unanimous vote of the Council Members present followed. Motion carried.

B. Update on Water and Sewer Capital Projects – *Lee Smith, Utilities Director & Adam Steurer, Utilities Engineer*

Adam Steurer presented a PowerPoint slide giving an update of all of the water & sewer capital projects: Etowah Water System Improvements; Clear Creek Sewer Interceptor Replacement; French Broad River Intake & Pumping Station; Water Treatment Facility Expansion; North Fork Reservoir Dredging; WWTF Replacement/Repair Projects and UV Disinfection Replacement.

Etowah Water System Improvements

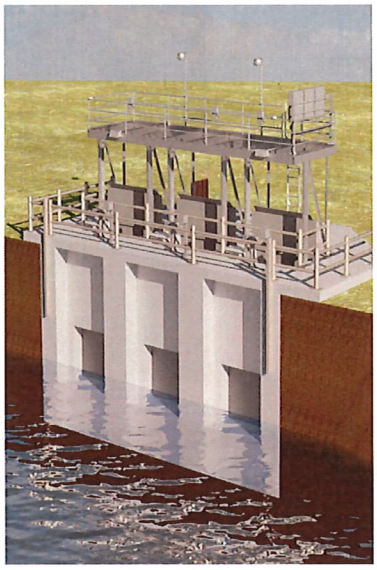
- New 500,000-gal storage tank
- New pump station
- ~15,000 feet of 12-inch water pipe
- Improve pressure and fire flow
- North Greenwood Forest Drive Water Replacement Completed
- Status: Project Activated
- Cost: $8M

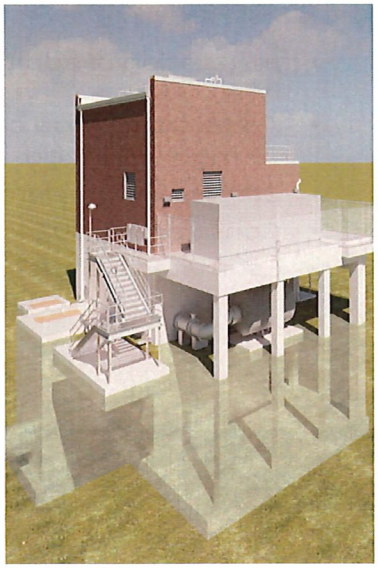
Clear Creek Sewer Interceptor Replacement

- Existing sewer undersized for current and future flows in Clear Creek Basin
- ~3,500 feet of 30" sewer
- Status: Substantially Complete
- Cost $4.5M

French Broad River Intake and Pumping Station

- Additional water source
- 15 mgd initial capacity and expandable to 21 mgd
- Under Construction – Completion Summer 2024
- $23.5M
- ~60% Complete per pay applications





French Broad River Intake and Pumping Station

Water Treatment Facility Expansion

- Installation of additional filter
- Additional 3 mgd capacity 12 mgd to 15 mgd
- Status: Design/Permitting
- Construction 2024
- Estimated Cost: $2.1M

North Fork Reservoir Dredging

- Removal of accumulated sediment, increase storage volume
- Status: Construction
- Construction Cost: $942,000

