



Report

Date: February 26, 2018

To: IEPA DWPC CAS #19 Email: EPA.PrmtSpecCondtns@Illinois.gov
1021 N. Grand Ave. East
Post Office Box 19276
Springfield, IL 62794-9276

Re: City of Braidwood NPDES Permit #IL0054992
Special Condition #16 Goal of no SSO's, CMOM plan

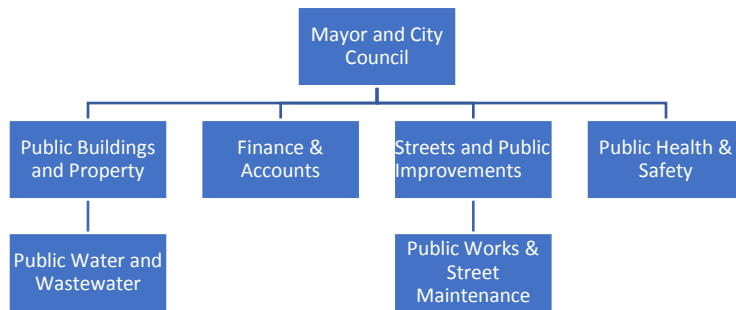
Dear Sirs:

The City of Braidwood has with the latest improvements to the sewer treatment plant and the collection system been able to permanently eliminate any Sanitary Sewer Overflows (SSO's). The city **has not had any SSO's** since the improvements were put on line in 2012, inspite of several high intensity rain events since that time.

Attached please find a copy Braidwood's completed DWPC/FOS CMOM Review Checklist as initially shared with the Des Plaines field office on 11/30/15 and updated before the 11/30/17 Des Plaines Field office inspection.

Below is a summary of the elements in Braidwood's plan that are suggested in the permit conditions but may not be fully addressed in the review checklist.

- The city has several extensive paper maps of their sewage collection system and is currently nearing completion of upgrading both their water and sewer maps to a digital form usable with most forms of computer and satellite imagery.
- The city has a Commissioner form of City Government with four commissioners where each commissioner is responsible for one of the four departments as shown below. The commissioner of Public Buildings and Property is responsible for the budgeting, operation, maintenance, etc of the Sewage collection and treatment systems with the assistance of the Treatment plant operators and maintenance personnel.



- Unplanned maintenance is documented on work order forms and kept in a permanent file.
- There have been no capacity issues since the 2012 improvements were put online.
- The system is basically structurally sound. The STP is in need of additional sludge storage space and the collection system has noticeable I&I issues the city is working to identify and reduce.
- The system is largely controlled and monitored by the SCADA system. Inspections and testing are performed and reported to IEPA as required by the city's NPDES permit.
- Assets are largely managed per their individual owner's manual directions and the experience of the operators. The city carries a substantial spare parts inventory and has a spare pump, etc. for most items in the system. It also budgets for a capital fund for unexpected major expenses.
- SSO's generally no longer occur. Generally any blockage or problem is on the customer's private line. The city works with the customer's plumber to identify and resolve the problem (at the customer's expense).
- The city has IEPA approved procedures and paperwork in place that it used occasionally prior to the 2012 improvements when an SSO occurred. In the extremely unlikely event an SSO were to occur, those procedures would be followed. A work order would be prepared to correct any necessary repairs.
- The city routinely does system inspections. When defects are discovered, a work order is prepared to fix the defect.

Illinois Environmental Protection Agency DWPC/FOS CMOM Review Checklist

February 2014

Rev. 2017rg

Source: USEPA Checklist for Conducting Evaluations of Wastewater Collection System Capacity, Management, Operation, and Maintenance (CMOM) Programs, January, 2005

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DWPC/FOS CMOM Review Checklist

