City of Terre Haute
Wastewater Utility

Vigo County Industrial Park
Summary of Available
Wastewater Services

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Section One

City of Terre Haute
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Introduction/Background

The Vigo County Industrial Park is located west of US 41, south of Harlan Drive, in southern Vigo County. The Industrial Park is subdivided into multiple parcels of varying size to serve development within the park's boundaries. Wastewater collection and treatment services are provided to the Industrial Park by the Terre Haute Wastewater Utility with ultimate treatment of the wastewater provided by the City's 48 million gallon per day treatment facility located on the south side of the City along SR 63, adjacent to the Wabash River and southwest of the Honey Creek Shopping Mall. (See Figure 2) Current dry weather flows to the treatment facility average approximately 11.5 MGD.

The Park, originally developed in the early 1990's, was planned for phased development and the extension of sanitary sewer services was also completed in multiple phases. The sanitary sewer service provided for the park and its existing and potential tenants is divided into two systems. A natural waterway, which is identifiable in Figure 1, is essentially the dividing line of the two systems, further referred to as the eastern and western systems. This document presents the current wastewater services available to the Park and the capacity to handle existing and proposed wastewater flows.

Existing Infrastructure

The eastern system was the industrial park's original sanitary sewer infrastructure and is made up of eight-inch (8") and ten-inch (10") gravity sewers, progressing in size to a lift station near the southeast corner of the park. (See Figure 1) The lift station discharges through an eight-inch (8") force main and serves approximately the eastern fifth (1/5) of the industrial park. The force main originally discharged to an eight-inch (8") sanitary sewer near Carlisle Road and Jessica Drive but was relocated to discharge to a thirty-inch (30") gravity sewer just south of Dallas Road on Carlisle Drive. The thirty-inch (30") sewer was constructed in approximately 1999 as part of the Terre Haute Sanitary District's 'Vigo County Industrial Park Sanitary Sewer Extension Project' which was constructed to provide a dedicated conveyance system of larger wastewater flows from the Park to a new Southside Lift Station located on Springhill Drive, just west of the County Fairgrounds. (See Figure 2)

The Southside Lift Station, as currently constructed, has a capacity of approximately 12 MGD. The lift station discharges directly to the wastewater treatment plant via a 30-inch force main and is currently pumping a little more than 2 MGD. It was designed and constructed with capabilities of adding a second 30-inch force main which would expand the peak capacity of this lift station to over 26 MGD.

The service area of the eastern system is made up of approximately 90 acres of developable land which is near 60% capacity in terms of available development area. The lift station serving this eastern system contains two pumps, each having a capacity of 250 gallons per minute, or 360,000 gallons per day. This total pumping capacity exceeds typically recognized industry standards of 1,000 gallons per acre per day for commercial developments and 1,500 gallons per acre per day for industrial developments based on the service area of the eastern system.

The installation of the Industrial Park interceptor, along with the pending development of the Heartland Steel (currently CSN) facility, precipitated the development of the industrial park's western sanitary sewer system in 1999 and into the early 2000's.

The western system serves approximately 80% of the industrial park's area, most of which is undeveloped as compared to the eastern area of the park. The system's main line consists of 18 – 24" sanitary sewers increasing in size from the eastern side of the service area to the main lift station located in the west central part of the service area as shown in Figure 1. The lift station discharges by an eighteen-inch (18") force main to the thirty-inch gravity sewer located near the intersection of Carlisle Drive and Harlan Road.

Utilized and Available Capacity

The existing capacity of the eastern and older collection system as delineated in Figure 1 is approximately 0.74 MGD for the 8" northern subsystem and 3.71 MGD for the 10" subsystem. In addition, a short run of 8" line south of the lift station has a capacity of 2.47 MGD. All of these collection subsystems exceed the design capacity of the lift station serving this system. Currently, the existing developments in the eastern system discharge an average of 2,040 GPD of wastewater or approximately 0.05% of the collection system's capacity and 0.56% of the current lift station's pumping capacity.

The service area of the western sanitary sewer system originally included 845 acres of developable land and 191 acres being developed for Heartland Steel. Heartland Steel reported anticipated discharges of approximately 100,000 gallons per day. Several design considerations were given to the remaining 845 developable acres potential discharge rate, with the design team ultimately using a correlation of Heartland Steel's discharge rate per acre as the design basis.

Utilizing this criteria, the western system was designed for an average flow of approximately 1.55 million gallons per day (MGD). Currently the western system is utilizing approximately 50,960 GPD or 3.3% of the western lift station capacity. When applying peak rates the lift station can pump 4,400 gallons per minute or approximately 6.34 MGD.

The existing capacity of the western collection system as delineated in Figure 1 increases in capacity and size from east to west as follows (Note: MGD and lengths have been rounded):

- 2.99 MGD for 3,500' of 18" sewer
- 3.20 MGD for 900' of 18" sewer
- 4.56 MGD for 800' of 18" sewer and 2,700' of 21" sewer
- 5.08 MGD for 425' of 21" sewer and 750' of 24" sewer
- 5.92 MGD for 1,200' of 24" sewer
- 10.50 MGD for 300' of 24" sewer discharging to the west lift station

With the exception of the last 300' of 24" sewer, the capacity of the collection system is compatible with the peak design flow rate of the lift station. The current discharge of existing developments in the western system is an average of 50,960 GPD of wastewater or approximately 0.86% of the collection system's capacity.

Given the undeveloped areas within the Park, and the capacity currently dedicated to existing facilities, the attached Figure 1 depicts not only the existing infrastructure in place but also the available capacity of the wastewater infrastructure available for new development in specific areas.

Information used in the development of this summary was obtained from several sources. Sewer connection locations within the park were determined by a combination of reviewing available City connection inspection records and a video inspection of the entire collection system by the Wastewater Utility.

System capacities were determined by reviewing 'as-built' information of the system and utilizing Manning's equation to calculate the flow, in gallons per day (GPD), a line segment or segments could transport. In some cases a downstream line segment with a lower flow capacity, dictated the capacity of an upstream line segment which, individually, had greater flow handling capability.

