

***Sanitary Sewer Overflow
Emergency Response Plan***

Village of Riverlea, Ohio

August 2009

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1.0 AUTHORITY

Authority for the Village of Riverlea to take the appropriate and necessary steps to maintain the sanitary sewers and related works is provided by Ohio Revised Code Sections 715.40 and 717.01.

2.0 GENERAL

The Sanitary Sewer Overflow Emergency Response Plan (SORP) is designed to ensure that every report of a confirmed sewage overflow is immediately dispatched to the appropriate crews so the effects of the overflow can be minimized with respect to impacts to public health and adverse effects on beneficial uses and water quality of surface waters and customer service. The SORP further includes provisions to ensure safety pursuant to the directions provided by the Ohio Environmental Protection Agency (Ohio EPA) and the Franklin County Board of Health and that notification and reporting is made to the appropriate local, state and federal authorities. For purposes of this SORP, *confirmed sewage spill* is also sometimes referred to as *sewer overflow*, *overflow*, or *SO*. The effective date of this plan will be no more than 180 days following receipt of comments on this draft from the Ohio EPA.

2.1. Objectives

The primary objectives of the SORP are to protect public health and the environment, satisfy regulatory agencies and waste discharge permit conditions which address procedures for managing sewer overflows, and minimize risk of enforcement actions against the Village of Riverlea (Village).

Additional objectives of the SORP are as follows:

- Provide appropriate customer service;
- Protect wastewater treatment plant and collection system personnel;
- Protect the collection system, wastewater treatment facilities, and all appurtenances;
- Protect private and public property beyond the collection and treatment facilities.

This plan shall not supersede existing emergency plans or standard operating procedures (SOPs) unless directed by the Mayor of the Village of Riverlea (Mayor).

2.2. Organization of Plan

The key elements of the SORP are addressed individually as follows:

- Section 3 Overflow Response Procedure
- Section 4 Public Advisory Procedure
- Section 5 Regulatory Agency Notification Plan
- Section 6 Media Notification Procedure
- Section 7 Distribution and Maintenance of SORP

2.3. SO Tracking

A procedure to track the frequency and location of SOs is included in Appendix A. Depending on the completeness of information resulting from implementation of the procedure, it could support the Mayor or the delegated representative's decision process for directing the correction of overflows and prioritizing maintenance activities.

3.0 OVERFLOW RESPONSE PROCEDURE

The Overflow Response Procedure presents a strategy for the Village to mobilize labor, materials, tools and equipment to correct or repair any condition which may cause or contribute to an unpermitted discharge. The plan considers a wide range of potential system failures that could create an overflow to surface waters, land or buildings.

3.1. Receipt of Information Regarding an SO

An overflow may be detected by Village officials or the general public. The Village Street Commissioner (Street Commissioner) is primarily responsible for receiving phone calls from the public regarding possible sewer overflows from the wastewater collection system, and for forwarding work orders to the sewer maintenance provider under contract with the Village to provide sewer overflow response (Contractor).

Generally, telephone calls reporting possible sewer overflows are received by the Street Commissioner between the hours of 7 a.m. and 6 p.m., Monday through Friday. At all other times, or if the Street Commissioner cannot be reached directly, the suspected overflow shall be reported to the Worthington Police Department dispatcher (Police Dispatcher) at 885-4463. The Village is developing a program for educating the public to report overflows they observe and the phone number to be called.

3.1.1. The Street Commissioner or Police Dispatcher obtains the relevant information available regarding the overflow including:

- Time and date call was received
- Specific location
- Description of problem
- Time possible overflow was noticed by the caller
- Caller's name and phone number;
- Observations of the caller (e.g., odor, duration, back or front of property)
- Other relevant information that will enable the responding investigator and crew, if required, to quickly locate, assess and stop the overflow.

The Street Commissioner or dispatcher records the overflow information, contacts the Contractor for immediate response, and notifies the Mayor of a possible overflow.

3.1.2. Pump station alarms or other signs of station failure shall be reported in the same manner as a sewer overflow.

3.1.3. The Contractor reports to the site to confirm the overflow. Until verified, the report of a possible spill will not be referred to as a *sewer overflow*. The Contractor immediately reports back to the Street Commissioner to confirm the overflow. The Street Commissioner informs the Mayor.

The Contractor immediately begins the necessary containment, investigation,

correction, and cleanup in consultation with the Street Commissioner.

