



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO ATTENTION OF
ECW-15J

VIA ELECTRONIC MAIL

Lynn Branson Matchingtouch, Director
Village of Cahokia Water and Sewer Department
900 Upper Cahokia Road
Cahokia, IL 62206

email: lbranson@cahokiaillinois.org

Re: Sanitary Sewer Inspection Report

Dear Lynn Matchingtouch:

On April 21-22, 2021, the U.S. Environmental Protection Agency conducted an inspection of the Village of Cahokia's sanitary sewer system. The enclosed report summarizes observations made by EPA during the inspection.

If you have questions or concerns regarding the report or believe any part of the report is not accurate, please contact Dean Maraldo of my staff at (312) 353-2098 or maraldo.dean@epa.gov.

Sincerely,

RYAN BAHR Digitally signed by RYAN BAHR
Date: 2021.05.06 08:56:26
-05'00'

Ryan Bahr, Chief
Water Enforcement and Compliance Assurance Branch, Section 2

Enclosure

cc: Mayor Curtis McCall, Jr., Village of Cahokia [cmccall@cahokiaillinois.org]
Rory Morgan, Village of Cahokia [rmorgan@cahokiaillinois.org]
Joe Stitely, Illinois EPA [Joe.Stitely@Illinois.gov]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Purpose: Village of Cahokia – Sanitary Sewer System Inspection Report

Facility: Village of Cahokia Sanitary Sewer System

Date of Inspection: April 21-22, 2021

U.S. EPA Inspectors:

Dean Maraldo, EPA Region 5; (312) 353-2098; maraldo.dean@epa.gov

Valerie Dooling, EPA Region 5; (312) 886-7167; dooling.valerie@epa.gov

Village of Cahokia Water & Sewer Department Representatives:

Lynn Branson Matchingtouch, Director; (618) 337-2149; lbranson@cahokiaillinois.org

Rory Morgan, Foreman/Operator; (618) 301-2160; rmorgan@cahokiaillinois.org

Inspection Report Prepared by:

Dean Maraldo, U.S. EPA Region 5 Inspector

U.S. EPA Inspector Signature: Maraldo, Dean Digitally signed by Maraldo, Dean
Date: 2021.04.30 10:19:25 -05'00'

Approver Name & Title:

Ryan Bahr, Chief, Section 2, Water Enforcement and Compliance Assurance Branch

Approver Signature: RYAN BAHR Digitally signed by RYAN BAH
Date: 2021.05.06 08:50:51 -05'00'

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I. INTRODUCTION

On April 21-22, 2021, I conducted an inspection of the Village of Cahokia's ("Village") sanitary sewer conveyance system. During the inspection I observed lift stations, areas in the Village with chronic flooding issues, and failing sewer manhole structures. The inspection was conducted as part of the U.S. Environmental Protection Agency's ongoing efforts to investigate sanitary sewage overflows ("SSOs") in the East Saint Louis area. I participated in the following inspection activities:

- Inspection opening conference;
- Interviews of Village sewer staff;
- Physical inspection of select lift/pump stations, areas with chronic flooding issues, and failing sewer manhole structures; and
- Closing conference.

The following personnel were involved in the inspection of the sewer system:

U.S. EPA Inspectors: Dean Maraldo, Inspector/Enforcement Officer
 Valerie Dooling, Inspector/Enforcement Officer

Village of Cahokia Water & Lynn Branson Matchingtouch, Director
Sewer Department: Rory Morgan, Foreman/Operator

The Village manages a sanitary sewer collection system in Cahokia, Illinois, including 32 sanitary lift stations, and approximately 50 miles of gravity sewers, three miles of force mains, and more than 1,200 manholes (Village of Cahokia Sanitary Sewer System CMOM Program, 2013). This report summarizes my inspection observations.