Available capacities were determined by obtaining water usage/billing records and using the most current 12 months of water usage for each individual property to develop an average daily amount. This average was also used as the discharge rate to the sewer collection system. The system capacity of a line segment or segments, less the discharge rate into that segment resulted in the available capacity.

Section Two

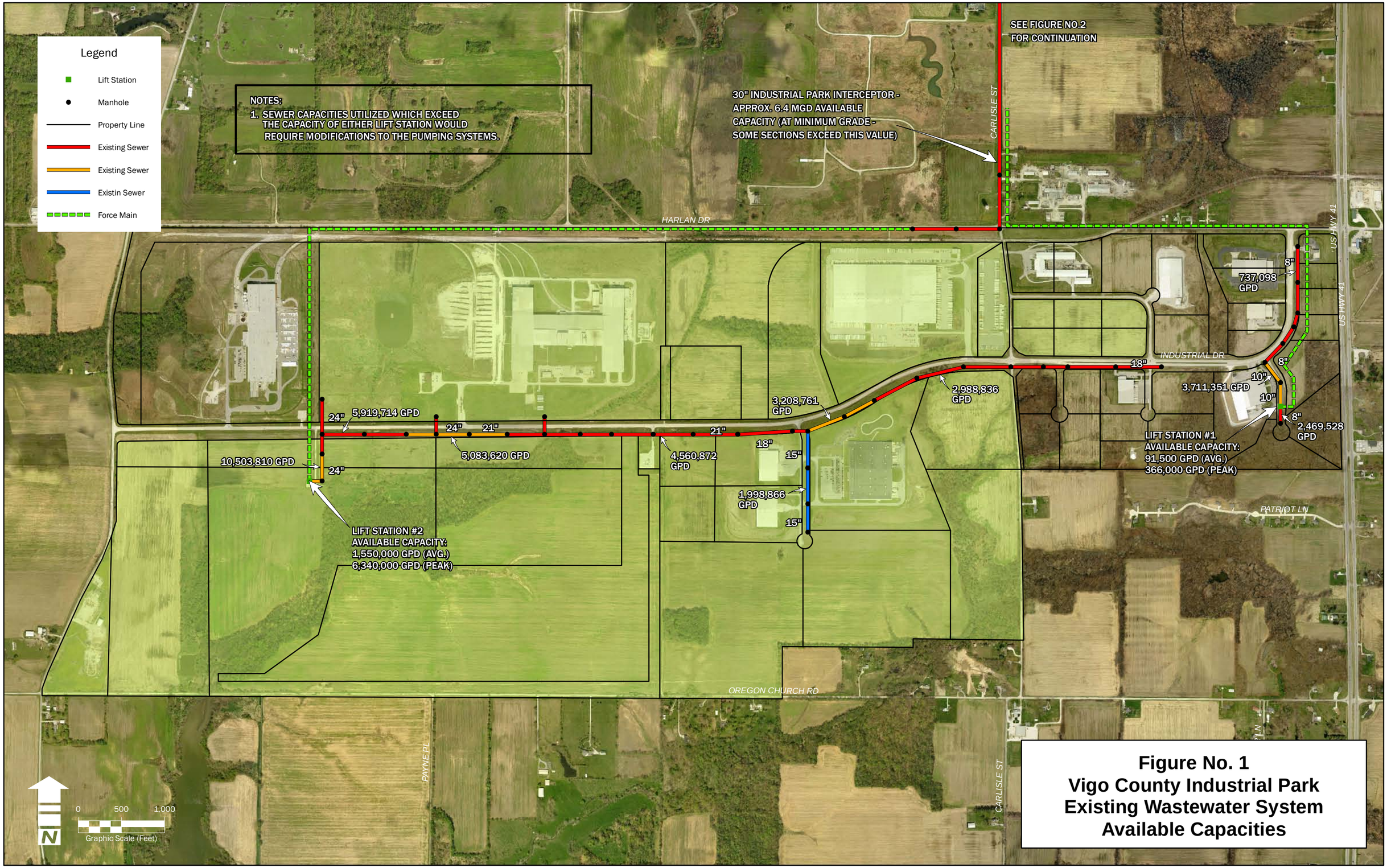


Figure No. 1
Vigo County Industrial Park
Existing Wastewater System
Available Capacities