The Contractor completes an initial Overflow Report Form (See Figure 3.1) within 8 hours of the occurrence. The Street Commissioner is responsible for reviewing, updating, and forwarding the final Overflow Report to the Mayor for signature, and then transmitting it to the Ohio EPA and Franklin County Board of Health within five days of spill confirmation. Table 3.1 (following) summarizes the SO response tracking protocol.

Figure 3.1 – Sewage Overflow Report Form

Village of Riverlea

_____ date Initial Report
 Final Report

_____ operator

_____ location of overflow

_____ cross street

_____ date(s) of overflow (o/f) Map Attached yes no

_____ time reported _____ crew arrival time

_____ time o/f stopped _____ total time of o/f

_____ receiving waters _____ amount of o/f (gals)

_____ description of incident

_____ description of response

_____ cleanup methods used

sign posted yes no barricaded yes no sample taken yes no
 notified public yes no may affect fish/wildlife yes no

_____ signature

Reporting Procedures:

1. Complete the above information.
2. Notify the Street Commissioner immediately and forward initial form within 8 hours of occurrence.
3. Street Commissioner to call the Ohio EPA and Franklin County Board of Health with the above information as soon as possible.
4. Street Commissioner fax or email this form (initial report) to the Ohio EPA and Franklin County Board of Health within 24 hours of spill confirmation.
5. Send a hard copy of this form signed by the Mayor (final report) to the Ohio EPA and Franklin County Board of Health within 5 working days of spill confirmation.

Agency	Address	Phone	Fax	Email
Ohio EPA Attn: Sheree Gossett-Johnson	P.O. Box 1049 Columbus, OH 43216	S. Gossett Johnson: 614-728-3847 Main Office: 614-728-3778 Hotline: 1-800-282-9378	614-728-3898	sheree.gossett-johnson@epa.state.oh.us
Franklin County Board of Health Attn: Paul Wenning	280 E. Broad St. Columbus, OH 43215	P. Wenning: 614-462-3928 Main Office: 614-462-3160 Hotline: 614-462-3965	614-462-6672	fcbh@franklincountyohio.gov

Table 3.1

Sewage Overflow (SO) Response Tracking Protocol

Step	Event
1	Report of possible SO received by the Street Commissioner / Police Dispatcher.
2	Street Commissioner / Police Dispatcher deploys the Contractor to confirm the reported SO and notifies the Mayor of the possible overflow (3.1.1).
3	Contractor reports back to the Street Commissioner to confirm the overflow and immediately begins containment, investigation, correction, and cleanup in consultation with the Street Commissioner. The Street Commissioner reports the findings to the Mayor (3.1.3).
4	Contractor completes an initial Overflow Report Form within 8 hours of the occurrence. The report is reviewed by the Street Commissioner. The Street Commissioner calls the Ohio EPA and Franklin County Board of Health within 24 hours of the occurrence. The initial report is also faxed or emailed to the same agencies within the first 24 hours.
5	The Street Commissioner updates the final Overflow Report and forwards to the Mayor for signature. The final signed report is mailed to the Ohio EPA and Franklin County Board of Health within 5 working days of spill confirmation.

3.2. Dispatch of the Contractor to Site of Sewer Overflow

A discovered failure of any element within the wastewater collection system that threatens to cause or causes an SO, triggers an immediate response to isolate and correct the problem. Crews and equipment are available to respond to any SO location. Dispatch crews to any site of a reported SO immediately. Also, place additional maintenance personnel *on call* in the event extra crews are needed.

3.2.1. Dispatching Crews

- The Street Commissioner or Police Dispatcher receives notification of sewer overflows as outlined in Section 3.1, *Receipt of Information Regarding an SO* and dispatches the Contractor as required.
- The Street Commissioner or Police Dispatcher notifies the Mayor by phone regarding sewer overflows and field crew locations.

3.2.2. Crew Instructions and Work Orders

- The Street Commissioner or Police Dispatcher verifies that the entire message has been received and acknowledged by the Contractor. Follow all standard communications procedures.
- In all cases, the Contractor reports his findings, including possible damage to private and public property, to the Street Commissioner immediately upon making their investigation. If the Street Commissioner has not received findings from the field crew within two hours, the Street Commissioner contacts the Contractor to determine the status of the investigation. If the Contractor is unable to reach the Street Commissioner, he will leave a message and then call the Mayor.

3.2.3. Preliminary Assessment of Damage to Private and Public Property

- The focus is to resolve the problem. The Contractor's response crews use discretion in assisting the property owner/occupant as reasonably as they can. Be aware that the Village could face increased liability for any further damages inflicted to private property during such assistance. The response crew shall enter private property for purposes of assessing damage only if invited by the Property Owner. Two crew members must be present when entering private property. Take appropriate still photographs and video footage, if possible, of the outdoor area of the sewer overflow and impacted area in order to thoroughly document the nature and extent of impacts. Forward available photographs to the Street Commissioner for filing with the Overflow Report.

