



Wastewater Treatment Plant Expansion

Finance Committee Meeting
5:00 PM, May 18, 2021
599 S Main St.
Johnstown, OH 43031



WWTP Overview

- Constructed in 1936
 - Upgraded in 1960, 1983, 1994, & 2005
- Current ADF: 0.6 MGD
 - 4.0 MGD peak flow
 - High strength sewage from commercial customers
 - Septage from residential and commercial hauling
- Capacity: 1.2 MGD
- Discharges to Racoon Creek



NPDES Permitting in Ohio



Fairfield County Board of Commissioners v. Nally (Ohio EPA)

- Ohio Supreme Court Decision, March 24, 2015
- Ohio EPA must follow rulemaking before TMDLs can be basis of NPDES Permit
- Decision brought TMDL process to a Halt!
- Affecting Issuance of NPDES Permits

**FAIRFIELD COUNTY BOARD OF COMMISSIONERS, APPELLANT, v. NALLY,
DIR., APPELLEE.**

**[Cite as *Fairfield Cty. Bd. of Commrs. v. Nally*, 143 Ohio St.3d 93,
2015-Ohio-991.]**

*R.C. Chapter 119—Rulemaking—Ohio Environmental Protection Agency—
Water-quality standards—Total maximum daily load established by
agency is a rule subject to requirements of R.C. Chapter 119—Ohio EPA
must follow rulemaking procedure before submitting total maximum daily
load to federal EPA for its approval and before total maximum daily load
may be implemented in National Pollutant Discharge Elimination System
permit.*

(No. 2013-1085—Submitted June 25, 2014—Decided March 24, 2015.)

APPEAL from the Court of Appeals for Franklin County,

No. 11AP-508, 2013-Ohio-2106.

NPDES Permitting in Ohio



New TMDL Rule in Ohio

- House Bill 49 addresses Supreme Court Decision
- TMDLs prior to March 24, 2015 are now approved but may be modified or appealed
- NPDES Permit limits appealable within 30 days of first Permit Renewal or Modified Permit Request
- TMDLs are now appealable to ERAC
- Can negotiate alternate limits using BTJ

1 As Introduced

2 131st General Assembly

3 Regular Session H. B. No. _____

4 2015-2016

5 Representative _____

6 _____

7 A BILL

8

9

10 To amend section 6111.03, to enact new section

11 6111.561, and to repeal existing section

12 6111.03 of the Revised Code, to require the

13 Director of Environmental Protection to

14 establish total maximum daily loads in

15 accordance with stakeholder input, notice,

16 comment and public hearing procedural

17 requirements and by an action appealable to

18 the Environmental Review and Appeals

19 Commission, that the establishment by the

20 Director of total maximum daily loads is not

21 subject to the rule adoption, amendment, and

22 rescission procedures in Chapters 106, 111,

23 119, or 121 of the Revised Code, that all total

24 maximum daily loads approved by the United

25 States Environmental Protection Agency prior

26 to March 24, 2015 shall remain in full force

27 and effect subject to certain appeal rights, to

28 require the Director to initiate rulemaking

29 regarding total maximum daily loads, and to

30 declare an emergency.

31

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BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF OHIO:

Section 1. That section 6111.03 be amended and new section 6111.561 of the Revised Code be enacted to read as follows:

Sec. 6111.03. (V) Establish a total maximum daily load (TMDL) for those waters of the state that require a TMDL and submit the established TMDL to the United States Environmental Protection Agency for approval.

Johnstown NPDES Permit



Existing Johnstown NPDES Permit effective Dec. 1, 2017

- Discharges to Raccoon Creek which is tributary to the Licking River, in Muskingum Watershed.
- Permit based on Best Available Technology
- No TMDL has been completed for Licking River (in development)
- Ohio EPA claims Raccoon Creek is “impaired” per 2008 stream study
- Impairment caused by Nutrients, Siltation and Ammonia
- Ohio EPA claims expansion of WWTP not possible due to impairment and no capacity available in stream for Phosphorous and Ammonia - THIS IS NOT TRUE!
- No recent stream data since 2008 (13 years) – Nothing Scheduled
- Village could conduct new stream study to determine impairment
- Johnstown Permit expires November 30, 2022

Application No. OH0020508

Issue Date: November 9, 2017

Effective Date: December 1, 2017

Expiration Date: November 30, 2022

Ohio Environmental Protection Agency
Authorization to Discharge Under the
National Pollutant Discharge Elimination System

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq., hereinafter referred to as the "Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

Village of Johnstown

is authorized by the Ohio Environmental Protection Agency, hereinafter referred to as "Ohio EPA," to discharge from the Village of Johnstown WWTP wastewater treatment works located at 470 W. Jersey Street, Johnstown, Ohio, Licking County and discharging to Raccoon Creek in accordance with the conditions specified in Parts I, II, and III of this permit.

This permit is conditioned upon payment of applicable fees as required by Section 3745.11 of the Ohio Revised Code.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.