II. INSPECTION ACTIVITY SUMMARY

II. A. Opening conference

I arrived at the Village office at 900 Upper Cahokia Road at 1 p.m. on April 21, 2021, and met EPA inspector Valerie Dooling. We entered the office and met Water and Sewer Department Director Lynn Branson Matchingtouch ("Director") and Water and Sewer Department Foreman Rory Morgan ("Foreman") in a conference room. The inspection opening conference began with introductions and I presented my U.S. EPA Inspector credentials to the Director and then discussed the inspection's intended scope, including an interview and physical inspection of lift stations in the Village. I also provided a general summary of EPA's efforts to investigate SSOs in the area.

II. B. Interview

I began the interview with the Director and Foreman by reviewing the system description provided in the 2013 CMOM to make sure the information is still accurate. They confirmed that the information was still valid with the exception of the estimate for miles of force main (three

miles according to CMOM). The Foreman thought that the miles of force main was closer to five. The Foreman also confirmed that the Village has no combined storm and sanitary sewers. I asked about sewage inputs from other communities into the Village sewer system and the Director said they received sewage from portions of Signal Hill, Centreville, Commonfields of Cahokia, and some flow from East Saint Louis. The Foreman added that the flow comes into the Village system at Lift Station #28 (Station 5 rear), then flows to Lift Station #26 (Diversion), then to the American Bottoms wastewater treatment plant (“WWTP”). The Foreman also stated that Lift Stations #26 and #28 are the two main lift stations conveying flow into Sauget and the American Bottoms WWTP.

I asked if the Village has any agreements with communities sending sewage to the Village. The Director stated that there is an agreement with Commonfields of Cahokia which includes a monthly transmission fee.

We then focused the discussion of sewer complaint records. The Director and Foreman both emphasized the importance of record keeping within the organization. The Director added that complaints and related work orders are logged into a computer. The Director also asked one of the staff to provide copies of sewer work orders from August 2020 to present. The staff member returned shortly and provide me with the copies to keep. The Village was in the process of preparing copies of all sewer work orders going back to 2016, in response to a recent EPA CWA Section 308 information request.

Next we talked about sewer operations and maintenance (“O&M”) issues. The Foreman mentioned some staffing issues, including recent injuries and sometimes needing to assign staff to non-sewer and water related tasks. I asked about sewer staffing levels. The Foreman replied that there are currently three workers, including himself, who maintain both sewer and water systems in the Village. I asked how the Village trains new sewer staff. The Foreman said they are only able to hire workers with no sewer experience and have to train them on-the-job. Also adding that they have access to two electricians to help with lift station maintenance. The Foreman then explained that they have a goal of inspecting every lift station twice a week, on Monday and Friday. Only main Lift Station #28 has an automatic alarm, some have warning lights, but most have no alarms or problem indicators of any kind, requiring manual observations to detect issues. Routine lift station maintenance is based on issues discovered during the routine inspections, and not planned in advance. The Foreman added that they could use better record-keeping for lift station inspections and identification of maintenance issues.

I asked if the Village experiences any surcharging or capacity issues related to Sauget and American Bottoms WWTP. The Foreman said they’ve never had an issue with flow capacity at Sauget and American Bottoms WWTP. The Director added that the Village requires sewer backflow preventers to minimize sewer backups into homes.

Next, I asked about lift station issues and sewer backups. The Foreman said that Lift Station #23 (St. Monica), needs to be replaced and scheduling has been delayed due to the COVID-19 pandemic. According to the Foreman, all other lift stations are “in decent shape.” The Foreman also mentioned that Lift Station #6 (Cooper) needs an upgrade to address a sink hole developing outside the wet well and thinning vault walls due to sewer gasses.

I asked if there are any chronic sewer backup issues in the system. The Foreman said that backups into home were not a big problem, but clarified that there are issues where residents cannot flush toilets due to backups in the system. This was attributed to sewer backflow preventers. The Foreman said backups occur in the area around Lift Station #19 (Shack), and the area northwest of the airport along Upper Cahokia Road. The Foreman attributed the backup issues around the Shack lift station to poor storm water drainage, typically during rain events exceeding 2-3 inches, adding that the storm water pools into yards and it usually takes days to drain. As a result, sewer lines in the area fill with silt and the system backs up to the point where residents cannot flush toilets. The Foreman then mentioned sewage overflow issues, including sewage discharging from manholes, in the area northwest of the airport along Upper Cahokia Road and near Kinder St., Edwards St., and Judith Lane. The Foreman believes the sewage just ponds up in the area and eventually infiltrates into the ground or back into the sewer system. Along Edwards St. the Village installed a stormwater pump station to pump ponded water to Dead Creek. The Foreman said that the water pumped to Dead Creek was mainly stormwater. The Director and Foreman added that flooding, in general, has been worse in recent years.