North Fork Reservoir Dredging

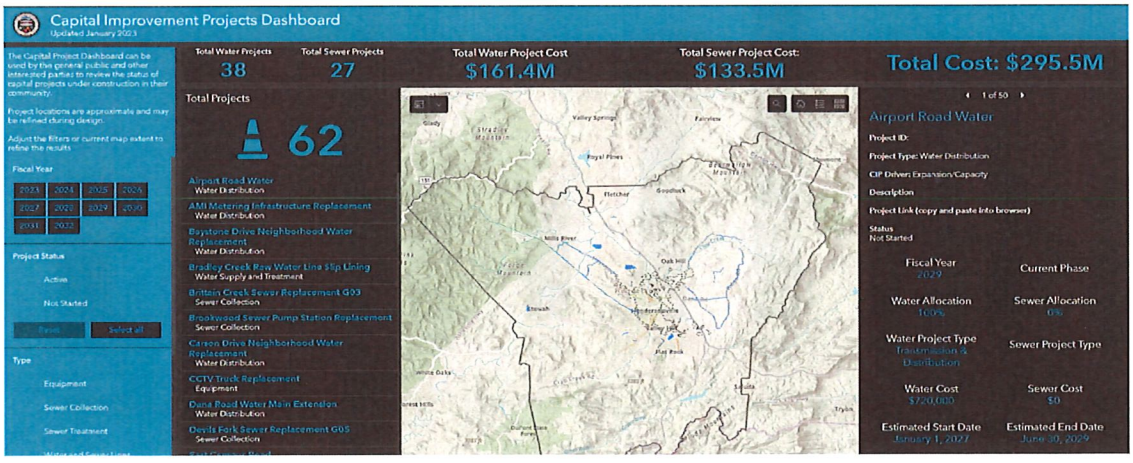
WWTF – Replacements/Repair Projects

- Ultraviolet (UV) Disinfection Improvements
  - Replaces existing equipment
  - Adds treatment capacity
  - Adds redundancy
  - Under construction – completion late 2023
  - $3.9M
- Aeration Basin No. 2 Repairs and Rehabilitation
  - Repairs bowing basin wall
  - Construction beginning summer 2023
  - $1.6M
- Both projects funded mostly through a $5.0 M grant allocation

WWTF – Biosolids Thermal Dryer

- Reduce solids management costs
- Produce high-quality biosolid
- Status: Design/Permitting
- Construction 2024/2025
- Estimated Cost $12.5M

Capital Projects Dashboard



For More Information and Projects:

Water & Sewer CIP Dashboard

C. Water & Sewer System Development Fees – *Adam Steurer, Utilities Engineer*

Adam Steurer explained the background, considerations, assessment methodologies, calculations, dwelling size and the cost for residential and non-residential.

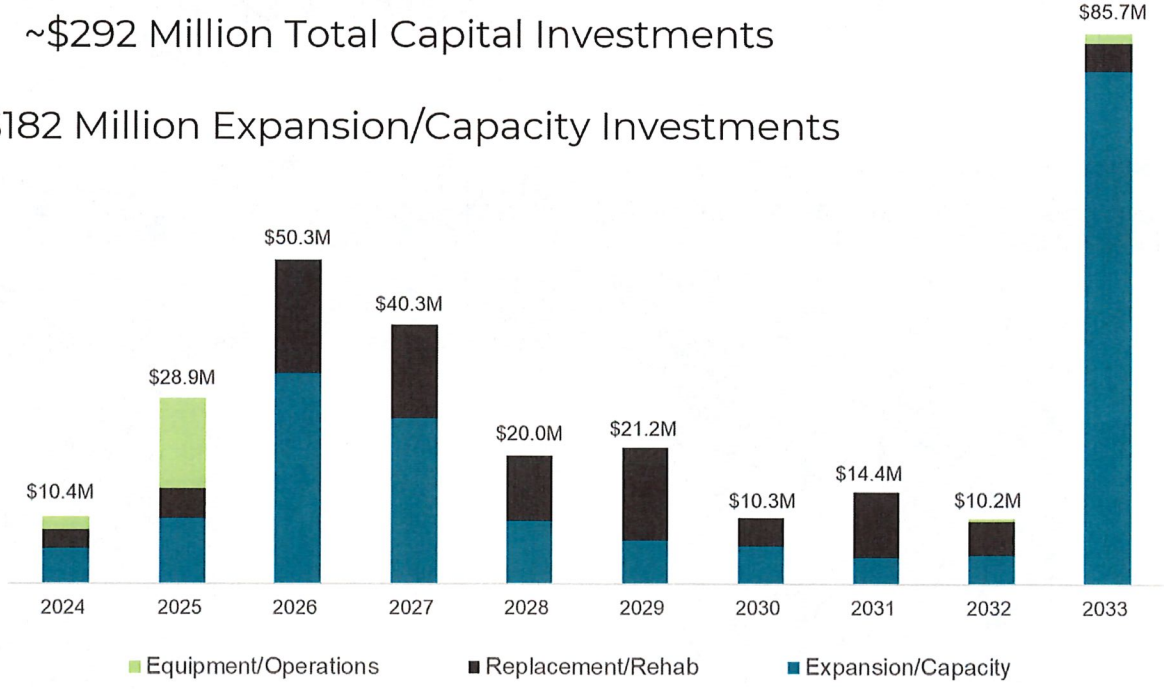
System Development Fees

- Fees charged for new connections joining the water and wastewater system and connections requiring additional system capacity
- Intended to recover the cost of constructing water and wastewater capacity, "growth pays for growth"
- Fees are applied based on units of service (representing potential demand on utility system / large user vs. small user)