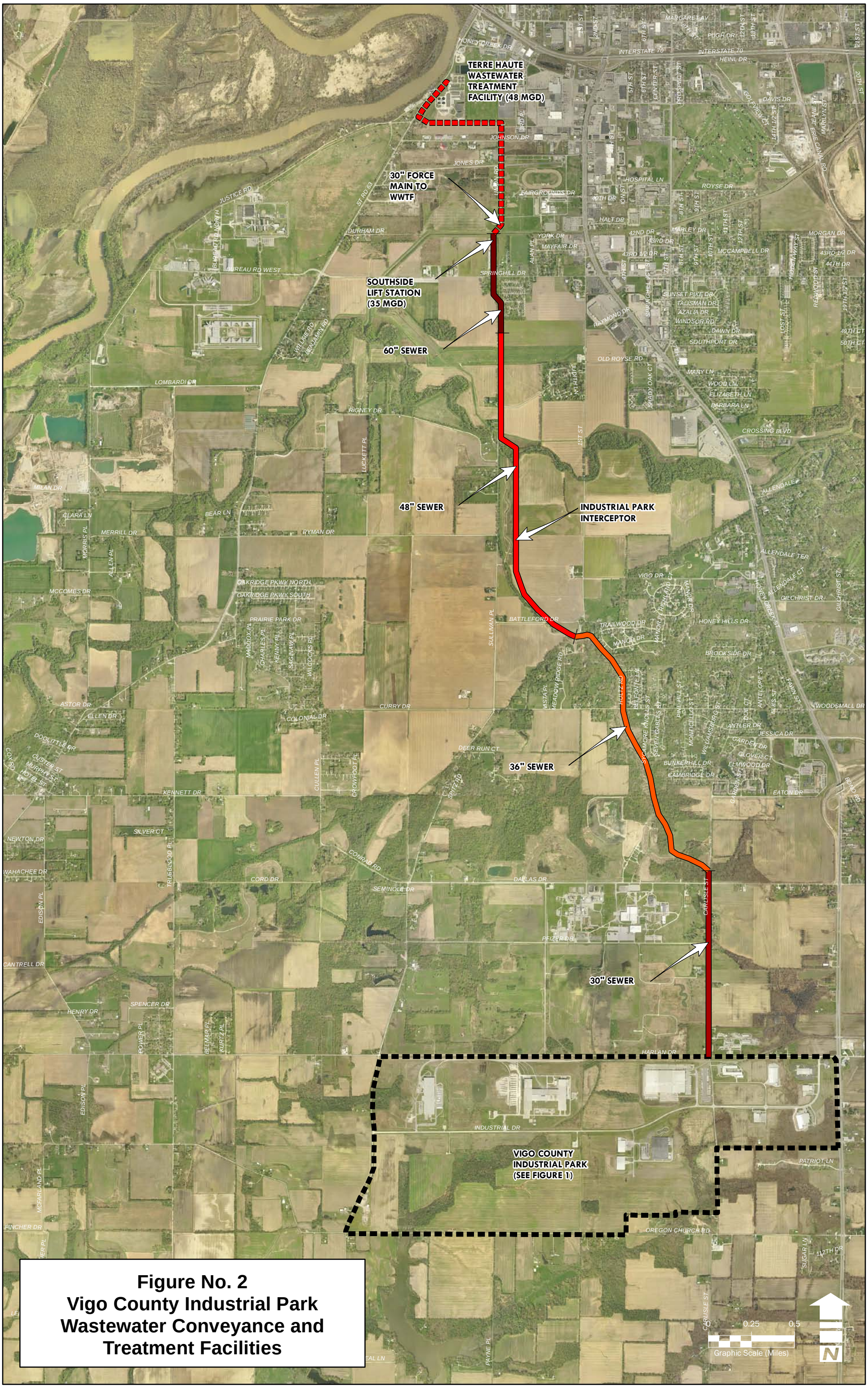


Figure No. 2
Vigo County Industrial Park
Wastewater Conveyance and Treatment Facilities

Section Three

CHAPTER 9

UTILITIES

ARTICLE 2. SEWAGE USAGE AND INDUSTRIAL PRETREATMENT.[1]

Division I. General Provisions.

Sec. 9-5 Purpose and Policy.

This Article sets forth uniform requirements for all users of the sewer system components of the Publicly Owned Treatment Works (POTW) of the City of Terre Haute, Indiana and to enable the City of Terre Haute to comply with all applicable State and Federal laws, including the Clean Water Act and the General Pretreatment Regulations. The objectives of this Ordinance are:

a. ...

g. To establish a Pretreatment Program for the regulation and control of industrial discharges through the issuance and enforcement of Industrial Wastewater Discharge Permits that set forth the terms, conditions and regulations under which non-compatible wastewaters may be discharged into the City's POTW.

This Article shall apply to all users of the Publicly Owned Treatment Works. (Gen. Ord. No. 8, 2012; 9-13-12)

Division II. General Rules and Requirements.

Sec. 9-9 General Requirements.

Sec. 9-10 Prohibited Discharge Standards.

a. General Prohibitions. No user shall introduce or cause to be introduced into the POTW any pollutant or wastewater that causes pass through or interference. These general prohibitions apply to all users of the POTW whether or not they are subject to categorical pretreatment standards or any other National, State, or local pretreatment standards or requirements.

b. Specific Prohibitions. No user shall introduce or cause to be introduced into the POTW the following pollutants, substances, or wastewater:

(1) Pollutants which create a fire or explosive hazard in the POTW, including, but not limited to, waste streams with a closed-cup flash point of less than 140°F (60°C) using the test methods specified in 40 CFR 261.21;

(2) Except in accordance with Sec. 9-9(G) of this Article, wastewater having a pH less than 5.0 or more than 10, or otherwise causing corrosive structural damage to the POTW or equipment, but in no case wastewater which causes the pH at the introduction into the treatment plant to exceed 10;

(3) Solid or viscous substances in amounts which will cause obstruction of the flow in the POTW resulting in interference but in no case solids greater than 3/4 inch (es) (3/4") in dimension;

(4) Pollutants, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants, will cause interference with the POTW;

(5) Wastewater having a temperature greater than 140°F, or which will inhibit biological activity in the treatment plant resulting in interference, but in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 104°F (40°C);

(6) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass through;

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

(8) Trucked or hauled pollutants, except at discharge points designated by the Director in accordance with Sec. 9-20 of this Article;

(9) Noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or a hazard to life, or to prevent entry into the sewers for maintenance or repair;

(10) Wastewater which imparts color which cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions, which consequently imparts color to the treatment plant's effluent, thereby violating the City's NPDES permit;

(11) Wastewater containing any radioactive wastes or isotopes except in compliance with applicable State or Federal regulations;

(12) Stormwater, surface water, ground water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, deionized water, non-contact cooling water, and unpolluted wastewater, unless specifically authorized by the Director;

(13) Sludges, screenings, or other residues from the pretreatment of industrial wastes;

(14) Medical wastes, may be authorized by the Director in a wastewater discharge permit if deemed necessary;

(15) Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail its NPDES toxicity test;

(16) Detergents, surface-active agents, or other substances which may cause excessive foaming in the POTW; or

(17) Wastewater causing two readings on an explosion hazard meter at the point of discharge into the POTW, or at any point in the POTW, of more than 10% or any single reading over 10% of the Lower Explosive Limit of the meter.

(18) Materials causing, alone or in conjunction with other materials normally in the sewer system, an obstruction to the flow in the sewer line or system or injury to the sewer system or cause a nuisance or prevention of effective maintenance or operation of the sewer.

