

Certified By:

Robert M. Bellucci, P.E.

Indiana P.E. No. 10000127



**COMMONWEALTH
ENGINEERS, INC.**

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TOWN OF CHESTERFIELD

**Preliminary Engineering Report
Wastewater Treatment Plant**

May 2018; Updated September 2018; Updated June 2020

A Wealth of Resources to Master a Common Goal.

June 12, 2020

Shelley L. Love
Wastewater Program Administrator
State Revolving Fund Loan Program
Indiana Finance Authority
100 North Senate Avenue, Room 1275
Indianapolis, Indiana 46204

**RE: Town of Chesterfield
Wastewater Treatment Improvements
Preliminary Engineering Report (PER)**

Dear Ms. Love:

On behalf of the Town of Chesterfield, Commonwealth Engineers Inc. is submitting the *Wastewater Treatment Preliminary Engineer Report (PER)* to the Indiana State Revolving Fund Loan Program for funding consideration. The project includes a chemical phosphorous removal system and miscellaneous improvements to the wastewater treatment plant (WWTP) including:

- Relocation of the electrical boxes along walkways,
- Installation of side access door for sludge pump room,
- Installation of vent and fan in sludge pump room,
- Replacement of air dryer in blower room,
- Installation of screenings dumpster for vacuum truck,
- Installation of a new storm drain outside of the blower control room,
- Modification of sludge holding piping, and
- Replacement of blowers.

In addition, the Mounds Lift Station will be replaced and converted to a submersible lift station. Also, an odor control system will be installed at the Town's Main Lift Station.

As shown in the application form, current residential monthly wastewater rates are relatively high at \$65.05. Considering the importance of this project to protect public health and the environment, the Town respectfully requests that strong consideration be given for (a) a high rank on the Project Priority List and (b) potential loan forgiveness via a low interest rate and/or grant associated with potential future infrastructure coronavirus stimulus package(s).

If there are any questions regarding the PER or recommended project, do not hesitate to reach out to Rob Bellucci of Commonwealth Engineers, Inc.

Respectfully,

TOWN OF CHESTERFIELD



Buddy Patterson
Town Council Vice-President

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Appendix C	WWTP Construction Permit APP
Appendix D	NPDES Permit
Appendix E	Rate Ordinance
Appendix F	Alternatives Cost Estimates
Appendix G	Financial & Managerial Documents
Appendix H	Public Participation Information

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Executive Summary

ES.1 Purpose

The Town of Chesterfield (Town) owns and operates a Class II, 1 million gallon per day (MGD) Aero-Mod™ Wastewater Treatment Plant (WWTP). The WWTP receives wastewater from residences, businesses, industries and institutions within the Town of Chesterfield and the IDNR Mounds State Park. Chesterfield also accepts wastewater from Town of Daleville through a contract with Delaware County Regional Wastewater District (DCRWD). Treated wastewater effluent is discharged into the White River through Outfall 001. The effluent water quality must comply with limits outlined in the Town's National Pollutant Discharge Elimination System (NPDES) Permit (IN0063983) issued by the State of Indiana through the Indiana Department of Environmental Management (IDEM).

WWTP performance was evaluated for the period between January 2014 and December 2017. On average, the WWTP is operating at 63% of the rated hydraulic capacity. During a three (3) month stretch in 2017 (May – July), wastewater flows averaged 1.2 MGD. The average flows to the WWTP for the remainder of the evaluation period averaged 0.59 MGD. Biological and solids loadings during the same three (3) month stretch also exceeded design parameters; however, the WWTP was able to reliably maintain effluent water quality under these increased loading conditions. The existing facilities have been shown to be capable of handling flows that the plant currently receives, and there is minimal projected growth within the service area in the near future. For this reason, this report does not consider any expansion of the existing facilities. If substantial development within the service area were to arise, the capacity of the existing facilities would need to be reevaluated.

The Town's NPDES permit was renewed in November 2017. The new permit contains a requirement for phosphorus treatment and identifies a Schedule of Compliance for implementing treatment measures. Phosphorus is a nutrient naturally found in wastewater. Until recently IDEM has not promulgated limits on this nutrient. One component of the proposed project involves the construction of chemical phosphorus treatment facilities at the Town's WWTP. Another concern addressed in this report relates to a yet to be identified toxic gas which is currently being released from the Town's wastewater collection system. An unknown substance volatilizes out of the waste stream at the Main Lift Station and at the WWTP's headworks facilities. This gas has a disagreeable odor and has been known to have adverse health effects on the Town's operations staff.

This report also addresses additional areas of concern at the Town's WWTP and within the collection system that are currently dilapidated, failing, or resulting in significant operational inefficiencies.

ES.2 Wastewater Facilities Proposed Projects

The proposed improvements are summarized as follows:

A. Chemical Phosphorous Removal

It is recommended that a chemical phosphorous removal system be constructed at the WWTP to comply with effluent phosphorus limits outlined in the Town's new NPDES permit.

B. New Submersible Lift Station for Mounds State Park

The existing lift station has exceeded its useful life and is at risk of complete failure. The configuration of the existing station creates a safety risk to staff and is not conducive to routine repair and maintenance activities. It is recommended that the entire station be replaced with a new submersible lift station and new flow meter.

C. Scrubber System at Main Lift Station

The installation of an air scrubber is recommended to remove undesirable contaminants that are volatilized at the lift station.

D. Aeration Blower System Improvements

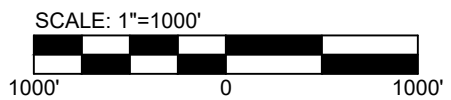
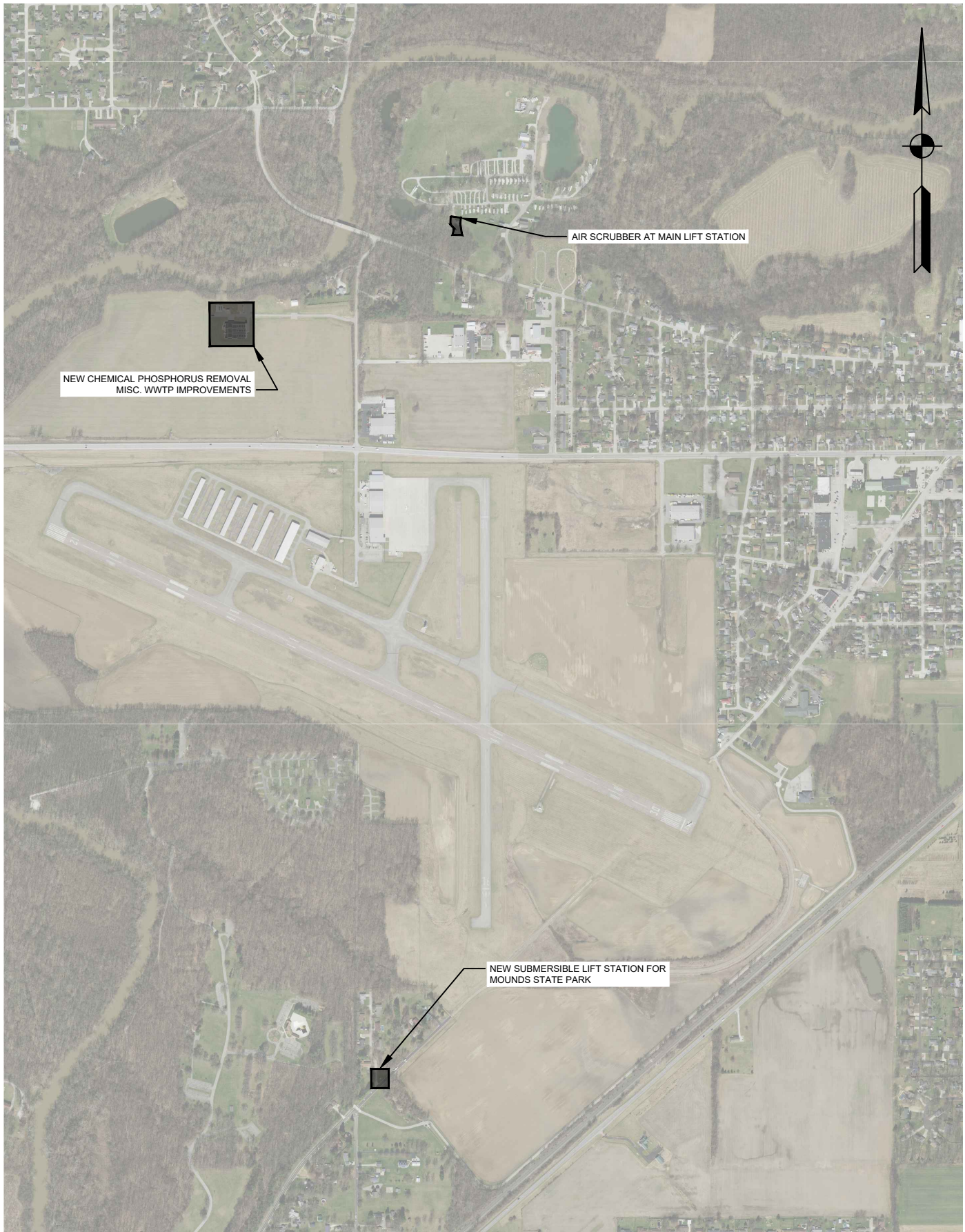
The replacement of the existing aeration blower equipment is recommended to afford the Town's operations staff reliability and operational efficiency for day to day operations of the WWTP. The existing equipment has experienced repeated mechanical and electrical failures and is nearing a state of disrepair. Without a reliable aeration system, the Town will not be able to comply with the discharge permit effluent limits outlined in their NPDES permit. The selected plan includes four (4) new aeration blowers, complete with individual weatherproof / soundproof enclosures. The selected plan involves installation of the new blowers on a concrete slab constructed immediately adjacent to the existing blower building. The selected plan also includes the installation of four (4) new variable frequency drives (one for each blower) inside of the existing blower building.

E. Miscellaneous WWTP Improvements

It is recommended that a number of miscellaneous improvements to the Wastewater Treatment Plant (WWTP) be completed. These items are summarized as follows:

- 1) Relocate the electrical boxes along walkways
- 2) Install side access door for sludge pump room
- 3) Install vent and fan in sludge pump room
- 4) Replace air dryer in blower room
- 5) Install screenings dumpster for vacuum truck
- 6) Install a new storm drain outside of the blower control room
- 7) Modify sludge holding piping

The proposed improvements are shown in the following **Figure ES-1**.



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TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
PROPOSED PROJECT
FIGURE ES-1

ES.3 Estimate of Costs

Table ES-1 shows the estimate of probable construction and capital cost. **Table ES-2** presents a breakdown of the estimated non-construction costs. **Table ES-3** shows the estimate of additional annual Operations, Maintenance, and Replacement (O&M&R) costs associated with the proposed improvements.

Table ES-1
Estimate of Probable Construction Costs
Wastewater Treatment Plant Improvements Project

Item	Cost
Chemical Phosphorous Removal	\$341,000
Main Lift Station Air Scrubber	\$66,000
Aeration Blower System	\$353,000
Submersible Lift Station at Mounds State Park	\$196,000
Miscellaneous WWTP Improvements	\$106,000
Total Construction Cost⁽¹⁾	\$1,062,000
⁽¹⁾ Includes 10% Construction Contingency	

Table ES-2
Non-Construction Costs
Wastewater Treatment Plant Improvements Project

Item	Cost
Study	\$17,675
Design	\$73,300
Field Investigation & Survey	\$7,500
Construction Engineering	\$27,000
Bidding/Negotiating	\$5,000
Construction Inspection	\$157,500
American Iron and Steel Act (AIS)	\$5,000
Erosion Control Plan	\$5,000
Geotechnical Investigation	\$7,500
Update O&M Manual	\$10,000
Post-Construction Assistance	\$5,000
Rate Consultant	\$44,100
Legal / Financial Services	\$9,500
Legal / Bond Council	\$40,000
Regulatory Assistance	\$10,000
Wage Monitoring	\$15,000
Total Non-Construction Costs	\$439,075
Total Project Cost	\$1,501,075

Table ES-3
Estimate of Increased Annual O&M&R Costs
Wastewater Treatment Plant Improvements Project

Item	Cost
Increased Annual O&M Costs	
Chemical Phosphorous Removal	\$32,800
Main Lift Station Air Scrubber	\$7,800
Miscellaneous WWTP Improvements	\$800
Annual Piping Replacement Budget	\$10,000
Total Increase in O&M Costs	\$51,400
Increased Annual Replacement Costs	
Chemical Phosphorous Removal	\$4,200
Main Lift Station Air Scrubber	\$1,100
Miscellaneous WWTP Improvements	\$1,200
Total Annual Replacement Costs	\$6,500
Total Increase in O&M&R	\$57,900

ES.4 Project Schedule

A Proposed Project Schedule is presented in **Table ES-4**.

Table ES-4
Proposed Project Schedule

Activity	Completion Date
Town Submits SRF Funding Application	June 2020
Town Conducts PER Public Meeting	July 2020
Town Adopts PER Resolutions	July 2020
Town Finalizes Wholesale Agreement with DCRWD	August 2020
Town Advertises for Construction Bids	August 2020
Town Received Construction Bids	September 2020
Town Conducts Public Hearing on Rates	October 2020
Town Adopts Bond and Rate Ordinances	October 2020
SRF Pre-closing	October 2020
SRF Closing	November 2020
Town Issues Construction Notice to Proceed	November 2020
Construction Substantial Completion (9 months)	August 2021
11-month Warranty Inspection	July 2022

Section 1 – Project Planning

This section defines the project planning area and planning period. This section also provides background information and current characteristics of the planning area. This information is utilized for the engineering analyses and decision-making processes within this report.

1.1 Location

The planning area includes the Town of Chesterfield (Chesterfield) which is located along State Road 32 approximately one (1) mile west of the intersection of State Road 32 and Interstate Highway 69 in Madison County. Chesterfield also provides wastewater treatment for the Town of Daleville (Daleville) and Mounds State Park (Mounds) which are also included in the planning area. Daleville is located east of Chesterfield in Delaware County and Mounds is located south of Chesterfield in Madison County. Daleville's wastewater collection system is controlled by the Delaware County Regional Wastewater District (DCRWD). **Figure 1-1** shows the general location of the Town of Chesterfield. The planning area is illustrated in **Figures 1-2 and 1-3**. The proposed project areas include the existing Chesterfield Wastewater Treatment Plant (WWTP), the Chesterfield WWTP Lift Station, and Mounds Lift Station. The planning period for this report will be 20-years.

1.2 Location

All intended work are located within the Town right-of-way, or on Town owned property that is accessible via Town right-of-way. There are no intended easements required to complete the construction of the proposed project. Additionally, all work is located within Town limits.

1.3 Environmental Resources Present

An environmental report has been completed for this project. A more in depth look at the environmental resources in the planning area, the project's potential effects on these resources, and mitigation measures are presented in the environmental report. The following is a brief presentation of several of the environmental resources considered during project planning.

A. Land Use

The land use classification within the planning area includes low-medium-high-intensity residential and commercial. **Figure 1-4** shows land use classification within the planning area. Projects proposed as part of this report will not impact established land use plans, policy, or regulations of any agency with jurisdiction over the project.

B. Disturbed/Undisturbed Land

Hydric ratings by soil types found within the planning area are shown in **Figures 1-5A through 1-5H**, which were taken from the USDA Natural Resources Conservation Services (NRCS) website. Short term impacts related to excavation activities will be mitigated using appropriate erosion control and surface restoration techniques during and following construction.

C. Archaeological/Historical Sites

The State and National Registers were reviewed for archaeological/historical sites located within the planning area. No sites were identified by the Indiana Department of Natural Resources (IDNR) SHAARD GIS database. **Figure 1-6** shows the sites identified by the SHAARD GIS database.

D. Wetlands

The recommended projects are located outside of any wetlands. **Figure 1-7** shows wetland locations within the planning area.



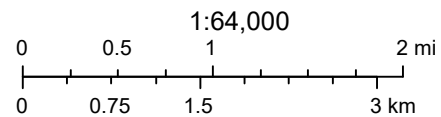
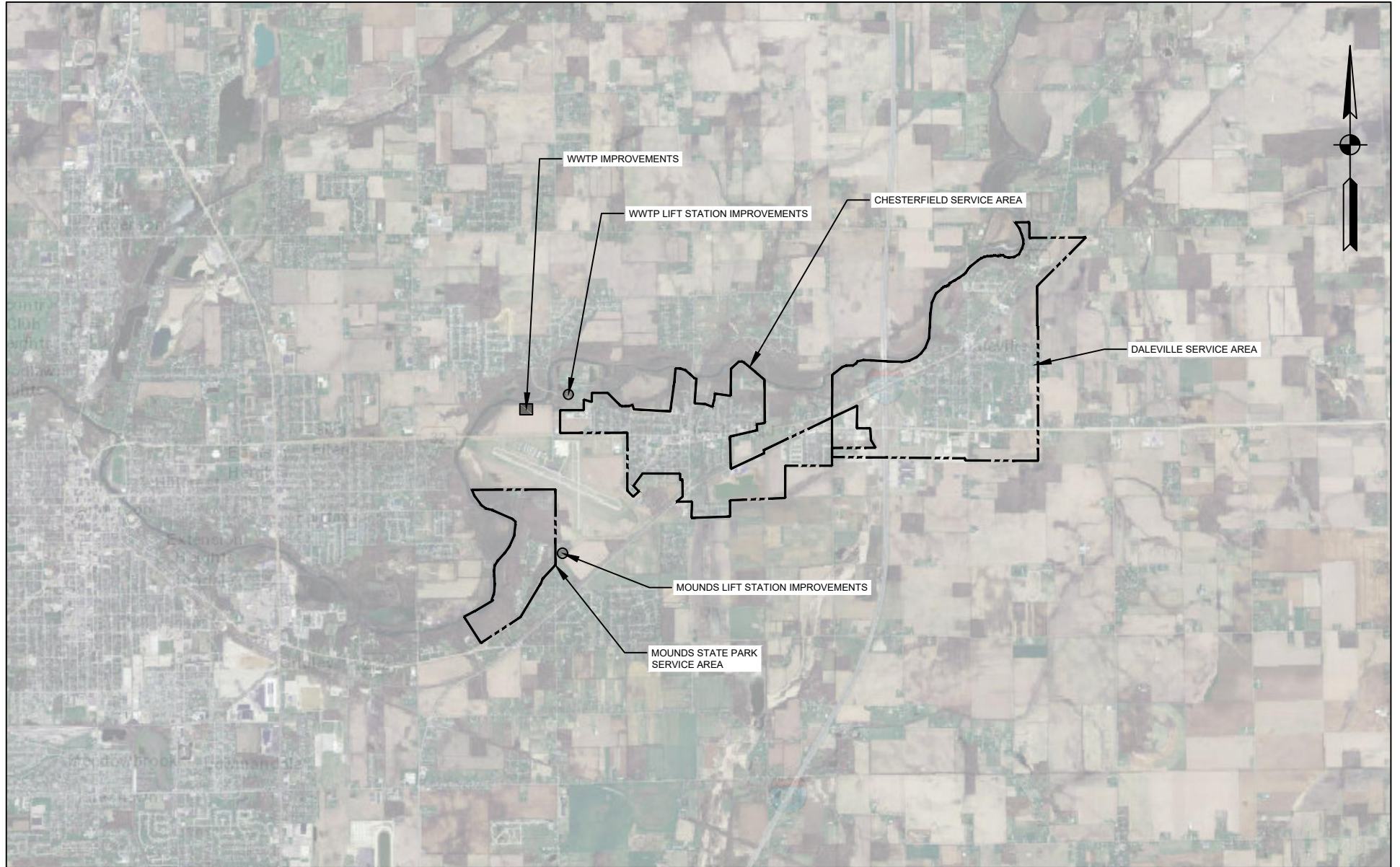
GENERAL LOCATION MAP

NO SCALE



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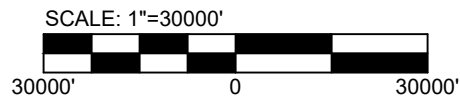
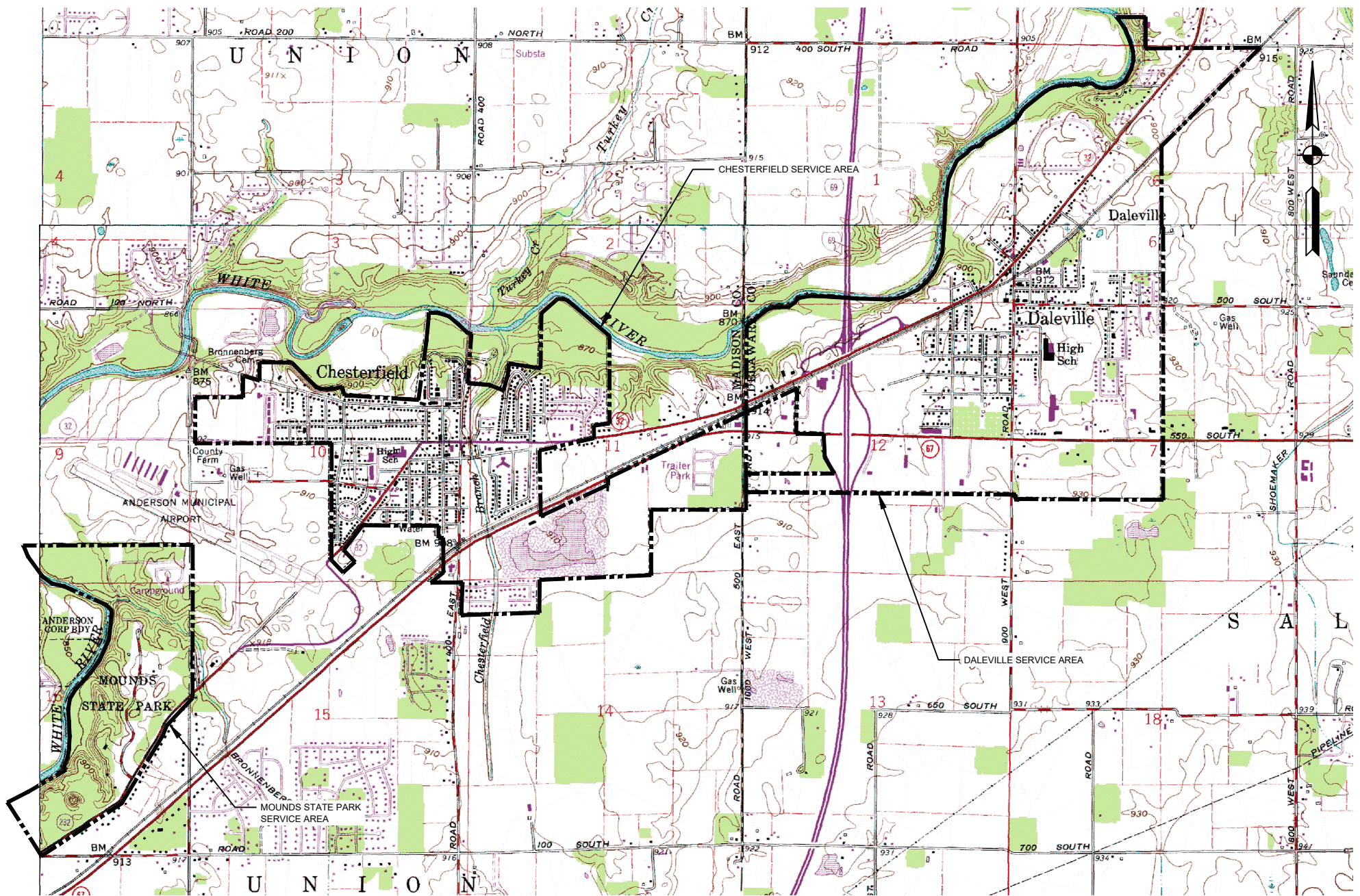
TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
OVERALL LOCATION MAP
FIGURE 1-1



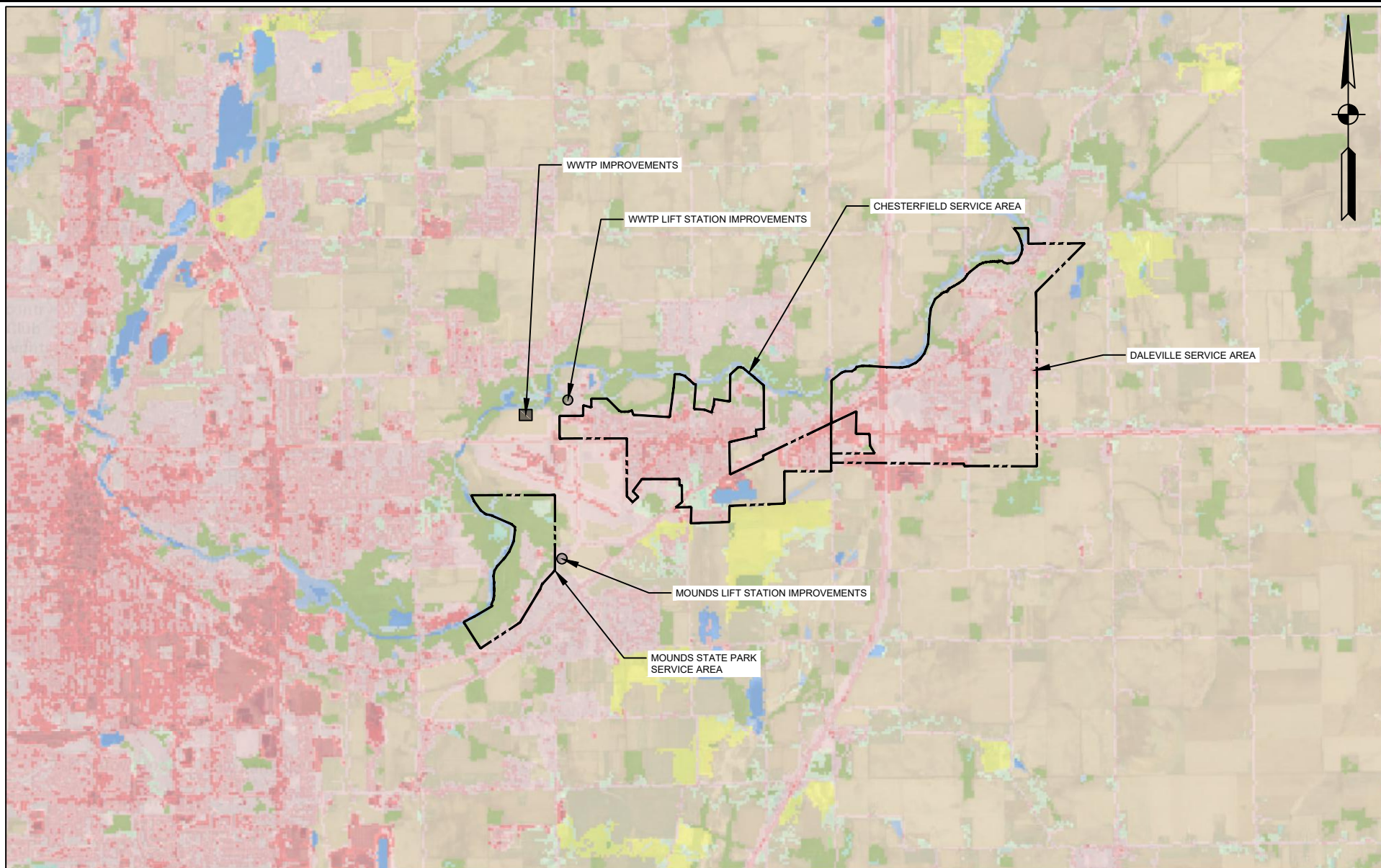
TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

PLANNING AREA
FIGURE 1-2

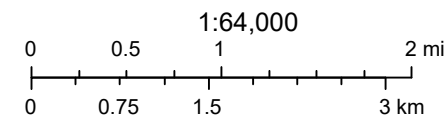


TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
PLANNING AREA TOPOGRAPHIC MAP
FIGURE 1-3



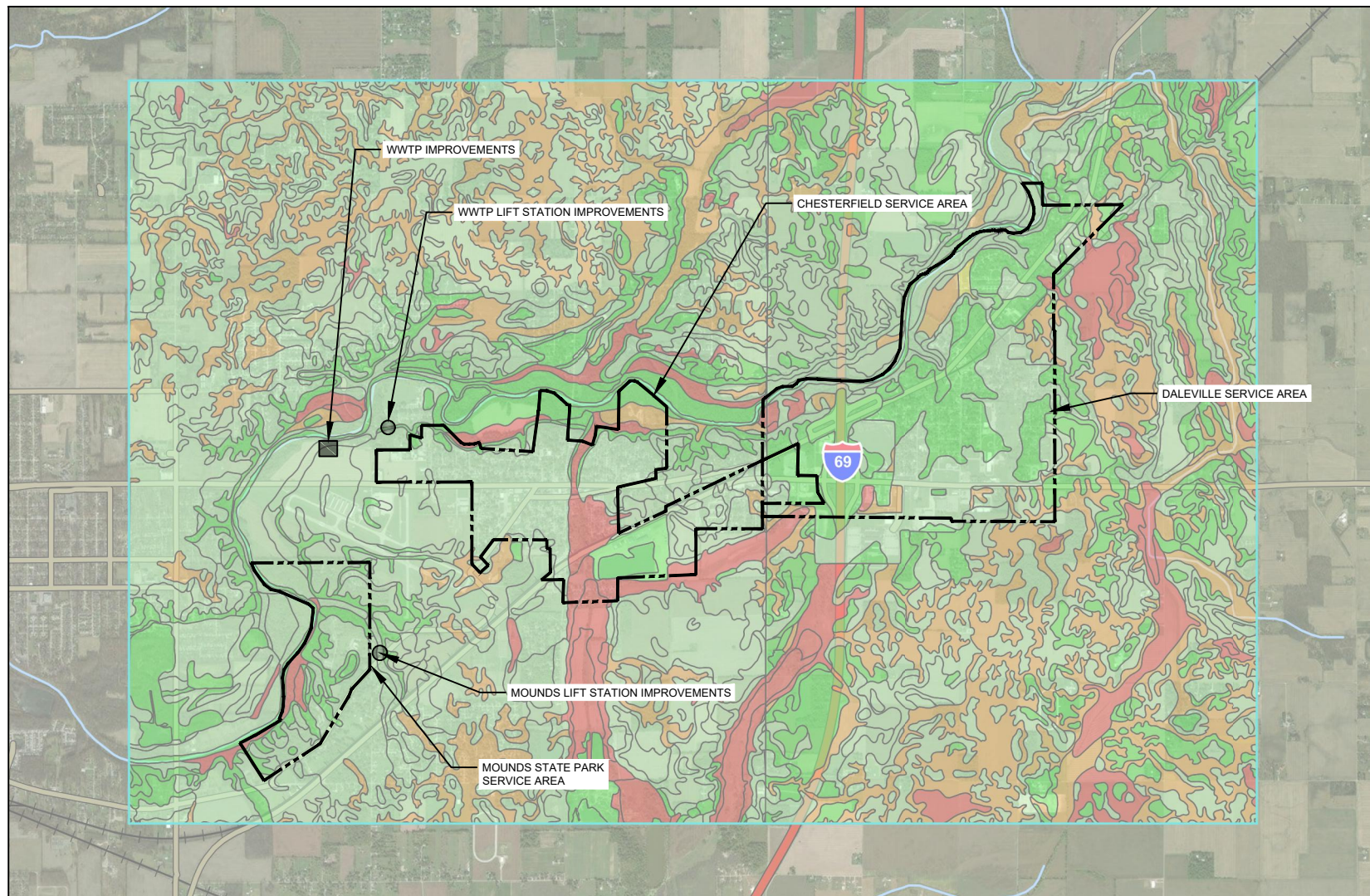
LAND COVER 2011 (USGS)

- | | |
|--|---|
| ■ 11 - OPEN WATER | ■ 43 - MIXED FOREST |
| ■ 21 - DEVELOPED, OPEN SPACE | ■ 52 - SHRUB/SCRUB |
| ■ 22 - DEVELOPED, LOW INTENSITY | ■ 71 - GRASSLANDS/HERBACEOUS |
| ■ 23 - DEVELOPED, MEDIUM INTENSITY | ■ 81 - PASTURE/HAY |
| ■ 24 - DEVELOPED, HIGH INTENSITY | ■ 82 - CULTIVATED CROPS |
| ■ 31 - BARREN LAND | ■ 90 - WOODY WETLANDS |
| ■ 41 - DECIDUOUS FOREST | ■ 95 - EMERGENT HERBACEOUS WETLANDS |
| ■ 42 - EVERGREEN FOREST | |



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TOWN OF CHESTERFIELD
 MADISON COUNTY, INDIANA
 PRELIMINARY ENGINEERING REPORT
 PLANNING AREA
 FIGURE 1-4



Scale: 1:51,900

0 2500 5000 10000 15000 Feet




TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

HYDRIC SOILS MAP
FIGURE 1-5A







MAP LEGEND

Area of Interest (AOI)







 Area of Interest (AOI)

Soils







Soil Rating Polygons

 Hydric (100%)
 Hydric (66 to 99%)
 Hydric (33 to 65%)
 Hydric (1 to 32%)
 Not Hydric (0%)
 Not rated or not available


Soil Rating Lines

 Hydric (100%)
 Hydric (66 to 99%)
 Hydric (33 to 65%)
 Hydric (1 to 32%)
 Not Hydric (0%)
 Not rated or not available






Soil Rating Points

 Hydric (100%)
 Hydric (66 to 99%)
 Hydric (33 to 65%)
 Hydric (1 to 32%)
 Not Hydric (0%)
 Not rated or not available


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Delaware County, Indiana

Survey Area Data: Version 22, Dec 6, 2017

Soil Survey Area: Madison County, Indiana

Survey Area Data: Version 20, Oct 2, 2017

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 1, 2011—Apr 1, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

GROUNDWATER LEGEND
FIGURE 1-5B

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BdlC2	Belmore loam, 6 to 12 percent slopes, eroded	0	19.1	0.1%
BdmA	Belmore silt loam, 0 to 1 percent slopes	0	346.4	2.4%
BdmB2	Belmore silt loam, 1 to 5 percent slopes, eroded	0	91.7	0.6%
BdsAN	Benadum silt loam, drained, 0 to 1 percent slopes	100	15.6	0.1%
BdsAU	Benadum silt loam, undrained, 0 to 1 percent slopes	100	12.7	0.1%
CdgC3	Casco sandy clay loam, 6 to 15 percent slopes, severely eroded	10	37.0	0.3%
CudA	Crosby silt loam, 0 to 2 percent slopes	5	827.1	5.8%
DdxA	Digby-Haney silt loams, 0 to 1 percent slopes	5	149.5	1.1%
FexB2	Fox loam, 2 to 6 percent slopes, eroded	6	45.2	0.3%
FexC2	Fox loam, 6 to 12 percent slopes, eroded	10	16.1	0.1%
GlnAH	Gessie-Eel silt loams, 0 to 1 percent slopes, frequently flooded, brief duration	5	60.1	0.4%
HtbAU	Houghton muck, undrained, 0 to 1 percent slopes	100	16.8	0.1%
LdfAH	Lash loam, 0 to 1 percent slopes, frequently flooded, brief duration	5	22.1	0.2%
LneAW	Lickcreek silt loam, 0 to 3 percent slopes, occasionally flooded, very brief duration	5	25.9	0.2%
LteE	Lybrand-Belmore loams, 15 to 30 percent slopes	5	10.6	0.1%
MecA	Martinsville loam, 0 to 2 percent slopes	0	1.9	0.0%



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TOWN OF CHESTERFIELD
 MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

HYDRIC SOILS LEGEND
 FIGURE 1-5C

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MecB	Martinsville loam, 2 to 6 percent slopes	0	2.8	0.0%
MmcB2	Miami loam, 2 to 6 percent slopes, eroded	0	396.0	2.8%
MmcC2	Miami loam, 6 to 12 percent slopes, eroded	5	27.4	0.2%
MoeB2	Miamian silt loam, New Castle Till Plain, 2 to 6 percent slopes, eroded	5	27.0	0.2%
MorA	Milford mucky silty clay, pothole, 0 to 1 percent slopes	100	28.3	0.2%
MphA	Milford silty clay loam, stratified sandy substratum, 0 to 1 percent slopes	100	22.6	0.2%
MryA	Millgrove silty clay loam, 0 to 1 percent slopes	90	134.6	0.9%
MwzAN	Muskego muck, drained, 0 to 1 percent slopes	100	8.3	0.1%
MwzAU	Muskego muck, undrained, 0 to 1 percent slopes	100	0.1	0.0%
ObxA	Ockley silt loam, 0 to 2 percent slopes	0	6.9	0.0%
ObxB2	Ockley silt loam, 2 to 6 percent slopes, eroded	0	4.9	0.0%
PgaA	Pella silty clay loam, 0 to 1 percent slopes	100	343.8	2.4%
Pmg	Pits, gravel	0	1.7	0.0%
ReyA	Rensselaer loam, 0 to 1 percent slopes	95	32.0	0.2%
RroAH	Ross-Lash loams, 0 to 1 percent slopes, frequently flooded, brief duration	5	25.5	0.2%
SgmAH	Shoals silt loam, 0 to 2 percent slopes, frequently flooded	4	42.4	0.3%
SmsAH	Sloan silt loam, 0 to 1 percent slopes, frequently flooded, brief duration	90	137.8	1.0%
SnIA	Southwest silt loam, 0 to 1 percent slopes	95	21.4	0.2%



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TOWN OF CHESTERFIELD
 MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

HYDRIC SOILS LEGEND
 FIGURE 1-5D

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
SvsE2	Strawn-Belmore loams, 15 to 30 percent slopes, eroded	10	85.9	0.6%
SvsG	Strawn-Belmore loams, 30 to 50 percent slopes	10	53.4	0.4%
ThrA	Treaty silty clay loam, 0 to 1 percent slopes	95	950.6	6.7%
Uam	Udorthents, loamy	0	95.4	0.7%
UccA	Urban land-Crosby-Treaty complex, 0 to 2 percent slopes	25	286.3	2.0%
Ucu	Udorthents, loamy-skeletal	0	0.9	0.0%
UemB	Urban land-Fox complex, 1 to 6 percent slopes	0	25.9	0.2%
UfuA	Urban land-Millgrove complex, 0 to 1 percent slopes	45	9.7	0.1%
UhaB	Urban land-Wawaka-Miami complex, 1 to 6 percent slopes	0	408.8	2.9%
W	Water	0	48.5	0.3%
WbgB3	Wapahani clay loam, 1 to 5 percent slopes, severely eroded	0	20.9	0.1%
WbgC3	Wapahani clay loam, 5 to 10 percent slopes, severely eroded	5	66.5	0.5%
WdrA	Wawaka silt loam, 0 to 2 percent slopes	2	562.7	4.0%
WdrB2	Wawaka silt loam, 2 to 6 percent slopes, eroded	2	274.3	1.9%
WdrC2	Wawaka silt loam, 6 to 12 percent slopes, eroded	5	2.8	0.0%
WonA	Williamstown silt loam, 0 to 2 percent slopes	0	323.8	2.3%
Subtotals for Soil Survey Area			6,178.1	43.5%
Totals for Area of Interest			14,215.0	100.0%
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Br	Brookston silt loam	100	21.8	0.2%
Bs	Brookston silty clay loam, 0 to 2 percent slopes	95	1,021.2	7.2%



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TOWN OF CHESTERFIELD
 MADISON COUNTY, INDIANA
 PRELIMINARY ENGINEERING REPORT
 HYDRIC SOILS LEGEND
 FIGURE 1-5E

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CaA	Camden silt loam, 0 to 2 percent slopes	10	338.5	2.4%
CaB2	Camden silt loam, 2 to 6 percent slopes, moderately eroded	10	1.6	0.0%
Cm	Houghton muck, drained, 0 to 1 percent slopes	100	124.2	0.9%
CnA	Celina silt loam, 0 to 2 percent slopes	5	210.5	1.5%
CnB2	Celina silt loam, 2 to 6 percent slopes, eroded	4	232.2	1.6%
Cp	Clay pits	0	3.3	0.0%
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	2	1,784.0	12.6%
CrB2	Crosby silt loam, 2 to 4 percent slopes, eroded	7	20.6	0.1%
Es	Eel silt loam, 0 to 2 percent slopes, frequently flooded	5	9.7	0.1%
FoA	Fox silt loam, 0 to 2 percent slopes	5	290.9	2.0%
FoB2	Fox silt loam, 2 to 6 percent slopes, moderately eroded	10	168.0	1.2%
FoC2	Fox silt loam, 6 to 12 percent slopes, moderately eroded	0	18.1	0.1%
FoD2	Fox silt loam, 12 to 18 percent slopes, moderately eroded	0	5.9	0.0%
FsA	Fox silt loam, till substratum, 0 to 2 percent slopes	5	686.7	4.8%
FsB	Fox silt loam, till substratum, 2 to 6 percent slopes	10	129.4	0.9%
FsB2	Fox silt loam, till substratum, 2 to 6 percent slopes, moderately eroded	10	304.4	2.1%
FsC	Fox silt loam, till substratum, 6 to 12 percent slopes	0	21.8	0.2%
FsC2	Fox silt loam, till substratum, 6 to 12 percent slopes, moderately eroded	0	7.4	0.1%



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TOWN OF CHESTERFIELD
 MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

