

**ADDENDUM NO. 1**  
TO  
PROCUREMENT AND CONTRACTING REQUIREMENTS  
FOR  
**Riley Village Sanitary Sewer Project (Both Divisions)**  
FOR  
NINESTAR CONNECT  
Issue Date: April 17th, 2024

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**BIDS ARE DUE BY**

**April 23, 2024**

**2:00 PM (Local Time)**

**Attn. Alan Martin, Manager of Water and Wastewater Utilities – 2243 East Main Street, Greenfield, IN  
46140**

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This addendum consists of three (3) pages and the following attachments:

**Attachment No. 1:** Pre-Bid Conference Meeting Agenda, CCTV Memo

The following, as additions to and modifications in the Bidding Requirements and Contract Documents, will be included in, and become a part of the **Riley Village Sanitary Sewer Project (Both Divisions)**. This Addendum forms a part of the Contract Documents. Bidders are, therefore, instructed to take the following into account in rendering any Bid for this work. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

**CHANGES TO PRIOR ADDENDA: (N/A)**

**CHANGES TO PROCUREMENT REQUIREMENTS: (N/A)**

**CHANGES TO CONTRACTING REQUIREMENTS: (N/A)**

**CHANGES TO SPECIFICATIONS: (N/A)**

**CHANGES TO DRAWINGS: (N/A)**

**CHANGES TO MISCELLANEOUS DOCUMENTS:**

1. Included as an attachment this addendum (**Attachment No. 1**) is the Pre-Bid Conference Meeting Minutes as well as the CCTV Technical Memorandum for the existing sewer pipes.

**SUBMITTED QUESTIONS/REQUESTS & RESPONSES:**

1. **Pre-Bid Meeting Questions**  
See Prebid Meeting Minutes

## 2. Additional Q/A

- a. **Q:** What are the manhole depths for manholes requiring rehabilitation?  
**A:** See CCTV Technical Memorandum for all information available. Ex. Structure 14 on Page C204 is approximately 18 ft deep. Other manhole depths downstream of this on Page C206 can be interpolated accordingly or measured down at a field visit.
- b. **Q:** What are the product requirements for manhole rehabilitation?  
**A:** Cementitious Liner or Epoxy Coating will be required. Products should be in accordance with applicable ASTM standards. Manufacturer should recommend best suitable product based upon manhole condition.
- c. **Q:** Was there any geotechnical boring done on the project to determine water table location?  
**A:** Yes. Geotechnical information is an appendix of the specifications. Note that the water table is generally high.
- d. **Q:** Has any thought been given to a potential deduct to do concrete patching and then a mill and resurface at the end of the project?  
**A:** Please bid the project with project documents as your reference point. If you believe there would be a substantial deduct for this type of adjustment, you are free to add it to your bid, but it will not be mandatory.
- e. **Q:** Have there been any talks with the campground about running bypass line on their property to keep main open during construction?  
**A:** The existing lines are in easements, so running a bypass line could be negotiated; however, nothing specific has been negotiated to date. I will note that bypass pumping along a similar route to the existing pipe in sections during construction is already anticipated.
- f. **Q:** The contract calls for fixing trenching only. What happens if street issues occur outside of trenching due to the age of the road?  
**A:** If additional pavement work is needed outside of trench patching repairs, we would not anticipate those dollars to have been in the original contract.
- g. **Q:** Detail for sanitary sewer trench detail on C600. Is #8 stone required in the area also listed as full depth granular backfill?  
**A:** This is a typo. #8 stone will only be required for bedding and backfill over pipe. Granular backfill is expected to fill in remaining trench after crown cover per detail. You can disregard the top comment on the left hand side of the drawing calling for full-depth #8 stone.
- h. **Q:** Do we have to bid on both projects?  
**A:** No.
- i. **Q:** Can we change plumbing configuration for the lateral project?  
**A:** The project division should not be bid based upon adjustments in plumbing configuration; only based on tying into existing laterals. Once the contract has begun, we can discuss alternative solutions for properties on a case-by-case basis.
- j. **Q:** In the project manual it states there is 350 LF of 12" SDR26 to be replaced. On the plans, Key Note O says "replace existing pipe to repair sag" and I am guessing this is the 12" to be replaced but there isn't anywhere on the plans that Key Note O is called out. I

assume the 12" goes from Existing Structure 14 to where the manhole and sewer lining stops, but just want to confirm.

**A:** You are correct. This replacement is of the 12" pipe on page C204 from EX MH 14 to MH4 and MH4 to MH5, stopping at the matchline on C204 with C206.

k. **Q:** Is participation of MBE/WBE required?

**A:** See page 10 of RUS bulletin in specifications. MBE/WBE participation is not required; however, efforts should be made to hire such businesses where applicable/appropriate. No additional items/information will be due with bids.

l. **Q:** What is the project prevailing wage / are Davis-Bacon wages required?