(19) Fats, oils or grease of animal or vegetable origin in concentrations greater than 300 mg/L or fats, oils or grease of petroleum or mineral origin in concentrations greater than 100 mg/L.

Pollutants, substances, or wastewater prohibited by this Section shall not be processed or stored in such a manner that they could be discharged to the POTW. (Gen. Ord. No. 8, 2012; 9-13-12)

Sec. 9-11 National Categorical Pretreatment Standards.

The categorical pretreatment standards found at 40 CFR Chapter I, Subchapter N, Parts 405-471 are hereby incorporated by reference.

a. Where a categorical pretreatment standard is expressed only in terms of either the mass or the concentration of a pollutant in wastewater, the Director, through the designated Pretreatment Coordinator, may impose equivalent concentration or mass limits in accordance with 40 CFR 403.6(c).

b. When wastewater subject to a categorical pretreatment standard is mixed with wastewater not regulated by the same standard, the Director, through the designated Pretreatment Coordinator, shall impose an alternate limit using the combined waste stream formula in 40 CFR 403.6(e).

c. A user may obtain a variance from a categorical pretreatment standard if the user can prove, pursuant to the procedural and substantive provisions in 40 CFR 403.13, that factors

relating to its discharge are fundamentally different from the factors considered by EPA when developing the categorical pretreatment standard. (Gen. Ord. No. 8, 2012; 9-13-12)

Sec. 9-12 State Pretreatment Standards.

The State of Indiana's pretreatment standards are hereby incorporated by reference. (Gen. Ord. No. 8, 2012; 9-13-12)

Sec. 9-13 Local Limits.

a. The following pollutant limits are established to protect against pass through and interference. No person shall discharge wastewater containing in excess of the following maximum daily allowable discharge limits.

MAXIMUM DAILY CONCENTRATION

Parameter	Limit Applicable to Non-Categorical Users Only	Limit Applicable to Categorical Industrial Users
Arsenic (total)	0.7 mg/L	0.7 mg/L
Cadmium (total)	0.8 mg/L	0.8 mg/L
Chromium (total)	10.0 mg/L	10.0 mg/L
Copper (total)	9.0 mg/L	9.0 mg/L
Cyanide (total)	0.5 mg/L	Calculated in accordance with National Categorical Pretreatment Standards under Sec. 9-11 of this Ordinance*
Lead (total)	1.2 mg/L	1.2 mg/L
Mercury (total)	0.059 mg/L	0.059 mg/L
Molybdenum	0.62 mg/L	0.62 mg/L
Nickel (total)	0.95 mg/L	Calculated in accordance with National Categorical Pretreatment Standards under Sec. 9-11 of this Ordinance*
Oil and/or grease (non-polar)	100 mg/L	100 mg/L
Oil and/or grease (polar)	300 mg/L	300 mg/L
Zinc (total)	9.0 mg/L	9.0 mg/L

*Limits for these parameters will be established for each categorical industrial user individually in accordance with the National Categorical Pretreatment Standard applicable to that user, and may be greater than the limits applicable to non-categorical users only, consistent with U.S. EPA guidance concerning individual allocation of available industrial loadings.

b. Total Toxic Organics (TTOs) - Limits for those parameters on any TTO list from 40 CFR 405-471 will be considered on an individual case by case basis. The Director shall consider such factors including but not limited to: concentration, loading, flow to the wastewater treatment plant and other consideration necessary to prevent pass through and protect the POTW.

c. Any wastewater containing in excess of 250 mg/L of BOD_5 or 300 mg/L total suspended solids or 25 mg/L ammonia-N will be surcharged as high strength wastewater. The issuance of surcharges for treating high strength wastewater shall not be construed as acceptance of high strength wastewaters for treatment by the City of Terre Haute. The City of Terre Haute reserves the right and authority to prohibit the discharge of high strength wastewater when such wastewaters cause or are reasonably expected to cause POTW upsets, overloading or damage to the sewer collection system.

d. The above limits apply at the point where the wastewater is discharged into the public sewer. The Director may impose mass limitations in addition to, or in place of, the concentration-based limitations above. (Gen. Ord. No. 8, 2012; 9-13-12)

Division III. Pretreatment of Wastewater.

Sec. 9-16 Establishment of Pretreatment Program.

The Director is hereby authorized and directed to establish a Pretreatment Program for the purpose of properly monitoring and controlling the discharging of non-domestic wastewaters into the City of Terre Haute's sewer system. The Pretreatment Program shall have written policies and procedures developed and approved by the Terre Haute Board of Public Works and Safety. The policies and procedures shall address, but not be limited to, issues such as a schedule and frequency of surveillance of Significant Industrial Users, Enforcement Procedures and Enforcement Response Plan. (Gen. Ord. No. 8, 2012; 9-13-12)

Sec. 9-17 Pretreatment Facilities.

Users shall provide wastewater treatment as necessary to comply with this Article and shall achieve compliance with all categorical pretreatment standards, local limits, and the prohibitions set out in Sec. 9-9 and Sec. 9-10 of this Article within the time limitations specified by EPA, the State, or the Board of Public Works and Safety, whichever is more stringent. Any facilities necessary for compliance shall be provided, operated, and maintained at the user's expense. Detailed plans describing such facilities and operating procedures shall be submitted to the Director for review, and shall be reviewed and approved by the Director before such facilities are constructed. The review of such plans and operating procedures shall in no way relieve the user from the responsibility of modifying such facilities as necessary to produce a discharge acceptable to the City under the provisions of this Article. (Gen. Ord. No. 8, 2012; 9-13-12)

Sec. 9-18 Additional Pretreatment Measures.

a. Whenever deemed necessary, the Director may require users to restrict their discharge during peak flow periods, designate that certain wastewater be discharged only into specific sewers, relocate and/or consolidate points of discharge, separate sewage waste streams from industrial waste streams, and such other conditions as may be necessary to protect the POTW and determine the user's compliance with the requirements of this Article.

b. The Director may require any person discharging into the POTW to install and maintain, on their property and at their expense, a suitable storage and flow-control facility to ensure equalization of flow. An industrial wastewater discharge permit may be issued solely for flow equalization.

c. Grease, oil, and sand interceptors shall be provided when, in the opinion of the Director, they are necessary for the proper handling of wastewater containing excessive amounts of grease and oil, or sand; except that such interceptors shall not be required for residential users. All interceptor units shall be of type and capacity approved by the Director and shall be so located to be easily accessible for cleaning and inspection. Such interceptors shall be inspected, cleaned, and repaired regularly, as needed, by the user at their expense.

d. Users with the potential to discharge flammable substances may be required to install and maintain an approved combustible gas detection meter. (Gen. Ord. No. 8, 2012; 9-13-12)

Sec. 9-19 Accidental Discharge/Slug Control Plans.