HYDRIC SOILS LEGEND
 FIGURE 1-5F

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
FtC3	Fox soils, 6 to 12 percent slopes, severely eroded	0	15.4	0.1%
FxB3	Fox soils, till substratum, 2 to 6 percent slopes, severely eroded	10	1.5	0.0%
Gn	Genesee silt loam, 0 to 2 percent slopes, frequently flooded, brief duration	0	164.9	1.2%
Gr	Gravel pits	0	128.4	0.9%
HeF2	Hennepin soils, 18 to 35 percent slopes, eroded	0	130.2	0.9%
Hm	Homer silt loam	10	6.8	0.0%
Kc	Kokomo silty clay loam, 0 to 2 percent slopes	90	2.4	0.0%
Kg	Kokomo silty clay loam, gravelly substratum	100	108.6	0.8%
Km	Kokomo silty clay loam, stratified substratum	100	44.8	0.3%
Lm	Palms muck, drained, 0 to 1 percent slopes	100	101.0	0.7%
Ma	Made land	0	42.4	0.3%
Mh	Mahalasville silt loam	100	2.5	0.0%
MnA	Miami silt loam, 0 to 2 percent slopes	6	261.9	1.8%
MnB2	Miami silt loam, 2 to 6 percent slopes, moderately eroded	3	343.4	2.4%
MnC2	Miami silt loam, 6 to 12 percent slopes, moderately eroded	0	47.4	0.3%
MnD2	Miami silt loam, 12 to 18 percent slopes, moderately eroded	0	31.2	0.2%
MnE2	Miami silt loam, 18 to 25 percent slopes, moderately eroded	0	38.8	0.3%
MpB3	Miami soils, 2 to 6 percent slopes, severely eroded	3	43.7	0.3%
MpC3	Miami soils, 6 to 12 percent slopes, severely eroded	0	114.3	0.8%
MpD3	Miami soils, 12 to 18 percent slopes, severely eroded	0	48.1	0.3%
OcA	Ockley silt loam, 0 to 2 percent slopes	0	79.9	0.6%



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 MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

HYDRIC SOILS LEGEND
 FIGURE 1-5G

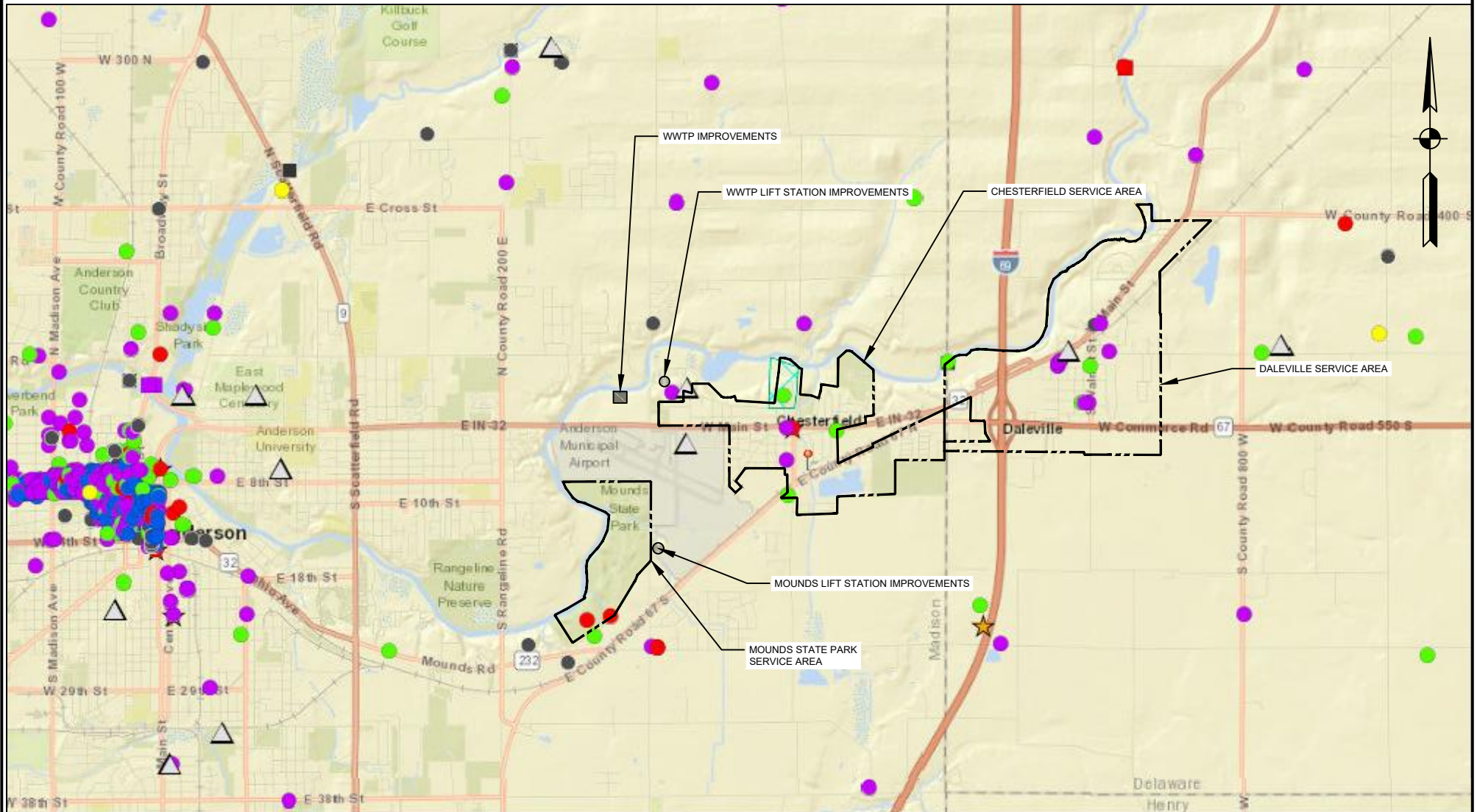
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
OcB	Ockley silt loam, 2 to 6 percent slopes	0	23.6	0.2%
RdE2	Rodman soils, 12 to 50 percent slopes, eroded	0	39.0	0.3%
Ro	Ross loam, 0 to 2 percent slopes, occasionally flooded	5	228.3	1.6%
Rs	Ross silt loam	3	63.9	0.4%
Sh	Shoals silt loam, 0 to 2 percent slopes, frequently flooded, brief duration	4	32.3	0.2%
Sl	Sleeth silt loam	10	29.1	0.2%
Sm	Sleeth silt loam, loamy substratum	10	8.1	0.1%
So	Sloan silt loam	100	98.3	0.7%
W	Water	0	146.4	1.0%
Wa	Walkill complex	100	2.2	0.0%
Wc	Washtenaw complex	100	32.0	0.2%
Wd	Westland silty clay loam, 0 to 2 percent slopes	94	168.3	1.2%
Ws	Westland silty clay loam, moderately deep	100	7.4	0.1%
Subtotals for Soil Survey Area			8,036.9	56.5%
Totals for Area of Interest			14,215.0	100.0%



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TOWN OF CHESTERFIELD
 MADISON COUNTY, INDIANA
 PRELIMINARY ENGINEERING REPORT
 HYDRIC SOILS LEGEND
 FIGURE 1-5H

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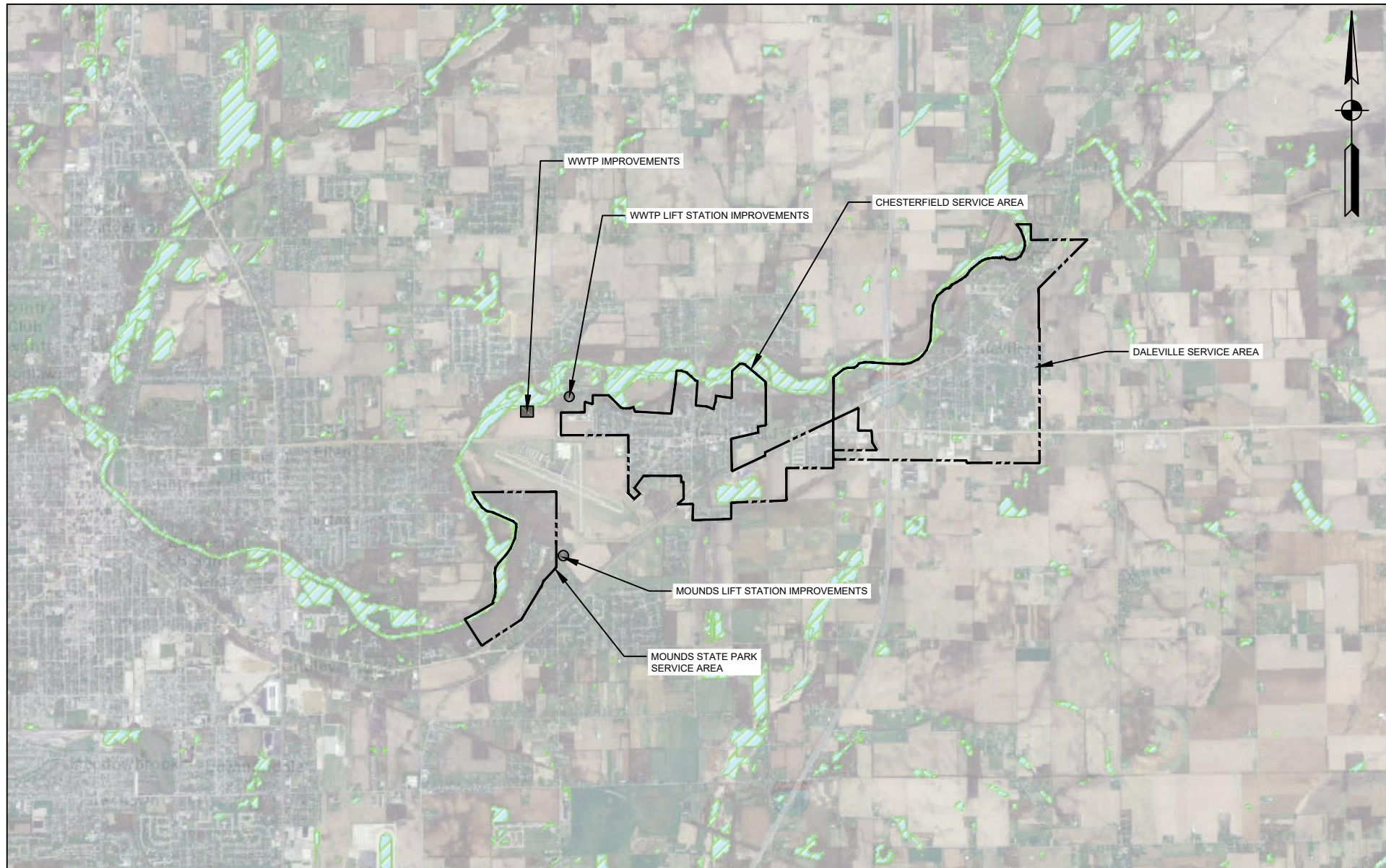
Author:

- | | | |
|------------------|------------------|-------------------------|
| Addresses | Demolished | Demolished |
| Cemeteries | Unknown | Unknown |
| Outstanding | Outstanding | National Register Sites |
| Notable | Notable | Historic Districts |
| Contributing | Contributing | World Street Map |
| Non-Contributing | Non-Contributing | |

1:80,309
Relative Scale



TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
SHAARD MAP
FIGURE 1-6

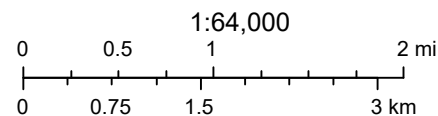


Wetlands NWI (USFWS)

Wetlands Project Metadata NWI (USFS)



State Boundary



TOWN OF CHESTERFIELD MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
WETLANDS MAP FIGURE 1-7

E. Surface Water Hydrology

The recommended projects are located outside of any waterways as shown in **Figure 1-8**. Proper erosion control techniques will be required during and after construction to ensure surface waters outside the project areas will not be adversely affected by construction. The planning area is located with the HUC-14 area 05120201030030, White River-Shoemaker Ditch, as shown in **Figure 1-9**.

F. Groundwater

No sole source aquifers will be affected by the proposed project. Groundwater quality will not be affected by construction of the project. Well records in the area indicate a groundwater elevation 17.5' to 30' below grade and aquifer elevations over 100' below grade. Where excavation is required, groundwater will be mitigated as needed. **Figures 1-10A** and **1-10B** show the depth to saturated soils per soil type.

G. Floodways

The recommended projects are located outside of the 100-year floodplain. **Figure 1-11** shows the 100-year floodplain for the service area.

H. Plants and Animals

The Indiana Department of Natural Resources (DNR) website and the U.S. Fish & Wildlife Service Information for Planning and Conservation (IPaC) report for the project were reviewed to identify any potential endangered, threatened and rare species within the service area. Included in the list of endangered species is the Indiana Bat (*Myotis sodalis*) and the Northern Long-Eared Bat (*Myotis septentrionalis*). The Northern Long-eared Bat is also listed in the threatened species list. All construction activity performed following recommendations of this PER will be completed on property presently owned by the Town or in road right of ways. Rare and endangered species habitats are not anticipated to be affected by this construction.

I. Prime Agricultural Land

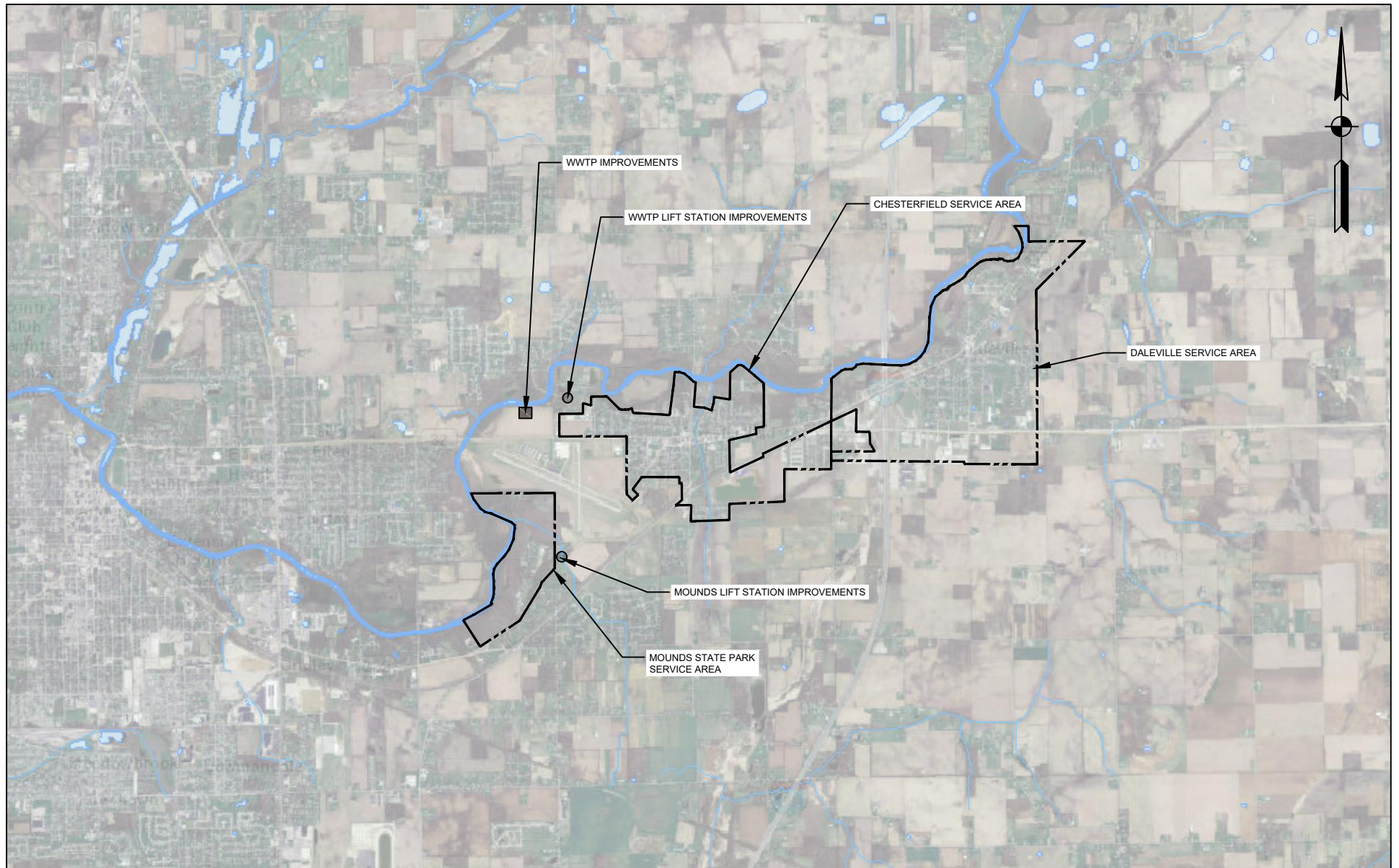
No farmland will be affected by this project as all proposed work is on the existing treatment plant and lift station sites. **Figures 1-12A** through **1-12C** show the different farmland categories within the service area.





J. Air Quality

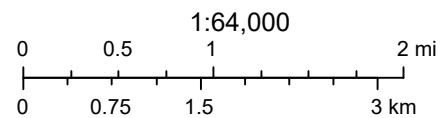
Per IDEM's Office of Air Quality, Madison County is an attainment county. Air quality impacts from the proposed project were evaluated for conformance with applicable rules under Title 326 Articles 1, 2, 6, 7, and 8 of the Federal 1990 Clean Air Act Amendments.

1. Construction Activity

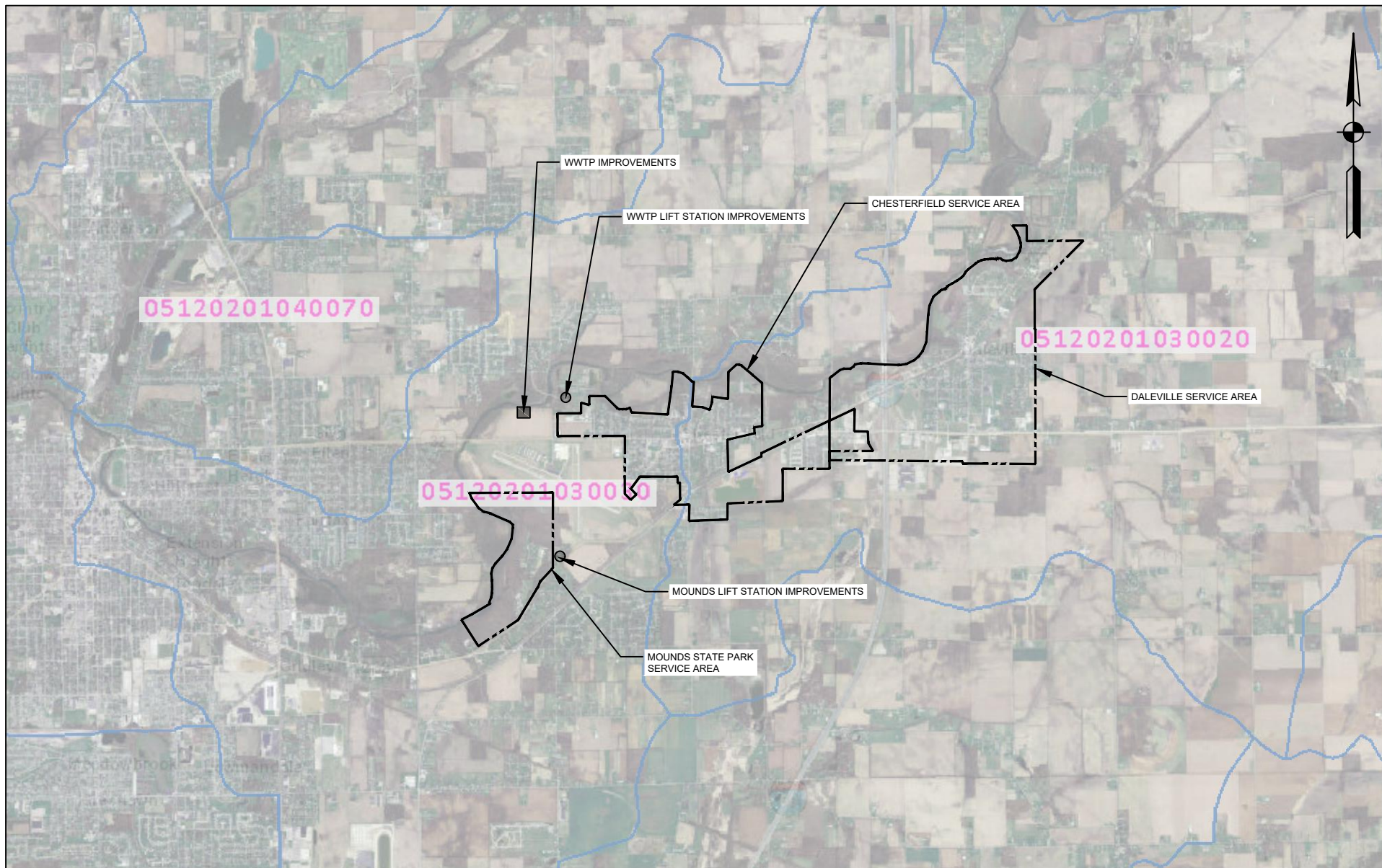
To minimize non-conformance with 326 IAC 6-4, "Fugitive Dust Emissions", reasonable and proper construction techniques and clean up practices will be provided. In addition, surface wetting practices will be utilized to control dust emissions where required. Please note that 326 IAC 6-4-6(3) provides for an exemption to the rule "...from construction or demolition activity where every reasonable precaution has been taken in minimizing fugitive dust emissions".





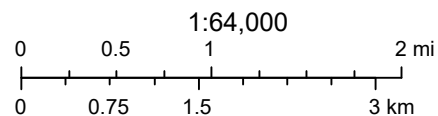
-  Rivers (NHD)
-  Lakes (NHD)
-  Streams (NHD)
-  State Boundary



TOWN OF CHESTERFIELD MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
SURFACE WATER MAP FIGURE 1-8



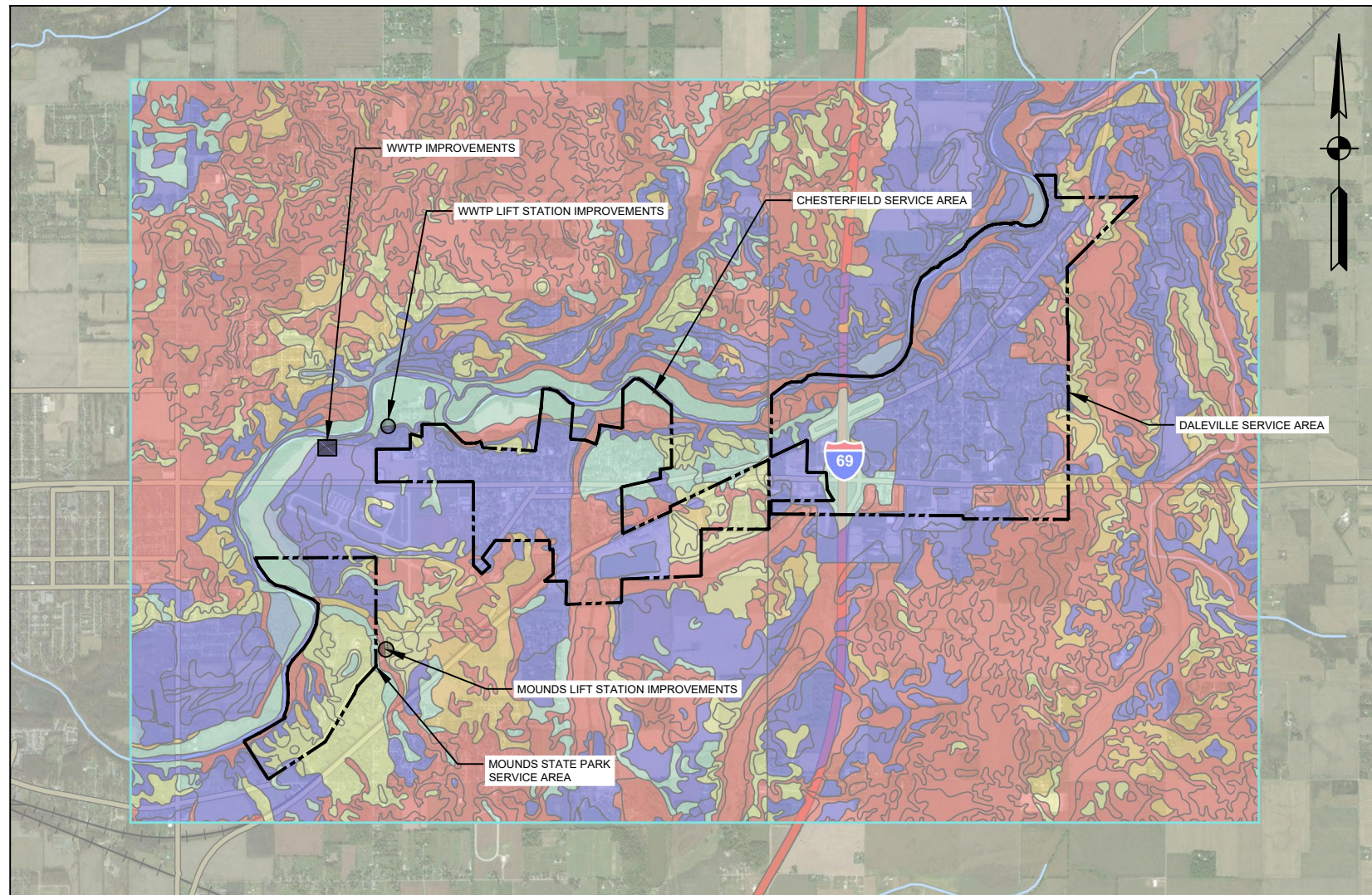
-  Watershed HUC14
-  State Boundary



TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

WATERSHED MAP
FIGURE 1-9



Scale: 1:51,900

0 2500 5000 10000 15000 Feet




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TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
GROUNDWATER MAP
FIGURE 1-10A

MAP LEGEND

Area of Interest (AOI)


 Area of Interest (AOI)

Soils



Soil Rating Polygons


 0 - 25
 25 - 50
 50 - 100
 100 - 150
 150 - 200
 > 200
 Not rated or not available

Soil Rating Lines


 0 - 25
 25 - 50
 50 - 100
 100 - 150
 150 - 200
 > 200
 Not rated or not available

Soil Rating Points

 0 - 25
 25 - 50
 50 - 100
 100 - 150
 150 - 200
 > 200

 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Delaware County, Indiana

Survey Area Data: Version 22, Dec 6, 2017

Soil Survey Area: Madison County, Indiana

Survey Area Data: Version 20, Oct 2, 2017

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Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

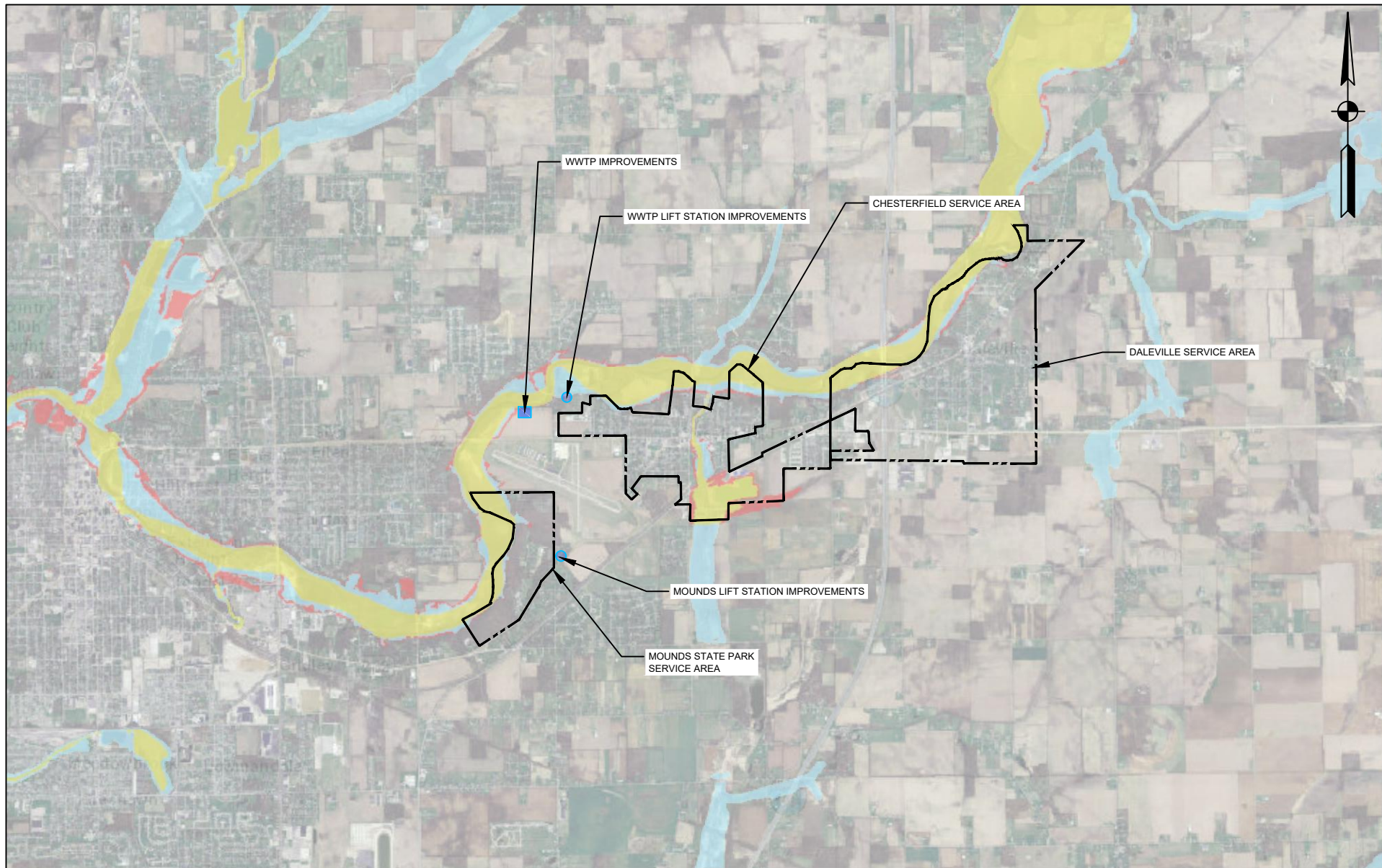
Date(s) aerial images were photographed: Oct 1, 2011—Apr 1, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.








TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
GROUNDWATER LEGEND
FIGURE 1-10B

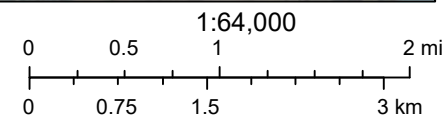
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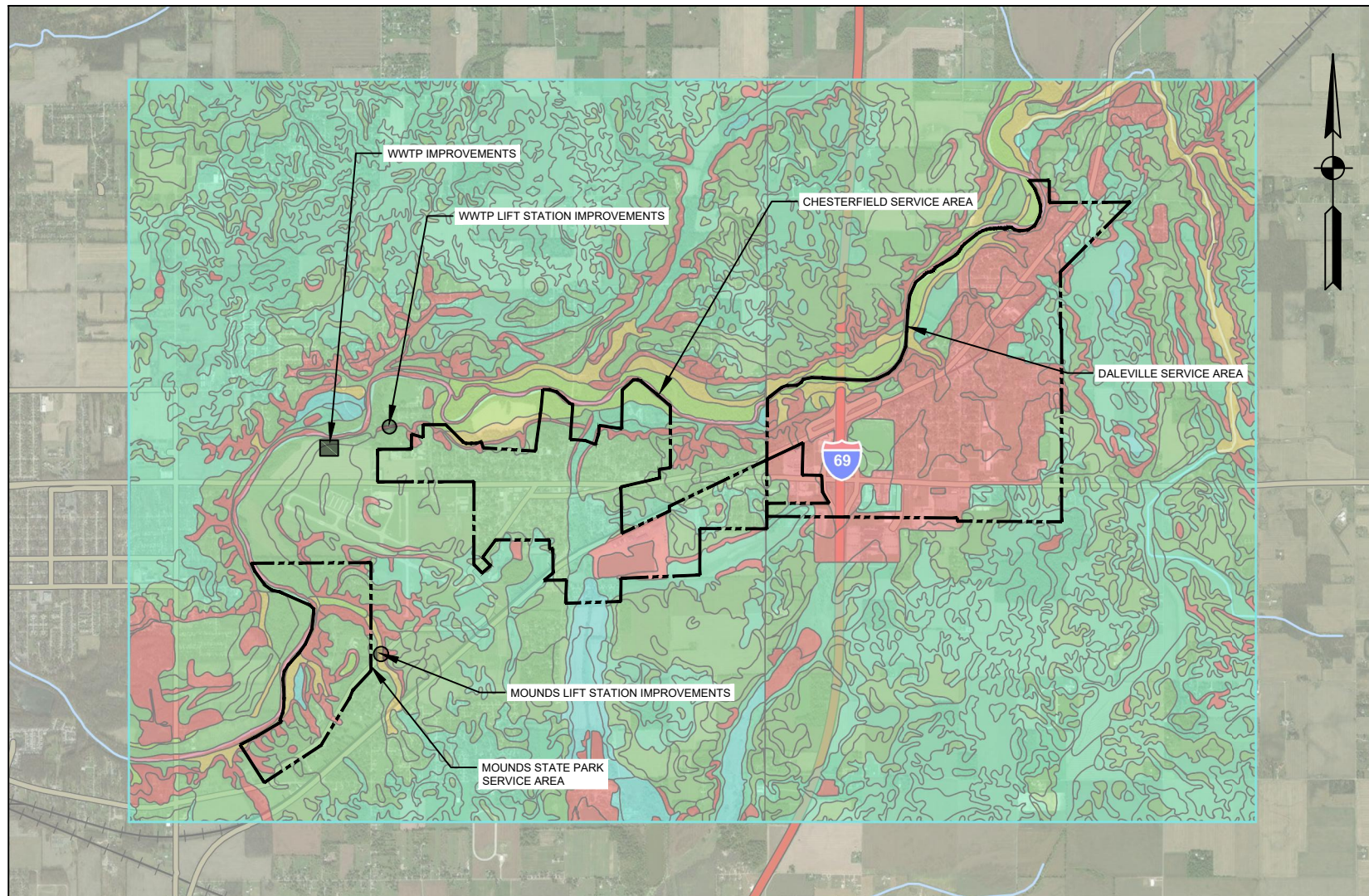
Floodplains - FIRM

-  Floodway
-  1% Annual Chance Flood Hazard

-  0.2% Annual Chance, Protected by Levee
-  0.2% Annual Chance Flood Hazard
-  State Boundary



TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
FLOODWAY MAP
FIGURE 1-11



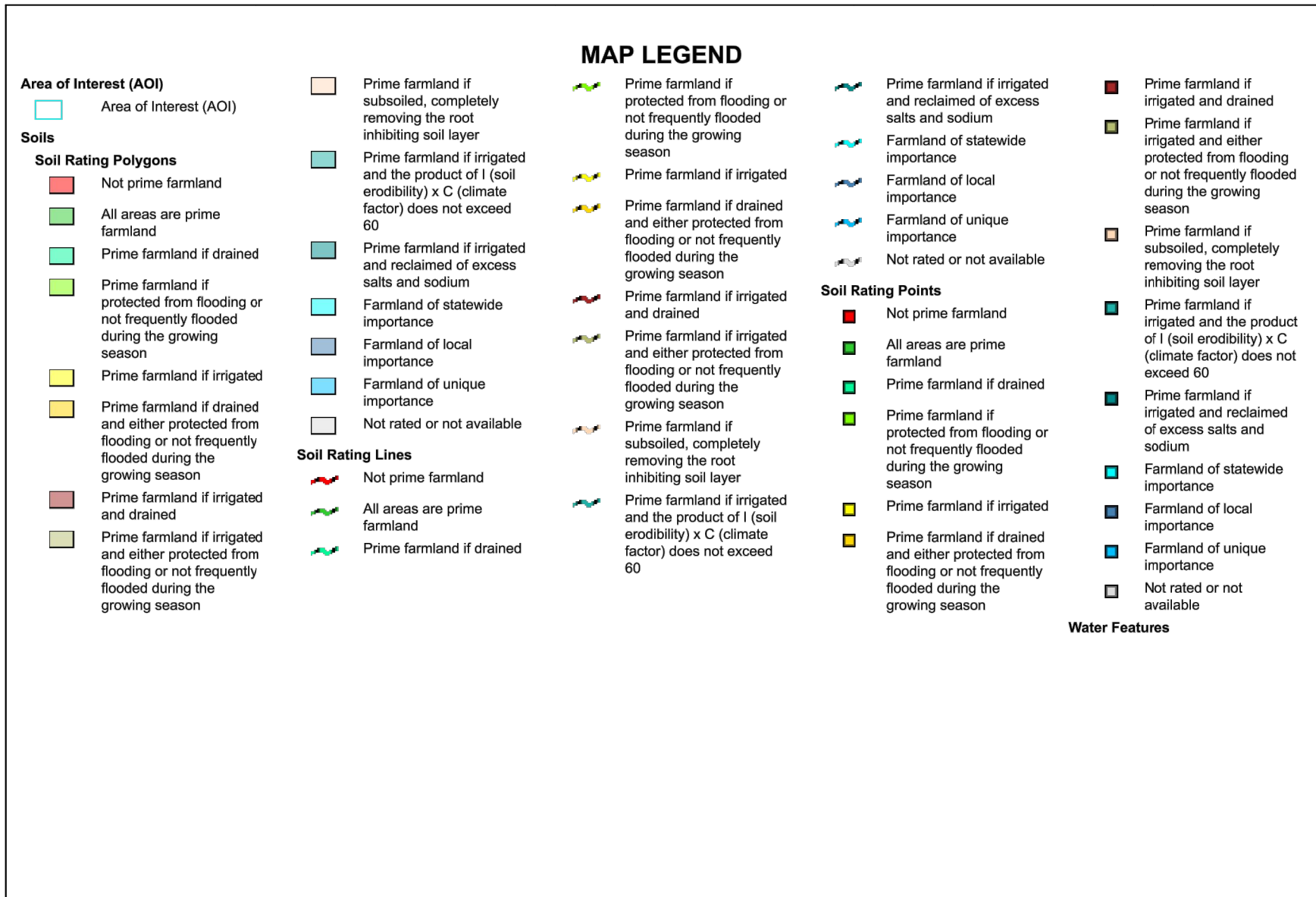
Scale: 1:51,900

0 2500 5000 10000 15000 Feet










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TOWN OF CHESTERFIELD
 MADISON COUNTY, INDIANA
 PRELIMINARY ENGINEERING REPORT
 FARMLAND MAP
 FIGURE 1-12A



MAP INFORMATION

-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
FARMLAND LEGEND
FIGURE 1-12C

Exhausts of construction equipment will be required to have mufflers for noise and air pollution abatement.

2. Clean Air Act Title III – Hazardous Air Pollutants

Title III calls for a program to prevent the accidental releases of hazardous air pollutants from facilities. The use of chemicals in the project that may release hazardous air pollutants as defined by EPA's Hazardous Air Pollutant Listing are not anticipated. If potential hazardous air pollutants are used in the project, then monitoring, record keeping, reporting, vapor recovery, secondary containment, design, equipment, work practices and operation according to Federal Standards will be required.

K. Open Space and Recreational Opportunities

The proposed project's construction and operation will not disturb any open space and recreational opportunities.

L. Lake Michigan Costal Program

The proposed project will not affect the Lake Michigan Costal Zone.

M. National Natural Landmarks

The construction and operation of the proposed project will not affect National Natural Landmarks.

1.4 Growth Areas and Population Trends

A. Population Trends

The United States Census Bureau counts and tabulates population every 10-years. Data is available for Madison County, Delaware County, Chesterfield and Daleville. No Data is available for the Mounds State park. **Table 1-1** shows the data from the year 1900 to the year 2010. The Census Bureau also estimates future population for counties, which is shown in **Table 1-2**.

**Table 1-1
Historical Population**

Year	Madison Co.	Chesterfield	Delaware Co.	Daleville
1900	70,470	N/A	49,624	N/A
1910	65,224	285	51,414	N/A
1920	69,161	319	56,377	N/A
1930	82,888	460	67,270	N/A
1940	88,575	581	74,963	N/A
1950	103,911	1,086	90,252	N/A
1960	125,819	2,588	110,938	N/A
1970	138,522	3,001	129,219	N/A
1980	139,336	2,701	128,587	N/A
1990	130,669	2,730	119,659	1,681
2000	133,357	2,969	118,769	1,658
2010	131,636	2,547	117,671	1,647

**Table 1 - 2
County's Projected Population**

Year	Madison County Population	Delaware County Population
2020	121,239	109,859
2030	127,466	114,951
2040	124,329	112,287

Since both Madison and Delaware Counties show declining projections, a projection was created for Daleville and Chesterfield based on a 0.3% annual growth rate. A 0.3% annual growth rate was the basis of design due to Indiana annual average growth rate being 0.3% (obtained from an article by IU Kelly school of Business 2016). This projection is illustrated in **Table 1-3**. For the 20-year planning area, the design population is 4,588. This design population includes Chesterfield and Daleville. Since there is no population data on Mounds and no population increase is expected, Mounds was not considered to have an impact on this projection.

