

#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING

#### AGENDA

#### Thursday, December 02, 2021 7:00 PM

#### CALL TO ORDER AND QUORUM ESTABLISHED:

#### **DELEGATIONS:**

#### **PUBLIC COMMENTS:**

#### MEMBER COMMENTS:

#### **STAFF REPORTS & PRESENTATIONS:**

- 1. Public Works/Utilities Monthly Report for November 2021
- 2. Community & Economic Development Monthly Report for November 2021
- 3. Police Department Monthly Report for November 2021
- 4. Town Clerk/Treasurer Monthly Report for November 2021
- 5. Town Manager Monthly Report for November 2021

#### **CONSENT AGENDA:**

- 6. Town Council Meeting Minutes for October 7, 2021
- 7. Bills November 2021

#### **UNFINISHED BUSINESS:**

8. Establish Public Hearing for Town Hall Rental Rates

#### **NEW BUSINESS:**

9. Preliminary Engineering Report for Sewer Upgrades

#### **INFORMATIONAL ITEMS:**

#### **COMMITTEE REPORTS:**

#### **ADJOURNMENT**



#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING MONTHLY REPORT / PROJECT UPDATE

AGENDA ITEM: Public Works/Utilities Monthly Report for November 2021

DATE: November 23, 2021

PREPARED BY: Josh Irby

#### MONTHLY REPORT / PROJECT UPDATE:

#### Water

- Bi-Weekly Water Project Update Meetings
- Water Meter Replacement continues throughout town
- Training on Sensus Analytics (water meters)

#### Wastewater

• Plant is running well, no exceptions to report

#### Public Works

- Leaf Collection
- Maintenance of Town vehicles, equipment, and buildings
- Set up for meetings at Town Hall
- Weekly Staff Meetings
- Facilities, Utilities, and Sidewalks Committee Meeting
- Put up Christmas Decorations on Main Street

#### ATTACHMENTS:

• DMR for October

#### **HEADS UP ITEMS:**

• Leaf Collection November 1, 2021 to December 30, 2021

11/9/21, 8:08 AM	https://edmr.deq.virginia.gov/edmr_public/E2/Shared/Pages/Util/E2StreamDoc.ashx?id=125901&type=StreamDocType_Printablb
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# COMMONWEALTH OF VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

DEPT. OF ENVIRONMENTAL QUALITY (REGIONAL OFFICE)

# PERMITTEE NAME/ADDRESS (INCLUDE FACILTY NAME/LOCATION IF DIFFERENT)

Northern Regional Office 13901 Crown Court

Woodbridge, VA 22193

NAME: ADDRESS:	Bowling Green Wastewater Treatment Plant co Town of Bowling Green Bowling Green, VA 22427	VA0020737 001 PERMIT NUMBER DISCHARGE NUMBER	Woodbridge, VA 22193
FACILITY LOCATION:	219 Anderson Ave Bowling Green, VA 22427	YEAR         MO         DAY         YEAR         MO         DAY           FROM         2021         10         01         TO         2021         10         31	NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE COMPLETING THIS FORM.

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#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING MONTHLY REPORT / PROJECT UPDATE

Community Engagement & Economic Development Council Monthly Report for November 2021

**DATE:** 11/24/21

PREPARED BY: Jo-Elsa Jordan

#### MONTHLY REPORT / PROJECT UPDATE:

#### Harvest Festival

- Collect W9 forms as needed for accounting purposes (expenditures).
- Process invoices for payment.
- Coordinate with beverage distributor for refund.
- Coordinate with Town Clerk/Treasurer to determine updates to expenditures and revenues. \*See attached
- Coordinate with Town Clerk to determine delinquent meals tax for food vendors; Create/mail delinquent tax letter. \*See attached.
- Follow up with Atlantic Broadband on remittance of sponsorship contribution.

#### Bowling Green Christmas Parade of Lights: 12/11/21, 5:00 p.m.

- Complete VDOT Land-Use Permit application as required for road closures; Coordinate with BGPD and VSP for required signatures.
- Finalize marketing graphic/promo package \*See attached
- Accept parade registration forms \*See attached
- Update Christmas Parade Route Map to show 'No Parking' at Town Hall and to offer alterative parking areas.
- Upload on to website/event calendar
- Create event on Facebook
- Paid advertising (social media)
- Create spreadsheet for participants
- Order trophies
- Coordinate with Roma's for awards ceremony
- Create and distribute letters to Maury Avenue residents \*See attached
- Secure Santa Claus and vehicle
- Recruit volunteers
- Recruit Judges
- Secure bathroom units
- Coordinate with Public Works for construction lights
- Coordinate with BGPD for positive safety barriers.

#### **Economic Development:**

• Send blanket email to Caroline County business community to generate interest in

recruitment of a new board appointee; publish on website.

- Cancel EDA meeting for 11/22/21; Update website
- Review four (4) 60 minute video drafts produced by ReThink Main Street.
- Review written marketing draft by ReThink Main Street
- Correspondence with owners of Caroline Square for meeting/introduction.
- Visit Main Street Massage; Meet business owner; Promote on Facebook.

#### **Planning & Zoning:**

- Gibson's Ice Cream; Communication with business owners about potential expansion.
  - Research Town Code
  - Email correspondence between the Zoning Administrator and business owners
  - Coordinate agenda item for Gibson's to present a request for modification to the site plan requirement at Planning Commission.
- Bowling Green Meadows; Research fence setbacks/requirements for Bowling Green resident.
- 18131 A.P. Hill Blvd; Research Town Code for signage requirements for commercial property as needed for a sign permit.
- Follow up with Town Manager/Zoning Admin on behalf of Fairmont for questions regarding storm water and proffers.
- Reformatting Chapter 10 in the Comprehensive Plan in Google Docs.
- Set up teleconference for PC board member.
- Attend 11/15/21 Planning Commission meeting; Record meeting minutes

#### **Community Relations:**

- Coordinate with Town Clerk/Treasurer and owners of Old Mansion for their request for an agenda item to address Council at 11/4/21 Town Council meeting; Owners told to speak in Public Comment.
- Coordinate with VCU graduate student and intern at The Berkely Group for an online community survey; Share survey on social media channels and publish on website.
- Communication with billboard landowner to solidify the Sign Agreement.
- Attend Pitts & Manns Meet & Greet on 11/18/21

#### Misc.

- Attend weekly staff meetings; Monday's at 10:00 a.m.
- Send Town Council PowerPoint presentation on ARPA guidelines.
- Staff report
- General social media posts
- Update proposed Town Hall Rental Rates for December Council meeting.
- Coordination with Caroline Computers and Bowling Green Electronics to resolve internet issues at Town Hall; Order access point.

**HEADS UP ITEM:** Bowling on the Green Virginia Wine Festival: This event takes place on the first Saturday in June, which falls in this fiscal year of 2021. By reallocating funds from the Wine Festival to be used for the Harvest Festival in the FY21 budget, currently there are no funds for the 2022 Bowling on the Green Wine Festival.

ITEM	COST
Pumpkins	600
Sponsor Banner	112
Oriental Trading	225
Entertainment	4600
Beer Order	866
DJ (Car Show)	300
Car Show Give-Away	56.55
Beer Truck	300
Tractor Show	422.15
Radio Advertising	1650
Bathrooms	1200
Dumpsters	2700
Hay Bales	140
Security	2208
VDOT Permit	100
Petting Zoo	500
Trophies	910
Clean Up	500
Graphic Design	250
Front Porch	900
HF Banner	148
Facebook Advertising	250
Main Stage	2400
Misc.	40
TOTAL	21,378
UNDER BUDGET	2,122
REVENUES	
Vendor Fees	11,120
Sponsors	7,000
*Atlantic Broadband	1,000
Beer Garden Sales	1,322
Beer Refund (VA Eagle)	220
Car Show Registrations	1,680
Motorcycle Show Registrations	180
Meals Tas (11/24/21)	575.95
TOTAL	23,097.95
NET REVENUE	1,719.95

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Town of Bowling Green Economic Development Office 117 Butler Street ~ P.O. Box 468 Bowling Green, Virginia 22427

November 24, 2021

To Whom It May Concern:

Thank you for participating in the 31st Annual Bowling Green Harvest Festival in 2021! The Town of Bowling Green was proud to offer festival-goers a variety of some of the best food that Virginia has to offer. We are already planning for Harvest Festival in 2022 and will continue to improve our process to ensure a great experience for our food vendors. We hope that you will join us for another successful Harvest Festival *Saturday, October 15, 2022*.

As of this mailing, the meals taxes from your participation at Harvest Festival last October have not been received and are **PAST DUE**. In order to be accepted for future events in the Town of Bowling Green, all food vendors are required to be current on payment of meals taxes. For your convenience, I have attached the required form for remittance of meals taxes due for 2021.

Again, we appreciate your previous attendance at the Harvest Festival, and we look forward to receiving payment for the outstanding taxes.

Sincerely,

Jo-Elsa Jordan Director of Community & Economic Development

CC: Allyson Finchum, Town Manager Tracy Wright, Town Treasurer

ENCLOSURE



# PARADE APPLICATION FORM

Parade will begin promptly at 5:00 p.m.

In order to participate in the parade, all units MUST be in line prior to 5:00pm on the day of the parade.

Entries must be RECEIVED no later than close-of-business **Monday**, **December 6**, **2021**. Applications are available at the Bowling Green Business Office located at the Town Hall, or downloaded online through the Events Calendar for both the Town of Bowling Green and Caroline County websites.

Applications may be submitted in person to the Bowling Green Town Hall Business Office or by mail to:

Town of Bowling Green P.O. Box 468 Bowling Green, Virginia 22427 Or emailed to the Bowling Green Events Coordinator at: EDAcoordinator@townofbowlinggreen.com

\*Commercial vehicles are limited to two (2) per company. ALL entries are required to be decorated in accordance with the theme, *"Parade of Lights"*.

Type of entry (please check one only): Float Marching Unit Emergency Unit Animal (Please indicate what type of animal(s)):
Motorized
Name of Sponsor or Organization:
Contact Person:
Phone Number:
Mailing Address:
Email:
Description of entry, including approximate length:

\*You may attach a separate narrative about your entry for the MC to read.

I hereby certify that I have read the rules and regulations and agree to abide by them. I understand that my participation is voluntary and safety measures to prevent the contraction and/or spreading of COVID-19 is my responsibility, not the Town of Bowling Green's. I understand that the Town of Bowling Green cannot be held responsible for theft, damage, injury or illness before, during or after this event.

Signature: \_\_\_\_

# **JUDGING CRITERIA & INSTRUCTIONS**

1<sup>st</sup> Place Best Float 1<sup>st</sup> Place Best Marching Unit 1<sup>st</sup> Place Best Commercial Vehicle 1<sup>st</sup> Place Best Emergency Vehicle 1<sup>st</sup> Place Best Motorized Vehicle 1<sup>st</sup> Place Best Animal Entry

## Winners will be announced at Roma's Italian Restaurant following the parade! Also, check out our Facebook page and website! www.townofbowlinggreen.com

- **No Santas on floats!** Only ONE (1) Santa will be allowed in the Parade; Will ride at the end.
- **Commercial vehicle entries are limited to TWO (2) per company.** Horns are **NOT PERMITTED** in the parade route.
- Please maintain the appropriate distance between your unit and the next. Stop in front of the judge's stand for no more than one (1) minute.
- Parade numbers will be given out right before the start of the parade and must be clearly visible on the **driver's side** of the entry. Please make space for this on the driver's side of the entry.
- Sirens and horns are prohibited while lining up, waiting in line and DURING the parade route.
- Walkers must NOT walk back through the parade route, but may use any of the side streets.
- Once lined up, motorized vehicles must remain parked and turned off until instructed to move.
- Candy may not be thrown from floats or vehicles.
- Children on floats and in marching units should be supervised by the appropriate number of adults at all times.
- Each unit is responsible for cleaning up their staging area, as well as along the parade route, if necessary.
- If at any time leading up to the parade day, the weather or street conditions are determined to be unsafe, the parade will be rescheduled to Sunday, December 12, 2021 at 5:00pm. If road conditions are still deemed unsafe for the rain date, the parade will be cancelled. Information will be available on the Town of Bowling Green's Facebook page, the town website (www.townofbowlinggreen.com), at the Bowling Green Town Hall or by calling the Events Coordinator at 804-516-5045.
- No alcohol allowed.
- The Town of Bowling Green reserves the right to reject any parade entry deemed inappropriate or unsafe.

## PARADE ROUTE – LINE UP ON MAURY AVENUE – TRAVELING NORTH ON MAIN STREET! (See next page)

# PARADE ROUTE

Check in will begin at 3:30 p.m. at the Milford Street and White Street intersection, with parade entries lining up along Maury Avenue. The parade will begin promptly at 5:00pm and will proceed NORTH on Main Street. Marching units will end their route at Atlantic Union Bank and proceed to the Town Hall where vehicles for pick up will be staged. All motorized parade entries will proceed to Oakridge, where the parade will conclude.

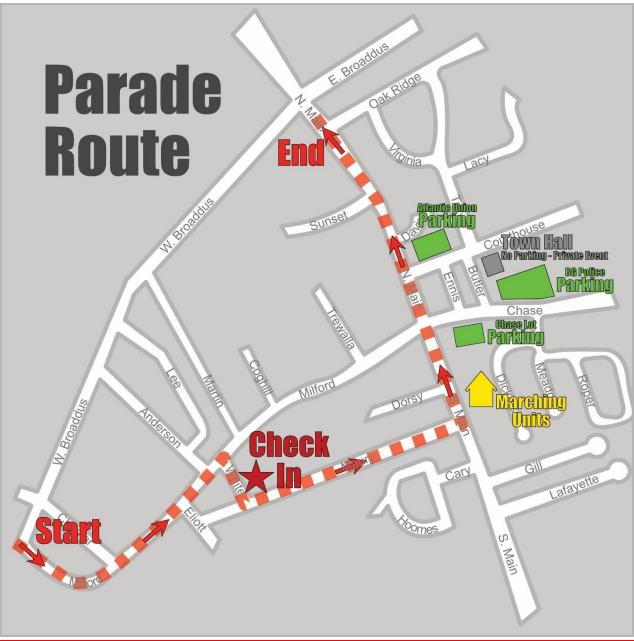
## LINE UP INSTRUCTIONS

- 1. Parade participants are required to wear masks at the registration check point.
- 2. Staging and line-up for the parade will occur on Maury Avenue.
- 3. Vehicles will access Maury Avenue by turning RIGHT onto Milford Street from Broaddus Avenue and turning RIGHT again onto White Street, where registered parade entries can check-in.
- 4. Maury Avenue will be closed to through traffic at 3:00pm. Main Street will close at 4:30 pm.

#### MARCHING UNITS

- 5. Vehicles transporting bands and/or marching units will drop off parade participants at the Antioch Christian Church located at 131 S. Main Street, Bowling Green. CHECK-IN FOR MARCHING UNITS WILL BE AT THE ANTIOCH CHRISTIAN CHURCH. Marching units will assemble with their groups in the front church yard. A Parade Assistant will be available to guide the units. Empty band vehicles will proceed to the gravel parking lot labeled "EVENT PARKING" on Chase Street or at Atlantic Union Bank. (Refer to the Parade Route Map on the next page.)
- 6. All other parade units will proceed as follows:
  - All units other than marching units (including floats, trucks and other vehicles) are to begin registration and check-in at the intersection of Milford Street and White Street. Upon being checked in, parade entries will proceed to line up along Maury Avenue. Maury Avenue will serve as the staging area for final decorations on floats and vehicles.
  - The leader of each unit or the operator of each vehicle (other than a marching unit) MUST CHECK IN with the Bowling Green Events Coordinator at the corner of Milford Street and White Street. Failure to follow the required check-in procedure will result in your unit or vehicle NOT participating in the parade or being judged.
  - After check in at the Milford Street and White Street intersection, the Events Coordinator will assign your unit or vehicle a position in the line-up and you will move immediately to that position along Maury Avenue.
- 7. When the parade begins (promptly at 5:00pm), a Parade Assistant will inform each unit when to begin to enter the parade route.

## PARADE ROUTE



#### **DINING BEFORE & DURING THE PARADE:**

VISIT THE MIX HOUSE, YOUR JUST DESSERTS, THE CORNER STORE, THE HEIST & LOS DOS AMIGOS ON MAIN STREET

#### MORE RESTAURANTS IN BOWLING GREEN:

ROMA'S, PINO'S, CHINA INN, SUBWAY, McDONALD'S and CELESTINO RESTAURANT

#### **SHOPPING:**

ARTISM by JOEY, TINDER'S JEWLERY & GIFTS, THE PAINTED HORSE, CHERRY'S WORLD IMPORTS, A&M HOME CENTER, CLASSIC COTTAGE & ANTIQUES, MIKE'S OUTDOOR SHOP

# Christmas Parade of

# SATURDAY, DECEMBER 11, 2021 5:00 PM

REGISTRATION FORMS AVAILABLEE AT

Winners will be announced following the parade at ROMA'S ITALIAN RESTAURANT!

FOR MORE INFORMATION, CONTACT (804) 633-6212 OR EDACOORDINATOR@TOWNOFBOWLINGGREEN.COM RAIN DATE IS SUNDAY, DECEMBER 12, 2021



November 17, 2021

Dear Maury Avenue Resident,

It's that time of year again and the annual Bowling Green Christmas Parade is approaching! This year is expected to be a great celebration of the holidays and our community, as floats and marching units will transform Main Street into a magical display of lights!

This letter is to notify you that the parade procession will be the same as in years past, with the line-up occurring on Maury Avenue and the parade entries heading North on Main Street. Maury Avenue will be closed to non-residents from 3:00-5:30pm Saturday, December 11, 2021. You will have a front row seat, as the parade participants begin lining up! Line-up begins at 3:00pm, at the intersection of Maury Avenue and White Street, with the parade beginning at 5:00pm.

We politely ask that you park your vehicles in your driveway, rather than on the street between 3:00pm and 5:00pm.

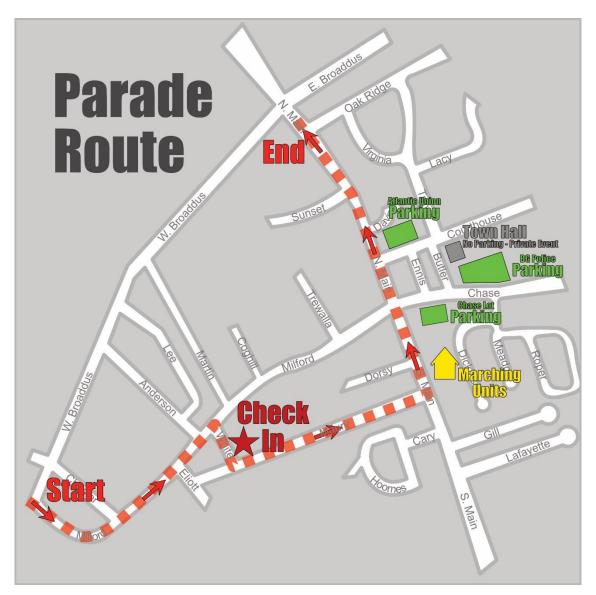
In the event of inclement weather on Saturday, the parade will be rescheduled to occur the following Sunday, December 12, 2021 at the same times indicated above.

Finally, if you have any questions or concerns, please feel free to contact me directly on my cell phone at (804) 516-5045 or by email at edacoordinator@townofbowlinggreen.com *before* Friday, December 10<sup>th</sup>.

Warm regards,

Jo-Elsa Jordan Events & Economic Development Winners will be announced at **ROMA'S PIZZA** following the parade.

# PARADE ROUTE



#### **DINING BEFORE & DURING THE PARADE:**

VISIT THE MIX HOUSE, YOUR JUST DESSERTS, THE CORNER STORE, THE HEIST & LOS DOS AMIGOS ON MAIN STREET

#### **MORE RESTAURANTS IN BOWLING GREEN:**

ROMA'S, PINO'S, CHINA INN, SUBWAY, McDONALD'S and CELESTINO RESTAURANT

**SHOPPING:** 

ARTISM by JOEY, TINDER'S JEWLERY & GIFTS, THE PAINTED HORSE, CHERRY'S WORLD IMPORTS, A&M HOME CENTER, CLASSIC COTTAGE & ANTIQUES, MIKE'S OUTDOOR SHOP



#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING MONTHLY REPORT / PROJECT UPDATE

AGENDA ITEM:	Police Departments Monthly Report November 2021
DATE:	11/27/2021
PREPARED BY:	Chief Justin Cecil Sr.

#### MONTHLY REPORT / PROJECT UPDATE:

Police Activity for November 2021

- 31 Total calls for service
- 42 Summons / Parking tickets
- 75 Park walk and talks
- 14 Assist other agencies
- 51 Property checks/ Vacation checks/ Business Checks
- 1 Warrant Services/ Arrests
- 1 Motor Vehicle Accidents
- 3 Alarms

# ATTACHMENTS: None

**HEADS UP ITEMS:** 



#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING MONTHLY REPORT / PROJECT UPDATE

AGENDA ITEM:	Town Clerk/Treasurer Council Monthly Report November 2021
DATE:	November 30, 2021
PREPARED BY:	Tracy Wright

#### MONTHLY REPORT / PROJECT UPDATE:

- Attended Monthly Meeting for Water/Meter Project.
- Attended Project-Update Utility Meeting (Bi-weekly).
- Attended Weekly Staff Meetings
- Attended Sensus RNI Training November 30, 2021 & December 01, 2021
- Completed billing for 2021 PP, RE, TD, PS Taxes
- Completed monthly payrolls/taxes.
- Completed monthly accounts payable.
- Completed daily register reconciliation.
- Completed daily banking/cc payment processing- supervisor approval.
- Completed Utility bills due December 03, 2021.
- Processed required follow-up information for VRSA Workers' Compensation Policy Audit.

#### ATTACHMENTS:

- Monthly Town Hall Rental Report November 2021
- Delinquent Tax Report Current Report
- YTD Budget Report Current Report

#### HEADS UP ITEMS: NONE

PAGE 1 TIME 11:03	Y-T-D & & AMOUNT & AMOUNT & CONCULARCTED			92,492.73	10,089.50 $24,179.50$ $70.55$ .00 .00	25,593.98	3,737.43	4,511.73	31,419.38 54,309.62 63.35	13,829.38	55,930.17	15,058.32	2 457 99 457 99 22 89-	106,422.38	942.50	8,648.33 4	11,644.08 344.08 344.08 3.04- 2 43 100 00-	11,762.00	7.50-	19,372.81	800.00	00.001 00.000,CL 00.000.000.000.000.000.000.000.000.000	797.22-	362,999.71 1,145,754.29 75.94		.00	.00 10,000.00 100.00		21,347.91 2,652.09 11.05 .00 12,950.00 100.00	21,347.91 15,602.09 42.22		298,798.12 2,011,501.88 87.06 .00 71,204.00 100.00	
	CURRENT AMOUNT 			48,007.27	10,089.50	19,906.02	1,262.57	488.27	31,419.38	16,170.62	12,069.83	4,941.68	.00			12,151.67	11,644.08	12,738.00	21,907.50	12,127.19	00.	00.	797.22	362,999.71		00.	00.		21,347.91 .00	21,347.91		298,798.12 .00	
TOWN OF BOWLING GREEN REVENUE SUMMARY 7/01/2021 - 11/29/2021	APPR. AMOUNT 			140,500.00	34,269.00	45,500.00	5,000.00	5,000.00	85,729.00	30,000.00	68,000.00	20,000.00	00.000,062	235,000.00	3,200.00	20,800.00	11,300.00	24,500.00	21,900.00	31,500.00	800.00	15,000.00	00.	1,508,754.00		10,000.00	10,000.00		24,000.00 12,950.00	36,950.00		2,310,300.00 71,204.00	
TOWN OF BOW REVENUE 7/01/2021 -	BUDGET AMOUNT 			140,500.00	34,269.00	45.500.00	5,000.00	5,000.00	85,729.00	30,000.00	68,000.00	20,000.00	00.000 002	235,000.00	3,200.00	20,800.00	11,300.00	24,500.00	21,900.00	31,500.00	800.00	15,000.00 A15 256 00	00.	1,508,754.00		10,000.00	10,000.00		500.00 12,950.00	13,450.00		2,310,300.00 71,204.00	
* GL060AA *	DESCRIPTION	FUND #-100 ***GENERAL FUND REVENUE***		***REAL ESTATE**	***RT 301 SPECIAL TAX DISTRICT*** ***pitri.tr service***	***PERSONAL PROPERTY***	***PENALTY & INTEREST***	INTEREST EARNED	***RFUSE COLLECTION FEES***	CONSUMER UTILITY TAX	BUSINESS LICENSE	VEHICLE LICENSE FEES	BANK STOCK TAX TEANGTENT OCTIERANCY TAY	MEALS TAX	***PERMITS, FEES AND LICENSES***	***FINES AND FORFEITURES***	***RENTALS*** Bott the shore may		PPTRA REIMBURSEMENT-STATE	COMMUNICATIONS TAX		VIRGINIA FIRE PROGRAMS TRANGERDS IN	MISCELLANEOUS	FUND TOTAL	FUND #-320 ***ECONOMIC DEVELOPMENT AUTH***	DONATIONS	FUND TOTAL	FUND #-400 ***EVENTS AND ACTIVITIES FUND***	EVENTS AND ACTIVITIES USE OF FUND BALANCE	FUND TOTAL	FUND #-500 ***WATER REVENUE***	***WATER REVENUE*** ***SAVINGS TRANSFER***	
11/29/2021	ACCT#	FUND #-100	=	11010	11011	11030	11060	15010	16099	120201	120301	120501	121001	121101	130306	140101	150201	220109	220110	220111	240407	240412	566666		FUND #-320	18990		FUND #-400	19050 410501		FUND #-500	16099 410501	

PAGE 2 11:03	\$ BALANCE UNCOLLECTED		412,478.84 64.24 107,255.00 100.00	519,733.84 69.36	3,773,796.10 80.52
TIME					
	Y - T - D AMOUNT		229,521.16	229,521.16	912,666.90
	CURRENT AMOUNT		229,521.16 .00	229,521.16	912,666.90
TOWN OF BOWLING GREEN REVENUE SUMMARY 7/01/2021 - 11/29/2021	APPR. AMOUNT		642,000.00 107,255.00	749,255.00	4,686,463.00
TOWN OF BC REVENT 7/01/2021	BUDGBT AMOUNT		642,000.00 107,255.00	749,255.00	4,662,963.00
*GL060AA*	DESCRIPTION	FUND #-520 ** SEWER OPERATIONS **	SEWER SALES USE OF FUND BALANCE SEWER	FUND TOTAL	FINAL TOTAL
11/29/2021	ACCT#	FUND #-520	16099 410501		