At this point we ended the interview and prepared to inspect select lift stations.

II. C. Physical inspection of select lift stations and stormwater flooding areas

The physical inspection of select lift stations and stormwater flooding areas began at 2:52 p.m. on April 21, 2021. The weather was overcast and cool. The Foreman led the tour, and inspector Dooling joined us. The physical inspection is summarized in the table below. Photos referenced below are included in the Photo Log (Attachment A). A map summarizing inspection observation locations, including lift/pump station numbers, is provided in Attachment B. Lift stations are identified by the descriptive names, where available, and numbers provided by the Village.

Physical inspection summary table

Lift Station No.	General Location	Date/Time	Notes	Photos
19	Jerome & Falling Spring	4/21/21; 2:48 p.m.	Known as Shack Station. Foreman mentioned silting in lines causes backups in this area. This is one of the deepest lift stations.	VCAH0001 VCAH0002
NA	Edwards & Upper Cahokia	4/21/21; 3:11 p.m.	Stormwater flood area. Foreman said flooding occurs here during 2-3” rains. Sewer backs up via manholes.	VCAH0003

Village of Cahokia Sanitary Sewer System
Inspection Report

Lift Station No.	General Location	Date/Time	Notes	Photos
998	Kinder & Falling Spring	4/21/21; 3:16 p.m.	Stormwater flood area and stormwater pump station. Pumps storm water to stormwater manhole along Jerome Lane. Also receives sewage from manhole when flooded (manhole captured in Photo VCAH 0004). Village installed a pump in a field (Photo VCAH0005) where floodwater collects to pump water to a nearby storm drain. [I identify this stormwater pump station as #998 for purposes of this report]. According to the Foreman this is the worst flooding area in the Village.	VCAH0004 VCAH0005
29	Upper Cahokia & Judith Ln.	4/21/21; 3:33 p.m.	Known as VFW station. Photo VCAH0006 captures inside of lift station. Photo VCAH0007 captures area outside of lift station.	VCAH0006 VCAH0007
4	Bruce and Judith Ln.	4/21/21; 3:39 p.m.	Known as Bruce St. Lift Station and “upstream” of Lift Station #29. This lift station is in poor condition as noted in Photo VCAH0008. According to the Foreman, this station is scheduled for rehabilitation.	VCAH0008
2	Judith & Bruce St.	4/21/21; 3:45 p.m.	Known as Judith Lift Station and “upstream” of Lift Station #4.	VCAH0009
1	100 Block Judith Ln.	4/21/21; 3:52 p.m.	Station is “upstream” of Lift Station #2. Shallow wet well. Note heavy grease in Photo VCAH0010. Foreman believes this may be due to a residential source. We concluded inspection activities for the day at 4:00 p.m.	VCAH0010
28	Jerome & Mousette Station 5 (Rear)	4/22/21; 10:28 a.m.	We began inspection activities again on 4/22/21 at 10:00 a.m. at the Village office. Then arrived at Lift Station #28, known as Station 5A (rear) at 10:28 a.m. Sewage from Commonfields of Cahokia enters the Village sewer system here.	VCAH20001
27	Jerome & Mousette Station 5 (Front)	4/22/21; 10:44 a.m.	Known as Station 5 (front). This lift station handles flow from a nearby trailer park and nursing home. According to the Foreman, lift stations #27 and #28 flow into a manhole then via gravity to Lift Station #26.	VCAH20002
26	Jerome & Wesley Station 3 (Diversion)	4/22/21; 10:54 a.m.	Known as Station 3 (Diversion), near airport. This station has new rails and chains (Photo VCAH20003) and begins force main to Sauget. The vault box was unlocked and I observed a missing gooseneck air vent, exposing vault to precipitation (Photo VCAH20004). The Foreman added a new lock to vault cover prior to departing the lift station.	VCAH20003 VCAH20004