**A:** RD does not specifically require Davis-Bacon wages (see Exhibit B, Attachment 1 of the RUS bulletin attached to the project manual [pg 234 of 536]). However, by state statute, all contractors are required to pay fair wages to their employees. As a guideline, contractors can use Davis Bacon 29 CFR 5.5 with the latest modification of rates. For your convenience, here is a link: <https://sam.gov/wage-determination/IN20240006/6>

m. **Q:** When is the anticipated Notice to Proceed for this project? When will the Notice to Proceed be issued for the RD Exclusion (Lateral work) relative to the RD (Main work)?

**A:** We anticipate being released for NTP within 60 days of receiving bids. However, NineStar is flexible in starting contract times with the selected contractor. Additionally, it is anticipated that the lateral division will begin contract time after the main division, but the extent to which to delay NTP can be negotiated with the selected contractor.

n. **Q:** Is there a plan sheet C602?

**A:** No. The plan sheet set ends at C601 for both divisions.

o. **Q:** Please provide a plan and profile sheet showing the 350 LF of 12" sanitary replacement for Item No. 10. Please include the allowable work limits for this installation.

**A:** See Question J for information regarding the location on the project sheets of this work. Sheet information on measure downs is located on C204 as well as easement boundaries. More information on existing sewer can be found in the CCTV report attached.

p. **Q:** Where do we find the pipe lining specification for Item No. 13? Can the pipe lining work be installed without point repairs?

**A:** Yes, lining can be installed manhole to manhole without point repairs. Lining should meet applicable AWWA or ASTM standards and is anticipated to be either Sliplining or CIPP. The design intent is to eliminate inflow and infiltration. The selected contractor will be able to select lining method they deem best fit. All available CCTV information has been attached.

q. **Q:** Which manhole numbers are to be lined?

**A:** Manholes to be lined begin at the connection to existing MH 14 on sheet C204 and continue along the alignment toward sugar creek on C206. There may be one extra unit on the bid form than what ends up being needed.

+ + END OF ADDENDUM + +

PLEASE ACKNOWLEDGE THIS ADDENDUM IN THE BID FORM YOU SUBMIT.



Certified: \_\_\_\_\_

Engineer

Date: 04/17/2024

# PRE-BID MEETING

**Client:** NineStar Connect

**Project Name:** Riley Village Sanitary Sewer (RD and RD Exclusion Divisions)

**Project ID:** 20-400-286-2

**Meeting Location:** NineStar Main Office – 2243 East Main Street, Greenfield, IN 46140

**Date:** April 2<sup>nd</sup>, 2024

## Goals

- Introductions
- Scope of Work
- Document Availability
- Contract Milestones
- Addenda
- Special Considerations
- General Questions/Discussion

## Introductions

- NineStar
- RQAW
- Sign-in Sheet

## Scope of Work

- Approximately 3,600 feet of 8-inch PVC gravity sanitary sewer
- Service laterals for approximately 80 homes
- Manhole and sewer lining on some existing lines

## Document Availability

- RQAW Online Plan Room
  - Electronic documents can be downloaded from: <https://rqaw.com/public-documents/>

Milestone	Date
Pre-bid Meeting	April 2, 2024
<b>Open Bids</b>	<b>April 23, 2024</b>
Close of RD Items (Anticipated)	
Substantial Completion	180 Days from NTP
Final Completion	210 Days from NTP

## Bid Overview

- Bids Due – April 23<sup>rd</sup>, 2024 at **2:00 PM** at NineStar Connect Main Office 2243 East Main Street, Greenfield, IN 46140
  - Bid Location – Sealed bids submitted to the attention of Alan Martin at NineStar Connect, 2243 East Main Street, Greenfield, IN 46140
  - Bid Opening will occur ~~privately~~ **publicly**
- Contract
  - Unit Price Contract (both divisions).
- Documents due at Bid
  - Completed Bid Form – Section 00 41 13
  - Required Bid Security
  - List of Proposed:
    - Subcontractors
    - Suppliers
  - List of Project References
  - Evidence of Bidder's Authority to do business in the State of Indiana
  - Bidder's state or contractor license number
  - Acknowledgement of Addendum(s)
  - Contractor's Bid for Public Work – Form 96
  - All Other Items in Contract(s)

## Contract Milestones

- Substantial Completion – 180 days after Notice to Proceed
- Final Completion – 210 days after Notice to Proceed
- Liquidated Damages: \$1,500 per day for missing Substantial Completion. \$750 per day for missing Final Completion

## Addenda

- All questions to be sent in writing to Whitney Weidenbenner no later than APRIL 17<sup>th</sup>:
  - Email: [wweidenbenner@rqaw.com](mailto:wweidenbenner@rqaw.com)
  - Mail: 8770 North St., Ste. 110, Fishers, IN 46038

## General Questions/Discussion

- Utility locations will need to be confirmed in the field
  - **Recently completed electrical/fiber in area.**
- Discuss Staging Areas
  - **Front of the neighborhood**
- Site Tours
  - All site tours need to be coordinated individually with Alan Martin at 317-326-3131
- Existing water main is shown on the drawings and is roughly 10' away from new sewer, parallel to it in most areas.