The Director shall evaluate whether each significant industrial user needs an accidental discharge/slug control plan and / or shall evaluate the need ...

Division VI. Reporting Requirements.

9-34 Baseline Monitoring Reports.

a. Within either one hundred eighty (180) days after the effective date of a categorical pretreatment standard, or the final administrative decision on a category determination under 40 CFR 403.6(a)(4), whichever is later, existing categorical users currently discharging to or scheduled to discharge to the POTW shall submit to the Director a report which contains the information listed in paragraph B, below. At least ninety (90) days prior to commencement of their discharge, new sources, and sources that become categorical users subsequent to the promulgation of an applicable categorical standard, shall submit to the Director a report which contains the information listed in paragraph B, below. A new source shall report the method of pretreatment it intends to use to meet applicable categorical standards. A new source also shall give estimates of its anticipated flow and quantity of pollutants to be discharged.

b. Users described above shall submit the information set forth below.

(1) Identifying Information. The name and address of the facility, including the name of the operator and owner.

(2) Environmental Permits. A list of any environmental control permits held by or for the facility.

(3) Description of Operations. A brief description of the nature, average rate of production, and standard industrial classifications of the operation(s) carried out

by such user. This description should include a schematic process diagram that indicates points of discharge to the POTW from the regulated processes.

(4) Flow Measurement. Information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from regulated process streams and other streams, as necessary, to allow use of the combined waste stream formula set out in 40 CFR 403.6(e).

(5) Measurement of Pollutants.

(a) The categorical pretreatment standards applicable to each regulated process.

(b) The results of sampling and analysis identifying the nature and concentration, and/or mass, where required by the standard or by the Director, of regulated pollutants in the discharge from each regulated process. Instantaneous, daily maximum, and long-term average concentrations, or mass, where required, shall be reported. The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in Sec. 9-43 of this Article.

(c) Sampling must be performed in accordance with procedures set out in Sec. 9-44 of this Article.

(6) Certification. A statement, reviewed by the user's authorized representative and certified by a qualified professional, indicating whether pretreatment standards are being met on a consistent basis, and, if not, whether additional operation and maintenance (O&M) and/or additional pretreatment is required to meet the pretreatment standards and requirements.

(7) Compliance Schedule. If additional pretreatment and/or O&M will be required to meet the pretreatment standards, the shortest schedule, as described in Sec. 9-28(B)(3) of this Article, by which the user will provide such additional pretreatment and/or O&M. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard. A compliance schedule pursuant to this Subsection must meet the requirements set out in Sec. 9-35 of this Article.

(8) Signature and Certification. All baseline monitoring reports must be signed and certified in accordance with Sec. 9-25 of this Article. (Gen. Ord. No. 8, 2012; 9-13-12)

ARTICLE 3. REGULATIONS ADDRESSING CONNECTIONS TO AND USE OF PUBLIC AND PRIVATE SEWERS AND DRAINS, INSTALLATION AND CONNECTION OF BUILDING SEWERS, AND DISCHARGE.

Sec. 9-76 Discharge Regulations.[2]

e. If any waters or wastes are discharged, or are proposed to be discharged, to the public sewers, which waters contain the substances or possess the characteristics enumerated in Sec. 9-76 d. of this Article, and which in the judgment of the Board may have a deleterious effect upon the sewage works, processes equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Board may:

(1) Reject the wastes;

(2) Require pretreatment to an acceptable condition for discharge to the public sewers;

(3) Require control over the quantities and rates of discharge; and/or

(4) Require payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under the provisions of this Article.

If the Board permits the pretreatment or equalization of waste flows, the design and installation of the plans and equipment shall be subject to the review and approval of the Board and subject to the requirements of all applicable codes, ordinances, and laws.

g. Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.

h. When required by the Board, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable control manhole together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling, and measurement of the wastes. Such manhole, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the Board. The manhole shall be installed by the owner at his expense, and shall be maintained by him so as to be safe and accessible at all times.

i. All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in this ordinance shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, and shall be determined at the control manhole provided, or upon suitable samples taken at said control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected. Sampling shall be carried out by customarily accepted methods to reflect the effect of constituents upon the sewage works and to determine the existence of hazards to life, limb, and property.

ARTICLE 5. SEWER RATES AND CHARGES.

Sec. 9-103 Meters and Measuring Devices for Certain Users.

In the event a lot, parcel of real estate or building discharging sewage, industrial wastes, water or other liquids into the City's sewage system, either directly or indirectly, is a user of water supplied by the water utility serving the City of Terre Haute and its inhabitants and in addition uses water from another source which is not measured by a water meter or is measured by a water meter not acceptable to the City, then the amount of water used shall be otherwise measured or determined by the City in order to ascertain the rate or charge, or the owner or other interested party, at his expense, may install and maintain meters, weirs, volumetric measuring devices or any adequate and approved method of measurement acceptable to the City for determination of sewage discharge. (Gen. Ord. No. 1, 1977, As Amended, § 1(f), 2-10-77, *Journal of Common Council,* p. 20)

Sec. 9-104 Volume, Strength and Character of Sewage and Waste.

a. In order that the rates and charges may be justly and equitably adjusted to the services rendered, the City shall have the right to base its charges not only on volume but also on the strength and character of the sewage and waste which it is required to treat and dispose of. The City shall have the right to measure and determine the strength and content of all sewage and wastes discharged, either directly or indirectly, into the City's sanitary sewerage system, in such manner and by such method as may be deemed practical in the light of the conditions and attending circumstances of the case, in order to determine the proper charge. The Board of Public Works and Safety is authorized to prohibit the dumping of wastes into the City's sewerage system which, in its discretion, are deemed harmful to the operation of the sewage disposal works of the City. (Gen. Ord. No. 2, 1981, As Amended, § l(g), 9-10-81)

b. **High Strength Surcharges.** High strength wastewater will be surcharged as outlined below.