Facility Name: City of Braidwood WWTP	Review Date:		
NPDES Permit No.: IL0054992	Review By:		
Permit Issue Date: 02/24/2016	Permit Expiration Date: 02/28/2021		
I. General Information - Collection System Description	Yes	No	N/A
Size of service area: <i>5 Square Miles</i>	X		
Population of service area: <i>6191</i>	X		
Percentage of sewer system that is separate and combined? <i>100% separated</i>	X		
Does the CMOM identify any categorical (CIUs) or significant industrial discharges (SIUs) in the system?		X	
Is there a POTW Pretreatment Program in place? Name of Authority?		X	
Are "as-built" plans (record drawings) or maps retained and available for use by field crews?	X		
II. Sewer Use Ordinance (SUO)	Yes	No	N/A
Does the SUO contain procedures for the following: <input checked="" type="checkbox"/> inspection standards, <input type="checkbox"/> pretreatment requirements, <input checked="" type="checkbox"/> building/sewer permit issues? <i>Plans are to update, combine in one place and simplify SUO</i>	X		
Does the SUO contain general prohibitions of the following materials: <input checked="" type="checkbox"/> fire and explosion hazards, <input checked="" type="checkbox"/> oils or petroleum, <input checked="" type="checkbox"/> corrosive materials, <input checked="" type="checkbox"/> materials which may cause interference at the wastewater treatment plant, <input checked="" type="checkbox"/> obstructive materials?	X		
Does the SUO contain procedures and enforcement actions for the following: <input checked="" type="checkbox"/> fats, oils, and grease (FOG); <input checked="" type="checkbox"/> building structures over the sewer lines; <input checked="" type="checkbox"/> storm water connections (sump pumps, gutters, foundation drains, etc.) to sanitary lines; <input checked="" type="checkbox"/> defects in service laterals located on private property? <i>May need updating/clarification</i>	X		
Does the CMOM describe the owner or operator inspection program in-place for grease traps? Frequency? Inspection entity identified. Does the party routinely communicate with sewer authority?			X
Is there a process in place for enforcing the SUO?	X		
III. Continuing Sewer Assessment Plan	Yes	No	N/A
Identified Inflow/Infiltration (I/I) problems in the collection system? What did the owner / operator cite as the problems associated with I/I? (Manhole overflows, basement flooding, SSOs, stream impacts, threats to CWS) <i>large flow fluctuations at the STP, have a sewer study from previous years</i>	X		
The basis that the owner or operator use to prioritize their investigation, repairs and rehabilitation related to mitigate I/I?			X
Plan periodically updated?			X
IV. Collection System Management	Yes	No	N/A
IV. A. Organizational Structure			
Is there an organizational chart that shows the overall personnel structure for the collection system, including operation and maintenance staff? <i>Not written</i>	X		
Is collection system staff responsible for any other duties, such as, road repair or maintenance, O&M of the storm water collection system?	X		
IV. B. Training	Yes	No	N/A