## Questions/Answers

- **How close to homes will the RD-Exclusion project go?**
  - **Clean outs may or may not be located. RD Exclusion includes 6" laterals and goes to roughly the location where a cleanout would be. Note that lateral total units in bid documents may end up being less LFT.**
- **Do the homes have basements?**
  - **No, only crawl spaces.**
- **Do contractors need to coordinate right of entry?**
  - **No, it has already been secured.**
- **What to replace pavement with in trenching locations?**
  - **Follow details, can adjust via means and methods if approved.**
- **Is there a detail on curb replacement?**
  - **No. Match Existing.**

## TECHNICAL MEMORANDUM

To: Jarrod Beeson, Director of Special Projects, NineStar Connect

From: Joe Bartos, Project Manager, Wessler Engineering

Date: January 23, 2019

Re: Task Order No. 7 – Riley Village Wastewater Collection System Investigations,  
CCTV Review

Project No.: 206918.03.007

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### **Background**

Wessler Engineering, Inc. has performed a review of the CCTV inspections of the existing wastewater collection system in Riley Village, Greenfield, Indiana. The CCTV inspections were performed in 2016.

### **Existing Conditions**

The existing wastewater collection system consists of PVC and truss pipe with one (1) ductile iron segment. Of the 26 segments, 19 segments run under homes and nine (9) are undersized per Indiana Administrative Code 327 3-6-8 (minimum 8 inches in diameter). Please refer to the attached *Exhibit A – CCTV Review and Recommendations*, as well as *Exhibit B-1 – Existing Wastewater Collection System Map*.

Structural issues in the system include sags, cracks, broken pipe, offset joints, partial collapses, roots and encrustations. Additionally, Segment R11 – R10 has a utility bore thru it. The system also has many visible sources of infiltration at laterals and joints.

### **Short Term and Long-Term Priorities**

The recommended improvements to the sanitary collection system focused on the short term (3 – 5 years) and long term (beyond 5 years) with the understanding the long-term plan would be to abandon the existing sanitary sewer segments that are located under homes. The priority of the short-term improvements is to address major issues that could lead to pipe blockages or collapses. A priority ranking system was used for classifying the improvements. They are as follows:

- Priority 1 – should be addressed as soon as possible
- Priority 2 – should be addressed as soon as financing is available
- Priority 3 – should be considered in future improvements project; revisit pipe condition in 5 years
- No priority – no work required

### **Short-Term Recommended Improvements**

#### A. New Manholes

Eight (8) of the existing segments do not have an upstream manhole for access. Adding upstream manholes will facilitate access for cleaning and televising, however, considering the long-term plan for the system, and the sensitive locations of where these manholes would

be installed (residences' yards, close to homes) addition of these manholes are at the option of the Owner.

The pre-design construction cost estimate for 8 new sanitary manholes is 8 manholes x \$12,500 each = **\$100,000.00**

B. Additional Cleaning and Annual Cleaning/CCTV

It is recommended the following segments receive follow-on cleaning/CCTV for the purposes of removing debris and obstructions and/or verifying the condition of the segments (only partial CCTV was completed in 2016):

- i. R4 – R3 – 360 LF – remove pipe clamp at 145'
- ii. R6 – R5 – 475 LF (locate MH R6)
- iii. R6A – R6 – 385 LF (locate MH R6)
- iv. R9A – R9 – 140 LF
- v. R10 – R9 – 350 LF
- vi. R12 – R10 – 400 LF
- vii. R13 – R12 – 400 LF
- viii. R14A – R14 – 375 LF
- ix. R15 – R13 – 325 LF
- x. R17A – R17 – 275 LF
- xi. R17B – R17 – 300 LF
- xii. R16A – R16 – 175 LF

The estimated cost for additional cleaning/CCTV = 3,960 LF x \$4.25/LF = **\$16,800.00**

It is recommended the following segments receive annual cleaning/CCTV to determine whether the segments which have cracks, offset joints, etc. have deteriorated further. Also, annual cleaning will help remove debris from those segments that suffer from sags. Annual Cleaning/CCTV:

- i. R4-R3 – 360 LF
- ii. R5-R4 – 135 LF
- iii. R8A – R8 – 300 LF
- iv. R10 – R9 – 350 LF
- v. R10 – R11 – 150 LF
- vi. R12 – R10 – 400 LF
- vii. R14A – R14 – 375 LF
- viii. R15 – R13 – 325 LF
- ix. R17B – R17 – 300 LF

The estimated annual cleaning/CCTV cost = 2,695 LF x \$4.25/LF = **\$11,500.00**

All additional cleaning/CCTV and annual cleaning/CCTV is considered to be Priority 1 work.