11/29/2021 *GL060AA*	TOWN OF EXPEND	LIN			TIME	PAGE 11:03	e
	- 1707/10//	1707/67/11 - 1					
ACCT# DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y - T - D AMOUNT	ENCUMBRANCE AMOUNT	UNENCUMBERED BALANCE RE	\$ REMAINING
FUND #-100 ***GENERAL FUND EXPENDITURES***							
12110 **COUNCIL AND ADMINSTRATOR EXPENSE	285,984.00	285,984.00	107,392.15	107,392.15	.00	178,591.85	62.44
	213,094.00	213,094.00	92,451.48	92,451.48	00.	120,642.52	56.61
31100 ***POLICE DEPT. EXPENSES***	187,108.00	1 000 00	66,624.53 2 070 20	66,624.53 2 970 29	00.	120,483.47	197 02-
31200 ****DONATIONS***	17,000.00	17,000.00	00.	00.	00.	17,000.00	100.00
	348,867.00 34.270.00	348,867.00 34,270.00	112,601.33.00	112,601.33	00.	236,265.67 34,270.00	67.72 100.00
	1 087 323 00	1 087 323 00	382.039.78	382.039.78	00	705.283.22	64.86
FUND #-300 ***CIP EXPENDITURES***							
300100 ***CAPITAL PROJECTS FUND(GF)***	.00	. 00	30,484.80	30,484.80	00.	30,484.80- 100.00	100.00-
FUND TOTAL	.00	00.	30,484.80	30,484.80	.00	30,484.80- 100.00	100.00-
FUND #-320 ***ECONOMIC DEV AUTH EXPENSES***							
32100 EDA LOANS AND GRANTS	10,000.00	10,000.00	00.	.00	.00	10,000.00	100.00
FUND TOTAL	10,000.00	10,000.00	.00	.00	.00	10,000.00	100.00
FUND #-400 ***EVENTS AND ACTIVITIES***							
71200 EVENTS COORDINATOR	13,450.00	36,950.00	25,127.19	25,127.19	.00	11,822.81	31.99
FUND TOTAL	13,450.00	36,950.00	25,127.19	25,127.19	00.	11,822.81	31.99
FUND #-500 ***WATER EXPENDITURES***							
500100 ***WATER OPERATIONS*** 500500 ***WATER CIP***	681,504.00 1,700,000.00	681,504.00 1,700,000.00	156,001.13 85,734.00	156,001.13 85,734.00	00.	525,502.87 1,614,266.00	77.10 94.95
FUND TOTAL	2,381,504.00	2,381,504.00	241,735.13	241,735.13	.00	2,139,768.87	89.84
FUND #-520 ***SEWER OPERATIONS***							
500100 ***SEWER OPERATIONS***	749,256.00	749,256.00	212, 327.77	212,327.77	.00	536,928.23	71.66
FUND TOTAL	749,256.00	749,256.00	212, 327.77	212, 327.77	.00	536,928.23	71.66
FINAL TOTAL	4,241,533.00	4,265,033.00	891,714.67	891,714.67	00.	3,373,318.33	79.09

TR504	COUNT	111 98 209	209	189 184 373	373	243 214 457	457	3 0 0 2 6 4 6 9	569	1608	1608		
PAGE 1	BALANCE DUE	1,748.41 2,244.67 3,993.08	3,993.08	3,635.30 5,050.77 8,686.07	8,686.07	6,093.50 6,385.00 12,478.50	12,478.50	5,974.67 7,758.22 13,732.89	13,732.89	38,890.54	38,890.54		
	ADJUSTMENTS	000	.00	0000	.00	0000	.00	0000	.00	.00	.00	ADJUSTED TOTAL	.00
	PAYMENTS	1,442.57- 184.33- 1,626.90-	1,626.90-	3,126.29- 444.23- 3,570.52-	3,570.52-	4,288.49- .00 4,288.49-	4,288.49-	5,143.73- 5,126.78- 5,270.51-	5,270.51-	14,756.42-	14,756.42-	PPTRA CREDIT	.00
	INT. PAID	1.58 .00 1.58	1.58	53.10 53.10 53.10	53.10	2.80 .000 2.80	2.80	1.61 1.61 1.61	1.61	59.09	59.09	ADJUSTMENTS	. 00
NTORY BALANCE-	PENALTY PAID	5.72 .00 5.72	5.72	22.57 22.57 22.57	22.57	17.90 17.90 17.90	17.90	30.40 30.40 30.40	30.40	76.59	76.59	DEPT	DEPT. TOTALS
-TREASURER INVE	TAXES	3,190.98 2,429.00 5,619.98	5,619.98	6,761.59 5,495.00 12,256.59	12,256.59	10,381.99 6,385.00 16,766.99	16,766.99	11,118.40 7,885.00 19,003.40	19,003.40	53,646.96	53,646.96		
	OTHER CHARGES	000.	00.	00000	00.	000	00.	00000	00.	.00	. 00		
11/29/2021	DEPT HALF CLASS	PP2017 1 PP 1 VL HALF TOTALS =	DEPT# TOTALS =	PP2018 1 MC 1 PP HALF TOTALS =	DEPT# TOTALS =	PP2019 1 PP 1 VL HALF TOTALS =	DEPT# TOTALS =	PP2020 1 PP 1 VL HALF TOTALS =	DEPT# TOTALS =	PP TOTALS =	COMPANY TOTALS =		

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11/29/2021	DEPT HALF CLASS	RE2000 1 HALF TOTALS =	DEPT# TOTALS =	RE2001 1 HALF TOTALS =	DEPT# TOTALS =	RE2002 1 HALF TOTALS =	DEPT# TOTALS =	RE2003 1 HALF TOTALS =	DEPT# TOTALS =	RE2004 1 HALF TOTALS =	DEPT# TOTALS =	RE2005 1 HALF TOTALS =	DEPT# TOTALS =	RE2006 1 HALF TOTALS =	DEPT# TOTALS =	RE2007 1 HALF TOTALS =	DEPT# TOTALS =	RE2008 1 HALF TOTALS =	DEPT# TOTALS =	RE2009 1 HALF TOTALS =	DEPT# TOTALS =	RE2010 1 HALF TOTALS =	DEPT# TOTALS =

DEPT HALF CLASS	OTHER CHARGES	TAXES	PENALTY PAID	INT. PAID	PAYMENTS	ADJUSTMENTS	BALANCE DUE	COUNT
RE2011 1 HALF TOTALS =	00.	00.	00.	00.	00.	000.	00.	00
DEPT# TOTALS =	00.	.00	00.	00.	.00	.00	.00	0
RE2012 1 HALF TOTALS =	00.	00	000.	00.	00.	000.	00.	00
DEPT# TOTALS =	00.	.00	00.	00.	00.	00.	.00	0
RE2013 1 HALF TOTALS =	000.	00.	00.	00.	00.	00	00.	00
DEPT# TOTALS =	.00	.00	.00	00.	.00	00.	.00	0
RE2014 1 HALF TOTALS =	000.	00.	000.	00.	00.	00.	00.	00
DEPT# TOTALS =	.00	00.	.00	00.	.00	00.	.00	0
RE2015 1 HALF TOTALS =	000.	22.20	6.78 6.78	.18	14.64- 14.64-	00.	7.56	00
2 HALF TOTALS =	000.	00	00.	00.	00.	00.	00.	00
DEPT# TOTALS =	. 00	22.20	6.78	.18	14.64-	.00	7.56	2
RE2016 1 HALF TOTALS =	000.	. 65	000.	00.	00.	00	.65	чч
DEPT# TOTALS =	.00	. 65	.00	.00	.00	.00	. 65	1
RE2017 1 HALF TOTALS =	00.	.65	000.	00.	00.	00.	.65	нн
DEPT# TOTALS =	.00	. 65	.00	.00	.00	.00	.65	Ч
RE2018 1 HALF TOTALS =	000.	838.63 838.63	83.67 83.67	156.07 156.07	978.99- 978.99-	00.	140.36- 140.36-	44
DEPT# TOTALS =	.00	838.63	83.67	156.07	978.99-	.00	140.36-	4
RE2019 1 HALF TOTALS =	00	518.18 518.18	000.	00.	00.	00.	518.18 518.18	90
DEPT# TOTALS =	.00	518.18	.00	.00	.00	00.	518.18	9
RE2020 1 HALF TOTALS =	00.	5,345.33 5,345.33	60.99 60.99	14.46 14.46	1,126.44- 1,126.44-	00.	4,218.89 4,218.89	31 31
DEPT# TOTALS =	.00	5,345.33	60.99	14.46	1,126.44-	.00	4,218.89	31
RE TOTALS =	.00	6,784.72	151.44	170.71	2,120.07-	.00	4,664.65	46
COMPANY TOTALS =	00.	6,784.72	151.44	170.71	2,120.07-	00.	4,664.65	46

11/29/2021	1		-TREASURER INVENTORY	ENTORY BALANCE-				PAGE 1	TR504
DEPT HALF	CLASS	OTHER CHARGES	TAXES	PENALTY PAID	INT. PAID	PAYMENTS	ADJUSTMENTS	BALANCE DUE	COUNT
TD2011 1 HALF	01 TOTALS =	000.	00.	000.	00	000.	00.	00.	00
DEPT#	TOTALS =	00.	00.	00.	.00	.00	00.	. 00	0
TD2012 1 HALF	01 TOTALS =	000.	00.	000.	00	000.	00.	00	00
DEPT#	TOTALS =	.00	00.	00.	00.	.00	00.	00.	0
TD2013 1 HALF	01 TOTALS =	000.	00.	000.	00	000.	00.	00.	00
DEPT#	TOTALS =	.00	00.	.00	.00	.00	.00	.00	0
TD2014 1 HALF	01 TOTALS =	000.	000.	000.	00	000.	00.	000.	00
DEPT#	TOTALS =	.00	. 00	00.	.00	.00	.00	.00	0
TD2015 1 HALF	01 TOTALS =	000.	000.	000.	00.	00	00.	00.	00
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				DEPT	ADJUSTMENTS	PPTRA CREDIT ADJUSTED	NDJUSTED TOTAL		

#### TOWN HALL RENTALS

#### November

NAME OF USER	ACTIVITY	<u>FEES</u>
Town Hall Activities	Class	\$ 180.00
Water Meter Replacement	Meeting	N/C
Town Council Meeting	Meeting	N/C
Town Council Work Session	Meeting	N/C
Planning Commission	Meeting	N/C
EDA Meeting	Meeting	N/C
General Election		\$100.00
Private Event	Birthday Party	\$575.00
Private Event	Retirement	\$ 675.00
Private Event	Tinsel Town	\$675.00
	Town Hall Activities Water Meter Replacement Town Council Meeting Town Council Work Session Planning Commission EDA Meeting General Election Private Event Private Event	Town Hall ActivitiesClassWater Meter ReplacementMeetingTown Council MeetingMeetingTown Council Work SessionMeetingPlanning CommissionMeetingEDA MeetingMeetingGeneral ElectionMeetingPrivate EventBirthday PartyPrivate EventRetirement

16

.

Totals

\$ 2205.00



#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING MONTHLY REPORT / PROJECT UPDATE

AGENDA ITEM: Town Manager Monthly Report - November 2021

DATE: December 2, 2021

PREPARED BY: Allyson Finchum

#### MONTHLY REPORT / PROJECT UPDATE:

- November 15th Planning Commission Meeting Preparation of legal ad, packets, facility set up, adjacent property mailings, meetings, inquiries from citizens/ developer/ Commissioners/ others, staff presentation
- Review of Site Plan for ZP 2021-013 Village Self-Storage on Route 301
- Review of ZP 2021-020 Residential Rezoning on Route 301 (Fairmont)
- Staff Preparation of Christmas Parade
- Preparation of December 2nd Town Council Agenda
- Review Zoning Permits
- Assistance with Planning and Zoning Inquiries
- Keystone Software Implementation
- Zoning Map Review
- Stormwater Management
- Water and Sewer Build-Out Analysis
- Budget Review
- ARPA Funds First Report due to federal government April 2022

#### Meetings/Training attended:

- November 4<sup>th</sup> Town Council Meeting
- November 15<sup>th</sup> Planning Commission Meeting
- Economic Development Authority Meeting
- Weekly Staff Meetings
- Meetings on various topics with:
- Developers/Citizens
- Caroline County/Commissioner of the Revenue/State Governmental Agencies
- Planning Commissioners
- Town Council Members
- Specific Topics:
- Regional Water Withdrawal Permit with Caroline and King George Counties, and Port Royal
- Water Meter Project
- Keystone Software
- Fairmont Rezoning
- LOVE Works Sign



#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING AGENDA ITEM REPORT

AGENDA ITEM:	Minutes – October 7, 2021 Town Council Meeting
ITEM TYPE:	Consent Agenda
PURPOSE OF ITEM:	Decision - By Motion
PRESENTER:	Tracy Wright, towntreasurer@townofbowlinggreen.com
PHONE:	(804) 633-6212

#### BACKGROUND / SUMMARY:

Minutes transcribed from the October 7, 2021 Town Council Meeting

#### ATTACHMENTS:

Minutes and approved bills from the October 7, 2021 Town Council Meeting

#### **REQUESTED ACTION:**

Approve Minutes.

#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING

#### MINUTES

#### Thursday, October 07, 2021 7:00 PM

#### CALL TO ORDER AND QUORUM ESTABLISHED:

The Mayor called the meeting to order and noted a quorum was present. The Pledge of Allegiance was recited.

Motion made by Council Member Voit, Seconded by Council Member T. Gaines to approve Council Member Davis's participation in the Town Council Meeting electronically in her home located on 332 N. Main Street, Bowling Green VA 22427 due to medical reasons.

Voting Yea: Vice-Mayor Coyle, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### PRESENT:

Mayor Mark Gaines Vice-Mayor Valarie Coyle Council Member Tammie Gaines Council Member Deborah Howard Council Member Jerry Covington Council Member Jeff Voit Council Member Arthur Wholey

Council Member Jean Davis - Electronically.

#### **PUBLIC COMMENTS:**

There were no public comments.

#### **MEMBER COMMENTS:**

<u>Council Member Davis</u> - read a thank you card in appreciation from the family of David E. Cox for the flowers sent from the Town Council.

<u>Council Member T. Gaines</u> - would like to thank Josh and the Public Works Staff for fixing a potential safety hazard at the playground in such a timely manner.

#### **STAFF REPORTS & PRESENTATIONS:**

The following staff reports were presented to Council:

Public Works/Utilities Monthly Report for August 2021 and September 2021.

Police Departments Monthly Report August 2021 and September 2021.

Community & Economic Dev.; Council Monthly Report for August 2021 and September 2021.

Town Clerk/Treasurer Council Monthly Report August 2021 and September 2021.

Town Manager Monthly Report - August & September 2021.

#### **CONSENT AGENDA:**

Council Member Voit questioned staff if the minutes from the August 05,2021 Town Council Meeting on the Consent Agenda had been corrected. The Town Manager referred to an email from Council Member Voit stating that Consent Item #6 should have been pulled for discussion by Council Member Voit and item #7 was requested to be pulled by Council Member Davis.

The Town Manager also corrected an error on the Report by Council Committees/Member Comments, a statement made by Council Member Voit was recorded incorrectly.

The August 05, 2021 Town Council Minutes have been updated to reflect the requested changes.

The following items were presented to Council:

Minutes – August 5, 2021 Town Council Meeting

Bills – August & September 2021 (attached to these meetings)

Approval of purchase of Trailer Jetting Machine and Push Camera

After discussion, a motion was made by Council Member Voit, Seconded by Council Member Wholey to accept the Consent Agenda as presented.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### **UNFINISHED BUSINESS:**

#### **Bowling Green 2021 Harvest Festival Appropriation of Funds:**

Motion made by Council Member Voit, Seconded by Council Member Wholey that Council allocate the \$23,500, but at the same time use the \$6,000 allocated already for the Wine Festival to fund that partially and revisit after reports come from the Harvest Festival.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

#### **NEW BUSINESS:**

#### **Town Hall Rental Rates:**

The Town Manager, Allyson Finchum addressed Council regarding a preliminary rental rate schedule for the Town Hall. A prior meeting was held with Council Member T. Gaines, staff, and sub committees to revise the current rental agreement to cover expenses from the use of the hall. Allyson requested the Council to review the documents on the changes of the rental rates and requested a motion to authorize a public hearing for amendment of the rental rates for the Town Hall.

After a lengthy discussion, Council decided to move the final decision to change rates until they meet for the Work Session on November 4, 2021 at 5:00 p.m. **Allocation of Funds for Keystone Software:** 

Motion made by Council Member Voit, Seconded by Council Member Wholey to accept the allocation of funds for the Keystone Software Proposal of \$167,477.00 to be taken from the ARPA Funds.

The floor was opened for discussion regarding the Keystone Software Proposal.

Council Member Voit amended his motion to allocate from the ARPA Funds for the purchase of the software with allocation not to exceed \$200,000, Seconded by Council Member Wholey.

The floor was opened again for discussion with the adjusted amount from the amended motion.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### Schedule Town Council Work Session on ARPA Funds:

Discussion from Town Council to consider moving the Work Session on ARPA Funds to the next Town Council Meeting, November 04, 2021 at 5:00 p.m.

No motion made by Council.

An item of New Business was presented by the Town Attorney, Andrea Erard for review from Council. The draft of Article III, Administration and Government for the Town Council was presented. Ms. Erard requested guidance from Council on their decision whether to to move forward with processing the terms of reducing the Council Members. After discussion by Council it was decided to move item to November meeting to allow for feedback from the public before a decision was made.

No Motion made.

#### **INFORMATIONAL ITEMS:**

#### EDA Request to Town Council for ARPA Funds:

Council Member Voit requested Agenda Item #16, EDA Request to Town Council for ARPA Funds to be deferred to the next month's Work Session on ARPA Funds.

#### Virginia Occupational Safety and Health (VOSH) Program Regulations:

The Town Attorney, Andrea Erard presented Employer requirements to protect employees from workplace exposure to the SARS-CoV-2 virus that causes the COVID-19 disease. The information provided by the Town Attorney was discussed between the Town Council Members and agreed upon that what is required will be the town's action. The Town Attorney will prepare a policy for authorization from the Town Council at a future meeting.

#### **COMMITTEE REPORTS:**

Committee and Commissions August & September 2021

<u>Council Member Voit</u> - Utilities, Streets, Buildings, and Grounds Sub-Committee did meet, much of what was discussed was already mentioned in Josh's report from Public Works. The committee is

waiting on quotes for the playground, security measures, need for ARPA Work Session and the software package. Council Member Voit also thanked Council Member T.Gaines for all her help with projects and reaching out to the public on what is needed in the town.

**Council Member T. Gaines** - some discussion on Facebook about the bike lines especially on West Broaddus Avenue. She contacted Kyle Bates with VDOT, they have it on the schedule for the end of October for maintenance and will try to restripe the lane at that time, weather permitted. Council Member Howard also asked if Klyle had any updates at this time regarding the sidewalks on Maury Avenue. No updates at this time.

<u>Council Member Wholey</u> - inquired about updates to the Smart Scale Project. The Town Manager had spoken with Kyle with VDOT, any changes the town wishes to make on the project should be done prior to any costs incurred, we have a few years until this happens.

<u>Council Member Covington</u> - EDA did meet in August 2021 but did not in September 2021. John Lane has drafted a letter to the Mayor requesting 20% of the ARPA funds to be granted to the EDA to be used for infrastructure, tourism, and to beautify the town.

#### **CLOSED SESSION:**

Closed Session in accordance with Section 2.2-3711(A) of the Code of Virginia to discuss Personnel Issues.

Motion made by Council Member Voit, to go into Closed Meeting in accordance with Section 2.2-3711(A)(1) of the Code of Virginia for the purpose of the discussion of the hiring of a Town Manager, Seconded by Council Member T.Gaines.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member T.Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### **RECONVENE IN OPEN SESSION:**

Motion made by Council Member T. Gaines, Seconded by Council Member Wholey to reconvene in open meeting.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

#### **CERTIFICATION:**

Only public business matters lawfully exempted from open meeting requirements in accordance with Section 2.2-3711 (A)(1) of the Code of Virginia and only such public business matters as were identified in the motion by which the closed meeting was convened were heard, discussed or considered.

Certifying Yea: Vice-Mayor Coyle, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Electronicly - Council Member Davis.

Motion made by Council Member Voit, Seconded by Council Member Wholey to approve the Employment Agreement between the Town of Bowling Green and Allyson Finchum.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### CLOSED SESSION:

Closed Meeting in accordance with Section 2.2-3711(A)(1) of the Code of Virginia for the discussion of the performance of a specific employee.

Motion made by Council Member Voit, Seconded by Council Member T. Gaines to go into closed meeting to discuss the performance of a specific employee.

Voting Yea: Vice-Mayor Coyle, Council Member Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### **RECONVENE IN OPEN SESSION**

Motion made by Council Member Voit, Seconded by Council Member T. Gaines to reconvene in open meeting.

Voting Yea: Vice-Mayor Coyle, Council Member Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

#### **CERTIFICATION:**

Only public business matters lawfully exempted from open meeting requirements in accordance with Section 2.2-3711 (A)(1) of the Code of Virginia and only such public business matters as were identified in the motion by which the closed meeting was convened were heard, discussed or considered.

Certifying Yea: Vice-Mayor Coyle, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Absent - Council Member Davis.

#### **ADJOURNMENT**

Motion made by Council Member Voit, Seconded by Council Member Wholey to recess until 5:00 p.m on November 4, 2021.

Voting Yea: Vice-Mayor Coyle, Council Member Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Absent - Council Member Davis.

ActPd - 2021/10 PAGE

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TOWN MANAGER

DATE

ActPd - 2021/10 PAGE

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I HERBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED. THE TOTAL 22,871.83- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

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FINAL TOTAL

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TOWN MANAGER



OF BOWLING GREEN

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TOWN OF BOWLING GREEN \* = DUP INVOICE NO

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ActPd - 2021/10 PAGE

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TOWN MANAGER

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#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING

#### MINUTES

#### Thursday, August 05, 2021 7:00 PM

#### CALL TO ORDER AND QUORUM ESTABLISHED:

The Mayor called the meeting to order and noted a quorum was present. The Pledge of Allegiance was recited.

#### PRESENT:

Mayor Mark Gaines Vice-Mayor Valarie Coyle Council Member Jean Davis Council Member Tammie Gaines Council Member Deborah Howard Council Member Jerry Covington Council Member Jeff Voit Council Member Arthur Wholey

#### **DELEGATIONS:**

Years of Service Award:

Mayor Gaines and Interim Town Manager, Allyson Finchum recognized Judy Beazley for her outstanding dedication and service working with the Department of Administration for the Town of Bowling Green. Judy was presented with a certificate from the Mayor with appreciation for her five years of service with the town.

Council congratulated Ms. Beazley on her years of service.

#### **PUBLIC COMMENTS:**

None

#### **MEMBER COMMENTS:**

Council thanked Tracy Wright, Judy Beazley, and Rusty Daymude for help with *National Night Out.* 

#### **STAFF REPORTS & PRESENTATIONS:**

The following staff reports were presented:

Public Works/Utilities Monthly Report - July 2021

Council Member T. Gaines requested an update on Kelvic.

The Town Attorney said communication is ongoing.

Events & Economic Development Coordinator Monthly Report - July 2021 Council Member Coyle questioned staff time for the Bowling Green Community Alliance. Staff responded they are a liaison between Community Heart and Soul and Bowling Green Community Alliance. Council Member T. Gaines asked for information on the murals noted on the staff report. Staff answered that business owners on Main Street are interested in having murals in the commercial district and funding and placement have not been determined. The Mayor stated that expenditures for the Fall Harvest Festival will be from the general fund until the allocation for the event is reviewed and approved by Council next month. The Events and Economic Development Coordinator noted that Music on the Green is occurring on Friday evenings.

Town Clerk/Treasurer Monthly Report - July 2021

Town Manager Monthly Report - July 2021

Council Member T. Gaines stated the minutes from the Planning Commission and subcommittee meetings provided in the packet is very helpful.

Two items were mentioned by the Town Manager: The Planning Commission is reviewing Village Self-Storage site plan located on Route 301; a rezoning application has been filed for a rezoning on Route 301 from B-2 to R-3.

#### **Consent Agenda:**

The Mayor reminded Council that Consent Agenda items must be pulled for questions.

A request was made by Council Member Voit to pull from the Consent Agenda item #6 for discussion. A request was made by Council Member Davis to pull item #7 for discussion.

#### Minutes – July 1, 2021 Town Council Meeting

Council Member Voit identified a typographical error in the spelling of the name Tiny Tang rather than Tz'ny Tang.

Motion made by Council Member T. Gaines, Seconded by Council Member Voit to approve Consent Agenda #6 July 1, 2021 Town Council Minutes with changes.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### Bills - July 2021(attached to theses minutes)

Motion made by Council Member Voit, Seconded by Council Member Wholey to accept Consent Agenda #7 July 2021 Bills as presented.

Discussion followed.

Spilman, Thomas, and Battle were paid as bond counsel for water meter project.

Question on benefit of paying contract versus staff for set-up, break-down and cleaning of Town Hall events. Council Member T. Gaines will meet with a committee to discuss issue.

David Brooks was paid for 1) sewer at 100 N. Main and 2) water leak which required repairs to asphalt.

Rappahannock Regional training dues are paid yearly.

Dawn Haun was paid for graphics for social media and poster design for the Town event *Music* on the Green.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### UNFINISHED BUSINESS: Resolution on Risks of Organ Transplants in China

Presentation by members of the Falun Gong Practitioners in Virginia about persecution of Falun Gong in China and the organ harvesting of imprisoned practitioners.

Motion made by Council Member Voit, Seconded by Council Member Davis to approve the resolution as written.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member T. Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Motion passed.

#### Allocation of Coronavirus State and Local Fiscal Recovery Funds (CSLFRF) to Non-Entitlement Units of Government (NEU)

The Town Manager presented information on a list of projects requested by citizens, staff, the Economic Development Authority and individual Council members for possible funding approval by Town Council. Additional information and costs will be provided at a later date.

#### **NEW BUSINESS:**

#### **Bowling Green Billboard Lease**

Town Attorney Andrea Erard provided information on the lease (\$0) of a billboard on Rogers Clark Boulevard west of Town limits. The Town owns the billboard and the land upon which it is placed. The Town agrees to maintain the billboard in structurally sound condition.

Motion made by Council Member Wholey, Seconded by Council Member T. Gaines to approve the billboard lease as presented.

Discussion followed with request to update the face of the billboard due to aging/fading and increase in businesses and services within the Town.

Vote by Roll-Call: Vice-Mayor Coyle, yea; Council Member Davis, yea; Council Member T. Gaines, yea; Council Member Covington, yea; Council Member Voit, yea; Council Member Wholey, yea.

Motion passed.

#### **REPORT OF COUNCIL COMMITTEES/MEMBER COMMENTS:**

<u>Vice-Mayor Coyle</u> – The Planning Commission discussed a site plan for Village Self-Storage and are waiting for information from the applicant to finalize the project.

Council Member Davis - No Comment.

<u>Council Member T. Gaines</u> – Cemetery fencing on Town owned land near Bowling Green Meadows is under review.

<u>Council Member Howard</u> – Discussion in the Policy, Personnel and Budget Committee discussed the budget and retreat with department heads who will request funding in the FY23 budget process, revenue/expenditures and possible funding of Town events, growth of the Town and staffing needs, Covid fund projects.

Council Member Covington - No Comment.

<u>Council Member Voit</u> – Discussion in the Utility, Streets, Sidewalks, Building and Grounds Committee Meeting included coronavirus relief funds and meeting format.

Council Member Wholey - No Comment.

#### **ADJOURNMENT**

Motion made by Council Member Voit, Seconded by Council Member Wholey to adjourn.