Capital Improvement Plan FY2023

~$292 Million Total Capital Investments

~$182 Million Expansion/Capacity Investments



SDF Background

- Hendersonville assessed water/sewer SDFs until September 2016
- 2016 Town of Carthage, NC lawsuit
  - Challenged authority to charge certain water/sewer fees including SDFs
- Fees are legislated in North Carolina
  - Public Water and Sewer System Development Fee Act (NC General Statutes - Chapter 162A Article 8) approved July 2017

Considerations

- SDFs allow the utility to recover at least a portion of cost of constructing system infrastructure
- Lack of SDFs places the full cost of infrastructure on user rates
- SDFs have a potential impact on development but are very common in North Carolina
  - 81 NC utilities charge SDFs (2018/2019)
- Requirements and limitations on the use of SDFs given legislation
  - Separate tracking of revenues from SDFs
  - Limitations on the use of proceeds depending on the approach

Assessment Methodologies

Methodology	Description	Appropriate For
Buy-In Method	Fees are based on cost of constructing existing utility system.	System with ample existing capacity to sell.
Incremental Cost Method	Fees are based on planned growth-related capital improvements	System with limited or no existing capacity to sell.
Combined Method	Fees are based on cost of existing system and planned capital improvements	System with existing capacity to sell and with planning growth-related capital projects.

Financial consultant (Stantec) recommend the use of the combined method for water and sewer SDFs

Combined Method Calculation

$$\text{System Development Fee} = \frac{\text{Value of System} - \text{Credit}}{\text{System Capacity}}$$

1. **Value of Utility System**
   - Depreciated value of current assets in place, escalated to current replacement cost
   - Plus: The value of future planned capital projects that will add capacity to the system (10-Year Capital Plan)
2. **Credit**
   - Outstanding principal on existing utility debt
   - NPV of principal on future debt over planning period (must equal at least 25% of expansion capital projects, if not additional credit required.
   - Donated/Contributed and non-core system assets
3. **System Capacity**
   - Total capacity in the utility system measured in units of services (Equivalent Residential Units or ERUs) with the existing system and expansion of the system.

Units of Service

Water System (based on historical demands)

Type	Average Consumption (gpd)
Single Family (1 equivalent residential unit - ERU)	136
Multi-Family	85
Mobile / Manufactured Home	133

Water System ERU Calculation	
Daily Usage per ERU (gpd)	136
Max Day Peaking Factor	1.64
Peak Day Usage per ERU (gpd)	**223**
Multi-Family Units (ERUs per Unit)	0.63

Sewer System (NC Planning Requirements)

Sewer System ERU Calculation	
State Standard Flow Rate (gpd) per Bedroom	120
Planning # of Bedrooms	2
Sewer Use per ERU (gpd)	**240**
Multi-Family Units (ERUs per Unit)	0.63

Water SDF Calculation

	Source / Treatment	Transmission / Distribution	Total
Replacement Value of Existing Depreciated Assets	$34,607,998	$51,705,500	$86,313,497
Expansion Capital Projects	63,485,535	45,005,000	108,490,535
Total Value	**$98,093,533**	**$96,710,500**	**$194,804,032**
Less Credits			
Outstanding Debt Principal	($7,240,635)	($10,817,749)	($18,058,384)
Donated and Non-Core Assets	(1,219,302)	(8,960,275)	(10,179,577)
Revenue Credit (NPV of future debt principal over period)	(26,613,455)	(18,866,322)	(45,479,777)
Net System Value	**$63,020,141**	**$58,066,154**	**$121,086,295**
System Capacity - Million Gallons per Day*	18	18	
Level of Service per ERU (gallons per day)	223	223	
Equivalent Residential Units (ERU)	**80,703**	**80,703**	
Water System Development Fee Per ERU	**$781**	**$720**	**$1,501**