**Table 1 - 3
Town's Projected Population**

Year	Chesterfield Projected Population	Daleville Projected Population	Total Projected Population
2040	2,786	1,802	4,588

B. Local Economy

The local economy is an important demographic factor that must be considered when planning for any utility project. Since funding of projects is based on need, it is important to know the economic nature of the community. STATS Indiana maintains a database of demographic information for cities, towns, townships, and counties located in Indiana.

1. Area Employment

The latest data available for employment and average wages for Madison and Delaware Counties is from the year 2016. This data is shown in **Table 1-4**.

2. Area Income

The most recent income data available from STATS Indiana is year 2016. The average income for Delaware County was \$34,452 and for Madison County it was \$35,953. The unemployment rate for Delaware County in 2016 was estimated to be 5.2%, which is higher than the state average of 4.4%. Currently, Delaware County ranks 17th for highest unemployment rate out of the 92 counties in the State. For Madison County in 2016, the unemployment rate was estimated to be 5.0%, which is higher than the state average of 4.4%. Currently, Madison County ranks 20th for highest unemployment rate out of the 92 counties in the State.

1.5 Community Engagement

Project planning should include but not be limited to helping the Community develop an understanding of the need for the project, the utility operational service levels required, and funding and revenue strategies to meet those requirements. In order to engage the Community regarding the project represented in this report, a public meeting will be held, which will be a forum for presenting the major elements of this project, as well as the corresponding benefits to the Community.

Action items to be completed and submitted after initial PER submittal include:

- **Public Hearing must be held:**
 - a. The Public Hearing Notice must be published.
 - b. The Publisher's Affidavit from the newspaper of the Public Hearing Notice will be received.
 - c. The Town should notify contract customers, significant users, and / or rate payers of the Public Hearing.
 - d. The PER must be available for review for 10-days before the hearing.
 - e. This is when required resolutions are typically signed.
- The sign-in sheet and minutes / transcript from the Public Hearing should be obtained.
- Any comments from the public should be obtained.
- Mailing labels should be prepared for: Public Hearing attendees, the County Drainage Board, the County Health Department, the planning Commission, Local Media Outlets, and any customer communities.

**Table 1-4
2016 Employment and Wage Data**

Industry	Madison County			Delaware County		
	Establishments	Jobs	Average Yearly Wage	Establishments	Jobs	Average Yearly Wage
Total Employment	2,176	39,183	\$36,535	2,189	45,452	\$37,286
Agriculture, Forestry, Fishing, Hunt	24	200	\$34,769	0	0	\$0
Mining	3	32	\$94,150	0	0	\$0
Construction	220	1,636	\$50,627	2	1,495	\$44,883
Manufacturing	103	4,198	\$54,630	1	4,307	\$50,318
Wholesale Trade	101	0	\$0	109	946	\$51,723
Retail Trade	317	4,737	\$23,555	4	6,504	\$24,690
Transport. and Warehousing	79	2,104	\$43,027	1	1,235	\$45,137
Utilities	2	0	\$0	7	160	\$81,542
Information	28	488	\$37,481	0	351	\$43,830
Finance and Insurance	135	921	\$58,913	1	1,819	\$43,068
Real Estate, Rental, Leasing	78	410	\$31,145	1	619	\$34,700
Professional and Technical Services	189	740	\$43,974	2	1,763	\$44,979
Mgmt. of Companies	12	506	\$75,821	0	469	\$91,789
Admin. and Waste Services	104	2,264	\$25,198	1	2,474	\$24,488
Educational Services	56	789	\$33,769	1	2,304	\$33,564
Health Care and Social Assistance	218	6,644	\$40,765	2	8,329	\$43,879
Arts, Entertain., and Recreation	29	1,219	\$27,431	0	485	\$13,938
Accommodation and Food Service	215	4,230	\$13,852	2	4,951	\$13,522
Other Services	213	1,148	\$23,528	2	1,094	\$24,308
Federal, State, & Local Govt.	52	3,301	\$39,080	37	1,448	\$39,078

Section 2 – Existing Facilities

2.1 Location Map

The Chesterfield wastewater system consists of a treatment plant, lift stations, force mains, and gravity sewers. The Chesterfield treatment plant treats wastewater from Chesterfield, Daleville and the Mounds State Park. **Figure 2-1** shows the planning area, Chesterfields wastewater treatment plant (WWTP), Main WWTP Lift Station (WWTP LS), and the Mounds State Park Lift Station (Mounds LS). **Figures 2-1A** and **2-1B** show aerial site plans and supplemental photographs for the WWTP LS and the Mounds LS.

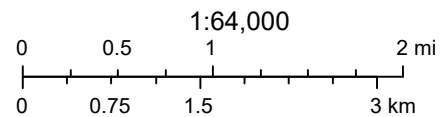
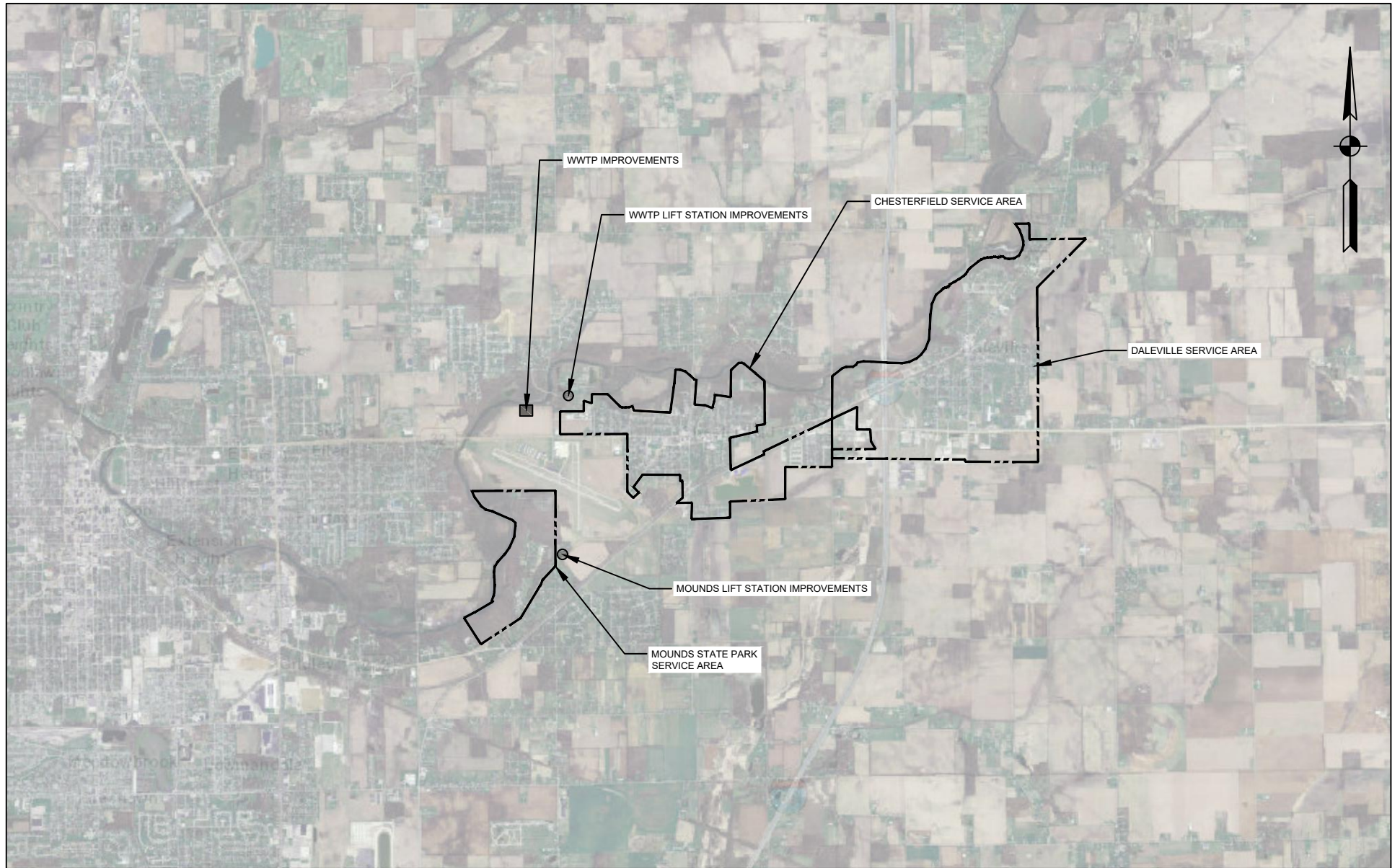
2.2 History

In 1972, Chesterfield and the City of Anderson executed an agreement that would allow Chesterfield to send an average daily flow of 700,000 gallons per day (GPD) with a maximum rate of 1,850,000 GPD of wastewater to Anderson to be treated. The original agreement was for 30-years, however it was extended and expired in December of 2008. After the agreement between Anderson and Chesterfield expired, Anderson presented a significant rate increase for the following years. Due to the rate increase, Chesterfield had a study completed to build and operate their own wastewater treatment plant. This study was completed in 2010 and the new treatment plant and influent lift station were built in 2011.

Chesterfield has two (2) agreements currently in effect. The first agreement is between Chesterfield and DNR, which began in 1979. This agreement allows Mounds State Park (Mounds) to send a peak flow of 50 gpm (72,000 GPD) of sewage to Chesterfield. In the agreement, it is stated that “the Town (Chesterfield) shall be the owner of said collection system and the Town shall have the duty to maintain and repair or replace as necessary.” There is no expiration date in the Contract. The agreement is included in **Appendix A**.

The second agreement is between Chesterfield and Delaware County Regional Wastewater District (DCRWD). This agreement was executed in 2011 and allows the Town of Daleville to send an average daily flow of 310,000 GPD, a peak daily flow of 1,000,000 GPD, and a peak hourly flow of 990 GPM to Chesterfield. The term of the agreement is 20 years. The interceptor that conveys the wastewater from Daleville to Chesterfield is owned and maintained by the DCRWD. The agreement is included in **Appendix B**.

Chesterfield also completed a sewer separation project in 2009 that eliminated the Town’s combined sewer system. As part of the separation project, the Town’s two combined sewage outfalls were converted to storm water outfalls.



TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
LOCATION MAP
FIGURE 2-1

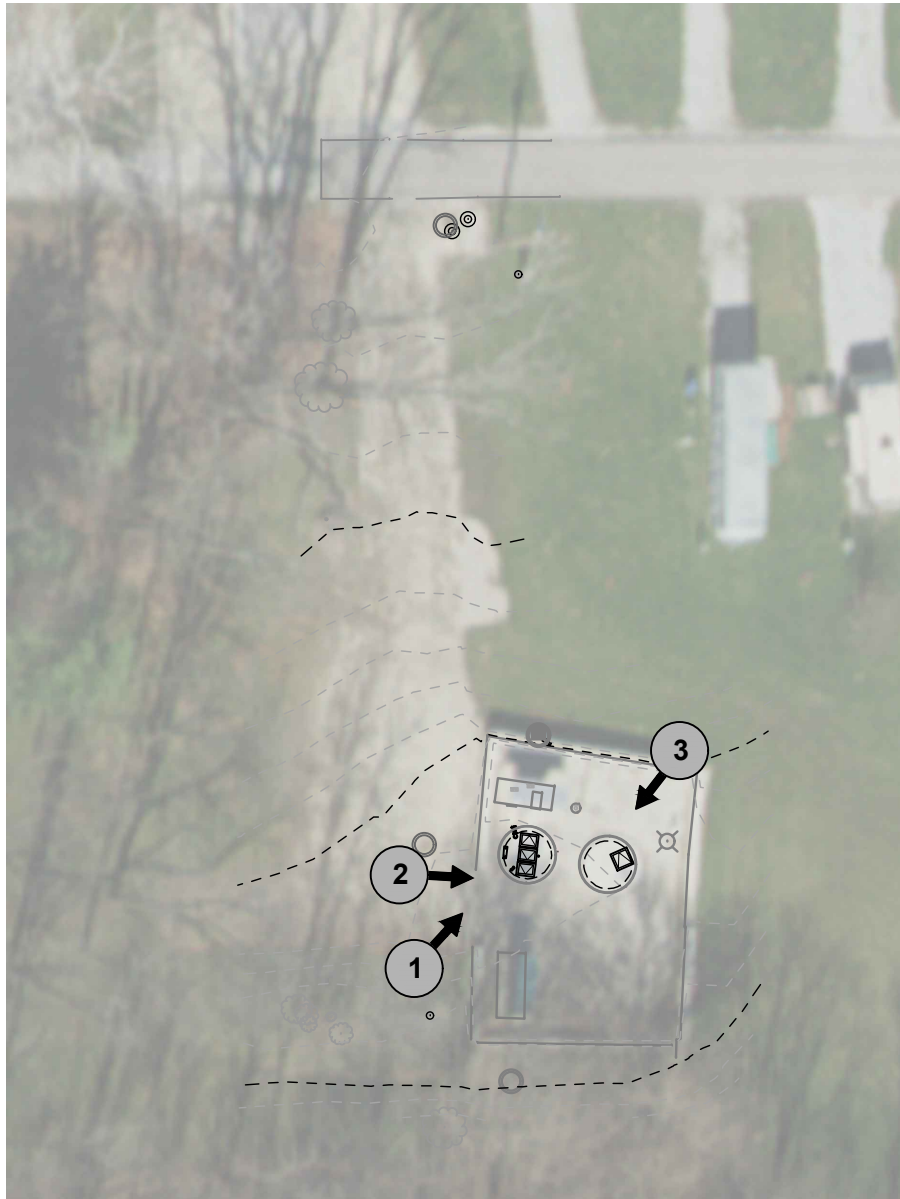


PHOTO LOG PLAN VIEW (MAIN LIFT STATION)

SCALE: 1"=40'

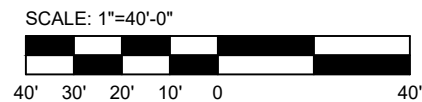


PHOTO #1



PHOTO #2



PHOTO #3



TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
LOCATION MAP
FIGURE 2-1A

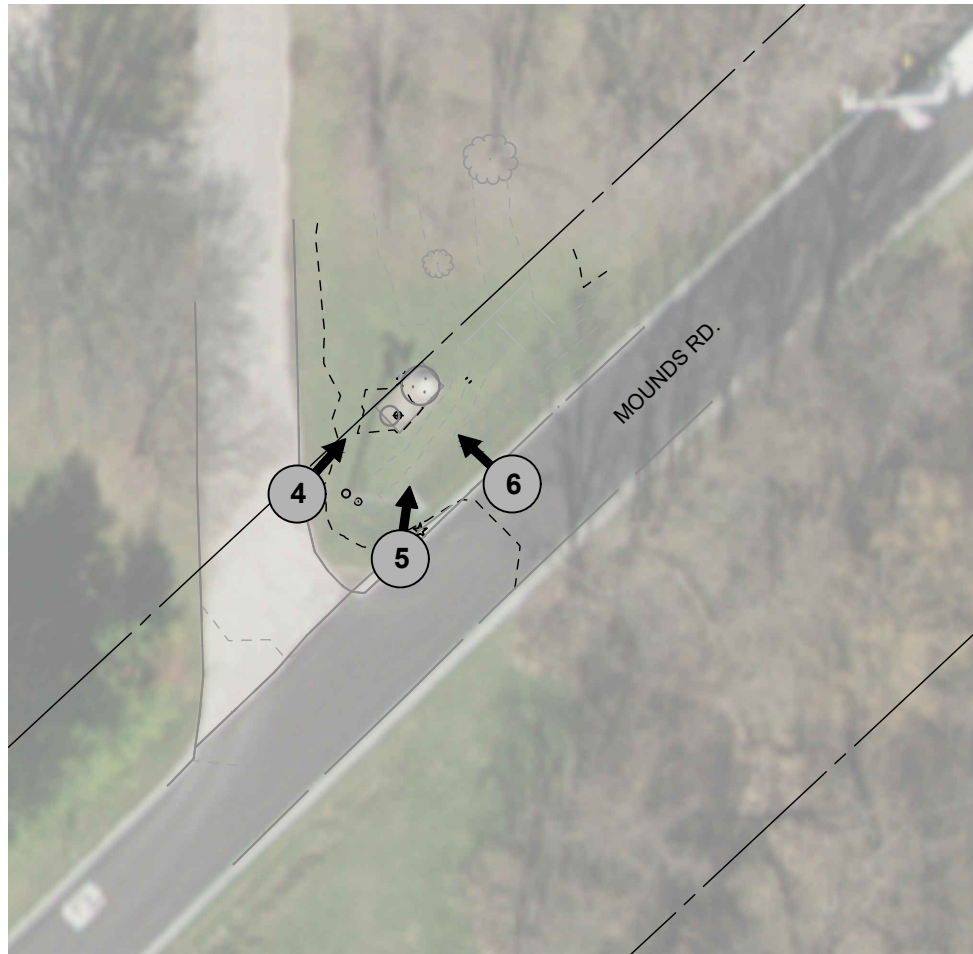


PHOTO LOG PLAN VIEW (MOUNDS ROAD LIFT STATION)

SCALE: 1"=40'

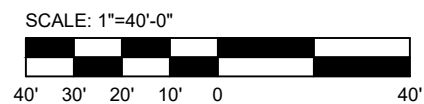


PHOTO #4



PHOTO #5



PHOTO #6



TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
LOCATION MAP
FIGURE 2-1B

2.3 Conditions of Existing Facilities

A. Current Safety and Health Hazards at the WWTP and Main WWTP Influent Lift Station

Since 2013, the Chesterfield WWTP Operator and other Town employees have been repeatedly exposed to a toxic chemical released as a gas/vapor from the raw wastewater entering the main influent lift station and treatment plant headworks. Testing by several companies has provided no evidence to confirm the chemical causing the exposure. A list of all industrial users in both Chesterfield and Daleville has been reviewed but the Town has been unable to determine a probable source of the chemical. In 2014, the Town worked with a company called Source Technology to try to pump chemicals into the sewer system in an attempt to prevent the toxic chemical from volatilizing at the WWTP. They tried this for a few months with no results.

More recently, the Town engaged a company called Micro-Air to do air-quality testing at the plant. Micro-Air visited the plant several times testing for mercury, VOC's, and other samples. All test results showed minimal levels.

Another group was put together to see if they could identify the chemical or find a potential source of the chemical. The team consisted of Chesterfield, Delaware County Regional Waste District, Larry Dockery (an environmental investigator), the Indiana Department of Environmental Management, and the hazmat team from the Chesterfield Fire Department. The team opened several manholes upstream of the treatment plant. In each case, the chemical odor was detected for several seconds and then dissipated. In some of the manholes that had a detectable odor the hydrogen air gauge went off. Samples were taken and tested for cyanide and metals. The tests came back with minimal results.

The Town of Chesterfield is doing everything it can to identify the chemical that is causing the health hazards to the plant personnel. The Town has ordered additional air monitoring equipment as is currently being assisted by the City of Anderson's sewage utility to collect and analyze additional samples.

B. Sanitary Sewers

Chesterfield's sanitary sewers convey sanitary sewage only and are made up of PVC, vitrified clay, and reinforced concrete pipes ranging from 8" to 36" in size. A large portion of the system was rehabilitated or constructed new in 2007 as part of a combined sewer separation project. DCRWD (Daleville) currently discharges an average daily flow (ADF) of 0.237 MGD to the Chesterfield collection system.

No current flow data is available from Mounds State Park. The agreement between Chesterfield and the Indiana Department of Natural Resources requires "sufficient capacity to handle an estimated future, peak flow from Mounds State Park of 50 gallons per minute" or 72,000 GPD. Based on this information and utilizing a peaking factor of 4, the current average design flow is estimated to be

approximately 18,000 GPD (i.e. 72,000 GPD / 4). Chesterfield bills Mounds based on potable water usage as metered by the City of Anderson. Mounds currently experiences high infiltration and inflow (I&I) during wet weather so the current method of billing likely does not accurately account for the wastewater flows received from Mounds. Chesterfield should add a flow meter to the Mounds lift station and bill Mounds based on actual wastewater pumped to Chesterfield.

C. Lift Stations

Within Chesterfield there are four (4) lift stations. Those four (4) lift stations include the Main WWTP lift station (WWTP LS), the Highway 67 lift station (LS 67), the Highway 32 lift station (LS 32), and the Mounds State Park lift station (Mounds LS). These lift stations are described in **Table 2-1**.

Table 2-1
Existing Lift Stations

Lift Station	Year Installed/ Upgraded	Number of Pumps	Capacity of Each Pump (GPM)	HP of Each Pump (HP)	Force Main Size (Inch)
Main WWTP LS	2011	3	3,200	75	12
LS 67	2009	2	125	2.2	4
LS 32	2007	2	85	3	4
Mounds LS	1980	2	50	Unknown	4

The existing Mounds LS is a dry-pit type pumping station. The station is in poor condition and the floor of the dry pit section is corroded and deteriorating. The LS is almost 40-years old and has reached the end of its useful life. Additionally, the current lift station is a confined space and presents a hazardous working condition.

The main WWTP LS was built in 2011 and is in good working condition. LS 67 and LS 32 are also in good working condition and do not require any improvements.

D. Wastewater Treatment Plant (WWTP)

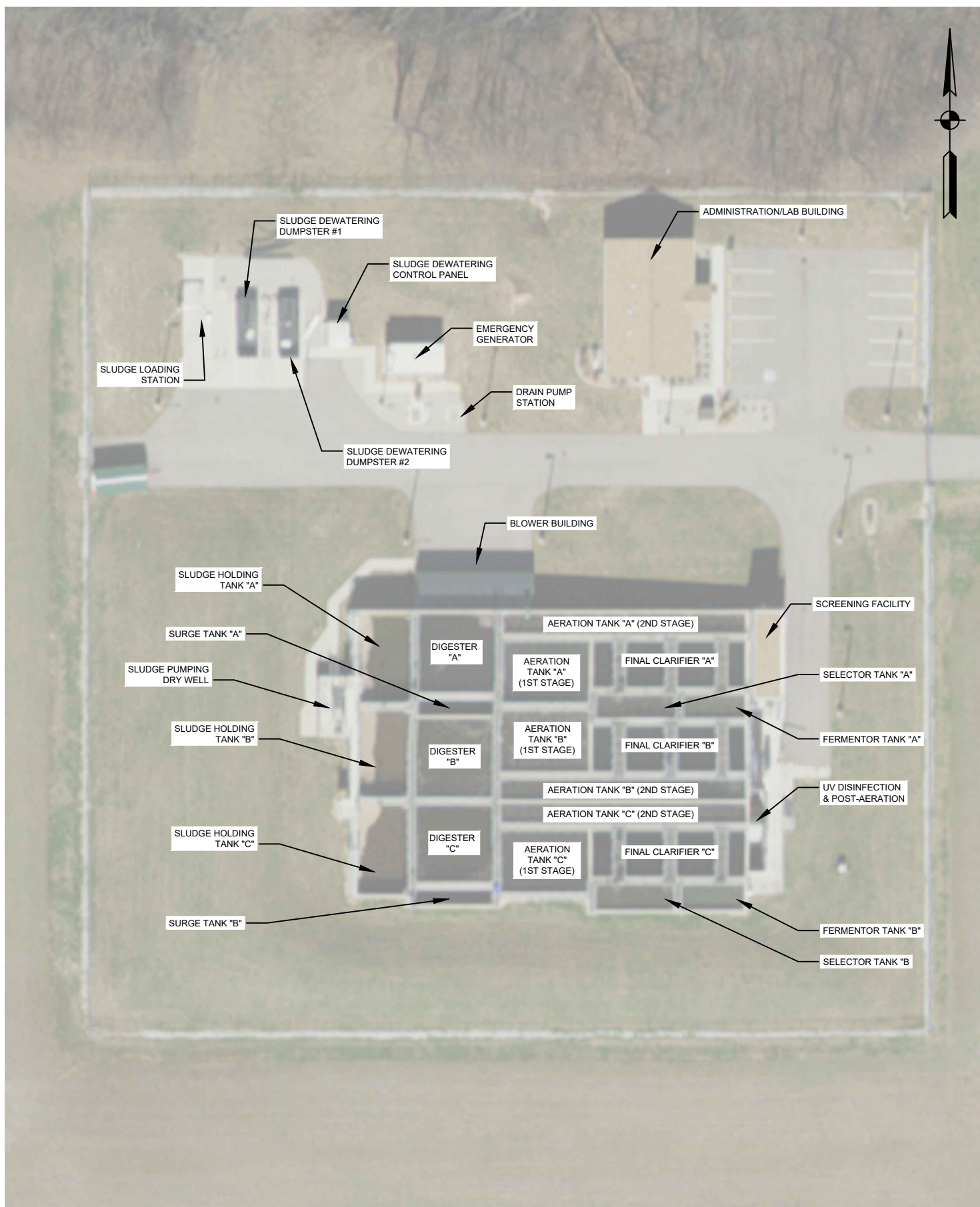
Chesterfield's WWTP was built in 2011. The treatment plant is an extended aeration treatment plant manufactured by Aero-Mod. The treatment plant process consists of an influent flow meter, mechanical screen with a bypass manual bar screen, two fermenter tanks, two (2) anaerobic selector tanks, three first stage aeration tanks, three (3) second stage aeration tanks, three (3) final clarifiers, one UV disinfection unit, cascade aeration, two (2) surge tanks, three (3) digester tanks, three (3) sludge holding tanks, and two (2) sludge dewatering bag units. All influent wastewater is pumped to the plant from the Main WWTP Lift Station and final discharge is to the White River. The WWTP is shown in **Figure 2-2**. The 2011 wastewater treatment plant design summary is in **Appendix C**. The current NPDES permit is in **Appendix D**.

The WWTP Monthly Reports of Operation (MRO) data was reviewed to see if the NPDES permit limits were being met. **Table 2-2** shows the original design parameters, current NPDES limits, and the performance data found in the treatment plant's MROs from 2014 through 2017. As shown in **Table 2-2**, the permit limits are easily met on an annual average. A further review of the data found in the treatment plant's MROs showed that the daily, weekly, and monthly permit limits are also currently being met.

The data in **Table 2-2** indicates that, on an annual basis, the WWTP is generally operating under its rated capacity. It should be noted that the maximum month's flows and loadings are at or above the plant's rated design capacity. The plant was able to meet NPDES limits during this period, but the data indicates that the plant is nearing its peak design capacity for both flow and loadings. Since there is minimal projected growth within the service area in the near future, and the existing facilities have been shown to be capable of reliably handling the flows and loadings that the plant currently receives, this report does not consider any expansion of the existing facilities.

Table 2-2
WWTP Performance

	Influent Original Design	Current Loadings (2014-2017 MRO's)		Year Average Plant Effluent	Max Month Plant Effluent	Current NPDES Limits
		Year Average	Max Month			
Avg. Daily Flow (MGD)	1.0	0.63	1.29			
Peak Daily Flow (MGD)	3.2		4.2			
Peak Hourly Flow (MGD)	4.6		4.8			
CBOD mg/l	117	122	103	3	2	10
CBOD lb/day	976	643	1,104	12	25	83
TSS mg/l	138	136	101	4	4	12
TSS lb/day	1,152	715	1,086	22	46	100
Ammonia mg/l	14.6	16.7	13.4	0.3	0.5	1.1
Ammonia lb/day	122	88	144	2	5.5	9.2
Phosphorous mg/l	4.6	2.9	3.4	1.7	1.4	n/a
Phosphorous lb/day	38	15	37	9.09	8.2	n/a



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TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
EXISTING WWTP
FIGURE 2-2

The WWTP is well maintained and most of the equipment is in good working order. However, some of the plant's equipment have some operational issues that need to be corrected. The following is a list and description of these issues:

- The influent mechanical screen routinely freezes in the winter causing flooding problems in the headworks and operational problems in the downstream aeration tanks and clarifiers
- There currently is no way to store the UV lamps during the wintertime
- The plant's effluent UV and post aeration channel are uncovered. There is significant algae growth in this section of the plant requiring frequent cleaning and creating suspended solids issues in the plant's effluent. Since the UV channel is open, the UV light can cause eye damage to personnel working in that area of the plant.
- The secondary clarifiers build up large amounts of algae causing suspended solids problems in the plant's effluent and reducing the disinfection efficiency of the downstream UV system.
- There currently is no way for the operator to pump sludge from one of the sludge holding tanks to the sludge dewatering system. The operator must manually pump sludge from the sludge holding tank to another tank.
- The existing sludge pumping room is poorly ventilated and must be accessed by a ladder. The room is a confined space making it difficult for the operator to operate and service the sludge pumps. This creates a safety hazard for the operator.
- Two (2) electric boxes are located inside the walkways above the aeration tanks preventing operator access from one end of the tanks to the other. This creates a safety hazard for the operator.
- The blower/control building is in a low-lying area and frequently floods during rain events damaging equipment and creating a safety hazard for the operator. There are no drains to divert storm water away from the building.
- The existing aeration blowers have experienced repeated mechanical and electrical failures and are in need of replacement.
- The plant has no way of receiving Vac truck waste from the Town's sewer and lift station cleaning operations. This prevents the operator from performing necessary routine collection system maintenance.
- The current compressor air dryer is undersized causing condensation problems in the main control panel solenoid valves. This will reduce the life of the main aeration process control system.

2.4 Financial Status of Existing Facilities

It is important that user fees and charges be examined frequently, to ensure that they can recover all direct and indirect costs of service. Rate structures should be reviewed with the Town's rate consultant and financial advisor, and rate modifications should be formally approved by the Town Council. Any unfavorable balances in cost recovery should be highlighted in the budget documents and addressed promptly.

Chesterfield receives income from the users of Chesterfield, DCRWD, and Mounds State Park. The current sewer rates and charges for Chesterfield are based on the quantity of water used as measured by their water meters. The current Chesterfield Rate Ordinance is included in **Appendix E**.

The average daily flow from the DCRWD (Daleville) to Chesterfield is currently 238,000 gpd. The current treatment rate in the agreement between Chesterfield and DCRWD is \$1.31/1,000 gallons. In addition to the treatment rate, DCRWD is required to pay a monthly debt service charge and coverage of \$9,726/month. Based on these numbers, the average monthly revenue from DCRWD is roughly \$19,000/month or \$2.60/1,000 gallons. The monthly sewer charge for a 4,000 gallon per month user for each community is shown in **Table 2-3**.

Table 2-3
Chesterfield Sewage Rates

Description	Chesterfield Rates Per 1,000 Gallons	DCRWD Rates Per 1,000 Gallons
First 3,000 gallons	\$16.75	\$2.60
Next 7,000 gallons	\$14.80	\$2.60
Over 10,000 gallons	\$13.30	\$2.60
Calculated Monthly Sewer Charge at 4,000 gal/month	\$65.05	\$10.40

The total revenue and disbursements from 2015 to 2017 are shown in **Table 2-4**. A summary of annual revenue from Mounds State Park and DCRWD is presented in **Table 2-5**. The current debt associated with Chesterfield's wastewater department is presented in **Table 2-6**.

Table 2-4
Chesterfield Wastewater Revenue and Disbursements

Description	Revenue	Disbursed
2015 Total Account Receivable	\$1,365,165	\$1,303,910
2016 Total Account Receivable	\$1,284,136	\$1,240,021
2017 Total Account Receivable	\$1,337,518	\$1,257,847

**Table 2-5
Out of Town Revenue by Source**

Description	Mounds State Park	DCRWD
2015 Total Revenue	\$27,490	\$235,278
2016 Total Revenue	\$29,815	\$207,221
2017 Total Revenue	\$27,191	\$280,022

**Table 2-6
Chesterfield Wastewater Debt**

Description	Cost
Sewage Bond Revenue Bond of 2007	\$4,909,000
Sewage Works Revenue Bond Of 2011	\$3,324,000
Total Debt	\$8,233,000

A. Existing O&M and Short-Lived Assets

Table 2-7 shows the estimated existing O&M costs associated with Chesterfield's wastewater system. The estimated existing short-lived assets annual costs are shown in **Table 2-8**.

**Table 2-7
Estimated Existing Annual Operation and Maintenance**

Description	Cost
2014 O&M	\$535,618
2015 O&M	\$457,178
2016 O&M	\$502,315

**Table 2-8
Estimated Existing Short-Lived Assets Annual Costs**

Description	Replacement Cost	Useful Life	Total	Remaining Useful Years
Timberline Lift Station Pumps	\$80,000	15	\$5,400	5
HWY 67 Lift Station Pumps	\$20,000	15	\$1,400	4
HWY 32 Lift Station Pumps	\$25,000	15	\$1,700	2
Mounds Lift Station Pumps	\$25,000	15	\$1,700	0
Mechanical Screen	\$100,000	15	\$6,700	6
Anaerobic Mixers	\$40,000	15	\$2,700	6
Blowers	\$125,000	15	\$8,400	0
Progressive Cavity Pumps	\$20,000	15	\$1,400	6
Polymer Pump	\$15,000	15	\$1,000	6

Description	Replacement Cost	Useful Life	Total	Remaining Useful Years
Surge Pumps	\$20,000	15	\$1,400	6
Drain Lift Station Pumps	\$20,000	15	\$1,400	6
Digested Sludge Pumps	\$20,000	15	\$1,400	6
Wash Water Pumps	\$20,000	15	\$1,400	6
Total Short-Lived Assets			\$36,000	

B. Customer Base and EDU's

The equivalent dwelling units (EDUs) are shown in **Table 2-9**. These are determined by dividing 310 GPD into the average daily flow. One EDU is equal to 310 GPD.

Table 2-9
Equivalent Dwelling Units

Equivalent Dwelling Units Calculations		
Annual Average Daily Flow (GPD)	Average Flow Per EDU (GPD)	EDU's
630,000	310	2,032

Section 3 – Need for Project

The purpose of this section is to identify system needs and deficiencies based on a thorough evaluation of available information as well as specific issues noted by Chesterfield. Proposed alternatives to target the needs described herein are detailed in a subsequent section of this report.

3.1 Growth Areas and Population Trends

A. Population Trends

The United States Census Bureau counts and tabulates population every 10-years. Data is available for Madison County, Delaware County, Chesterfield and Daleville. No Data is available for the Mounds State park. **Table 3-1** shows the data from the year 1900 to the year 2010. The Census Bureau also estimates future population for counties, which is shown in **Table 3-2**.

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Since both Madison and Delaware Counties show declining projections, a projection was created for Daleville and Chesterfield based on a 0.3% annual growth rate. A 0.3% annual growth rate was the basis of design due to Indiana annual average growth rate being 0.3% (obtained from an article by IU Kelly school

of Business 2016). This projection is illustrated in **Table 3-3**. For the 20-year planning area, the design population is 4,588. This design population includes Chesterfield and Daleville. Since there is no population data on Mounds and no population increase is expected, Mounds was not considered to have an impact on this projection.

Table 3-3
Town's Projected Population

Year	Chesterfield Projected Population	Daleville Projected Population	Total Projected Population
2040	2,786	1,802	4,588

3.2 Health, Sanitation and Security

As discussed in Section 2, the Chesterfield WWTP Operator and other Town employees have been repeatedly exposed to a toxic chemical released as a gas/vapor from the raw wastewater entering the Main Lift Station (Main LS) and Wastewater Treatment Plant (WWTP) since 2013. Extensive testing and investigation from several companies and government agencies has failed to identify the source or chemical causing the problem. In fact, the Operator was recently sent to the Emergency Room as a result of this unknown chemical being released at the plant. This hazardous condition must be addressed to prevent future health problems with plant personnel and the public.

Most of the facilities of the WWTP are in very good condition. The treatment plant currently meets all NPDES permit limits reliably. On November 1, 2017, IDEM placed a 1 mg/l phosphorus limit on Chesterfield's WWTP effluent as part of their new NPDES Permit. Currently, the WWTP is not designed to remove phosphorus to this level. The new permit states that compliance with the new limit must be achieved thirty-six months after the effective date of the NPDES Permit. **Table 3-4** shows the schedule required by the Indiana Department of Environmental Management (IDEM) for Chesterfield to comply with the new phosphorous limit.

Table 3-4
IDEM Phosphorous Compliance Schedule

Task	IDEM Date
NPDES Permit with Phosphorus Limitation Schedule of Compliance Effective	November 1, 2017 (Permit Effective Date)
Update IDEM on Desired Improvements for Phosphorus Compliance with Phosphorus Limitation	May 1, 2018 (6 Months from Permit Effective Date)
Finish Design Documents and Submit Construction Permit Application	January 1, 2019 (14 Months from Permit Effective Date)
Begin Construction	October 1, 2019 (23 Months from Permit Effective Date)
Update IDEM on Construction Progress	July 1, 2020 (32 Months from Permit Effective Date)

Construction Complete/Facilities Operational	October 1, 2020 (35 Months from Permit Effective Date)
Phosphorus Compliance Achieved	November 1, 2020 (36 Months from Permit Effective Date)

As shown in **Table 3-4**, IDEM will require Chesterfield to meet the effluent of 1 mg/l by November 1, 2020. IDEM also requires all treatment plants with phosphorous limits to have the ability to remove phosphorous with chemical addition.

The Chesterfield wastewater plant is currently design with a biological phosphorous removal process. This process currently is removing about half of the phosphorous. Even with this removal, the plant has an average effluent concentration of 1.7 mg/l, which does not meet the required effluent limit of 1 mg/l.

3.3 Aging Infrastructure

A. Lift Stations

Currently, Chesterfield maintains four (4) lift stations. The oldest lift station is the Mounds Lift Station (Mounds), which pumps wastewater water from Mounds State Park to Chesterfield collection system with a max flow rate of 50 GPM. This lift Station was built in 1980 and in the last 15-years has no records of replacing pumps. The pumps, controls, and lift station structure are all in poor condition. Due to these reasons it is recommended that the Town replaces this lift station.

As for the other three (3) lift stations, they are still in relatively good condition and there are no records indicating any mechanical problems with the pumps and controls. However, the Main LS, which is in a residential neighborhood, has at times released a toxic gas/vapor from the incoming raw wastewater creating a public health concern. For this reason, it is recommended that the Town address this problems at this lift station.

B. Wastewater Treatment Plant

As discussed in Section 2, the WWTP is generally operating under its rated average design capacity and meets all the NPDES discharge limits. Changes to the WWTP are needed for the WWTP to meet its new phosphorus limit.

In addition, miscellaneous plant improvement items have been identified which must be addressed to eliminate hazardous working conditions for the plant operator and more efficiently operate the treatment plant. These miscellaneous problems and improvements necessary for the new phosphorous limit are described below.

1. Headworks

The town has noted that there is a toxic gas/vapor release issue at the Main LS and WWTP headworks creating a public health concern. The influent mechanical screen routinely freezes in the winter causing flooding

problems in the headworks and operational problems in the downstream aeration tanks and clarifiers.

2. Fermenter, Anaerobic, Aeration and Final Clarifier Tanks

The Fermenter, Anaerobic, and Aeration tanks have not been noted from the town of having any issues. These tanks will also meet the new requirements required by IDEM due to the chemical addition for phosphorus removal.

The secondary clarifiers are not equipped with adequate skimming devices and build up large amounts of algae causing suspended solids problems in the plant's effluent and reducing the disinfection efficiency of the downstream UV system. This algae problem will also reduce the ability of the plant to meet the new effluent phosphorus limits due to suspended algae particles in the effluent.

3. UV Disinfection and Cascade Aeration

During winter months when disinfection is not required, the UV units must be pulled from the channel and stored. There currently is no way to store the UV units so the operator either must leave them in the channel or set them outside.

The plant's effluent UV and post aeration channel has no cover. There is significant algae growth in this section of the plant requiring frequent cleaning and creating suspended solids issues in the plant's effluent. Since the UV channel is open, the UV light can cause eye damage to personnel working in that area of the plant. Algae growth is also a health and safety problem because toxic algae blooms could occur. The algae will also reduce the ability of the plant to meet the new effluent phosphorus limits due to suspended algae particles in the effluent.

4. Sludge Tanks and Dewatering System

Chesterfields Wastewater treatment plant has a sludge pump room that is classified as a confined space. Since this room is considered a confined space it takes special provisions to work on all equipment in the room. Even with the provisions to work on the equipment, working in a confined space is a hazardous condition and is a safety issue. Along with this room being unsafe due to the confined space classification, the room does not have adequate ventilation. It is recommended that the Town resolve this issue.

Other things noted about the dewatering system is there is no sludge pump or piping going from the 3rd sludge holding tank to the dewatering bagging system. This essentially makes the 3rd sludge holding tank unusable.

5. Miscellaneous Items

- The current compressor air dryer is undersized causing condensation problems in the main control panel solenoid valves. This will cause premature failure of the plant's main aeration tank control system.
- Two (2) electrical boxes on the aeration tanks block the walkways restricting mobility for access and maintenance. This creates a hazardous working condition for the operator.
- The blower/control building is in a low-lying area and currently floods during rain events damaging equipment and creating a hazardous working condition for the operator. There are no drains to divert storm water away from the building.
- The Town's existing blowers have recently experience mechanical and electrical failures requiring repeated repairs. These blowers are in need of complete replacement.
- The plant also has no way of receiving Vac truck waste from the Town's sewer and lift station cleaning operations. This prevents the operator from performing necessary routine collection system maintenance.