Voting Yea: Vice-Mayor Coyle, Council Member Davis, Council Member Gaines, Council Member Howard, Council Member Covington, Council Member Voit, Council Member Wholey.

Meeting adjourned at 7:57 p.m.

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8/11/2021 TOWN OF 29:34	VEND#	999 1 1999 1 199
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I HEREBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED. THE TOTAL 54,995.04- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

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8/19/2021 TOWN OF BOWLING 33:03
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A/P CHECK REGISTER Check Date - 8/	DATE 	8/20/2021 8/20/2021 8/20/2021 8/20/2021 8/20/2021 8/20/2021 8/20/2021 8/20/2021	
AP100B 8/19/2021 TOWN OF BOWLING GREEN A/1 TIME-15:33:03	CHECK# VENDAR VENDOR CLASS	26372 999999 EGAN KIMBERLY 26373 999999 FINEBERG JONATHAN & TIFFA 000 999999 FINEBERG JONATHAN & TIFFA 000 26375 999999 CGEURN GARRISON 26377 999999 PARKER FETER III & CHANIC 000 999999 RODGERS DEANNA & GREGORY 000 26377 999999 SLATER TRAVIS 000 9999999 THOMPSON CHARLES TOTAL ACH TOTAL ACH TOTAL ACH TOTAL EFY TOTAL FINAL TOTAL	

I HEREBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED. THE TOTAL 623.82- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

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3720/2021	AMOUNT	500.00	.00	500.00
A/P CHECK REGISTER Check Date - 8/20/2021	DATE 	8/20/2021		
	CLASS	000 CLASS TOTAL	ACH TOTAL	CHECK TOTAL
OWLING GREE		1125 BARTLEY DELMAS A		
FOWN OF E	VEND# VENDOR	BARTLEY		
AP100B 8/25/2021 TOWN OF BOWLING GREEN TIME-14:27:41	VEND#	1125		
AP100B TIME-14:	CHECK#	26405		

I HEREBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED. THE TOTAL 500.00- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

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rer 9/03/2021 AMOUNT	77.54 212.68	19, 849.60 1, 290.00 270.00	880.48 140.00 625.00 365.59 50.00	160.00 600.00 6593.81 1,190.00 2,940.00	338.66 338.66 100.00 100.00 650.00 4,455.60	123.22 123.22 38,494.61 .00	38,494.61		38,494.61
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	DISCOUNT	00.			
ER 9/09/2021	AMOUNT	1,138.00 1,138.00	.00	1,138.00	.00
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AP100B 9/10/2021 TOWN OF BOWLING GREEN TIME-15:04:45	VEND# VENDOR	1049 WEX BANK			
AP100B 5104	CHECK#	26439			

I HEREBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED. THE TOTAL 1,138.00- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

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TER 9/24/2021	AMOUNT	6,430.00 91.77 3,528.000 5,528.000 5,540.35 117.25 117.25 28,501.00 46,380.02 46,380.02 46,380.02	46,380.02
A/P CHECK REGISTER Check Date - 9/	DATE	9/24/2021 9/24/2021 9/24/2021 9/24/2021 9/24/2021 9/24/2021 9/24/2021 9/224/2021 9/224/2021 9/221 9/221	
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AP100B 9/24/2021 TOWN OF BOWLING GREEN TIME-11:24:39	VEND# VENDOR	117 BAI MUNICIPAL SOFTWARE 1058 DIAMOND SPRINGS 237 GRAINGER 537 GRAINGER 537 GRAINGER 537 GRAINGER 530 MORTON'S FOWER EQUIPMENT 1092 PBM 11 RAPPAHANNOCK ELEC COOP 11 RAPPAHANNOCK ELEC COOP 1099 SNAP-ON TOOLS 1020 SNAP-NO TOOLS 1020 SOSMETAL PRODUCTS INC 1020 SOSMETAL PRODUCTS INC 1020 CLASS TOT 1020 CLASS	TNAL
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'ER 9/17/2021	AMOUNT	200.00 14.15 14.15 14.15 123.53 176.63 176.63 176.63 177.50 310.00 310.00 310.75 40.00 9,534.73 9,534.73 00	00.
A/P CHECK REGISTER Check Date - 9/	DATE	9/117/2021 9/117/2021 9/117/2021 9/117/2021 9/117/2021 2021 117/22021 2021 2021 2021	
AP100B 9/16/2021 TOWN OF BOWLING GREEN A/P TIME-11:01:57 C	VEND# VENDOR CLASS	1065 CASWELL KAT 897 CINTAS CORPORATION 10 DOMINION VIRGINIA POWER 28 G & G MILFORD FARM SERV. 2007 1115 JUSTTECH 1115 JUSTTECH 1021 MUNICIPAL CODE CORP 257 ON SITE PC 1021 MUNICIPAL CODE CORP 1021 MUNICIPAL CODE CORP 1020 SNAP-ON TOOLS 1049 WEX BANK CLASS TOTAL ACH TOTAL CHECK TOTAL	EPY TOTAL
AP100B TIME-11	CHECK#	22102222222222222222222222222222222222	

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9,534.73

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	DISCOUNT	000000000000000000000000000000000000000	00.
'ER 9/30/2021	AMOUNT	4, 922:24 380:28 209:85 629:85 629:00 180:29 127:50 1224:74 224:74 127:50 4411:70 338:66 123:22 10, 660.48 10, 660.48	.00 10,660.48
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AP100B 9/30/2021 TOWN OF BOWLING GREEN TIME-14:46:52	VEND# VENDOR	1111 BKT UNIFORMS 4 CAROLINE COUNTY 1076 EXPERT AUTO 237 GRAINGER 546 DOHNSON'S EXTERMINA 48 MID-ATLANTIC LAB 1042 OMNIGO SOFTWARE 257 ON SITE PC 257 ON SITE PC 1106 THE PAINTED HORSE 291 USA BLUE BOOK 19 VERIZON 1114 XEROX FINANCIAL SER	EPY TOTAL FINAL TOTAL
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#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING AGENDA ITEM REPORT

AGENDA ITEM:	Bills - November 2021
ITEM TYPE:	Consent Agenda
PURPOSE OF ITEM:	Decision - By Motion
PRESENTER:	Tracy Wright, towntreasurer@townofbowlinggreen.com
PHONE:	(804) 633-6212

#### BACKGROUND / SUMMARY:

Invoices for items purchased and services rendered in November 2021

#### ATTACHMENTS:

Check Reports:

- 11/05/2021
- 11/19/2021

#### **REQUESTED ACTION:**

Approve invoices.

			22222222222222222222222222222222222222	AP100B 11/ TIME-15:16: CHECK#
DATE	FINAL J I HEREBY APPROVE THIS REGI THE TOTAL 14,817.13- EQ	ACH TOTAL CHECK TOTAL EPY TOTAL	18 A & M HOME CENTER 18 A & M HOME CENTER 1063 ALACRITI PAYMENTS, LLC 944 ATLANTIC BROADBAND //C 865 CASH 897 CINTAS OF RICHMOND 114 CINTAS OF RICHMOND 114 CINTAS OF RICHMOND 115 JUSTTECH 514 K L LANGFORD EXCAVATING 512 MID-ATLANTIC 1132 SEAL ADAM 1122 SHIFFLETT'S WASTE SERVICE 1089 SNAP-ON TOOLS 918 STAPLES ADVANTAGE 102 VACORP 19 VERIZON 19 VERIZON 19 VERIZON WIRELESS 226 VERIZON WIRELESS 226 VERGINIA DEPARTMENT OF 44 VUPS 12 WASTE MANAGEMENT 11 WASTE MANAGEMENT 11 X XEROX FINANCIAL SERVICES 14 XEROX FINANCIAL SERVICES	49 VEND# VENDOR
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00904 SHARED DR COMP	TELECOMMUNICATIONS	195.00 26604	4100-012410-5230-	11/19/2021	0000000 000257 ON SITE PC 5184
00904 JO ELSA COMP	TELECOMMUNICATIONS	85.00 26604	4100-012410-5230-	11/19/2021	0000000 000257 5195
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00904 SAND	REPAIR/ MAINTENANCE	164.35 26603	4520-500100-6007-	26 11/19/2021	000000 000179 LUCK STONE CORFORATION IV-101505026
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00904 PLAYGROUND POT	PUBLIC RELATIONS	135.00 26602	4100-012110-6021-	11/19/2021	0000000 000743 LOCAL SERVICES 71537
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00904 TEST BACKFLOW DEVI	REPAIR/MAINTENANCE	300.00 26600	4500-500100-6007-	11/19/2021	000000 001134 HELD ED 012120
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00904 FUEL, OIL & AIR FI 00904 FUEL, OIL & AIR FI 00904 PART FOR CLARIFIER 00904 CAN LINER 681.24	REPAIR/MAINTENANCE REFAIR/ MAINTENANCE REPAIR/ MAINTENANCE TOWN HALL EXPENSES .00 TOTAL	231.00 26599 230.99 26599 69.76 26599 149.49 26599 .00 EPY PMT TOTAL	4500-500100-6007- 4520-500100-6007- 4520-500100-6007- 4100-043100-7200- .00 CPA PMT TOTAL	11/19/2021 11/19/2021 11/19/2021 11/19/2021 11/19/2021 681.24 ACH PMT TOTAL	0000000 000237 GRAINGER 9111096898 0000000 000237 9111096898 0000000 000237 9116838153 0000000 000237 9120475034 DISC. TOTAL .00 CHECK TOTAL
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TOWN MANAGER

DATE



#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING AGENDA ITEM REPORT

AGENDA ITEM:	Town Hall Rental Rates
ITEM TYPE:	Action Item
PURPOSE OF ITEM:	Decision - By Motion
PRESENTER:	Allyson Finchum, townmanager@townofbowlinggreen.com
PHONE:	(804) 633-6212

#### **BACKGROUND / SUMMARY:**

A meeting was held with Council Member Tammy Gaines and staff to review current rental rates for Town Hall. Discussion involved issues with covering expenses of the building including internal/external building maintenance, utilities, police protection, set up and cleaning. A draft document was prepared and revised following discussions at sub-committee and Council meetings that outlines suggested new rates.

A public hearing must be held to adopt a new rate schedule.

#### ATTACHMENTS:

Proposed rate sheet.

#### **REQUESTED ACTION:**

At the Town Council Worksession - Review and edit the attached documents on change of rental rates for Town Hall.

At the Town Council Meeting - Motion to authorize a public hearing for amendment of rental rates for Town Hall.

## TOWN OF BOWLING GREEN BOWLING GREEN EVENT HALL RENTAL RATES

PROPOSAL BASED ON COUNCIL MEMBERS' FEEDBACK AT 11/04/21 WORK SESSION; DECISION BY VOTE ON 12/02/21

### **USO BALLROOM**

The proposed rates below include the fee of \$275 for set-up, breakdown and cleaning. Cleaning includes bathrooms, kitchen and floors.

STANDARD RENTAL – CURRENT RATE     PROPOSED RATE	-
NON-PROFIT – CURRENT RATE     PROPOSED RATE	
TOWN RESIDENT/TOWN EMPLOYEE - CURRENT RATE     PROPOSED RATE	
• EXTRA PREPERATION AFTER 4:00 THE NIGHT BEFORE AN EVENT	
CURRENT RATE (For decorating only, no dinner, practice, etc.) <b>PROPOSED RATE</b> :	·

## **RAPPAHANNOCK ROOM**

The proposed rates below include the fee of \$100 for set-up, breakdown and cleaning. Cleaning includes bathrooms, kitchen and floors.

## DEPOSITS

Deposit returned following inspection of the property.

•	USO BALLROOM – CURRENT RATE PROPOSED RATE	•
•	RAPPAHANNOCK ROOM – CURRENT RATE PROPOSED RATE:	



#### TOWN OF BOWLING GREEN TOWN COUNCIL MEETING AGENDA ITEM REPORT

AGENDA ITEM:	Preliminary Engineering Report for Sewer Upgrades
ITEM TYPE:	Presentation
PURPOSE OF ITEM:	Discussion Only
PRESENTER:	Josh Irby with Dewberry Engineering
PHONE:	(804) 633-6212 Town Hall

**BACKGROUND / SUMMARY:** Preliminary Engineering Report for Sewer Upgrades pertaining to the sanitary sewer collection system and the wastewater treatment facility.

ATTACHMENTS: Preliminary Engineering Report

**REQUESTED ACTION: N/A** 



ARCHITECTS ENGINEERS CONSULTANTS

Preliminary Engineering Report

# TOWN OF BOWLING GREEN WASTEWATER TREATMENT PLANT IMPROVEMENTS

# **TOWN OF BOWLING GREEN**

Dewberry Project No.: 50133134

SEPTEMBER 2021

# DRAFT

PREPARED BY:

**Dewberry** 4805 Lake Brook Drive, Suite 200 Glen Allen, Virginia 23060 804.205.3342

PREPARED FOR:

**Town of Bowling Green** 117 Butler Street PO Box 468 Bowling Green, VA 22427

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#### **APPENDICES**

- Appendix A Alternatives and Recommended Improvements Cost Estimates
- Appendix B FEMA Firm Panel

Appendix D – Permit and Compliance Appendix D – Sewer Rates Appendix E – Project Planning Factors

#### **INTRODUCTION**

The Town of Bowling Green (Town) contracted with Dewberry Engineers Inc. (Dewberry) to prepare a preliminary engineering report (PER) to evaluate options and provide recommendations for replacing aging equipment and rehabilitating the Town's existing Wastewater Treatment Plant (WWTP). Additionally, this PER will evaluate replacement or rehabilitation of portions of the gravity sewer collection system and improvements to various wastewater pump stations (WWPS) in the wastewater collection system.

The existing WWTP has a rated capacity of 0.25 MGD and discharges treated effluent to the Mattaponi River under VPDES Permit No. VA0020737. This WWTP process generally includes fine screening, an oxidation ditch, secondary clarifiers, sand filters, ultraviolet disinfection, aerobic digesters, and sludge drying beds. The WWTP capacity will not be increased as a part of this project.

#### **SECTION 1 - PROJECT PLANNING**

#### 1.1 - Location

The Town of Bowling Green is located within Caroline County, Virginia. It is situated between Richmond and Fredericksburg. See Figure 1.1 –Vicinity Map for details.

#### **1.2 - Environmental Resources Present**

Based upon the FEMA flood maps no floodplains are located on the existing WWTP site or pump station sites. However, based upon the National Wetlands Inventory there are some wetlands located on the existing WWTP site, but none are anticipated to be disturbed during construction. No wetlands are anticipated for the pump station sites. See Figure 1.2 – WWTP Floodplains and Wetlands for details.

#### **1.3 - Population Trends**

Census data from the Weldon Cooper Center for Public Service was compiled to examine the experienced population trends from 2000 through 2020. Data from 2020 was unavailable, so it was based upon the best available estimates, see **Table 1.1 – Census Data** for details.

Location	Population			Average Percent Growth
	2000	2010	2020*	per Decade
Bowling Green	936	1,111	1,175	12.2%
Caroline County	22,121	28,545	30,342	17.7%

#### Table 1.1 – Census Data

\*2020 data based upon best available estimates from Weldon Cooper

Center for Public Service

Although Bowling Green only experienced a 12.2% average growth rate per decade, the surrounding Caroline County experienced an average growth rate of 17.7% per decade. It is anticipated that as development continues, the Town will start to experience a higher growth rate similar to that of the County.

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## 1.4 - Community Engagement

This project will be presented at the Town Council Meetings, which are public record. Proposed work for this project that is contained within the existing WWTP site will have a negligible impact on the community. Proposed work outside of the WWTP and associated impacts will be communicated with the community during preliminary design, with updates being provided as needed to maintain effective communication regarding the project status.

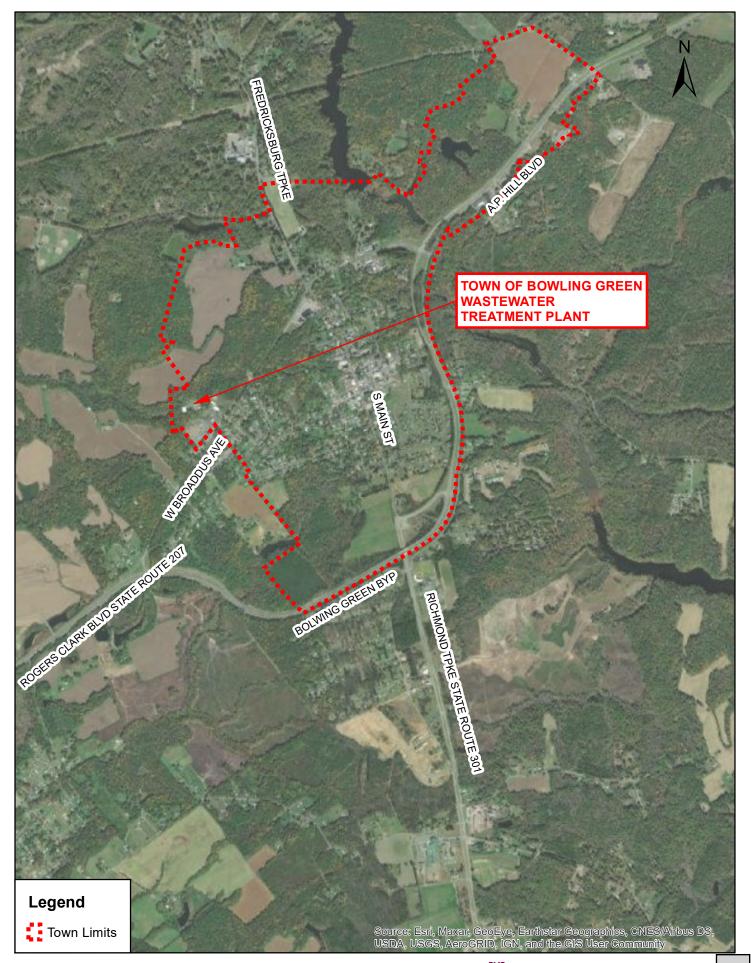


FIGURE 1.1: VICINITY MAP 1 INCH = 2,500 FEET



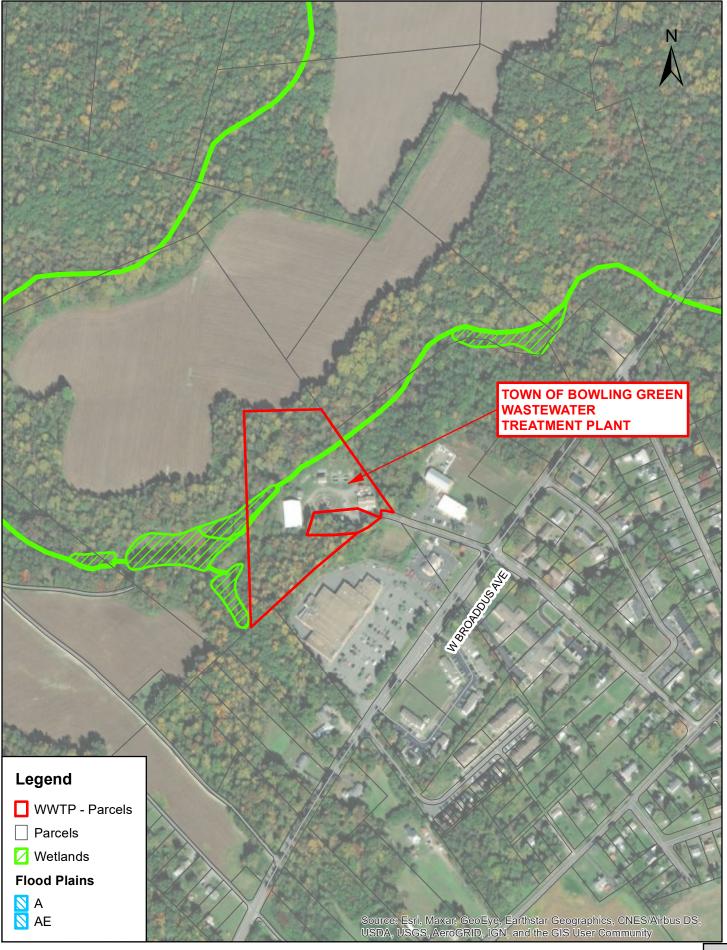


FIGURE 1.2: FLOOD PLAINS AND WETLANDS 1 INCH = 500 FEET



# **SECTION 2 - EXISTING FACILITIES**

# 2.1 - Location Map

The Town of Bowling Green WWTP is located on Anderson Avenue, east of West Broaddus Avenue. The WWTP is situated on two parcels with a total of approximate site area of 7.9-acres. A tree buffer located on the Town property which surrounds the WWTP, shielding the facility from public view. Refer to Figure 1.1 –Vicinity Map and Figure 2.1 – Existing Sanitary Sewer System Overview for additional detail regarding site location and layout.

## 2.2 - History

#### 2.2.1 - Overview

The Town of Bowling Green public sewer system currently serves approximately 548 residential and commercial users. These users are located both within the town limits and outside of the town limits.

## 2.2.2 - Wastewater Treatment Plant

The WWTP currently operates under the Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0020737. The last time the WWTP had a significant upgrade was in 1991, which included the demolition of the existing plant and the construction of a new WWTP on the existing site. Based upon record drawings, the plant is rated for a 0.25 MGD average day flow and 1.06 MGD peak flow rate.

Primary treatment is accomplished at the headworks, utilizing an inclined cylindrical screen with an integral washer and compactor and a bypass manually cleaned bar screen. Currently there is no grit removal system. Flow is measured via a 9-inch Parshall Flume with a 6-inch nest, prior to the primary effluent flowing by gravity to the secondary treatment process.

The secondary treatment process consists of an Orbal<sup>™</sup> oxidation ditch with two channels. Typical operation consists of return activated sludge (RAS) and primary effluent entering the outer channel and flowing by gravity into the inner channel. Horizontal disk aerators provide aeration and mixing of the mixed liquor in both channels. From the inner channel of the oxidation ditch the mixed

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liquor flows by gravity through the effluent weir to the clarifier splitter box, which splits flow to the two secondary clarifiers.

Each secondary clarifier has a side water depth (SWD) of 12 feet and a diameter of 25 feet. Mixed liquor flows by gravity from the splitter box into the feed well and the sludge settles at the bottom in a hopper, where it flows by gravity to the RAS/WAS (return activated sludge/waste activated sludge) pump station wet well. The sludge flow from each clarifier is controlled by a telescoping valve located in the RAS/WAS wet well. The RAS/WAS pumps then can either pump the RAS to the inlet of the oxidation ditch or waste sludge to the aerobic digesters. The secondary effluent flows over a v-notched weir into a launder with an outlet pipe, which is routed to the tertiary filters.

The tertiary filtration system consists of three DynaSand filters by Parkson corporation in concrete basins. The filtered effluent flows by gravity through a horizontal low-pressure, low-output ultraviolet (UV) disinfection system contained in a concrete channel. The UV channel shares a common wall with the non-potable water pump station and effluent weir. From this structure, the flow is directed by gravity to the outfall.

The solids handling process consists of two aerobic sludge holding tanks that operate in series, each with a volume of 15,600 gallons. Supernatant that is decanted from the digesters is routed back to the plant drain pump station and subsequently to the inlet of the oxidation ditches. The sludge is then routed by gravity to the sludge drying beds, where it is dried for offsite disposal at a landfill.

The electrical service consists of a single 480/277 volt (V), 3-phase, 4-wire, 800 amp (A) utility service to the sludge pump station electrical room. A 275 kW diesel generator provides emergency standby power in the event of loss of utility power. The generator service is transferred via a 400 A automatic transfer switch (ATS). Motor control centers (MCC) are located in the sludge pump station electrical room and are the primary electrical distribution containing breakers and motor starters for the entire plant.

#### 2.2.3 - Collection System

The sewer collection system is comprised of approximately six (6) miles of gravity sewer pipe, eight (8) miles of force main, and six (6) lift stations, all of which convey wastewater to the

WWTP. Information relative to the existing sewer system's size, length, and material was based on Caroline County's Geographic Information System (GIS) and a schematic sewer map marked-up by Town personnel. Based on this information, the gravity sewer main diameters range from 8-inch to 10-inch and the sanitary force main diameters ranges from 2-inch to 8-inch. Much of the existing gravity sewer main is concrete.

Through discussions with Town personnel, it is our understanding that the majority of the existing manholes are constructed of brick.

# 2.3 - Condition of Existing Facilities

## 2.3.1 - Overview

The Town of Bowling Green is an established historic town, with parts of its wastewater infrastructure reaching the end of its useful life. In order to continue to protect the safety, health, and welfare of the public, significant improvements are required to both the WWTP and the wastewater collection system.

#### 2.3.2 - Wastewater Treatment Plant

The last major upgrade of the WWTP occurred in 1991. Miscellaneous maintenance and upgrades have been performed on the oxidation ditch within the last 5 years. Additionally, the influent screen was replaced in 2017. Most of the equipment at the WWTP has reached the end of its useful life, being approximately 30 years old. The concrete basins within the plant appear to be in good condition.

The electrical equipment appears to be in fair condition with much of the equipment approaching or being at the end of its estimated useful life. The generator is at the end of its useful life. There is significant corrosion in many electrical enclosures.

#### 2.3.3 - Collection System

The age and sections of concrete pipe within the gravity sewer collection system make it susceptible to Inflow and Infiltration (I/I). It is not uncommon for aged concrete sewer pipe to show poor sealing characteristics at joints and to have more joints per unit length than today's

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commonly used sewer pipe materials. Over time concrete pipe can also erode and deteriorate to the point where portions of the pipe will no longer exist. It is evident through discussions with Town personnel that portions of the Town's concrete gravity sewer need to be replaced to assist with eliminating I/I in the collection system as well as restore the structural integrity of the collection system piping. It is Dewberry's understanding a large majority of the Town's manholes are still the original brick construction. Aging brick manholes have a high probability for I/I during storm events.

When collecting information for this report, Town personnel indicated that there have been two recent sewer main collapses. The first collapse was located on Butler Street and the second collapse was between Anderson Avenue and Martin Street. Dirt and debris have also been observed during CCTV inspection completed by the Town, which is likely due to collection system defects.

