

**AN ORDINANCE  
AUTHORIZING THE VILLAGE ENGINEER TO CONDUCT  
A SANITARY SEWER OVERFLOW STUDY, AND  
DECLARING AN EMERGENCY.**

WHEREAS, the Village has a license to operate its Waste Water Treatment Plant ("WWTP"); and

WHEREAS, the Ohio Environmental Protection Agency requires, as a condition of the Village's license to operate its WWTP, that the Village "shall conduct a comprehensive analysis of all feasible alternatives necessary to eliminate the equalization basin overflow at the treatment plant and any overflows in the collection system," which requires an investigation of infiltration and inflow of storm water into the Village's sanitary sewer lines; and

WHEREAS, this Council wishes to authorize the Village Engineer to conduct the required Sanitary Sewer Overflow Study.

**NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE VILLAGE OF CHAGRIN FALLS, CUYAHOGA COUNTY, STATE OF OHIO:**

SECTION 1. That the Village Engineer be and is hereby authorized and directed to conduct a Sanitary Sewer Overflow Study, at the direction of the Chief Administrative Officer of the Village, in a fashion that comports with the requirements of the Ohio Environmental Protection Agency.

SECTION 2. That actions of this Council concerning and relating to the passage of this legislation were adopted in lawful meetings of this Council and that all deliberations of this Council and of any of its committees that resulted in such formal action were in compliance with all legal requirements, including Chapter 114 of the Codified Ordinances of the Village of Chagrin Falls.

SECTION 3. That in accordance with Section 113.01 of the Codified Ordinances of the Village of Chagrin Falls, public notice of this Ordinance shall be given by posting a copy thereof for not less than fifteen (15) days in the Village Hall.


SECTION 4. That this Ordinance is declared to be an emergency measure necessary for the immediate preservation of the public peace, property, health and safety of this Village and for the further reason that this Ordinance must be immediately effective so that the Village may comply with the requirement of the Ohio Environmental Protection Agency; wherefore, provided it receives the requisite number of affirmative votes of all members elected to Council, this Ordinance shall be in full force and effect from and immediately upon its passage by this Council and approval by the Mayor; otherwise, it shall take effect and be in force after the earliest period allowed by law.

PASSED: July 23, 2012


  
\_\_\_\_\_  
Council President

Submitted to the Mayor for  
his approval on this  
24 day of July, 2012

Approved by the Mayor  
July 24, 2012

  
\_\_\_\_\_  
Mayor

I hereby certify that Ordinance No. 2012- 34 was duly enacted on the 23 day of July  
          , 2012, by the Council of the Village of Chagrin Falls and posted in accordance with Section  
113.01 of the Codified Ordinances of the Village of Chagrin Falls.

  
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Clerk of Council

Village of Chagrin Falls  
Scope for Analysis to Eliminate  
Sanitary Sewer Overflows

The Village of Chagrin Falls received a renewed permit from the Ohio Environmental Protection Agency (OEPA) to operate the Wastewater Treatment Plant (WWTP) that was effective November 1, 2011 [NPDES Permit 3PD00038\*ID]. The permit states that the wastewater collection system receives excessive infiltration and inflow (I/I). This results in one or more of the following problems:

1. Sanitary Sewer Overflows (SSOs) in the collection system
2. Surcharging of sanitary sewers [possibly resulting in Water In Basements (WIBs)]
3. Hydraulic overloading of lift stations
4. Poor treatment plant performance or plant bypasses
5. Filling and subsequent bypassing of the equalization basin

The permit states that the village "shall conduct a comprehensive analysis of all feasible alternatives necessary to eliminate the equalization basin overflow at the treatment plant and any overflows in the collection system" [page 11 of the permit (see attached)]. Specific items to be addressed are listed in bold type below. A discussion of the proposed scope follows each item.

**NPDES listed tasks:**

**i. Inflow/infiltration reduction within the collection system**

Review flow monitoring results and subsequent corrective actions listed in *Addendum to General Plan for Village of Chagrin Falls Wastewater Treatment Plant* (CT Consultants, March 1990). This report evaluated the sewage collection system and recommended improvements to reduce I/I and deactivate SSOs. Many recommendations were subsequently implemented. Five collection system SSOs were capped.

The 1990 report will be reviewed and subsequent rehabilitation projects will be detailed. The Average Daily Flow (ADF) will be analyzed to approximate effectiveness of system rehabilitations. This effectiveness will be extrapolated to determine if additional projects are warranted.