Lift Station No.	General Location	Date/Time	Notes	Photos
999	Edwards St.	4/22/21; 11:32 a.m.	Stormwater pump station to Dead Creek (Photo VCAH20005). [I identify this stormwater pump station as #999 for purposes of this report]. Foreman said that rainwater is the issue here when area floods, not sewage backups.	VCAH20005
24	Mississippi & David	4/22/21; 11:39 a.m.	Foreman said this station needs an upgrade. Only pumps a couple times a day and serves a small area. First lift station on a main line.	VCAH20006
17	Mississippi & David	4/22/21; 11:47 a.m.	Note station well has detached rail (Photo VCAH20007).	VCAH20007
7	Mississippi & School St.	4/22/21; 11:56 a.m.	Note rusted components and edges of cover in Photo VCAH20008.	VCAH20008
20	Mississippi & Hissrich	4/22/21; 12:04 p.m.	Known as Singer Station. Hanger needs replacement (Photo VCAH20009). Only one pump operating.	VCAH20009
10	Edgar St & Circle Creek Dr.	4/22/21; 12:14 p.m.	Known as Edgar Street Station. This station has new rails and operating on only one pump (waiting for replacement pump to arrive). We observed bypass piping in place in preparation for manhole repair work next month. As a result, vault cover could not shut and was unlocked (Photo VCAH20010). The Foreman said he would use a chain to lock vault cover.	VCAH20010
NA	Circle Creek Ln.	4/22/21; 12:25 p.m.	Manhole failure area. The site was secured with temporary fencing around a collapsed sewer manhole (Photo VCAH20011). The Foreman believes the collapse was due to tree root and high water table, and added that repairs are scheduled to start next month. The failure started in May 2020 according to the Foreman.	VCAH20011
30	Falling Springs & Il 157	4/22/21; 12:35 p.m.	Known as Washington Station. The Foreman stated that this was the deepest and newest lift station in the Village. The station was in good shape. From here, sewage is pumped to a 30" line then gravity flows to Sauget and American Bottoms WWTP. We broke for lunch after inspecting this station.	VCAH20012
23	St. Monica & St. Maud Dr.	4/22/21; 1:53 p.m.	Known as St. Monica Station. We returned from lunch break and began the inspection at this location. The Foreman said this is an old and reliable lift station in need of replacement. I did not descend the ladder into the station well to observe its condition (Photo VCAH20013).	VCAH20013

Lift Station No.	General Location	Date/Time	Notes	Photos
22	St. Margaret & St. Justin	4/22/21; 2:06 p.m.	Known as St. Margaret Station. Only one pump operational.	VCAH20014
6	Cooper & IL Rt 157	4/22/21; 2:23 p.m.	Known as Cooper Station. Upon arrival I noticed an area with a recently filled ground collapse near a vault (VCAH20017). According to Foreman, this is the oldest lift station in the Village and one of the highest flow stations. I observed the incoming flow vault (VCAH20015) and pump station (VCAH20016). The Foreman mentioned that sewer gasses were deteriorating the walls of the lift station structures. At this point we were joined by EPA inspectors Joan Rogers and Ted Flatebo who were in the area and wanted to meet the Foreman. We concluded the physical inspection of lift stations and returned to the Village office to conduct the close out conference.	VCAH20015 VCAH20016 VCAH20017

II. D. Inspection close out conference

The inspection close out conference began at the Village’s office at 900 Upper Cahokia Road at 2:40 p.m. In addition to EPA inspectors Dooling, Flatebo, and Rogers, I was joined by the Director and Foreman. I confirmed that the documents I received did not contain confidential business information and provided an estimated timeframe to prepare an inspection report. I asked if there were any questions. With no questions, I concluded the closing conference at 3:05 p.m. and the EPA team departed the Village office.