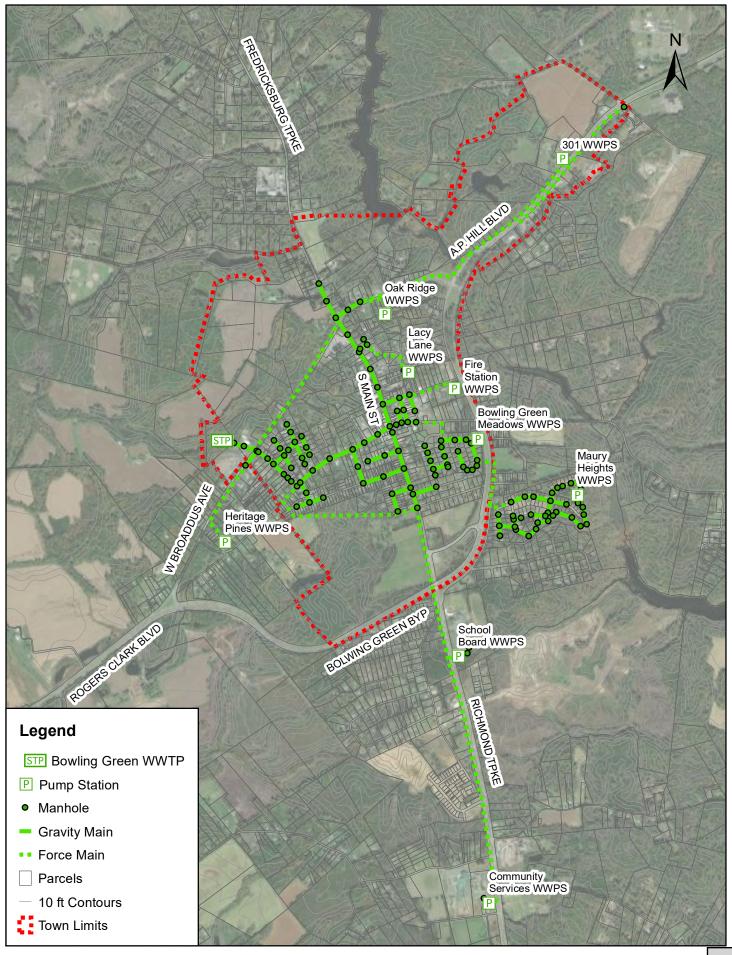


FIGURE 2.1: EXISTING SEWER SYSTEM MAP 1 INCH = 2,500 FEET



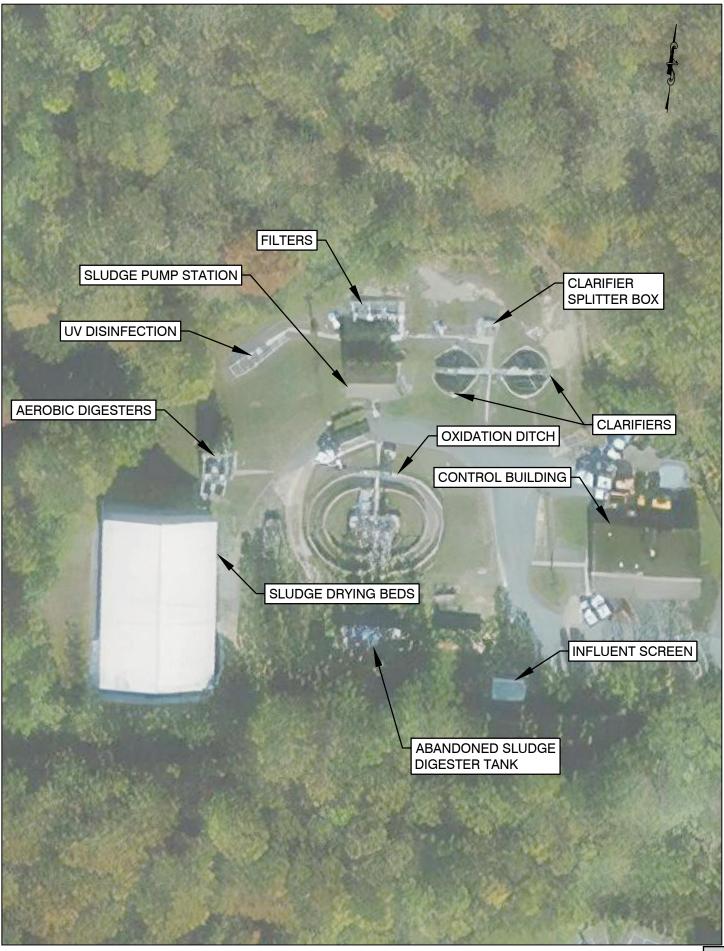


FIGURE 2.2: EXISTING SITE LAYOUT



### 2.4 - Financial Status of Existing Facilities

#### 2.4.1 - Existing Rate Schedule

Sewer billing is based upon water meter readings, which are recorded bi-monthly. Users are charged a base fee for water and sewer up to 5,000 gallons, after which additional fees apply. User charges vary whether the user is in town and out of town. See **Table 2.1 – Bi-Monthly Sewer Rates** below for breakdown of bi-monthly sewer rates.

	Resi	dential	Com	mercial
Gallons	In-Town	Out-of-Town	In-Town	Out-of-Town
0-5,000	\$86.53	\$97.80	\$93.48	\$112.38
5,001-10,000	\$4.39	\$4.96	\$5.21	\$6.26
10,001-20,000	\$4.62	\$5.22	\$5.40	\$6.49
20,001-30,000	\$4.82	\$5.45	\$5.58	\$6.71
30,001-40,000	\$5.00	\$5.65	\$5.83	\$7.01
40,001-50,000	N/A*	N/A*	\$6.02	\$7.23
50,0001-100,000	N/A*	N/A*	\$6.24	\$7.50
100,001 And Up	N/A*	N/A*	\$6.39	\$7.68

#### Table 2.1 – Bi-Monthly Sewer Rates

\*Residential usage above 40,000 gallons is billed at the same rated as 30,001-40,000 gallons.

### 2.4.2 - Annual Operations and Maintenance Costs

Annual operations and maintenance costs are based upon expenditure summaries provided by the Town of Bowling Green; refer to **Table 2.2 - Sewer Expense Summary** for reference. The average annual operation and maintenance costs for the fiscal years ending in June 2018, 2019, and 2020 was approximately \$466,000. The fiscal year ending in June of 2018 was higher than the previous two years, due to wastewater treatment plant sewer line repair expenses. The budgeted annual operations and maintenance costs for the fiscal year ending in June 2021 is \$589,537.

# Table 2.2 - Sewer Expense Summary

Fiscal Year Ending in June	Sewer Expenses
2018	\$509,126
2019	\$456,877
2020	\$431,466

## 2.5 - Water/Energy/Waste Audits

The Town of Bowling Green has not conducted any water, energy, or waste audits.

# **SECTION 3 - NEED FOR PROJECT**

## 3.1 - Health, Sanitary, and Security

In the past three years, the Town has received one warning letter from the Virginia Department of Environmental Quality (DEQ). This warning letter originated from a loss of solids reported on August 4, 2020 by a concerned citizen. This loss of solids resulted in an inspection by DEQ, which led to the observation of various equipment out of service. The warning letter specifically states that proper operation and maintenance of the facility is required. The loss of solids was caused by an extremely high flow caused by tropical storm Isaias. During their visit DEQ noticed the following:

- UV Bank 1A was not in operation
- Ashing was observed on the clarifier surface
- The sludge judge for the clarifier was broken
- One out of the three available sand filters were operational
- The final effluent flow meter was not operating properly

DEQ staff additionally discussed the influence of inflow and infiltration on this event. Continual I/I problems can result in the deterioration of pipe bedding materials and erosion of soil adjacent to the gravity main pipe. This creates the potential for unsuitable subsurface conditions that can result in a range of consequences from sags and fractures in the pipe to something as major as a sink hole. As previously mentioned, the Town has experienced two recent sewer main collapses.

In addition, I/I also increases the potential for exfiltration of wastewater from the sanitary sewer system, which presents a health concern where wastewater can potentially combine with groundwater and potentially enters a well utilized for drinking water. There is also a major convenience concern when emergency open cut repairs are completed.

Additionally, as part of this project, which will be discussed in further detail in subsequent sections, fences and generators will be installed at several pump stations. This will increase the reliability of the collection system and protect it from tampering and minimize the potential for sanitary sewer overflows (SSOs) during power outages.

This project will increase the reliability of the wastewater collection and treatment facility, which will protect the health and safety of the town population.

#### 3.2 - Aging Infrastructure

As previously discussed, one of the main driving factors of this project is the age of the overall sanitary sewer system. A major plant upgrade has not been completed since 1991, with only small projects relating to the influent screen and oxidation ditch equipment repairs. Therefore, most of the mechanical equipment is beyond the end of its useful life and will require significant rehabilitation, repair, or replacement in the near future. Additionally, much of the gravity sewer system is reaching the end of its useful life and needs to be replaced or rehabilitated immediately.

## 3.3 - Reasonable Growth

The average annual daily influent flow rate is 0.13 MGD; refer to **Table 4.2 – Influent Flow Data** from DMRs in Section 4.1.1 - Basis of Design for details.

Based upon the comprehensive plan adopted by the Town of Bowling in Green in 2008, three population projections scenarios were developed. Projection 1 was based upon a 6% growth rate per decade, Projection 2 was based upon a 12% growth rate per decade, and Projection 3 was based upon future land use, which resulted in the highest population increase projection of 17.5% to 54.5% per decade. Refer to **Table 3.1 - Population Projections** for details. As previously discussed, in **Section 1.3 - Population Trends**, the Town is experienced an average growth rate of 12.2% per decade between 2000 and 2020, which is similar to Projection 2. Based upon this, it was determin

ed that the WWTP capacity did not have to be expanded beyond 0.25 MGD over the next 20 year period, therefore a WWTP capacity increase was not required.

	Population	Estimated C	umulative	Estimat	ed Flows*
Scenario	Increase Per	Added Po	pulation	(N	/IGD)
	Decade	2030	2040	2030	2040
Projection 1	6%	71	75	0.13	0.13
Projection 2	12%	141	158	0.14	0.14
Projection 3A	17.5%	206	242	0.14	0.14
Projection 3B	54.5%	640	989	0.16	0.18

# **Table 3.1 - Population Projections**

\*Assumes 50 gpd per capita of added population plus the existing flow rate of 0.13 MGD

# **SECTION 4 - ALTERNATIVES CONSIDERED**

Two alternatives were evaluated for the wastewater treatment plant upgrades, as shown below:

- Rehabilitate Existing Oxidation Ditch
- Convert Existing Oxidation Ditch to Diffused Aeration

It should be noted that portions of the plant will be very similar from process to process and will be noted as such.

Collection system improvements are fairly straightforward. There's one reasonable alternative, which is to replace the severely deteriorated concrete sewer mains identified by the Town and rehabilitate or replace associated manholes. This is fully analyzed in Section 4.2 -Collection System Improvements.

# 4.1 - Wastewater Treatment Plant Upgrade Options

# 4.1.1 - Basis of Design

To determine a basis of design for the wastewater treatment plant options, influent wastewater characteristics and effluent requirements were evaluated.

### 4.1.1.a - Influent Wastewater Characteristics

Limited influent sampling data was available; therefore, it is recommended that a full wastewater characterization be performed during the preliminary design phase. Historical influent data from February 2021 is summarized in **Table 4.1 – Influent Data** below. Flow data is summarized for the DMR data from January 2018 through November 2020; refer to **Table 4.2 – Influent Flow Data from DMRs** for a summary of data.

As shown in the table below BOD, TKN, and Ammonia concentrations indicate a higher strength wastewater.

### Table 4.1 – Influent Data

Statistic	BOD <sub>5</sub>	TKN	Ammonia
Statistic	(mg/L)	(mg/L)	(mg/L)
Average	276	52.3	35.5
Max	394	68.2	41.9
Min	211	38.6	24.9

#### Table 4.2 – Influent Flow Data from DMRs

	Annual Average	Maximum Month	Maximum Day
Year	Day Flow	Average Day Flow	Flow
	(MGD)	(MGD)	(MGD)
2018	0.13	0.17	0.59
2019	0.13	0.16	1.12
2020	0.12	0.17	1.00

# 4.1.1.b - Virginia Pollutant Discharge Elimination System Permit

The Town of Bowling Green WWTP operates under VPDES Permit Number VA0020737. Based upon the current permit, which expires on September 30, 2023, the effluent limits are as summarized in **Table 4.3 – Permit Effluent Limits**.

Effluent Characteristics	Monthly Average Discharge Limitation	Weekly Average Discharge Limitation	Minimum	Maximum	Frequency	Sample Type
рН	N/A	N/A	6.0 SU	9.0 SU	1/D	Grab
cBOD₅	10 mg/L; 9.5 kg/day	15 mg/L; 14 kg/day	N/A	N/A	3 Days Per Week	8 Hour Composite
Total Suspended Solids (TSS)	10 mg/L; 9.5 kg/day	15 mg/L; 14 kg/day	N/A	N/A	3 Days Per Week	8 Hour Composite
Total Kjeldahl Nitrogen (TKN)	3.0 mg/L; 2.8 kg/day	4.5 mg/L; 4.2 kg/day	N/A	N/A	3 Days Per Week	8 Hour Composite
Dissolved Oxygen	N/A	N/A	5.0 mg/L	N/A	3 Days Per Week	8 Hour Composite
E. Coli (Geometric Mean)	126 n/100 mL	N/A	N/A	N/A	3 Days Per Week	8 Hour Composite
Total Phosphorus	NL	N/A	N/A	N/A	Once Per Year	8 Hour Composite
Nitrate-Nitrite	NL	N/A	N/A	N/A	Once Per Year	8 Hour Composite
Total Nitrogen	NL	N/A	N/A	N/A	Once Per Year	Calculated

#### Table 4.3 – Permit Effluent Limits Summary

Based on preliminary discussions with the VDEQ, permit limits are not expected to change for the improvements, with the exception of a new ammonia limit, which is due to the VDEQ's implementation of the Environmental Protection Agency (EPA) 2013 Fresh Water Ammonia Criteria. Preliminary input from VDEQ indicated that the WWTP's effluent ammonia limit could be set at 1.4 mg/L and 1.0 mg/L for the weekly and monthly averages.

Based upon the above influent characteristic and effluent requirements, the following was selected as a conservative basis of design. This should be finalized during the preliminary design phase, after a complete wastewater characterization has been performed. The influent values are based upon best engineering judgment, limited influent sampling, and domestic wastewater as defined in Table 3-15 of Wastewater Engineering Treatment and Reuse by Metcalf and Eddy 4<sup>th</sup> Edition. These values are conservative based upon the observed influent data but were chosen based upon the limited influent data available. The peak hour flow rate was based upon record drawings.

## **Table 4.4 – Flow Parameters**

Wastewater Characteristics	MGD
Annual Average Day Flow	0.25
Maximum Day Flow	0.5
Peak Hour Flow	1.06

# Table 4.5 – Basis of Design

Wastewater Characteristics	Influent	Effluent
cBOD <sub>5</sub>	300 mg/L	10 mg/L Monthly Average
Total Suspended Solids (TSS)	300 mg/L	10 mg/L Monthly Average
Total Kjeldahl Nitrogen (TKN)	55 mg/L	3 mg/L Monthly Average
Ammonia as Nitrogen	40 mg/L	1.4 mg/L Weekly Average
		1.0 mg/L Monthly Average

# 4.1.2 - WWTP Alternative 1 - Rehabilitate Existing Oxidation Ditch

# 4.1.2.a - Description

#### 4.1.2.a.i - Summary

The first alternative considered is to rehabilitate the existing oxidation ditch in kind. This will consist of replacing or rehabilitating the existing equipment as necessary, redesigning key aspects of the wastewater treatment plant, and installing a centrifuge for dewatering. See Figure 4.1 -Rehabilitate Existing Oxidation Ditch Process Flow Diagram for details on this process

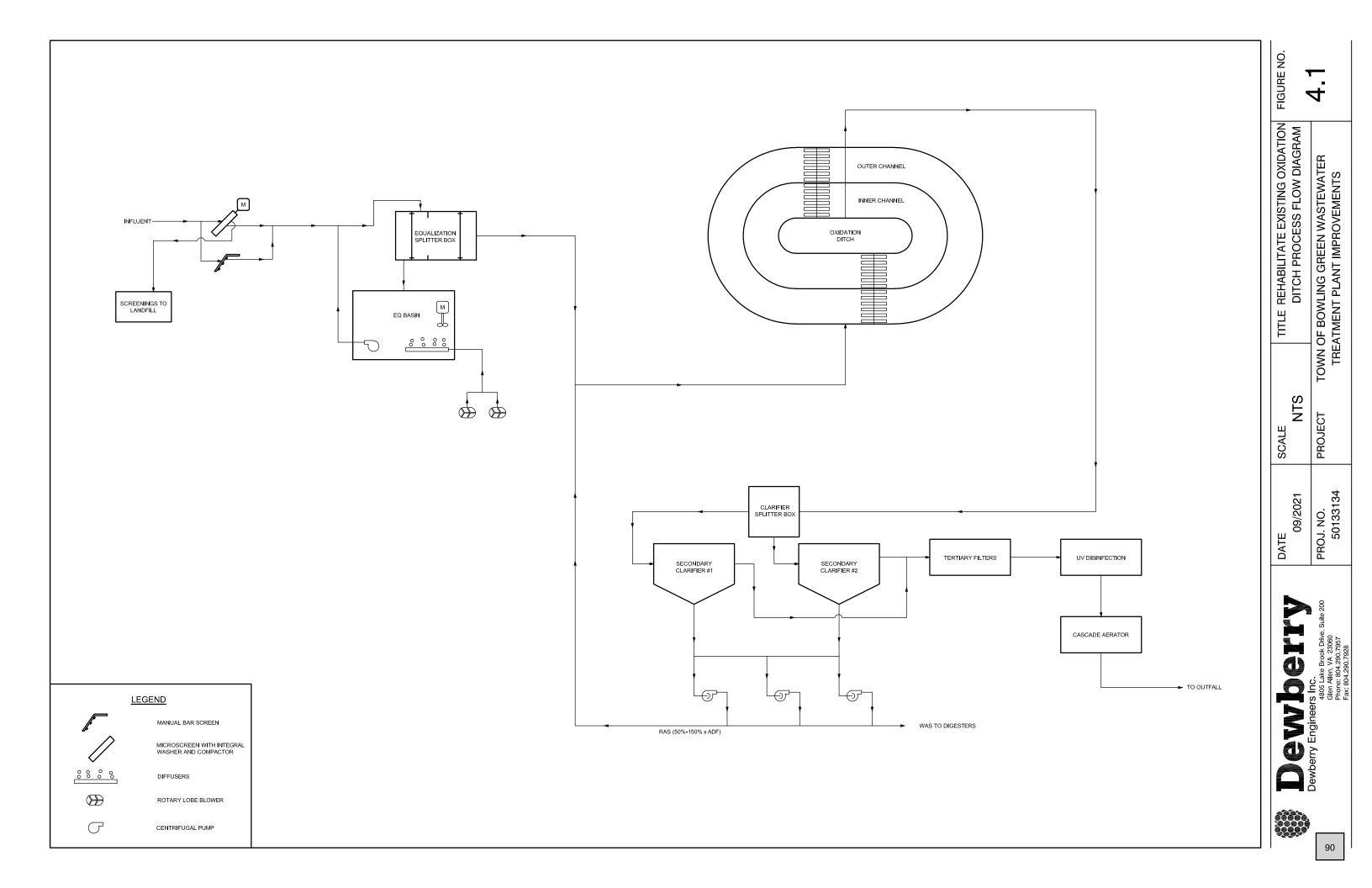
# 4.1.2.a.ii - Biological Process

This alternative will consist of rehabilitating the existing oxidation ditches in kind, with any upgrades required to bring the oxidation ditch closer to current design standards. This will include replacing the following:

- Drives
- Drive reducers
- Torque arms
- Aeration disks
- Shafts
- Shaft Couplings
- Weather hoods,
- Bearing lubrication units

The upgrades to bring the unit into existing best standards are as follows:

- Direct drives replacing the existing belt drive system
- Larger aeration disks
- Automatic bearing lubrication system



#### 4.1.2.a.iii - Headworks

The primary goal of any headworks is to remove solids from the wastewater to protect downstream equipment. Based upon initial discussions with the Town and the condition of the existing concrete channels, it was decided to reuse the existing screenings channels. An inclined cylindrical screen identical to the existing screen will be installed for this upgrade. Based upon discussions with the town, it was determined that grit removal was not necessary.

#### 4.1.2.a.iv - Equalization

The plant expansion will include an offline equalization basin to provide for more consistent loading to the treatment process. During lower and average flow periods, the influent will be routed directly to the biological reactor to maximize the availability of the influent BOD for biological nutrient removal. During periods of higher flow, the influent would be diverted to the equalization basin, and repumped back to the biological reactor once flows subside.

#### 4.1.2.a.v - Secondary Clarification

The WWTP has two existing 25' diameter clarifiers, which would need to have all mechanical components replaced as part of this project. In conjunction with the secondary clarifiers the return activated sludge (RAS) and waste activated sludge (WAS) pump station, which routes the sludge from the clarifier underdrain either to the head RAS anoxic reactor or to the digesters, will be modified. The clarifier underflow piping will be routed directly to the pumps, versus to a common wet well in order to provide better RAS control for each clarifier. Additionally, a third RAS/WAS pump will be installed as a swing pump to provide redundancy.

#### 4.1.2.a.vi - Tertiary Filtration

In order to create room for a third RAS/WAS pump, the existing sand filter will be replaced with a cloth disk filter that does not require a compressed air system. This will allow room for a third RAS/WAS pump parallel to the existing two. It was determined that reusing the existing filter structures was possible with slight modifications.

# 4.1.2.a.vii - Disinfection

The UV system will be replaced in kind to the current design redundancy. Additionally, a manual davit crane will be installed to assist in the removal and re-installation of the UV modules.

4.1.2.a.viii - Outfall

No modifications to the outfall will be performed as part of this project.

# 4.1.2.a.ix - Solids Handling

The existing sludge holding tanks will be reused as part of this project, in conjunction with a centrifuge to provide dewatering of the digested sludge. The aerobic sludge holding tanks are not designed to meet Class B biosolids reduction in accordance with EPA Part 503, however this is not required for the current landfill disposal location. The centrifuge is intended to replace the existing sludge drying beds and will be placed in a separate room in the dewatering building.

# 4.1.2.b - Design Criteria

# 4.1.2.b.i - Summary

The design criteria are summarized below and will be similar to the existing design criteria.

# 4.1.2.b.ii - Biological Process

The rehabilitation to the oxidation ditch, will also include some upgrades to bring it up to current design standards. The upgrades and rehabilitation will include:

- Two (2) 30 HP direct drive motors, drive reducers and torque arms
- Thirty-two (32) 66" aeration disks
- Four (4) shafts
- Eight (8) shaft bearings
- Two (2) shaft couplings
- Four (4) domed fiberglass weather hoods
- Six (6) automatic bearing lubrication units

The major equipment changes for the oxidation ditch for this option include replacing the belt drives with direct drives and larger aeration disks, in order to increase efficiency and bring the plant to more mo.

The major drawback to this option is the limited redundancy of the aeration system. The drives are oversized, in order to provide some redundancy in aeration capacity. However, the dissolved oxygen will only be supplied at two distinct points, one point in each channel. This is a significant limitation during periods with one aerator offline. Additionally, operations staff has had issues with the current drive shafts and bearings, which require frequent maintenance and replacement. There are several components of this upgrade that should help remediate this concern with the shaft bearings including:

- Conversion to direct drives
- Automatic bearing lubrication
- Releveling drive shafts as basins have likely settled over time

## 4.1.2.b.iii - Headworks

The headworks will be designed to pass the peak hour flow rate. The headworks will be designed to the existing peak flow rate of 1.06 MGD, which is slightly over a 4.0 peak factor. A micro strainer screen will be installed similar to the existing, in the existing channel.

#### 4.1.2.b.iv - Equalization

The equalization basin was sized based upon a maximum day flow rate of 0.5 MGD and a peak hour flow rate of 1.06 MGD. The equalization basin will buffer peak flow rates down to an allowable flow rate of 0.6 MGD. The equalization basin will be a single compartment basin with coarse bubble diffusers and two blowers, one duty and one redundant.

# 4.1.2.b.v - Secondary Clarification

The two existing secondary clarifiers will have all mechanical components replaced. In addition to this, the piping will be modified, such that each clarifier will have a dedicated RAS/WAS pump with a third, redundant, swing pump. The RAS pumps will be sized for each pump to handle up to

50% of the RAS rate, which is a total of 125% of the average day flow rate. This equates to a flow rate of approximately 110 gpm per pump.

### 4.1.2.b.vi - Tertiary Filtration

Tertiary filtration will be designed for an average day flow rate of 0.25 MGD and a peak flow rate of 1.06 MGD, with 5-micron cloth media. There will be two cloth disk filters installed in the existing concrete basin, which will require modifications to be converted from sand filters to cloth disk filters. These modifications include removing the influent baffle wall and modifying the effluent weir/overflow structure. There will be two 4-disk Aqua MiniDisk filters, and the middle filter will be converted into a dry pit for the filter backwash pumps.

### 4.1.2.b.vii - Disinfection

The UV system will be replaced in kind to the current design redundancy. Additionally, a manual davit crane will be installed to assist in the removal and re-installation of the UV modules.

4.1.2.b.viii - Outfall

No modifications to the outfall will be performed as part of this project.

#### 4.1.2.b.ix - Solids Handling

The waste activated sludge (WAS) will be routed from the clarifier to the sludge holding tanks. From the sludge holding tanks, the sludge will be pumped to a centrifuge for dewatering, which will be located in a new building. The centrifuge will be designed for 45 gpm hydraulic feed rate and 335 lbs/hr solids feed rate. It was assumed the centrifuge will run approximately 12 hours per week.

#### 4.1.2.b.x - Reliability

The plant will be designed to meet class II reliability, similar to the existing plant.

### 4.1.2.c - Map

Refer to Figure 4.2 – Rehabilitate Existing Oxidation Ditch Site Layout for a layout of the proposed WWTP improvements.

# 4.1.2.d - Environmental Impacts

No major lasting environmental impacts are expected. All improvements are within the existing previously disturbed areas.

# 4.1.2.e - Land Requirements

No new land will be required for this expansion.

# 4.1.2.f - Potential Construction Problems

The largest construction challenge will be maintaining the WWTP in operation during construction. This will require a detailed phasing and demolition plan.

# 4.1.2.g - Sustainability Considerations

# 4.1.2.g.i - Water and Energy Efficiency

Water efficiency does not vary drastically from treatment process to treatment process, therefore only energy efficiency was evaluated. Energy efficiency also does not vary drastically between alternatives, see **Appendix A – Alternatives and Recommended Improvements Cost Estimates** for details. Energy efficiency will be improved during this upgrade by the following:

- Installing variable frequency drives for the mechanical aerators
- Installing newer more efficient equipment

# 4.1.2.g.ii - Green Infrastructure

New impervious area will be minimized to the greatest extent possible, only utilizing impervious area as required for the buildings, treatment basins, miscellaneous structures, and pavement for site access. Additionally, a stormwater management plan will be developed as required to address the water quantity and quality. This stormwater management plan is anticipated to utilize a

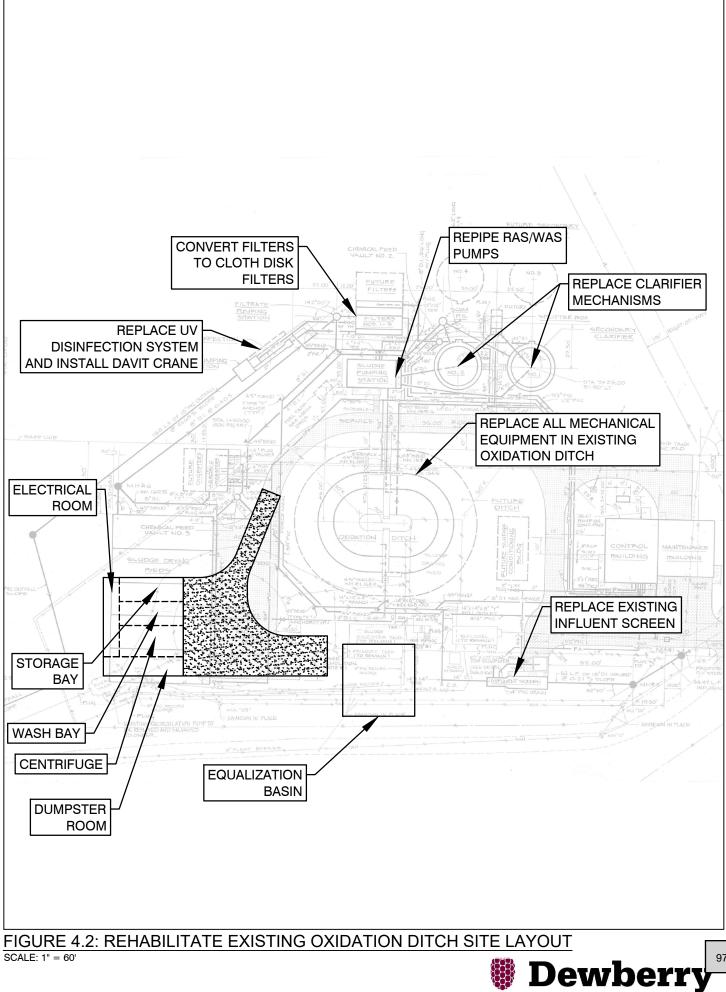
combination of best management practices and nutrient credits to meet the requirements at the time of design.