**Includes 6 MGD WTP plant expansion*

Water Calculated Fee - $6.73 per gallon per day

Sewer SDF Calculation

	Treatment	Conveyance / Collection	Total
Replacement Value of Existing Depreciated Assets	$28,145,176	$35,802,595	$63,947,771
Expansion Capital Projects	57,750,769	16,212,000	73,962,769
Total Value	**$85,895,945**	**$52,014,595**	**$137,910,540**
Less Credits			
Outstanding Debt Principal	($6,446,996)	($8,201,021)	($14,648,017
Donated and Non-Core Assets	(63,282)	(2,629,945)	(2,693,227)
Revenue Credit (NPV of future debt principal over period)	(24,209,412)	(6,796,152)	(31,005,564)
Net System Value	**$55,176,255**	**$34,387,477**	**$89,563,732**
System Capacity - Million Gallons per Day*	7.8	7.8	
Level of Service per ERU (gallons per day)	240	240	
Equivalent Residential Units (ERU)	**28,139**	**28,139**	
Wastewater System Development Fee Per ERU	**$1,698**	**$1,058**	**$2,756**

**Includes 3 MGD WWTP plant expansion*

Sewer Calculated Fee - $11.48 per gallon per day

Assessment of System Development Fees

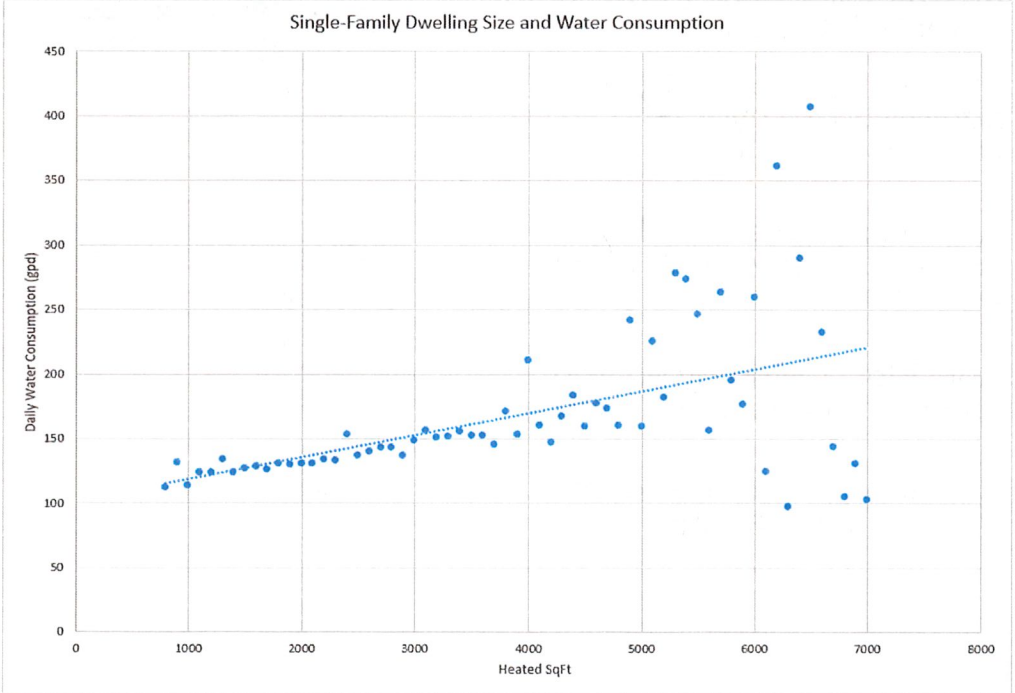
- SDFs must be applied based on units of service (represents potential demand)
- SDFs can be scaled by meter size based on hydraulic capacity of meter
- American Water Works Association (AWWA) meter equivalents
- Consider scaling by heated square footage for residential
- Consider master-metered multi-family per unit

Meter size	Equivalent Residential Units (ERU)
3/4“	1.00
1"	1.67
1 ½"	3.33
2"	5.33
3”	11.67
4"	21.00
6"	43.33
8”	93.33
Multi-Family (per unit)	0.63