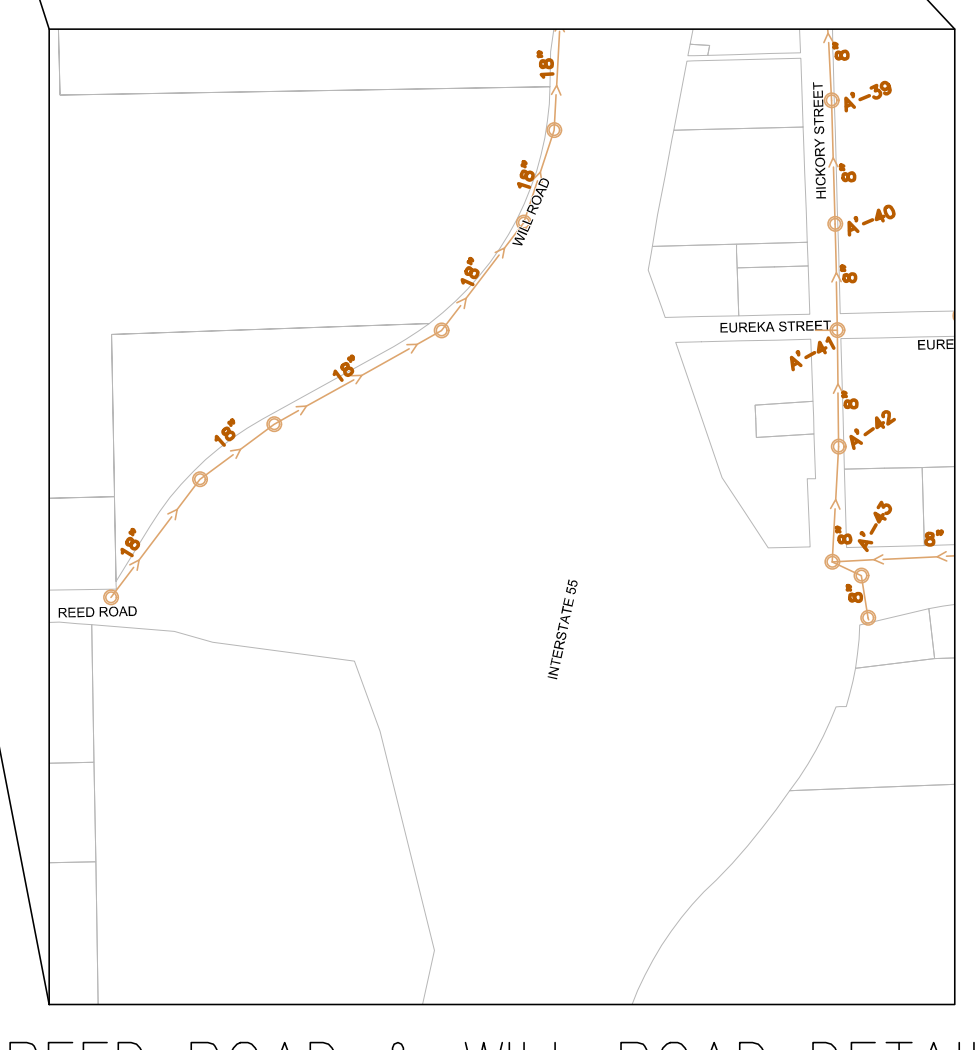
Is there a formal training program? Does the CMOM list the training requirements for the collection system personnel: <i>Personnel encouraged to seek licensure and training at area seminars.</i>	X		
Does the training include the following areas: <input checked="" type="checkbox"/> safety, <input checked="" type="checkbox"/> routine line maintenance, <input checked="" type="checkbox"/> confined space entry, <input checked="" type="checkbox"/> record keeping, <input checked="" type="checkbox"/> pipe repair, <input type="checkbox"/> SSO/emergency response, <input checked="" type="checkbox"/> pump station operations and maintenance? <i>Personnel encouraged to attend training at area seminars.</i>	X		
IV. C. Collection System Management: Management Information Systems	Yes	No	N/A
CMOM identify the types of work reports prepared by the collection system managers / staff?	X		
Are records maintained for at least 3-years?	X		
CMOM list standard operating practices (SOPs) for the tracking of the following: <input type="checkbox"/> complaint investigations, <input type="checkbox"/> scheduled work orders, <input type="checkbox"/> scheduled preventative maintenance, <input type="checkbox"/> scheduled inspections, <input type="checkbox"/> safety incidents, <input type="checkbox"/> scheduled monitoring/sampling, <input type="checkbox"/> equipment / tools tracking, and <input type="checkbox"/> parts inventory? <i>Most of these exist but need to be put in written form.</i>	X		
IV. D. SSO Notification Program	Yes	No	N/A
Does the owner or operator have SOPs for notifying the IEPA, local HD, and the drinking water purveyor of all SSO events?	X		
Are above notification procedures dependent on the size or location of the overflow? If so, does the CMOM describe this procedure.		X	
Is there a Standard form for recording overflow events? Does it include <input checked="" type="checkbox"/> date and time <input checked="" type="checkbox"/> location <input checked="" type="checkbox"/> type <input checked="" type="checkbox"/> receiving water <input checked="" type="checkbox"/> estimated flow/volume discharged <input checked="" type="checkbox"/> duration of overflow <input checked="" type="checkbox"/> cause <input checked="" type="checkbox"/> names of affected receiving water(s) <input checked="" type="checkbox"/> how it was stopped <input checked="" type="checkbox"/> cleanup efforts <input checked="" type="checkbox"/> timeline <input checked="" type="checkbox"/> long-term remedies? N/A no SSO's since new plant came on line in June 2012.	X		X
V. Equipment and Collection System Maintenance	Yes	No	N/A
V. A. Sewer Cleaning			
CMOM detail their routine schedule for cleaning sewer lines on a system wide basis, such as, system wide at the rate of once every #-years or a rate of X-percent per year? <i>Done as needed.</i>	X		
Is there a program to identify sewer line segments that have chronic problems and stipulates that these segments be cleaned on a more frequent schedule?			X
Are blockage locations plotted on maps and correlated with other data such as pipe size and material?			X
Sewer cleaning records include the following information: <input checked="" type="checkbox"/> date and time, <input checked="" type="checkbox"/> cause of stoppage, <input checked="" type="checkbox"/> method of cleaning, <input checked="" type="checkbox"/> routine cleaning activity? <i>On complaint form/work order.</i>	X		X
V. B. Sewer Cleaning – Chemical Cleaning and Root Removal	Yes	No	N/A
Does the owner or operator have a root control program?		X	X
Are chemical cleaners used? If so, CMOM identify which chemical cleaners are used? MSDS available?		X	
How often, and by what method, are the chemical cleaners applied?			X