3.2.4. Field Supervision and Inspection

- The Contractor's supervisor is responsible for confirming that the Overflow Report is provided to the Street Commissioner within the specified time.

3.2.5. Coordination with Hazardous Material Response

- Upon arrival at the scene of a sewer overflow, should a suspicious substance (e.g., oil sheen, foamy residue) be found on the ground surface, or should a suspicious odor (e.g., gasoline) not common to the sewer system be detected, the Contractor shall contact the Worthington Fire Department and await their arrival to take over the scene. **Remember that any vehicle engine, portable pump or open flame (e.g., cigarette lighter) can provide the ignition for an explosion or fire should flammable fluids or vapors be present. Keep a safe distance and observe caution until assistance arrives.**
- Upon arrival of the fire department, the Contractor takes direction from the fire official. Only when that authority determines it is safe and appropriate for the Contractor to proceed can the crew then proceed under the SORP with the containment, cleanup activities and correction.

3.3. Overflow Correction, Containment, and Cleanup

Sewer Overflows (SO) of various volumes occur from time to time in spite of concerted prevention efforts. Spills may result from blocked sewers, pipe failures, or mechanical malfunctions among other natural or man-made causes. The Village is on alert and ready to respond upon notification and confirmation of an overflow.

This section describes specific actions to be performed by the crews during an SO.

The objectives of these actions are:

- To protect public health, environment and property from sewage overflows and restore surrounding area back to normal as soon as possible;
- To establish perimeters and control zones with appropriate traffic cones and barricades, vehicles or use of natural topography (e.g., hills, berms);
- To promptly notify the regulatory agency's communication center of preliminary overflow information and potential impacts;
- To contain the sewer overflow to the maximum extent possible including preventing the discharge of sewage into surface waters; and
- To minimize the Village's exposure to any regulatory agency penalties and fines.

An important issue with respect to an emergency response is to ensure that the temporary actions necessary to divert flows and repair the problem do not produce a

problem elsewhere in the system. For example, repair of a force main could require the temporary shutdown of the pump station and diversion of the flow at an upstream location. If the closure is not handled properly, sewage system backups may create other overflows.

3.3.1. Responsibilities of Response Crew (Contractor) Upon Arrival

It is the responsibility of the first personnel who arrive at the site of a sewer overflow to protect the health and safety of the public by mitigating the impact of the overflow to the extent possible. Should the overflow not be the responsibility of the Village but there is imminent danger to public health, public or private property, or to the quality of waters of the U.S., then the Village takes prudent emergency action until the responsible party assumes responsibility and provides the necessary actions. Upon arrival at an SO, the response crew:

- Determines the cause of the overflow, e.g. sewer line blockage, pump station mechanical or electrical failure, sewer line break, etc., and reports this information to the Street Commissioner; identifies and requests, with the approval of the Street Commissioner, assistance or additional resources needed to correct the overflow or to assist in the determination of its cause;
- Determines if private property is impacted. If yes, inform the Street Commissioner so the Franklin County Board of Health may be advised. Contact: Paul Wenning at (614) 462-3928;
- Takes immediate steps to stop the overflow, e.g. relieves pipeline blockage, manually operates pump station controls, repairs pipe, etc. Extraordinary steps may be considered where overflows from private property threaten public health and safety (e.g., an overflow running off of private property into the public right-of-way); and
- Requests additional personnel, materials, supplies, or equipment that will expedite and minimize the impact of the overflow, as approved by the Street Commissioner.

3.3.2. Initial Measures for Containment

Initiate measures to contain the overflowing sewage and recover where possible sewage that has already been discharged, minimizing impact to public health or the environment.

- Determine the immediate destination of the overflow, e.g. storm drain, street curb gutter, body of water, creek bed, etc.;
- Identify and request the necessary materials and equipment to contain or isolate the overflow, if not readily available; and

- Take immediate steps to contain the overflow, e.g., block or bag storm drains, recover through vacuum truck, divert into downstream manhole, etc.

3.3.3. Additional Measures Under Potentially Prolonged Overflow Conditions

In the event of a prolonged sewer line blockage or a sewer line collapse, set up a portable by-pass pumping operation around the obstruction.