# 4.1.2.g.iii - Other

No other sustainability items were evaluated.

4.1.2.h - Cost Estimates

Budgetary cost estimates were prepared for this alternative, see Appendix A – Alternatives and Recommended Improvements Cost Estimates for details.



# 4.1.3 - WWTP Alternative 2 - Convert Existing Oxidation Ditch To Diffused Aeration

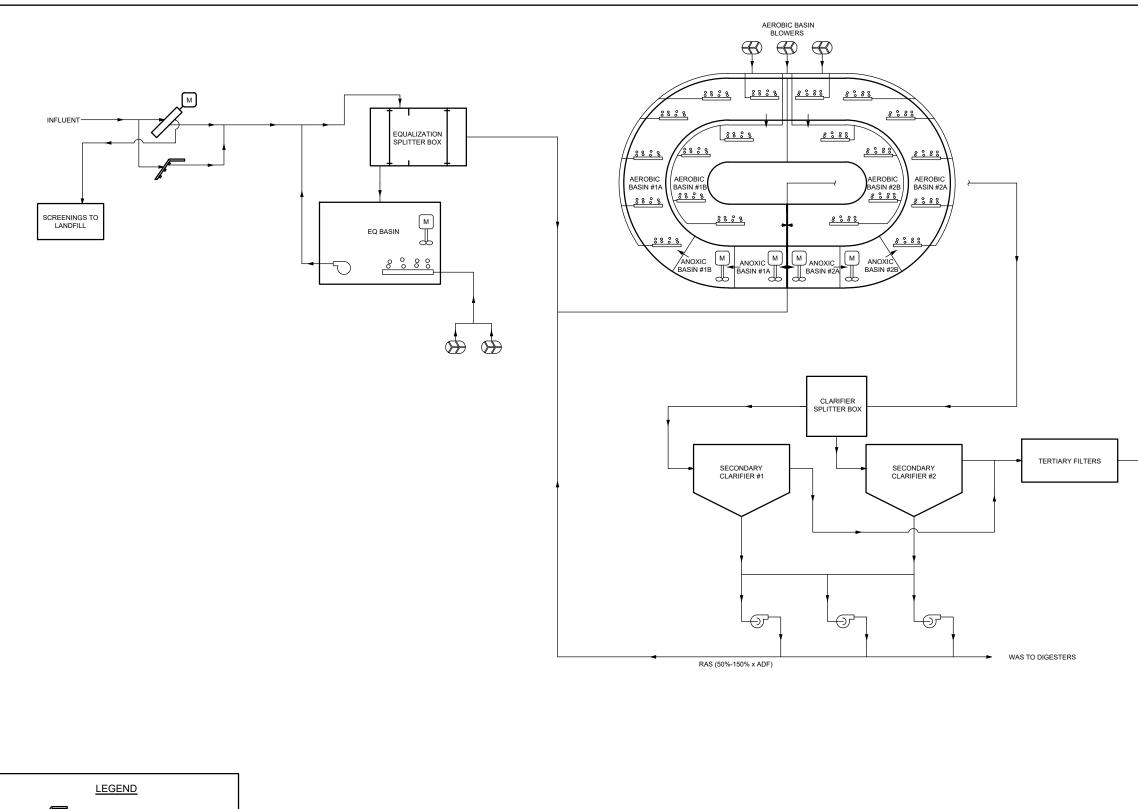
## 4.1.3.a - Description

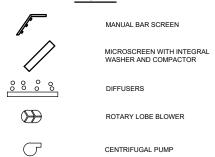
#### 4.1.3.a.i - Summary

The second alternative evaluated was to convert the existing oxidation ditches to diffused aeration, replacing or rehabilitating the existing equipment as necessary, redesigning key aspects of the wastewater treatment plant, and installing a centrifuge for dewatering. See **Figure 4.3 – Convert Existing Oxidation Ditch To Diffused Aeration** Process Flow Diagram for details.

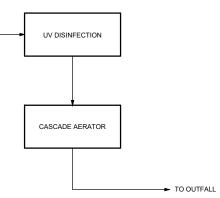
## 4.1.3.a.ii - Biological Process

The second alternative will consist primarily of removing the existing mechanical aeration equipment and installing diffused aeration and submersible mixers. This conversion will include constructing walls to ensure the proper flow of the wastewater and to divide the basin into two trains. Additionally, an anoxic selector will be constructed within the existing basin to aide in sludge settleability.





2000	Dewberry	DATE 09/2021	scale NTS	TITLE CONVERT EXITING OXIDATION DITCH PROCESS FLOW DIAGRAM	FIGURE NO.
99	Dewberry Engineers Inc. 4005 Lake Brook Drive, Suite 200 Glen Allen, VA 23060 Phone: 804, 290, 7957 Fax: 804, 290, 7928	PROJ. NO. 50133134	PROJECT TO	TOWN OF BOWLING GREEN WASTEWATER TREATMENT PLANT IMPROVEMENTS	4 2.



### 4.1.3.a.iii - Headworks

The headworks will be identical to the headworks described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.a.iii -Headworks.

4.1.3.a.iv - Equalization

Equalization will be identical to the equalization described previously for rehabilitating the existing oxidation ditch, see **Section 4.1.2.a.iv -Equalization**.

4.1.3.a.v - Secondary Clarification

Clarification will be identical to the secondary clarification described previously for rehabilitating the existing oxidation ditch, see **Section 4.1.2.a.v** -**Secondary Clarification**.

4.1.3.a.vi - Tertiary Filtration

Tertiary filtration will be identical to tertiary filtration described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.a.vi -Tertiary Filtration.

4.1.3.a.vii - Disinfection

Disinfection will be identical to the disinfection described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.a.vii -Disinfection.

4.1.3.a.viii - Outfall

Plant outfall will be identical to the outfall described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.a.viii -Outfall.

4.1.3.a.ix - Solids Handling

Solids handling will be identical to the solids handling described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.a.ix -Solids Handling.

4.1.3.b - Design Criteria

## 4.1.3.b.i - Summary

The design criteria are summarized below and will be similar to the existing design criteria.

## 4.1.3.b.ii - Biological Process

The oxidation ditch conversion will be accomplished by removing the existing mechanical aerators and installing diffused aeration and submersible mixers. The following design parameter assumptions were made:

- Oxygen credit for denitrification was not used in sizing the blowers and diffusers
- Blowers sized with a 1.5 peak factor with largest unit out of service
- Diffusers will be tapered, to match the oxygen requirements

New concrete walls will be required to divide the influent from the effluent side, because no rotational movement will be induced without the oxidation ditch disks rotating. Additionally, these walls will divide the ditches into two parallel trains. A key design benefit to this alternative is the ability to add an anoxic selector to the front of the treatment train. This selector will help to ensure that good sludge settleability is maintained. This anoxic selector will include two walled off subbasin each with a 2-hour hydraulic retention time. To provide flexibility, these two anoxic selectors will have submersible mixers and diffusers to allow them to swing from being either aerobic zones or anoxic zones. The second major advantage to diffused aeration is the ability to the basins. The primary disadvantage to the diffused aeration system is the necessity to drain each sub basin in order to perform maintenance on the diffuser assemblies.

To construct this option, one channel will be taken offline at a time, with shutdowns timed during the winter after the equalization basin is installed. First the outside channel will be taken offline, directing flow only through the inside channel. The blower, diffusers, and baffle walls for the outside channel will be constructed. Then flow will be diverted to the outside channel and bypass pumped around the inside channel. Diffusers and dividing walls will then be installed in the interior channel.

## 4.1.3.b.iii - Headworks

The headworks will be identical to the headworks described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.b.iii -Headworks.

4.1.3.b.iv - Equalization

Equalization will be identical to the equalization described previously for rehabilitating the existing oxidation ditch, see **Section 4.1.2.b.iv -Equalization**.

4.1.3.b.v - Secondary Clarification

Clarification will be identical to the secondary clarification described previously for rehabilitating the existing oxidation ditch, see **Section 4.1.2.b.v** -**Secondary Clarification**.

4.1.3.b.vi - Tertiary Filtration

Tertiary filtration will be identical to the tertiary filtration described previously for rehabilitating the existing oxidation ditch, see **Section 4.1.2.b.vi** -**Tertiary Filtration**.

4.1.3.b.vii - Disinfection

Disinfection will be identical to the disinfection described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.b.vii -Disinfection.

4.1.3.b.viii - Outfall

Plant outfall will be identical to the outfall described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.b.viii - Outfall.

4.1.3.b.ix - Solids Handling

Solids handling will be identical to the solids handling described previously for rehabilitating the existing oxidation ditch, see Section 4.1.2.b.ix -Solids Handling.

4.1.3.b.x - Reliability

Reliability will be identical as for rehabilitating the existing oxidation ditch, see Section 4.1.2.b.x -Reliability.

4.1.3.c - Map

Refer to **Figure 4.4 – Convert Existing Oxidation Ditch Site Layout** for a layout of the proposed WWTP improvements.

4.1.3.d - Environmental Impacts

No major lasting environmental impacts are expected. All improvements are within the existing previously disturbed areas.

4.1.3.e - Land Requirements

No new land will be required for this expansion.

4.1.3.f - Potential Construction Problems

Similar to the previous alternative, the largest construction hurdle will be maintaining the WWTP in operation during construction. This will require a detailed phasing and demolition plan.

4.1.3.g - Sustainability Considerations

4.1.3.g.i - Water and Energy Efficiency

Water efficiency does not vary drastically from treatment process to treatment process, therefore only energy efficiency was evaluated. Energy efficiency also does not vary drastically between alternatives, see **Appendix A – Alternatives and Recommended Improvements Cost Estimates** for details. Energy efficiency will be improved during this upgrade by the following:

- Installing VFDs for the blowers
- Installing newer more efficient equipment

## 4.1.3.g.ii - Green Infrastructure

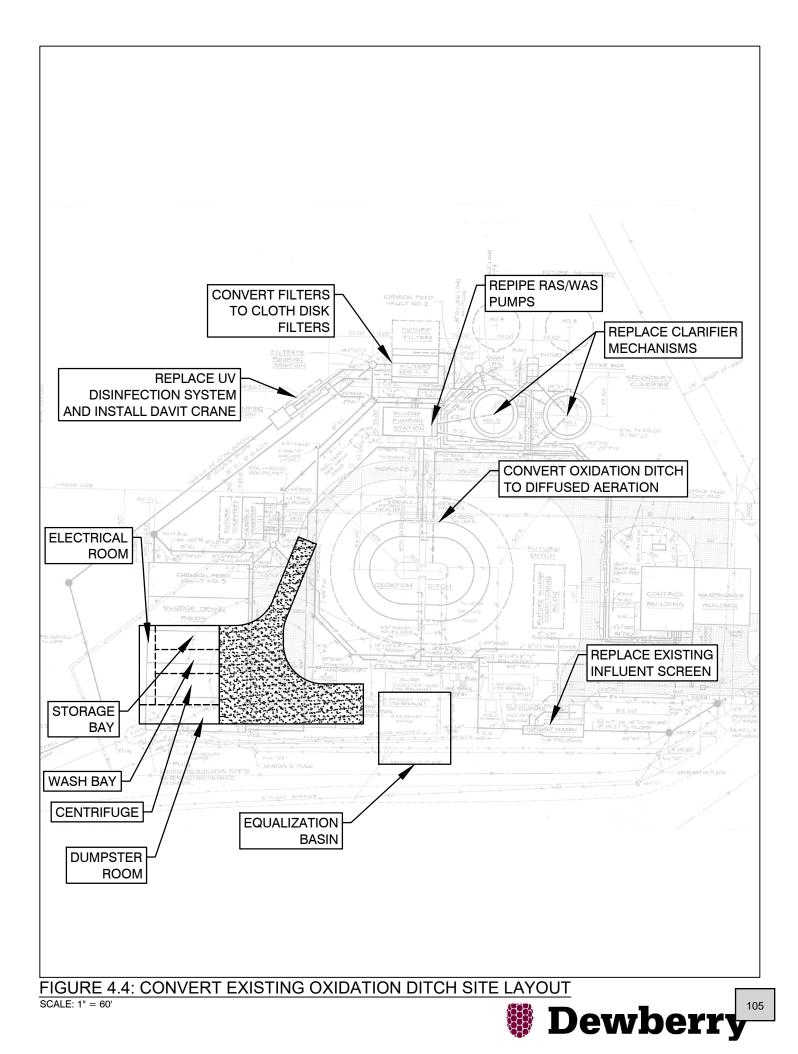
New impervious area will be minimized to the greatest extent possible, only utilizing impervious area as required for the buildings, treatment basins, miscellaneous structures, and pavement for site access. Additionally, a stormwater management plan will be developed as required to address the water quantity and quality. This stormwater management plan is anticipated to utilize a combination of best management practices and nutrient credits to meet the requirements at the time of design.

### 4.1.3.g.iii - Other

No other sustainability items were evaluated.

## 4.1.3.h - Cost Estimates

Budgetary cost estimates were prepared for the this alternative, see Appendix A – Alternatives and Recommended Improvements Cost Estimates for details.



# 4.2 - Collection System Improvements

#### 4.2.1 - Description

To reduce I/I in the collection system and improve structural integrity of the gravity sewer pipe, it is recommended all concrete pipe be rehabilitated or replaced. Given input from Town personnel, rehabilitation of existing sewer main through lining is not a possibility given the severe deterioration of the concrete gravity sewer pipes. Therefore, the only option to improve the existing gravity collection system sewer mains is to replace existing concrete pipe through open cut excavation. For the purposes of this report, the Town has identified high priority sewer main to be replaced based on known issues. This equates to replacing approximately 9,770 linear feet of 8-inch diameter sewer main, approximately 750 linear feet of 10-inch diameter sewer main, and rehabilitation of the associated forty-two (42) manholes. Brick manholes possibly have the option to be rehabilitated by cementitious lining or the option to be replaced. Rehabilitation by lining is budgeted in the proposed improvement for a cost savings; however, inspection of the manholes during the design phase will verify that lining is feasible.

While not included in the budget for the proposed project improvements, additional improvements that could provide additional benefits to the system would be replacing other sections of the aging concrete sewer piping.

# 4.2.2 - Design Criteria

In general, the design criteria considered for preliminary design is based on the standard of practice in the Commonwealth of Virginia and the Sewage Collection and Treatment Regulations. The Town has not experienced any sanitary sewer overflows in the collection system, so current pipe slopes and capacities should be sufficient. Prior to final design, manholes will be visually inspected to determine structural integrity for rehabilitation or replacement.

# 4.2.3 - Map

Refer to **Figure 4.5** – **Collection System Improvements** for a layout of the proposed collection system improvements.

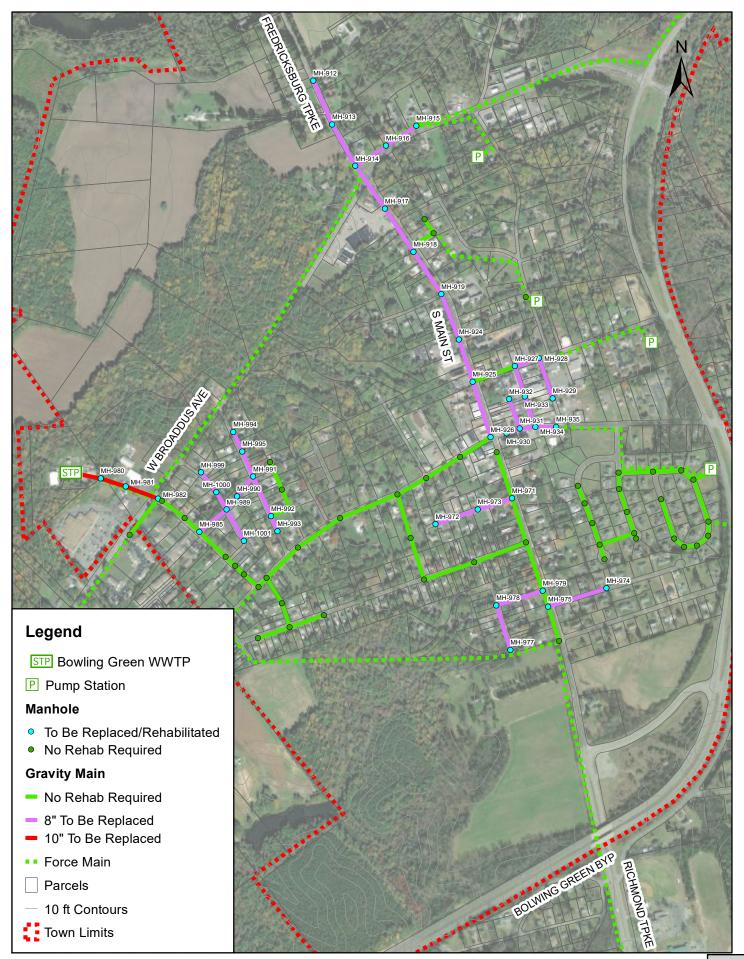


FIGURE 4.5: COLLECTION SYSTEM IMPROVEMENTS 1 INCH = 1,000 FEET



## 4.2.4 - Environmental Impacts

All improvements will occur on previously disturbed areas for the existing features of the sewer collection system, therefore there are minimal environmental impacts. The majority of the existing sewer identified to be replaced is located within the limits of road pavement or road shoulder. Open cut excavation will require pavement repair. Land disturbance will be limited to construction and a quick recovery of the environmental conditions is expected. Proper erosion and sediment control measures will be implemented per an approved erosion and sediment control plan for all construction activities.

## 4.2.5 - Land Requirements

All sewer mains are located within existing road rights-of-way or existing easements; therefore, no easements and no additional land requirements are associated with the replacement of the existing sewer collection system.

## 4.2.6 - Potential Construction Problems

While the improvements will occur in previously disturbed areas, unknown subsurface conditions are a potential issue in the form of unknown soil conditions and underground utilities installed after the gravity sewer. Geotechnical borings and a report will be completed during the design phase to determine and provide recommendations on backfill and requirements for compaction. Utility designation will be completed in conjunction with field survey of the project corridors to identify known existing underground utilities.

As with any construction project, there is also potential for adverse impacts to air quality, noise, and traffic flow during construction. To minimize these impacts, proper construction methods will be used to implement dust control measures during dry weather, construction activities will be typically limited to working hours of weekdays (often between 7 AM and 5 PM), and traffic control measures will be implemented for short periods of time during typical working hours.

# 4.2.7 - Sustainability Considerations

# 4.2.7.a - Water and Energy Efficiency

Water and energy efficiency do not vary for sewer replacement.

# 4.2.7.b - Green Infrastructure

As previously discussed, the gravity sewer will be replaced in the same location, and the sites will be returned to their existing conditions. Therefore, there are no significant impacts anticipated.

4.2.7.c - Other

Reduction of I/I provides environmental benefits by eliminating the potential for exfiltration of wastewater from the collection system into surrounding soils.

# 4.2.8 - Cost Estimates

The collection system improvements costs are incorporated into the total project cost for each wastewater treatment plant upgrade cost estimate, see Appendix A – Alternatives and Recommended Improvements Cost Estimates and Table 4.6 – Gravity Collection System Improvements Cost for reference. For cost estimating purposes, each manhole was assumed to be 15' deep. The number of laterals reconnected was estimated based upon counting houses along the replaced sewer alignment.

Description	Unit	Quantity	Unit Price	Total Price
Remove existing sewer and install 8" gravity sewer	LF	9768	\$115	\$1,123,320
Remove existing sewer and install 10" gravity sewer	LF	750	\$130	\$97,500
Reconnect service laterals	EA	163	\$650	\$105,950
Rehabilitate manholes	VF	630	\$385	\$242,550
Pavement demo/repair	SY	8,180	\$85	\$695,300
Traffic Control	LS	1	\$114,000	\$114,000
Subtotal				\$2,378,620

# Table 4.6 – Gravity Collection System Improvements Cost

# **SECTION 5 - Selection of Alternative**

# 5.1 - Non-Monetary Factors

#### 5.1.1 - Wastewater Treatment Plant Improvements

#### 5.1.1.a - Rehabilitate Existing Oxidation Ditch

The major advantage to rehabilitating the existing oxidation ditch with in-kind equipment is the similarity to the existing treatment process and simplicity of construction. However, plant operations staff has expressed some concerns with the oxidation ditch, including frequent maintenance items. The second major advantage is the ability to do most maintenance without dewatering the basins, however this advantage comes in conjunction with reduced redundancy in the aeration system. As previously discussed, although the mechanical aerator drives have some redundancy built in there is a major limitation with the aeration being confined to specific points in the basin.

#### 5.1.1.b - Convert Existing Oxidation Ditch to Diffused Aeration

The primary advantages to converting the existing oxidation ditches to diffused aeration are the increased redundancy and ability to incorporate an anoxic selector. As previously discussed, the ditches will be converted into two trains with diffusers and blowers, more redundancy can be incorporated into the design and that redundant air can be more effectively distributed to the basin. Additionally, an anoxic selector can help to ensure sludge settleability. The primary disadvantage to the diffused aeration system is the necessity to drain each subbasin in order to perform maintenance on the diffuser assemblies.

#### 5.1.1.c - Conclusion

In conclusion, either alternative can provide the necessary treatment for the Bowling Green WWTP. Both alternatives have distinct advantages and disadvantages. It is recommended to proceed with the diffused aeration alternative based upon operator preference.

#### 5.1.2 - Collection System Improvements

The gravity sewer main must be replaced based on its existing condition.

Lining brick manholes is selected over manhole replacement for its fewer environmental impacts and fewer potential construction problems.

#### 5.2 - Life Cycle Cost Analysis

#### 5.2.1 - Wastewater Treatment Plant Improvements

See **Table 5.1 - Life Cycle Cost Analysis Summary**, for a breakdown of the life cycle cost analysis. Both options are very similar both from an initial capital cost and total life cycle cost perspective, therefore an alternative should be selected based upon the nonmonetary factors.

Alternative	Initial Capital Cost	Total Life Cycle Cost
Rehabilitating The Existing	\$15,854,400	\$19,323,800
Oxidation Ditch	Ş13,834,400	¥19,323,800
Converting The Existing Oxidation	\$15,902,900	\$19,363,800
Ditches To Diffused Aeration	Ş13,302,300	<i>\$13,303,000</i>

#### Table 5.1 - Life Cycle Cost Analysis Summary

#### 5.2.2 - Collection System Improvements

Operating costs for the collection system are identical whether the old brick manholes are rehabilitated or replaced. A new precast manhole or a brick manhole rehabilitated with a cementitious lining will be operated and maintained the same way, therefore an overall life cycle present worth analysis for each alternative is not provided. Lining brick manholes is the selection due to its lower capital cost.

# 5.3 - Alternative Selection

#### 5.3.1 - Wastewater Treatment Plant Improvements

Because the total capital cost and life cycle cost are so similar, it is recommended to choose an alternative based upon the nonmonetary factors. The primary nonmonetary factor to consider is operator preference, flexibility in operation, and additional redundancy. Based upon discussions

with the plant operation staff, the preferred treatment method is converting the oxidation ditches to diffused aeration.

# 5.3.2 - Collection System Improvements

Collection system improvements include the following:

- Replacement of approximately 9,770 LF of 8-inch diameter concrete gravity sewer pipe
- Replacement of approximately 750 LF of 10-inch diameter concrete gravity sewer pipe
- Reconnection of 163 laterals
- Rehabilitation of forty-two (42) existing manholes with cementitious liner

# **SECTION 6 - Proposed Project (Recommended Alternative)**

# 6.1 - Summary of Proposed Project

#### 6.1.1 - Summary of Chosen Alternatives

The chosen alternative is to convert the existing oxidation ditches to diffused aeration, which will consist of replacing or rehabbing existing equipment as necessary, redesigning key aspects of the wastewater treatment plant, and installing a centrifuge for dewatering. The existing mechanical aeration equipment will be removed, and diffusers and blowers will be installed.

# 6.2 - Preliminary Project Design

# 6.2.1 - Headworks

The headworks will be designed to pass the peak hour flow rate. The headworks will be designed to the existing peak flow rate of 1.06 MGD, which is slightly over a 4.0 peak factor. A micro strainer screen will be installed similar to the existing, in the existing channel.

# 6.2.2 - Equalization Basin

The equalization basin was sized based upon a maximum day flow rate of 0.5 MGD and a peak hour flow rate of 1.06 MGD. The equalization basin will be a single compartment basin with coarse bubble diffusers and two blowers, one duty and one redundant.

# 6.2.3 - Secondary Treatment

The oxidation ditch conversion will be accomplished by removing the existing mechanical aerators and installing diffused aeration and submersible mixers. The following design parameter assumptions were made:

- Oxygen credit for denitrification was not used in sizing the blowers and diffusers
- Blowers sized with 1.5 peak factor with largest unit out of service
- Diffusers will be tapered, to match the oxygen requirements

A new concrete wall will be required to divide the influent from the effluent side. An anoxic selector with two baffled zones, each with a 2-hour hydraulic retention time will also be constructed.

# 6.2.4 - Clarification

The two existing secondary clarifiers will have all mechanical components replaced. In addition to this, the piping will be modified, such that each clarifier will have a dedicated RAS/WAS pump with a third, redundant, swing pump. The RAS pumps will be sized for each pump to handle up to 50% of the RAS rate, which is 125% of the average day flow rate. This equates to a flow rate of approximately 110 gpm.

# 6.2.5 - Tertiary Filtration

Tertiary filtration will be designed for an average day flow rate of 0.25 MGD and a peak flow rate of 1.06 MGD, with 5-micron cloth media. There will be two cloth disk filters installed in the existing concrete basin, which will require modifications to be converted from sand filters to cloth disk filters. These modifications include removing the influent baffle wall and modifying the effluent weir/overflow structure. There will be two 4-disk Aqua MiniDisk filters, and the middle filter will be converted into a dry pit for the filter backwash pumps.

# 6.2.6 - Disinfection

The UV system will be replaced in kind. Additionally, a manual davit crane will be installed to assist in the removal and re-installation of the UV modules.