It is recommended to the Town that these issues be resolved to eliminate hazardous working conditions and help in the overall efficiency of the process and maintenance of the treatment plant.

3.4 Reasonable Growth

As mentioned in Section 1-Project Planning and above in paragraph 3.1, the population is projected to have an insignificant growth rate of 0.3%. This projected population increase will not have a significant impact on either the collection system or the wastewater treatment plant. Since the WWTP is currently well under its average design capacity, no expansion of the WWTP is needed other than changes required to meet the new phosphorus limit and address the items described in the previous section.

Currently, Chesterfield does not have utility mapping of their wastewater system. Mapping of the Town's wastewater infrastructure is a useful tool for growth and repairs. In addition, IDEM is making utility mapping a regulatory requirement. Therefore, it is recommended that a map of the entire wastewater system be created.

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Section 4 – Alternatives Considered

4.1 Phosphorus Removal Alternatives

A. No Action Alternative

If effluent phosphorous levels are not addressed, the Town will be in violation of their new NPDES permit issued November 1, 2017. The permit establishes an effluent limit for phosphorus of 1 mg/l or less. Currently, the plant is not meeting this effluent limit. The permit establishes November 1, 2020 as the date the limit will go into effect and includes a schedule of compliance specifying intermediate dates for planning, design, and construction. This process must be started in a timely fashion in order to meet these dates. Therefore, no action is not a feasible alternative.

B. Optimize Existing Facilities Operation (Enhanced Biological Phosphorous Removal)

Enhanced biological phosphorous removal (EBPR) is a process by which phosphorous accumulating organisms (PAOs) are selected for in initial anaerobic environment and subsequently store phosphorus in an aerobic environment. The advantage of this alternative is that a substantial portion of phosphorus can be economically removed from wastewater without the use of expensive chemicals. The existing Aero-Mod system is designed to provide for biological phosphorous removal. The manufacturer of the Aero-Mod system claims that the existing facilities can produce effluent with phosphorus levels under 1 mg/l. This would be achieved by optimizing dissolved oxygen levels to ensure that anaerobic conditions are achieved in the selector tank. However, a review of the WWTP's MROs show that effluent phosphorous levels under 1.0 mg/l are not often achieved. The Operator has experienced complications when attempting to operate the WWTP under the required conditions. Due to the variety of factors effecting the performance of biological process, it can be difficult to reliability meet phosphorous effluent limits with biological treatment only, and IDEM has not historically allowed EBPR without some form of chemical back-up. For these reasons, optimization of existing facilities will not be considered further.

C. Chemical Phosphorus Removal

The traditional method of removing phosphorus from wastewater is to add a coagulant that reacts with the soluble phosphorus to form an insoluble compound that agglomerates into larger settleable particles. These particles are removed along with other suspended solids in the clarifiers. In Indiana, the chemical typically used is aluminum sulfate. The following is a list of advantages and disadvantages of chemical removal.

1. Pros:

- a. This alternative is relatively easy to implement into the existing WWTP process.

- b. Chemical phosphorous removal is an established and reliable removal method.

2. Cons:

- a. Alum chemical costs are significant and noticeably increase the annual operation and maintenance costs of the treatment plant. These costs can fluctuate given changes in alum prices and fluctuating phosphorus levels.
- b. Metal coagulation does have some adverse impacts in the operation of a WWTP. Assuming a 1.5:1 mole ratio of Aluminum to Phosphorus, about 5.70 dry pounds of sludge is produced per pound of phosphorus. This is a big impact. It causes the mixed liquor in the aeration tanks to increase, and this consumes valuable aeration tank space.
- c. Sludge production is increased, and thus the amount of sludge to be disposed of is greatly increased. This impacts the cost of polymer and sludge disposal.

Table 4-1 is provided to show the amounts of phosphorus to be removed, and how much alum would be needed to accomplish this. An average influent phosphorous concentration of 2.94 mg/l was determined using the past three years of MRO data. Assumptions include a molar dose of 1.5 moles of Al⁺ per mole of P, resultant pounds of 1.31 Al⁺ per pound of P and 0.48 pound of Al⁺ in 1 gallon of 48% alum.

Table 4-1
Amount of Alum Needed to Remove Phosphorus
Year 2040 Anticipated Loadings

Parameter	Current Annual ADF (0.63 MGD)	Rated Plant Capacity (1.00 MGD)	Peak Month ADF (1.29 MGD)
Influent Phosphorus as P	15.5 lbs/day	24.5 lbs/day	31.6 lbs/day
Mass of Al ⁺ needed	20.3 lbs/day	32.0 lbs/day	41.3 lbs/day
Flow of Alum needed	41.3 gpd	65.3 gal/day	84.3 gpd
	1.7 gph	2.7 gal/hour	3.5 gph
Annual amount of Alum used	15,075 gallons	23,835 gallons	
Storage volume needed for 30 days of use			2,528 gallons
Chemical Sludge Produced (dry weight)	88 lbs/day	140 lbs/day	

It would be desirable for the Town to be able to purchase alum by the tanker truck load so as to lower the price and minimize the number of times chemical has to be purchased. Therefore the new chemical storage and feed facility should be accessible by tanker truck. The location that appears best on the property is west of the Aero-Mod system. The building will include the chemical feed pumps and

the alum storage tank. One 3,000-gallon alum storage tank would be appropriate in order to receive the tanker truck of alum.

There are two (2) possible locations the alum could be dosed into the wastewater. These locations are upstream of the four sets of clarifiers and selected to provide both good mixing and sufficient contact time, prior to reaching the clarifiers, allowing the alum-phosphorus precipitant to form larger particles ideal for settling.

The proposed locations are:

1. Between first stage and second stage aeration
2. In the second stage aeration tank

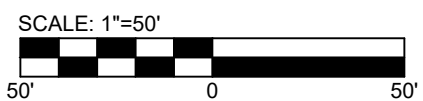
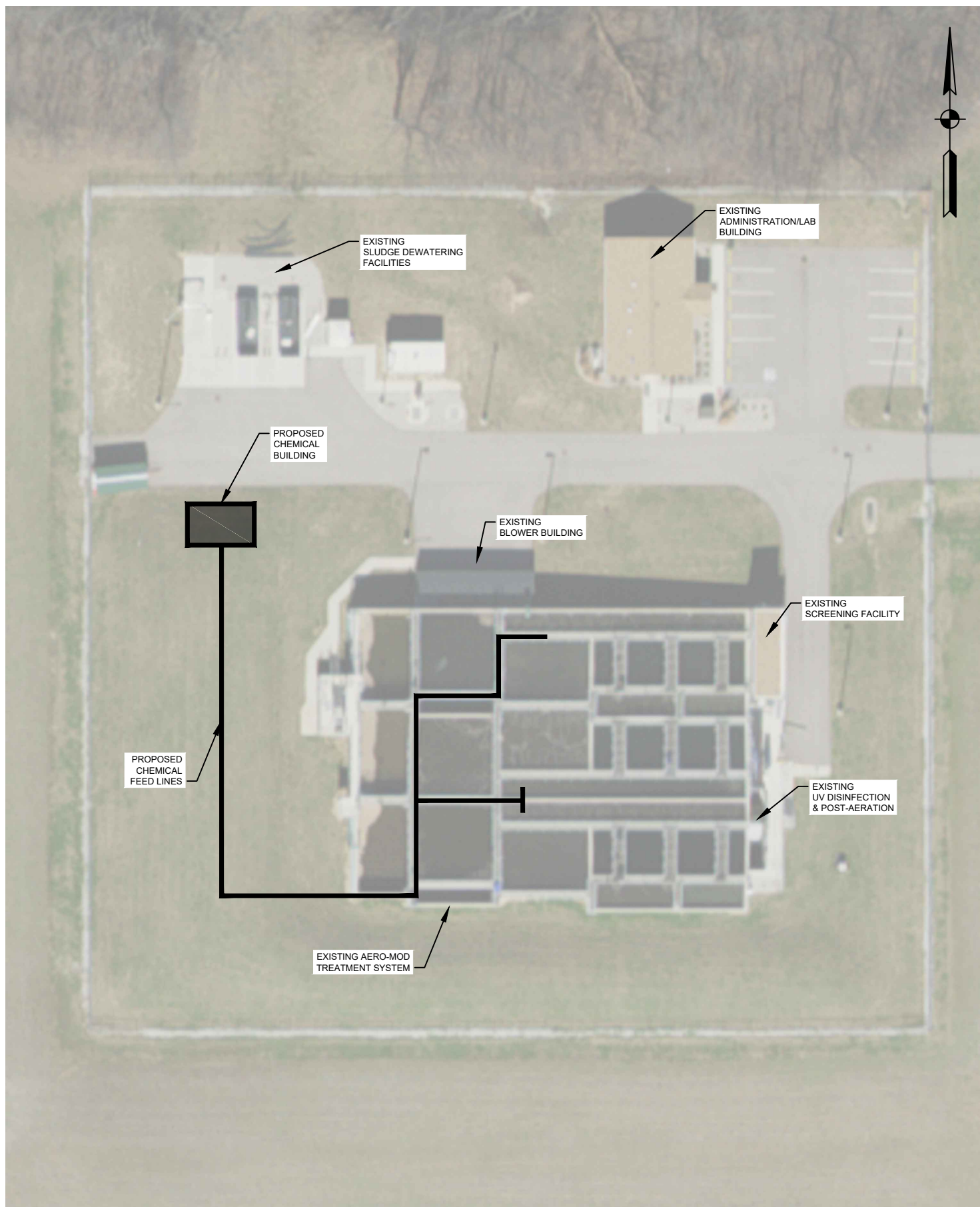
Figure 4-1 shows the proposed conceptual plan for the new chemical delivery, storage and feed facilities. **Table 4-2** and **4-3** are provided below to show the estimate of probable construction and O&M&R costs, respectively. For O&M&R costs, an annual influent flow rate to the WWTP of 1.0 MGD is assumed. Detailed cost estimates for all costs presented herein can be found in **Appendix F**.

Table 4-2
Chemical Phosphorus Removal
Estimate of Construction Cost

Item	Cost
New Chemical Building	\$118,000
Equipment	\$116,000
Chemical Feed Lines	\$35,000
Bonding and Mobilization	\$14,000
Subtotal	\$283,000
Contractor's Construction Administration (10%)	\$29,000
Contingency (10%)	\$29,000
Total	\$341,000

Table 4-3
Chemical Phosphorus Removal
Estimate of Annual O&M&R Cost

Item	Cost
Manpower	\$2,300
Electrical and Heating Cost	\$900
Chemical (Alum)	\$20,400
Equipment Replacement Cost	\$4,200
Chemical Sludge	\$9,200
Total Estimated O&M&R	\$37,000



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CHEMICAL PHOSPHORUS REMOVAL
FIGURE 4-1

D. Combined Chemical and Biological Phosphorous Removal

By utilizing the biological treatment capabilities of the existing system, the amount of chemical required to achieve adequate phosphorous removal could be minimized. MRO data indicates that the existing system achieves an average phosphorous reduction of 57%. Calculations for sizing the chemical system were rerun assuming this amount of the phosphorous removal is achieved through EBPR. **Table 4-4** presents the revised phosphorous requirements.

Table 4-4
Amount of Alum Needed to Remove Phosphorus
Combined Chemical & Biological Phosphorous Removal

Parameter	Current Annual ADF (0.63 MGD)	Rated Plant Capacity (1.00 MGD)	Peak Month ADF (1.29 MGD)
Influent Phosphorus as P	6.7 lbs/day	10.5 lbs/day	13.6 lbs/day
Mass of Al+ needed	8.7 lbs/day	13.8 lbs/day	17.8 lbs/day
Flow of Alum needed	17.8 gpd	28.1 gpd	36.2 gpd
	0.74 gph	1.17 gph	1.5 gph
Annual amount of Alum used	6,497 gallons	10,256 gallons	
Storage volume needed for 30 days of use			1,087 gallons
Chemical Sludge Produced (dry weight)	38 lbs/day	60 lbs/day	

This smaller system lowers upfront and annual costs associated with the chemical system. Costs are presented in the **Table 4-5** and **4-6** below.

Table 4-5
Combined Chemical & Biological Phosphorus Removal
Estimate of Construction Cost

Item	Cost
New Chemical Building	\$118,000
Equipment	\$87,000
Chemical Feed Lines	\$35,000
Bonding and Mobilization	\$12,000
Subtotal	\$252,000
Contractor's Construction Administration (10%)	\$26,000
Contingency (10%)	\$26,000
Total	\$304,000

Table 4-6
Combined Chemical & Biological Phosphorus Removal
Estimate of Annual O&M&R Cost

Item	Cost
Manpower	\$2,300
Electrical and Heating Cost	\$800
Chemical (Alum)	\$8,800
Equipment Replacement Cost	\$3,400
Chemical Sludge	\$4,500
Total Estimated O&M&R	\$19,800

4.2 Mounds State Park Lift Station Improvements

A. No Action Alternative

The existing lift station for Mounds State Park is in poor condition. The floor of the lift station is corroded and deteriorating, and the equipment is reaching the end of its useful life. If these concerns are not addressed, the lift station has the potential to fail. Additionally, the current lift station is a confined space and presents a hazardous work condition. For these reasons, no action is not an acceptable alternative and will not be considered further.

B. Replace Existing Lift Station (Dry Pit)

This lift station would be replaced with a new submersible station. The capacity of the existing pumps is 50 gpm. This flow rate does not produce sufficient velocity in a 4-inch line. As such, it is recommended that the new pumps have a capacity of 80 gpm. Replacement would also include the installation of a flow meter. This would allow the Town to bill Mounds State Park based directly on the amount of wastewater generated. This data would also provide an idea of the extent of the Park's infiltration and inflow (I&I) problem. **Table 4-7** presents the estimated construction cost. Because this is replacement of an existing facility, annual O&M&R costs will not change.

Table 4-7
Estimate of Construction Cost

Item	Cost
Dry Pit Lift Station	\$167,000
Bonding and Mobilization	\$9,000
Subtotal	\$176,000
Contractor's Construction Administration (10%)	\$18,000
Contingency (10%)	\$18,000
Total	\$212,000

C. New Submersible Lift Station

A new lift station could use submersible pumps instead of the existing dry pit. Submersible type lift stations are often preferred to dry pit lift stations as they eliminate confined space requirements. This alternative also includes a new flow meter. **Table 4-8** presents the estimated construction cost. Annual O&M&R costs will not change.

Table 4-8
Estimate of Construction Cost

Item	Cost
Submersible Lift Station	\$154,000
Bonding and Mobilization	\$8,000
Subtotal	\$162,000
Contractor's Construction Administration (10%)	\$17,000
Contingency (10%)	\$17,000
Total	\$196,000

4.3 Odor Control at Main Lift Station

A. No Action Alternative

If no action is taken, the lift station will continue to release offensive odors that disturb adjacent dwellings. The Main Lift Station is located next to the Timberline Valley RV Resort and is within the vicinity of several other homes and businesses. The Town has received complaints about a chemical type smell coming from the lift station. If concerns are not addressed, the Town will likely continue to receive complaints and customers may be deterred from the RV resort. In addition to being unpleasant, this gas has also been known to negatively impact the health of the plant operational staff. Continuing to release toxic gas to is therefore not an acceptable option. A no action scenario would have no upfront costs and would not be associated with any change in O&M&R costs.

B. Biological Filter System

One alternative for treating contaminated air is a biological treatment system such as a biotrickling filter. These systems use microorganisms grown on a synthetic media to degrade contaminants within the air. This type of system would not work in this application because the odor is not associated with organics but is instead chemical in nature. Therefore, this alternative will not be considered further.

C. Scrubber System

Scrubber systems use media to capture unwanted contaminants from the air. Unlike a biological filter, a dry media scrubber would not require process water and would not be affected by variable loading. However, dry media filter systems have a finite capacity. They have relatively low upfront costs, but frequent media changes increase O&M&R.

Because the gas of concern is currently unknown, it is recommended that the first step of selection of any kind of air filter system be comprehensive testing of the gas. A budgetary cost has been included for performing this testing. This will allow for more targeted and efficient media to be selected.

Table 4-9 and **4-10** provided below show the estimate of probable construction and O&M&R costs, respectively.

Table 4-9
Estimate of Construction Cost

Item	Cost
Air Quality Testing	\$1,000
Filter System	\$50,000
Bonding and Mobilization	\$3,000
Subtotal	\$54,000
Contractor's Construction Administration (10%)	\$6,000
Contingency (10%)	\$6,000
Total	\$66,000

Table 4-10
Estimate of Annual O&M&R Cost

Item	Cost
Manpower	\$1,800
Electrical	\$1,600
Equipment Replacement Cost	\$1,100
Media Replacement	\$4,400
Total Estimated O&M&R	\$8,900

4.4 Aeration Blower System Improvements

A. No Action Alternative

The existing aeration system blowers have experienced significant mechanical and electrical failures during the recent past. This system is critical toward maintaining proper, reliable, and efficient treatment capacity within the Town's wastewater treatment plant in order to maintain compliance with their NPDES permit.

If no action is taken, the WWTP will continue to have a significant risk in not being able to comply with their permit.

B. New Aeration Blowers External to the Existing Blower Building

This alternative includes the installation of four (4) new 75 HP aeration blowers, external to the existing blower building. These blowers would be contained within individual weatherproof-soundproof enclosures. This alternative also includes new variable frequency drives (VFDs) for each new blower unit. The new VFDs would

be located inside of the existing blower building. Selection of this alternative will not result in a change in existing O&M&R expenditures as the proposed improvements involve replacement, in-kind, of existing equipment.

Table 4-11
Estimate of Construction Cost for New Aeration Blowers External to the Existing Blower Building

Item	Cost
Four (4) New Blowers w/ Enclosures	\$200,000
Four (4) New 75 HP VFDs	\$50,000
New Concrete Equipment Pad	\$3,000
Electrical & Instrumentation Costs	\$38,000
Bonding and Mobilization (5%)	\$15,000
Subtotal	\$306,000
Contractor's Construction Administration (3%)	\$10,000
Contingency (10%)	\$37,000
Total	\$353,000

C. New Aeration Blowers Located Inside Existing Blower Building

This alternative includes the replacement of the existing aeration system blowers and VFDs with new equipment, located inside of the existing blower. This alternative will require significant modifications to the existing blower building to accommodate removal and replacement of the existing equipment. As with the previously discussed alternative, this alternative also includes new variable frequency drives (VFDs) for each new blower unit. The new VFDs would be located inside of the existing controls within the existing blower building. Selection of this alternative will not result in a change in existing O&M&R expenditures as the proposed improvements involve replacement, in-kind, of existing equipment.

Table 4-12
Estimate of Construction Cost for New Aeration Blowers Internal to the
Existing Blower Building

Item	Cost
Four (4) New Blowers	\$165,000
Four (4) New 75 HP VFDs	\$50,000
Modifications to the Existing Blower Building	\$100,000
Electrical & Instrumentation Costs	\$50,000
Bonding and Mobilization (5%)	\$19,000
Subtotal	\$384,000
Contractor's Construction Administration (3%)	\$12,000
Contingency (10%)	\$40,000
Total	\$436,000

4.5 Miscellaneous WWTP Improvements

A. No Action

A number of items have been identified that are preventing optimal operation of the existing facilities. These deficiencies result in additional labor requirements and increased maintenance costs, and in several instances jeopardize operator safety. If these items are not addressed, annual O&M&R costs will continue to reflect this. Additionally, in instances where unnecessary wear is placed on existing equipment, taking no action would result in a decreased useful life.

B. Perform Miscellaneous Improvements

The following are the improvements that have been identified. While these items are presented together herein they could be broken out as desired. The locations of these improvements are shown on **Figure 4-2**.

1. Relocate the Electrical Boxes Along Walkways

The current locations of the boxes obstruct the walkway (see **Figure 4-2**). These boxes could be relocated to the other side of the railings to facilitate easier movement between the tanks.

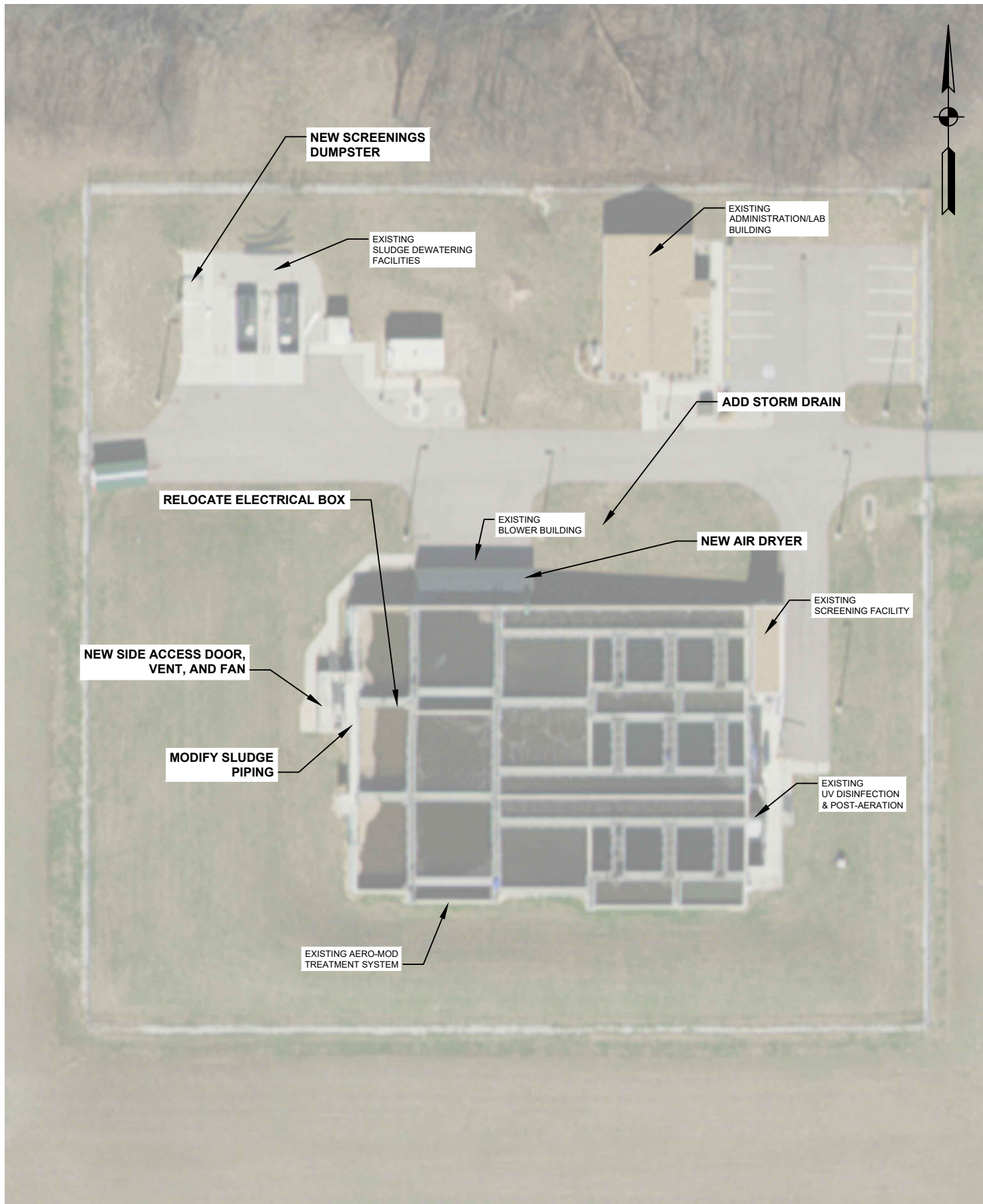
2. Install Side Access Door for Sludge Pump Room

Currently, this is a confined space with the only access point via a ladder from the top of the room. A side door would be a safer means of access and would eliminate confined space requirements.

3. Install Vent and Fan in Sludge Pump Room

This would improve ventilation within the sludge pump room.

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MISC. WWTP IMPROVEMENTS
FIGURE 4-2

4. Add Appropriately Sized Air Dryer to Blower Room

The existing air dryer is undersized and cannot keep up with the air compressors.

5. Install Screenings Dumpster for Vacuum Truck

The plant does not have a facility for dumping material collected from sewer cleanings. A drying bed system would this provide location for dumping. This would allow for easier and less costly sewer cleanings.

6. Add Storm Drain Outside Control Room

The WWTP's control room has had reoccurring issues with flooding due to improper sloping of the concrete pad surrounding it. Flooding of the control room is safety hazard and threatens the operation of the plant. A new storm drain would capture this water before it can pond around the control room.

7. Modify Sludge Piping

The plant has three (3) separate sludge storage tanks. Currently, sludge can be pumped to the drying beds from tanks "A" and "B," but not tank "C." Additional piping should be added to allow the existing pump to pull from tank "C." Submersible pumps exist in each tank to allow the operator to pump sludge between the tanks. However, the current operational set-up causes frequent air locking of the lines. New connections between the tanks would solve this issue.

8. Replace All Plant Piping

The existing Aero-Mod plant uses polyvinyl chloride (PVC) for submerged piping. The PVC joints commonly leak and have become a recurring maintenance issue. In several applications temperatures on PVC air piping exceed those recommended for PVC, causing additional cracks and leaks. Because of the scale of this work, it is recommended that the Town develop an annual replacement program. A cost for this has been included in O&M&R costs.

The above items are straightforward additions and have no alternatives. The improvements can be made, or no action can be taken. A cost estimate for the above items is presented in **Table 4-13** broken down by item. It is not necessary that each item is performed. **Table 4-14** presents estimated increase in O&M&R associated with the improvements.

Table 4-13
Estimate of Construction Costs

No.	Item	Cost
1	Relocate Surge Pump Electrical Box	\$2,000
2	Side Access Door (Sludge Pump Room)	\$5,000
3	Vent and Fan (Sludge Pump Room)	\$8,000
4	Air Dryer	\$4,000
5	Drying Bed	\$46,000
6	Add Storm Drain	\$10,000
7	Modify Sludge Holding Piping	\$13,000
	Bonding and Mobilization	\$5,000
	Subtotal	\$93,000
	Contractor's Construction Administration (2.5%)	\$3,000
	Contingency (10%)	\$10,000
	Total	\$106,000

Table 4-14
Estimate of Annual O&M&R Cost

Item	Cost
Annual Plant Piping Replacement	\$10,000
Equipment Replacement Cost	\$1,200
Total Estimated O&M&R	\$11,200

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Section 5 – Evaluation of Alternatives

5.1 Life Cycle Cost Analysis (Cost and Effectiveness Analysis)

An economic analysis is useful in selecting the best alternative as it determines a measure of total money spent to implement any particular alternative. The costs of the alternatives are compared on a “present worth” basis whereby the alternative with the smallest present worth is the least costly alternative to implement. Present worth may be thought of as the sum that if invested now at a given interest rate, would provide exactly the funds required to make all necessary expenditures during the life of the project. The following cost and effectiveness analysis was completed and meets the minimum requirements of the Water Resources Reform and Development Act of 2014.

The period of time considered in the analysis is 20-years, typically used for planning municipal infrastructure improvements. The analysis is dependent on the discount (interest) rate. In planning work for public wastewater treatment facilities, the federal discount rate is used. This is found in OMB Circular No. A-94, Appendix C. The last published value is that of November 2019. The rate is 0.3% for a planning period of 20 years.

The various cost considerations for the ‘present worth’ analysis are as follows:

➤ **Construction Cost**

Construction costs are the capital cost to purchase and install the facilities and equipment. The costs are based on 2020-dollar values.

➤ **Project Related Cost**

These costs are those needed for non-construction items that are necessary to develop and finance the project. Items included are design, construction related and start-up services, financial, legal and interest during construction. This item is estimated as 25% of construction costs for the purpose of cost effectiveness analysis.

➤ **Total Estimated Project Capital**

Cost is the sum of the Estimated Construction Cost and the Project Related Costs.

➤ **Operation and Maintenance and Equipment Replacement Fund (O&M&R)**

The costs are based upon the following unit rate estimates:

- Labor costs are based on a rate of \$25.00 per hour, including benefits, overhead, and other overhead costs.
- Power costs are based on an electric rate of 8 cents per Kilowatt Hour (KWH).
- Equipment Replacement Fund annual cost is the annual funding needed to replace equipment that has an estimated service life of 15-years or less.

The annual cost assigned is the purchase cost of the particular piece of equipment divided by its estimated life.

➤ **Salvage Value**

The planning period used in the analysis is 20-years. At the end of 20-years, the structural and piping components have 20 or 30-years left to their useful life. The value of these assets is used to lower the present worth costs of the alternatives. Straight line depreciation is used.

➤ **Present Worth Analysis Method**

The total present worth of an alternative is determined by summing the initial total project cost, present worth of the operation, maintenance and equipment replacement costs and subtracting the salvage value. Some of the multiplying factors to bring items to present worth current dollars used include:

- 19.38 to bring the 20-years of O&M&R costs back to present worth;
- 0.942 to convert year 20 salvage value back to present worth.

5.2 **Phosphorous Removal**

A. **Present Worth Analysis**

Table 5-1 compares each alternative by its present worth.

Table 5-1
Present Worth Analysis
Phosphorous Removal

Alternatives	Factor	Chemical Removal Only	Chemical & EBPR
Cost Summary			
A. Estimated Construction Costs	1	\$341,000	\$304,000
B. Estimated Non-Construction Costs	0.25	\$86,000	\$76,000
C. Total Capital Cost	A+B	\$427,000	\$380,000
D. Estimated Annual O&M&R	1	\$37,000	\$19,800
E. Estimated Salvage Value	1	\$0	\$0
Present Worth			
F. Present Worth Annual O&M&R	19.38	\$717,060	\$383,724
G. Present Worth Salvage	0.942	\$0	\$0
H. Total Present Worth	C + F - G	\$1,144,060	\$763,724
I. % Higher than Least Cost Alternative		50.0%	Least Cost

B. **Non-Monetary Factors**

It is unlikely that the phosphorous removal system will be permitted if it is not sized for complete chemical removal. Because biological removal is less reliable, it is more prudent to size chemical facilities for the full capacity. However, because

some biological phosphorous removal will take place regardless, it is likely that the O&M costs for the Chemical Removal Only alternative would actually be lower than predicted.

5.3 Mounds State Park Lift Station

A. Present Worth Analysis

Table 5-2 compares each alternative by its present worth. It is noted that the expected O&M&R will be the same regardless of which alternative is selected.

Table 5-2
Present Worth Analysis
Mounds State Park Lift Station

Alternatives	Factor	Submersible Lift Station	Dry Pit Lift Station
Cost Summary			
A. Estimated Construction Costs	1	\$196,000	\$212,000
B. Estimated Non-Construction Costs	0.25	\$49,000	\$53,000
C. Total Capital Cost	A+B	\$245,000	\$265,000
D. Estimated Annual O&M&R	1	\$0	\$0
E. Estimated Salvage Value	1	\$0	\$0
Present Worth			
F. Present Worth Annual O&M&R	19.38	\$0	\$0
G. Present Worth Salvage	0.942	\$0	\$0
H. Total Present Worth	C + F - G	\$245,000	\$265,000
I. % Higher than Least Cost Alternative		Least Cost	8.2%

B. Non-Monetary Factors

A submersible type lift station is generally considered to be less of a safety hazard for operational staff than a dry pit type lift station.

5.4 Odor Control at Main Lift Station

A. Present Worth Analysis

As discussed in **Section 4**, only one viable alternative for odor and gas control at the Main Lift Station was identified. **Table 5-3** identified the present worth for this alternative.

Table 5-3
Present Worth Analysis
Odor Control at Main Lift Station

Alternatives	Factor	No Action	Scrubber
Cost Summary			
A. Estimated Construction Costs	1	\$0	\$66,000
B. Estimated Non-Construction Costs	0.25	\$0	\$17,000
C. Total Capital Cost	A+B	\$0	\$83,000
D. Estimated Annual O&M&R	1	\$0	\$8,900
E. Estimated Salvage Value	1	\$0	\$0
Present Worth			
F. Present Worth Annual O&M&R	19.38	\$0	\$172,482
G. Present Worth Salvage	0.942	\$0	\$0
H. Total Present Worth	C + F - G	\$0	\$255,482

B. Non-Monetary Factors

As discussed in Section 4, No Action is not an acceptable alternative due to the health risk currently posed.

5.5 Aeration System Blower Improvements

A. Present Worth Analysis

Table 5-4 compares each alternative by its present worth.

Table 5-4
Present Worth Analysis
Aeration System Blower Improvements

Alternatives	Factor	Blowers External to Existing Building	Blowers Internal to Existing Building
Cost Summary			
A. Estimated Construction Costs	1	\$353,000	\$436,000
B. Estimated Non-Construction Costs	0.25	\$88,000	\$109,000
C. Total Capital Cost	A+B	\$441,000	\$545,000
D. Estimated Additional O&M&R	1	\$0	\$0
E. Estimated Salvage Value	1	\$0	\$0
Present Worth			
F. Present Worth Annual O&M&R	19.38	\$0	\$0
G. Present Worth Salvage	0.942	\$0	\$0
H. Total Present Worth	C + F - G	\$441,000	\$545,000
I. % Higher than Least Cost Alternative		Least Cost	123.58%

B. Non-Monetary Factors

Individual UV Improvements does not include any improvements to the headworks and thus should not be considered a true side-by-side comparison. Only Headworks & UV Enclosures address concerns with freezing of the headworks or the toxic gases being released.

5.6 Miscellaneous WWTP Improvements

Alternatives for these items were not presented. As described in **Section 4**, these items all reduce health and safety hazards or increase the operational efficiency of the plant.

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Section 6 – Selected Plan

6.1 Recommended Project

Section 4 presented the methodology used for analyzing the developed alternatives. Based on this analysis, a recommended project was selected that includes components to address each of the identified needs. The recommended improvements are summarized below. **Figure 6-1** shows the location of these improvements.

A. Chemical Phosphorous Removal

The recommended alternative for addressing the upcoming phosphorous limitations is Chemical Phosphorus Removal. Due to the difficulties of permitting and effectively biological phosphorous removal it is prudent to size the proposed facilities for chemical removal only. Any biological removal that may be achieved will serve to lower O&M&R cost by reducing chemical usage and sludge produced.

B. New Submersible Lift Station for Mounds State Park

It is recommended that the exiting lift station be replaced with a submersible lift station as it is a more desirable and cost-effective alternative.

C. Scrubber System at Main Lift Station

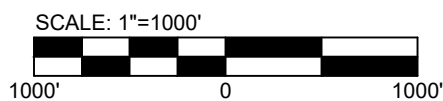
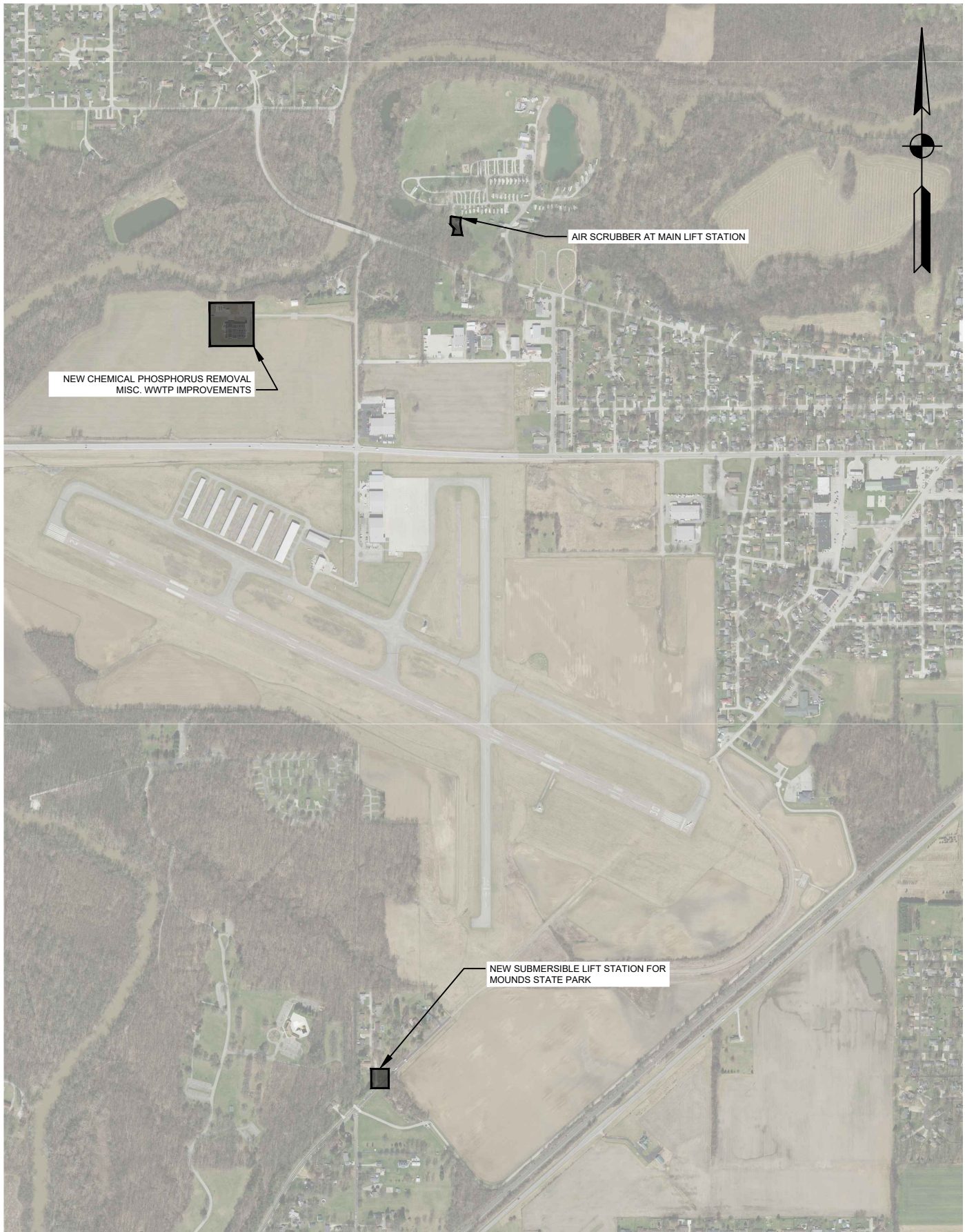
The installation of an air scrubber is recommended to remove undesirable contaminants that are volatilized at the lift station.

D. Aeration Blower System Improvements

The replacement of the existing aeration blower equipment is recommended to afford the Town's operations staff reliability and operational efficiency for day to day operations of the WWTP. The existing equipment has experienced repeated mechanical and electrical failures and is nearing a state of disrepair. Without a reliable aeration system, the Town will not be able to comply with the discharge permit effluent limits outlined in their NPDES permit. The selected plan includes four (4) new aeration blowers complete with individual weatherproof / soundproof enclosures. The selected plan involves installation of the new blowers on a concrete slab constructed immediately adjacent to the existing blower building. The selected plan also includes the installation of four (4) new variable frequency drives (one for each blower) inside of the existing blower building.

E. Miscellaneous WWTP Improvements

It is recommended that all miscellaneous improvements to the Wastewater Treatment Plant (WWTP) that were identified in **Section 4** be completed as part of this project.



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A wealth of resources to master a common goal.

TOWN OF CHESTERFIELD
MADISON COUNTY, INDIANA
PRELIMINARY ENGINEERING REPORT
PROPOSED PROJECT
FIGURE 6-1

6.2 Project Schedule

This project should be constructed in a timely fashion. **Table 6-1** shows a proposed schedule for this project.

Table 6-1
Possible Project Time Sequence

Activity	Completion Date
Town Submits SRF Funding Application	June 2020
Town Conducts PER Public Meeting	July 2020
Town Adopts PER Resolutions	July 2020
Town Finalizes Wholesale Agreement with DCRWD	August 2020
Town Advertises for Construction Bids	August 2020
Town Receives Construction Bids	September 2020
Town Conducts Public Hearing on Rates	October 2020
Town Adopts Rate and Bond Ordinances	October 2020
SRF Pre-closing	October 2020
SRF Closing	November 2020
Town Issues Construction Notice to Proceed	November 2020
Construction Substantial Completion (9 months)	August 2021
11-month Warranty Inspection	July 2022

6.3 Permit Requirements

It is anticipated that permits will be required for construction of this project, including:

- IDEM Construction Permit
- IDEM Rule 5 Sediment and Erosion Control Permit

6.4 Sustainability Considerations

The phosphorous removal component of this recommended project will reduce the amount of phosphorous released into the environment via the plant effluent. This is desirable from an environmental standpoint, as excess phosphorous in natural water bodies leads to eutrophication and subsequent degradation of the ecosystem. The other components of this project will not have a substantial impact on the sustainability of the WWTP.

6.5 Recommended Project Cost Estimate (Engineer's Opinion of Probable Cost)

Table 6-2 shows the estimated total project cost. Table 6-3 breaks out the non-construction costs.