VI. Satellite Communities	Yes	No	N/A
Does the collection system receive flow from satellite communities? List the communities and their population and total service area. <i>Shadow Lakes Community. 1000 residents. One half square mile Exelon Generating Station, about 900 fulltime employees.</i>	X		
Percentage of the satellite communities' sewer system that is separate and combined? <i>100% separated</i>	X		
Does the owner or operator require satellite communities to enter into an agreement on maximum flow?		X	
Does the agreement include the requirements listed in the owner/operator SUO? <i>Understood but may not be in writing.</i>			X
Does the agreement include construction standards, inspection requirements, and approval for new connections?		X	X
Require satellite communities to adopt the same industrial and commercial regulator discharge limits, inspection and sampling schedules as the owner/operator and/or POTW Pretreatment Authority?			X
VII. Collection System Operation	Yes	No	N/A
VII. A. Budgeting			
List the current user rates? <i>sewer \$31.14 Base plus \$2.59/1000 gallons, Water \$11.14 base plus \$5.57/1000 gals. Out of Town Water&Sewer \$13.94/1000,</i>	X		
Frequency that the user rates are evaluated and adjusted? <i>Automatic 4% annual increase only if council approves at fiscal year. NO INCREASE SINCE 2015.</i>	X		
Does the CMOM address whether the current level of funding from its revenues is sufficient?	X		
Does the maintenance budget allocate funds for the following: <input checked="" type="checkbox"/> predictive maintenance (tracking design, life span, and scheduled parts replacement), <input checked="" type="checkbox"/> preventative maintenance (identifying and fixing system weakness which, if left unaddressed, could lead to overflows), <input checked="" type="checkbox"/> corrective maintenance (fixing system components that are functioning but not at 100% capacity/efficiency), and <input checked="" type="checkbox"/> emergency (overflows, equipment breakdowns)?	X		
Identify how are priorities determined for budgeting for O&M? <i>Review of prior year's expenses/audit</i>	X		
Does the owner/ operator maintain a fund for future equipment and infrastructure replacement? <i>Capital or Enterprise fund.</i>	X		
VII. B. Safety	Yes	No	N/A
Does the owner or operator have SOPs for the following: <input checked="" type="checkbox"/> lockout/tag out, <input checked="" type="checkbox"/> MSDS, <input checked="" type="checkbox"/> chemical handling, <input checked="" type="checkbox"/> confined spaces permit program, <input checked="" type="checkbox"/> trenching and excavations, <input checked="" type="checkbox"/> biological hazards in wastewater, <input checked="" type="checkbox"/> traffic control (barricades) and work site & public safety, <input checked="" type="checkbox"/> electrical and mechanical systems, <input checked="" type="checkbox"/> pneumatic and hydraulic systems safety? <i>Not written other than supplier safety manuals.</i>	X		
Is there a permitting system for confined space entry procedure for manholes, wet wells, etc.?			X