- Take appropriate measures to determine the proper size and number of pumps required to effectively handle the sewage flow.
- Implement continuous or periodic monitoring of the by-pass pumping operation as required.
- Address regulatory agency issues in conjunction with emergency repairs.

3.3.4. Cleanup

Sewer overflow sites are to be thoroughly cleaned after an overflow. No readily identified residue (e.g., sewage solids, papers, rags, plastics, rubber products) is to remain.

- Where practical, thoroughly flush the area and clean up any sewage or wash-down water. Solids and debris are to be flushed, swept, raked, picked-up, and transported for proper disposal.
- Secure the overflow to prevent contact by members of the public until the site has been thoroughly cleaned. If posting is required, refer to Section 4.0.
- Where appropriate, disinfect and deodorize the overflow site. See Appendix B for further guidance on the use of disinfectants.
- Where sewage has resulted in ponding, pump the pond dry and dispose of the residue in accordance with applicable regulations and policies.
- If a ponded area contains sewage which cannot be pumped dry, it may be treated with bleach. If sewage has discharged into a body of water that may contain fish or other aquatic life, do not use bleach or other appropriate disinfectant and contact the Ohio Department of Natural Resources, Division of Wildlife, Franklin County Wildlife Officer at (614) 644-3929 or (614) 644-3925 for specific instructions.
- Use of portable aerators may be required where complete recovery of sewage is not practical and where severe oxygen depletion in existing surface water is expected.

3.4. Overflow Report

The Contractor completes an initial Overflow Report within 8 hours of the occurrence and forwards it to the Street Commissioner as soon as possible (See Figure 3.1). The Contractor promptly notifies the Street Commissioner when the overflow is eliminated. Information regarding the sewer overflow includes the following:

- 3.4.1.** Indication that the sewage overflow had reached surface waters, i.e., all overflows where sewage was observed running to surface waters, or there was obvious indication (e.g. sewage residue) that sewage flowed to surface waters; and
- 3.4.2.** Indication that the sewage overflow had not reached surface waters. Guidance in characterizing these overflows to include:
 - Sewage overflows to covered storm drains (with no public access) where personnel verify, by inspection, that the entire volume is contained in a sump or impoundment and where complete cleanup occurs leaving no residue.
 - Preplanned or emergency maintenance jobs involving bypass pumping if access by the public to a bypass channel is restricted and subsequent complete cleanup occurs leaving no residue (Any preplanned bypass under these circumstances will not be considered an overflow.); and
 - Overflows where observation or on-site evidence clearly indicates all sewage was retained on land and did not reach a surface water and where complete cleanup occurs leaving no residue.
- 3.4.3.** Determination of the start time of the sewer overflow by one of the following methods:
 - Date and time information received and/or reported to have begun and later substantiated by the Contractor's response crew;
 - Visual observation; or
 - Pump station and lift station flow charts and other recorded data.
- 3.4.4.** Determination of the stop time of the sewer overflow by one of the following methods:
 - When the blockage is cleared or flow is controlled or contained; or
 - The arrival time of the Contractor's response crew, if the overflow stopped between the time it was reported and the time of arrival.

3.4.5. Visual observations

An estimation of the rate of sewer overflow in gallons per minute (GPM) by one of the following criteria:

- Direct observations of the overflow; or
- Measurement of actual overflow from the sewer main. See Appendix C for guidance on estimating flow rates.

3.4.6. Determination of the volume of the sewer overflow:

- When the rate of overflow is known, multiply the duration of the overflow by the overflow rate; or
- When the rate of overflow is not known, investigate the surrounding area for evidence of ponding or other indications of overflow volume. See Appendix C for guidance on estimating overflow volumes.

3.4.7. Photographs of the event, when possible.

3.4.8. Assessment of any damage to the exterior areas of public/private property. Personnel shall not enter private property for purposes of estimating damage to structures, floor and wall coverings, and personal property, unless two crew members are present and they are invited by the property owner to enter.

3.5. Customer Satisfaction

Following confirmation of the overflow, the Street Commissioner follows up in person or by telephone with the citizen(s) reporting the overflow. The cause of the overflow and its resolution will be disclosed.

4.0 PUBLIC ADVISORY PROCEDURE

This section describes the actions the Village takes, in cooperation with the Ohio EPA, to limit public access to areas potentially impacted by unpermitted discharges of pollutants to surface water bodies or ground surfaces from the wastewater collection system.

4.1. Temporary Signage

The Village has primary responsibility for determining when to post notices of polluted surface water bodies or ground surfaces that result from uncontrolled wastewater discharges from its facilities. The postings do not necessarily prohibit use of recreational areas, unless posted otherwise, but provide a warning of potential public health risks due to sewage contamination.