Calculated System Development Fees

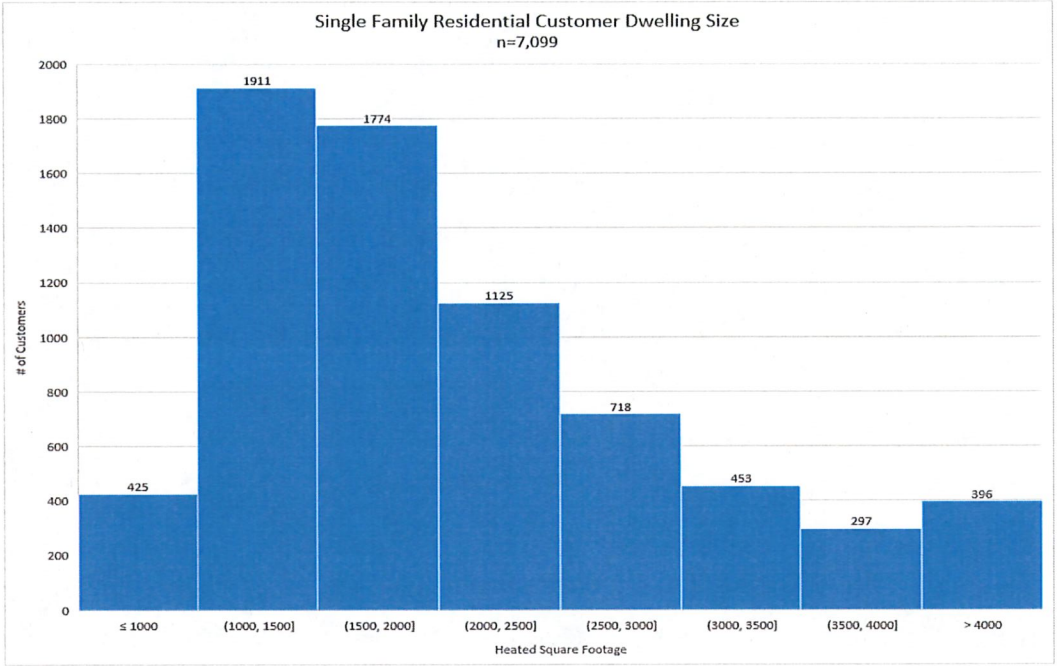
Meter size	Calculated Water SDF	Current No. of Water Meters	Calculated Wastewater SDF	Current No. of Wastewater Customers	Combined SDF
3/4" (1 ERU)	$1,501	29,564	$2,756	9,767	$4,257
1"	$2,502	622	$4,593	297	$7,095
1 ½"	$5,003	317	$9,187	177	$14,190
2"	$8,005	142	$14,699	79	$22,704
3"	$17,512	24	$32,153	12	$49,665
4"	$31,521	11	$57,876	4	$89,397
6"	$65,043	11	$119,427	2	$184,470
8"	$140,093	0	$257,227	0	$397,320
Multi-Family (per Unit)	$938		$1,736		$2,674