C. Point Repairs

Point repairs are recommended at those locations where the pipe is failing and cannot be corrected with pipe lining. Point repairs are recommended at the following locations (all Priority 1):

- i. 167 LF from MH R6 (estimated 5 foot repair)



- ii. 87.3 LF from MH R11 (estimated 3 foot repair)



- iii. 83.7 LF FROM MH R16 (estimated 5 foot repair)



The pre-design construction cost estimate for three (3) point repairs is 3 x \$15,000 = **\$45,000.00**

#### D. Pipe Lining

Pipe lining is proposed in the short term for those segments that appear to be at risk of failure or are already failing. Pipe lining of PVC and truss pipe using cured-in-place pipe and fold and form pipe poses some risks. First, the high temperatures required for the installation of the liners may cause thermal deformation of the host pipe. This does not happen frequently; however, it does pose a risk. The fold and form process uses slightly lower temperatures than the cured-in-place pipe.

UV lining systems, which rely on UV radiation to cure the resin in lieu of high temperatures, may be a better option for pipe lining in Riley Village. These liners cost about 25% more than traditional cured-in-place liners.

Another risk of lining PVC and truss pipe is during the lateral reinstatement, there is a greater risk of the cutting tool causing damage to the existing lateral. After speaking with rehabilitation contractors, they recommended assuming 50% of the laterals will require lateral liners.

The following segments are recommended for pipe lining in the short term:

- i. R4 – R3 – 360 LF of 12 inch – Priority 2
- ii. R8 – R7 – 340 LF of 12 inch – Priority 1
- iii. R9 – R8 – 150 LF of 12 inch – Priority 1
- iv. R13 – R12 – 400 LF of 8 inch – Priority 2
- v. R16 – R15 – 370 LF of 8 inch – Priority 1

The pre-design construction cost estimate for pipe lining is as follows:

850 LF of 12 inch pipe lining at \$50/LF = **\$42,500.00**

770 LF of 8 inch pipe lining at \$35/LF = **\$26,950.00**

11 lateral liners at \$6,000 each = **\$66,000.00**

The total estimated construction cost for all Short-Term Recommended Improvements is **\$308,750.00**. Refer to *Exhibit B-2 – Short-Term Recommended Improvements* for a graphical display of this work.

### **Long-Term Recommended Improvements**

*Note: costs have not been provided for the long-term improvements. Further discussion and evaluation are needed with respect to Owner's long-term plans for providing sanitary service in Riley Village.*

#### A. Sewer Relocation/Replacement

The recommended long-term solution for the system is relocation/replacement of the 19 segments that are located under homes and/or are undersized. All this work is rated Priority 1. *Exhibit B-3 – Long Term Recommended Improvements* displays the 19 segments recommended for relocation/replacement.

- i. In addition, R7 – R5 is listed as Priority 2 for replacement if it is determined the sag in this segment is causing continual operation and maintenance issues.
- ii. R5 – R4 is recommended for replacement (Priority 2) if sags are causing issues (otherwise, pipe lining is recommended).

#### B. Pipe Lining

The following segments which are not undersized or located under homes are recommended for pipe lining:

- i. R2 – R1 – 380 LF of 12-inch – Priority 3
- ii. R4 – R3 – 360 LF of 12-inch – Priority 1
- iii. R5 – R4 – 135 LF of 12-inch – Priority 2 (if sags are not causing O&M issues)

It is recommended these segments not be lined in the short term, as their condition does not currently warrant rehab and it is unknown whether these segments will remain in service in the long term (e.g., if a low pressure sewer system is installed).