#### 6.2.6.a.i - Outfall

No modifications to the outfall will be performed as part of this project.

#### 6.2.7 - Solids Handling

The existing digesters will be reused as sludge holding tanks. A new dewatering building will be constructed to house a centrifuge and will also include a wash bay for trucks and a storage bay. Since the new dewatering building will be constructed within the existing sludge drying bed location, temporary liquid sludge hauling and offsite disposal will be required during construction.

#### 6.2.8 - Electrical

The existing electrical room will not have space to house the new equipment required. In order to improve constructability and to allow for room for the new electrical, SCADA, and HVAC equipment, additional electrical room space will be provided as part of the project. Additionally, the existing 275 kW generator, which is at the end of its useful life, will be replaced with a 300 kW unit. A new service will be installed to an MCC with automatic transfer controls in main-tie-main construction, with the secondary main connected to the generator. The new MCC will be installed containing all motor starters and variable frequency drives for the plant. With the MCC in main-tie-main configuration, the plant will have additional reliability and safety in the electrical system, which will allow flexibility to de-energize a single bus of the MCC to safely work on the electrical gear. The electrical room space will be air conditioned for the VFDs and the new PLC.

#### 6.2.9 - SCADA

A new plant-wide SCADA system will be installed as part of this project. This will include a new master PLC installed in the new electrical room. A server rack adjacent to the PLC will provide the front-end of the SCADA software to communicate with workstations and operators, the software will be determined during the design phase, but it will be non-proprietary. The PLC communication protocol will be Modbus TCP, and the new PLC will connect to the existing plant PLCs over Ethernet via fiber optic or copper.

# 6.2.10 - Site Improvements

Miscellaneous site improvements will be performed including a new asphalt access road as required to access the plant.

# 6.2.11 - Collection System Improvements

Replacement of the existing concrete gravity sewer identified by Town personnel is proposed to reduce I/I and restore structural integrity in the Town's collection system. Proposed improvements also include the rehabilitation of the associated manholes and reconnection of existing lateral connections.

# 6.2.12 - Pump Station Improvements

Various improvements to several wastewater pump stations around the town will also be performed during this project. These improvements include:

- Bowling Green Meadows Pump Station
  - New fence
  - New generator and automatic transfer switch
- Lacey Lane Pump Station
  - New fence
  - New generator and automatic transfer switch
- Oak Ridge Pump Station
  - New fence
  - New generator and automatic transfer switch
- Route 301 Pump Station
  - New fence
  - New generator and automatic transfer switch
  - New pumps
- Heritage Pines Pump Station
  - New generator and automatic transfer switch

# 6.2.13 - Miscellaneous

New influent and effluent composite samplers will be included as part of this design. Additionally, the town would like to invest in a new water data management software.

# 6.3 - Project Schedule

Refer to Table 6.1 - Preliminary Schedule for an estimated schedule for the proposed project.

Description	Duration in	Approximate Start	Approximate
Description	Month	Date	<b>Completion Date</b>
Draft Preliminary Engineering Report			09/2021
Town of Bowling Green Review	0.5	10/2021	10/2021
Final Preliminary Engineering Report	1	10/2021	11/2021
USDA-RD Review	1	11/2021	12/2021
Revisions	0.5	12/2021	01/2022
Design	12	01/2022	01/2023
Permitting	3	01/2023	04/2023
Bidding	2	04/2023	06/2023
Construction	24	06/2023	06/2025

# **Table 6.1 - Preliminary Schedule**

# 6.4 - Permitting Requirements

A VPDES permit modification will not be needed for this project. Additionally, for the construction of this project a certificate to construct (CTC) and a certificate to operate (CTO) will be required. Building permits, a land disturbance permit, an erosion and sediment control permit, and a stormwater permit will be required.

#### 6.5 - Sustainability Considerations

#### 6.5.1 - Water and Energy Efficiency

Water efficiency was not evaluated as a part of this project. It is not anticipated that a large water demand is required. Additionally, a non-potable water system is installed to reduce the potable water demand. Energy efficiency will be optimized at the plant through various means. The primary way energy efficiency will be increased is by the implementation of newer, more modern technology that is inherently more efficient. Pumps and blowers will be powered by variable frequency drives (VFDs), where applicable. The use of VFDs will allow the Town to turn down the blowers and pumps during lower flows or loadings, which will save energy.

#### 6.5.2 - Green Infrastructure

New impervious area will be minimized to the greatest extent possible, only utilizing impervious area as required for the buildings, treatment basins, miscellaneous structures, and pavement for site access. Additionally, a stormwater management plan will be developed as required to address the water quantity and quality. This stormwater management plan is anticipated to utilize a combination of best management practices and nutrient credits to meet the requirements at the time of design.

#### 6.5.3 - Other

No other sustainability issues were considered.

#### 6.6 - Total Project Cost (Engineers Opinion of Probable Cost)

#### 6.6.1 - Estimated Project Capital Cost

A detailed cost estimate for the project is included in Appendix A – Alternatives and Recommended Improvements Cost Estimates, which was estimated at a total capital cost of \$15,902,900. This includes costs for construction, contingencies, and soft costs including basic engineering services, additional engineering services, full-time resident construction inspection, and miscellaneous legal, administrative, and other costs associated with the funding process. Additional engineering services are expected to include items such as survey, geotechnical inve

stigation, subsurface utility engineering (SUE), influent sampling, process modeling, and a pilot study for the dewatering equipment. Refer to **Table 6.2 – Total Estimated Project Cost** for a breakdown of total project costs.

Description	Estimated Cost	
Construction	\$ 14,098,900	
Bond Attorney	\$ 60,000	
Legal and Advertising	\$ 50,000	
Preliminary Engineering Report <sup>1</sup>	\$ 30,000	
Basic Engineering	\$ 1,154,000	
Additional Engineering	\$ 200,000	
Resident Inspection	\$ 240,000	
Interest	\$ 100,000	
Total Estimated Project Cost	\$ 15,902,900	

# Table 6.2 – Total Estimated Project Cost

1 - The Preliminary Engineering Report (PER) has already been funded separately.

#### 6.6.2 - Income

The Town's sewer fund income is summarized in **Table 6.3 - Sewer Fund Income Summary**. Based upon the preliminary analysis in **Appendix E – Project Planning Factors.** It was assumed that the Town would offset the sewer fund by 260,000, identical to fiscal year 2019. Additionally, it was assumed the town would obtain 30% grant funding and 5,000,000 of funding from another source to avoid increasing rates.

# Table 6.3 - Sewer Fund Income Summary

Fiscal Year	Sewer Fund Income					
Ending June of	Sewer Fund Income					
2018	\$484,664					
2019	\$545,916					
2020	\$484,375					

# 6.6.3 - Annual Operation and Maintenance Costs

See Table 6.4 - Sewer Operation and Maintenance Costs, for a summary of the existing operation and maintenance costs. See Table 6.5 - Projected Sewer System O&M Costs, for a detailed breakdown of existing and anticipated operation and maintenance costs. It should be noted that Table 6.5 - Projected Sewer System O&M Costs, because finalized financial statements were not available for 2020. Additionally, the O&M costs for 2020 were less than 2019, which could be due to decreased expenses related to the COVID-19 pandemic.

Fiscal Year Ending June of	O&M Costs
2018	\$509,126
2019	\$456,877
2020	\$431,466

Table 6.4 - Sewer Operation and Maintenance Costs

# Table 6.5 - Projected Sewer System O&M Costs

Description	2019 Act	tual*	Projected			
Description	Cost	Total	Cost	Total		
Operating Expenses						
Personnel Services	\$129,303	\$438,155	\$129,303	\$444,363		
Fringe Benefits	\$71,560	\$456,155	\$71,560	Ş444,303		
Other Operating Expenses	\$237,292		\$243,500			
Nonoperating Revenue (Expenses)		\$88,881		\$88,881		
Interest Expenses	\$88,881	200,001	\$88,881	200,001		
Total O&M Cost		\$527,036		\$564,744		

\*Values based upon FY2019 Financial Report

# 6.6.4 - Dept Repayment

The Town of Bowling Green has an existing USDA Rural Development sewer loan with an approximate outstanding balance of \$4,644,565.

The anticipated loan values are included in the project planning factors shown Appendix E – Project Planning Factors.

# 6.6.5 - Reserves

# 6.6.5.a - Debt Service Reserve

A debt reserve of 10% are included in the project planning factors shown in the Appendix E – Project Planning Factors.

# 6.6.5.b - Short Lived Asset Reserves

The Town's projected short lived assets and asset recovery over the next fifteen (15) years are outlined in Table 6.6 – Short Lived Assets

No.	Description	Replacement	Useful	Annual Reserve
NO.	Description	Value	Life	Deposit
1	Bowling Green Meadows Pump Station (Two Pumps)	\$20,000	15	\$2,000
2	Lacy Lane Pump Station (Two Pumps)	\$20,000	15	\$2,000
3	Oak Ridge Pump Station (Two Pumps)	\$20,000	15	\$2,000
4	Heritage Pines Pump Station (Two Pumps)	\$20,000	15	\$2,000
5	Maury Heights (Two Pumps)	\$20,000	15	\$2,000
	Totals	\$100,000		\$10,000

# Table 6.6 – Short Lived Assets

# **SECTION 7 - Conclusions and Recommendations**

#### 7.1 - Conclusions

The recommended project includes converting the existing oxidation ditches to operate with diffused aeration, the construction of an equalization basin, dewatering building, and other improvements within the wastewater treatment plant. Additionally, it is recommended to perform the collection system improvements for the gravity sewer system and pump stations. Properly operated, these facilities will provide for the public health and welfare of the existing residential and commercial customers.

#### 7.2 - Recommendations

The chosen alternative in this report is recommended to provide the Town of Bowling Green will continue to treat the influent wastewater effectively and consistently. The following recommendations are also made to expedite implementation of the project.

- 1. Secure funding for the project;
- 2. Perform sampling to determine the full influent wastewater characterization;
- 3. Perform process modeling for the WWTP sizing;
- 4. Obtain permit modification from DEQ for the expanded flow rate;
- Develop Construction Drawings, Technical Specifications, and Bidding Documents to receive competitive construction bids;
- 6. Construct the proposed improvements.

# Appendix A – Alternatives and Recommended Improvements Cost Estimates

Town of Bowling Green WWTP Improvements PER

#### Town of Bowling Green WWTP Improvements Project Cost Estimate: Rehabilitate Existing Oxidation Ditch Town of Bowling Green PER Budgetary Cost Estimate

9/29/2021

Des	cription	Quantity	Unit	T	Jnit Cost		Extension	Subtotal
	pilization/Demobilization	1	LS	\$	510,000	\$	510,000	\$ 510,000
-	neral Conditions	1	LS	\$	510,000	_	510.000	510,000
	nolition	1	LS	\$	100,000	<u> </u>	100,000	100,000
-	Work	1	LS	\$	30,000		30,000	\$ 30,000
	sion and Sediment Control	1	LS	\$	100,000	\$	100,000	\$ 100,000
Asp	halt Drive	5,000	SQFT	\$	30	\$	150,000	\$ 150,000
Byr	ass Pumping and Phasing Costs	1	LS	\$	200,000	\$	200,000	\$ 200,000
	uid Sludge Hauling	1	LS	\$	150,000	\$	150,000	\$ 150,000
Hea	dworks			$\square$				\$ 171,000
	Equipment	1	LS	\$	94,000	\$	94,000	
	Piping, Valves, and Appurtenances	1	LS	\$	17,000	\$	17,000	
	Labor and Equipment to Install	1	LS	\$	60,000	\$	60,000	
EQ	Basin							\$ 523,000
	Equipment	1	LS	\$	107,000	\$	107,000	
	Piping, Valves, and Appurtenances	1	LS	\$	60,000	\$	60,000	
	Labor and Equipment to Install	1	LS	\$	91,000	\$	91,000	
	Concrete	1	LS	\$	177,000	\$	177,000	
	Excavation And Dewatering	1	LS	\$	88,000	\$	88,000	
Tre	atment Trains							\$ 510,000
	Equipment	1	LS	\$	240,000	\$	240,000	
	Piping, Valves, and Appurtenances	1	LS	\$	120,000	\$	120,000	
	Labor and Equipment to Install	1	LS	\$	150,000	\$	150,000	
Sec	ondary Clarifiers							\$ 894,000
	Equipment	1	LS	\$	444,000	\$	444,000	
	Piping, Valves, and Appurtenances	1	LS	\$	150,000	\$	150,000	
	Labor and Equipment to Install	1	LS	\$	300,000	\$	300,000	
Ter	tiary Filters			$\square$				\$ 480,000
	Equipment	1	LS	\$	223,000	\$	223,000	
	Piping, Valves, and Appurtenances	1	LS	\$	57,000	\$	57,000	
	Labor and Equipment to Install	1	LS	\$	175,000	\$	175,000	
	Concrete	1	LS	\$	25,000	\$	25,000	
υν	Disinfection							\$ 182,000
	Equipment	1	LS	\$	151,000	\$	151,000	
	Labor and Equipment to Install	1	LS	\$	31,000	\$	31,000	
Dev	vatering							\$ 1,444,000
	Equipment	1	LS	\$	536,000	\$	536,000	
	Piping, Valves, and Appurtenances	1	LS	\$	402,000	\$	402,000	
	Labor and Equipment to Install	1	LS	\$	506,000	\$	506,000	
Bui	ldings							\$ 630,000
	Dewatering Building	3,000	SQFT	\$	200	\$	600,000	
	HVAC	1	LS	\$	30,000	\$	30,000	
SC/	ADA System	1	LS	\$	300,000	\$	300,000	\$ 300,000
Mis	cellaneous Instrumentation and Controls	1	LS	\$	350,000	\$	350,000	\$ 350,000
Ele	ctrical Upgrades	1	LS	\$	1,150,000	\$	1,150,000	\$ 1,150,000

Description	Quantity	Unit	Unit Cost		Extension		Subtotal	
Composite Samplers	2	EA	\$ 16,000	\$	32,000	\$	32,000	
Gravity Sewer Rehab						\$	2,378,800	
Remove existing sewer and install 8" gravity sewer	9768	LF	\$115	\$	1,123,400			
Remove existing sewer and install 10" gravity sewer	750	LF	\$130	\$	97,500			
Reconnect service laterals	163	EA	\$650	\$	106,000			
Rehabilitate manholes	630	VF	\$385	\$	242,600			
Pavement demo/repair	8,180	SY	\$85	\$	695,300			
Traffic Control	1	LS	\$114,000	\$	114,000			
Bowling Green Meadows						\$	47,500	
Fence	150	LF	\$ 30	\$	4,500			
Swing Gate	1	LS	\$ 3,000	\$	3,000			
Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000			
Lacey Lane						\$	46,000	
Fence	100	LF	\$ 30	\$	3,000			
Swing Gate	1	LS	\$ 3,000	\$	3,000			
Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000			
Oak Ridge						\$	46,000	
Fence	100	LF	\$ 30	\$	3,000			
Swing Gate	1	LS	\$ 3,000	\$	3,000			
Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000			
301 Pump Station						\$	52,000	
Pumps								
Fence	300	LF	\$ 30	\$	9,000			
Swing Gate	1	LS	\$ 3,000	\$	3,000			
Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000			
Heritage Pines						\$	40,000	
Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000			
Subtotal	•					\$	11,026,300	
Contractor Overhead & Profit		15	%			\$	1,654,000	
Construction Contingency		10	%			\$	1,268,100	
Construction Total								
Basic Engineering Services		9.0	%			\$	1,256,000	
Additional Engineering Services (Geotech, Survey, SUE, Modeling, Sampling)						\$	200,000	
Full Time Resident Inspection		4.5				\$	240,000	
Legal, Advertising, Interest, Others		1.5	%			\$	210,000	
Soft Cost Total						\$	1,906,000	
Project Cost Total						\$	15,854,400	

Net Present Worth Analysis	
Yearly Costs	
Yearly Energy Costs	\$ 53,100.00
Yearly Maintenance Costs	\$ 101,000.00
Yearly Major Equipment Replacement Costs (5% of Capital Equipment)	\$ 90,000.00
Yearly Total Operation And Maintenance Costs	\$ 244,100.00
Net Present Worth Factor	
Duration (n) in years	20
Discount rate (i%)	3.5%
Capital Recovery Factor (P/A, i%, n)	14.2124
Net Present Worth Costs	
NPWC of Energy Costs	\$ 754,700.00
NPWC of Maintenance Costs	\$ 1,435,500.00
NPWC of Major Equipment Replacement Costs	\$ 1,279,200.00
NPWC of Total Operation And Maintenance Costs	\$ 3,469,400
Total NPWC	\$ 19,323,800

#### Town of Bowling Green WWTP Improvements Project Cost Estimate: Rehabilitate Existing Oxidation Ditch Town of Bowling Green PER Budgetary Cost Estimate

#### Power-Efficiency

Description	kW-hr/day (all units)	Number of Units Operating	kW	Total HP Per Unit	Motor Efficiency	Hydraulic Efficiency	Design Head (Ft)	Design Peak Flow (gpm)	Design Peak Flow (MGD)	Design Average Flow (MGD)	Hours Operating At Peak
Influent Screens	17.88	1	1.49	2.0				N/A			12
EQ Basin Blowers	335.52	1	18.6	25.0				N/A			18
EQ Basin Mixers	179.04	1	7.46	10.0				N/A			24
EQ Basin Pumps	24.96	1	1.3	1.7	0.9	0.7	25	174	0.25	0.2	19.2
Oxidation Ditch	608.4	1	25.4	34.0		N/A					
Clarifiers	17.76	2	0.37	0.5		N/A					24
RAS Pumps	93.12	2	1.94	2.6	0.9	0.7	25	260	0.375	0.375	24
Tertiary Filters	44.64	2	1.86	2.5				N/A			12
UV System	235.2	1	9.8					N/A			24
Centrifuge Feed Pumps	0.98	1	0.49	0.7	0.9	0.7	25	66		N/A	2
Centrifuge Booster Pump	0.74	1	0.37	0.5				N/A			2
Centrifuge	55.92	1	28	37.5				N/A			2
Total kW-hr/day	1614.16									*	

 Sper kW-hr
 \$0.09

 Operating Cost Per Day
 \$145.27

 Yearly Operating Cost
 \$53,025.16

Equalization mixing power was estimated using 0.04 hp/1,000 gallons of storage.

#### Town of Bowling Green WWTP Improvements Project Cost Estimate: Convert Existing Oxidation Ditch to Diffused Aeration Town of Bowling Green PER Budgetary Cost Estimate

9/29/2021

Des	cription	Quantity	Unit	ι	Jnit Cost	Ext	ension		Subtotal
	pilization/Demobilization	1	LS	\$		\$	510,000	\$	510.000
	eral Conditions	1	LS	\$	510,000	\$	510,000	\$	510,000
	nolition	1	LS	\$	100,000	\$	,	\$	100,000
-	Work	1	LS	\$	30.000	\$	30,000		30.000
	sion and Sediment Control	1	LS	\$	100,000	\$	100,000	\$	100,000
	halt Drive	5.000	SQFT	•	30	\$	150,000	\$	150.000
	ass Pumping and Phasing Costs	1	LS	\$	200,000	\$	200,000	\$	200,000
	Jid Sludge Hauling	1	LS	\$	150,000	\$	150,000	\$	150,000
<u> </u>	dworks				,		,	\$	171,000
	Equipment	1	LS	\$	94,000	\$	94,000		
	Piping, Valves, and Appurtenances	1	LS	\$	17,000	\$	17,000		
	Labor and Equipment to Install	1	LS	\$	60,000	\$	60,000		
EQ	Basin				,		,	\$	523,000
F	Equipment	1	LS	\$	107,000	\$	107,000	·	,
	Piping, Valves, and Appurtenances	1	LS	\$	60,000	\$	60,000		
	Labor and Equipment to Install	1	LS	\$	91,000	\$	91,000		
	Concrete	1	LS	\$	177,000	\$	177,000		
	Excavation And Dewatering	1	LS	\$	88,000	\$	88,000		
Tre	atment Trains				,		,	\$	661,000
	Equipment	1	LS	\$	236,000	\$	236,000		
	Piping, Valves, and Appurtenances	1	LS	\$	175,000	\$	175,000		
	Labor and Equipment to Install	1	LS	\$	250,000	\$	250,000		
Sec	ondary Clarifiers				,		,	\$	894,000
	Equipment	1	LS	\$	444,000	\$	444,000		
	Piping, Valves, and Appurtenances	1	LS	\$	150,000	\$	150,000		
	Labor and Equipment to Install	1	LS	\$	300,000	\$	300,000		
Ter	tiary Filters				,		,	\$	480,000
	Equipment	1	LS	\$	223,000	\$	223,000		
	Piping, Valves, and Appurtenances	1	LS	\$	57,000	\$	57,000		
	Labor and Equipment to Install	1	LS	\$	175,000	\$	175,000		
	Concrete	1	LS	\$	25,000	\$	25,000		
υv	Disinfection							\$	182,000
	Equipment	1	LS	\$	151,000	\$	151,000		
	Labor and Equipment to Install	1	LS	\$	31,000	\$	31,000		
Dev	vatering							\$	1,444,000
	Equipment	1	LS	\$	536,000	\$	536,000		
	Piping, Valves, and Appurtenances	1	LS	\$	,	\$	402,000		
	Labor and Equipment to Install	1	LS	\$	506,000	\$	506,000		
Bui	dings		1		, -		, -	\$	630,000
	Dewatering Building	3,000	SQFT	\$	200	\$	600,000		
	HVAC	1	LS	\$	30,000	\$	30,000		
sc	ADA System	1	LS	\$	300,000	\$	300,000	\$	300,000
	cellaneous Instrumentation and Controls	1	LS	\$	350,000	\$	350,000	\$	350,000
FIG	ctrical Upgrades	1	LS	\$	1,150,000	\$	1,150,000	\$	1,150,000

De	scription	Quantity	Unit	Unit Cost		Extension	Subtotal
Gr	avity Sewer Rehab				Γ		\$ 2,378,800
	Remove existing sewer and install 8" gravity sewer	9768	LF	\$115	\$	1,123,400	
	Remove existing sewer and install 10" gravity sewer	750	LF	\$130	\$	97,500	
	Reconnect service laterals	163	EA	\$650	\$	106,000	
	Rehabilitate manholes	630	VF	\$385	\$	242,600	
	Pavement demo/repair	8,180	SY	\$85	\$	695,300	
	Traffic Control	1	LS	\$114,000	\$	114,000	
Во	wling Green Meadows				Τ		\$ 47,500
	Fence	150	LF	\$ 30	\$	4,500	
	Swing Gate	1	LS	\$ 3,000	\$	3,000	
	Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000	
La	cey Lane				Γ		\$ 46,000
	Fence	100	LF	\$ 30	\$	3,000	
	Swing Gate	1	LS	\$ 3,000	\$	3,000	
	Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000	
Oa	k Ridge				Τ		\$ 46,000
	Fence	100	LF	\$ 30	\$	3,000	
	Swing Gate	1	LS	\$ 3,000	\$	3,000	
	Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000	
30	Pump Station				Τ		\$ 52,000
	Pumps						
	Fence	300	LF	\$ 30	\$	9,000	
	Swing Gate	1	LS	\$ 3,000	\$	3,000	
	Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000	
He	ritage Pines						\$ 40,000
	Generator and Automatic Transfer Switch	1	LS	\$ 40,000	\$	40,000	
Su	btotal						\$ 11,145,300
	ntractor Overhead & Profit		15	%			\$ 1,671,800
	nstruction Contingency		10	%			\$ 1,281,800
Co	nstruction Total						\$ 14,098,900
	Basic Engineering Services		9.0	%			\$ 1,154,000
	Additional Engineering Services (Geotech, Survey, SUE, Modeling, Sampling)						\$ 200,000
	Full Time Resident Inspection	<b>1</b>	145	0/			\$ 240,000
	Legal, Advertising, Interest, Others		1.5	%			\$ 210,000
	ft Cost Total						\$ 1,804,000
Pre	oject Cost Total						\$ 15,902,900

Net	Present	Worth	Analy	/sis

Yearly Costs	
Yearly Energy Costs	\$ 53,200.00
Yearly Maintenance Costs	\$ 100,800.00
Yearly Major Equipment Replacement Costs (5% of Capital Equipment)	\$ 89,500.00
Yearly Total Operation And Maintenance Costs	\$ 243,500.00
Net Present Worth Factor	
Duration (n) in years	20
Discount rate (i%)	3.5%
Capital Recovery Factor (P/A, i%, n)	14.2124
Net Present Worth Costs	
NPWC of Energy Costs	\$ 756,100.00
NPWC of Maintenance Costs	\$ 1,432,700.00
NPWC of Major Equipment Replacement Costs	\$ 1,272,100.00
NPWC of Total Operation And Maintenance Costs	\$ 3,460,900
Total NPWC	\$ 19,363,800

#### Town of Bowling Green WWTP Improvements Project Cost Estimate: Convert Existing Oxidation Ditch to Diffused Aeration Town of Bowling Green PER Budgetary Cost Estimate

#### Power-Efficiency

Description	kW-hr/day (all units)	Number of Units Operating	kW	Total HP Per Unit	Motor Efficiency	Hydraulic Efficiency	Design Head (Ft)	Design Peak Flow (gpm)	Design Peak Flow (MGD)	Design Average Flow (MGD)	Hours Operating At Peak
Influent Screens	17.88	1	1.49	2.0				N/A			12
EQ Basin Blowers	335.52	1	18.6	25.0				N/A			18
EQ Basin Mixers	179.04	1	7.46	10.0				N/A			24
EQ Basin Pumps	24.96	1	1.3	1.7	0.9	0.7	25	174	0.25	0.2	19.2
Anoxic Mixers	71.52	2	1.49	2.0		•	•	N/A			24
Aeration Blowers	540.48	2	11.3	15.1				N/A			24
Clarifiers	17.76	2	0.37	0.5				N/A			24
RAS Pumps	93.12	2	1.94	2.6	0.9	0.7	25	260	0.375	0.375	24
Tertiary Filters	44.64	2	1.86	2.5		•		N/A			12
UV System	235.2	1	9.8					N/A			24
Centrifuge Feed Pumps	0.98	1	0.49	0.7	0.9	0.7	25	66		N/A	2
Centrifuge Booster Pump	0.74	1	0.37	0.5		•		N/A			2
Centrifuge	55.92	1	28	37.5				N/A			2

 Total kW-hr/day
 1617.76

 \$ per kW-hr
 \$0.09

 Operating Cost Per Day
 \$145.60

 Yearly Operating Cost
 \$53,143.42

Equalization mixing power was estimated using 0.04 hp/1,000 gallons of storage.

Anoxic Basin mixing power was estimated using 0.05 hp/1,000 gallons.

Only proposed equipment is included in power-efficiency estimations, existing equipment not replaced is not evaluated.