Residential SDF – Dwelling Size



*Based on historical demands

Residential SDF – Dwelling Size



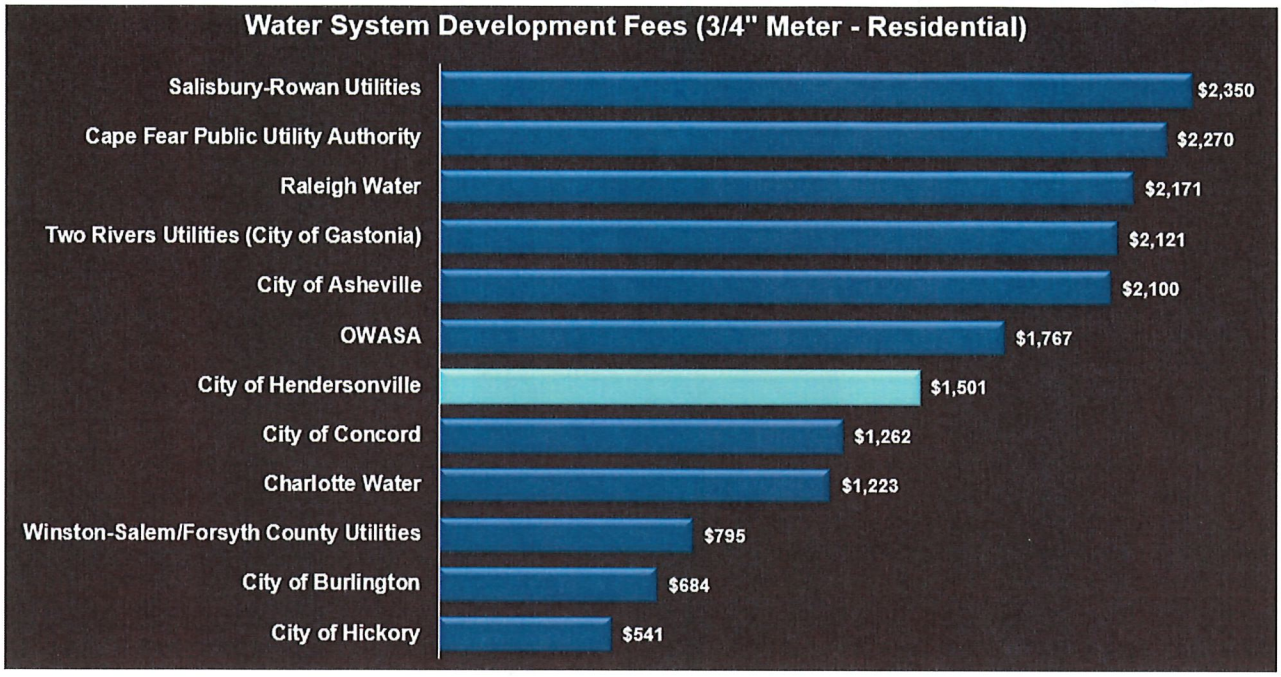
Existing Customer Single-Family Dwelling Size Distribution

Residential Calculated SDFs - Dwelling Size

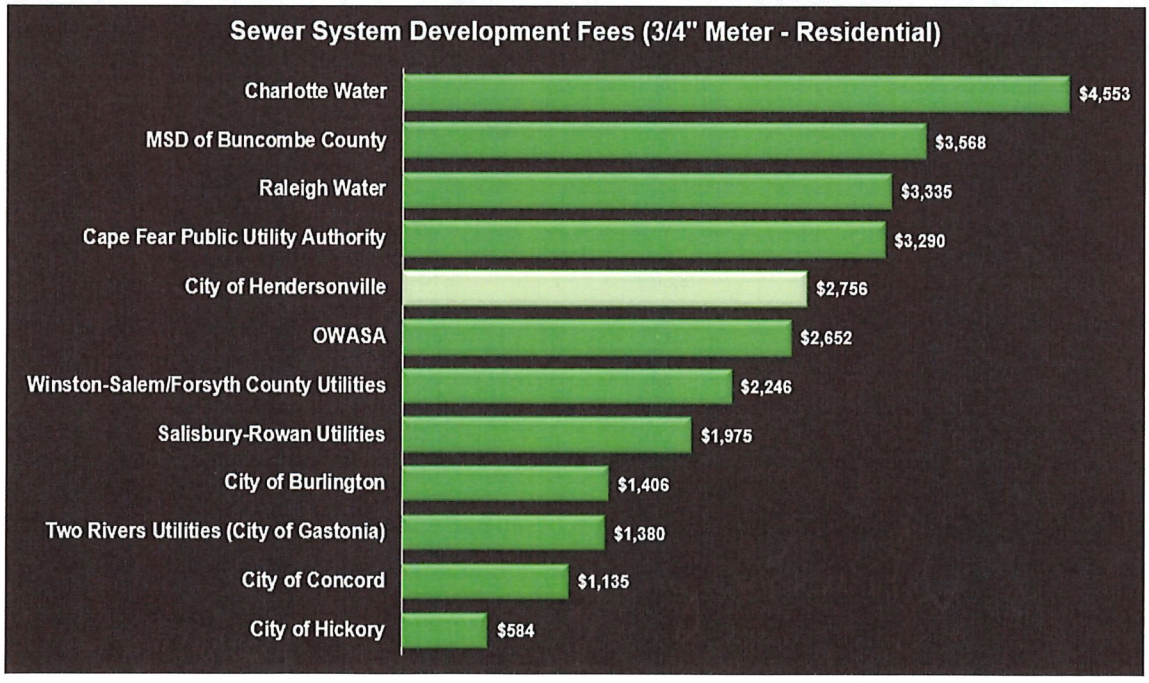
Dwelling Heated Sq Ft	Calculated Water SDF	Calculated Wastewater SDF	Combined SDF	Combined SDF 1 ERU	% of 1 ERU (Dwelling Size)
<1000	$ 1,308	$ 2,401	$ 3,709	$ 4,256	-13%
1,000 - 1,500	$ 1,397	$ 2,564	$ 3,961	$ 4,256	-7%
1,501 - 2,000	$ 1,426	$ 2,617	$ 4,043	$ 4,256	-5%
2,001 - 2,500	$ 1,514	$ 2,778	$ 4,292	$ 4,256	1%
2,501 - 3,000	$ 1,574	$ 2,889	$ 4,463	$ 4,256	5%
3,001 - 3,500	$ 1,692	$ 3,106	$ 4,798	$ 4,256	13%
3,501 - 4,000	$ 1,809	$ 3,321	$ 5,130	$ 4,256	21%
4,000+	$ 2,090	$ 3,836	$ 5,926	$ 4,256	39%
Multi-Family (per unit)	$ 938	$ 1,722	$ 2,660	$ 4,256	-37%