END

#### Attachments

Exhibit A – CCTV Review and Recommendations

Exhibit B – Aerial Maps

cc: File

Outstanding Item  
Work Completed

GENERAL INFORMATION						CCTV INFORMATION											
Street Name	US MH	DS MH	Material	Estimated Length (LFT)	Diameter (in.)	Under House/Above-Ground Conflict (Y/N)	CCTV Completed (Y/N)	Survey Direction	CCTV Length (LFT)	Total No. of Taps	No. of Intruding Taps	No. of Capped Taps	Pre-CCTV Comments	PRIORITIZATION - SHORT TERM (3 - 5 YEARS)	Recommendation	PRIORITIZATION - LONG TERM	Recommendations
SUGAR CREEK	R2	R1	DIP	380	12	N	Y	Downstream	369.3	0	0	0	Survey abandoned at 369.3 LF due to change in pipe alignment; some surface damage due to corrosion, few joints with mineral deposits	NO PRIORITY	NO ACTION NECESSARY	PRIORITY 3	PIPE LINING
I-70	R3	R2	RMP	300	12	N	Y	Downstream	296.5	0	0	0	Separated joint at 295 LF; light roots at a few joints; pipe appears to be in fair condition	NO PRIORITY	NO ACTION NECESSARY	NO PRIORITY	CCTV IN 5 YEARS
I-70	R4	R3	RMP	360	12	N	Y	Downstream	361.3	0	0	0	Encrustation at joint at 5.4 LF; longitudinal cracking at several locations throughout the segment	PRIORITY 1 - ANNUAL CLEAN/CCTV OR PRIORITY 2 - PIPE LINING	REMOVE PIPE CLAMP AT 145'; CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS OR PIPE LINING	PRIORITY 1	PIPE LINING
I-70	R5	R4	RMP	135	12	N	Y	Downstream	134.4	0	0	0	Open joints at 6.5 LF, 57 LF, 70 LF and 108 LF; appear to be sags from 60 to 82 LF (1/4 pipe) and 90 to 134.4 LF (1/2 pipe)	PRIORITY 1	CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS	PRIORITY 2	PIPE LINING (IF SAGS ARE NOT CAUSING O&M ISSUES); SEWER REPLACEMENT IF THEY ARE
FOUNTAIN LAKE DRIVE	R6	R5	PVC	475	6	N	N	Upstream	167.0	6	1	0	Survey abandoned at 167.0 LF due to defective tap/PVC point repair and heavy root intrusion; defective tap/PVC point repair from 85 to 95 LF; encrustation at tap connection at 162.7 LF	PRIORITY 1	LOCATE MANHOLE R6; CCTV; DIG AND REPLACE DEFECTIVE TAP/POINT REPAIRS AT 166' FROM R5 (5 FOOT POINT REPAIR)	PRIORITY 1	REPLACE - SEWER UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R6A	R6	XXX	385	XXX	Y	N	N/A	XXX	XXX	XXX	XXX	No video provided	PRIORITY 1	LOCATE MANHOLE R6 AND CCTV; OWNER OPTION TO INSTALL NEW MANHOLE 6A	PRIORITY 1	REPLACE - SEWER UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R7	R5	RMP	200	12	N	Y	Downstream	204.0	3	1	0	Protruding tap 2.5" at 20'; Encrustation at tap connection at 185 LF; minor joint separation at several locations throughout the segment; potential 1/2 pipe sag from 135' to end of pipe (or due to downstream debris) - cannot determine	NO PRIORITY	NO ACTION NECESSARY	PRIORITY 2	REPLACE SEWER IF SAG IS CAUSING O&M ISSUES
FOUNTAIN LAKE DRIVE	R7A	R7	PVC	800	6	N	N	Upstream	360.1	10	0	2	Survey abandoned at 360.1 LF due to root ball; encrustation and active infiltration at tap connection at 317.8 LF	NONE	PER NINESTAR, THIS SEGMENT HAS BEEN ABANDONED	NONE	NO ACTION NECESSARY
FOUNTAIN LAKE DRIVE	R8	R7	RMP	340	12	Y	Y	Downstream	343.5	5	0	0	Encrustation at joints at 6.8 LF, 32.6 LF, and at several tap connections; longitudinal cracking from 126 LF to 150 LF, from 191 LF to 200 LF, from 246.6 LF to 251.5 LF; broken pipe from 265 LF to 271 LF; tap connection at 319.7 completely blocked by roots; appears to be a sag from 330 LF to 343.5 LF; line has partially collapsed and additional failures may occur within next 5 years	PRIORITY 1	PIPE LINING	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R8A	R8	PVC	300	6	Y	N	Upstream	121.8	3	0	0	Survey abandoned at 121.8 LF due to hole/defective pipe; encrustation and active infiltration at tap connection at 40.1 LF; large root ball at 113.1 LF	PRIORITY 1	CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS; OWNER OPTION TO INSTALL NEW MH R8A TOWARDS UPSTREAM END OF SEGMENT	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES AND UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R9	R8	RMP	150	12	Y	Y	Downstream	151.1	0	0	0	Separated joint with heavy encrustation at 10.8 LF; joint separation at several locations throughout the segment; appears to be a sag from 90 LF to 140 LF; broken pipe and longitudinal cracking from 140 LF to 145 LF represents potential area of collapse in next 5 years	PRIORITY 1	PIPE LINING	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R9A	R9	XXX	140	XXX	Y	N	N/A	XXX	XXX	XXX	XXX	No video