# Appendix B – FEMA Firm Panel

Town of Bowling Green WWTP Improvements PER

# NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North America Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 18. Horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <u>http://www.ngs.noaa.gov/</u> or contact the National Geodetic Survey at the following address:

Spatial Reference System Division National Geodetic Survey, NOAA Silver Spring Metro Center 1315 East-West Highway Silver Spring, Maryland 20910 (301) 713-3191

To obtain current elevation, description, and/or location information for bench **marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at <u>http://www.ngs.noaa.gov/.</u>

BASE MAP SOURCE: Base map files were obtained in digital spatial data format from the Commonwealth of Virginia and the U. S. Census Bureau. Political boundaries were downloaded from the 2000 TIGER/Line files. 2002 digital orthophotographs were provided by the Virginia Geographic Network Division of its Department of Technology Planning (VGIN). Streamlines were digitized based on the VGIN orthophotos. Adjustments were made to specific base map features to align them to 1:4800 scale VGIN orthophotos.

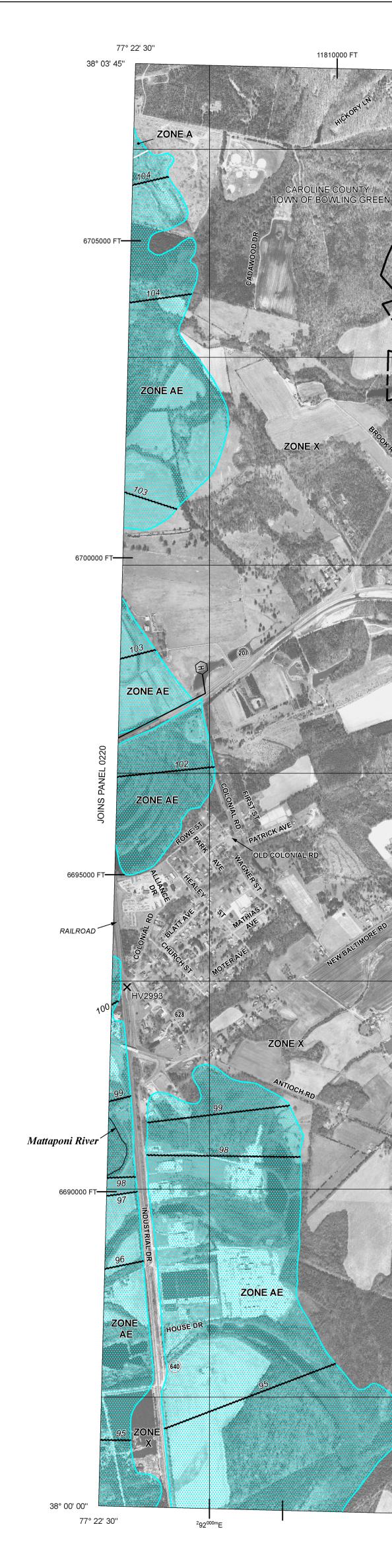
Based on the above mentioned digital orthophotographs, this map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

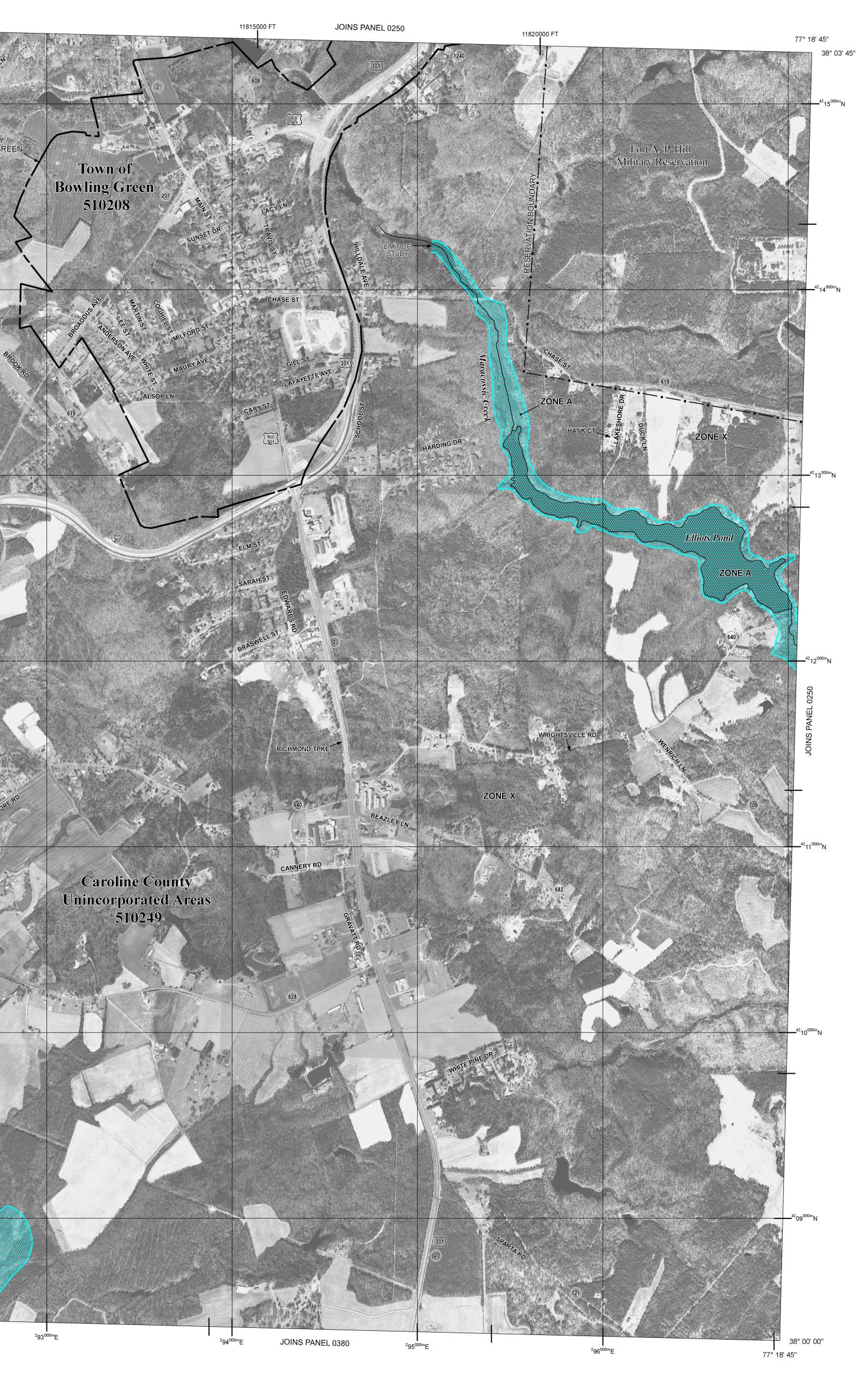
**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Service Center at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and /or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <u>http://www.fema.gov/business/nfip.</u>





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# Appendix C – Permit and Compliance

Town of Bowling Green WWTP Improvements PER



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No. VA0020737 Effective Date: **October 1, 2018** Expiration Date: **September 30, 2023** 

# AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the information submitted with the permit application, and with this permit cover page, Part I - Effluent Limitations and Monitoring Requirements, and Part II - Conditions Applicable To All VPDES Permits, as set forth herein.

Owner Name:	Town of Bowling Green
Facility Name:	Bowling Green WWTP
County:	Caroline
Facility Location:	219 Anderson Avenue, Bowling Green, VA 22427

The owner is authorized to discharge to the following receiving stream:

Stream Name: Mattaponi River, UT River Basin: York River River Subbasin: None Section: 3 III Class: Special Standards: None

Thomas A. Faha Director, Northern Regional Office Department of Environmental Quality

) eptember 28, 2018 Date

#### A. Effluent Limitations and Monitoring Requirements

#### 1. Outfall 001 – 0.25 MGD Facility

a. There shall be no discharge of floating solids or visible foam in other than trace amounts.

b. During the period beginning with the effective date of the permit and lasting until the permit's expiration date, the permittee is authorized to discharge from Outfall Number 001. Such discharges shall be limited and monitored by the permittee as specified below.

Parameter		Discharg	e Limitation	ns		Monitoring	Requirements	
	Monthly Ave	Monthly Average <sup>(1)</sup>		Weekly Average <sup>(1)</sup>		Maximum <sup>(1)</sup>	Frequency	Sample Type
Flow <sup>(2)</sup> (MGD)	NL	NL		NA		NL	Continuous	TIRE
pH	NA	NA		NA		9.0 S.U.	1/D	Grab
CBODs 10 mg/L 9.5 k		5 kg/day	15 mg/L	14 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids, TSS	10 mg/L 9.5	5 kg/day	15 mg/L	14 kg/day	NA	NA	3D/W	8H-C
Total Kjeldahl Nitrogen (TKN)	3.0 mg/L 2.8	8 kg/day	4.5 mg/L	4.2 kg/day	NA	NA	3D/W	8H-C
Dissolved Oxygen	NA	NA		NA		NA	1/D	Grab
E. coli (Geometric Mean) <sup>(3)</sup>	126 n/100 r	126 n/100 mL		NA		NA	3D/W	Grab
Total Phosphorus	NL mg/L	NL mg/L		NA		NA	1/YR	8H-C
Nitrate+Nitrite	NL mg/L	<i>.</i>	NA		NA	NA	1/YR	8H-C
Total Nitrogen <sup>(4)</sup>	NL mg/L		NA NA		NA	NA	1/YR	Calculated
<sup>(1)</sup> See Part I.B.		MO	GD = Million	gallons per day	7.	1/I	$\mathbf{O} = \mathbf{O}\mathbf{n}\mathbf{c}\mathbf{e}$ every $\mathbf{c}$	ay.
(2) The design flow is $0.25$ MGD.		1	NA = Not applicable.			3D/W = Three days a week.		
<sup>(3)</sup> Between 10:00 a.m. and 4:00 p.m.		1	NL = No limit; monitor and report.			1/YF	R = Once every c	alendar year.
(4) Total Nitrogen is the sum of Total Kjeldahl Nitrogen and			S.U. = Standard units.					
NO <sub>2</sub> +NO <sub>3</sub> Nitrogen and sl results of those tests.	hall be calculated from the	TII	RE = Totaliz	ing, indicating a	and recording equ	ipment.		
8H-C = A flow proportional compo	site sample collected manua	ally or autor	natically, and	discretely or cor	tinuously, for the	entire discharge of	the monitored 8-	our period. Where

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum of eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

# B. Quantification Levels and Compliance Reporting

# 1. Quantification Levels

a. The quantification levels (QL) shall be less than or equal to the following concentrations:

<b>Characteristic</b>	Quantification Level
TSS	1.0 mg/L
CBOD <sub>5</sub>	2  mg/L
TKN	0.5 mg/L

b. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method. It is the responsibility of the permittee to ensure that proper quality assurance/quality control (QA/QC) protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained. The permittee shall use any method in accordance with Part II A of this permit.

# 2. Compliance Reporting for parameters in Part I.A.

- a. Monthly Average Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in Part I.B.1.a. of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the monthly average of the calculated daily quantities.
- b. Weekly Average Compliance with the weekly average limitations and/or reporting requirements for the parameters listed in Part I.B.1.a. of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in a. above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each complete calendar week and entirely contained within the reporting month. The maximum value of the weekly averages thus determined shall be reported on the DMR. If all data are below the QL used for the analysis, then the weekly average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported weekly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the maximum weekly average of the calculated daily quantities.</p>
- c. Single Datum Any single datum required shall be reported as "<QL" if it is less than the QL used in the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above). Otherwise the numerical value shall be reported.
- d. Significant Digits The permittee shall report at least the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding convention used by the permittee (i.e., 5 always

# B. Quantification Levels and Compliance Reporting

#### 1. Quantification Levels

a. The quantification levels (QL) shall be less than or equal to the following concentrations:

<b>Characteristic</b>	Quantification Level
TSS	1.0 mg/L
CBOD <sub>5</sub>	2 mg/L
TKN	0.5 mg/L

- b. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method. It is the responsibility of the permittee to ensure that proper quality assurance/quality control (QA/QC) protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained. The permittee shall use any method in accordance with Part II A of this permit.
- 2. Compliance Reporting for parameters in Part I.A.
  - a. Monthly Average Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in Part I.B.1.a. of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the monthly average of the calculated daily quantities.
  - b. Weekly Average Compliance with the weekly average limitations and/or reporting requirements for the parameters listed in Part I.B.1.a. of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in a. above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each complete calendar week and entirely contained within the reporting month. The maximum value of the weekly averages thus determined shall be reported as "<QL". If all data are below the QL used for the analysis, then the weekly average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported weekly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the maximum weekly average of the calculated daily quantities.</p>
  - c. Single Datum Any single datum required shall be reported as "<QL" if it is less than the QL used in the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above). Otherwise the numerical value shall be reported.
  - d. Significant Digits The permittee shall report at least the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding convention used by the permittee (i.e., 5 always

rounding up or to the nearest even number), the permittee shall use the convention consistently, and shall ensure that consulting laboratories employed by the permittee use the same convention.

- 3. Nutrient Reporting Calculations for Part I. A
  - a. For Total Phosphorus, all daily concentration data below the quantification level (QL) for the analytical method used shall be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.
  - b. For Total Nitrogen (TN), if none of the daily concentration data for the respective species (i.e., TKN, Nitrates/Nitrites) are equal to or above the QL for the respective analytical methods used, the daily TN concentration value reported shall equal one half of the largest QL used for the respective species. If one of the data is equal to or above the QL, the daily TN concentration value shall be treated as that data point is reported. If more than one of the data is above the QL, the daily TN concentration value shall equal the sum of the data points as reported.

#### C. Pretreatment Requirements

- Within 180 days of the effective date of this permit, the permittee shall submit to DEQ Northern Regional Office (DEQ-NRO) a survey of all Industrial Users (IUs) discharging to the publically owned treatment works (POTW). The information shall be submitted on the DEQ Discharger Survey Form; or an equivalent form that includes the quantity and quality of the IU wastewater. Survey results shall include the identification of significant industrial users of the POTW. In conjunction with the survey, the permittee may elect to develop, submit for DEQ-NRO approval and implement a plan to survey, on pre-established intervals during the term of this permit, the industrial community within their jurisdiction. If an alternative plan is developed, the permittee shall submit the plan to DEQ-NRO for approval within 90 days of the permit effective date.
- 2. If Categorical Industrial User(s) (CIUs) are identified, or if the permittee or the DEQ determines that the industrial user(s) have potential to adversely affect the operation of the POTW or cause violation(s) of federal, state or local standards or requirements, the permittee shall develop and submit to DEQ-NRO a pretreatment program for approval within one year of written notification by the DEQ. The program shall enable the permittee to control by permit the Significant Industrial Users (SIUs), as defined in 9VAC25-31-10, discharging wastewater to the treatment works.
- 3. If the evaluation of the IU survey conducted in accordance with (1) above indicates that the permittee is not required to implement a pretreatment program, the requirements for program development described in (4) below are suspended until such time that the development of a pretreatment program should be necessary.
- 4. The approvable pretreatment program submission shall at a minimum contain the following elements:
  - a. Legal authority;
  - b. Program procedures;
  - c. Funding and resources;
  - d. Local limits evaluation and local limits if needed;
  - e. Enforcement response plan (ERP); and
  - f. List of Significant Industrial Users.

- 5. All program elements shall be approved by DEQ prior to implementation. After all program elements are approved, the permittee shall:
  - Implement the approved pretreatment program that complies with the Clean Water Act, State Water Control Law and the Virginia Pollutant Discharge Elimination System (VPDES) Regulations found at 9VAC25-31-730 through 900;
  - b. Submit to DEQ-NRO an annual report that describes the permittee's program activities during the previous year. The annual report shall be submitted no later than January 31<sup>st</sup> of each year and shall include:
    - 1) An updated list of the SIUs showing the categorical standards and local limits applicable to each. The updated list of the SIUs shall note all of the following:
      - a) Facility contact information (contact name, mailing address, email address, telephone number);
      - b) Identification and explanation of any SIUs removed from the previous year's list;
      - c) Identification of SIUs subject to Categorical Standards and the applicable standard(s);
      - d) Applicable sections of Title 40 of the Code of Federal Regulations (CFR);
      - e) IUs/SIUs subject to local limits that are more stringent than Categorical Pretreatment Standards;
      - f) IUs/SIUs subject only to local limits;
      - g) CIUs that are subject to reduced reporting requirements under 9VAC25-31-840.E.3.,
      - h) SIUs that are nonsignificant CIUs; and
      - i) The Standard Industrial Classification (SIC) and North American Industry Classification System (NAIC) codes for all SIUs and CIUs.
    - 2) A summary of the compliance status of each SIU/IU with pretreatment standards and permit requirements.
    - 3) A summary of the number and types of SIU/IU sampling and inspections performed by the POTW.
    - 4) All information concerning any interference, upset, VPDES permit or Water Quality Standards violations directly attributable to SIU/IUs and enforcement actions taken.
    - 5) A description of all enforcement actions taken against SIUs over the previous 12 months.
    - 6) A summary of any changes to the submitted pretreatment program previously not reported DEQ-NRO.
    - 7) A summary of the permits issued to SIUs/IUs since the last annual report.
    - 8) POTW and self-monitoring results for SIUs determined to be in significant noncompliance during the reporting period.
    - 9) Results of the POTW's influent, effluent and sludge sampling not previously submitted to DEQ-NRO.

- Page 5 of 7 10) Copies of newspaper publications of all SIUs/IUs in significant noncompliance during the reporting period.
- 11) Signature of an authorized representative.
- c. Ensure all SIU permits are issued within 90 days of program approval. Subsequent SIU permits are reissued in a timely manner and SIU permits issued or reissued by the POTW are effective and enforceable.
- d. Ensure all SIUs are inspected at least annually.
  - 1) Sampling shall include all regulated parameters and shall be representative of the wastewater discharged.
  - 2) Inspection of the SIUs shall cover all areas that could result in wastewater discharge to the treatment works. At a minimum, this would include: manufacturing areas; chemical storage areas; pretreatment facilities; spill prevention and control procedures; hazardous waste generation; and the SIU's self-monitoring procedure and records.
- e. Implement the reporting requirements of Part VII of the VPDES Permit Regulation at 9VAC25-31-840.
- f. Ensure that all public participation requirements are met. SIUs in significant noncompliance with pretreatment standards and/or requirements for the previous 12 months shall be placed in public notice annually.
- 6. DEQ may require the POTW to institute changes to the legal authority regarding SIU permits:
  - a. If the legal authority does not meet the requirements of the Clean Water Act, State Water Control Law or VPDES Regulations;
  - b. If problems such as interferences, pass-through, violations of Water Quality Standards or sludge contamination develop or continue; and/or
  - c. If federal, state or local requirements change.

#### D. Other Requirements and Special Conditions

1. 95% Capacity Reopener

A written notice and a plan of action for ensuring continued compliance with the terms of this permit shall be submitted to the DEQ-Northern Regional Office (DEQ-NRO) when the monthly average flow influent to the sewage treatment plant reaches 95 percent of the design capacity authorized in this permit for each month of any three consecutive month period. The written notice shall be submitted within 30 days and the plan of action shall be received at the DEQ-NRO no later than 90 days from the third consecutive month for which the flow reached 95 percent of the design capacity. The plan shall include the necessary steps and a prompt schedule of implementation for controlling any current or reasonably anticipated problem resulting from high influent flows. Failure to submit an adequate plan in a timely manner shall be deemed a violation of this permit.

2. Indirect Dischargers

The permittee shall provide adequate notice to the Department of the following:

a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Section 301 or 306 of Clean Water Act and the State Water Control Law if it were directly discharging those pollutants; and

VA0020737 Part I b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of this permit.

Adequate notice shall include information on (i) the quality and quantity of effluent introduced into the treatment works, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the treatment works.

3. Operation and Maintenance (O&M) Manual Requirement

The permittee shall maintain a current Operations and Maintenance (O&M) Manual for the treatment works that is in accordance with Virginia Pollutant Discharge Elimination System Regulations, 9VAC25-31 and (for sewage treatment plants) Sewage Collection and Treatment Regulations, 9VAC25-790.

The O&M Manual and subsequent revisions shall include the manual effective date and meet Part II.K.2 and Part II.K.4 Signatory Requirements of the permit. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M manual available to Department personnel for review during facility inspections. Within 30 days of a request by DEQ, the current O&M Manual shall be submitted to the DEQ-NRO for review and approval.

The O&M Manual shall detail the practices and procedures which will be followed to ensure compliance with the requirements of this permit. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

- a. Permitted outfall locations and techniques to be employed in the collection, preservation, and analysis of effluent, storm water and sludge samples;
- b. Procedures for measuring and recording the duration and volume of treated wastewater discharged;
- c. Discussion of Best Management Practices, if applicable;
- d. Procedures for handling, storing, and disposing of all wastes, fluids, and pollutants that will prevent these materials from reaching state waters. List type and quantity of wastes, fluids, and pollutants (e.g. chemicals) stored at this facility;
- e. Discussion of treatment works design, treatment works operation, routine preventative maintenance of units within the treatment works, critical spare parts inventory and record keeping;
- f. Plan for the management and/or disposal of waste solids and residues;
- g. Hours of operation and staffing requirements for the plant to ensure effective operation of the treatment works and maintain permit compliance;
- h. List of facility, local and state emergency contacts; and
- i. Procedures for reporting and responding to any spills/overflows/ treatment works upsets.

# 4. Licensed Operator Requirement

The permittee shall employ or contract at least one Class II licensed wastewater works operator for this facility. The license shall be issued in accordance with Title 54.1 of the Code of Virginia and Board for Waterworks and Wastewater Works Operators and Licensing Regulations at 18VAC160-30 et seq. The permittee shall notify the Department in writing whenever he is not complying, or has grounds for anticipating he will not comply with this requirement. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

# 5. Reliability Class

The permitted treatment works shall meet Reliability Class II.

# 6. CTC and CTO Requirement

In accordance with *Sewage Collection and Treatment* regulation (9VAC25-790), the permittee shall obtain a Certificate to Construct (CTC) and a Certificate to Operate (CTO) from the Department of Environmental

Quality prior to constructing wastewater treatment works and operating the treatment works, respectively. Non-compliance with the CTC or CTO shall be deemed a violation of the permit.

#### 7. Treatment Works Closure Plan

If the permittee plans an expansion or upgrade to replace the existing treatment works, or if facilities are permanently closed, the permittee shall submit to the DEQ-NRO a closure plan for the existing treatment works. The plan shall address the following information as a minimum: Verification of elimination of sources and/or alternate treatment scheme; treatment, removal and final disposition of residual wastewater and solids; removal/demolition/disposal of structures, equipment, piping and appurtenances; site grading, and erosion and sediment control; restoration of site vegetation; access control; fill materials; and proposed land use (post-closure) of the site. The plan should contain proposed dates for beginning and completion of the work. The plan must be approved by the DEQ prior to implementation. Once approved, the plan shall become an enforceable part of this permit and closure shall be implemented in accordance with the approved plan. No later than 14 calendar days following closure completion, the permittee shall submit to the DEQ-NRO written notification of the closure completion date and a certification of closure in accordance with the approved plan.

#### 8. Sludge Reopener

The Board may promptly modify or revoke and reissue this permit if any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the Clean Water Act is more stringent than any requirements for sludge use or disposal in this permit, or controls a pollutant or practice not limited in this permit.

#### 9. Sludge Use and Disposal

The permittee shall conduct all sewage sludge use or disposal activities in accordance with the Sludge Management Plan (SMP) approved with the issuance of this permit. Any proposed changes in the sewage sludge use or disposal practices or procedures followed by the permittee shall be documented and submitted for DEQ-NRO approval 90 days prior to the effective date of the changes. Upon approval, the revised SMP becomes an enforceable part of the permit. The permit may be modified or alternatively revoked and reissued to incorporate limitations or conditions necessitated by substantive changes in sewage sludge use or disposal practices.

# 10. Total Maximum Daily Load (TMDL) Reopener

This permit shall be modified or alternatively revoked and reissued if any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the facility that are not consistent with the permit requirements.

# CONDITIONS APPLICABLE TO ALL VPDES PERMITS

# A. Monitoring

- 1. Samples and measurements required by this permit shall be taken at the permit designated or approved location and be representative of the monitored activity.
  - a. Monitoring shall be conducted according to procedures approved under Title 40 Code of Federal Regulations Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this permit.
  - b. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will insure accuracy of measurements.
  - c. Samples taken shall be analyzed in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.
- 2. Any pollutant specifically addressed by this permit that is sampled or measured at the permit designated or approved location more frequently than required by this permit shall meet the requirements in A 1 a through c above and the results of this monitoring shall be included in the calculations and reporting required by this permit.
- 3. Operational or process control samples or measurements shall not be taken at the designated permit sampling or measurement locations. Operational or process control samples or measurements do not need to follow procedures approved under Title 40 Code of Federal Regulations Part 136 or be analyzed in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

# **B.** Records

- 1. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling or measurements;
  - c. The date(s) and time(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.
- 2. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years, the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Board.

#### C. Reporting Monitoring Results

1. The permittee shall submit the results of the monitoring required by this permit not later than the 10th day of the month after monitoring takes place, unless another reporting schedule is specified elsewhere in this permit. Monitoring results shall be submitted to:

Department of Environmental Quality - Northern Regional Office (DEQ-NRO) 13901 Crown Court Woodbridge, VA 22193

- 2. Monitoring results shall be reported on a Discharge Monitoring Report (DMR) or on forms provided, approved or specified by the Department.
- 3. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

#### **D.** Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Board may require the permittee to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from this discharge on the quality of state waters, or such other information as may be necessary to accomplish the purposes of the State Water Control Law. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

#### E. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

#### F. Unauthorized Discharges

Except in compliance with this permit, or another permit issued by the Board, it shall be unlawful for any person to:

- 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or
- 2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.

#### G. Reports of Unauthorized Discharges

Any permittee who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance into or upon state waters in violation of Part II.F.; or who discharges or causes or allows a discharge that may reasonably be expected to enter state waters in violation of Part II.F., shall notify the Department of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the Department, within five days of discovery of the discharge. The written report shall contain:

VA0020737 Part II Page 3 of 8

- 1. A description of the nature and location of the discharge;
- 2. The cause of the discharge;
- 3. The date on which the discharge occurred;
- 4. The length of time that the discharge continued;
- 5. The volume of the discharge;
- 6. If the discharge is continuing, how long it is expected to continue;
- 7. If the discharge is continuing, what the expected total volume of the discharge will be; and
- 8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit.

Discharges reportable to the Department under the immediate reporting requirements of other regulations are exempted from this requirement.

#### H. Reports of Unusual or Extraordinary Discharges

If any unusual or extraordinary discharge including a bypass or upset should occur from a treatment works and the discharge enters or could be expected to enter state waters, the permittee shall promptly notify, in no case later than 24 hours, the Department by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse affects on aquatic life and the known number of fish killed. The permittee shall reduce the report to writing and shall submit it to the Department within five days of discovery of the discharge in accordance with Part II.I.2. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

- 1. Unusual spillage of materials resulting directly or indirectly from processing operations;
- 2. Breakdown of processing or accessory equipment;
- 3. Failure or taking out of service some or all of the treatment works; and
- 4. Flooding or other acts of nature.

#### I. Reports of Noncompliance

The permittee shall report any noncompliance which may adversely affect state waters or may endanger public health.

- 1. An oral report shall be provided within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which shall be reported within 24 hours under this paragraph:
  - a. Any unanticipated bypass; and
  - b. Any upset which causes a discharge to surface waters.
- 2. A written report shall be submitted within 5 days and shall contain:
  - a. A description of the noncompliance and its cause;
  - b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
  - c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Board may waive the written report on a case-by-case basis for reports of noncompliance under Part II.I. if the oral report has been received within 24 hours and no adverse impact on state waters has been reported.