Does the owner or operator possess the following equipment items: <input checked="" type="checkbox"/> confined space ventilation equipment; <input checked="" type="checkbox"/> tripods or non-entry rescue equipment; <input checked="" type="checkbox"/> equipment to enter manholes; <input checked="" type="checkbox"/> portable crane/hoist; <input checked="" type="checkbox"/> atmospheric testing equipment and <input checked="" type="checkbox"/> gas detectors (oxygen sensors, H ₂ S monitors, methane gas, and LEL metering)?	X		
	X		
CMOM specify the frequency for review of safety procedures and revisions when necessary?	X		
VII. C. Emergency Preparedness and Response	Yes	No	N/A
Does the owner or operator have an emergency response plan? <i>Contingency Plan.</i>	X		
How often is the plan reviewed and updated? Date it was last updated? <i>As needed, 2008, 2012 with new plant</i>	X		
Does the plan take into consideration: <input checked="" type="checkbox"/> vulnerable points in the system, <input checked="" type="checkbox"/> severe natural events, <input checked="" type="checkbox"/> failure of critical system components, <input checked="" type="checkbox"/> vandalism or other third party events, <input checked="" type="checkbox"/> a root cause analysis protocol, and <input checked="" type="checkbox"/> mitigation measures? <i>Not written.</i>	X		
Are staff trained and drilled to respond to emergency situations? Are their roles & responsibilities detailed for all personnel who respond to emergencies? <i>Not written.</i>		X	
Are there emergency operation procedures for equipment and processes? Including 24/7 notification of IEMA; Local HD; and drinking water authorities?	X		
Does the procedure include an up-to-date list of the names, titles, phone numbers, and responsibilities of all personnel involved?	X		
Does the owner or operator possess containment techniques (booms, inlet covers) to protect the storm drainage systems?		X	X
VII. D. Engineering - Construction	Yes	No	N/A
Does the owner or operator follow standard procedures in conducting their construction inspection and testing program (Standard Specifications for Water and Sewer Main Construction in Illinois, 5 th ed.)? How is the new gravity sewer construction tested? (infiltration, exfiltration, deflection testing, etc.). Conformance with IEPA Permit requirements?	X		
Are new manholes tested for inflow and infiltration? <i>Per STD Specs.</i>	X		
What tests are performed on pump stations? <i>Per STD Specs.</i>	X		
What tests are performed on force mains? <i>Per STD Specs.</i>	X		
VIII. Communication and Customer Service	Yes	No	N/A
Does the owner or operator have a formal procedure in place to evaluate and respond to complaints?	X		
Specifics on their complaint records system? <i>Complaint form or work order form.</i>	X		
Do customer service records include the following information: <input checked="" type="checkbox"/> personnel who received the complaint, <input checked="" type="checkbox"/> nature of complaint or request, <input checked="" type="checkbox"/> follow-up action assignment, <input checked="" type="checkbox"/> date of the complaint, <input checked="" type="checkbox"/> date the complaint was resolved, <input checked="" type="checkbox"/> location of the problem, <input checked="" type="checkbox"/> date the follow-up action was assigned, <input checked="" type="checkbox"/> cause of the problem, and <input checked="" type="checkbox"/> feedback to customer? <input checked="" type="checkbox"/> <i>Photographs.</i>	X		

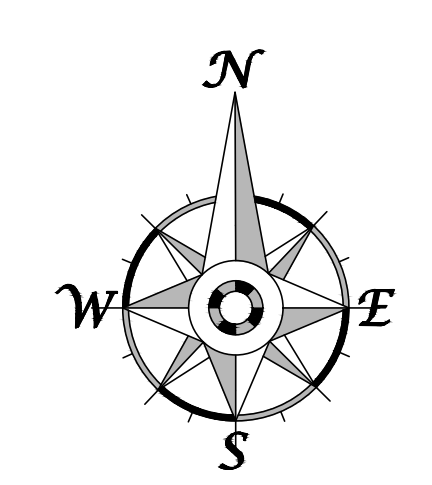
IX. Pump Station General	Yes	No	N/A
List the number of pump stations in the system? [Number, location, design (submersible, wet well/dry well, suction lift)] <i>7 Duplex submersible pump stations</i>	X		
How is loss of power at a station dealt with? (i.e. on-site electrical generators, alternate power source, portable electric generator(s)) <i>three 4" Portable pumps, rent generators if necessary.</i>	X		
List of available equipment for pump station bypass? <i>three 4" Portable pumps, 300' discharge hose</i>	X		
Detail investigative process in-place for causation analysis of the pump station failure and measures taken to prevent future failures?			X
IX. A. Inspection	Yes	No	N/A
Frequency of the pump stations inspections? <i>Continuous via SCADA, weekly on site.</i>	X		
Is there a checklist? <i>Understood, but not written</i>		X	
Are records maintained for each inspection?	X		
IX. B. Emergency Response and Monitoring	Yes	No	N/A
How are lift stations monitored? <i>Continuous via SCADA, weekly on site.</i>	X		
Is there an Emergency Operating Procedure for each pump station?			X
Who responds to lift station failures and overflows? How are they notified? <i>Operator on call.</i>	X		
IX. C. Recordkeeping	Yes	No	N/A
Are operations logs maintained for all pump stations?	X		
Frequency that the pumps are serviced? <i>MVP Pump inc. yearly inspection</i>	X		
Pump run times maintained for all pumps? <i>Weekly recorded.</i>	X		
Elapsed time meters used to assess performance?	X		
Annual draw down tests conducted? <i>Monitored on SCADA,</i>		X	
IX. D. Force Mains and Air/Vacuum Valves	Yes	No	N/A
Regular inspections of the route of force mains? Frequency?		X	X
Detail investigative process in-place for causation analysis of force main failure and measures taken to prevent future failures?			X
Does the owner or operator have a regular maintenance/inspection program for air/vacuum valves?			X