provided	PRIORITY 1	CCTV; OWNER OPTION TO INSTALL NEW MANHOLE R9A	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R10	R9	RMP	350	8	Y	Y	Both	328	5	0	0	Reverse survey performed; appear to be several structural issues, i.e. hole, sag(s), throughout the pipe along with heavy debris; poor video quality in several areas	PRIORITY 1	HEAVY CLEANING THEN CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R11	R10	PVC	150	6	Y	Y	Both	152.2	0	0	0	Utility bore-thru/root intrusion at 87.3 LF (DS)/64.9 LF (US); hole in pipe at 64.4 LF (DS); crack/hole in pipe and active infiltration at 78.0 LF (DS)	PRIORITY 1	3 FOOT POINT REPAIR TO REMOVE UTILITY BORE THRU; CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES AND UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R11A	R11	PVC	275	6	Y	Y	Upstream	276.4	10	1	3	Encrustation at tap connection at 118.3 LF; active infiltration at tap connection at 243.3 LF	NO PRIORITY	OWNER OPTION TO INSTALL NEW MANHOLE R11A	PRIORITY	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES AND UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R12	R10	RMP	400	8	Y	Y	Both	411.6	10	0	0	Reverse survey performed; camera under water for much of the inspection; longitudinal cracking, sags, and debris throughout the segment	PRIORITY 1	HEAVY CLEANING THEN CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R13	R12	RMP	400	8	Y	Y	Both	404.9	9	0	0	Reverse survey performed; heavy encrustation at several taps and joints, longitudinal cracking throughout the segment; appears to be broken pipe 60 LF downstream of R13	PRIORITY 1 - HEAVY CLEAN/CCTV/ENCRUSTATION REMOVAL PRIORITY 2 - PIPE LINING	HEAVY CLEAN/CCTV, REMOVE ENCRUSTATIONS; PIPE LINING TO PREVENT FURTHER PIPE DETERIORATION/COLLAPSE	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R14	R13	PVC	150	6	Y	Y	Upstream	160.6	0	0	0	Poor video quality; no issues noted	NO PRIORITY	NO ACTION NECESSARY	NO PRIORITY	NO ACTION NECESSARY
FOUNTAIN LAKE DRIVE	R14A	R14	PVC	375	6	Y	N	Upstream	230.0	3	0	0	Survey abandoned due to root ball at 230 LF; camera under water for much of the inspection; encrustation/roots at taps and joints	PRIORITY 1	HEAVY CLEANING/ROOT REMOVAL AND RE-CCTV; CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS; OWNER OPTION TO INSTALL MH 14A	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES AND UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R14B	R14	PVC	355	6	Y	Y	Upstream	355.1	14	1	1	Active infiltration through several tap connections; appear to be several sags throughout the segment	NO PRIORITY	OWNER OPTION TO INSTALL NEW MH 14B	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES AND UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R15	R13	RMP	325	8	Y	N	Upstream	216.1	5	0	0	Survey abandoned due to heavy encrustation at tap at 216.1 LF; broken pipe at 5 LF	PRIORITY 1	REMOVE ENCRUSTATION; HEAVY CLEANING AND RE-CCTV; CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R16	R15	RMP	370	8	Y	N	Downstream	332.7	7	0	0	Survey abandoned due to debris; broken and cracked pipe at 182'; heavy encrustation and active infiltration at several tap connections	PRIORITY 1	PIPE LINING	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R17	R16	RMP	150	6	Y	N	Upstream	83.7	0	0	0	Survey abandoned due to offset joint/PVC point repair at 83.7'; appear to be several sags throughout the segment	PRIORITY 1	5 FOOT POINT REPAIR TO FIX OFFSET JOINT AT 83.7' FROM MH R16	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES AND UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R17A	R17	XXX	275	XXX	Y	N	N/A	XXX	XXX	XXX	XXX	No video provided	PRIORITY 1	CLEAN/CCTV; OWNER OPTION TO INSTALL NEW MANHOLE R17A	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES
FOUNTAIN LAKE DRIVE	R17B	R17	PVC	300	6	Y	Y	Upstream	271.1	7	0	0	Camera under water for much of the inspection; appear to be several sags throughout the segment	PRIORITY 1	HEAVY CLEANING THEN CLEAN/CCTV ON ANNUAL BASIS TO SEE IF CONDITION WORSENS	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES AND UNDERSIZED PER INDIANA CODE
FOUNTAIN LAKE DRIVE	R16A	R16	RMP	175	8	Y	Y	Upstream	176.6	4	0	0	Heavy encrustation/roots at 133'; active infiltration at several tap connections	PRIORITY 1	REMOVE ENCRUSTATION/ROOTS AT 133'; OWNER OPTION TO INSTALL NEW MANHOLE R16A	PRIORITY 1	SEWER RELOCATION/REPLACEMENT SINCE LOCATED UNDER HOMES