3. The permittee shall report all instances of noncompliance not reported under Parts II, I.1.or I.2., in writing, at the time the next monitoring reports are submitted. The reports shall contain the information listed in Part II.I.2.

NOTE: The immediate (within 24 hours) reports required in Parts II, G., H. and I. may be made to the Department's Northern Regional Office at (703)583-3800 (voice) or online at http://www.deq.virginia.gov/Programs/PollutionResponsePreparedness/MakingaReport.aspx . For reports outside normal working hours, leave a message and this shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Services maintains a 24-hour telephone service at 1-800-468-8892.

#### J. Notice of Planned Changes

- 1. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - a. The permittee plans alteration or addition to any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:
    - 1) After promulgation of standards of performance under Section 306 of Clean Water Act which are applicable to such source; or
    - 2) After proposal of standards of performance in accordance with Section 306 of Clean Water Act which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal;
  - b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations nor to notification requirements specified elsewhere in this permit; or
  - c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- 2. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

#### K. Signatory Requirements

- 1. Applications. All permit applications shall be signed as follows:
  - a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - 1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or
    - 2) The manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a public agency includes:
  - 1) The chief executive officer of the agency, or
  - 2) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- 2. Reports, etc. All reports required by permits, and other information requested by the Board shall be signed by a person described in Part II.K.1., or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Part II.K.1.;
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
  - c. The written authorization is submitted to the Department.
- 3. Changes to authorization. If an authorization under Part II.K.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part II.K.2. shall be submitted to the Department prior to or together with any reports, or information to be signed by an authorized representative.
- 4. Certification. Any person signing a document under Parts II, K.1. or K.2. shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

#### L. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the State Water Control Law and the Clean Water Act, except that noncompliance with certain provisions of this permit may constitute a violation of the State Water Control Law but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the Clean Water Act within the time provided in the regulations that establish these

standards or prohibitions or standards for sewage sludge use or disposal, even if this permit has not yet been modified to incorporate the requirement.

#### M. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. All permittees with a currently effective permit shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Board. The Board shall not grant permission for applications to be submitted later than the expiration date of the existing permit.

#### N. Effect of a Permit

This permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

#### **O.** State Law

Nothing in this permit shall be construed to preclude the institution of any legal action under, or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by Section 510 of the Clean Water Act. Except as provided in permit conditions on "bypassing" (Part II.U.), and "upset" (Part II.V.) nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

#### P. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Sections 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

#### **Q.** Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

#### **R.** Disposal of Solids or Sludges

Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters.

#### S. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

#### T. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

## **U.** Bypass

1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts II, U.2. and U.3.

#### 2. Notice

- a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, prior notice shall be submitted, if possible at least ten days before the date of the bypass.
- b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part II.I.
- 3. Prohibition of bypass.
  - a. Bypass is prohibited, and the Board may take enforcement action against a permittee for bypass, unless:
    - 1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
    - 2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
    - 3) The permittee submitted notices as required under Part II.U.2.
  - b. The Board may approve an anticipated bypass, after considering its adverse effects, if the Board determines that it will meet the three conditions listed above in Part II.U.3.a.

## V. Upset

- 1. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of Part II.V.2. are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.
- 2. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
  - b. The permitted facility was at the time being properly operated;
  - c. The permittee submitted notice of the upset as required in Part II.I.; and
  - d. The permittee complied with any remedial measures required under Part II.S.
- 3. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

## W. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:

- 1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- 3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- 4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act and the State Water Control Law, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

## X. Permit Actions

Permits may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

#### Y. Transfer of permits

- 1. Permits are not transferable to any person except after notice to the Department. Except as provided in Part II.Y.2., a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made, to identify the new permittee and incorporate such other requirements as may be necessary under the State Water Control Law and the Clean Water Act.
- 2. As an alternative to transfers under Part II.Y.1., this permit may be automatically transferred to a new permittee if:
  - a. The current permittee notifies the Department at least 30 days in advance of the proposed transfer of the title to the facility or property;
  - b. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
  - c. The Board does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part II.Y.2.b.

## Z. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Matthew J. Strickler Secretary of Natural Resources NORTHERN REGIONAL OFFICE 13901 Crown Court, Woodbridge, Virginia 22193 (703) 583-3800 www.deq.virginia.gov

David K. Paylor Director

Thomas A. Faha Regional Director

September 22, 2020

VIA E-mail: towntreasurer@townofbowlinggreen.com

Melissa Lewis Acting Town Manager Town of Bowling Green P.O. Box 468 Bowling Green, VA 22427

## Re: Town of Bowling Green - WWTP Permit # VA0020737

Dear Ms. Lewis:

Attached is a copy of the Inspection Report generated while conducting a Facility Recon Inspection at the Town of Bowling Green – Wastewater Treatment Plant (WWTP), on August 5, 2020. This letter is not intended as a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA).

Please review the "Request for Corrective Action" and "Notes and Comments" sections and submit a progress report, to include a timeline, as appropriate, outlining how the facility plans to address these items, to the Department of Environmental Quality – Northern Regional Office (DEQ-NRO) within thirty days from the date of this inspection report. Your response must be sent electronically, via E-mail and we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. If you have any questions or comments concerning this report, please feel free to contact me at (703) 583-3854 or email at <u>Rebecca.Johnson@deq.virginia.gov</u>

Sincerely,

Rebecca J. Johnson

Rebecca Johnson Environmental Specialist II

cc via electronic copy:

ECM; Compliance Manager; Compliance Auditor; and Compliance Inspector – DEQ Mr. Josh Irby, Director of Public Works/Utilities, <u>jirby@townofbowlinggreen.com</u>

## Virginia Department of Environmental Quality

## **RECON INSPECTION REPORT**

FACILITY NA	ME: Town of	Bowling Green	<b>INSPECTION DATE:</b> August 5, 2020					
	Wastewa	ter Treatment Plant	<b>INSPECTOR:</b>	Rebecca Johnson				
PERMIT No.:	<u>VA0020</u>	<u>)737</u>	<b>REPORT DATE:</b>	September 22, 2020				
TYPE OF FACILITY:	☑Municipal □Industrial	□Major ☑Minor	TIME OF INSPECTION:	Arrival 12:00 p.m.	Departure 1:30 p.m.			
	□Federal		TOTAL TIME SPENT (including prep & travel)	<u>12 Hours</u>				
PHOTOGRAP	<b>HS: </b> ℤYes	□No	UNANNOUNCED INSPECTION?	⊠Ye	s □No			
REVIEWED BY / Date:								
PRESENT DU	RING INSPEC	<b>FION:</b> <u>Melissa Le</u>	wis, Acting Town Manager					

## INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

## August 4, 2020:

DEQ staff was notified by a concerned citizen of partially treated solids in the receiving stream at approximately 12:30 p.m. on August 4, 2020, Incident Report# 296099. DEQ staff contacted Mr. Billy Deavers, Director of Public Works/Utility later in the afternoon, via phone call, to inquire about the current state of operations at the wastewater treatment facility. Mr. Deavers said he was just about to contact DEQ to report the plant upset. Mr. Deavers said the facility received extremely high flows on the morning of August 4, 2020 due to tropical storm Isaias. In preparation for the anticipated high flow conditions, Mr. Deavers directed his operations staff, on August 3, 2020, to stay at the facility until approximately 1:00 a.m. in the morning, August 4, 2020, to make process adjustments and monitor the treatment facility. Mr. Deavers said that when the operations staff departed at 1:00 a.m. on August 4, 2020, the treatment facility was in normal operation and there were no high flow conditions.

## August 5, 2020:

DEQ staff arrived onsite at 12:00 p.m. and met with Mr. Shawn Fortune, operator. DEQ staff explained the purpose of this site inspection was to follow up on the reported loss of solids. DEQ staff asked to speak to Mr. Deavers, Mr. Fortune said he was not onsite. Mr. Fortune called Mr. Deavers to inform him DEQ staff was onsite and Mr. Deavers said he was suspended from operator duties and not able to come to the facility.

Mr. Fortune gave DEQ staff a tour of the facility and the following observations were made:

## **Oxidation Ditch**

Mr. Fortune said during the high flow conditions the blowers were turned off and the gates were closed to retain the solids in this unit process. **Photo 1** 

## Clarifier

Ashing was observed on the clarifier surface\*. Mr. Fortune believes there are filamentous bacteria in the mixed liquors. **Photos 2-4** 

DEQ staff asked what the solids blanket was in the clarifier and Mr. Fortune said the "sludge judge" broke the day before. The logbook denoted on August 4, 2020 "2:00 p.m. ... fixing cracked sludge judge". Operations staff said a new sludge judge was on order. See Request for Corrective Action

\*Ashing was observed in this unit during the December 18, 2018 inspection as well.

## Sand filters

There are three sand filters. Mr. Fortune said sand filters #1 and #2 were not in operation due to equipment malfunction. Sand filter # 3 was the only sand filter in operation, **Photos 5-8**. **Request for Corrective Action** 

## **Ultraviolet Disinfection**

Bank 1A was not in operation. The screen indicated "MJ\*Module Err". Bank 1B intensity meter reading was 3.1 MW/cm2, Photos 9-10. See Request for Corrective Action

## Final effluent weir

The final effluent flow meter was not operational. Operations staff were using the influent flow meter to report flow, **Photo 11**. **See Notes and Comments** 

## Outfall 001

No problems were observed, Photos 12 – 15.

## **Aerobic Digesters**

During the high flow conditions, solids were wasted to the aerobic digester to reduce the amount of solids loss from the clarifier, **Photos 16 & 17**.

## **Drying Beds**

Solids from the Aerobic Digestor were added to drying beds 2 and 5, **Photo 18**. No problems were observed.

DEQ staff asked Mr. Fortune if final effluent samples were collected on August 4, 2020, during the plant upset due to high flow conditions. He said operations staff did not collect samples on August 4, 2020. DEQ staff asked what the approximate solids loss were and he said the final effluent flow meter has not been operating properly (giving erratic readings) since July 19, 2020 and were unable to provide a solids loss estimate at this time.

DEQ staff discussed the inflow and infiltration into the collection system, which is heavily impacting the treatment facility during and after rain events. Ms. Lewis said that the Town of Bowling Green has "been working with the USDA to secure a Special Evaluation Assistance for Rural Communities and Households (SEARCH) grant to fund the Preliminary Engineering Report (PER). The town is currently waiting on a determination from USDA - Rural Development on this project's qualification for the grant."

## Logbook review

On August 3, 2020, the last entry in the logbook was "5:00 Lock up". Mr. Deavers said the Mr. Fortune was onsite until 1:00 p.m. August 4, 2020. See Notes and Comments

DEQ staff reviewed the e-DMR for July 2020 and August 2020 and noted operations staff did not report the final effluent flow meter was not operating properly. **See Request for Corrective Action**.

DEQ staff departed at 1:30 p.m.

# E-mail Correspondence after the August 5, 2020 site inspection: **August 8, 2020**

Ms. Lewis provided additional information on the I&I and PER status:

"...I've contacted Reid Engineering to clarify what scope of work was discussed with Billy and Reese. Shane Reid has provided the attached proposal detailing what the Preliminary Engineering and Environmental Reports will include once we have given them the order to proceed. After reading the proposal it became clear that Inflow and Infiltration was not included in the initial assessment. I've asked Shane to expand the scope to include I & I. We have plans to regroup with our USDA representative, Cyndy Hines, to discuss including an I & I study. It has been my experience in working with the USDA that the town is able secure a greater grant to loan ratio with larger projects. I believe that it will be beneficial to the town to expand our scope of work to include the collection system infrastructure."

Ms. Lewis provided a 5-day letter:

"...On the morning of August 4, 2020 we experienced an unusual discharge which included a loss of solids that left the plant. The solid loss was a result of extremely high flows which occurred because of Tropical Storm Isaias. The storm dropped 4+ inches of rain in a very short period of time. The town is aware of the inflow and infiltration issues and is currently in the preliminary stages of working with an engineer on plans to replace and upgrade infrastructure to rectify this.

The evening of August 3rd, staff member Shawn Fortune was monitoring the plant; he left at approximately 1 a.m. the morning of August 4th. At that time, the sludge blanket was 7' and the influent flow was low, around 100 gpm. According to the influent flow chart the flows held steady at 100 gpm until 6:45 a.m. at which time they increased to 1000 gpm.

Alicia Warner, lead operator, arrived at the plant at 6:50 a.m. to find solids flowing over the weir of the clarifier and through the effluent. She immediately began wasting into the digestors and drying beds # 4 and #2. She wasted 21,507 gallons. The gates on the splitter boxes were throttled down and the gate on the oxidation ditch was closed and the air was cut off to the ditches. This allowed the ditch to settle and run clear water to the clarifiers giving them a chance to settle and the solids to stop spilling. Settling agent was added to the clarifiers to aid in settling.

The extreme flow that pushed the blankets over the weirs did not begin until approximately 6:45 a.m. The spill was completely contained by 9:30 a.m. the morning of August 4th. The influent flow chart shows the flow holding steady at around 100 gpm until 6:45 a.m. at which time it jumped to approximately 1000 gpm. We were unable to use the effluent meter to determine the amount of discharge because on July 19, 2020 the meter had been found to be not working properly. The meter was in the process of being repaired and recalibrated but was not back in operation until August 7th. To best calculate the volume of the discharge, we used the influent readings during the period of high flow (6:45 a.m. to 9:30 a.m.) which totaled 111,000 gallons and subtracted the 21,507 gallons of solids that were wasted. Our best estimate of the amount discharged is approximately 89,500 gallons..."

## August 27, 2020

Ms. Lewis provided an facility status update:

"I would like to keep you informed about the operations at the Wastewater Treatment Plant. We are currently working on repair and maintenance of the following items:

**Oxidation Ditch:** one side of the oxidation ditch is currently at the shop to address oil leak from drive and gear and chain housing.

**UV lights:** A contractor recently came out to evaluate our UV light sensors because one of the sensors was displaying zero intensity. He installed a digital readout that's hooked directly to the sensor on bank #1, which was showing 0 intensity. Bank #2 is currently showing intensity, but the contractor will return to install a digital read out on that bank as well as a preventive measure.

**Sand Filters:** Currently one filter is out of service. A manufacturer's representative took a look at the filter and recommended new airlines. We have requested a quote on 3 new lines so that we can install new lines in both filters and have an extra airline on hand. We were advised that the life expectancy of the airlines is 3 to 5 years, which ours have exceeded. We expect the replacement of the airline on the out of service filter to bring the filter back into service."

## VA DEQ Recon Inspection Report

**Permit** # **V**A

VA0020737

## **EFFLUENT FIELD DATA: N/A**

Flow	MGD	Dissolved Oxygen mg/L	TRC (Contact Tank)	mg/L
pН	S.U.	<b>Temperature</b> °C	TRC (Final Effluent)	mg/L
Was a S	ction) ⊠No			

## CONDITION OF OUTFALL AND EFFLUENT CHARACTERISTICS:

1.	Type of outfall: ☑Sh	ore Based  Submerged	Diffuser?	$\Box$ Yes $\blacksquare$ No		
2.	Are the outfall and su	pporting structures in good co	ndition?	IVes	□No	$\Box$ Not observed
3.	Final Effluent (evide	nce of following problems):	□Sludge B	ar □Gre	ase	
	$\Box$ Turbid effluen	t $\Box$ Visible foam $\Box$ Uni	usual color	$\Box$ Oil shee	en	
4.	Is there a visible efflu	ent plume in the receiving stre	eam?	$\Box$ Yes	⊠No	
5.	Receiving stream:	☑No observed problems		n of problem	ns (explai	n below)
	Comments:					

## **REQUEST for CORRECTIVE ACTION:**

1. As stated in Permit Number VA0020737, Part II.Q. Proper Operation and Maintenance. "The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit."

During the inspection the following observations were made:

- UV Bank 1A was not in operation. The screen indicated "MJ\*Module Err";
- Ashing was observed on the clarifier surface;
- The sludge judge for the clarifier was broken;
- One out of the three available sand filters was operational; and
- The final effluent flow meter was not operating properly (giving erratic readings).

The permittee shall furnish to DEQ-NRO within thirty days of the date of this inspection report an explanation and timeframe as to how and when the facility plans to address these items.

## **NOTES and COMMENTS:**

On August 3, 2020, the last entry in the logbook was "5:00 Lock up". Mr. Deavers said the Mr. Fortune was onsite until 1:00 p.m. August 4, 2020 making process adjustments in preparation for the anticipated high flow event. *DEQ staff recommends denoting process adjustments in the logbook in preparation for anticipated high flow events and the time that the last operator leaves the facility for the day.* 

The final effluent flow meter is not properly operating (giving erratic readings). Operations staff are using the influent flow meter to report final effluent flow.

*DEQ* staff requires the final effluent flow meter to be calibrated annual. *DEQ* recommends calibrating the influent flow meter annually as well if the influent flow meter will be used as a "back-up" to the effluent flow meter.





Facility name: Town of Bowling Green WWTP Site Inspection Date: August 5, 2020





12) Partiving Stream	10 Passiving Stream
13) Receiving Stream	14) Receiving Stream
(Yellow arrow indicates direction of flow)         Image: Constrained of the second o	(Yellow arrow indicates direction of flow)         Image: Constraint of the second se
(Yellow arrow indicates direction of flow)	

Facility name: Town of Bowling Green WWTP Site Inspection Date: August 5, 2020





COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY NORTHERN REGIONAL OFFICE 13901 Crown Court, Woodbridge, Virginia 22193 (703) 583-3800 www.deq.virginia.gov

David K. Paylor Director

Thomas Faha Regional Director

November 17, 2020

## WARNING LETTER

Melissa Lewis Acting Town Manager Town of Bowling Green P.O. Box 468 Bowling Green, VA 22427

Matthew J. Strickler

Secretary of Natural Resources

RE: WL No. <u>W2020-11-N-1011</u> Town of Bowling Green WWTP VA0020737 Caroline County VIA EMAIL: <u>towntreasurer@townofbowlinggreen.com</u>

Dear Ms. Lewis;

The Department of Environmental Quality (DEQ), Northern Regional Office (NRO), has reason to believe that the Town of Bowling Green may be in violation of State Water Control Law § 62.1-44 and the Virginia Pollutant Discharge Elimination System (VPDES) Permit regulation 9VAC25-31 *et seq.* at the Town of Bowling Green - Wastewater Treatment Plant (WWTP) facility.

This letter addresses conditions at the facility named above, and also recites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15 (8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq*.

## **OBSERVATIONS AND LEGAL REQUIREMENTS**

Facility staff are required to submit discharge monitoring reports (DMRs) and documents to DEQ NRO, including the following *relevant* data results. The following describe DEQ NRO staff factual observations and identify the applicable legal requirements.

- 1. *Observations*: During the inspection conducted on August 5, 2020, DEQ staff observed the following:
  - One of out the two ultraviolet banks was operational. UV Bank 1A was not operational. The screen indicated "MJ\*Module Err";
  - Ashing was observed on the clarifier surface;
  - The sludge judge for the clarifier was broken;
  - One out of the three available sand filters was operational; and
  - The final effluent flow meter was not operating properly (giving erratic readings).

*Legal Requirement* Part II. Q. "Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit."

\*This facility had 1.0 point in the Compliance Auditing System at the end of September 2020.

## **ENFORCEMENT AUTHORITY**

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, an order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of the same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations, and to impose a civil penalty. Va. Code §§ 62.1-44.32 (b) and 62.1-44.32 (c) provide for other additional penalties.

## **FUTURE ACTIONS**

After reviewing this letter, please respond in writing to DEQ within 30 days of the date of this letter detailing actions you have taken or will be taking to ensure compliance with state law and regulations. If corrective action will take longer than 90 days to complete, you may be asked to formalize a plan and schedule. *It is DEQ policy that appropriate, timely, corrective actions undertaken in response to a Warning Letter will avoid adversarial enforcement proceedings and the assessment of civil charges or penalties.* 

Please advise us if you dispute any of the observations recited herein or if there is other information of which DEQ should be aware. In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. Also, if informal discussions do not lead to a satisfactory conclusion, you may request in writing that DEQ take all necessary steps to issue a final decision or fact finding under the APA on whether or not a violation has occurred. For further information on the Process for Early Dispute Resolution, please see Agency Policy Statement No. 8-2005 posted on the Department's website under "Programs," "Enforcement," and "Laws, Regulations, & Guidance"

(http://www.deq.virginia.gov/Programs/Enforcement/Laws,Regulations,Guidance.aspx) or ask the DEQ contact below.

Please direct written materials electronically, via E-mail, regarding this matter to Rebecca Johnson. DEQ recommends sending electronic responses as an Acrobat PDF or in a Word-compatible, write-protected format. If you have questions or wish to arrange a meeting, please contact Rebecca Johnson at (703) 583-3854 or by e-mail at <u>Rebecca.Johnson@deq.virginia.gov</u>

Sincerely,

Elme L. Sta

Edward L. Stuart Regional Water Compliance Manager

cc via electronic copy: ECM; Compliance Manager; and Compliance Auditor – DEQ

## Appendix D – Sewer Rates

Town of Bowling Green WWTP Improvements PER

#### TAX AND UTILITY RATES FOR THE FISCAL YEAR BEGINNING JULY 1, 2020 AND ENDING JUNE 30, 2021

ORDINANCE NUMBER O-2020-002 to set Tax and utility rates for the fiscal year beginning July 1, 2020 and ending June 30, 2020.

**BE IT ORDAINED** by the Bowling Green Town Council, at its regular monthly meeting on the 25<sup>th</sup> day of June 2020 that the Bowling Green Town Council sets the tax and utility rates as follows:

#### Tax Rates

Real Estate	\$0.13/\$100
Personal Property	\$0.72/\$100
Mobile Homes	\$0.10/\$100
Machinery/Tools	\$0.72/\$100
Route 301 Tax District	\$0.92/\$100
Vehicle License Tax	\$30 for cars and light trucks
Vehicle License Tax	\$25 for motorcycles

#### **Residential and Commercial Bi-Monthly Water/Sewer Rate**

-																	
Current BI-Monthy Water & Sewer Rates								Proposed BI-Monthy Water & Sewer Rates									
RESI	DENTIAL		COM	MERCIAL		COM	IMERCIAL		RESIDENTIAL			COMMERCIAL			COMMERCIAL		
In	Town		In-	Town		Out -of-Town		In-Town		In-Town		Out -of-Town					
Gallons	Water	Sewer	Gallons	Water	Sewer	Gallons	Water	Sewer	Gallons	Water	Sewer	Gallons	Water	Sewer	Gallons	Water	Sewer
0-5,000	\$36.47	\$86.53	0-5,000	\$36.47	\$93.48	0-5,000	\$72.94	\$112.38	0-5,000		\$86.53	0-5,000		\$93.48	0-5,000	\$80.23	
5,001-10,000	\$1.85	\$4.39	5,001-10,000	\$2.04	\$5.21	5,001-10,000	\$4.07	\$6.26	5,001-10,000	\$2.04	\$4.39	5,001-10,000	\$2.24	\$5.21	5,001-10,000	\$4.48	\$6.26
10,001-20,000	\$1.95	\$4.62	10,001-20,000	\$2.10	\$5.40	10,001-20,000	\$4.21	\$6.49	10,001-20,000	\$2.15	\$4.62	10,001-20,000	\$2.31	\$5.40	10,001-20,000	\$4.63	\$6.49
20,010-30,000	\$2.04	\$4.82	20,001-30,000	\$2.18	\$5.58	20,001-30,000	\$4.35	\$6.71	20,010-30,000	\$2.24	\$4.82	20,001-30,000	\$2.40	\$5.58	20,001-30,000	\$4.79	\$6.71
30,001 & Up	\$2.10	\$5.00	30,001-40,000	\$2.28	\$5.83	30,001-40,000	\$4.54	\$7.01	30,001 & Up	\$2.31	\$5.00	30,001-40,000	\$2.51	\$5.83	30,001-40,000	\$4.99	\$7.01
Out-	of-Town		40,001-50,000	\$2.34	\$6.02	40,001-50,000	\$4.72	\$7.23	Out-of-Town		_	40,001-50,000	\$2.57	\$6.02	40,001-50,000	\$5.19	\$7.23
Gallons	Water	Sewer	50,001-100,000	\$2.43	\$6.24	50,001-100,000	\$4.84	\$7.50	Gallons	Water	Sewer	50,001-100,000	\$2.67	\$6.24	50,001-100,000	\$5.32	\$7.50
0-5,000	\$72.94	\$97.80	100,001 & Up	\$2.50	\$6.39	100,001 & Up	\$4.99	\$7.68	0-5,000	\$80.23	\$97.80	100,001 & Up	\$2.75	\$6.39	100,001 & Up	\$5.49	\$7.68
5,001-10,000	\$3.71	\$4.96						_	5,001-10,000	\$4.08	\$4.96						
10,001-20,000	\$3.89	\$5.22							10,001-20,000	\$4.28	\$5.22						
20,010-30,000	\$4.07	\$5.45							20,010-30,000	\$4.48	\$5.45						
30,001 & Up	\$4.21	\$5.65						_	30,001 & Up	\$4.63	\$5.65						

Solid Waste Collection Bi-Monthly Rate Schedule

Residential Rates: \$32.56

Commercial Rates: \$25.72 bimonthly/per cubic yard

## Appendix E – Project Planning Factors

Town of Bowling Green WWTP Improvements PER

			APPENDIX E - PROJECT PLANI SCENARIO 1	NING FACTOR		
INCOME:			Estimated			
Sewer	An	nual Charges	Number of Connections	Net Consumption		
Sewer Charges						
Residential In-Town	\$	266,987.00	368	16506446		
Residential Out-Of-Town	\$	76,934.00	110	4403025		
Commercial In-Town	\$	123,514.00	80	12045504		
Commercial Out-OF-Town	\$	794.00	1	36237		
County Bulk	\$	14,623.00	3	974764		
Connection Fees	\$	1,500				
Offset From Town General Fund	\$	260,000				
SEWER INCOME	\$	744,352				
EXPENSES:		Estimated			· · · · · · · · · · · · · · · · · · ·	
Sewer System Operation						
Personnel Services	\$	129,303				
Fringe Benefits	\$	71,560				
Other Operating Expenses	\$	243,500				
Total Operating Costs (includes Insurance)	\$	444,363				
Short Lived Asset Recovery	\$	10,000				
SEWER EXPENSES	\$	454,363				
			Monthly Payment			
Sewer Debt Service						
Existing	\$	88,881				
					Loan Assumptions:	
					Total project cost \$	15,902,900
				Assu	med Percentage Grant Funding	30.00%
New		104 2 55			USDA Grant Funding \$	4,700,000
- USDA RD New Bond	\$	181,246	\$15,103.86		Other Funding \$	5,500,000
- Debt Reserve (10%)	\$	18,125			USDA-RD Loan \$	5,702,900
Total Debt Payment	Ş	288,252			Interest Rate Loan Term (years)	1.25% 40
TOTAL EXPENSES (SEWER + DEBT)	\$	742,615			,	
	\$	1,737	Annual Income (Annual Deficit)			
	\$	145	Monthly Income (Monthly Defic	cit)		