III. AREAS OF CONCERN

The following areas of concern are based on inspection observations:

- Sewer staffing. A total of three sewer maintenance staff is far below expected staffing levels for operation and maintenance of a sewer system with such a large number of lift stations, and for a community of over 10,000 residents (EPA, 1973);
- Sewer overflows in flood prone areas, and related silting of sewer lines contributing to backups;
- Practice of pumping ponded stormwater with potential sewage contamination to Dead Creek;
- Heavy grease observed in Lift Station #1;
- Poor condition of several lift stations, including Lift Station #4, missing air vent gooseneck on Lift Station #26, detached rail on Lift Station #17, hanger replacement needed in Lift Station #20, deteriorating lift station walls due to sewer gasses and ground collapse near Lift Station #6, and lift stations (#10, #20, and #22) operating on only one pump;

- Lack of automatic alarms or auto dialers to alert sewer staff of lift station failures or issues;
- Need for better record-keeping for lift station inspections and identification of maintenance issues; and
- Collapsed sewer manhole on Circle Creek Drive.

REFERENCES

Specific resources included by reference:

- *Village of Cahokia Sanitary Sewer System Capacity, Management, Operation and Maintenance (CMOM) Program*, October 2013.
- *Manpower Requirements for Waste Water Collection Systems in Cities and Towns up to 150,000 in Population*. U.S. Environmental Protection Agency. June 1973.

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ATTACHMENT A: Photo Log
Village of Cahokia Sanitary Sewer System
EPA Inspection April 21-22, 2021
All photos taken by Dean Maraldo, Inspector, U.S. EPA
Camera: Ricoh WG-4



1: VCAH0001

Description: Lift Station #19 (Shack). This is one of the deepest lift stations in the Village.

Location: Jerome & Falling Spring

Camera Direction: 327°

Date/Time: 4/21/21; 2:48 p.m.

Village of Cahokia Sanitary Sewer System
Inspection Report



2: VCAH0002

Description: Lift Station #19 (Shack).

Location: Jerome & Falling Spring

Camera Direction: 192°

Date/Time: 4/21/21; 3:04 p.m.



3: VCAH0003

Description: Stormwater flood area. Foreman said flooding occurs here during 2-3" rains.

Location: Edwards & Upper Cahokia

Camera Direction: 108°

Date/Time: 4/21/21; 3:11 p.m.



4: VCAH0004

Description: Stormwater flood area. Manhole in photo surcharges during flooding.

Location: Kinder & Falling Spring

Camera Direction: 327°

Date/Time: 4/21/21; 3:16 p.m.



5: VCAH0005

Description: Stormwater pump station [identified as station 998 for purposes of this report]. Pumps storm water to stormwater manhole along Jerome Lane.

Location: Kinder & Falling Spring

Camera Direction: 229°

Date/Time: 4/21/21; 3:19 p.m.



6: VCAH0006

Description: Lift Station #29 (VFW).
Location: Upper Cahokia & Judith Ln.
Camera Direction: 338°
Date/Time: 4/21/21; 3:33 p.m.



7: VCAH0007

Description: Lift Station #29 (VFW).
Location: Upper Cahokia & Judith Ln.
Camera Direction: 221°
Date/Time: 4/21/21; 3:33 p.m.



8: VCAH0008

Description: Lift Station #4 (Bruce). Note poor condition.

Location: Bruce and Judith Ln.

Camera Direction: 82°

Date/Time: 4/21/21; 3:39 p.m.



9: VCAH0009

Description: Lift Station #2 (Judith).

Location: Judith & Bruce St.

Camera Direction: 43°

Date/Time: 4/21/21; 3:45 p.m.



10: VCAH0010

Description: Lift Station #1. Note heavy grease.

Location: 100 Block Judith Ln.

Camera Direction: 273°

Date/Time: 4/21/21; 3:52 p.m.



11: VCAH20001

Description: Lift Station #28, known as Station 5A (rear). Sewage from Commonfields of Cahokia enters the Village sewer system here.