Notes:  
DIP = DUCTILE IRON PIPE  
PVC = POLYVINYL CHLORIDE  
RMP = REINFORCED PLASTIC PIPE (TRUSS)  
XXX = NOT KNOWN









PER NINESTAR, THIS SEGMENT HAS BEEN CAPPED AND ABANDONED

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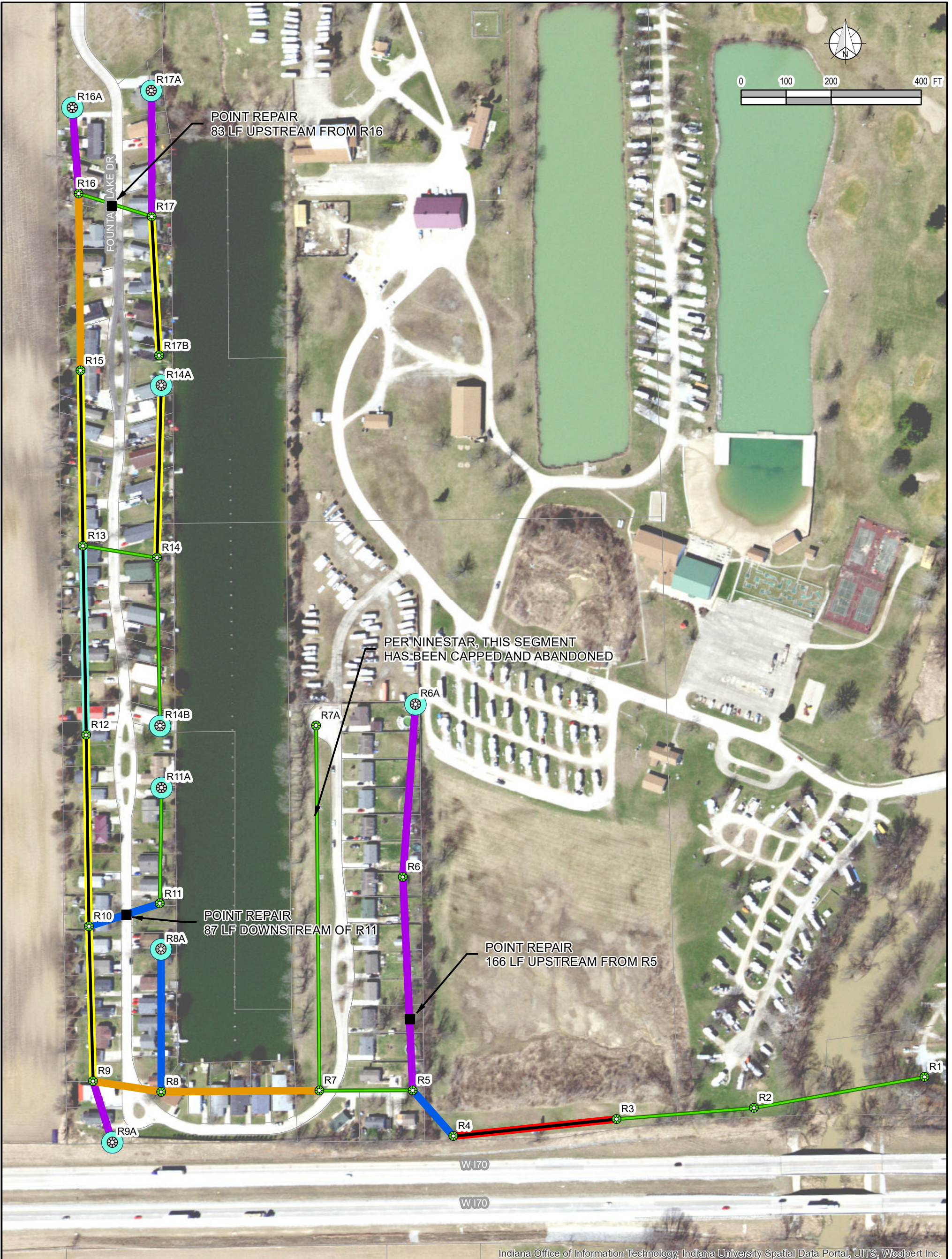
- LEGEND**
-  Sanitary Manhole
  -  Cleanout / Capped Pipe
  -  Sanitary Sewer
  -  Parcels

