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SCAP—
Sewer Capacity Assurance Plan

REVISED 05-2022

PROJECT WIN
Waterway Improvements Now

A publication of
MSD ProjectWIN

Louisville & Jefferson County Metropolitan Sewer District
System Capacity Assurance Plan

Louisville and Jefferson County Metropolitan Sewer District
700 W. Liberty Street
Louisville, Kentucky 40203-1911

Protocol Established:

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Introduction

The Louisville and Jefferson County Metropolitan Sewer District (MSD) has developed a System Capacity Assurance Plan (SCAP), consistent with Kentucky Pollutant Discharge Elimination System (KPDES) permit requirements, and is applicable to all service areas owned and operated by MSD. The SCAP was originally completed February 28, 2008.

This SCAP is organized into four sections as listed below.

Section 1: System Capacity Assurance Plan Overview provides an introduction to the SCAP, including the purpose and background of the program.

Section 2: System and Organizational Framework provides an overview of MSD's wastewater collection, transmission and treatment system and data management applications.

Section 3: System Capacity Protocol provides a description and background of the existing capacity in the collection system using the hydraulic models and monitoring. This section also establishes capacity assessment protocols for treatment facilities, pump stations, and collection lines.

Section 4: Capacity Certification Determination Procedures details the current, committed, and requested flow methodology for system capacity as well as how software applications play a role in storing, tracking, and analyzing data related to system capacity. The main objective of this section is to define the systematic process to determine current capacity limitations and the available capacity for the system to receive new flow.

Section 5: Standard Procedures for Calculating and Tracking Flow Credits documents the standard procedures for calculating and tracking flow credits. This section outlines procedures for estimating flow reduction from corrective actions, calculating credit, and entering and tracking credits.

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Section 1: System Capacity Assurance Plan Overview

1.1. Purpose

Louisville and Jefferson County Metropolitan Sewer District (MSD) has developed a System Capacity Assurance Plan (SCAP), which is applicable to sewer systems in all service areas owned or operated by MSD. The SCAP is the basis for coordinating capacity decision criteria for each sewershed within the separate sanitary system. Providing wastewater collection, conveyance, and treatment capacity that meet the needs of MSD's customers, while protecting the environment and meeting regulatory requirements, are top priorities of MSD's facility improvement and sewer capacity review efforts.

1.2. Background

In MSD service areas with separate sanitary sewers, wet weather sanitary sewer overflows (SSOs) occur because of aged pipes that leak when the system is overloaded from rainfall or due to infiltration, inflow and/or illicit connections to the sanitary sewer system such as sump pumps, roof drains, and foundation drains. Although new connections do not contribute to the root causes identified for sanitary sewer overflows, they do contribute additional flow that utilizes available capacity in the system. Since system capacity deficiencies have been identified as the cause for a significant portion of wet weather overflows, it is important for MSD to have a program to ensure new connections, and/or additional flow does not cause or contribute to sanitary sewer overflows.

MSD developed a Capacity, Management, Operations and Maintenance (CMOM) program in May 2006, including development of a CMOM Self-Assessment Report consistent with United States Environmental Protection Agency (EPA) guidance. The overall goal of the CMOM Self-Assessment Report was to determine if there are MSD programs or activities that should be recommended for improvement to enhance service or compliance performance and to recommend specific actions and an implementation schedule to complete the recommended improvements. CMOM states that the SCAP should be the basis for applying capacity decision criteria to support each watershed's community values. The process should include a programmatic approach for items such as:

- Confirming available capacity of water quality treatment centers (WQTCs), pump stations, and conveyance system;
- Creating capacity credits through system improvement and rehabilitation;
- Identifying hydraulic constrictions; and
- Proposing capacity improvements that support interim and long-term performance objectives.

Required improvements to existing sewer systems to accommodate system capacity take years to implement. While these improvements are being implemented, developers, individual homeowners, and other entities continue making requests for additional flows to the system. The CMOM Self-Assessment specifies that MSD must respond to these requests for new connections to the sewer system and subsequent increases in flow through this SCAP.

The objective of the SCAP is to enable MSD to authorize new sewer service connections or increases in flow from existing sewer service connections while making system improvements to reduce inflow and infiltration (I/I) and increase conveyance capacity to ensure that wet weather overflow volumes do not increase within any credit catchment. As detailed in the plan, MSD assesses the peak flow capacity of all major system components (collector sewers, interceptor sewers, pump stations and treatment centers) and reviews requests for increased flow to the collection system.