Table 4.1 outlines the decision process for the Street Commissioner to recommend to the Mayor that posting of a confirmed overflow be undertaken or that there is reasonable potential for an overflow to occur, thus the need to post in advance. If posting is deemed necessary, the Franklin County Board of Health shall be notified. See Appendix D for signage requirements.

4.2. Other Public Notification

Should the posting of surface water bodies or ground surfaces subjected to a sewer overflow be recommended by the Street Commissioner and approved by the Mayor, then the need for further public notification through the use of pre-scripted notices made available to the printed or electronic news media for immediate publication or airing will be considered. Notice will also be placed on the Village website.

See Appendix E for examples of pre-scripted notices.

Table 4.1

Sewer Overflow (SO) Posting Decision Process

Category	Step	Event
Overflow	1	The Contractor confirms reported SO.
	2	Provide all relevant SO data to the Street Commissioner. <ul style="list-style-type: none">• Unavoidable or avoidable (See Appendix F for suggested criteria for determining)• History of overflow frequency at the location• Relevant rainfall data, if wet-weather related• Map identifying overflow location and surrounding area• Personnel input on posting recommendation
	3	The Street Commissioner recommends whether or not to post.
	4	If posting is recommended, the final decision is made by the Mayor.
	5	If posting recommendation is accepted by the Mayor, a warning sign is posted by the Street Commissioner
	6	The Street Commissioner decides when the sign is removed, with the Mayor's approval, in accordance with Appendix D.
Potential	1	Identify reasonable potential for an SO to occur at a particular location from: <ul style="list-style-type: none">• Overflow investigations during previous storm events• Planned maintenance activities which might contribute to an overflow condition
	2	Provide other relevant SO data to the Street Commissioner.
	3	The Street Commissioner recommends to post or not.
	4	If posting is recommended, the final decision is made by the Mayor.
	5	If posting recommendation is accepted by the Mayor, a warning sign is posted by the Street Commissioner.
	6	The Street Commissioner decides when the sign is removed, with the Mayor's approval, in accordance with Appendix D.

5.0 REGULATORY AGENCY NOTIFICATION PLAN

The Regulatory Agency Notification Plan establishes procedures which the Village follows to provide formal notice to the Ohio EPA, Franklin County Board of Health, and other agencies as necessary in the event of SOs. The reporting criteria below explains to whom various forms of notification should be made, and lists agencies/individuals to be contacted.

Agency notifications will be performed in parallel with other internal notifications. The procedures for providing notification to the media of an SO are presented in Section 6.0 - Media Notification Procedure. Internal notification and mobilization of personnel are detailed in Section 3.0 - Overflow Response Procedure.

5.1. Immediate Notification

The Village notifies state and local agency representatives (see below) immediately and keeps them abreast of response actions and final corrective actions.

Using data collected during the verification process, the Contractor prepares an initial Overflow Report for review and approval by the Street Commissioner. The Street Commissioner calls the Ohio EPA and the Franklin County Board of Health with this information as soon as possible. The Street Commissioner faxes or emails the initial report to these agencies within 24 hours of confirmation of the overflow. Within 5 days of overflow confirmation, the Street Commissioner sends a hard copy of the final report, signed by the Mayor, to the Ohio EPA and the Franklin County Board of Health.

Agency	Address	Phone	Fax	Email
Ohio EPA Attn: Sheree Gossett-Johnson	P.O. Box 1049 Columbus, OH 43216	S. Gossett-Johnson: 614-728-3847 Main Office: 614-728-3778 Hotline: 1-800-282-9378	614-728-3898	sheree.gossett-johnson@epa.state.oh.us
Franklin County Board of Health Attn: Paul Wenning	280 E. Broad St. Columbus, OH 43215	P. Wenning: 614-462-3928 Main Office: 614-462-3160 Hotline: 614-462-3965	614-462-6672	fcbh@franklincountyohio.gov

5.2. Secondary Notification

After those parties identified in Section 5.1. *Immediate Notification* have been contacted, the Street Commissioner contacts the City of Columbus, Division of Sewerage and Drainage, Sewer Maintenance Operations Center (SMOC) at (614) 645-7102.