**EXHIBIT B-1**  
**Existing Wastewater**  
**Collection System Map**

NineStar Connect  
Riley Village Wastewater  
Collection System Investigations

January 2019  
206918-03-007





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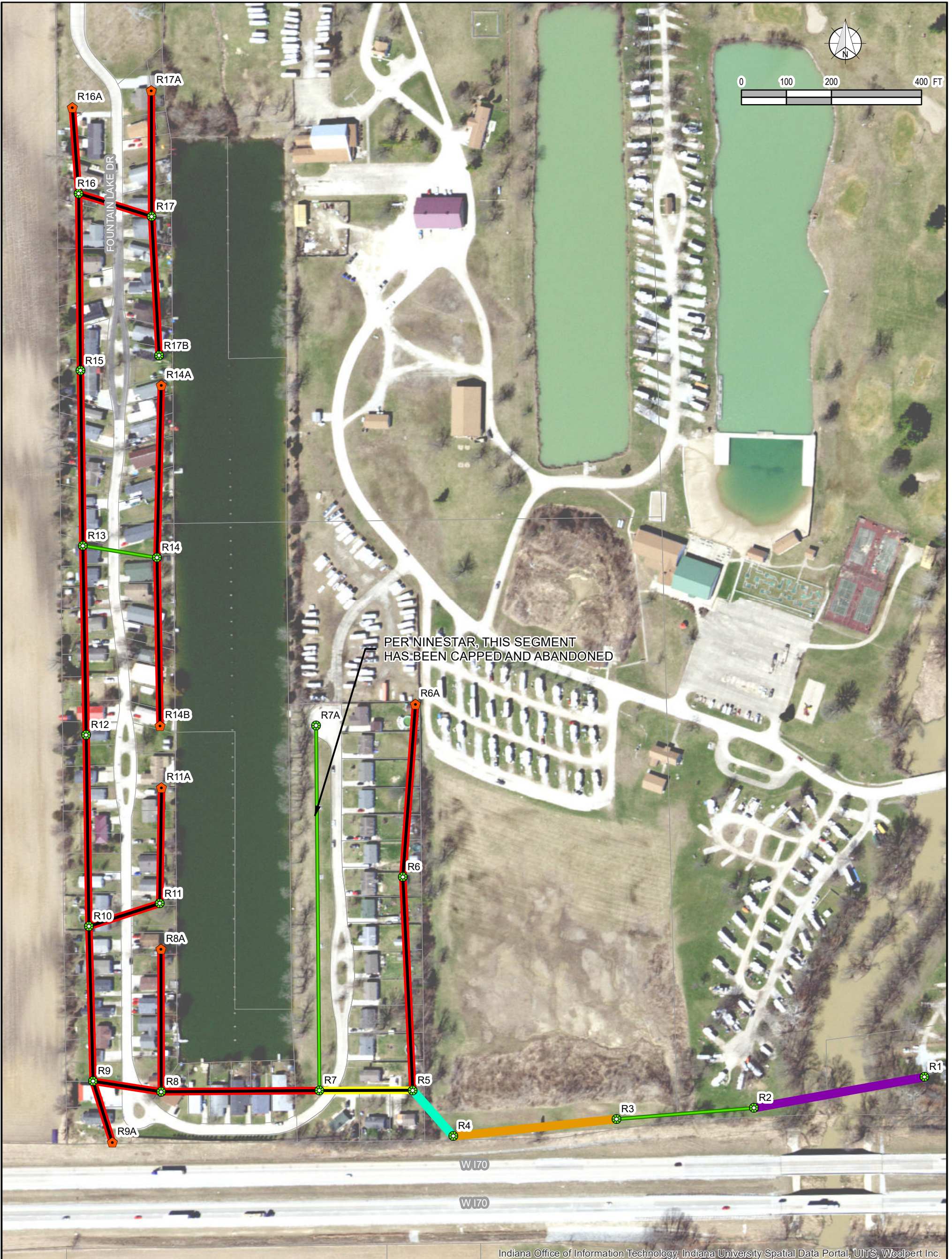
LEGEND			
	Sanitary Manhole		Additional Cleaning, Annual Cleaning, Pipe Lining
	Cleanout / Capped Pipe		Additional Cleaning
	Parcels		Additional Cleaning, Pipe Lining
			Additional Cleaning, Annual Cleaning
			Annual Cleaning
			Pipe Lining
			INSTALL NEW MANHOLE

**EXHIBIT B-2**  
**Short-Term Recommended Improvements**

**NineStar Connect**  
**Riley Village Wastewater**  
**Collection System Investigations**

January 2019  
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**LEGEND**

- |                        |                                     |                                     |
|------------------------|-------------------------------------|-------------------------------------|
| Sanitary Manhole       | Sanitary Sewer Main                 | Priority 2 Pipe Lining              |
| Cleanout / Capped Pipe | Priority 1 Pipe Lining              | Priority 2 Relocation / Replacement |
| Parcels                | Priority 1 Relocation / Replacement | Priority 3 Pipe Lining              |

**EXHIBIT B-3**

**Long-Term Recommended Improvements**

**NineStar Connect  
Riley Village Wastewater  
Collection System Investigations**

January 2019  
206918-03-007