Table 6-2
Total Project Cost
Wastewater Treatment Plant Improvements Project

Item	Cost
Chemical Phosphorous Removal	\$341,000
Main Lift Station Air Scrubber	\$66,000
Aeration Blower System	\$353,000
Submersible Lift Station at Mounds State Park	\$196,000
Miscellaneous Improvements	\$106,000
Total Construction Cost⁽¹⁾	\$1,062,000
Non-Construction Costs	\$439,075
Total Capital Cost	\$1,501,075
⁽¹⁾ Includes 10% Construction Contingency	

Table 6-3
Non-Construction Costs
Wastewater Treatment Plant Improvements Project

Item	Cost
Study	\$17,675
Design	\$73,300
Field Investigation & Survey	\$7,500
Construction Engineering	\$27,000
Bidding/Negotiating	\$5,000
Construction Inspection	\$157,500
American Iron and Steel Act (AIS)	\$5,000
Erosion Control Plan	\$5,000
Geotechnical Investigation	\$7,500
Update O&M Manual	\$10,000
Post-Construction Assistance	\$5,000
Rate Consultant	\$44,100
Legal / Financial Services	\$9,500
Legal / Bond Council	\$40,000
Regulatory Assistance	\$10,000
Wage Monitoring	\$15,000
Total Non-Construction Costs	\$439,075

6.6 Annual Operating Budget

Table 6-4 shows the disbursements for the wastewater utility for year 2017.

**Table 6-4
Current Annual Operating Budget**

Item	2017 Budget
Employee Salary	\$139,848
Employee Benefits	\$77,325
Training	\$463
Office Supplies	\$1,220
Misc. Supplies & Operational Costs	\$22,310
Professional Services	\$50,775
Chemicals	\$1,348
Insurance	\$10,472
Heat	\$598
Electrical	\$133,205
Gasoline	\$2,151
Repairs and Maintenance	\$6,440
Equipment	\$38,094
Other Services	\$9,797
Sewer Depreciation	\$41,400
Total O&M&R Costs	\$535,447
Bond Repayment	\$722,400
Total Operational Costs	\$1,257,847

6.7 Annual O&M Costs

Table 6-5 details new Operations and Maintenance (O&M) costs associated with the proposed project.

**Table 6-5
Estimate of Increased Annual O&M Costs
Wastewater Treatment Plant Improvements Project**

Item	Cost
Chemical Phosphorous Removal	\$32,800
Main Lift Station Air Scrubber	\$7,800
Miscellaneous Improvements	\$800
Annual Piping Replacement Budget	\$10,000
Total Increase in O&M Costs	\$51,400

6.8 Reserves

Table 6-6 details the utility's new and existing Short-Lived Assets (SLAs).

Table 6-6
Estimate of Increased Annual O&M&R Cost
Wastewater Treatment Plant Improvements Project

Description	Replacement Cost	Useful Life	Annual Cost
Estimated New Short-Lived Assets Annual Costs			
Chemical Phosphorous Removal Equipment	\$62,600	15	\$4,200
Main Lift Station Air Scrubber	\$15,900	15	\$1,100
Estimated Existing Short-Lived Assets Annual Costs			
Timberline Lift Station Pumps	\$80,000	15	\$5,400
HWY 67 Lift Station Pumps	\$20,000	15	\$1,400
HWY 32 Lift Station Pumps	\$25,000	15	\$1,700
Mounds Lift Station Pumps	\$25,000	15	\$1,700
Mechanical Screen	\$100,000	15	\$6,700
Anaerobic Mixers	\$40,000	15	\$2,700
Blowers	\$125,000	15	\$8,400
Progressive Cavity Pumps	\$20,000	15	\$1,400
Polymer Pump	\$15,000	15	\$1,000
Surge Pumps	\$20,000	15	\$1,400
Drain Lift Station Pumps	\$20,000	15	\$1,400
Digested Sludge Pumps	\$20,000	15	\$1,400
Wash Water Pumps	\$20,000	15	\$1,400
Total New & Existing Short-Lived Assets			\$41,300

6.9 Debt Repayment

The proposed project will require financing either fully or partially with a loan. The RUS guidance documents for Preliminary Engineering Reports direct that the report be based on loans, not grants from RUS. RUS will then evaluate the proposed project for possible RUS grant funding.

Estimated monthly user rates for the proposed project will be calculated for different funding scenarios. These rates are preliminary in nature and are presented only to provide the Town with an estimated sanitary user rate following the completion of the proposed project. Additional rate studies will be completed to determine a more accurate monthly sanitary user rate.

The current schedule of rates have been provided in **Section 2**. A monthly sewer bill for use of 4,000 gallons per month is \$65.05.

6.10 Green Project Reserve

At this time, the Town does not intend to pursue green project reserve incentives given the scope and shovel-ready nature of the proposed project.

Section 7 – Conclusions and Recommendations

7.1 Recommended Project

The recommended project is presented in **Section 6** of this report. The project includes the installation of chemical phosphorus treatment equipment at the Town's WWTP, a new submersible lift station at the Mounds State Park (to replace an existing dry-pit style station), a new air scrubber system at the Town's Main WWTP Lift Station, four (4) new aeration blowers and VFDs located outside of the existing blower building within individual weatherproof / soundproof enclosures, and miscellaneous other improvements at the Town's WWTP.

7.2 Additional Recommendations

Prior to the selection of an air scrubber system for the Main Lift Station, it is recommended that air quality testing be conducted. This will allow for selection of optimum of the filter media to be used in the scrubber system.

It is not anticipated that any additional special studies, coordination, or scheduling will be required to complete the recommended project.

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Section 8 – Legal, Financial & Managerial Capabilities

8.1 General

Draft copies of the Authorized Representative and PER Acceptance Resolutions are included in **Appendix G**. The Town intends to proceed with bidding the proposed project as soon as environmental and PER clearances are received. The Town will be seeking SRF reimbursement for any project-related expenditures that occur prior to loan closing with the SRF.

The Town does not currently have an Asset Management Plan (AMP). It is the intent of the Town, through this project, to complete the assembly of an AMP prior to the final disbursement request related to the proposed project.

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Section 9 – Public Participation

9.1 General

Public participation information (published notice, newspaper affidavit, sign-in sheet, public comments, and minutes) for this PER will be added to this PER under **Appendix H**.

A public hearing is tentative scheduled for early July 2020 (July 13, 2020). Written comments from the public will continue to be received through July 18, 2020.

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APPENDIX A

MOUNDS AGREEMENT

AGREEMENT FOR SANITARY SEWER CONNECTION

THIS AGREEMENT, by and between the INDIANA DEPARTMENT OF ADMINISTRATION, a state entity, acting for and on behalf of the INDIANA DEPARTMENT OF NATURAL RESOURCES (hereinafter referred to as "Department") and, the TOWN OF CHESTERFIELD (hereinafter referred to as "Town"), WITNESSETH THAT:

WHEREAS, the Town, by and through its Board of Trustees operates a sanitary sewage collection system in and for said Town and in certain areas adjacent to said Town in Madison County, Indiana, as authorized by law; and

WHEREAS, the Department operates the Mounds State Park, in Madison County, Indiana, and needs a reliable method of disposal of its wastewater therefrom and desires to contract for such service from Town;

NOW, THEREFORE, in consideration of the mutual undertaking of the Parties, the Parties hereto agree as follows:

TOWN SHALL CONSTRUCT, as soon as practicable, a sewage collection system to the Mounds State Park property line at a point proximate to the intersection of the east property line of Mounds State Park and the north right-of-way line of Mounds Road. Said sewage collection system to be composed of 5,280 linear feet of 4 inch force main and a sewage lift station and to have sufficient capacity to handle an estimated future, peak flow from Mounds State Park of 50 gallons per minute.

SAID CONSTRUCTION shall be according to plans and specifications prepared by Stoeppelworth and Associates, Inc., who as consulting engineers for the Town shall supervise and inspect the construction. Town will secure any necessary easements, permits, and approvals required by law. It is understood and agreed that the Town shall be the owner of said collection system and the Town shall have the duty to maintain and repair or replace as necessary.

UPON CERTIFICATION of completion of said construction by Stoeppelworth and Associates, Inc., and Department shall promptly pay to the Town One Hundred Eight Thousand Four Hundred Nine Dollars (\$108,409.00) as a connection fee. Department further agrees to pay an additional connection fee, up to a maximum of \$5,000.00, for any unforeseen construction expense which may be necessary to extend the collection system to Mounds State Park and which is not covered by the aforementioned plans and specifications. Town agrees to reimburse Department for any additional connection made to the collection system extension during the next five (5) years. Said reimbursement to consist of the standard connection fee which would be normally charged by the Town. Said additional connections shall in no way alter the Town's ability to receive peak flows of 50 gallons per minute from Mounds State Park.

THE DEPARTMENT at its expense shall install and maintain all lift stations, sewers and force mains necessary to transmit its wastewater to Town's collection system and make the necessary connection to a manhole to be constructed by Town at the park property line.

BEGINNING with the first full month after Department connects its sewer system to Town's collection system, Department shall make monthly payment for sewage discharged based on potable water usage for Mounds State Park as metered by the City of Anderson. Payment shall be through the brackets of the schedule of rates and charges for sewerage service by said Town, presently charged by the Town to all users and on file in the office of the Clerk-Treasurer of the Town; or in the event a change of such rates and charges are made and approved according to law then at such new schedule. Town agrees to mail written notice to the Director of Department of any proposed rate or charge increase a minimum of ninety (90) days prior to public hearing on same. Department agrees as a user of the system to comply with the sewer use ordinance of the Town. Said schedule of rates and use ordinance are attached hereto, made a part hereof, and marked Exhibit "A".

IN WITNESS WHEREOF, we have hereunto executed this agree-
ment this 19 day of November, 19 79.

BOARD OF TRUSTEES OF THE TOWN OF
CHESTERFIELD, INDIANA

By: Rick L. Grills 11-19-79
President Date
Rick Grills
STATE OF INDIANA

ATTEST:

Patricia A. Summers
Clerk-Treasurer
Patricia A. Summers

By: Joseph D. Cloud 12/12-79
Director Date
Department of Natural Resources

APPROVED:

By: R. E. Sanders 12/13/79
Raymond E. Sanders Date
Commissioner of Administration

APPROVED AS TO AVAILABILITY OF FUNDS:

By: John M. Huie 12-17-79
John M. Huie Date
Director of State Budget

APPROVED AS TO LEGALITY AND FORM:

By: Theodore L. Sendak DEC 19 1979
Theodore L. Sendak Date
Attorney General of Indiana

THIS INSTRUMENT PREPARED BY:

William C. Kreegar
William C. Kreegar
Attorney at Law

APPROVED:

By: Otis R. Bowen, M.D. 12-27-79
Otis R. Bowen, M.D. Date
Governor of Indiana

LOGGED
12-27-79
date recd.

Approved by
Date

12-27-79 Signed by Governor

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APPENDIX B

DCRWD AGREEMENT

CHESTERFIELD (INDIANA) MUNICIPAL SEWAGE WORKS

Exhibit A

CALCULATION OF DELAWARE COUNTY RWD TREATMENT RATE

Line item Number	Annual Operation & Maintenance Costs & Replacement Costs on Equipment	Total Annual Costs (1)	Allocation Percentage	Ref.	Shared Costs
1	Operation and Maintenance Expense:				
2	Collection System:				
3	Purchased power and other utilities - Lift stations		0%		
4	Operating Labor		0%		
5	Payroll taxes, pension and benefits		0%		
6	Repairs and maintenance		0%		
7	Materials and supplies		0%		
8	Contractual services		0%		
9	Treatment and Conveyance:				
10	Purchased power and other utilities - WWTP	\$60,000	100%		\$60,000
11	Operating Labor	64,000	100%		64,000
12	Payroll taxes, pension and benefits	16,000	100%		16,000
13	Chemicals	7,500	100%		7,500
14	Repairs and maintenance	5,750	100%		5,750
15	Materials and supplies	5,750	100%		5,750
16	Insurance	5,000	100%		5,000
17	Contractual services		100%		
18	Billing and Collection:				
19	Office salaries		0%		
20	Payroll taxes, pension and benefits		0%		
21	Billing supplies and expenses		0%		
22					
23	Sub-totals	164,000			164,000
24					
25	General and Administrative:				
26	Office salaries		0%		
27	Elected officials salaries		0%		
28	Payroll taxes, pension and benefits		0%		
29	Insurance		0%		
30	Office supplies and expenses		0%		
31	Miscellaneous		0%		
32	Payment in lieu of taxes		0%		
33					
34	Total Operation and Maintenance Costs	164,000			164,000
35					
36	Annual replacement costs on WWTP equipment	83,800	100%		83,800
37					
38	Total O, M & R	\$247,800			247,800
39					
40	Total annual flow received at				
41	Wastewater Treatment Plant (In 1,000 gallons)				189,631
42					
43	Wholesale Treatment Rate (per 1,000 gallons)				\$1.31

(1) Based on estimates from the consulting engineer.

CHESTERFIELD (INDIANA) MUNICIPAL SEWAGE WORKS

Exhibit B

**CALCULATION OF MONTHLY FIXED CHARGE TO DELAWARE COUNTY RWD
FOR DEBT SERVICE AND COVERAGE**

ALLOCATION FACTOR:

Delaware Co. RWD contracted capacity	278,000 GPD
Total plant capacity	<u>910,000 GPD</u>
Plant capacity allocated to Delaware Co. RWD	<u>31%</u>

I.

DEBT SERVICE ON PROPOSED TREATMENT PLANT:

(Payable monthly at completion of construction beginning January 1, 2013 until bonds mature on January 1, 2033)

Average annual debt service for WWTP project costs paid from the 2007 Bonds (\$944,300 for 20-years @ 2.92%)	\$66,300
Average annual debt service for WWTP project costs paid from the 2011 Bonds (\$3,914,000 for 20 years @ 2.87%)	<u>258,500 *</u>
Sub-total	324,800
Times capacity allocated Delaware Co. RWD	<u>31%</u>
Total Annual Debt Service Charge to Delaware Co. RWD from Chesterfield	<u>\$100,688</u>

II.

COVERGE

(Payable monthly at completion of construction beginning January 1, 2013 until bonds mature on January 1, 2033)

Annual debt service reserve	51,700 *
Times capacity allocated Delaware Co. RWD	<u>31%</u>
Total Annual Coverage Charge to Delaware Co. RWD from Chesterfield	<u>\$16,027</u>

TOTAL:

Total Annual Debt Service Charge and Coverage to Delaware Co. RWD from Chesterfield	<u>\$116,715</u>
Total Monthly Debt Service Charge and Coverage to Delaware Co. RWD from Chesterfield	<u>\$9,726</u>

* Subject to change. Will be based on final size of loan and grant amount from SRF.

MUNICIPAL WASTEWATER SERVICE AGREEMENT
BETWEEN
THE TOWN OF CHESTERFIELD, INDIANA
AND
THE DELAWARE COUNTY REGIONAL WASTEWATER DISTRICT

THIS AGREEMENT, made and entered into this ____ day of May, 2011, by and between the TOWN OF CHESTERFIELD, INDIANA, a municipal corporation in Madison County, Indiana, by and through its Town Council (hereinafter referred to as "Town") and the DELAWARE COUNTY REGIONAL WASTEWATER DISTRICT, a sewer district in Delaware County, Indiana, by and through its Board of Trustees (hereinafter referred to as "District").

WITNESSETH THAT:

WHEREAS, the Town is in the process of constructing a sewage treatment and disposal facility and has capacity in excess of that required to process its own wastewater, liquid wastes and sewage, and is willing to accept wastewater, liquid wastes and sewage from the District and process and dispose of the same; and

WHEREAS, the District does not have adequate means of disposing of its wastewater, liquid wastes and sanitary sewage from the District; and

WHEREAS, the District desires to connect the sewer system of the District to the sewage treatment and disposal facilities of the Town of Chesterfield and will transport wastewater, liquid wastes and sewage generated within the jurisdiction of the District to the sanitary sewer system of the Town; and

WHEREAS, both the Town and the District have retained the firm of H.J. Umbaugh and Associates to analyze the costs of dedicating capacity and operating and maintaining the wastewater treatment facilities, and said firm has recommended a rate structure that would allocate fees and charges in a manner that would be fair to both the Town and the District; and

WHEREAS, the Town and the District desire to enter into a mutually beneficial agreement for the operation of the sewage treatment and disposal facility and the disposal of sanitary sewage from the District.

NOW THEREFORE, it is hereby agreed by and between the parties hereto that the Town will accept from the District the wastewater, liquid wastes and sewage of the District and will treat and dispose of the same in the proper manner when its sewage treatment plant

has been fully constructed and operational subject to the following covenants and conditions.

1. The District agrees to extend, as necessary, its sewer to connect into the Town's sanitary sewer system at a point that is to be mutually agreed upon by the parties and described in "Exhibit C" which is attached hereto and made a part of this Agreement.
2. The Town agrees to accept, transport, treat and process in a proper manner all wastewater, liquid wastes and sewage transported from the District to the Town system by means of such sewer, subject to the conditions hereinafter set forth in this Agreement.
3. The Town and District agree to equally pay for all costs necessary to install and maintain at the point of connection to the Town's sewer system, the necessary metering and sampling equipment and all appurtenant devices for properly measuring the quantity and quality of wastewater delivered to the Town's Wastewater Treatment Plant. This shall be the official sampling point for the quality determination of the wastewater generated by the District. Calibration of such metering equipment shall be performed not less than once every twelve (12) months or by request of either party. A meter registering not more than five percent (5%) above or below the test result at full scale shall be deemed to be accurate. The previous readings of any meter disclosed by test to be inaccurate shall be corrected for the two (2) months previous to such test in accordance with the percentage of inaccuracy found by such tests. If any meter fails to register for any period, the amount of wastewater treated during such period shall be deemed to be the amount of wastewater treated in the corresponding period immediately prior to the failure.
4. The duly authorized representatives of both the District and Town shall have rights of access during business hours to inspect and observe the operation of the meter provided for in the preceding paragraph hereof. The Town shall be the owner of the meter and the expense of operating, maintaining and calibrating the meter shall be paid equally by the District and the Town. Any records or charts from such meter or meters shall be kept by both the Town and the District, and shall be subject to examination by either party. Both the Town and the District may install additional meters at their own cost and expense to verify flow, provided however, that such meters shall not be considered official meters for the purpose of determining monthly rates and charges.
5. The District has or will construct and maintain a sewage collection system, including sewers, pump stations, force mains, regulating stations, manholes and other structures, as may be required to deliver the flow of wastewater, liquid wastes and sewage to the point of connection to the Town. The District shall use all necessary

precautions and diligence to exclude from wastewater, liquid wastes and sewage transported to Town, sand, gravel, street waste, grits, leaves, rags, paper, pickling liquor, cyanide, coal, tar, oil, grease, acids, dry cleaning fluids, and any other foreign material and industrial wastes which are objectionable, dangerous and inhibitive to bacterial growth or which for other reasons cannot readily be treated in the sewage treatment plant of Town or may be injurious thereto or are prohibited by the Sewer Use Ordinances of Town, which may be amended from time to time. Upon discovery that unacceptable substances or materials as defined by the Sewer Use Ordinances of the Town of Chesterfield, Indiana, as amended from time to time, or waste or materials deemed unacceptable pursuant to rules and regulations duly promulgated by the U.S. Environmental Protection Agency (EPA) or the Indiana Department of Environmental Management (IDEM), are being discharged by District to Town, the District shall be notified and the District shall forthwith take appropriate steps to insure that such unacceptable materials are excluded from future discharges to Town. The District shall be liable for any additional costs at the wastewater treatment plant in connection with such unacceptable materials delivered from the District, including any fines as may be levied by the State of Indiana or E.P.A., for noncompliance with Town's NPDES (National Pollution Discharge Elimination System) permit. Upon discovery that any unacceptable substances or materials are being discharged as set forth above:

- a. Either party shall immediately notify the other party of such unacceptable sewage or materials, including the location, time or times, the nature of such unacceptable sewage or waste, and such other information as may be available.
- b. Upon verbal notification and confirmation thereof in writing, the District shall notify that user to immediately cease delivery of such materials and/or waste within twenty-four (24) hours, and continue all necessary monitoring to assure compliance with this Agreement.
- c. The Town shall, in the event the District is unable to identify the location, time and source of such unacceptable sewage, cooperate with the District in locating such source. The District will use its best efforts to correct or cut off the user delivering unacceptable wastewater, liquid wastes and sewage to the parties' sewer system.
- d. In the event that the user delivering such unacceptable sewage or materials through the District's connection point to Town cannot be ascertained within forty-eight (48) hours of first notice, then the District and Town shall authorize an independent emergency investigation to be instigated forthwith in regard to the matter. The District and Town shall fully cooperate with said

emergency investigation to ascertain the user delivering such unacceptable sewage or material and severity of damage and necessary correction actions.

- e. The parties shall determine and agree as to the severity of the damage caused to Town's treatment facilities resulting from the discharge of such unacceptable sewage or materials. If the parties are unable to reach such agreement, then both parties may agree within thirty (30) days after said negotiations fail, to each name an independent engineer or other person not connected with either party who has knowledge in the disputed areas. The two named arbitrators shall name a third qualified person to serve and the three arbitrators shall determine the unresolved issues between the parties. The judgment of findings of a majority of the arbitrators shall be binding upon the parties and final determination of all unresolved issues. In addition to the expenses, civil penalties, damages, or fines for the damage to the Town sewage system, the expense of such investigation or arbitration shall be borne by the District. It is the intent of the parties hereto that any arbitrator selected pursuant thereto shall have experience and expertise in the particular area of disagreement.
 - f. In the event that the parties are unable to ascertain the user delivering such unacceptable sewage or materials through the District's connection point to Town, then and in that event, if an emergency exists as to the continuing damage to Town's treatment facilities resulting from the discharge of such unacceptable sewage or material, Town may seek such equitable or injunctive relief as is necessary or appropriate in a court of competent jurisdiction.
 - g. In the event of a finding by a Court that a party has acted arbitrarily, capriciously or in bad faith regarding the inability of the parties to resolve issues arising out of this Paragraph 5, then the party who has acted in bad faith arbitrarily or capriciously shall pay the litigation expenses of the party who has not acted arbitrarily, capriciously or in bad faith.
- 6. The District agrees to adopt a sewer use and rate ordinance as required by law, and said ordinance shall be compatible with and at least as restrictive as the Town's sewage use ordinance as required by law.
 - 7. The District has, or will enact, an ordinance which prohibits the introduction of surface water and ground water inflow into its sewage system and will otherwise enforce such prohibition.
 - 8. The Town agrees to report to the District once each month, before the 15th day of each month, the volume and characteristics of the discharge of sewage into the Town system during the preceding calendar month. The characteristics measured or

otherwise identified and reported shall include, but not be limited to, volume and any waste constituents identified in Town's rate ordinance and/or sewer use ordinance. Sampling and analysis of the District's wastewater, liquid wastes and sewage shall be conducted in a comprehensive way and in accordance with acceptable engineering practice so as to reflect an accurate profile of the sewage to form the basis for fair and equitable variable charges.

9. The District reserves the right to verify the reports submitted by Town and may conduct such verifications, in accordance with acceptable engineering standards and shall have rights of ingress and egress onto the premises of Town as necessary and required to examine and verify documents and records subject of such report.
10. In the event the equipment (meter or sampler) should for any reason fail to provide Town with required reports and data as provided for hereinabove, Town shall make an estimate of the charges due from the District based upon prior flows and loadings and bill the District therefor as provided in this Agreement. If the correct actual charges due should be later determined, Town shall make appropriate adjustments in the next billing to the District.
11. The District agrees to pay to Town for the treatment and conveyance of wastewater, liquid wastes and sewage from the District an amount or amounts to be determined as follows:
 - a. Variable Treatment Rate. Payment shall commence on the date Town first accepts wastewater for treatment from the District or any mutually agreeable date with said date to be endorsed by Addenda to this Agreement and signed by both parties. The District shall pay to Town for the treatment and conveyance of wastewater, liquid wastes and sewage from the District an amount as determined on Exhibit "A" hereof, "Calculation of Delaware County RWD Treatment Rate" to be completed and computed prior to connection. This rate shall be reviewed at the election of either party hereto upon written notice and request to the other, not more than annually nor less than every two (2) years and shall be adjusted according to conditions and circumstances existing at the time of any such adjustment. At the time of such adjustment or review, the Town of Chesterfield shall provide to the District a verified statement detailing the calculation of the rate based on the previous calendar year's operation and maintenance expense recorded by the Town of Chesterfield. The rate so determined shall be accepted by the District and shall be paid by said District to the Town of Chesterfield until modified again, as herein provided; provided, however, at each said time the District shall have the opportunity to examine the books and records of the Town of Chesterfield pertaining to the costs which determine said figure. If the District at such time and after such inspection does not agree with the

figures of the Town of Chesterfield, it may submit any difference to a court of competent jurisdiction or arbitration as set out in Paragraph 16 of this Agreement.

The monthly charge for operation, maintenance and replacement shall be determined by multiplying the number of gallons of sewage accepted from the District as shown by said meter times the rate calculated.

The Town of Chesterfield shall, once each month, following the submission of the reports and data as heretofore provided in this Agreement, invoice the District for such operation, maintenance and replacement cost charges and such amount shall be due from the District to Town on the 30th day following the receipt of such invoice by the District. In the event that the District should fail to make payment to Town of the amount of such invoice within the time so limited, the District may be liable for and shall pay to Town, as a penalty for delinquency in such payment, the same percentage of such invoice, that the sewage rate ordinance and schedule of Town imposes upon all other users of Town's sewage disposal facilities for similar delinquencies in payment.

- b. Fixed Monthly Fee. The District agrees to pay Town a fixed monthly fee for debt service and debt service coverage for the portion of the local cost incurred by Town in the construction of its wastewater treatment facility.

The fixed monthly fee will be determined on Exhibit "B" hereof "Calculation of Monthly Fixed Charge to Delaware County RWD for Debt Service and Coverage". The fixed monthly fee shall be fixed and in place for twenty years. The fixed monthly fee shall commence and be billable in the same manner as the variable fee as outlined in Section 11(a).

- c. It is agreed that at the commencement of this Agreement, 310,000 gallons per day (G.P.D.) of the 1,000,000 G.P.D. annual average daily capacity of Town's sewage treatment facility is reserved to the District. To utilize this 31 percent of such capacity, the District is entitled to transport 113,150,000 gallons of wastewater, liquid wastes and sewage to Town each year at a peak daily rate of flow not to exceed 1,000,000 G.P.D. (During the peak day event, the average of the flow shall not exceed 1,000,000 G.P.D., the peak hourly rate shall not exceed 990 gallons per minute (G.P.M.), and this peak event shall not occur for more than 72 consecutive hours.)

For purposes of this Agreement, the District's contracted capacity measured in terms of average daily flow shall be calculated on a 30 day monthly basis and shall not exceed 310,000 G.P.D. If the District exceeds their 310,000

G.P.D. contracted capacity or if the District wishes to acquire additional capacity, this Agreement including the fee for debt service on the existing system shall be renegotiated. In the event the District requires additional capacity and cannot acquire such capacity from Town based upon the current design of the system, the District shall, at its own expense, pay all costs for necessary for the expansion of the Town sewage treatment facility. The manner in which the engineering, design and construction of the expansion shall be negotiated between the Town and the District at the time of the expansion. Any improvements made to the Town's sewage treatment facility shall become the property of the Town and subject to the rates and charges set forth in this Agreement.

- d. In the case of (a) future treatment facility capital improvements required by IDEM and/or EPA for either achieving or maintaining compliance with N.P.D.E.S. permit requirements, or (b) the costs of necessary capital improvements or maintenance to the shared interceptor sewer from the District's flow meter at the point of connection to the Town's lift station, the lift station and the force main from the lift station to the Town's treatment plant, the District shall pay to Town its pro rata share of those capital improvements based on the average daily flows of the District and Town as outlined under Section 11(c).
- 12. In the event wastewater, liquid wastes and sewage are received by Town from the District in excess of domestic loadings, BOD and suspended solids now established in Town ordinances, then the District shall pay to Town the rate per pound therefor as established in the Town rate ordinance. In the event the wastewater, liquid wastes and sewage received by Town from the District are in excess of domestic loadings, BOD, and suspended solids, for three (3) consecutive months, Town may at Town's sole option, require the District to install and maintain an automated sampling device at the District's sole cost and expense to monitor the quality of such discharge. In the event of future changes in the cost of treatment of suspended solids and BOD based upon the studies in conformity with EPA requirements, then the District shall be subject to any such increased or decreased charges for such excessive pollutants. In the event the future charges are made for other pollutants received by Town and such charges are uniformly applied throughout the region served by Town, then the District shall be subject to such charges.
 - 13. The District acknowledges that Town has obtained certain Federal grants and that the provisions of PL 92-500 apply to the users within the jurisdiction of the District. The District agrees to cooperate with Town to the fullest extent so that the provisions of PL 92-500 as amended will be adhered to and complied with.

14. The District agrees to comply with all applicable provisions of the Federal Water Pollution Control Act, as amended and regulations promulgated thereunder, including 40 CFR Parts 35 and 403, and Indiana statutes relating to pollution abatement. Further, the District will implement any requirements of the U.S. Environmental Protection Agency with respect to conditions and limitations of grants sought by Town that are applicable to the District and being within the jurisdiction of Town.
15. The parties agree that in the event any provision of this Agreement is declared unacceptable or unenforceable by any agency exercising its appropriate authority, the remainder of the Agreement shall remain in full force and effect and the failing provisions(s) shall be amended by good faith negotiations between the parties to cure any such defect.
16. Resolution of Disagreements.

- a. The parties recognize that this Agreement puts into operation a user charge system and pollutant volume and loading restrictions, the application and results of which can be determined only by experience. The parties hereby agree that if either party believes the effect of this Agreement in any way is inequitable or unfair to its citizens, such party may by thirty (30) days written notice, request re-negotiation of any part of this Agreement and the other party will in good faith participate in such negotiations.

If the parties are unable to solve their problems by negotiations, each party shall within thirty (30) days after said negotiations fail, name an independent engineer, accountant, or other person not connected with either party, who has knowledge in the disputed areas. The two named arbitrators shall name a third person to serve and the three arbitrators shall determine the unresolved issues between the parties. The judgment or findings of a majority of the arbitrators shall be binding upon the parties and a final determination of all unresolved issues.

During this period of re-negotiation and/or arbitration, the District shall continue to meet its financial obligations to Town in accordance with the provisions of this Agreement, and Town shall continue to accept and treat the District's sewage.

The expense of such arbitration shall be borne jointly and equally by the disputing parties. It is the intent of the parties hereto that any arbitrator selected pursuant hereto shall have experience and expertise in the particular area of disagreement.

- b. Notwithstanding Paragraph 16(a), all disputes regarding charges computed under Paragraph 11 shall be resolved ultimately by (i) a Court of competent jurisdiction or, (ii) if the parties mutually agree, by arbitration pursuant to Paragraph 16(a) thereof.
 - c. The Town shall give the District ninety (90) days advance written notice of any proposed increase in the costs described in Paragraph 11(a) and 11(b) hereof to afford the District an opportunity to review and either accept or dispute such proposed increase. It is expressly understood and agreed that Town shall have the right to proceed with such rate increase even if disputed by the District and that the District shall be required to continue its payment obligations to Town, including the charges arising out of the disputed rate increase, until such dispute is resolved in accordance with the terms of this paragraph. In the event that such dispute is ultimately resolved in the District's favor, then the disputed payments previously made to Town shall be refunded within fifteen (15) days to the District by Town, together with interest at a rate equal to the maximum Indiana Revolving Loan Fund rate in effect at the time of resolution of such dispute.
- 17. This Agreement shall become effective on the date executed by the parties and shall continue for a period of twenty (20) years thereafter or until all bonds issued by the Town to finance the construction of its new wastewater treatment facility are paid in full, whichever period is longer.
 - 18. This Agreement shall continue in full force and effect for two (2) additional five (5) year terms after the initial twenty (20) year term subject to the same terms and conditions, unless either of the parties thereto shall notify the other in writing of intention to terminate the same at least twenty-four (24) months prior to the expiration of the original term or any additional five (5) year terms. The parties may then desire to renegotiate the terms hereof by reason of governmental changes or requirements, changes in physical conditions, rates, costs or expenses of any kind applicable within the twenty-four (24) month period prior to the expiration of the original term or additional term. Any such renegotiation shall reflect, in good faith, changes in terms and conditions based on the reasons hereinabove set forth.
 - 19. The parties agree that the planning area for the District is reflected upon the map attached hereto as Exhibit "D" and may be changed by agreement of the parties.
 - 20. At such time as the Town's wastewater treatment facility has been constructed and becomes operational and accepts sewage from the District, all prior contracts and agreements between the Town and the District shall become null and void. It is the intent of the parties that this Agreement supercede all prior agreements between the Town and the District.

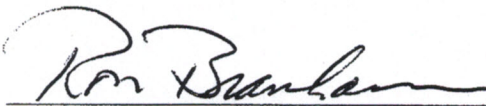
21. This Agreement is expressly made binding upon the successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the parties have hereunto executed this Agreement effective this ____ day of May, 2011.

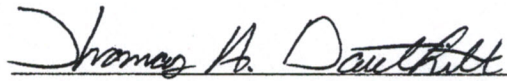
TOWN OF CHESTERFIELD, INDIANA

DELAWARE COUNTY REGIONAL
WASTEWATER DISTRICT

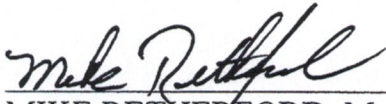
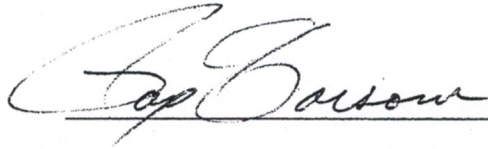
TOWN COUNCIL



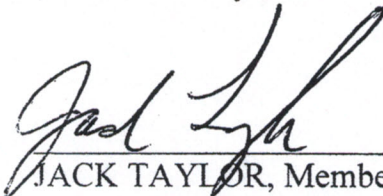
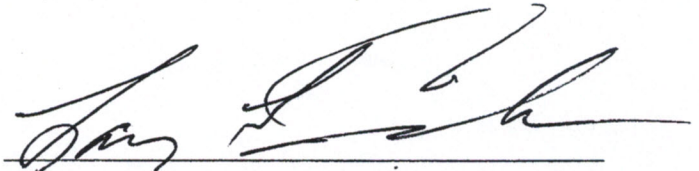
RON BRANHAM, President



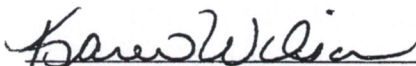
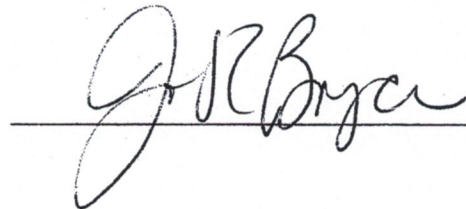
LYNETTE CARTER, Member



MIKE RETHERFORD, Member



JACK TAYLOR, Member



KAREN WILSON, Member

ATTEST:


CANDY BENNETT, Clerk-Treasurer

ATTEST:

Prepared by:

WILLIAM C. KREEGAR
Attorney for Town of Chesterfield
1424 East 8th Street
Anderson, Indiana 46012
Telephone: (765) 644-8873

Approved by:

MARK L. ABRELL
Attorney for Delaware County
Regional Wastewater District
119 North High Street
Muncie, Indiana 47305
Telephone (765) 289-2469

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APPENDIX C

WWTP CONSTRUCTION PERMIT APP



APPLICATION FOR WASTEWATER TREATMENT PLANT CONSTRUCTION PERMIT PER 327 IAC 3

STATE FORM 53160 (R2 / 9-08)

Approved by State Board of Accounts, 2007

Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
Facilities Construction Section
100 North Senate Avenue, room N1255
Indianapolis, IN 46204-2251

INSTRUCTIONS:

1. This form must be filled out completely.
2. Additional pages (attachments following this form) are part of this application form and must be filled out completely.
3. Submission of plans, flow charts and/or schematic drawings are part of the application.
4. Submit the application form, additional pages, plans and specifications to the above address.
5. If you have any questions regarding this application, call IDEM's Office of Water Quality at (317) 232-8670.

APPLICANT		APPLICANT'S ENGINEER	
Name Mr. Jack Taylor, Town Council President		Name Albert C. Stong	
Company Name Town of Chesterfield		Company Name Commonwealth Engineers, Inc.	
Address 17 Veterans Boulevard		Address 7256 Company Drive	
City Chesterfield		City Indianapolis	
State Indiana	ZIP code 46017	State Indiana	ZIP code 46237
Telephone number (including area code) (765) 378-3331		Telephone number (including area code) (317) 888-1177	
NAME AND LOCATION OF PROPOSED FACILITY		ATTACHMENT CHECKLIST	
Name Wastewater Treatment Plant		A. Wastewater treatment plant design summary form: <input checked="" type="checkbox"/> Yes	
Location (Referenced to two existing streets) West of County Road 300 East and North of State Road 32		B. Plans and specifications: <input checked="" type="checkbox"/> Yes	
Location Latitude 40° 06' 58" N, Longitude 85° 37' 04" W		C. The appropriate fee (if applicable, no fees for state or federal projects): <input checked="" type="checkbox"/> Yes	
Location		D. Identification of Potentially Affected Persons (see note below): <input checked="" type="checkbox"/> Yes	
City Town of Chesterfield		E. Mailing Labels for Potentially Affected Persons: <input checked="" type="checkbox"/> Yes	
County Madison			
<i>Note Regarding item (D) above:</i> Fully identify all persons, by name and address, who may be potentially affected by the issuance of this permit, such as adjoining landowners, persons with a propriety interest, and/or persons who have complained or submitted comments about your facility. Under IC 4-21.5-3-4, IDEM is required to notify potentially affected persons of its permit decision.			
PERMIT APPLICATION FOR CONSTRUCTION, EXPANSION, OR MODIFICATION OF (Check all that apply)		FUNDING	
A. Municipal wastewater treatment facility: <input checked="" type="checkbox"/> Yes		SRF Funding: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
B. Semipublic wastewater treatment facility: <input type="checkbox"/> Yes			
C. New facility: <input checked="" type="checkbox"/> Yes			
D. Expansion or modification of existing facility: <input type="checkbox"/> Yes			
CERTIFICATION AND SIGNATURE			
Application is hereby made for a permit to authorize the activities described herein. I certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete and accurate.			
Printed name of person signing Mr. Jack Taylor		Title Town Council President	
Signature of Applicant 		Date application signed (month, day, year)	
Please refer to IC 13-30-10 for penalties of submission of false information			

Dear Applicant:

To complete your construction application, you must submit **all** of the necessary items. If your application materials are incomplete, you will be sent a deficiency notice, and your application will be retained for 60 days. If the information is not received within the 60 day period your application will be denied due to incompleteness. You can get a copy of this application package on the Internet at: <http://www.in.gov/idem/4875.htm> or <http://www.in.gov/idem/5157.htm#waterforms>. Please complete the following steps (only one copy of the requested documents needs to be submitted):

- Complete all the information on the wastewater design summary and certify it with a professional engineer's stamp. The general information, Part I, and design data, Part II, should be completely filled out and also other areas that pertain. Only one copy of the design summary needs to be submitted.
- Submit NPDES limits verification for projects that increase the capacity at the wastewater treatment facility. (This information can be obtained from the NPDES permitting section at 317/232-8760.)
- Enclose the proper processing fee (see attached fee schedule).
- Sign and date the application form and fill it out completely. Municipal projects must be signed by a city or town official. Others, such as private wastewater treatment plant projects can be signed by the owner or a representative. Only one copy of this form needs to be submitted.
- Submit one set of complete plans. Every page must be stamped and signed by a professional engineer.
- List all affected parties. This list should include: officials of affected counties, cities or towns; adjacent property owners; and all other potentially affected parties, their names and mailing addresses. A complete set of mailing labels with the mailing code 65-42FC listed above each name on each label is required.
- Please be advised that if your project will disturb one (1) or more acres of land area, coverage under 327 IAC 15-5 (Rule 5) is required. Rule 5 is the General Permit for Storm Water Runoff Associated with Construction Activity. You can review the Rule 5 web site for information at: <http://www.in.gov/idem/4902.html> or contact Permits Coordinator at 317/233-1864 for more information.

Please send construction applications to:

Indiana Department of Environmental Management
Office of Water Quality- Mail Code 65-42
100 North Senate Avenue, Rm N1255
Indianapolis, IN 46204-2251
Attention: Don Worley
Telephone number: (317) 232-5579

Wastewater Construction Permit Fees

A. The applicants listed below must remit with each application a fee of fifty dollars (*\$50). These applications must be signed by an official of the entity (*check all that apply*).

<input checked="" type="checkbox"/>	County, Municipality, or Township which is defined as a unit under IC 36-1-2-23
<input type="checkbox"/>	A Nonprofit Organization
<input type="checkbox"/>	A Conservancy District
<input type="checkbox"/>	A School Corporation that operates a sewage treatment facility
<input type="checkbox"/>	A Regional Water or Sewage District

*Only pay \$50 for a new wastewater treatment plant or expansion of an existing facility.