6.0 MEDIA NOTIFICATION PROCEDURE

When an overflow has been confirmed and is a threat to public health, take the following actions, if necessary, to notify the media:

- 6.1.** The Contractor verifies overflow and reports back to the Street Commissioner.
- 6.2.** The Street Commissioner informs the Mayor. The Mayor shall be the *first-line* of response to the media for any overflow.
- 6.3.** Calls received by the Street Commissioner or Worthington Police dispatcher from the media at any time are referred to the Mayor.
- 6.4.** The following personnel are authorized to be interviewed by the media and are the designated spokespersons:
 - Mayor
 - Street Commissioner
 - Solicitor

7.0 DISTRIBUTION AND MAINTENANCE OF SORP

Annual updates to the SORP reflect all changes in policies and procedures as may be required to achieve its objectives.

7.1. Submittal and Availability of SORP

Distribute copies of the SORP and any amendments to the following departments and functional positions:

- Mayor
- Street Commissioner
- Solicitor
- Contractor
- Police Dispatcher (City of Worthington)

Familiarize all other personnel who may become incidentally involved in responding to overflows with the SORP.

7.2. Review and Update of SORP

Review the SORP annually and amend as appropriate. The Village should:

- Update the SORP with the issuance of a revised or new NPDES permit or state waste discharge permit;
- Conduct biennial training sessions with appropriate personnel; and
- Review and update, as needed, the various contact person lists included in the SORP.

Appendices

Appendix B

Responsible Usage of Disinfectants in Sewer Overflow Cleanups

All sanitary and combined sewer overflows present some level of risk to public health and the environment. The health risks are caused by the presence of pathogens – disease-causing organisms in humans, including bacteria and viruses commonly found in sanitary and combined sewer systems. These risks can be minimized by appropriately treating ground surfaces and other surfaces which have been contaminated. Exposure risks increase with the concentration of pathogens. The more dilute the overflow, the less risk involved with exposure. Undiluted (“full strength”) sewage should be expected during a dry weather overflow with a higher risk to public health when contrasted with that of a wet weather overflow. Actions to sanitize contaminated surfaces should reflect whether the overflow event was during wet or dry weather conditions.

When the use of a disinfectant is needed where a ponded area of sewage cannot be pumped dry or it is commingled with standing water not of sewage origin, it should be treated with bleach or high-test hypochlorite (HTH). A dosing of 10 to 12 ounces of HTH per 100 square feet of pond surface may be appropriate for relatively shallow ponds. Deeper ponds may require significantly higher dosages and the Franklin County Health Department (FCHD) or the Ohio EPA (OEPA) should be contacted. However, if sewage has been discharged into a body of water that may contain fish or other aquatic life, bleach or other chlorine products should not be applied until the Ohio Department of Natural Resources (ODNR) is contacted. Only after the receipt of specific instructions from ODNR should procedures for disinfection involving surface waters be implemented.

If an overflow is anticipated to be of a long duration, e.g., in excess of 12-24 hours, special consideration of the type and extent of disinfection may be necessary, and the FCHD, Ohio EPA, and ODNR should be consulted.

Appendix C

Calculating Overflow Rates and Volumes

To calculate the amount of gallons in a sewage discharge, the volume of the discharge must be determined. If it is a rectangular ponded area:

$$\text{Volume} = \text{Length (ft)} \times \text{Width (ft)} \times \text{Depth (ft)} \times 7.48 \text{ gal/cu. ft.} = \text{Gallons}$$

Example 1: A discharge 100 ft x 100ft x 0.5ft

$$100' \times 100' \times 0.5' \times 7.48 = 37,400 \text{ gallons}$$

If a spill has been discharging into a storm drain, the gallons must be estimated by the elapsed time of the overflow multiplied by the number of service connections on the collector sewer multiplied by 200 gallons per household per 24 hrs.

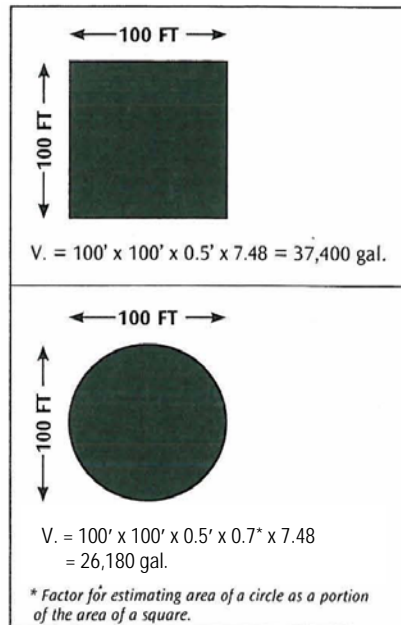
Example 2: If there are 6 houses on a line and it has been overflowing for 24 hrs:

$$\text{Volume} = 6 \text{ houses} \times 200 \text{ gal/house/24 hrs} \times 24 \text{ hrs} = 1200 \text{ gallons}$$