1 ERU: $1,501 (water) + $2,755 (sewer) = $4,256 combined

Water SDF Comparison – 1 ERU



Sewer SDF Comparison – 1 ERU



MSD of Buncombe County: - Multi-family per unit $2,390 (67% of single family)

Multi-Family Residential SDFs

Meter Size Approach

Example	Master Meter Size	Water SDF	Sewer SDF	Combined SDF
Apartment A	3"	$17,512	$32,153	$49,665
Apartment B	4"	$31,521	$57,876	$89,397

Master-Meter Unit Approach

Example	Number of Dwelling Units	Water SDF	Sewer SDF	Combined SDF
Apartment A	208	$195,130	$361,146	$556,276
Apartment B	340	$318,963	$590,335	$909,298

Single-Family Development

Example	Single-Family Units	Water SDF	Sewer SDF	Combined SDF
SF Subdivision A	208	$312,208	$573,248	$885,456
SF Subdivision B	340	$510,340	$937,040	$1,447,380

SDF- Key Takeaways

- Fees assessed to new connections or connections requiring additional capacity.
- Fees recovers costs necessary for system expansion and additional capacity - "Growth pays for Growth"
- Lack of SDFs places full cost of infrastructure on user rates
- Reduction in future rate increases possible
- Fees assessed equitably based on units of service/demands

Schedule

Group	Action	Date	Time
Business Advisory Committee (BAC)	Intro. presentation	07/10/23	11:30am
Water & Sewer Advisory Council (WSAC)	Intro. presentation	07/24/23	6:00pm
City Council	Intro. presentation	08/23/23	4:00pm
City Staff	Analysis published on website	09/04/23	5:00pm
Business Advisory Committee (BAC)	Final presentation & board recommendations	10/09/23	11:30am
Water & Sewer Advisory Council (WSAC)	Final presentation & board recommendations	10/23/23	6:00pm
City Council	Second presentation & board recommendation	10/25/23	4:00pm
Chamber of Commerce-Public Policy Committe	Final presentation	10/26/23	8:30am
City Council	Final presentation/adoption	01/04/24	5:45pm

Policy Considerations

1. Timing for Collection of SDFs
   - Legislation outlines when fees are collected (new development: building permit, existing: application for connection)
   - If fees are adopted, Utility will need to determine how to handle developments that are in process

2. Multi-Family Residential Approach
   - Use of master meter size vs dwelling unit approach

3. Heated Square Footage Residential Approach
   - Use of dwelling square footage for assessment amount

After some discussion, Adam said he would come back with suggestions regarding master meters vs. individual meters. Also, Jerry Smith asked that the PowerPoint presentations be included with the agenda packet in the future.

5. OTHER BUSINESS - None

6. ADJOURNMENT

There being no further business, the meeting was adjourned at 7:28 p.m.

Jerry A. Smith Jr., J.D., City Council Member & Chairman

ATTEST:

Jill Murray, City Clerk