Flow monitoring at key system locations using temporary flow meters and one additional rain gauge will be installed in the system at the equalization site, the 1990 study locations, other locations of suspected SSOs, and water in basement areas. Starting in the early 2013 wet season, these meters will be installed for 90 days to record flow during dry weather and rain events. The data will be used to analyze the collection system and compare I/I to the previous study.

Geauga County will be contacted to report on system I/I tributary to Chagrin Falls per the 2007 Satellite System Discharge Control Program (SSDCP). OEPA will be contacted to ascertain Chagrin Falls' responsibility in enforcing SSDCP requirements in Geauga County. Known Geauga problems to be investigated include:

- Walters Road basement flooding suspected to be caused by I/I in Geauga system.
- Sewer surcharging at Monticello in Geauga trunk sewer and other locations as needed.

**ii. Additional wastewater storage and flow equalization**

The DMRs will be examined to help determine if equalization overflows can be eliminated by;

1. Increasing storage capacity,
2. Increasing peak hydraulic capacity of the WWTP, and/or
3. Speed of dewatering of the equalization basin.

**iii. Providing additional secondary treatment capacity which includes an analysis of constructing additional secondary treatment capacity and analysis of process changes to enhance secondary treatment capacity**

Chagrin Falls commissioned a report titled *Wastewater Treatment Plant Study – Report of Findings* (CT Consultants, November 1999) which evaluated five years of flow and treatment data. According to the report, since completion of the 1997 I/I reduction program, the average daily flow has dropped from 0.927 million gallons per day (MGD) to 0.862 MGD as compared to the rated capacity of 1.0 MGD. The report concluded that plant expansion was not needed for future average daily flows; however, recommendations (i.e. fourth clarifier) were given to improve the plant efficiency. This report will be used as the basis to complete the required analyses.

**iv. Methods to enhance treatment of bypassed flow**

Since the overflows of the equalization basin are to be eliminated, the study will examine temporary measures to enhance treatment of the bypassed flows. The study will examine:

1. Grit removal prior to equalization. This may help with cleaning the basin after a storm.
2. A floatables baffle to eliminate them from the overflow
3. Adding coagulants to enhance solids removal prior to overflowing the equalization basin

**v. Costs to evaluate alternatives**

The study will develop preliminary opinions of probable project costs for the alternatives as well as estimated increases in pollutant removals. These values will be used to develop a cost-effectiveness analysis.

**vi. A fixed-date schedule to implement necessary collection system and treatment plant improvements**

A recommended set of improvements will be made based on the cost-effectiveness analysis. An implementation schedule will be developed with the assistance of Village personnel.

**Summary Statement**

**A comprehensive plan will be prepared and reviewed with Village Administration and presented to Council for submittal to OEPA by November 1, 2013.**

Part I. C - Schedule of Compliance

Sanitary Sewer System Infiltration and Inflow (I/I)/Bypasses

The collection system receives excessive infiltration and inflow (I/I) which results in one or more of the following: collection system overflows; surcharging of sewers; hydraulic overloading of lift stations; sewage flows at the treatment plant that cause poor treatment plant performance or result in plant bypasses. All sewage flow must be collected, transported to the treatment plant, and properly treated prior to discharge.

The permittee shall undertake the following actions:

- a. The permittee shall conduct a comprehensive analysis of all feasible alternatives necessary to eliminate the equalization basin overflow at the treatment plant and any overflows in the collection system. This analysis shall address and evaluate the following:
  - i. Inflow/infiltration reduction within the collection system;
  - ii. Additional wastewater storage and flow equalization;
  - iii. Providing additional secondary treatment capacity which includes an analysis of constructing additional secondary capacity as well as an analysis of process changes to enhance secondary treatment capacity;
  - iv. The analysis shall also evaluate methods that will enhance the treatment of any bypassed flow;
  - v. Costs associated with the respective alternatives;
  - vi. A fixed-date schedule for implementation of necessary improvements (if required) in the collection system and/or the treatment plant;
- b. The permittee shall submit the comprehensive analysis evaluation listed in Item a. above as soon as possible, but no later than 24 months from the effective date of this NPDES permit.
- c. Within 30 days of notification of review and acceptance by Ohio EPA, the permittee shall implement the recommendations of the evaluation. The permittee shall respond to any deficiencies in the evaluation noted by Ohio EPA within 30 days.
- d. The permittee shall submit annual status reports towards implementation of the evaluation approved under Item c.