(1) High strength wastewater containing total suspended solids (TSS) in excess of 300 mg/L shall be billed at $0.25 per pound.

(2) High strength wastewater with a biochemical oxygen demand (BOD) concentration in excess of 250 mg/L shall be billed at $0.25 per pound.

(3) High strength wastewater with a total ammonia-nitrogen (NH_3-N) concentration in excess of 50 mg/L shall be billed at $0.60 per pound.

Invoices for high strength surcharges will be sent monthly for each month a surcharge may occur. Payment in full must be within 30 days of the bill date on the surcharge invoice or a 10% penalty will be added.

Section Four

Chapter Three: Sanitary Sewer Construction Specifications

3.1 Overview

The purpose of this chapter is to ensure the proper design and construction of sanitary sewer systems and to provide for the public health and safety. These specifications serve as a guide for developers and are not intended to address every possible situation. Developers who intend to use alternative specifications and procedures are required to have such approved by the Department of Engineering before construction may begin. The Department of Engineering understands that unique situations may require variances from these specifications and procedures and will provide the necessary guidance and assistance in the best interests of construction and design integrity, public health and public safety.

3.2 License and Bond Requirements

Refer to Section 1.2 (page 1) in these specifications for license and bonding requirements.

3.3 General Construction Procedures

A. The developer/owner shall check for the availability of sewer service in the proposed construction area and receive permission from the Department of Engineering to increase the capacity of the system.

B. A written agreement shall be entered into between the developer and the City of Terre Haute through its Board of Public Works. This shall define the contract terms for the construction of sanitary sewers within the Sanitary District of Terre Haute. This agreement shall be obtained before any construction begins.

C. The developer shall furnish the Department of Engineering with preliminary design plans for review and approval at least thirty (30) days before the proposed starting date of the actual construction and within ninety (90) days of signing a written agreement to construct new sanitary sewers.

D. The plans and design shall conform to all applicable State and City specifications regarding design and construction of such sewer systems.

E. The plans shall be stamped and signed by an Indiana licensed professional engineer. In addition, an Indiana licensed surveyor may approve *gravity only* type systems.

F. All plans shall include but not be limited to the following:

1. Cover page showing the location, project name, designer, owner, and other pertinent information about the project overview
2. Plan design
3. Profile design
4. Construction details
5. Lift station details if applicable
6. Proposed lateral locations (8.5" x 11" sheet in table format)
7. All necessary easements, right-of-ways, and lot numbers for plan design
8. All pages shall be 24" x 36"
9. All drawings shall not be less than 1" = 50' scale

G. Preliminary plans should be computer generated original drawings but may be blueprint copies.

H. All final as-built drawings **must** be computer-generated drawings (ie: C.A.D.).

I. Final as-built plan sets shall include 2 blueprint copies, 1 original set, and 1-3.5" computer C.A.D. disk file.

J. The developer shall ensure all necessary easements are obtained, properly recorded, and on file with the Vigo County, Indiana Recorders office. All easements shall be for the use and benefit of the Sanitary District of the City of Terre Haute. Such easements shall be shown on all final as-built plan drawings.

K. After the preliminary plans have been reviewed and approved by the Department of Engineering, construction may begin. The Department of Engineering shall be given at least three (3) days notice to schedule necessary construction inspection. Work shall not commence without proper notice. Any work that has been accomplished without inspection and covered may be regarded as unacceptable.

L. Any actual construction changes to the proposed design must first be approved by the Department of Engineering. Such changes must be noted upon the construction drawings. All final field measurements shall be noted on the construction plans for "as-built" information.

M. All service taps (laterals) shall be carefully measured in reference to the center of iron manhole castings and recorded in table form. These measurements shall be submitted to the Department of Engineering along with all final as-built drawings. Linear distances shall be measured from the downstream manhole. In addition baseline (lateral length) measurements shall be included.

N. The following performance tests are required by the contractor/developer and shall be witnessed by a representative of the Department of Engineering:

1. Air pressure tests
2. Mandrel alignment tests
3. Lift station pump capacity test

- Force main pipe hydrostatic test
- Light test (unless installed using a laser level)
- Manhole Vacuum Test

O. The following performance tests will be conducted by a representative of the Department of Engineering:

1. Visual manhole inspection
2. Video camera inspection
3. Any other quality control inspection during or after construction

P. The acceptance of the sewer systems and extensions by the City of Terre Haute will be based upon the following criteria:

1. The owner/developer must fulfill the conditions set forth by the Agreement signed with the Board of Public Works.
2. The system shall be required to pass all tests and inspections required by the Department of Engineering.
3. As-Built plans and lateral information must be submitted to the Department of Engineering prior to acceptance.

3.4 Materials Acceptable for Construction of Gravity Sanitary Sewers

The following materials are minimum requirements for use during the construction of public sanitary sewer systems in the Terre Haute Sanitary District. Material requirements shall not be limited to theses standards. All materials used shall conform to but not be limited to ASTM, ANSI, IDEM standards for testing and construction of gravity sanitary sewers in Indiana. Refer to Section 3.7 (page 20) for materials not specified as follows.