B. All other applications will pay the following revised fees per project type:

New Wastewater Treatment Plant (Except industrial)

<input type="checkbox"/>	A. Up to 500,000 gallons per day	\$1,250.00
<input type="checkbox"/>	B. Greater than 500,000 per day	\$2,500.00

New Industrial Wastewater Treatment Plant (Including pretreatment)

<input type="checkbox"/>	A. Up to 500,000 per day for:	
<input type="checkbox"/>	1. Biological or chemical treatment	\$1,250.00
<input type="checkbox"/>	2. Physical Treatment	\$250.00
<input type="checkbox"/>	B. Greater than 500,000 gallons per day:	
<input type="checkbox"/>	1. Biological or chemical	\$2,500.00
<input type="checkbox"/>	2. Physical Treatment	\$250.00

Wastewater Treatment Plant Expansion:

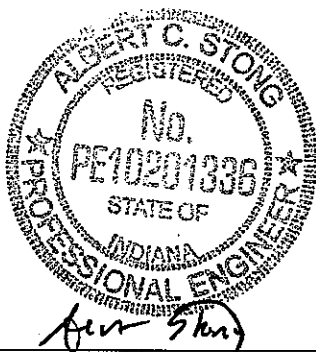
<input type="checkbox"/>	A. Up to fifty percent (50%) design capacity:	
<input type="checkbox"/>	1. Greater than 500,000 per day	\$2,500.00
<input type="checkbox"/>	2. Up to 500,000 per day	\$625.00
<input type="checkbox"/>	B. Greater than fifty percent (50%) design capacity	
<input type="checkbox"/>	1. Greater than 500,000 gallons per day	\$2,500.00
<input type="checkbox"/>	2. Up to 500,000 gallons per day	\$1,250.00

Checks should be made payable to the **Indiana Department of Environmental Management**. Fees shall not be refundable once staff review and processing of the Permit Application has commenced.

Wastewater Treatment Plant Design Summary

1. General

- A. Applicant name: Town of Chesterfield
- B. Project Name: New Wastewater Treatment Plant Project
- C. Location: Latitude 39° 48' 12" N, Longitude 87° 30' 20" W
- D. Engineer (consultant): Commonwealth Engineers, Inc.
- E. NPDES permit number: (Note: Will be requested upon issuance of Construction Permit)
1. Date of final permit issuance (month, day, year):
2. Expiration date (month, day, year):
- F. Remarks
1. Description of present situation: The Town is currently conveys its wastewater, along with wastewater from the Delaware County Regional Sewer District and Mounds State Park, to the City of Anderson for Treatment.
2. Description of proposed facility(s): A "packaged" treatment plant incorporating a new plant lift station, pretreatment via mechanical bar screen, an extended aeration Aero-Mod "packaged" treatment unit, complete with equalization, aeration, clarification, and digestion, UV disinfection, and laboratory building.
3. Inspection during construction to be provided by:
Commonwealth Engineers, Inc.
- G. Estimated project cost
1. Source of funding (Revenue bond, state grant, SRF, etc.): SRF, Local
2. Total cost: \$7,370,000
- H. Certification seal and signature of engineer and date:



Printed name of engineer:
Mr. Albert C. Stong

Signature of engineer:

Albert Stong

Date signed (month, day, year):

March, 29, 2010

2. Design Data

- A. Current population: 4,467 (includes Chesterfield and Delaware County RSD, not Mounds State Park)
- B. Design year and population: Year 2029 Population = 4,768
- C. Design population and equivalent P.E.: 5,218 @ 0.187 lbs. BOD/P.E. (Includes Chesterfield, Delaware County RSD and Mounds State Park)
- D. Design flow: 1.000 MGD
1. Domestic: 0.404 MGD DCI Flow
2. Industrial/commercial: included with domestic flow above
3. infiltration/inflow: 0.506 MGD
- E. Average design peak flow: 3.2 MGD Peak Day
- F. Maximum plant flow capacity: 4.6 MGD Peak Hour
- G. Design waste strength
1. CBOD: 117 mg/l; 976 lbs/day
2. TSS: 138 mg/l; 1,152 lbs/day
3. NH₃-N: 14.6 mg/l
4. P: Not Permitted
5. Other:

2. Design Data (continued)**H. NPDES permit limitation on effluent quality (See attached letter)**

1. CBOD: 10 mg/l monthly, 15 mg/l weekly
2. TSS: 12 mg/l monthly, 18 mg/l weekly
3. NH₃-N: (Summer) 1.1 mg/l monthly, 1.6 mg/l weekly; (Winter) 1.6 mg/l monthly, 2.4 mg/l weekly
4. P: N/A
5. E-coli: 125 count per 100 mLs monthly, geometric mean; 235 count/100 mL daily maximum
6. Chlorine Residual: N/A
7. pH: 6.0 to 9.0
8. D.O.: 6.0 mg/l daily minimum

I. Receiving stream

1. Name: White River
2. Tributary to: Wabash River
3. Stream uses: Aquatic Life, Partial Body Contact
4. 7-day, 1-in-10 year low flow: 43 cfs

3. Treatment units (Fill out the ones that apply and if needed create a new entry that follows the format.)**A. Plant site lift station (New)**

1. Location: On-site
2. Type of pump: Submersible
3. Number of pumps: Two (2); One (1) standby
4. Constant or variable speed: Constant
5. Capacity of pumps: 350 gpm each
6. RPM and TDH: 1,800 rpm @ 44' TDH
7. Volume of the wet well: 1,125 gallons (1 pump operational)
8. Detention time in the wet well: 3.2 minutes @350 GPM pump rate
9. A gate valve and a check valve in the discharge line: Yes (plug valve and check valve)
10. A gate valve on suction line: No, N/A for a submersible pump
11. Ventilation: Gravity vent only
12. Standby power: Diesel Engine Generator (main plant emergency power, plus portable pump capable)
13. Alarm: Yes; audio-visual; high level and low level cut-off, plant SCADA
14. Breakwater tank: No seal water, N/A
15. Bypass overflow: No

B. Flow equalization (New)

1. Number and size of units: 73,800 gallons total (29,800 gal in aeration tanks & final clarifier, 44,000 gal in surge tanks)
2. Method of flow diversion to unit: In tank = Orifice; Surge Tanks = fixed weir
3. Air and mixing provided: Yes, 60 cfm diffused air
4. Method and control of flow return: 200 GPM Pumps
5. Description of unit operation: Surge tanks fill by overtopping weirs. Manual flow return pumps.
6. Lagoon sealing: N/A Reinforced concrete tank
7. Method of sludge removal: Pump or drain tank to drain pump station

C. Flow meters (New)

1. Type: Electro-magnetic on town and plant drain force mains; V-notch weir with ultrasonic for effluent
2. Location: On wall at headworks for force mains; effluent weir following cascade aeration
3. Indicating, recording and totalizing: Yes

D. Grit chamber (N/A)

1. Type of grit chamber:
2. Number of units:
3. Size of unit:
4. Method of velocity (aeration) control:
5. Velocity (aeration) in the chamber:
6. Drain provided:
7. Flow restrictions:
8. Facilities to isolate:

3. Treatment units (continued)**E. Comminutors (N/A)**

1. Type:
2. Location:
3. Maximum capacity:
4. By-pass (overflow) bar screen:

F. Screens (New)

1. Type: Fine Screen / Bar Screen
2. Number and capacity: One (1) mechanical perforated screen, one (1) bar screen bypass; 4.6 MGD each
3. Bar spacing and slope: Fine Screen – ¼", 35° Slope; Bar Screen – 1 ½" opening, 45° Slope
4. Method of cleaning: Mechanical with manual for bypass screen; mechanical dewatering screening
5. Disposal of screenings: Truck to Landfill

G. Primary settling (N/A)

1. Type of clarifier:
2. Number and size of units:
3. Surface settling rate (gpd/sf)
 - a. At the design flow:
 - b. At the influent pumping rate:
 - c. At the equalized flow rate:
4. Detention time (hrs):
5. Type of sludge removal mechanism
6. Weir overflow rate:
7. Disposition of scum:
8. Location of overflow weir:
9. Facilities to isolate:

H. Activated sludge (New)

1. Type of activated sludge process: Extended aeration
2. Number and size of units: Two (2) trains, splitting to three (3) trains; 14' SWD; Total Volume 704,000 gal
3. Detention time (hrs): 16.9 hours per train @ design flow
4. Organic loading (lb BOD/1000 cf): 10.8 BOD/1000 cu. ft.
5. Type of aeration equipment: Fine bubble diffusers
6. Type and size of blowers: 75 HP, 1,410 scfm positive displacement blowers
7. Air required (itemize, cfm): Aeration 1st Stage = 812 scfm; Aeration 2nd Stage = 945 scfm; Digester Tanks = 1,336 scfm; Selector Tanks = 38 scfm; Clarifier RAS Pumps = 191 scfm; Surge Tanks = 60 scfm; Sludge Holding Tanks = 987 scfm; Total Air Requirement = 4,369 scfm
8. Provisions of speed adjustment: Yes, variable frequency drives with PLC
9. Air provided: Yes
10. Ventilation in the blower room: N/A Outdoor installation under a shelter
11. Number and capacity of return sludge pump: 90 RAS Air Lift Pumps, each with 100 GPM capacity
12. Method of return sludge rate control: Timer for each airlift pump
13. Return sludge rate as % of design flow: > 150% design flow
14. Provisions for return rate metering: No
15. Location of return sludge discharge: Fermenter and Selector Tank
16. Facilities to isolate units: Yes
17. Facilities for flow split control: Yes

I. Oxidation ditch (N/A)

1. Number and size of units:
2. detention time (hrs):
3. Organic loading (lb BOD/1,000 cf):
4. Type and efficiency of aeration equipment (lb O/HP-hr):
5. Oxygen required:
6. Oxygen provided:
7. Flow velocity in ditch:

3. Treatment units (continued)

8. Number and capacity of return sludge pump:
9. Method of return sludge rate control:
10. Return sludge rate as % of design flow:
11. Provisions for return sludge metering:
12. Location of return sludge discharge:
13. Facilities to isolate units:
14. Facilities for flow split control:

J. Trickling filters (N/A)

1. Number and size of units:
2. Type of media:
3. Hydraulic loading (gpm/cf):
4. Organic loading (lb BOD/1,000 cf):
5. Recirculation:
6. Ventilation:

K. Rotating biological contactor (N/A)

1. Size and number of units:
2. Type of media:
3. Detention time (min.):
4. Organic loading (lb BOD/1,000 sf):
5. Hydraulic loading (gpd/sf):
6. Method of shaft drive:
7. Supplemental air:
8. Facilities to isolate:
9. Facilities for flow split control:

L. Sequential batch reactors (N/A)

1. Type of activated sludge process:
2. Number and size of units:
3. Detention time (hours):
 - a. Low water level:
 - b. High water level:
 - c. Total cycle:
4. Organic Loading (lb BOD/1,000 cf)
 - a. At low water level:
 - b. At high water level:
5. Type of aeration equipment:
6. Type and size of blowers:
7. Air required (itemize, cfm):
8. Provisions of speed adjustment:
9. Air provided:
10. Ventilation in the blower room:
11. Number and capacity of waste sludge pump:
12. Decanter rated at average flow (GPM):
Decanter rated at peak flow (GPM):
13. Facilities to isolate units:
14. Facilities for flow split control:

M. Lagoons (N/A)

1. Type of lagoons:
2. Number and size of lagoons:
3. Organic loading:
4. Type of aeration equipment (if applicable):
5. Type and size of air blowers (if applicable):
6. Air required (if applicable):
7. Air provided (if applicable):
8. Controlled discharge facilities:

3. Treatment units (continued)

9. Maximum water level:
10. Freeboard:
11. Soil boring data and permeability data:
12. Slope of embankment and top width:
13. Fence:
14. Detention time:
15. Stream gage:
16. Lagoon seal:
17. Facilities for multi-level lagoon discharge:
18. Scum control:

N. Secondary clarifier

1. Type of clarifiers: Rectangular
2. Number and size of units: Three (3) – 60' W x 20' L x 14' SWD
3. Surface settling rate (gpd/sf):
 - a. at the design flow: 281 gpd/sf
 - b. at the influent pumping rate: N/A
 - c. at the equalized flow rate: 893 gpd/sf
4. Detention time (hrs): 9.0 hrs. @ design flow; 2.8 hrs. @ peak w/o return flow
5. Type of sludge removal mechanism: Air Lift Surface Removal Skimmer
6. Weir overflow rate: 3,003 gpd/LF Average; 9,610 gpd/LF Max Flow
7. Disposal of scum: Air Lift Surface Removal Skimmer
8. Facilities for unit isolation: Yes (upstream of aeration tanks)
9. Facilities for flow split control: Yes (slide gate to first stage aeration tank and weirs and slide gates downstream of screening)

O. Constructed wetland (N/A)

1. Design flow:
2. Type of wetland:
3. Type of solids removal/pretreatment:
4. Number and size of cells:
5. Number of zones per cell:
6. Surface area of each zone:
7. Organic loading:
8. Liner:
9. Detention time:
10. Type of media:
11. Media depth:
12. Media void rate:
13. Operating capacity:
14. Length/width ratio:
15. Type of plants:
16. Expected % of BOD and NH₃-N removal:
17. Recirculation:
18. Dosing tank information:
 - a. Dimensions:
 - b. Capacity:
 - c. Pumps:

P. Rapid sand filtration (N/A)

1. Number and size of filters:
2. Filtration rate:
 - a. at peak flow rate:
 - b. at average flow rate:
3. Type, depth, and grain size of filter media:
4. Backwash rate:
5. Air scour:

3. Treatment units (continued)

6. Capability to chlorinate ahead of the filter:
7. Backwash pumps (number and capacity):
8. Method of rate control:
9. source of capacity of backwash water:
10. Holding capacity or dirty water tank:
11. Facilities for unit isolation:

Q. Micro-strainers (N/A)

1. Number and size of strainers:
2. Screen material:
3. Filtration rate:
4. Backwash rate:
5. Number and capacity of backwash pumps:
6. Facilities for unit isolation:
7. Slime control provisions:

R. Two-day lagoon (N/A)

1. Number and size of lagoon cells:
2. Detention time (days):
3. Type of chemical:
4. Location of chemical injection:
5. Number and size of chemical storage tank:
6. Rate adjustment capabilities:
7. Capacity of chemical storage tank:
8. Capacity of spill storage tank:
9. Expected daily use of chemical (dosage and solution):
10. Lagoon seal:
11. Parallel or series operation:
12. Sludge removal facilities:
13. Method of draining:
14. Multi-level discharge:
15. Scum control:

S. Post-aeration (New)

1. Type of aeration: Cascade Aeration Structure
2. Number of units: One (1)
3. Size of units: Nine (9) Steps; each approximately 1' tall and 7' wide
4. Aeration provided: No
5. Expected effluent DO: 6.0 minimum

T. Nitrification system (New, see Activated Sludge)

1. Type of nitrification system: Combined with Activated Sludge
2. Ammonia loading: 127 lbs/day design; 166 lbs/day peak
3. Additional oxygen demand: 934 lbs O₂ per day design; <1,217 lbs O₂ per day peak
4. Air supply system: Positive Displacement Blowers with Diffusers
5. Hydraulic detention time: 16.9 hrs @ 1.0 MGD
6. Mean cell residence time (days): 18 days

U. Phosphorus removal facilities (N/A)

1. Type of chemical to be used:
2. Location of chemical injection:
3. Number and size of chemical feed pumps:
4. Size of chemical; storage tank:
5. Capacity of spill storage space:
6. Chemical dosage:
7. Daily chemical consumption expected:
8. Rapid mix tank:
9. Slow mixing equipment:
10. Other facilities – describe:

3. Treatment units (continued)**V. Disinfection (N/A)**

1. Type of disinfectant used:
2. Size of contact tank:
3. Contact time:
4. Type of disinfectant feeders:
5. Capacity of the feeders:
6. Disinfectant dosage:
7. Scum control baffle:
8. Source of the disinfectant feed water:
9. Breakwater tank for the feed water:
10. Bypass:
11. Drain for tank:
12. Ventilation in chlorine room:
13. Safety equipment:

W. De-chlorination (N/A)

1. Chemical used:
2. Type of feeders:
3. Capacity of feeders:
4. Dosage:
5. Type of diffuser:
6. Diffuser location:
7. Equipment location:
8. Ventilation provided:
9. Safety equipment:

X. UV disinfection

1. Type: Open Channel, Horizontal Layout
2. Location: Downstream of Secondary Clarifier
3. Size of channel: 21' Long x 1'-4" Wide x 2.79' SWD
4. Contact time: 28 seconds
5. Dosage: 42,000 $\mu\text{Ws} / \text{cm}^2$
6. Bypass: Yes
7. Safety equipment: Low water level "lights off" sensor and switch
8. Cleaning equipment: Automatic in-channel chemical and mechanical cleaning
9. Intensity Monitoring: Yes

Y. Sludge thickening (N/A)

1. Number and size of thickeners:
2. Type of sludge thickeners:
3. Hydraulic loading:
4. Solids loading:
5. Provisions to chlorinate:

Z. Anaerobic digesters (N/A)

1. Number and size of units:
2. Total volume:
3. Organic loading
4. Hydraulic detention time:
5. Volume per capita:
6. Type of mixing:
7. Heating: ☐ internal or ☐ external

AA. Aerobic digesters

1. Number and size of units: Three (3) @ 111,000 total gallons each; 333,000 gallons total
2. Detention time: 60 days
3. Organic loading: 9.2 lbs VSS / 1,000 cu ft per day
4. Air supply: 30 cfm/1000 cu. ft. stainless steel fixed
5. Decanting method: Weir

3. Treatment units (continued)	
BB. Wet-oxidation (N/A)	
1. Number of units:	
2. Type of heat treatment:	
3. Temperature and pressure to be used:	
4. Capacity of the unit:	
5. Daily sludge production for heat treatment:	
CC. Sludge drying beds (N/A)	
1. Number and size of drying beds:	
2. Filter area per capita:	
3. Under-drain system:	
4. Discharge location of filtrate:	
5. Accessibility of dry sludge removal equipment:	
DD. Mechanical dewatering (New)	
1. Type of dewatering units:	Belt Filter Press
2. Number and size of dewatering units:	One (1), 1.5 Meter Unit
3. Capacity of dewatering units:	4,800 lbs/day for 8-hour day; 14,400 lbs/day for 24-hour day
4. Daily solids production for dewatering:	675 lbs/day
5. Type of chemicals to be used:	Polymer
EE. Sludge disposal (New)	
1. Ultimate disposal method of sludge:	Landfill
2. Expected solids content of sludge (by the principal method of disposal):	18%
3. Location of disposal site:	N/A
4. Ownership of the disposal site:	N/A
5. Availability of sludge transport equipment:	Contract Haul
4. Sewer Collection System (Note: Submitted under separate letter)	
A. Lift Stations (New – Constructed as part of separate project under separate construction permit)	
1. Location:	Lat: 40°07'06.24"N Long: 85°36'42.69" W
2. Type of pump:	Flygt NP3301.180 HT
3. Number of pumps:	Three (3)
4. Constant or variable speed:	Variable Speed
5. Capacity of pumps:	2,000 gpm
6. RPM and TDH:	1,100 RPM; 157' TDH
7. Volume of the wet well:	2,136 ft ³
8. Detention time in the wet well:	10 min
9. A gate valve and a check valve in the discharge line:	Yes, plug valve and check valve
10. A gate valve on the suction line:	N/A
11. Ventilation:	Yes, 6" SS in wet well
12. Standby power:	Yes, generator
13. Alarm:	Yes, Audible & Visual
14. Breakwater tanks:	N/A
15. Bypass or overflow:	Bypass
16. Type of force main:	12" PVC SDR 21
17. Diameter and length of force main:	12"; 3,765' Total (1,015' constructed under this permit)
B. Sewer (New – Constructed as part of separate project under separate construction permit)	
1. Type of sewer material:	18" PVC SDR 26 and 24" D.I.
2. Diameter and length of sewer (indicate length for each size):	128' of 18" PVC & 13' of 24" D.I.
3. Stream, highway, and railroad crossing:	N/A
4. Separation of combined sewer or new sewer:	New Sewer
5. Number of manholes:	One (1)
6. Water main protection:	N/A

4. Sewer Collection System (continued)**C. Individual grinder pumps (N/A)**

1. Location:
2. Number of pumps:
3. Capacity of pumps:
4. RPM and TDH:
5. Volume of the wet well:
6. A gate valve and a check valve in the discharge line:
7. Ventilation:
8. Alarm:

5. Miscellaneous

- | | |
|---|---|
| A. Laboratory equipment: | Yes, Equipped for Process Control |
| B. Safety equipment: | Eye wash station |
| C. Plant site fence: | Security fence provided around entire plant |
| D. Handrail for the tanks: | Provided as required |
| E. Units, unit operation, and plant bypasses: | Provided as needed for plant reliability |
| F. Flood elevation (10, 25, or 100 year flood): | 100 year flood = 862.00' |
| G. Provisions to maintain the same degree of treatment during construction: | Yes |
| H. Standby power: | Yes, standby generator |
| I. Site inspection: | Yes |
| J. Statement in the specifications as to the protection against any adverse environmental effect (e.g., dust, noise, soil erosion) during construction: | Yes |
| K. Hoists for removing heavy equipment: | Provided |
| L. Adequate sampling facilities: | Automatic sampler provided |
| M. Hydraulic gradient: | Yes |
| N. Septage receiving facilities (N/A) | |
| 1. Screening: | |
| 2. Location of discharge: | |

IDENTIFICATION OF POTENTIALLY AFFECTED PERSONS

Please list any and all persons whom you have reason to believe have a substantial or proprietary interest in this matter, or could otherwise be considered to be potentially affected under law. Failure to notify a person who is later determined to be potentially affected could result in voiding our decision on procedural grounds. To ensure conformance with Administrative Orders and Procedures Act (AOPA) and to avoid reversal of a decision, please list all such parties. The letter on the opposite side of this form will further explain the requirements under the AOPA. Attach additional names and addresses on a separate sheet of paper, as needed.
(See attached)

Name	
Jack Taylor	
Address (number and street)	
17 Veterans Boulevard	
City	
Chesterfield	
State	ZIP
IN	46017

Name	
North Anderson Church of God	
Address (number and street)	
P.O. Box 2479	
City	
Anderson	
State	ZIP
IN	46018

Name	
New Life Christian Church	
Address (number and street)	
2515 E 100 N	
City	
Anderson	
State	ZIP
IN	46012

Name	
Rick & Bobbi Eads	
Address (number and street)	
718 N 300 E	
City	
Anderson	
State	ZIP
IN	46017

Name	
Jerry Stires	
Address (number and street)	
751 N 300 E	
City	
Anderson	
State	ZIP
IN	46017

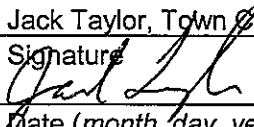
Name	
Thomas Shepherd	
Address (number and street)	
3181 E 400 N	
City	
Anderson	
State	ZIP
IN	46017

Name	
Whitewater Ranch LLP	
Address (number and street)	
1912 E 200 S	
City	
Bluffton	
State	ZIP
IN	46714

Name	
City of Anderson Aviation Division	
Address (number and street)	
P.O. Box 2100	
City	
Anderson	
State	ZIP
IN	46018

CERTIFICATION

I certify that to the best of my knowledge I have listed all potentially affected parties, as defined by IC 4-21.5-3-4.

Proposed facility name	Printed Name
Wastewater Treatment Plant	Jack Taylor, Town Council President
City	Signature
Chesterfield	
County	Date (month, day, year)
Madison	3 / 29 / 10

IDENTIFICATION OF POTENTIALLY AFFECTED PERSONS (CONTINUED)

To: Applicant

Subject: Identification of Potentially Affected Persons

The Administrative Orders and Procedures Act (AOPA), IC 4-21.5-3-4, requires that the Indiana Department of Environmental Management (IDEM) give notice of its decision on your application to the following persons:

- Each person to whom the decision is specifically directed,
- Each person to whom a law requires notice be given.

IC 13-15-3-1 requires IDEM to provide notice of receipt of a permit application to the following:

- 1. The county executive of a county affected by a permit application,**
- 2. The executive of a city affected by a permit application,**
- 3. The executive of a town council of a town affected by a permit application.**

Under IC 13-15-3-1 (b) IDEM is requesting information necessary to provide such notice to the appropriate officials.

Attention:

Since June 17, 1999, mailing labels are required to be submitted with your project. Having these labels with your application is helpful to you as well as our office. These mailing labels need to have the names and addresses of the affected parties along with our mailing code (which is 65-42FC) listed above each affected party listing.

For Example: 65-42FC
 JOHN DEERE
 111 CIRCLE DR
 YOUR CITY IN 44444



65-42FC
Jack Taylor
17 Veterans Boulevard
Chesterfield, , IN 46017

65-42FC
New Life Christian Church
2515 E. 100 N.
Anderson, , IN 46012

65-42FC
Jerry Stires
751 N. 300 E.
Anderson, , IN 46017

65-42FC
Whitewater Ranch, LLP
1912 E. 200 S.
Bluffton, , IN 46714

65-42FC
North Anderson Church of God
P. O. Box 2479
Anderson, , IN 46018

65-42FC
Rich & Bobbi Eads
718 N. 300 E.
Anderson, , IN 46017

65-42FC
Thomas Shepherd
3181 E. 400 N.
Anderson, , IN 46017

65-42FC
City of Anderson Aviation Division
P. O. Box 2100
Anderson, , IN 46018

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APPENDIX D

NPDES PERMIT



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno Pigott
Commissioner

VIA ELECTRONIC MAIL

July 21, 2017

Mr. Jack Taylor, President
Town Council of Chesterfield
17 Veterans Boulevard
Chesterfield, Indiana 46071

Dear Mr. Taylor:

Re: Final NPDES Permit No. IN0063983
Town of Chesterfield Wastewater Treatment Plant
Madison County

Your application for a National Pollutant Discharge Elimination System (NPDES) permit has been processed in accordance with Sections 402 and 405 of the Federal Water Pollution Control Act as amended, (33 U.S.C. 1251, et seq.), and IDEM's permitting authority under IC 13-15. The enclosed NPDES permit covers your discharges to the West Fork White River. All discharges from this facility shall be consistent with the terms and conditions of this permit.

One condition of your permit requires monthly reporting of several effluent parameters. You are required to submit both federal discharge monitoring reports (DMRs) and state Monthly Reports of Operation (MROs) on a routine basis. The MRO form is available on the internet at the following web site: <http://www.in.gov/ideM/cleanwater/2396.htm>.

Once you are on this page, select the "IDEM Forms" page and locate the version of the MRO applicable to your plant under the "Wastewater Facilities" heading. We recommend selecting the "XLS" version as it will complete all of the calculations on the data entered.

All NPDES permit holders are required to submit their monitoring data to IDEM using NetDMR. Please contact Rose McDaniel at (317) 233-2653 or Helen Demmings (317) 232-8815 if you would like more information on NetDMR. Information is also available on our website at <http://IN.gov/ideM/cleanwater/2422.htm>.

Another condition which needs to be clearly understood concerns violation of the effluent limitations in the permit. Exceeding the limitations constitutes a violation of the permit and may bring criminal or civil penalties upon the permittee. (See Part II.A.1 and II.A.11 of this permit). It is very important that your office and treatment operator understand this part of the permit.

Please note that this permit issuance can be appealed. An appeal must be filed under procedures outlined in IC 13-15-6, IC 4-21.5, and the enclosed public notice. The appeal must be initiated by filing a petition for administrative review with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the emailing of an electronic copy of this letter or within eighteen (18) days of the mailing of this letter by filing at the following addresses:

Mr. Jack Taylor, President
Page 2

Director
Office of Environmental Adjudication
Indiana Government Center North
Room N103
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

The permit should be read and studied. It requires certain action at specific times by you, the discharger, or your authorized representative. One copy of this permit is also being sent to your operator to be kept at the treatment facility. You may wish to call this permit to the attention of your consulting engineer and/or attorney.

If you have any questions concerning your NPDES permit, please contact Jason House at 317/233-0470 or jahouse@idem.IN.gov. Questions concerning appeal procedures should be directed to the Office of Environmental Adjudication, at 317/233-0850.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Higginbotham", with a long horizontal line extending to the right.

Paul Higginbotham
Deputy Assistant Commissioner
Office of Water Quality

Enclosures

cc: Dustin R. Bennett, Certified Operator
Brady Dryer, Commonwealth Engineers
U.S. EPA, Region 5

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Act"), Title 13 of the Indiana Code, and regulations adopted by the Water Pollution Control Board, the Indiana Department of Environmental Management (IDEM) is issuing this permit to the

TOWN OF CHESTERFIELD

hereinafter referred to as "the permittee." The permittee owns and/or operates the Town of Chesterfield Wastewater Treatment Plant, a major municipal wastewater treatment plant located at 745 North County Road 300 East, Chesterfield, Indiana, Madison County. The permittee is hereby authorized to discharge from the outfalls identified in Part I of this permit to receiving waters named the West Fork of the White River in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in the permit. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date: November 1, 2017.

Expiration Date: October 31, 2022.

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and application forms as are required by the Indiana Department of Environmental Management. The application shall be submitted to IDEM at least 180 days prior to the expiration date of this permit, unless a later date is allowed by the Commissioner in accordance with 327 IAC 5-3-2 and Part II.A.4 of this permit.

Issued July 21, 2017, for the Indiana Department of Environmental Management.



Paul Higginbotham
Deputy Assistant Commissioner
Office of Water Quality

TREATMENT FACILITY DESCRIPTION

The permittee currently operates a Class II, 1.0 MGD extended aeration treatment facility consisting of a mechanical fine screen, a flow splitter box and two treatment trains. The first train consists of a fermenter tank, an anaerobic/selector tank, two (2) first stage aeration tanks, a surge tank with a return sludge pump, two (2) second stage aeration tanks, two (2) final clarifiers, two (2) aerobic digesters, and two (2) sludge holding tanks. The second treatment train consists of a fermenter tank, an aerobic/selector tank, one (1) first stage aeration tank, one (1) second stage aeration tank, one (1) final clarifier, one (1) aerobic digester, and one (1) sludge holding tank. Both treatment trains will merge prior to ultraviolet light disinfection followed by cascade aeration. Flow meters are present for both wastewater influent and effluent. A sludge bagging system is utilized for sludge handling. Sludge is disposed of at a landfill.

The collection system is comprised of 100% separate sanitary sewers by design with no overflow or bypass points

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee shall take samples and measurements at a location representative of each discharge to determine whether the effluent limitations have been met. Refer to Part I.B of this permit for additional monitoring and reporting requirements.

- Beginning on the effective date of this permit, the permittee is authorized to discharge from Outfall 001, which is located at Latitude: 40° 7' 0.57" N, Longitude: 85° 37' 5.45" W. The discharge is subject to the following requirements:

TABLE 1

<u>Parameter</u>	<u>Quantity or Loading</u>			<u>Quality or Concentration</u>			<u>Monitoring Requirements</u>	
	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Units</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow [1]	Report	----	MGD	----	----	----	5 X Weekly	24-Hr. Total
CBOD ₅	83	125	lbs/day	10	15	mg/l	3 X Weekly	24-Hr. Composite
TSS	100	150	lbs/day	12	18	mg/l	3 X Weekly	24-Hr. Composite
Ammonia-nitrogen								
Summer [2]	9.2	13.4	lbs/day	1.1	1.6	mg/l	3 X Weekly	24-Hr. Composite
Winter [3]	13.4	20.0	lbs/day	1.6	2.4	mg/l	3 X Weekly	24-Hr. Composite
Phosphorus [4]								
Interim	----	----	----	Report	----	mg/l	Monthly	24-Hr. Composite
Final	----	----	----	1.0	----	mg/l	3 X Weekly	24-Hr. Composite

TABLE 2

<u>Parameter</u>	<u>Quality or Concentration</u>				<u>Monitoring Requirements</u>	
	<u>Daily Minimum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Units</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
pH [5]	6.0	----	9.0	s.u.	5 X Weekly	Grab
Dissolved Oxygen [6]	6.0	----	----	mg/l	5 X Weekly	3 Grabs/24-Hrs.
<i>E. coli</i> [7]	----	125 [8]	235 [9]	cfu/100 ml	3 X Weekly	Grab
Influent Mercury	----	----	Report	ng/l	6 X Annually	Grab
Effluent Mercury [10]						
Interim [11]	----	----	Report	ng/l	6 X Annually	Grab
Final [11]	----	12	20	ng/l	6 X Annually	Grab

- [1] Effluent flow measurement is required per 327 IAC 5-2-13. The flow meter(s) shall be calibrated at least once every twelve months.
- [2] Summer limitations apply from May 1 through November 30 of each year.
- [3] Winter limitations apply from December 1 through April 30 of each year.
- [4] Refer to the Schedule of Compliance for phosphorus in Part I.D of this permit.
- [5] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Report of Operation forms.
- [6] The daily minimum concentration of dissolved oxygen in the effluent shall be reported as the arithmetic mean determined by summation of the three (3) daily grab sample results divided by the number of daily grab samples. These samples are to be collected over equal time intervals.
- [7] The effluent shall be disinfected on a continuous basis such that violations of the applicable bacteriological limitations (*E. coli*) do not occur from April 1 through October 31, annually.

The *Escherichia coli* (*E. coli*) limitations apply from April 1 through October 31 annually. IDEM has specified the following methods as allowable for the detection and enumeration of *Escherichia coli* (*E. coli*):

1. Coliscan MF® Method
2. EPA Method 1603 Modified m-TEC agar
3. mColi Blue-24®
4. Colilert® MPN Method or Colilert-18® MPN Method

- [8] The monthly average *E. coli* value shall be calculated as a geometric mean. Per 327 IAC 5-10-6, the concentration of *E. coli* shall not exceed one hundred twenty-five (125) cfu or mpn per 100 milliliters as a geometric mean of the effluent samples taken in a calendar month. No samples may be excluded when calculating the monthly geometric mean.
- [9] If less than ten samples are taken and analyzed for *E. coli* in a calendar month, no samples may exceed two hundred thirty-five (235) cfu or mpn as a daily maximum. However, when ten (10) or more samples are taken and analyzed for *E. coli* in a calendar month, not more than ten percent (10%) of those samples may exceed two hundred thirty-five (235) cfu or mpn as a daily maximum. When calculating ten percent, the result must not be rounded up. In reporting for compliance purposes on the Discharge Monitoring Report (DMR) form, the permittee shall record the highest non-excluded value for the daily maximum.
- [10] Refer to the Schedule of Compliance for mercury in Part I.E of this permit.
- [11] Mercury monitoring shall be conducted six times annually (i.e. every other month) for the term of the permit. Monitoring shall be conducted in the months of February, April, June, August, October, and December of each year. Mercury monitoring and analysis will be performed using EPA Test Method 1631, Revision E. If Method 1631, Revision E is further revised during the term of this permit, the permittee and/or its contract laboratory is required to utilize the most current version of the method immediately after approval by EPA.

The permittee shall measure and report this parameter as total recoverable metal.

2. Minimum Narrative Limitations

At all times the discharge from any and all point sources specified within this permit shall not cause receiving waters:

- a. including the mixing zone, to contain substances, materials, floating debris, oil, scum or other pollutants:
 - (1) that will settle to form putrescent or otherwise objectionable deposits;
 - (2) that are in amounts sufficient to be unsightly or deleterious;
 - (3) that produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;
 - (4) which are in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;

- (5) which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.
- b. outside the mixing zone, to contain substances in concentrations which on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

B. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge flow and shall be taken at times which reflect the full range and concentration of effluent parameters normally expected to be present. Samples shall not be taken at times to avoid showing elevated levels of any parameters.

2. Data on Plant Operation

The raw influent and the wastewater from intermediate unit treatment processes, as well as the final effluent shall be sampled and analyzed for the pollutants and operational parameters specified by the applicable Monthly Report of Operation Form, as appropriate, in accordance with 327 IAC 5-2-13. Except where the permit specifically states otherwise, the sample frequency for the raw influent and intermediate unit treatment process shall be at a minimum the same frequency as that for the final effluent. The measurement frequencies specified in each of the tables in Part I.A. are the minimum frequencies required by this permit.

For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand (CBOD₅) and Total Suspended Solids shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.102, as incorporated by reference in 327 IAC 5-2-1.5. The permittee must monitor the influent and effluent CBOD₅ and TSS at least once per month and calculate the percent removal to ensure compliance with the required 85 percent removal. This information must be maintained on site and provided to this Office's staff upon request.

3. Monthly Reporting

The permittee shall submit accurate monitoring reports to the Indiana Department of Environmental Management containing results obtained during the previous monitoring period and shall be submitted no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the monitoring period in which the permit becomes effective. These reports shall include, but not necessarily be limited to, the Discharge Monitoring Report (DMR) and the Monthly Report of Operation (MRO). All reports shall be submitted

electronically by using the NetDMR application, upon registration, receipt of the NetDMR Subscriber Agreement, and IDEM approval of the proposed NetDMR Signatory. The NetDMR website (for initial registration and monthly DMR/MMR submittal) is: <https://netdmr.epa.gov/netdmr/public/home.htm>. The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit.

A calendar week will begin on Sunday and end on Saturday. Partial weeks consisting of four or more days at the end of any month will include the remaining days of the week, which occur in the following month in order to calculate a consecutive seven-day average. This value will be reported as a weekly average or seven-day average on the MRO for the month containing the partial week of four or more days. Partial calendar weeks consisting of less than four days at the end of any month will be carried forward to the succeeding month and reported as a weekly average or a seven-day average for the calendar week that ends with the first Saturday of that month.

4. Definitions

a. Calculation of Averages

Pursuant to 327 IAC 5-2-11(a)(5), the calculation of the average of discharge data shall be determined as follows: For all parameters except fecal coliform and *E. coli*, calculations that require averaging of sample analyses or measurements of daily discharges shall use an arithmetic mean unless otherwise specified in this permit. For fecal coliform, the monthly average discharge and weekly average discharge, as concentrations, shall be calculated as a geometric mean. For *E. coli*, the monthly average discharge, as a concentration, shall be calculated as a geometric mean.

b. Terms

- (1) “Monthly Average” -The monthly average discharge means the total mass or flow-weighted concentration of all daily discharges during a calendar month on which daily discharges are sampled or measured, divided by the number of daily discharges sampled and/or measured during such calendar month. The monthly average discharge limitation is the highest allowable average monthly discharge for any calendar month.
- (2) “Weekly Average” - The weekly average discharge means the total mass or flow weighted concentration of all daily discharges during any calendar week for which daily discharges are sampled or measured, divided by the number of daily discharges sampled and/or measured during such calendar week. The average weekly discharge limitation is the maximum allowable average weekly discharge for any calendar week.

- (3) “Daily Maximum” - The daily maximum discharge limitation is the maximum allowable daily discharge for any calendar day. The “daily discharge” means the total mass of a pollutant discharged during the calendar day or, in the case of a pollutant limited in terms other than mass pursuant to 327 IAC 5-2-11(e), the average concentration or other measurement of the pollutant specified over the calendar day or any twenty-four hour period that represents the calendar day for purposes of sampling.
- (4) “24-hour Composite” - A 24-hour composite sample consists of at least three (3) individual flow-proportioned samples of wastewater, taken by the grab sample method over equal time intervals during the period of operator attendance or by an automatic sampler, and which are combined prior to analysis. A flow proportioned composite sample shall be obtained by:
- (a) recording the discharge flow rate at the time each individual sample is taken,
 - (b) adding together the discharge flow rates recorded from each individual sampling time to formulate the “total flow value,”
 - (c) dividing the discharge flow rate of each individual sampling time by the total flow value to determine its percentage of the total flow value, and
 - (d) multiplying the volume of the total composite sample by each individual sample’s percentage to determine the volume of that individual sample which will be included in the total composite sample.

Alternatively, a 24-hour composite sample may be obtained by an automatic sampler on an equal time interval basis over a twenty-four hour period provided that a minimum of 24 samples are taken and combined prior to analysis. The samples do not need to be flow-proportioned if the permittee collects samples in this manner.

- (5) CBOD₅: Five-day Carbonaceous Biochemical Oxygen Demand
- (6) TSS: Total Suspended Solids
- (7) *E. coli*: Escherichia coli bacteria
- (8) The “Regional Administrator” is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.
- (9) The “Commissioner” is defined as the Commissioner of the Indiana Department of Environmental Management, located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204-2251.

- (10) Limit of Detection or LOD is defined as a measurement of the concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix. The LOD is equivalent to the Method Detection Level or MDL.
- (11) Limit of Quantitation or LOQ is defined as a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also called the limit of quantification or quantification level.
- (12) Method Detection Level or MDL is defined as the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by the procedure set forth in 40 CFR Part 136, Appendix B. The method detection level or MDL is equivalent to the LOD.

5. Test Procedures

The analytical and sampling methods used shall conform to the current version of 40 CFR, Part 136, unless otherwise specified within this permit. Multiple editions of Standard Methods for the Examination of Water and Wastewater are currently approved for most methods, however, 40 CFR Part 136 should be checked to ascertain if a particular method is approved for a particular analyte. The approved methods may be included in the texts listed below. However, different but equivalent methods are allowable if they receive the prior written approval of the State agency and the U.S. Environmental Protection Agency.

- a. Standard Methods for the Examination of Water and Wastewater
18th, 19th, or 20th Editions, 1992, 1995 or 1998 American Public Health Association, Washington, D.C. 20005.
- b. A.S.T.M. Standards, Part 23, Water; Atmospheric Analysis
1972 American Society for Testing and Materials, Philadelphia, PA 19103.
- c. Methods for Chemical Analysis of Water and Wastes
June 1974, Revised, March 1983, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 45202.

6. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record and maintain records of all monitoring information on activities under this permit, including the following information:

- a. The exact place, date, and time of sampling or measurements;
- b. The person(s) who performed the sampling or measurements;
- c. The dates and times the analyses were performed;
- d. The person(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of all required analyses and measurements.

7. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monthly Discharge Monitoring Report and on the Monthly Report of Operation form. Such increased frequency shall also be indicated on these forms. Any such additional monitoring data which indicates a violation of a permit limitation shall be followed up by the permittee, whenever feasible, with a monitoring sample obtained and analyzed pursuant to approved analytical methods. The results of the follow-up sample shall be reported to the Commissioner in the Monthly Discharge Monitoring Report.

8. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three-year period shall be extended:

- a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or
- b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

C. REOPENING CLAUSES

In addition to the reopening clause provisions cited at 327 IAC 5-2-16, the following reopening clauses are incorporated into this permit:

1. This permit may be modified or, alternately, revoked and reissued after public notice and opportunity for hearing to incorporate effluent limitations reflecting the results of a wasteload allocation if the Department of Environmental Management determines that such effluent limitations are needed to assure that State Water Quality Standards are met in the receiving stream.
2. This permit may be modified due to a change in sludge disposal standards pursuant to Section 405(d) of the Clean Water Act, if the standards when promulgated contain different conditions, are otherwise more stringent, or control pollutants not addressed by this permit.
3. This permit may be modified, or, alternately, revoked and reissued, to comply with any applicable effluent limitation or standard issued or approved under section 301(b)(2)(C), (D) and (E), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:
 - a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. controls any pollutant not limited in the permit.

D. SCHEDULE OF COMPLIANCE FOR PHOSPHORUS

The permittee shall achieve compliance with the final effluent limitations in accordance with the following schedule:

1. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality (OWQ) six (6) months from the effective date of the permit. The progress report shall include, among other items, a description of the method(s) selected for meeting the final requirements for **phosphorus**. The final effluent limitations for phosphorus are deferred for the term of this compliance schedule, unless the final effluent limitations can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the final effluent limitations for phosphorus can be met. Upon receipt of such notification by OWQ, the final limitations for phosphorus will become effective, but no later than 36 months from the effective date of this permit. Monitoring and reporting of effluent phosphorus is required during the interim period.
2. If construction is required, a construction permit application (including Plans and Specifications) for complying with final requirements shall be submitted (if required by 327 IAC 3-2) within fourteen (14) months from the effective date of the permit. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality at this time.

3. Initiation of construction, if necessary, shall commence not later than the twenty-three (23) months from the effective date of the permit. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality at this time.
4. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality thirty-two (32) months from the effective date of the permit.
5. Construction shall be completed within thirty-five (35) months from the effective date of the permit. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality when construction has been completed.
6. The permittee shall comply with all final requirements no later than thirty-six (36) months from the effective date of the permit.
7. If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Data Section of the Office of Water Quality stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

E. SCHEDULE OF COMPLIANCE FOR MERCURY

1. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality (OWQ) nine (9) months from the effective date of the permit. The progress report shall include, among other items, a description of the method(s) selected for meeting the final requirements for mercury. The final effluent limitations for mercury are deferred for the term of this compliance schedule, however the permittee must take steps to attempt to meet the final limitations as soon as reasonably possible. If the permittee determines prior to the conclusion of this compliance schedule that it can meet any of the final limitations, the permittee shall provide written notification to the Compliance Data Section of the Office of Water Quality. Monitoring and reporting of effluent mercury is required during the interim period in accordance with Part I.A.3 of the permit.
2. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality not later than the eighteen (18) months from the effective date of the permit.
3. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality not later than the twenty-seven (27) months from the effective date of the permit.
4. The permittee shall comply with all final requirements no later than the thirty-six (36) months from the effective date of the permit. The permittee shall submit a written progress report to the Compliance Data Section, Office of Water Quality at this time.

5. If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Data Section of the Office of Water Quality stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all terms and conditions of this permit in accordance with 327 IAC 5-2-8(1) and all other requirements of 327 IAC 5-2-8. Any permit noncompliance constitutes a violation of the Clean Water Act and IC 13 and is grounds for enforcement action or permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

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

2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit. During periods of noncompliance, the permittee shall conduct such accelerated or additional monitoring for the affected parameters, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

3. Duty to Provide Information

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the facility that:

- a. could significantly change the nature of, or increase the quantity of, pollutants discharged; or
- b. the Commissioner may request to evaluate whether such cause exists.

In accordance with 327 IAC 5-1-3(a)(5), the permittee must also provide any information reasonably requested by the Commissioner.

4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must obtain and submit a renewal of this permit in accordance with 327 IAC 5-3-2(a)(2). It is the permittee's responsibility to obtain and submit the application. In accordance with 327 IAC 5-2-3(c), the owner of the facility or

operation from which a discharge of pollutants occurs is responsible for applying for and obtaining the NPDES permit, except where the facility or operation is operated by a person other than an employee of the owner in which case it is the operator's responsibility to apply for and obtain the permit. The application must be submitted at least 180 days before the expiration date of this permit. This deadline may be extended if:

- a. permission is requested in writing before such deadline;
- b. IDEM grants permission to submit the application after the deadline; and
- c. the application is received no later than the permit expiration date.

As required under 327 IAC 5-2-3(g)(1) and (2), POTWs with design influent flows equal to or greater than one million (1,000,000) gallons per day and POTWs with an approved pretreatment program or that are required to develop a pretreatment program, will be required to provide the results of whole effluent toxicity testing as part of their NPDES renewal application.

5. Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except in accordance with 327 IAC 5-2-6(c). This permit may be transferred to another person by the permittee, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

- a. the current permittee notified the Commissioner at least thirty (30) days in advance of the proposed transfer date.
- b. a written agreement containing a specific date of transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgment that the existing permittee is liable for violations up to that date, and the transferee is liable for violations from that date on) is submitted to the Commissioner.
- c. the transferee certifies in writing to the Commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the Commissioner may allow a temporary transfer of the permit without permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility.

- d. the Commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act or state law.

6. Permit Actions

In accordance with 327 IAC 5-2-16(b) and 327 IAC 5-2-8(4), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts in the application, or during the permit issuance process; or
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge controlled by the permittee (e.g., plant closure, termination of the discharge by connecting to a POTW, a change in state law or information indicating the discharge poses a substantial threat to human health or welfare).

Filing of either of the following items does not stay or suspend any permit condition: (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) submittal of information specified in Part II.A.3 of the permit including planned changes or anticipated noncompliance.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility that:

- 1. could significantly change the nature of, or increase the quantity of, pollutants discharged; or
- 2. the commissioner may request to evaluate whether such cause exists.

7. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or an invasion of rights, any infringement of federal, state, or local laws or regulations. The issuance of the permit also does not

preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

8. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstance is held invalid, the invalidity shall not affect any other provisions or applications of the permit which can be given effect without the invalid provision or application.

9. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

10. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act or state law.

11. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Water Pollution Control Board is liable for a civil penalty not to exceed twenty-five thousand dollars (\$25,000) per day of any violation. Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated agent in the performance of an inspection or investigation commits a class C infraction.

Pursuant to IC 13-30-10, a person who intentionally, knowingly, or recklessly violates any provision of this permit, the water pollution control laws or a rule or standard adopted by the Water Pollution Control Board commits a class D felony punishable by the term of imprisonment established under IC 35-50-2-7(a) (up to one year), and/or by a fine of not less than five thousand dollars (\$5,000) and not more than fifty thousand dollars (\$50,000) per day of violation. A person convicted for a violation committed after a first conviction of such person under this provision is subject to a fine of not more than one hundred thousand dollars (\$100,000) per day of violation, or by imprisonment for not more than two (2) years, or both.

12. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(10), the permittee shall comply with monitoring, recording, and reporting requirements of this permit. The Clean Water Act, as well as IC 13-30-10, provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under a permit shall, upon conviction, be punished by a fine of not more than ten thousand dollars (\$10,000) per violation, or by imprisonment for not more than one hundred eighty (180) days per violation, or by both.

13. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health, and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants injurious to human health are effective and must be complied with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

14. Operator Certification

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7. The permittee shall designate one (1) person as the certified operator with complete responsibility for the proper operations of the wastewater facility.

327 IAC 5-22-10.5(a) provides that a certified operator may be designated as being in responsible charge of more than one (1) wastewater treatment plant, if it can be shown that he will give adequate supervision to all units involved. Adequate supervision means that sufficient time is spent at the plant on a regular basis to assure that the certified operator is knowledgeable of the actual operations and that test reports and results are representative of the actual operations conditions. In accordance with 327 IAC 5-22-3(11), "responsible charge" means the person responsible for the overall daily operation, supervision, or management of a wastewater facility.

Pursuant to 327 IAC 5-22-10(4), the permittee shall notify IDEM when there is a change of the person serving as the certified operator in responsible charge of the wastewater treatment facility. The notification shall be made no later than thirty (30) days after a change in the operator.

15. Construction Permit

Except in accordance with 327 IAC 3, the permittee shall not construct, install, or modify any water pollution treatment/control facility as defined in 327 IAC 3-1-2(24). Upon completion of any construction, the permittee must notify the Compliance Data Section of the Office of Water Quality in writing.

16. Inspection and Entry

In accordance with 327 IAC 5-2-8(8), the permittee shall allow the Commissioner, or an authorized representative, (including an authorized contractor acting as a representative of the Commissioner) upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a point source, regulated facility, or activity is located or conducted, or where records must be kept pursuant to the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment or methods (including monitoring and control equipment), practices, or operations regulated or required pursuant to this permit; and
- d. Sample or monitor at reasonable times, any discharge of pollutants or internal wastestreams for the purposes of evaluating compliance with the permit or as otherwise authorized.

17. New or Increased Discharge of Pollutants

This permit prohibits the permittee from undertaking any action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

- a. Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the submittal of an antidegradation demonstration.
- b. An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6.

B. MANAGEMENT REQUIREMENTS

1. Facility Operation, Maintenance and Quality Control

- a. In accordance with 327 IAC 5-2-8(9), the permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances, i.e., equipment used for measuring and determining compliance) for collection and treatment that are:

- (1) installed or used by the permittee; and

- (2) necessary for achieving compliance with the terms and conditions of the permit.

Neither 327 IAC 5-2-8(9), nor this provision, shall be construed to require the operation of installed treatment facilities that are unnecessary for achieving compliance with the terms and conditions of the permit. This provision also does not prohibit taking redundant treatment units off line, provided that the permittee is at all times: maintaining in good working order and efficiently operating all facilities and systems; providing best quality effluent; and achieving compliance with the terms and conditions of the permit.

- b. The permittee shall operate the permitted facility in a manner which will minimize upsets and discharges of excessive pollutants. The permittee shall properly remove and dispose of excessive solids and sludges.
- c. The permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit.
- d. Maintenance of all waste collection, control, treatment, and disposal facilities shall be conducted in a manner that complies with the bypass provisions set forth below.
- e. Pursuant to 327 IAC 5-22-10(1), the permittee is responsible for providing adequate funding for and oversight of the wastewater treatment plant and collection system to ensure proper operation, maintenance, management, and supervision.
- f. Any extensions to the sewer system must continue to be constructed on a separated basis. Plans and specifications, when required, for extension of the sanitary system must be submitted to the Facility Construction and Engineering Support Section, Office of Water Quality in accordance with 327 IAC 3-2-2. There shall also be an ongoing preventative maintenance program for the sanitary sewer system.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(12):

a. Terms as defined in 327 IAC 5-2-8(12)(A):

- (1) “Bypass” means the intentional diversion of a waste stream from any portion of a treatment facility.
- (2) “Severe property damage” means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypasses, as defined above, are prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless:

- (1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, as defined above;
- (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and
- (3) The permittee submitted notices as required under Part II.B.2.d; or
- (4) The condition under Part II.B.2.f below is met.

c. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the “Spill Response and Reporting Requirements” in 327 IAC 2-6.1, including calling 888/233-7745 as soon as possible, but within two (2) hours of discovery. However, under 327 IAC 2-6.1-3(1), when the constituents of the bypass are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

d. The permittee must provide the Commissioner with the following notice:

- (1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.

- (2) The permittee shall orally report or fax a report of an unanticipated bypass within 24 hours of becoming aware of the bypass event. The permittee must also provide a written report within five (5) days of the time the permittee becomes aware of the bypass event. The written report must contain a description of the noncompliance (i.e. the bypass) and its cause; the period of noncompliance, including exact dates and times; if the cause of noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the bypass event. If a complete fax or email submittal is sent within 24 hours of the time that the permittee became aware of the unanticipated bypass event, then that report will satisfy both the oral and written reporting requirement.
- e. The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.b. The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.
- f. The permittee may allow any bypass to occur that does not cause a violation of the effluent limitations in the permit, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of Part II.B.2.b.,d and e of this permit.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(13):

- a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this subsection, are met.
- c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:
 - (1) An upset occurred and the permittee has identified the specific cause(s) of the upset;
 - (2) The permitted facility was at the time being operated in compliance with proper operation and maintenance procedures;

- (3) The permittee complied with any remedial measures required under “Duty to Mitigate”, Part II.A.2; and
 - (4) The permittee submitted notice of the upset as required in the “Incident Reporting Requirements,” Part II.C.3, or 327 IAC 2-6.1, whichever is applicable. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.
- d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof pursuant to 40 CFR 122.41(n)(4).

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal.

- a. Collected screenings, slurries, sludges, and other such pollutants shall be disposed of in accordance with provisions set forth in 329 IAC 10, 327 IAC 6.1, or another method approved by the Commissioner.
- b. The permittee shall comply with existing federal regulations governing solids disposal, and with applicable provisions of 40 CFR Part 503, the federal sludge disposal regulation standards.
- c. The permittee shall notify the Commissioner prior to any changes in sludge use or disposal practices.
- d. The permittee shall maintain records to demonstrate its compliance with the above disposal requirements.

5. Power Failures

In accordance with 327 IAC 5-2-10 and 327 IAC 5-2-8(14) in order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, or

- b. shall halt, reduce or otherwise control all discharge in order to maintain compliance with the effluent limitations and conditions of this permit upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit.

6. Unauthorized Discharge

Any overflow or release of sanitary wastewater from the wastewater treatment facilities or collection system that results in a discharge to waters of the state and is not specifically authorized by this permit is expressly prohibited. These discharges are subject to the reporting requirements in Part II.C.3 of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(11)(F) and 5-2-16(d), the permittee shall give notice to the Commissioner as soon as possible of any planned alterations or additions to the facility (which includes any point source) that could significantly change the nature of, or increase the quantity of, pollutants discharged. Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited. Material and substantial alterations or additions to the permittee's operation that were not covered in the permit (e.g., production changes, relocation or combination of discharge points, changes in the nature or mix of products produced) are also cause for modification of the permit. However those alterations which constitute total replacement of the process or the production equipment causing the discharge converts it into a new source, which requires the submittal of a new NPDES application.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(10), 327 IAC 5-2-13, and 327 IAC 5-2-15, monitoring results shall be reported at the intervals and in the form specified in "Data On Plant Operation", Part I.B.2.

3. Incident Reporting Requirements

Pursuant to 327 IAC 5-2-8(11) and 327 IAC 5-1-3, the permittee shall orally report to the Commissioner information on the following incidents within 24 hours from the time permittee becomes aware of such occurrence. If the incident meets the emergency criteria of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made as soon as possible, but within two (2) hours of discovery. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

- a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

- b. Any emergency incident which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the incident by calling 317/233-7745 (888/233-7745 toll free in Indiana). This number should only be called when reporting these emergency events;
- c. Any upset (as defined in Part II.B.3 above) that exceeds any technology-based effluent limitations in the permit;
- d. Any release, including basement backups, from the sanitary sewer system (including satellite sewer systems operated or maintained by the permittee) not specifically authorized by this permit. Reporting of known releases from private laterals not caused by a problem in the sewer system owned or operated by the permittee is not required under Part II.C.3, however, documentation of such events must be maintained by the permittee and available for review by IDEM staff; or
- e. Any discharge from any outfall from which discharge is explicitly prohibited by this permit as well as any discharge from any other outfall or point not listed in this permit.
- f. Violation of a maximum daily discharge limitation for any of the following toxic pollutants: mercury.

The permittee can make the oral reports by calling 317/232-8670 during regular business hours. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. For incidents involving effluent limit violations or discharges, the written submission shall contain: a description of the event and its cause; the period of occurrence, including exact dates and times, and, if the event has not concluded, the anticipated time it is expected to continue; and steps taken or planned to reduce, mitigate and eliminate the event and steps taken or planned to prevent its recurrence. For sewer releases which do not meet the definition of a discharge, the written submission shall contain: a description of the event and its believed cause; the period of occurrence; and any steps taken or planned to mitigate the event and steps taken or planned to prevent its recurrence. The permittee may submit a "Bypass Overflow/Incident Report" or a "Noncompliance Notification Report", whichever is applicable, to IDEM at 317/232-8637 or 317/232-8406 or to wwreports@idem.IN.gov. If a complete fax or email submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then that report will satisfy both the oral and written reporting requirements.

4. Other Noncompliance

Pursuant to 327 IAC 5-2-8(11)(D), the permittee shall report any instance of noncompliance not reported under the "Incident Reporting Requirements" in Part II.C.3 at the time the pertinent Discharge Monitoring Report is submitted. The written submission shall contain: a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to

continue; and steps taken or planned to reduce, eliminate and prevent the noncompliance.

5. Other Information

Pursuant to 327 IAC 5-2-8(11)(E), where the permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application or in any report to the Commissioner, the permittee shall promptly submit such facts or corrected information to the Commissioner.

6. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(15):

- a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:
 - (1) For a corporation: by a principal executive defined as a president, secretary, treasurer, any vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making functions for the corporation or the manager of one or more manufacturing, production, or operating facilities employing more than two hundred fifty (250) persons or having gross annual sales or expenditures exceeding twenty-five million dollars (\$25,000,000) (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - (3) For a federal, state, or local governmental body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.
- b. A person is a duly authorized representative only if:
 - (1) The authorization is made in writing by a person described above.
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
 - (3) The authorization is submitted to the Commissioner.

- c. Certification. Any person signing a document identified under paragraphs a and b of this section, shall make the following certification:

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

7. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(15) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

9. Progress Reports

In accordance with 327 IAC 5-2-8(11)(A), reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date.

10. Advance Notice for Planned Changes

In accordance with 327 IAC 5-2-8(11)(B), the permittee shall give advance notice to IDEM of any planned changes in the permitted facility, any activity, or other circumstances that the permittee has reason to believe may result in noncompliance with permit requirements.

11. Additional Requirements for POTWs and/or Treatment Works Treating Domestic Sewage

- a. All POTWs shall identify, in terms of character and volume of pollutants, any significant indirect discharges into the POTW which are subject to pretreatment standards under section 307(b) and 307 (c) of the CWA.
- b. All POTWs must provide adequate notice to the Commissioner of the following:
 - (1) Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to section 301 or 306 of the CWA if it were directly discharging those pollutants.
 - (2) Any substantial change in the volume or character of pollutants being introduced into that POTW by any source where such change would render the source subject to pretreatment standards under section 307(b) or 307(c) of the CWA or would result in a modified application of such standards.

As used in this clause, “adequate notice” includes information on the quality and quantity of effluent introduced into the POTW, and any anticipated impact of the change on the quantity or quality of the effluent to be discharged from the POTW.

- c. This permit incorporates any conditions imposed in grants made by the U.S. EPA and/or IDEM to a POTW pursuant to Sections 201 and 204 of the Clean Water Act, that are reasonably necessary for the achievement of effluent limitations required by Section 301 of the Clean Water Act.
- d. This permit incorporates any requirements of Section 405 of the Clean Water Act governing the disposal of sewage sludge from POTWs or any other treatment works treating domestic sewage for any use for which rules have been established in accordance with any applicable rules.
- e. POTWs must develop and submit to the Commissioner a POTW pretreatment program when required by 40 CFR 403 and 327 IAC 5-19-1, in order to assure compliance by industrial users of the POTW with applicable pretreatment standards established under Sections 307(b) and 307(c) of the Clean Water Act. The pretreatment program shall meet the criteria of 327 IAC 5-19-3 and, once approved, shall be incorporated into the POTW’s NPDES permit.

D. ADDRESSES

1. Municipal NPDES Permits Section

Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
Municipal NPDES Permits Section
100 N. Senate Avenue
Indianapolis, Indiana 46204-2251

The following correspondence shall be sent to the Municipal NPDES Permits Section:

- a. NPDES permit applications (new, renewal or modifications) with fee
- b. Preliminary Effluent Limits request letters
- c. Comment letters pertaining to draft NPDES permits
- d. NPDES permit transfer of ownership requests
- e. NPDES permit termination requests
- f. Notifications of substantial changes to a treatment facility, including new industrial sources
- g. Combined Sewer Overflow (CSO) Operational Plans
- h. CSO Long Term Control Plans (LTCP)
- i. Stream Reach Characterization and Evaluation Reports (SRCER)

2. Facility Construction and Engineering Support Section

Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
Facility Construction and Engineering Support Section
100 N. Senate Avenue
Indianapolis, Indiana 46204-2251

The following correspondence shall be sent to the Facility Construction and Engineering Support Section:

- a. Construction permit applications with fee

3. Compliance Data Section

Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
Compliance Data Section
100 N. Senate Avenue
Indianapolis, Indiana 46204-2251

The following correspondence shall be sent to the Compliance Data Section:

- a. Discharge Monitoring Reports (DMRs)
- b. Monthly Reports of Operation (MROs)
- c. Monthly Monitoring Reports (MMRs)
- d. CSO MROs
- e. Gauging station and flow meter calibration documentation
- f. Compliance schedule progress reports
- g. Completion of Construction notifications
- h. Whole Effluent Toxicity Testing reports
- i. Toxicity Reduction Evaluation (TRE) plans and progress reports
- j. Bypass/Overflow Reports
- k. Anticipated Bypass/Overflow Reports
- l. Streamlined Mercury Variance Annual Reports

4. Pretreatment Group

Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
Compliance Data Section – Pretreatment Group
100 N. Senate Avenue
Indianapolis, Indiana 46204-2251

The following correspondence shall be sent to the Pretreatment Group:

- a. Organic Pollutant Monitoring Reports
- b. Significant Industrial User (SIU) Quarterly Noncompliance Reports

- c. Pretreatment Program Annual Reports
- d. Sewer Use Ordinances
- e. Enforcement Response Plans (ERP)
- f. Sludge analytical results

Fact Sheet
May 2017

Town of Chesterfield Wastewater Treatment Plant
located at 745 North County Road 300 East, Chesterfield, Indiana, Madison County

<u>Outfall Location</u>	Latitude:	40° 7' 0.57" N
	Longitude:	85° 37' 5.45" W

NPDES Permit No. IN0063983

Background

This is the proposed renewal of the NPDES permit for the Town of Chesterfield Wastewater Treatment Plant which was issued on October 25, 2002, and has an expiration date of October 31, 2017. The permittee submitted an application for renewal which was received on April 20, 2017. The permittee currently operates a Class II, 1.0 MGD extended aeration treatment facility consisting of a mechanical fine screen, a flow splitter box and two treatment trains. The first train consists of a fermenter tank, an anaerobic/selector tank, two (2) first stage aeration tanks, a surge tank with a return sludge pump, two (2) second stage aeration tanks, two (2) final clarifiers, two (2) aerobic digesters, and two (2) sludge holding tanks. The second treatment train consists of a fermenter tank, an aerobic/selector tank, one (1) first stage aeration tank, one (1) second stage aeration tank, one (1) final clarifier, one (1) aerobic digester, and one (1) sludge holding tank. Both treatment trains will merge prior to ultraviolet light disinfection followed by cascade aeration. Flow meters are present for both wastewater influent and effluent. A sludge bagging system is utilized for sludge handling. Sludge is disposed of at a landfill.

Collection System

The collection system is comprised of 100% separate sanitary sewers by design with no overflow or bypass points.

Spill Reporting Requirements

Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.c. and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedences that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedence to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an

outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

Solids Disposal

The permittee is required to dispose of its sludge in accordance with 329 IAC 10, 327 IAC 6.1, or 40 CFR Part 503.

Receiving Stream

The facility discharges to the West Fork of the White River via Outfall 001. The receiving water has a seven day, ten year low flow ($Q_{7,10}$) of 43 cubic feet per second (28 MGD) at the outfall location. This provides a dilution ratio of receiving stream flow to treated effluent of 28:1. The receiving stream is designated for full body contact recreational use and shall be capable of supporting a well-balanced warm water aquatic community in accordance with 327 IAC 2-1.

Industrial Contributions

There is no industrial flow to the wastewater treatment plant. This NPDES permit does not authorize the facility to accept industrial contributions until the permittee has provided the Indiana Department of Environmental Management with a characterization of the waste, including volume amounts, and this Office has determined whether effluent limitations are needed to ensure the State water quality standards are met in the receiving stream.

Antidegradation

327 IAC 2-1.3 outlines the state's Antidegradation Standards and Implementation Procedures. The Tier 1 antidegradation standard found in 327 IAC 2-1.3-3(a) applies to all surface waters of the state regardless of their existing water quality. Based on this standard, for all surface waters of the state, existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. IDEM implements the Tier 1 antidegradation standard by requiring NPDES permits to contain effluent limits and best management practices for regulated pollutants that ensure the narrative and numeric water quality criteria applicable to the designated use are achieved in the water and any designated use of the downstream water is maintained and protected.

The Tier 2 antidegradation standard found in 327 IAC 2-1.3-3(b) applies to surface waters of the state where the existing quality for a parameter is better than the water quality criterion for that parameter established in 327 IAC 2-1-6. These surface waters are considered high quality for the parameter and this high quality shall be maintained and protected unless the commissioner finds that allowing a significant lowering of water quality is necessary and accommodates important social or economic development in the area in which the waters are located. IDEM implements the Tier 2 antidegradation standard for regulated pollutants with numeric water quality criteria quality adopted in or developed pursuant to 327 IAC 2-1 and utilizes the antidegradation implementation procedures in 327 IAC 2-1.3-5 and 2-1.3-6.

According to 327 IAC 2-1.3-1(b), the antidegradation implementation procedures in 327 IAC 2-1.3-5 and 2-1.3-6 apply to a proposed new or increased loading of a regulated pollutant to surface waters of the state from a deliberate activity subject to the Clean Water Act, including a change in process or operation that will result in a significant lowering of water quality.

This permit includes new permit limitations for phosphorus and mercury. In accordance with 327 IAC 2-1.3-1(b), the new permit limitations are not subject to the Antidegradation Implementation Procedures in 327 IAC 2-1.3-5 and 2-1.3-6 as the new permit limitations are not the result of a deliberate activity taken by the permittee.

Effluent Limitations and Rationale

The effluent limitations proposed herein are based on Indiana Water Quality Standards, NPDES regulations, the Updated Preliminary Effluent Limitations letter sent by the Permits Branch staff on February 4, 2010, which approved the antidegradation assessment, and a Reasonable Potential to Exceed analysis performed by this Office's Permits Branch staff on May 3, 2017. These limits are in accordance with antibacksliding regulations specified in 327 IAC 5-2-10(a)(11)(A).

The final effluent limitations to be limited and/or monitored include: Flow, Carbonaceous Biochemical Oxygen Demand (CBOD₅), Total Suspended Solids (TSS), Ammonia-nitrogen (NH₃-N), Phosphorus, pH, Dissolved Oxygen (DO), *Escherichia coli* (*E. coli*), and mercury.

Final Effluent Limitations

The summer monitoring period runs from May 1 through November 30 of each year and the winter monitoring period runs from December 1 through April 30 of each year. The disinfection season runs from April 1 through October 31 of each year.

The mass limits for CBOD₅, TSS, and ammonia-nitrogen are calculated by multiplying the average design flow (in MGD) by the corresponding concentration value and by 8.345.

Influent Monitoring

The raw influent and the wastewater from intermediate unit treatment processes, as well as the final effluent shall be sampled and analyzed for the pollutants and operational parameters specified by the applicable Monthly Report of Operation Form, as appropriate, in accordance with 327 IAC 5-2-13 and Part I.B.2 of the permit. Except where the permit specifically states otherwise, the sample frequency for the raw influent and intermediate unit treatment process shall be at a minimum the same frequency as that for the final effluent. The measurement frequencies specified in each of the tables in Part I.A. are the minimum frequencies required by the permit.

Flow

Flow is to be measured five (5) times weekly as a 24-hour total. Reporting of flow is required by 327 IAC 5-2-13.

CBOD₅

CBOD₅ is limited to 10 mg/l (83 lbs/day) as a monthly average and 15 mg/l (125 lbs/day) as a weekly average.

Monitoring is to be conducted three (3) times weekly by 24-hour composite sampling. The CBOD₅ concentration limitations included in this permit are set in accordance with the Updated Preliminary Effluent Limitations letter dated February 4, 2010, and are the same as the concentration limitations found in the facility's previous permit.

TSS

TSS is limited to 12 mg/l (100 lbs/day) as a monthly average and 18 mg/l (150 lbs/day) as a weekly average.

Monitoring is to be conducted three (3) times weekly by 24-hour composite sampling. The TSS concentration limitations included in this permit are set in accordance with the Updated Preliminary Effluent Limitations letter dated February 4, 2010, and are the same as the concentration limitations found in the facility's previous permit.

Ammonia-nitrogen

Ammonia-nitrogen is limited to 1.1 mg/l (9.2 lbs/day) as a monthly average and 1.6 mg/l (13.4 lbs/day) as a weekly average during the summer monitoring period. During the winter monitoring period, ammonia-nitrogen is limited to 1.6 mg/l (13.4 lbs/day) as a monthly average and 2.4 mg/l (20.0 lbs/day) as a weekly average.

Monitoring is to be conducted three (3) times weekly by 24-hour composite sampling. The ammonia-nitrogen concentration limitations included in this permit are set in accordance with the Updated Preliminary Effluent Limitations letter dated February 4, 2010, and are the same as the concentration limitations found in the facility's previous permit.

Phosphorus

Consistent with IDEM's current Nonrule policy (WATER-019-NPD) which applies phosphorus reduction requirements to POTWs with average design flows greater than or equal to 1 MGD, monitoring requirements and an effluent limitation for phosphorus have been included in the permit renewal. Phosphorus is limited to 1.0 mg/l as a monthly average. Monitoring is to be conducted three (3) times weekly by 24-hour composite sampling.

Since the phosphorus limit is a new requirement of the permit, and as the permittee has provided sufficient justification, the permit includes a thirty-six (36) month schedule of compliance to allow the permittee time to meet the new limitation. During the interim period, phosphorus is to be monitored on a monthly basis. Please refer to Part. I.D. of the permit for the schedule of compliance terms.

pH

The pH limitations have been based on 40 CFR 133.102 which is cross-referenced in 327 IAC 5-5-3.

To ensure conditions necessary for the maintenance of a well-balanced aquatic community, the pH of the final effluent must be between 6.0 and 9.0 standard units in accordance with provisions in 327 IAC 2-1-6(b)(2).

pH must be measured five (5) times weekly by grab sampling. These pH limitations are the same as the limitations found in the facility's previous permit.

Dissolved Oxygen

Dissolved oxygen shall not fall below 6.0 mg/l as a daily minimum average.

This dissolved oxygen limitation is set in accordance with the Updated Preliminary Effluent Limitations letter dated February 4, 2010, and are the same as the concentration limitations found in the facility's previous permit. Dissolved oxygen measurements must be based on the average of three (3) grab samples taken within a 24-hr. period. This monitoring is to be conducted five (5) times weekly.

E. coli

The *E. coli* limitations and monitoring requirements apply from April 1 through October 31, annually. *E. coli* is limited to 125 count/100 ml as a monthly average, and 235 count/100 ml as a daily maximum. The monthly average *E. coli* value shall be calculated as a geometric mean. This monitoring is to be conducted three (3) times weekly by grab sampling. These *E. coli* limitations are set in accordance with regulations specified in 327 IAC 5-10-6.

Mercury

The NPDES permit requires that mercury sampling be conducted bi-monthly (every other month) for the term of the permit (influent and effluent).

The Reasonable Potential to Exceed (RPE) analysis performed by this Office's Permits Branch staff on May 3, 2017, revealed that the projected effluent quality (PEQ) for mercury was greater than the projected effluent limitations (PELs). Therefore, effluent limitations for mercury are being included in this permit. Mercury is limited to 12 ng/l as a monthly average and 20 ng/l as a daily maximum. The mercury WQBELs are based on the surface water quality criteria of 327 IAC 2-1-6(a)(3), Table 6-1. In accordance with 327 IAC 5-2-11.1(b)(6), the criteria for mercury are applied to the undiluted discharge.

The permit includes a three year schedule of compliance in which the permittee has to comply with the final requirements for mercury. The permittee will utilize the three year timeframe to implement the pollution control measures which the permittee expects will result in compliance with mercury limitations. Please refer to Part I.E. of the permit for the schedule of compliance terms.

Whole Effluent Toxicity Testing

The permittee submitted a Whole Effluent Toxicity Tests (WETT) with the renewal application as required in 327 IAC 5-2-3(g). The results of WETT revealed no toxic effects on the tested aquatic organisms.

Backsliding

None of the concentration limits included in this permit conflict with antibacksliding regulations found in 327 IAC 5-2-10(a)(11)(A), therefore, backsliding is not an issue.

Reopening Clauses

Three (3) reopening clauses were incorporated into the permit in Part I.C. One clause is to incorporate effluent limits from any further wasteload allocations performed; a second clause is to allow for changes in the sludge disposal standards; and a third clause is to incorporate any applicable effluent limitation or standard issued or approved under section 301(b)(2)(C), (D) and (E), 304(b)(2), and 307(a)(2) of the Clean Water Act.

Compliance Status

The permittee has no enforcement actions at the time of this permit preparation.

Expiration Date

A five-year NPDES permit is proposed.

Drafted by: Jason House
May 2017

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE NO: 2017 – 7B – F
DATE OF NOTICE: JULY 21, 2017

The Office of Water Quality issues the following NPDES FINAL PERMIT.

MAJOR – RENEWAL

CHESTERFIELD (town) WWTP, Permit No. IN0063983, MADISON COUNTY, 745 N 300E, Chesterfield, IN. This major municipal facility discharges 1 million gallons daily of sanitary wastewater into West Fork White River. Permit Manager: Jason House, jahouse@idem.in.gov, 317/233-0470.

Notice of Right to Administrative Review [Permits]

If you wish to challenge this Permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA), and serve a copy of the Petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM.

Addresses are:

Director
Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue - Room N103
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue - Room 1301
Indianapolis, Indiana 46204

The Petition must contain the following information:

1. The name, address and telephone number of each petitioner.
2. A description of each petitioner's interest in the Permit.
3. A statement of facts demonstrating that each petitioner is:
 - a. a person to whom the order is directed;
 - b. aggrieved or adversely affected by the Permit; or
 - c. entitled to administrative review under any law.
4. The reasons for the request for administrative review.
5. The particular legal issues proposed for review.
6. The alleged environmental concerns or technical deficiencies of the Permit.
7. The Permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
8. The identity of any persons represented by the petitioner.
9. The identity of the person against whom administrative review is sought.
10. A copy of the Permit that is the basis of the petition.
11. A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the Permit. Examples are:

1. Failure to file a Petition by the applicable deadline;
2. Failure to serve a copy of the Petition upon IDEM when it is filed; or
3. Failure to include the information required by law.

If you seek to have a Permit stayed during the Administrative Review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with Notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to Notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.

If you have procedural or scheduling questions regarding your Petition for Administrative Review you may contact the Office of Environmental Adjudication at (317) 233-0850 or see OEA's website at <http://www.in.gov/oea>.

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APPENDIX E

RATE ORDINANCE

ORDINANCE NO. 2011-05

AN ORDINANCE ESTABLISHING RATES AND CHARGES FOR THE USE OF THE SEWAGE SYSTEM AND RELATED SERVICES OF THE TOWN OF CHESTERFIELD, INDIANA.

WHEREAS, the Town of Chesterfield, Indiana has heretofore constructed and has in operation a sewer system for the purpose of collecting and disposing in a sanitary manner of sewage of the Town; and

WHEREAS, the Town of Chesterfield, Indiana has determined that it is in the best interests of the citizens of the Town of Chesterfield, to construct a new wastewater treatment facility ("Project"); and

WHEREAS, the Town of Chesterfield, Indiana has sought financial assistance from the Indiana Finance Authority through the Wastewater Resolving Loan Program (Wastewater SRF Program) to obtain grants and issue bonds for this Project; and

WHEREAS, the Town of Chesterfield, Indiana has retained the firm of Umbaugh Certified Public Accounts, LLC, Indianapolis, Indiana to conduct a rate study, and that said study concluded that the current rates would be reduced and still meet the financial requirements of the sewer utility and pay for the construction of the Project; and

WHEREAS, the existing sewage rates can be reduced to provide sufficient revenue to pay all of the necessary expenses incidental to the operation of such utility including maintenance costs, operating charges, upkeep, repairs, interest charges on bonds or other obligations, to provide a sinking fund for the liquidation of bonds or other evidences of indebtedness and reserves against default in the payment of interest and principal of bonds, to provide adequate funds to be used as working capital, as well as funds for making improvements, additions, extensions, and replacements, and to produce an income sufficient to maintain the sewage works in a sound physical and financial condition to render adequate and efficient service; and

WHEREAS, it is deemed advisable to establish new rates and charges as set out below, which are reasonable and just charges for services, and that said rates and charges be finally adopted after due notice and public hearing as required by law; now therefore,

BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF CHESTERFIELD, INDIANA:

SECTION 1. For the use of and service rendered by said sewage works, rates and charges shall be collected from the owners of each and every lot, parcel of real estate or building that is connected with the Town's sanitary sewerage system or otherwise discharges sanitary sewage, industrial wastes, water or other liquids, either directly or indirectly, into the sanitary sewerage system of the Town of Chesterfield, which rates and charges shall become effective upon completion of the Project and shall be payable as hereinafter provided and shall be in an amount determinable as follows:

(a) The sewage rates and charges shall be based on the quantity of water used on or in the property or premises subject to such rates and charges, as the same is measured by the water meter there in use, except as herein otherwise provided. Water meters will be read monthly and sewage service bills shall be rendered monthly.

(b) The water usage schedule on which the amount of said sewage rates and charges shall be determined shall be implemented in three phases as follows:

<u>Monthly Metered Rates</u>	<u>Rates Per 1,000 Gallons</u>
First 3,000 gallons	\$16.75
Next 7,000 gallons	14.80
Over 10,000 gallons	13.30

Minimum charges for sewage service based upon water meter size are as follows:

<u>Minimum Monthly Charges</u>	
<u>Meter Size:</u>	<u>Monthly Charge</u>
5/8 – 3/4 inch meter	\$ 50.25
1 inch meter	71.86
1 ¼ inch meter	145.93
1 ½ inch meter	223.08
2 inch meter	300.62
3 inch meter	649.16
4 inch meter	1,301.31
6 inch meter	3,150.34

Connection Fee - \$750.00

(Plus actual costs in excess of minimum).

(c) Multiple users such as trailer courts, apartments, housekeeping rooms, doubles, and duplexes served by one 5/8" - 3/4" meter shall pay a monthly minimum of not less than the number of dwelling units times the minimum monthly charge. Multiple users such as trailer courts, apartments, housekeeping rooms, doubles, and duplexes served by one meter larger than a 5/8" - 3/4" meter shall pay one monthly minimum charge based on the size of the meter installed.

(d) Such rates and charges shall be prepared and billed by the Town of Chesterfield, and shall be collected in the manner provided by law and ordinance. The first billing may be for a period of more or less than one full month in order to make the monthly collection period correspond with the water meter readings of the Town, depending upon the date on which the rates established by this ordinance become effective.

(e) The rates and charges may be billed to the tenant or tenants occupying the properties served, unless otherwise requested in writing by the owners, but such billings shall in no wise relieve the owner from liability in the event payment is not made as herein required. The owners of the properties served, which are occupied by tenants, shall have the right to examine the collection records of the Town for the purpose of determining whether such rates and charges have been paid by such tenants, provided that such examination shall be made at the office at which said records are kept and during the hours that such office is open for business.

(f) Where a metered water supply is used for fire protection as well as for other uses, the Town may, in its discretion, make adjustments in the minimum charge and in the use charge as may be equitable.

(g) A user who uses in excess of 10,000 gallons per month and diverts unpolluted water away from the sanitary system may install measuring devices for determination of sewage discharge and will not be charged for unpolluted water diverted from the sanitary system.

(h) In order that domestic and residential users of sewage services shall not be penalized for sprinkling lawns during the summer months of May, June, July, August and

September, the billing for sewage services for the residential and/or domestic users for said months shall be based upon the water usage for the previous months of November, December, January, February and March, if such usage is lower than the summer months. This provision shall not apply in instances of new construction, change of ownership, vacancies or other situations where water usage during said winter months is not representative of non-sprinkling use during the said summer months. Said sprinkling rate shall not apply to any premises which are partially or wholly used for commercial or industrial purposes. In the event a portion of such premises shall be used for commercial or industrial purposes, the owner shall have the privilege of separating the water service so that the residential portion of the premises is served through a separate water meter, and in such case, the water usage as registered by the water meter serving such portion of the premises used for residential purposes would qualify under the sprinkling rate.

(i) Charges to users outside the corporation limits of the Town will be billed at 125% of the rates and charges to users within the corporation limits.