The SCAP is a document that is intended to change and evolve due to various components including modeling improvements, map updates, process improvements, reporting automation, capital improvement projects, capacity requests, and other CMOM and MSD programs.

The document outlines MSD's procedure for authorizing additional flows through capacity-limited areas by removing I/I from the system and creating capacity credits. This capacity credit banking through system rehabilitation is similar to approaches used in other cities.

The SCAP has been developed to enable MSD to authorize new sewer service connections or increases in flow from existing sewer service connections while making system improvements. These improvements will increase available capacity by removing I/I in accordance with MSD's May 2006 CMOM Self-Assessment recommendations, which state:

> Develop a System Capacity Assurance Plan that implements the performance objectives that result from the Wet Weather Team and stakeholder group involvement in the development of the Wet Weather Plan. The System Capacity Assurance Plan will be the basis for coordinating capacity decision criteria for each watershed. The process should include a programmatic approach for items such as: confirming capacity of plants, pump stations, and conveyance system; identifying hydraulic constrictions; and proposing capacity improvements that support interim and WWP performance objectives. Review current connection protocols with the Metro Government and modify, if necessary, plumbing permit process or MSD capacity certification process, to ensure that capacity assurance is incorporated into permitting process. Implement capacity certification process through System Capacity Assurance Plan developed and updated under the supervision of a licensed professional engineer. Document and track using existing programs in Hansen.

The capacity assurance process applies to the separate sanitary sewer system (SSS). The program does not include any combined sewer system (CSS). By design, the CSS serves as the stormwater conveyance network as well as the sanitary waste collection and conveyance, and is meant to allow wet weather inflow into it. In addition, wet weather combined sewer overflow (CSO) discharges listed in the Kentucky Pollutant Discharge Elimination System (KPDES) permit are permitted outfalls. As such, application of the SCAP process, which focuses on I/I removal, is not appropriate within this area. However, all development in any CSS shall limit the 100-year post-developed discharge to the 10-year pre-developed discharge. Connections to the CSS shall be no less than six (6) inches in diameter. If calculations show that a connection should be less than six (6) inches, the difference of the two volumes must be compensated for in the pipe system. Development disturbing less than one-half (0.5) acre shall be exempt from the 10-year pre- and 100-year post-developed requirements.

The SCAP process includes a programmatic approach for items such as confirming capacity of water quality treatment centers, pump stations, and conveyance systems; generating sewer capacity credits; identifying hydraulic constrictions; and proposing capacity improvements to collection system components. The protocols and procedures for providing adequate average daily flow (ADF) capacity at WQTC are not covered within this plan.

In MSD's SSS service areas, wet weather sanitary sewer overflows (SSOs) occur because of I/I and/or due to the illicit connections of sump pumps, roof drains, or foundation drains to the SSS.

MSD initiated a Wet Weather Abatement Program in 1989. The first goal was to identify potential overflow points in the CSS and in the fast growing sanitary sewer system. Both CSOs and SSOs occur most often during prolonged or intense rain storms. On the wettest days, millions of gallons of diluted sewage may discharge to local streams.

MSD's activities to reduce SSOs and CSOs include these measures:

- Adding storage basins, conveyance capacity and treatment capacity to the sewer system
- Cleaning sewers of excess sand, gravel and mud to increase carrying capacity
- Removing unnecessary clean-water connections (downspouts and sump pumps)
- Repairing sewer leaks that allow groundwater into the sewer system

System capacity assurance is an important component of MSD's water quality improvement initiatives.

1.3. Definitions

This section defines the commonly used terms in the SCAP.

Combined Sewer Overflow (CSO) - An outfall identified as a combined sewer overflow (CSO) in MSD's KPDES permit from which MSD is authorized to discharge during wet weather.

Combined Sewer System (CSS) - the portion of MSD's Sewer System designed to convey municipal sewage (domestic, commercial and industrial wastewaters) and stormwater runoff through a single-pipe system to MSD's WQTC or CSOs.

Credit Catchment – Defined area of the sewer system where capacity assurance credits are tracked for the Credit Banking System.

Geographic Information System (GIS) - A computer-based system that is capable of storing, managing and analyzing geographic spatial data. This capability includes producing maps, displaying the results of data queries and conducting spatial analysis.

InfoWorks Integrated Catchment Model (ICM) – hydraulic modeling software developed by Innovyze used by MSD for collection system modeling.

Kentucky Department for Environmental Protection (KDEP) - The agency responsible for administering KPDES permits and receiving permit-related reports.