CITY OF BRAIDWOOD SANITARY SEWER ATLAS



REED ROAD & WILL ROAD DETAIL

- LEGEND**
- SANITARY SEWER
 - SANITARY FORCE MAIN
 - SANITARY MANHOLE
 - LIFT STATION

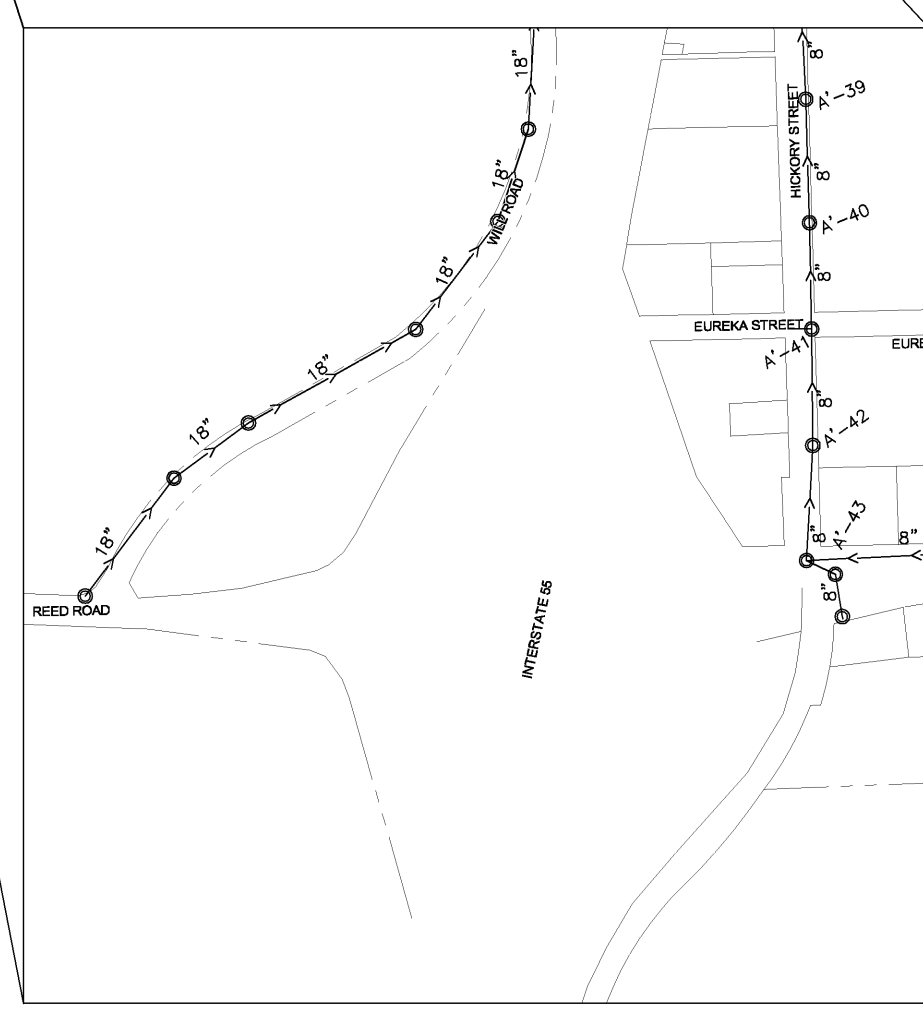


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DATE: 1/20/2012

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CITY OF BRAIDWOOD SANITARY SEWER ATLAS



- LEGEND**
- SANITARY SEWER
 - SANITARY FORCE MAIN
 - SANITARY MANHOLE
 - LIFT STATION
 - PROP. SANITARY SEWER MANHOLE & SANITARY SEWER TO BE COMPLETED SUMMER 2012



0 500' 1000'
DATE: 1/20/2012

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