Craig W. Butler
Director

Total Pages: 32

NPDES Permit - Moving Forward



NPDES Considerations

- No change in current concentration limits in NPDES – Fight for this!
- Ammonia-Nitrogen limit may be lowered (0.94 mg/L currently)
- Total Phosphorus limit of 1.0 mg/L added
- Conduct Stream Study to prove Racoon Creek not impaired
- Village maintains Right to Appeal Permit

Next Steps

- Complete General Plan
 - Determine options and costs for Increasing Plant Capacity
 - Identify acceptable Permit Limits & Loadings for technologies proposed
- Consider an environmental attorney for guidance
- Proceed with Stream Study and Sampling Plan
- Submit NPDES Permit Modification for increased plant capacity
- Negotiate with Ohio EPA on acceptable Nutrient / TP Limits & Loadings

WWTP Processes

1. Septage Receiving
2. Screening
3. Grit Removal
4. Influent Pumps
5. Sequencing Batch Reactors (SBRs)
6. Aerobic Digestors
7. Ultraviolet Disinfection
8. Post Aeration
9. Sludge Dewatering
10. Sludge Storage



WWTP Expansion

Growth

- 80 new sewer taps per year
- New Enterprise Center
- More high strength waste from farmers

Expansion

- Double capacity from 1.2 MGD to 2.4 MGD
- Improve current processes to meet Total Phosphorous NPDES permit limit

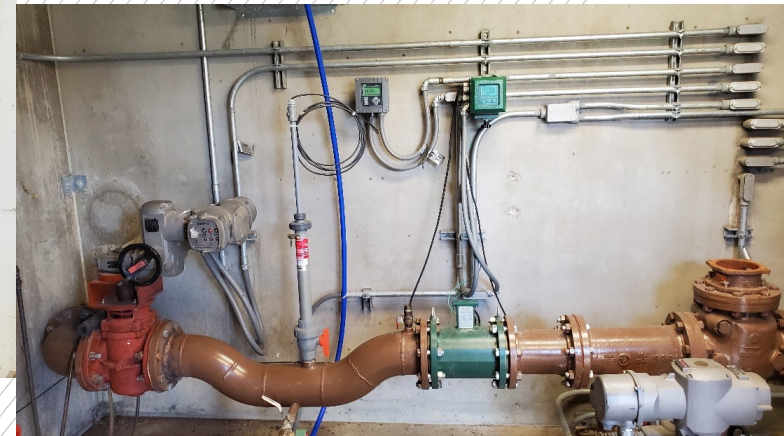


Septage Receiving

- Dedicated for septic tanks and other hauled waste
- Not used by commercial customers

Anticipated Improvements

- New connection for receiving
- New user panel for tracking offloading
- New pH probe to auto-stop receiving of illicit loads



Screening

- First unit process of wastewater treatment
- Removes large objects such as rags, paper, plastic, and metal

Anticipated Improvements

- Replace existing screen & compactor
- Additional screen to support increased flows
- One new washer/compactor for both screens



Grit Removal

- Grit includes sand, gravel, cinders, eggshells, coffee grounds, etc.
- Removal prevents unnecessary abrasion of mechanical equipment

Anticipated Improvements

- Capacity
- Replace aging equipment



Influent Pump Station

- Pumps wastewater to sequencing batch reactors
- Two active pumps with one standby pump

Anticipated Improvements

- Increase pump capacity



Sequencing Batch Reactors (SBRs)

- Aqua-Aerobic System
- Biological treatment, settling, decanting
- No secondary clarifiers or return activated sludge needed

Anticipated Improvements

- Add two additional SBRs to handle increased flow
- Area already planned for expansion



Aerobic Digestion

- Promotes microbial growth to decompose organic matter

Anticipated Improvements

- Additional sludge aeration basis to handle increased flow
- Area for expansion already planned



Ultraviolet Disinfection

- Primary mechanism for destruction of pathogens
- Prevents spread of waterborne diseases
- UV is alternative to Chlorine

Anticipated Improvements

- New UV equipment to handle increased flows
- Evaluate low versus high intensity



Post Aeration

- Increases dissolved oxygen required for receiving stream

Anticipated Improvements

- Increase capacity for increased flows
- Evaluate new/more efficient equipment



Sludge Dewatering

- Fournier Rotary Press
- Removes water from sludge

Anticipated Improvements

- Additional presses to handle increased flows



Sludge Storage

- Dry sludge stored on-site
- Applied as fertilizer on farm field

Anticipated Improvements

- Additional space and building for sludge storage
- Not part of PRIME AE project
- Being handled by Village/others



Project Funding Options

Preliminary Engineering & General Plan

- Village Funding
- OWDA (0.5% to 2.20% loan)
- Ohio EPA – WPCLF (0.38% to 0.75% loan)
- Both can be rolled over into Detailed Design Loan

Detailed Design & Bidding

- Approximately 10% of construction cost
- OWDA
- Ohio EPA – WPCLF



Ohio Water
Development Authority



Project Funding Options

Construction Cost will be determined in the General Plan

Construction & Inspection

- OWDA (low interest loan/30-yr)
- Ohio EPA – WPCLF (low interest loan/30-yr)
- OPWC (grant/loan/credit enhancement)
- Ohio Development Services Agency (\$750k grant/51% LMI)
- USDA Rural Development
 - Loan & grant/40-yr
 - Requires General Plan to be converted to Preliminary Engineering Report (PER)
 - Environmental Assessment Report is required





Thank you.
Questions?

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