Pipe: Polyvinylchloride (PVC), Reinforced Concrete Pipe, Ductile Iron Pipe, Truss Pipe and High Density Polyethylene Pipe (HDPE)

Manholes: Pre-Cast reinforced manholes including bases, risers/barrels, cones and flat slabs constructed of Class A concrete. Manhole steps shall be provided. Manholes shall be a minimum of 48" diameter for pipe up to 24". For larger pipes, the minimum diameter shall be 60".

Monolithic (Cast-in-Place) manholes designed by a registered Professional Engineer. Manhole steps shall be provided. Designed sizes shall conform to those for Pre-Cast manholes.

Castings: The type of frame and cover used shall be Neenah Foundry Company R-1772 or equal. The cover shall be labeled "Sanitary Sewer". Variations and larger sizes must be approved by the Department of Engineering.

Riser Rings: Pre-Cast adjusting rings ranging from 2" to 12" shall be used for the accomplishment of adjustments in casting elevation.

3.5 Force Main Sewer Minimum Design Requirements

The following materials are minimum requirements for use during the construction of public sanitary sewer systems in the Terre Haute Sanitary District. Material requirements shall not be limited to theses standards. All materials used shall conform to but not be limited to ASTM, ANSI, IDEM standards for testing and construction of force main sanitary sewers in Indiana. Refer to Section 3.7 (page 30) for materials not specified as follows.

Pipe: PVC that conforms to ASTM D-2241. Joints shall be bell end or push-on type

Ductile Iron Pipe that conforms to ANSI A21.51 and AWWA C-151 with mechanical, slip or flanged joints.

Pumps: Pumps shall be manufactured by the following or an approved equivalent:

Submersible - Flygt, Hydro-Matic or Myers
Grinder - Flygt, Hydro-Matic or Myers

The pump manufacturer shall warrant the pumps for a period of five years. The contractor, through the manufacturer, shall provide one set of spare parts including an impeller, upper and lower seal assembly, upper and lower bearing assembly, wear rings and two sets each of O-rings and gaskets.

Station: All components of the lift station that are exposed to weather shall be constructed of material that is resistant to corrosion and will not require surface protection throughout the expected life of the lift station. In general, these materials are stainless steel, aluminum, fiberglass reinforced polyester and ultraviolet stabilized PVC.

Exception: Lifting Chains - Stainless Steel only
Guide Rails - Stainless Steel or Fiberglass
Guide Rail Hangers - Aluminum or Stainless Steel

The availability of all spare parts shall be within a one hundred (100) mile radius of the City of Terre Haute.

Controls: All pump stations shall have a duplex automatic pump control panel in NEMA 4X enclosure for outdoor mounting.

The controls shall allow automatic and manual operation of all pumps simultaneously or independently.

There shall be both audio and visual high water alarms for the pump station with silencing controls located in the NEMA 4X enclosure. In addition, all pump stations shall incorporate the use of radio telemetry warning systems for operating failure. Such systems shall be electronically compatible with those used by the Terre Haute Waste Water Treatment Plant. Contact the Department of Engineering for this information.

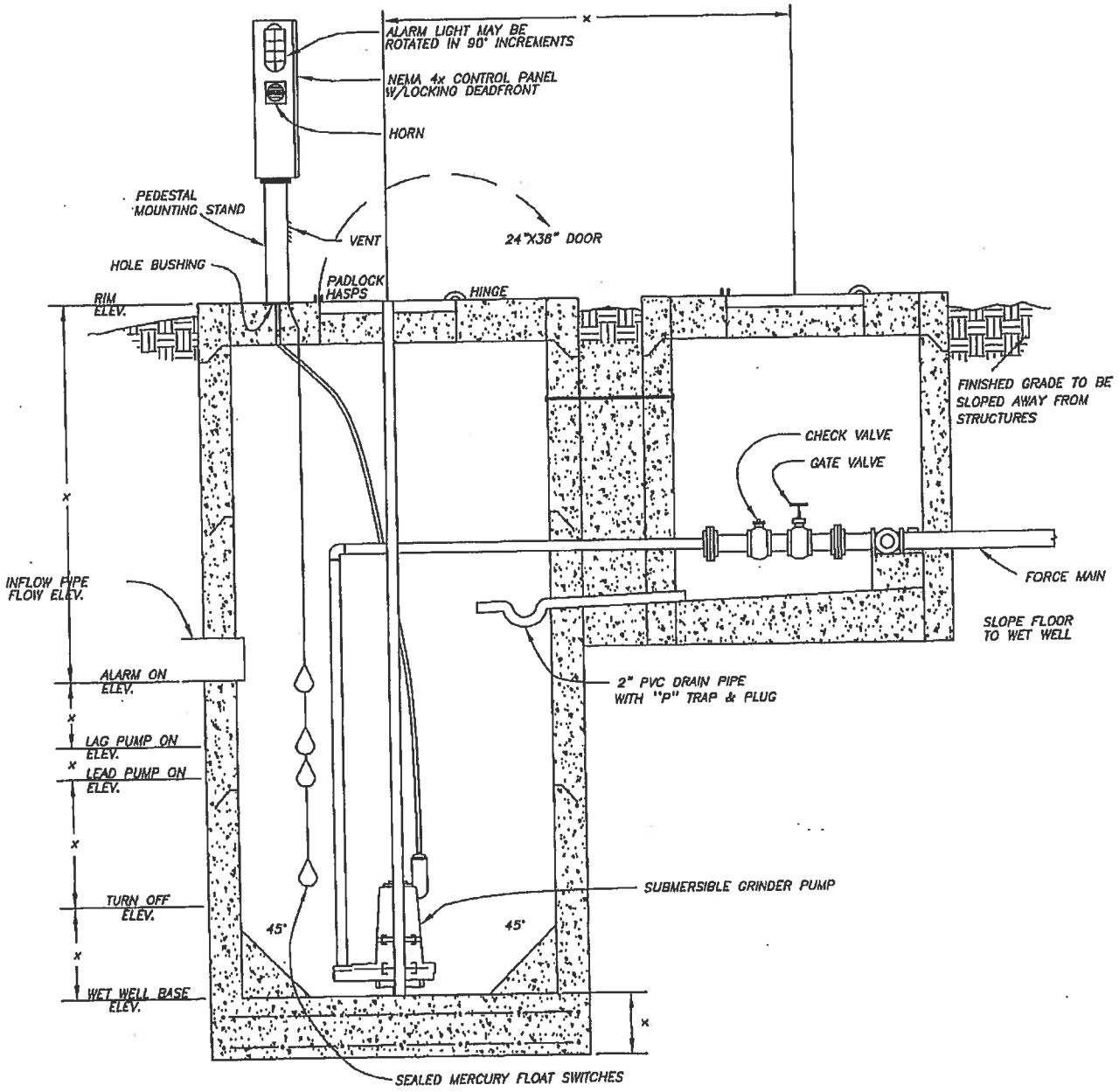
Sealed float type mercury switches shall be supplied to control pump operations and alarm signals.