Location: Jerome & Mousette

Camera Direction: 177°

Date/Time: 4/22/21; 10:28 a.m.



12: VCAH20002

Description: Lift Station #27, known as Station 5A (front). Handles flow from nearby trailer park and nursing home.

Location: Jerome & Mousette

Camera Direction: 114°

Date/Time: 4/22/21; 10:44 a.m.



13: VCAH20003

Description: Lift Station #26, known as Station 3 (Diversion). This station has new rails and chains.

Location: Jerome & Wesley, near airport

Camera Direction: 320°

Date/Time: 4/22/21; 10:54 a.m.



14: VCAH20004

Description: Lift Station #26, known as Station 3 (Diversion). Note air vent hole on vault pad (in front of vault doors) with missing gooseneck cap, exposing vault to precipitation.

Location: Jerome & Wesley, near airport

Camera Direction: 40°

Date/Time: 4/22/21; 11:01 a.m.



15: VCAH20005

Description: Stormwater pump station to Dead Creek [identified as station 999 for purposes of this report].

Location: Edwards St.

Camera Direction: 18°

Date/Time: 4/22/21; 11:32 a.m.



16: VCAH20006
Description: Lift Station #24.
Location: Mississippi & David
Camera Direction: 100°
Date/Time: 4/22/21; 11:39 a.m.



17: VCAH20007
Description: Lift Station #17. Note detached rail.
Location: Mississippi & David
Camera Direction: 19°
Date/Time: 4/22/21; 11:47 a.m.



18: VCAH20008

Description: Lift Station #7. Note rusted components and edges of cover.

Location: Mississippi & School St.

Camera Direction: 86°

Date/Time: 4/22/21; 11:56 a.m.



19: VCAH20009

Description: Lift Station #20, known as Singer Station. Hanger needs replacement.

Location: Mississippi & Hissrich

Camera Direction: 95°

Date/Time: 4/22/21; 12:04 p.m.



20: VCAH20010

Description: Lift Station #10, known as Edgar Station. This station has new rails and operating on only one pump. Observed bypass piping in place in preparation for manhole repair work next month. As a result, Vault cover could not shut and was unlocked.

Location: Edgar St & Circle Creek Dr.

Camera Direction: 127°

Date/Time: 4/22/21; 12:14 p.m.



21: VCAH20011

Description: Manhole failure area. The site was secured with temporary fencing around a collapsed sewer manhole.

Location: Circle Creek Ln.

Camera Direction: 256°

Date/Time: 4/22/21; 12:25 p.m.



22: VCAH20012

Description: Lift Station #30, known as Washington Station. The Foreman stated that this was the deepest and newest lift station in the Village.

Location: Falling Springs & Il 157

Camera Direction: 328°

Date/Time: 4/22/21; 12:35 p.m.



23: VCAH20013

Description: Lift Station #23, known as St Monica Station. The Foreman said this is an old and reliable lift station in need of replacement.

Location: St. Monica & St. Maud Dr.

Camera Direction: 71°

Date/Time: 4/22/21; 1:53 p.m.



24: VCAH20014

Description: Lift Station #22, known as St. Margaret Station.

Location: St. Margaret & St. Justin

Camera Direction: 105°

Date/Time: 4/22/21; 2:06 p.m.



25: VCAH20015

Description: Lift Station #6, known as Cooper Station. Incoming flow vault.

Location: Cooper & IL Rt 157

Camera Direction: 126°

Date/Time: 4/22/21; 2:23 p.m.