(j) All bills for sewer service not paid by the end of the month when billed shall be subject to a deferred payment charge of 10% of the amount owed. Further, a fee of \$25.00 shall be assessed on all checks returned for "non-sufficient funds".

SECTION 2. All ordinances and parts of ordinances in conflict herewith are hereby repealed; provided, however, that any existing ordinance of the Town of Chesterfield providing for definitions and fixing rates for municipal sewer service and miscellaneous charges associated therewith not in conflict with this ordinance shall remain in full force and effect including any rules and regulations therein approved. The existing rates and charges shall remain in effect until completion of the Project. The reduced rates and charges approved herein shall become effective upon completion of the Project.

SECTION 3. The sections and subdivisions of this ordinance shall be deemed to be separate and several and if any part thereof shall be declared to be invalid, the same shall not affect any other portion.

SECTION 4. This ordinance shall be in full force and effect from and after its passage by the Town Council of the Town of Chesterfield, Indiana.

PASSED AND ADOPTED by the Town Council of the Town of Chesterfield, Indiana, this
24 day of May, 2011.

TOWN COUNCIL


RON BRANHAM, President

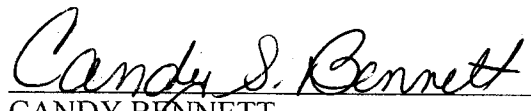
LYNETTE CARTER, Member


MIKE RETHERFORD, Member


JACK TAYLOR, Member


KAREN WILSON, Member

ATTEST:


CANDY BENNETT,
Clerk-Treasurer

Prepared by:

WILLIAM C. KREGAR
Town Attorney

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APPENDIX F

ALTERNATIVES COST ESTIMATES

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

Miscellaneous WWTP Improvements

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
Miscellaneous Improvements						
Relocate Surge Pump Electrical Box	1	LS		\$1,500	\$1,500	\$1,500
Side Access Door (Sludge Pump Room)	1	LS	\$2,500	\$2,500	\$5,000	\$5,000
Vent and Fan (Sludge Pump Room)	1	LS	\$5,000	\$3,000	\$8,000	\$8,000
Air Dryer	1	LS	\$2,500	\$1,500	\$4,000	\$4,000
Drying Bed	1	LS	\$32,000	\$14,000	\$46,000	\$46,000
Sonic System	3	EA			\$5,500	\$17,000
Add Storm Drain						
Pipe (12-inch)	55	LF			\$75	\$4,125
New Inlet	2	EA	\$1,500	\$900	\$2,400	\$4,800
Connection to Existing	1	LS			\$1,000	\$1,000
Modify Sludge Holding Piping						
Pipe (6-inch)	200	LF			\$45	\$9,000
Fittings	12	EA			\$300	\$3,600
Bonding and Mobilization	1	LS			\$6,000	\$6,000
Subtotal						\$ 111,000
Construction Administration (10%)						\$ 12,000
Contingency (10%)						\$ 12,000
TOTAL						\$ 135,000

Miscellaneous WWTP Improvements

Annual O&M&R Cost

Manpower Cost	\$ 30.00	per hour
Electrical Cost	\$ 0.08	per KWH
Alum Cost	\$ 1.35	gallon

Manpower	Amount	Units	per		Annual Cost	Subtotal
Sonic System Maintenance						
Scheduled Maintenance	4	hours	Quarterly	16	\$480	
Other Maintenance	8	hours	Yearly	8	\$240	\$800
Annual Plant Piping Replacement	1	times	year	1	\$10,000	\$10,000
Equipment Replacement Cost						
Sonic System	1	every	15 years	\$1,133	\$1,133	\$1,200
Total Estimated O&M&R					\$11,853	\$12,000

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

Chemical Removal System for Phosphorus Removal

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
New Chemical Building						
Building	500	SF			\$125	\$62,500
Site Work	1	LS			\$20,000	\$20,000
HVAC	1	LS			\$10,000	\$10,000
Electrical	1	LS			\$10,000	\$10,000
Plumbing	1	LS			\$15,000	\$15,000
Equipment						
Three Pump Chemical Feed Skid	1	EA	\$28,800	\$18,000	\$46,800	\$46,800
Spare Pump	1	EA	\$5,800		\$5,800	\$5,800
Chemical Fill Station Panel	1	EA	\$6,000	\$4,000	\$10,000	\$10,000
Double Walled 3,050 Storage Tank	1	EA	\$20,700	\$13,000	\$33,700	\$33,700
Electrical Work	1	LS	\$19,300		\$19,300	\$19,300
Chemical Feed Lines						
Feed Lines in Yard	400	LF			\$50	\$20,000
Valving & Fittings	1	LS			\$5,000	\$5,000
Heat Trace and Insulate	1	LS			\$10,000	\$10,000
Bonding and Mobilization	1	LS			\$14,000	\$14,000
Subtotal						\$ 283,000
Construction Administration (10%)						\$ 29,000
Contingency (10%)						\$ 29,000
Total						\$ 341,000

Chemical Removal System for Phosphorus Removal

Annual O&M&R Cost

Manpower Cost	\$ 30.00	per hour
Electrical Cost	\$ 0.08	per KWH
Alum Cost	\$ 1.35	gallon

Item	Amount	Units	per		Annual	Subtotal
Manpower						
Operations	1	hours	week	52	\$1,560	
Scheduled Maintenance	4	hours	Quarterly	16	\$480	
Other Maintenance	8	hours	Yearly	8	\$240	\$2,300
Electrical and Heating Cost						
Building Heat	\$600		year	\$600	\$600	
Chemical Equipment	0.3	KW	continuously	2,628	\$210	\$900
Chemical (Alum)	41	gals	day	15,075	\$20,351	\$20,400
Equipment Replacement Cost						
Three Pump Chemical Feed Skid	Once	Every	15		\$3,120	
Spare Pump	Once	Every	15		\$387	
Chemical Fill Station Panel	Once	Every	15		\$667	\$4,200
Chemical Sludge						
Sludge Disposal					\$2,776	
Bags					\$4,800	
Polymer					\$1,605	\$9,200
Total Estimated O&M&R					\$36,795	\$37,000

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

Chemical Removal System for Phosphorus Removal (with EBPR)

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
New Chemical Building						
Building	500	SF			\$125	\$62,500
Site Work	1	LS			\$20,000	\$20,000
HVAC	1	LS			\$10,000	\$10,000
Electrical	1	LS			\$10,000	\$10,000
Plumbing	1	LS			\$15,000	\$15,000
Equipment						
Three Pump Chemical Feed Skid	1	EA	\$25,300	\$12,000	\$37,300	\$37,300
Spare Pump	1	EA	\$4,600		\$4,600	\$4,600
Chemical Fill Station Panel	1	EA	\$6,000	\$3,000	\$9,000	\$9,000
Double Walled 1,550 Storage Tank	1	EA	\$13,800	\$7,000	\$20,800	\$20,800
Electrical Work	1	LS	\$15,000		\$15,000	\$15,000
Chemical Feed Lines						
Feed Lines in Yard	400	LF			\$50	\$20,000
Valving & Fittings	1	LS			\$5,000	\$5,000
Heat Trace and Insulate	1	LS			\$10,000	\$10,000
Bonding and Mobilization	1	LS			\$12,000	\$12,000
Subtotal						\$ 252,000
Construction Administration (10%)						\$ 26,000
Contingency (10%)						\$ 26,000
Total						\$ 278,000

Chemical Removal System for Phosphorus Removal (with EBPR)

Annual O&M&R Cost

Manpower Cost	\$ 30.00	per hour
Electrical Cost	\$ 0.08	per KWH
Alum Cost	\$ 1.35	gallon

Item	Amount	Units	per		Annual	Subtotal
Manpower						
Operations	1	hours	week	52	\$1,560	
Scheduled Maintenance	4	hours	Quarterly	16	\$480	
Other Maintenance	8	hours	Yearly	8	\$240	\$2,300
Electrical and Heating Cost						
Building Heat	\$600		year	\$600	\$600	
Chemical Equipment	0.15	KW	continuously	1,314	\$105	\$800
Chemical (Alum)	18	gals	day	6,497	\$8,771	\$8,800
Equipment Replacement Cost						
Three Pump Chemical Feed Skid	Once	Every	15		\$2,487	
Spare Pump	Once	Every	15		\$307	
Chemical Fill Station Panel	Once	Every	15		\$600	\$3,400
Chemical Sludge						
Sludge Disposal					\$1,388	
Bags					\$2,400	
Polymer					\$695	\$4,500
Total Estimated O&M&R					\$19,632	\$19,800

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

WWTP Lift Station Odor Containment

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
Air Quality Testing	1	LS	\$1,000		\$1,000	\$1,000
Scrubber System						
Filter System & Blower	1	LS	\$9,900	\$6,000	\$15,900	\$15,900
System Pad	1	EA	\$7,500		\$7,500	\$7,500
Blower Pad	1	EA	\$7,500		\$7,500	\$7,500
Ductwork & Plumbing	1	LS	\$10,000		\$10,000	\$10,000
Electrical Work	1	EA	\$8,200		\$8,200	\$8,200
Bonding and Mobilization	1	LS			\$3,000	\$3,000
Subtotal						\$ 54,000
Construction Administration (10%)						\$ 6,000
Contingency (10%)						\$ 6,000
Total						\$ 66,000

WWTP Lift Station Odor Containment

Annual O&M&R Cost

Manpower Cost \$ 30.00 per hour
 Electrical Cost \$ 0.08 per KWH

Item	Amount	Units	per		Annual	Subtotal
Manpower						
Operations	1	hours	week	52	\$1,560	
Other Maintenance	8	hours	yearly	8	\$240	\$1,800
Electrical						
Blower, Pumps, & Controls	54	KWH	day	19,605	\$1,568	\$1,600
Equipment Replacement Cost						
Filter System & Blower	Once	Every	15		\$1,060	\$1,100
Media Replacement	2	times	year	2	\$4,400	\$4,400
Total Estimated O&M&R					\$8,828	\$8,900

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

Headworks & UV Enclosure

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
Equipment						
Headworks Enclosure	525	SF			\$100	\$52,500
Air Handling System						
HVAC System	1	EA	\$20,000	\$12,000	\$32,000	\$32,000
Ductwork (Vent to Other Side of Plant)	1	LS			\$20,000	\$20,000
Air Scrubber	1	LS	\$29,100	\$17,500	\$46,600	\$46,600
UV Enclosure	1,125	SF			\$75	\$84,400
Bonding and Mobilization	1	LS			\$12,000	\$12,000
Subtotal						\$ 248,000
Construction Administration (10%)						\$ 25,000
Contingency (10%)						\$ 25,000
Total						\$ 298,000

Headworks & UV Enclosure

Annual O&M&R Cost

Manpower Cost \$ 30.00 per hour

Electrical Cost \$ 0.08 per KWH

Item	Amount	Units	per		Annual	Subtotal
Manpower						
Operations	1	hours	week	52	\$1,560	
Other Maintenance	8	hours	Yearly	8	\$240	\$1,800
Electrical						
Heat	240	KWH	day	36,500	\$2,920	
Air Scrubber	90	KWH	day	32,675	\$2,614	\$5,600
Equipment Replacement Cost						
Filter System & Blower	Once	Every	15		\$3,107	
Air Handling System	Once	Every	15		\$2,133	\$5,300
Media Replacement	2	LS	year	2	\$16,000	\$16,000
Total Estimated O&M&R					\$28,574	\$28,700

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

Individual UV Improvements

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
UV Improvements						
UV Cover	1	LS	\$5,000	\$3,000	\$8,000	\$8,000
Bypass						
Pipe (14-inch)	60	LF			\$60	\$3,600
Valve (Manual)	1	EA	\$1,500	\$900	\$2,400	\$3,600
Fittings	4	EA	\$300	\$200	\$500	\$1,200
UV Storage	1	LS	\$5,000	\$3,000	\$8,000	\$8,000
Davit Crane	1	EA	\$5,000	\$3,000	\$8,000	\$8,000
Bonding and Mobilization	1	LS			\$2,000	\$2,000
Subtotal						\$ 35,000
Construction Administration (10%)						\$ 4,000
Contingency (10%)						\$ 4,000
Total						\$ 43,000

Annual O&M&R same as existing

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

Mounds Lift Station - Submersible

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
Submersible Lift Station						
Pumps & Controls	1	LS	\$21,000	\$12,600	\$33,600	\$33,600
Valves & Meter	1	LS	\$25,000		\$25,000	\$25,000
Structures	1	LS	\$50,000		\$50,000	\$50,000
Site Work	1	LS	\$50,000		\$25,000	\$25,000
Electrical	1	LS	\$20,100		\$20,100	\$20,100
Bonding and Mobilization	1	LS			\$8,000	\$8,000
Subtotal						\$ 162,000
Construction Administration (10%)						\$ 17,000
Contingency (10%)						\$ 17,000
Total						\$ 196,000

Annual O&M&R same as existing

COST ESTIMATE
Town of Chesterfield
Wastewater Utilities Improvements PER

Mounds Lift Station - Dry Pit

Item	Quantity	Unit	Material Unit Price	Installation Unit Price	Total Unit Price	Amount
Dry Pit Lift Station						
Pumps & Controls	1	LS	\$28,000	\$16,800	\$44,800	\$44,800
Valves & Meter	1	LS	\$25,000		\$25,000	\$25,000
Structures	1	LS	\$50,000		\$50,000	\$50,000
Site Work	1	LS	\$50,000		\$25,000	\$25,000
Electrical	1	LS	\$21,800		\$21,800	\$21,800
Bonding and Mobilization	1	LS			\$9,000	\$9,000
Subtotal						\$ 176,000
Construction Administration (10%)						\$ 18,000
Contingency (10%)						\$ 18,000
Total						\$ 212,000

Annual O&M&R same as existing

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APPENDIX G

FINANCIAL & MANAGERIAL DOCUMENTS

**State Revolving Fund Loan Program
Asset Management Program Certification Form
Inclusive of
Fiscal Sustainability Plan Certification**

(To be submitted either at the time of loan closing or no later than the final disbursement of a Participant's loan proceeds)

Participant Name			
Street Address		P. O. Box Number	
City	State	Zip Code	

Indiana Code 5-1.2-10-16 requires a Participant that receives a loan or other financial assistance from the State Revolving Fund Loan Program (SRF) to certify that the Participant has documentation demonstrating it has the financial, managerial, technical and legal capability to operate and maintain its water or wastewater collection and treatment system. A Participant must demonstrate that it has developed an asset management program as defined in the Indiana Finance Authority's (Authority) Asset Management Program Guidelines.

Section 603(d)(1)(E) of the Federal Water Pollution Control Act (FWPCA) requires a recipient of a loan for a project that involves the repair, replacement or expansion of a publically owned treatment works to develop and implement a Fiscal Sustainability Plan (FSP). The requirement pertains to those portions of the treatment works paid for with Clean Water SRF Loan Funds.

The Asset Management Program (AMP) shall be inclusive of the requirements of the FSP for Wastewater and Drinking Water projects and shall include at a minimum the following: (1) A system map (2) An inventory and assessment of system assets (3) development of an infrastructure inspection, repair, and maintenance plan, including a plan for funding such activities (4) an evaluation and implementation of water and energy conservation efforts (5) An analysis of the customer rates necessary to support the AMP (6) Audit performed at least every two years (7) Demonstration of the technical, managerial, legal and financial capability to operate and maintain the system, per the guidelines established by the Authority.

I hereby certify that I am an authorized representative for the above listed Participant and pursuant to IC 5-1.2-10-16 and Section 603(d)(1)(E), the Participant has developed and is implementing an AMP (inclusive of the requirements of an FSP) that meets the requirements established by the Authority. Upon the request of the Environmental Protection Agency (EPA) or the Indiana SRF, the Participant agrees to make the AMP (which includes the FSP requirements) available for inspection and/or review.

Signature of Authorized Representative	Date
Printed Name	Phone Number/Email Address

**ASSET MANAGEMENT PROGRAM CHECKLIST**

This Asset Management Program Checklist provides the framework for the essential elements of asset management to promote the responsible maintenance, investment and rehabilitation of water and wastewater utilities. A properly implemented asset management program can increase the efficiency of the system and increase the financial sustainability of a utility while at the same time decrease the chance of emergencies. The following checklist is broken down into three sections: Technical, Managerial, and Financial. Each section allows the utility to evaluate key components to asset management within the category. For more details regarding a specific element on the checklist, please refer to the Asset Management Program (AMP) Guidance for the State Revolving Fund Loan Program located here: <https://www.in.gov/ifa/srf/2376.htm>

Technical

- ☐ System Map/GIS
 - ☐ Lines and sizes, valves, hydrants, fittings, backflow preventers, sample stations, chemical feed, manholes
 - ☐ Lead lines (as identified)
 - ☐ Booster/lift stations
 - ☐ Water or Wastewater Treatment Plants
 - ☐ Storage
 - ☐ Meters
 - ☐ Wells
 - ☐ CSO/SSO locations
- ☐ Inventory of Assets
 - ☐ Account for all assets – “any physical property, real estate or equipment, item or appurtenance installed as part of the system”.
 - ☐ Asset Location – written description of location
- ☐ Evaluation of Assets
 - ☐ Condition and remaining useful life of assets
 - ☐ Assess Condition (Probability of Failure)
 - ☐ Assess Criticality (Consequence of Failure)
 - ☐ Assess Risk = Condition X Criticality
 - ☐ Value of assets
 - ☐ Desired Level of Service
- ☐ Evaluation and implementation of water and energy conservation efforts
- ☐ Plan for Maintaining, Repairing, and Replacing the Assets and Plan for Funding
 - ☐ Repair/Maintenance funds should be identified separately from Capital Replacement funds
 - ☐ Define the recommended planning period (20-year minimum)
 - ☐ Criteria and timeline for Rehabilitation and Replacement
 - ☐ Provide reference to location of maintenance Reports for meters, hydrants, pumps, valves, tanks, etc.
 - ☐ Growth related needs



Managerial

- ☐ Location of Documentation of Proof of Ownership (deeds, titles, receipts)
- ☐ Documentation of Proof of Certified Operator
- ☐ Non-Technical description of water/wastewater system
 - ☐ Average Daily Demand
 - ☐ Minimum and Maximum Daily Flow
 - ☐ Loadings
 - ☐ Number of Connections
 - ☐ Number of Customers
 - ☐ Population Served
 - ☐ Source type (if DW)
 - ☐ Receiving Stream (If WW or DW Backwash)
 - ☐ Storage Capacity (gallons)
 - ☐ Purchase/Sell (Agreements/Quantities)
 - ☐ CSO vs. Non-CSO
 - ☐ Accounting of I/I and/or Water Loss
- ☐ Operating Plan
 - ☐ Organization Chart including Governing Body
 - ☐ Description of Job Duties for all positions
 - ☐ Daily operating procedures
 - ☐ Operation & Maintenance Manuals
- ☐ Written Procedures
 - ☐ Security, including cyber security
 - ☐ Personnel Access/User Rights for System Equipment/Computers/Controls/SCADA
 - ☐ Customer Complaints
 - ☐ Purchasing Authority
 - ☐ Internal Controls (checks and balances)
 - ☐ Customer Deposits/Payments
 - ☐ Collections
 - ☐ Connection Charges (new/upgrade tap or sewer connections)
 - ☐ Routine Billing – AMR, AMI, monthly/quarterly billing
 - ☐ Use ordinances
 - ☐ Training and Safety
- ☐ External Contact Information
 - ☐ Police
 - ☐ Fire
 - ☐ Suppliers
- ☐ Internal Contracting and Purchasing Procedures
 - ☐ Routine
 - ☐ Emergency



Financial –

- ☐ Revenues by line item which should match the Utility's historical financial statements. Normal revenues include but are not limited to:
 - ☐ Revenues by user type, if available.
 - ☐ Residential
 - ☐ Commercial
 - ☐ Industrial
 - ☐ Multi-family
 - ☐ Wholesale
 - ☐ Fire protection
 - ☐ Forfeited discounts/penalties
 - ☐ Excessive strength surcharges
 - ☐ System development charges fees
 - ☐ Interest Income
 - ☐ Other
- ☐ Customer growth, if any
 - ☐ Historical and future assumptions
- ☐ Collection rates and procedures
 - ☐ Collection procedures for delinquent accounts
 - ☐ Non recurring charges (disconnect, reconnect, bad check, etc.)
 - ☐ Verify billing follows adopted rate ordinance
 - ☐ Capacity/System Development Charges and assumptions for user connections
 - ☐ Historical and future assumptions
- ☐ Operating expenses (by function if available) by line item which should match the Utility's historical financial statement. Normal expenses include but are not limited to:
 - ☐ Salaries and wages
 - ☐ Employee benefits
 - ☐ Purchased power
 - ☐ Chemicals
 - ☐ Sludge removal
 - ☐ Repairs and maintenance
 - ☐ Materials and supplies
 - ☐ Contractual services
 - ☐ Insurance
 - ☐ Rent
 - ☐ Transportation
 - ☐ Other
- ☐ Future expense assumptions including assumed annual inflation rate
- ☐ Capital improvement plan for the AMP period
- ☐ Estimated project costs and funding schedule for bond funded projects
- ☐ Outstanding bond debt service (Include amortization schedules)
- ☐ Proposed bond debt service (Include amortization schedules)
 - ☐ Debt assumptions – terms, rates, funding source
- ☐ Outstanding lease payments (Include amortization schedules)
- ☐ Revenues
- ☐ Combined debt service schedule
- ☐ Outstanding and proposed debt service reserve requirements
- ☐ Capital improvement plan expenditures from rates and charges
- ☐ Payment in lieu of property taxes and other transfers if applicable



- ☐ Each year's cash flow should result in an increase/(decrease) in cash and cash equivalents and also have a beginning and ending balance. The ending balance for cash and cash equivalents should not go below the minimum required balance for operating cash and cash equivalents as determined by the Utility. The ending balance for cash and cash equivalents should not result in a negative balance.
- ☐ Resulting rate increase required to fund requirements
- ☐ Resulting average user rates assuming 4,000 gallons per month
- ☐ Resulting debt service coverage meeting or exceeding SRF requirements
- ☐ Current historical financial statements for the last three years.
- ☐ Copy of Review, Examination or Audit per the AMP Guidance
- ☐ Current audited financial statements:
 - ☐ If cash basis:
 - ☐ Comparative schedule of selected financial information
 - ☐ Cash balances
 - ☐ Outstanding indebtedness
 - ☐ Comparative schedule of receipts and disbursements
 - ☐ If accrual basis:
 - ☐ Comparative Schedule of Net Position/Balance Sheet
 - ☐ Comparative Schedule of Revenues, Expenses and Changes in Net Position/Income Statement
 - ☐ Comparative Statement of Cash Flows
- ☐ Outstanding Long-Term Bonds and Leases. Provide a listing of the outstanding debt noting the funding source, security and bond rating.
- ☐ Other Items
 - ☐ Last bond rating agency report
 - ☐ Most recent annual budget
 - ☐ Current rate ordinance and rate structure

**SRF Loan Program
Signatory Authorization Resolution**

Whereas, the _____ [insert name of Utility / Political Subdivision] of _____ [insert location], Indiana, (the "Participant") has plans for a _____ [insert one: wastewater / drinking water] infrastructure improvement project to meet State and Federal regulations and the Participant intends to proceed with the construction of such project:

Now, therefore, be it resolved by the Council / Board of Trustees, the governing body of the Participant, that:

1. _____ [insert name] be authorized to make application for a State Revolving Fund Loan ("SRF Loan") and provide the SRF Loan Program such information, data and documents pertaining to the loan process as may be required, and otherwise act as the authorized representative of the Participant; and
2. The Participant agrees to comply with State and Federal requirements as they pertain to the SRF Loan Program; and
3. Two certified copies of this Resolution be prepared and submitted as part of the Participant's Preliminary Engineering Report.

Adopted and Passed by the Council / Board of Trustees of the Utility / Political Subdivision of _____ [insert location], Indiana, this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

Council / Board of Trustees

[insert name], President

Attest:

[insert name], Secretary / Clerk Treasurer

Approved and signed by the Mayor of _____ [insert location], Indiana this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

[insert name], Mayor

Attest:

[insert name], Secretary / Clerk Treasurer



APPLICATION FORM **Wastewater State Revolving Fund** **Loan Program (WWSRF)¹**

Return completed form:
WWSRF Administrator
100 North Senate Avenue, Rm. 1275
Indianapolis, IN 46204

Section I. APPLICANT INFORMATION

1. Applicant name (political subdivision): Town of Chesterfield
2. Type of Applicant (check one): ☐ City ☒ Town ☐ County ☐ Conservancy District ☐ Regional Sewer District ☐ Other
3. Wastewater Treatment Provider: Current: Town of Chesterfield Proposed: Town of Chesterfield
4. NPDES Number: IN0063983
5. Does the community have any inter-local agreement(s)? ☒ Yes ☐ No
 - a. If yes, do they expire after the maturity of the SRF loan? ☐ Yes ☒ No

Note: If no, agreements will need to be renewed to ensure they expire after the final maturity of the SRF Loan
6. Location of the Proposed Project: City / Town: Chesterfield
County(ies): Madison Civil Township(s): Union
State Representative District: 35 State Senate District: 25 Congressional District: 5th
7. Service Area Population (<http://data.census.gov>): 2,547 (2010 Census)
8. Population Trend, select one (<http://data.census.gov>): ☒ Increasing ☐ Decreasing
9. Median Household Income for Service Area (<http://data.census.gov>): \$35,953 (STATS Indiana 2016)
10. Unemployment Rate Data (<http://data.bls.gov>): 3.8%
11. Number of Connections: (Current): 969 (Post –Project): _____
12. Current User Rate/4,000 gallons: \$65.05 Estimated Post-Project User Rate/4,000 gallons: TBD
13. Applicant's Data Universal Numbering System (DUNS) Number²: 050584379
14. Have Architectural and Engineering (A&E) services been procured? ☒ Yes ☐ No
15. If A&E services were procured, was procurement done pursuant to 40 USC Chapter 11?: ☒ Yes ☐ No
16. Has the utility participated in Regional Planning Initiatives³: ☐ Yes ☒ No

¹ By submitting this form, the Community is applying to multiple funding sources administered by the Authority, including the state Water Infrastructure Assistance Program. The Authority will determine the fund source that best serves the proposed project.

² SRF Participants must register with SAM.gov, which requires the Participant to have a DUNS Number. For more information about how to obtain a DUNS Number and register in SAM.gov, see www.srf.in.gov

³ Per IC 5-1.2-11.5-7 and 5-1.2-11-8, the Applicant has or will participate in a cooperative/ regional activity (e.g., attend an IFA Regional Planning Meeting [www.in.gov/ifa/3035] or cooperative activity) acceptable to the Authority.

Section II. CONTACT INFORMATION

Authorized Signatory (An official of the Community or wastewater system that is authorized to contractually obligate the applicant with respect to the proposed project.):

Name: _____
Title: Town Council President _____
Address: 17 Veterans Boulevard _____
City, State, Zip Code: Chesterfield, IN 46017 _____
Telephone # (include area code): (317) 378-3331 _____
E-mail: shardin@chesterfield.in.gov _____

Applicant Staff Contact (person to be contacted directly for information if different from authorized signatory):

Name: Deborah Dunham _____
Title: Clerk Treasurer _____
Address: 17 Veterans Boulevard _____
City, State, Zip Code: Chesterfield, IN 46017 _____
Telephone # (include area code): (317) 378-3331 _____
E-mail: ddunham@chesterfield.in.gov _____

Certified Operator:

Name: Scott Schutte _____
Telephone # (include area code): (317) 600-9507 _____
E-mail: scott@schuttecompliance.com _____

Grant Administrator (if applicable):

Contact: _____
Firm: _____
Address: _____
City, State, Zip Code: _____
Telephone # (include area code): _____
E-mail: _____

Consulting Engineer:

Contact: Rob Bellucci _____
Firm: Commonwealth Engineers, Inc. _____
Address: 7256 Company Drive _____
City, State, Zip Code: Indianapolis, IN 46237 _____
Telephone # (include area code): (317) 888-1177 _____
E-mail: rbellucci@contactcei.com _____

Bond Counsel:

Contact: Jacob McClellan _____
Firm: Bose McKinney & Evans LLP _____
Address: 111 Monument Circle Suite 2700 _____
City, State, Zip Code: Indianapolis, IN 46204 _____
Telephone # (include area code): (317) 684-5154 _____
E-mail: jmccllellan@boselaw.com _____

Financial Advisor:

Contact: Andre J. Riley _____
Firm: BakerTilly _____
Address: 8365 Keystone Crossing, Suite 300 _____
City, State, Zip Code: Indianapolis, IN, 46240 _____
Telephone # (include area code): (317) 465 1537 _____
E-mail: Andre.Riley@bakertilly.com _____

Local Counsel:

Contact: Thomas Beeman _____
Firm: Beeman Law _____
Address: 3737 S. Scatterfield Rd., Suite 200 _____
City, State, Zip Code: Anderson, IN 46013 _____
Telephone # (include area code): (765) 640-1330 _____
E-mail: Tom@beemanlawoffice.com _____

Section III. PROJECT INFORMATION

1. Project Need:

Complete as many of the following categories that apply to your project. Provide a brief description of the needs/problems associated with each. Descriptions can be found in [Appendix A](#). Please attach additional sheets if necessary.

Secondary Treatment:	
Advanced Treatment:	Phosphorus Removal Equipment will be installed in order to comply with NPDES Permit No. IN0063983
Infiltration/ Inflow Correction and/ or Major Sewer System Rehabilitation:	
New Collection and/or Interceptor Sewers:	
Combined Sewer Overflow Correction	
Storm Water Management	
Nonpoint Source Management	

2. **Proposed Project:** Describe the scope of the proposed project and how it will address the applicant's needs as enumerated above. Please provide a map/ figure showing proposed work areas. *Please attach additional sheets if necessary.*

Project will include a chemical phosphorous removal system and miscellaneous improvements to the wastewater treatment plant (WWTP) including: 1) Relocate the electrical boxes along walkways; 2) Install side access door for sludge pump room; 3) Install vent and fan in sludge pump room; 4) Replace air dryer in blower room; 5) Install screenings dumpster for vacuum truck; 6) Install a new storm drain outside of the blower control room; 7) Modify sludge holding piping; and 8) replacement of blowers. In addition, the Mounds Lift Station will be replaced and converted to a submersible lift station. Also, an odor control system will be installed at the Town's Main Lift Station.

3. Environmental Benefits

Public Health / National Pollutant Discharge Elimination System (NPDES) Violation / Agreed Order

Will this project achieve compliance? ☒ Yes ☐ No **OR** Maintain compliance? ☐ Yes ☐ No

Permit Information

- a. Will the NPDES permit be revised as part of this project? ☒ Yes ☐ No
- b. If the plant will increase its treatment capacity, have preliminary effluent limitations been requested from IDEM's Office of Water Quality Modeling Section? ☐ Yes ☒ No
- c. Will the project require an Antidegradation Demonstration prior to approval? ☐ Yes ☒ No
4. Does any part of the proposed project address:
- a. Elements of the CSO Long Term Control Plan? ☐ Yes ☒ No
- b. Stormwater MS4 (Rule 13) Best Management Practices? ☐ Yes ☒ No
- c. An existing Watershed Management Plan? ☐ Yes ☒ No
5. Does the applicant have an Asset Management Program in place?: ☐ Yes ☒ No
6. What receiving stream(s) does the wastewater treatment plant and/or CSOs project impact (if any)?:
NA
7. Will the proposed project incorporate Green Project or Climate Ready Components? ☐ Yes ☒ No

If yes, complete the appropriate Checklist, found at <http://www.in.gov/ifa/srf/2385.htm> .

8. Is land acquisition and/or easements needed for this project? ☐ Yes ☒ No
- a. If yes, has the land been acquired? ☐ Yes ☐ No
- b. If yes, are all easements secured? ☐ Yes ☐ No

Section IV. COST INFORMATION

1. **Project Cost Estimate:** Include estimates for ALL projects identified in the Project Information, Section III, A.

Indicate estimates for each project. Please attach additional sheets if necessary.

Estimated Construction Costs:

(I) Secondary Treatment \$ _____

(II) Advanced Treatment \$ _____

(IIIA) Inflow / Infiltration Correction \$ _____

(IIIB) Major Sewer System Rehabilitation \$ _____

(IV-A) New Collection Sewers \$ _____

(IV-B) New Interceptor Sewers \$ _____

(V) Combined Sewer Overflow Correction \$ _____

(VI) Storm Water Management \$ _____

(VII-A-K) Nonpoint Source Needs \$ _____

Contingencies \$ _____

TOTAL CONSTRUCTION: **\$1,084,100** _____

Estimated Non-Construction Costs:

Financial, Legal, etc. \$108,600 _____

Engineering \$330,475 _____

Other Non-construction Costs \$ _____

(Describe: _____)

Land/ Easement Acquisition \$ _____

TOTAL NON-CONSTRUCTION: **\$439,075** _____

TOTAL PROJECT COST (Estimated): **\$1,523,175** _____

2. Please identify any other funding sources being considered, the amount requested and the anticipated funding time frame:

	Application Submittal (date)	Amount Requested (dollars)	Amount Awarded (if applicable)
Office of Community and Rural Affairs			
U.S. Dept. of Commerce Economic Development Administration			
U.S. Dept. of Agriculture Rural Development			
Local Funds			
Other: _____			

3. Anticipated SRF Loan Amount (after other funding): _____

4. What was the date of the last full State Board of Accounts Audit?: April/May 2020_____
5. Will this project proceed if other funding sources are not in place?: ☐ Yes ☒ No
6. Important Anticipated Dates
- Preliminary Engineering Report Submittal: June 2020_____
- Bid Open Date: September 2020_____
- SRF Loan Closing: November 2020_____
- Construction Start: November 2020_____
- Construction Complete: August 2021_____

Section V. ADDITIONAL FINANCIAL QUESTIONS

Please confirm your answers with your legal and financial advisers prior to submitting your responses as related to the applicant's plans to issue bonds that will be used to secure the requested SRF loan

- A. Will this SRF loan be repaid from net revenue of the applicant's utility being improved by the SRF project?:

☒ Yes ☐ No

If "yes", then please answer the following additional questions:

- Are there any other debt obligations of this utility (i.e., bank loans, guarantee savings contracts, installment payment contracts, bank or financing purchase leases, loans from other utilities of the applicant)?
☐ Yes ☒ No
- Is an estimated debt service coverage percentage currently available (coverage is computed by taking Net Revenues and dividing it by maximum annual debt service inclusive of both the planned new and any outstanding revenue bonds)?
☒ Yes ☐ No
 - if available, the coverage estimate is _____ 135_ percent.

Please know that prior to any loan preclosing, a formal pro forma coverage showing of at least 125% is required by SRF.

- B. Will net revenues be the sole source of repayment? ☒ Yes ☐ No

If "no" was marked in Questions A and B, then please answer the following additional questions:

- What is the planned source(s) to provide funds to make SRF loan repayments? Check below as applicable:
 - ☐ property taxes. If checked:
 - Is a preliminary determination & remonstrance process under IC 6-1.1-20 required?
☐ Yes ☐ No
 - Has that preliminary determination & remonstrance process under IC 6-1.1-20 been completed?
☐ Yes ☐ No
 - ☐ tax increment revenues. If checked:
 - Has a TIF area already established?
☐ Yes ☐ No
- If already established:
 - 1) Please provide history of tax increment revenues (at least five (5) years)
 - 2) Provide a schedule of projected tax increment revenues, debt service (which includes existing obligations pledged with tax increment revenues) and a showing that the 125% coverage requirement is met.
- ☐ other (describe: _____).

- C. Will proceeds be used to payoff an existing BAN? ☐ Yes ☒ No

- if "yes", provide amount of the payoff _____.
 - And, provide the purpose for which the BAN was used: ☐ Construction ☐ Non-construction
- If Construction is selected, the subject of the BAN will require SRF review prior to construction.

Section VI. SIGNATURE

I certify that I am legally authorized by the legislative body to sign this application. To the best of my knowledge and belief, the foregoing information is true and correct.

Signature of Authorized Signatory (Community Official)

Printed or Typed Name

Title of Authorized Signatory

Date

Appendix A

This appendix is intended to assist with the completion of Section III and Section IV of the Indiana Wastewater/Clean Water SRF application.

Category Definitions

Secondary Wastewater Treatment: Required to meet the minimum level of treatment that must be maintained by all treatment facilities. Secondary treatment typically requires a treatment level that produces an effluent quality of 30 mg/l of both 5-day BOD and total suspended solids.

Advanced Treatment: Required to achieve treatment levels more stringent than secondary treatment or produces a significant reduction in nonconventional or toxic pollutants present in the wastewater treated by a facility. A facility is considered to have advanced wastewater treatment if its permit includes one or more of the following: BOD less than 20 mg/l, the removal of nitrogen, phosphorus, ammonia, metal, and/or synthetic organic compounds.

Conveyance System Repair: Infiltration / Inflow Correction: Required for the correction of sewer system infiltration and inflow (I/I) problems. Infiltration includes the penetration of water into a sanitary or combined sewer system from the ground through defective pipes or manholes. Inflow includes the penetration of water into the system from drains, storm sewers, and other improper entries. All costs that are necessary for removing excessive I/I from the sewer system such as replacement or relining sewer sections, flow routing systems, downspout disconnections, elimination of sanitary/storm sewer cross connections etc.

Conveyance System Repair: Major Sewer System Rehabilitation: Required for replacement and/or major rehabilitation of existing sewer system throughout the municipality.

New Collectors and Appurtenances: Required for construction of new collector sewer systems and appurtenances, designed to correct violations caused by raw discharges, seepage to water from septic tanks, and similar problems, and/or to comply with federal, state or local enforcement actions.

New Interceptor Sewers: Required for construction of new interceptor sewers and pumping stations necessary for the bulk transport of wastewater.

Combined Sewer Overflow Correction: Required for construction of facilities to prevent and control periodic bypassing of untreated wastes from combined sewers in order to achieve water quality objectives. This category does not include treatment and/or control of stormwater.

Stormwater Management: Required for implementing structural and nonstructural measures to control the runoff water resulting from precipitation. Includes controlling stormwater pollution from diffuse sources by reducing pollutants from runoff, detecting and removing illicit discharges and improper disposal into storm sewers and monitoring pollutants in runoff. Category can include stormwater conveyance infrastructure, stormwater treatment systems, and green infrastructure.

Nonpoint Source: Nonpoint Source water pollution comes from many diffuse sources and results when human-made pollutants are carried to waterways by the natural movement of water. Nonpoint Source pollution results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. This category can include correction of failing septic systems, brownfield remediation, wetland restoration/protection, erosion control measures, groundwater remediation, wellhead protection measures, agricultural and waste management best management practices.

**SRF Loan Program
PER Acceptance Resolution**

Whereas, the _____ [insert Utility / Political Subdivision] of _____ [insert location], Indiana, has caused a Preliminary Engineering Report ("PER"), dated _____, to be prepared by the consulting firm of _____; and

Whereas, said PER has been presented to the public at a public hearing held on _____ [insert date], at _____ [insert location], for public comment; and

Whereas, the _____ [insert Utility / Political Subdivision] Council / Board of Trustees finds that there was not sufficient evidence presented in objection to the recommended project in the PER.

Now, therefore be it resolved that:

1. The PER dated _____ [insert date] _____ be approved and adopted by the _____ [insert Utility / Political Subdivision] Council / Board of Trustees; and
2. Said PER be submitted to the State Revolving Fund Loan Program for review and approval.

Adopted and Passed by the Council / Board of Trustees of the Utility / Political Subdivision of _____ [insert location], Indiana, this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

Council / Board of Trustees

[insert name], President

Attest:

[insert name], Secretary / Clerk Treasurer

Approved and signed by the Mayor of _____ [insert location], Indiana this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

[insert name], Mayor

Attest:

[insert name], Secretary / Clerk Treasurer

APPENDIX H

PUBLIC PARTICIPATION INFORMATION



Public Notices

Public notices should be published 10 days before the public hearing.

What to include in the public notice:

1. **Where/when the public hearing will be held;**
2. **What the public hearing will be about;**
3. **Where the Preliminary Engineering Report will be kept for public viewing;**
4. **State that written comments will be accepted for 5 days after the public hearing; and**
5. **Include an address of where to send written comments.**

Sample of a public notice:

**Notice of Public Hearing
Name of treatment work/community
Wastewater Preliminary Engineering Report (PER)**

The Town/city/utility of _____ will hold a public hearing at (time) on (day of week), (date) at (place), (address).

(Applicant name)'s engineering consultant (name, firm) will present the recommended project, which will include (list general description, e.g. "construction of a new wastewater treatment plant, upgrades to the existing wastewater treatment plant, adding/ rehabilitation of sewer lines, combined sewer overflow correction).

The project will be funded through a Wastewater State Revolving Fund (WWSRF) loan.

Copies of the required Preliminary Engineer Report (PER) are available for public viewing starting (date of notice) through (date 5 days following hearing) at (location).

There will be the opportunity for questions and comments from the public at this meeting. Written comments from the public will be accepted through (date, which should be 5 days after hearing date). Your participation is welcomed and encouraged. If you will require special assistance at the meeting, please contact (phone#, name).

Written comments regarding this project should be sent to (contact name, mailing address) prior to (date 5 days following hearing).

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