Valves: All types of operational valves used shall meet the requirements of design, material and workmanship for AWWA C500 latest edition. An emergency bypass valve shall be placed in the valve pit.

3.6 Tapping Brick Mains

In all cases of connecting to the Terre Haute sanitary sewer system, every effort shall be made to not disturb aging mains constructed of brick. Brick sewer mains constructed around the turn of the century are usually fragile and are generally difficult to perform heavy construction on or around. However, if no other reasonable means of providing sanitary service is available, tapping brick mains will be allowed with the written permission of the Department of Engineering. In these cases, careful consideration shall be given to the quality and workmanship of all construction. In addition, the Department of Engineering will perform increased inspection to ensure that all work is

TYPICAL LIFT-STATION DETAILS



Section Five

COMMERCIAL AGREEMENT

I/WE _____ the undersigned, hereby representing to the City of Terre Haute, Indiana, that we the owners of the following described real estate, more commonly known and referred to as_____ hereby request of the City of Terre Haute, Indiana, and the Waste Water Utility of the City of Terre Haute, by and through the Board of Public Works and Safety of such City the authority to connect the aforesaid - described real estate to the sanitary sewer system and thereby utilize the services of the Waste Water Utility of the City of Terre Haute, Indiana.

The undersigned further represent that they will not make any conveyance of encumbrance of the aforesaid property, or any interest therein, which will in any way jeopardize, impair or prevent the Waste Water Utility of the City of Terre Haute, from the collection of the fees contemplated herein, and that any such obligation of the undersigned grantees to assume and pay the fees and charges specified herein.

This proposal by the undersigned is hereby made to the Waste Water Utility of the City of Terre Haute, Indiana, through the Board of Public Works and Safety of the City of Terre Haute, Indiana, and the undersigned acknowledge that the same shall be binding from and after the date of acceptance of this proposal by the Board of Public Works and Safety of the City of Terre Haute, Indiana.

Dated this _____ day of _____ 20_____ all at Terre Haute, Indiana and submitted in duplicate to the Board of Public Works and Safety of the City of Terre Haute, Indiana.

State of Indiana
County of Vigo ss;
Subscribed and sworn before
me, a Notary Public in said County
and State this_____ day of _____
20_____.

_____
Notary Public
My Commission Expires_____

OWNERS

_____
_____
_____
_____

ACCEPTANCE

These presents hereby certify that this Board of Public Works and Safety of the City of Terre Haute, Indiana, does hereby accept the foregoing proposal of the owners of real estate located at _____ and upon terms and conditions set forth this _____ day of _____ 20 _____.

THIS INSTRUMENT PREPARED BY

_____

BOARD OF PUBLIC WORKS AND SAFETY
CITY OF TERRE HAUTE, INDIANA

_____
President

_____
Vice-President

_____
Secretary

I HEREBY CERTIFY that the bearer has paid to the City Controller the sum of $ ..... and is entitled to permit as per said application.

Countersigned and sealed this ..... day of 20

..... City Controller

THIS BECOMES A PERMIT WHEN COUNTERSIGNED BY CITY CONTROLLER

No. 18585

Office of **THE BOARD OF PUBLIC WORKS**

Terre Haute, Ind. _____

To the City Controller:

This is to Certify that Mr. ..... has filed his application to make a Sewer Connection.

Mr. .....

at the following number.....

The character of the building is a .....of.....apartments

and the connection is to be a ..... inch pipe.

The City Controller is hereby authorized to collect the sum of $ ..... and to countersign this application.

BOARD OF PUBLIC WORKS

.....Applicant.....Secretary

Proposed Sewer Connection Fees

For connection to sanitary sewer, such owner shall pay to the Board of Public Works and Safety a connection charge in accordance of the following schedule:

- Existing Residence: For each existing single-family residential connection the base fee of five hundred dollars ($500), payable in equal quarterly installments over a maximum period five (5) years. A charge equal to ten percent (10%) of delinquent quarterly fees will be assessed on payments made after the due date of said payments. The unpaid balance shall be immediately due and payable upon conveyance of said property.
- New Residence: For each new single-family residential connection the Base Fee of five hundred dollars ($500) payable at the time of construction
- Multiple Family Residences: Multiple family residential connection fees shall be the base fee multiplied by 0.65 multiplied by the number of units. i.e. duplex connection fee (500x0.65 x2 = $650)
- Commercial/Industrial: All other structures not covered in the above should be based on the following connection fee schedule:

Domestic Water Meter Size	Connection Fee
5/8 inch	Base Fee
¾ inch	1.5 Times Base Fee ($750)
1 inch	2.5 Times Base Fee ($1,250)
1 & ½ inch	6 Times Base Fee ($3,000)
2 inch	10 Times Base Fee ($5,000)
3 inch	23 Times Base Fee ($11,500)
4 inch	41 Times Base Fee ($20,500)
6 inch	Case by Case

If an additional or larger meter is installed for an existing non-single family residential customer, a connection fee shall be assessed based on the following formula. Additional flow generated by the customer divided by flow generated by average single family residential customer multiplied by the base fee.