Example 3: If there are 60 houses on a line and it has been overflowing for 1 hr:

$$60 \text{ houses} \times 200 \text{ gal/house/24 hrs} \times 1 \text{ hr.} = 500 \text{ Gallons}$$

Example 4:



Example 5: 6 houses overflowing for 12 hours at 240 gallons/house/24 hrs:

$$6 \text{ houses} \times 240 \text{ gal/house/24hrs} \times 12 \text{ hrs} = 720 \text{ gallons}$$

Source: City of Pacifica, California, Collection System Department

Appendix C (continued)

Measuring Flow in a Storm Sewer to Estimate an SSO Volume/Flow Rate

To determine flow rate and volume of wastewater discharged to a storm sewer, two approaches may be used.

One is the “drop/bucket” method. This method is limited to flow rates of approximately 20 gallons/minute or less, and requires a free discharging storm sewer with adequate space below the pipe invert to position a plastic bucket of known volume (2-5 gallons). As the bucket captures the discharge, a stopwatch is used to time its filling. Dividing the volume of the bucket, in gallons by the elapsed time to fill the bucket in minutes, yields the flow rate in gallons/minute.

The second method utilizes a piece of 0.5-inch polyvinyl chloride (PVC) pipe 3 feet in length and wrapped with fluorescent-colored tape at one foot gradations, and the following procedure:

1. The PVC pipe is lowered from the manhole rim and anchored in the storm sewer manhole’s line of flow with an attached 0.5-pound fishing line weight.
2. To determine the velocity of flow, a floatable marker is dropped into the flow at the upstream end of the PVC pipe and its time of travel along the length of the PVC pipe is timed with a stopwatch. Note that the marker should be of a material and size that will not clog any downstream pumps. The PVC pipe’s 3 feet in length divided by the elapsed time in seconds, for the marker to travel that length yields the velocity in feet/second. (The use of electrical or mechanical velocity meters are likely not practical because this method is only for relatively low velocity/low flow scenarios of less than 0.75 feet/second.)
3. The depth of flow is the depth from the water surface to the manhole invert as measured remotely from the manhole rim using a string and a 0.5-pound fishing weight. The string should be white and absorbent so the flow depth is apparent, i.e., the moisture stain on the string, when retrieved.
4. Using the storm sewer pipeline diameter and grade obtained from storm sewer maps, the measured water depth, flow velocity, and the flow rate can be calculated.

Source: City of Riverside, California, Wastewater Division

Appendix D

Signage Requirements

At any point within the Village of Riverlea sewage collection system where an overflow has recently occurred or there is reasonable potential for an occurrence at a frequency greater than once per year, the following notice, or an equivalent similar notice, shall be posted near the overflow site in a location readily visible to the public:

“The overflow of untreated sewage has occurred at or near this location and may occur in the future. Contact with ponded water near this location should be avoided to prevent possible exposure to disease. Also avoid contact or consumption of water downstream of this location. Please report any discharge to the Village of Riverlea at 614-885-3567 or contact that number for additional information.”

Signs may be removed when no overflows have occurred at the location for 12 consecutive months, or the cause of the overflow has been corrected and the site has been disinfected.

The objective of posting signs is to provide warning of potential public health risks due to sewage contamination. Sign postings do not prohibit the use of posted areas. Generally, signs are posted where sewage enters a water body or spills onto the ground, where an overflow area cannot be cleaned, or when directed by regulatory agencies. Signage locations may be sites of confirmed overflows or of reasonable potential for overflows. The designation of “reasonable potential” is often based on investigations of prior storm events or on planned maintenance activities which might contribute to overflow occurrence. Signs should be regularly inspected, replaced if missing and only removed by direction of the Mayor.

On the next two pages, two examples of warning signs for posting at a sewage overflow site are shown, one for an SSO that *has occurred* and one for an SSO that *is probable*.