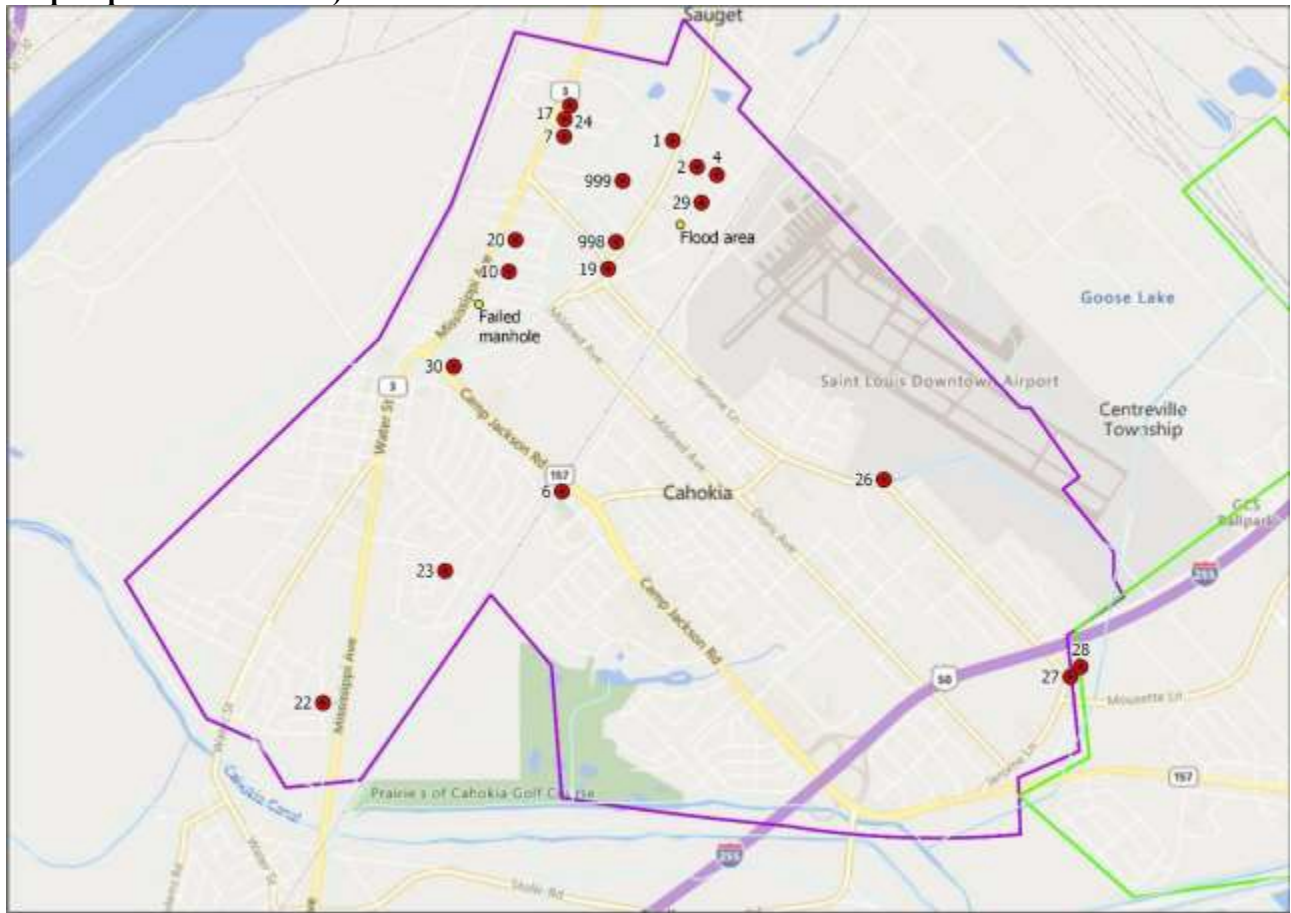


26: VCAH20016
Description: Lift Station #6, known as Cooper Station. Pump station.
Location: Cooper & IL Rt 157
Camera Direction: 260°
Date/Time: 4/22/21; 2:25 p.m.



27: VCAH20017
Description: Lift Station #6, known as Cooper Station. Note cobbles filling in ground collapse in front of inflow vault.
Location: Cooper & IL Rt 157
Camera Direction: 326°
Date/Time: 4/22/21; 2:29 p.m.

ATTACHMENT B: Summary of April 21-22, 2021 inspection observation locations (including lift/pump station numbers)



● Village of Cahokia inspected lift/pump stations (4/21-22/2021)