WARNING

**A SANITARY SEWER OVERFLOW (SSO)
HAS OCCURRED IN THIS AREA.**

**AVOIDING CONTACT WITH
STANDING WATER, CONTAMINATED SOIL,
OR VEGETATION IS RECOMMENDED.**

**FOR MORE INFORMATION
OR TO REPORT AN SSO, CALL:**

**VILLAGE OF RIVERLEA
(614) 885-3567**



WARNING

**A SANITARY SEWER OVERFLOW (SSO)
IS PROBABLE IN THIS AREA.**

**AVOIDING CONTACT WITH
STANDING WATER, CONTAMINATED SOIL,
OR VEGETATION IS RECOMMENDED.**

**FOR MORE INFORMATION
OR TO REPORT AN SSO, CALL:**

**VILLAGE OF RIVERLEA
(614) 885-3567**

Appendix E

Sample News Release – Initial Notification

Village of Riverlea Letterhead

For Immediate Release

Insert Date and Time

Cause of failure, such as mechanical breakdown or natural cause (lighting or local flooding) damage at the sewage pump station / overloading of the sewer located near the intersection of street name and street name has caused sewage overflow into the surface water name in area name. A map showing the location of the areas impacted by the sewage overflow is attached.

Although crews have begun to make temporary repairs and divert some of the flows to which plant and/or interim bypass pumping has begun, backups may occur in portions of the system. Consequently, residents (reference area or location on map) are urged to reduce water usage inside the home as much as possible and avoid coming into physical contact with standing waters in the street or using receiving surface water for any purpose until further notice.

Please note that the drinking water supply is not affected; however, the cooperation of residents to minimize water usage in order to reduce sewage flows is of the utmost importance.

Contact: Mary Jo Cusack
Mayor
(614) 880-0888

Bill Charles
Street Commissioner
(614) 848-6262

Appendix E (continued)

Sample News Release – Olentangy River Advisory

Village of Riverlea Letterhead

For Immediate Release

Insert Date and Time

Cause of failure, such as mechanical breakdown or natural cause (lighting or local flooding) damage at the sewage pump station / overloading of the sewer located near the intersection of street name and street name has caused sewage overflow into the Olentangy River. Repair efforts are underway to mitigate the overflow.

Discharge of untreated sewage to the Olentangy River contaminates the river waters. Citizens are advised to avoid swimming or fishing in the areas where warning signs are posted.

The waters of the Olentangy River in the vicinity of the overflow are being monitored by the Franklin County Board of Health and the Ohio EPA to determine the extent of pollution and possible environmental damage. Additional advisories will be issued on the status of the water quality and when it is safe to resume normal use of the river.

Contact: Mary Jo Cusack
Mayor
(614) 880-0888

Bill Charles
Street Commissioner
(614) 848-6262

Appendix E (continued)

Sample News Release – Closing Statements

Village of Riverlea Letterhead

For Immediate Release

Insert Date and Time

Cause of failure, such as mechanical breakdown or natural cause (lighting or local flooding) damage at the sewage pump station / overloading of the sewer located near the intersection of street name and street name has caused sewage overflow into the surface water name in area name. The overflow caused the discharge of approximately _____ gallons of sewage to name of surface water or other area, resulting in restricted public access.

A specially trained team of repair experts were swiftly mobilized to take immediate and effective action. The repairs were completed in _____ (hours or days) and involved around-the-clock operations.

The Village of Riverlea worked in cooperation with the Franklin County Board of Health and the Ohio EPA in monitoring the environmental effects of the sewage discharge. The media assisted in issuing advisories to keep the public informed of the status of remedial actions. As a result, the impacts of accidental sewage discharged were minimized. The water quality in name of surface water is continuing to be monitored to ensure there are no threats to public health and the environment.

Contact: Mary Jo Cusack
Mayor
(614) 880-0888

Bill Charles
Street Commissioner
(614) 848-6262

Appendix F

Suggested Criteria for Demonstrating How a Sewer Overflow (SO) Was Unavoidable

SOs can be demonstrated as unavoidable by showing the discharge meets each of criteria 1 through 5.

1. The discharge resulted from a temporary, exceptional incident that was either:
 - A. necessary to prevent loss of life, personal injury, or severe property damage or
 - B. beyond the reasonable control of the operator. Incidents beyond the reasonable control of the operator would include:
 - i. exceptional acts of nature;
 - ii. third party actions that could not be reasonably prevented, including vandalism that could not be avoided by reasonable measures;
 - iii. blockages that could not be avoided by reasonable measures; and
 - iv. unforeseeable sudden structural, mechanical, or electrical failure that could not be avoided by reasonable measures.
2. The discharge had no feasible alternative.
3. The discharge was not caused by any of the following:
 - A. operational error,
 - B. improperly designed or constructed collection system facilities,
 - C. inadequate collection system facilities or components,
 - D. the lack of appropriate preventive maintenance, or
 - E. careless or improper oversight.
4. Steps to stop the discharge, address the source of the problem, and mitigate potential impacts from the discharge were taken as soon as possible after becoming aware of the release; and
5. The NPDES enforcement authority was notified of the event.