Kentucky Pollutant Discharge Elimination System (KPDES) Permit - Any National Pollutant Discharge Elimination System permit issued to MSD by the KDEP pursuant to the authority of the Act and KRS Chapter 224 and the regulations promulgated thereunder.

Louisville and Jefferson County Metropolitan Sewer District (MSD) - The agency responsible for providing wastewater services in the service areas listed in Appendix A. MSD is also responsible for response, mitigation, cleanup, notification and reporting of overflows, including unauthorized discharges.

MSD Development and Capacity Review Team – The department within MSD's Engineering Division responsible for reviewing and approving new development plans and requests for sewer system capacity.

Overflow - For the purposes of this document, overflow shall be defined as SSOs, dry weather CSOs and releases on WQTC property that do not reach Waters of the United States.

Peak Wet Weather Flow – The anticipated, calculated, or monitored maximum flow within the sewer system during an actual or synthetic rainfall event.

Sanitary Sewer System (SSS) - the portion of MSD's sewer system designed to convey only municipal sewage (domestic, commercial and industrial wastewaters) to MSD's WQTCs.

Sanitary Sewer Overflow (SSO) - Any discharge of wastewater to Waters of the United States from MSD's Sewer System through a point source not authorized by a KPDES permit, as well as any release of wastewater from MSD's Sewer System to public or private property that does not reach Waters of the United States, such as a release to a land surface or structure that does not reach Waters of the United States; provided, however, that releases or wastewater backups into buildings that are caused by blockages, flow conditions, or malfunctions in a building lateral, or in other piping or conveyance system that is not owned or operationally controlled by MSD are not SSOs.

Sewer System - The wastewater collection, retention, and transmission systems that MSD owns or operates, that are designed to collect, retain and convey municipal sewage (domestic, commercial and industrial wastewaters) to MSD's WQTCs or CSOs which are comprised of the CSS and the SSS.

Surcharge Condition – The condition within the sewer when the water surface level is less than two feet from the manhole rim elevation. If the sewer system is in a residential area with historical capacity-related backup complaints, then a surcharge condition is considered to be a water surface level within five feet of the manhole rim.

Unauthorized Discharge - (a) Any discharge of wastewater to Waters of the United States from MSD's Sewer System or WQTCs through a point source not authorized by a KPDES permit; and, (b) any Bypass at MSD's WQTCs prohibited pursuant to the provisions of 40 CFR 122.41(m)(2) and (4) or 401 KAR 5:065, Section 1(13) (a) and (c).

U.S. Environmental Protection Agency (EPA) - The federal agency responsible for enforcing the Clean Water Act, Safe Drinking Water Act and other federal environmental regulations.

Water Quality Treatment Center (WQTC) - The devices or systems used in the storage, treatment, recycling, and reclamation of municipal sewage that MSD owns or operates, and for which KPDES permits have been or become issued to MSD.

Waters of the United States (WUS) - As defined in 40 CFR 122.2:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;'

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as Waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

** The regulations exclude waste treatment systems, manmade ponds, and prior converted cropland from the definition of "Waters of the US." With respect to prior converted cropland, EPA maintains jurisdiction for purposes of the Clean Water Act.

1.4. Acronyms

Table 1.1 lists the commonly used acronyms in the SCAP.

Table 1.1. Acronyms

ACRONYM	DEFINITION
ADF	Average Daily Flow
CIP	Capital Improvement Program
CMOM	Capacity, Management, Operations, and Maintenance
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
CSSA	Continuing Sanitary Sewer Assessment
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
gpcd	Gallons per Capita per Day
gpd	Gallons per Day
I/I	Inflow and Infiltration
ICM	Integrated Catchment Model
IDM	Inch diameter-mile
IMS	Information Management System
IPS	Infor Public Sector
KDEP	Kentucky Department for Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
LIMS	Laboratory Information Management System
LOJIC	Louisville/Jefferson County Information Consortium
MGD	Million Gallons Per Day
MSD	Louisville and Jefferson County Metropolitan Sewer District
O&M	Operations and Maintenance
PI	Plant Information System
POTW	Publicly Owned Treatment Works
Project WIN	Waterway Improvements Now
PSC	Property Service Connection
SCADA	Supervisory Control and Data Acquisition
SCAP	System Capacity Assurance Plan
SOP	Standard Operating Procedure
SSES	Sanitary Sewer Evaluation Study
SSO	Sanitary Sewer Overflow
SSS	Sanitary Sewer System
USGS	Uunited States Geological Survey
WQTC	Water Quality Treatment Center
WWP	Wet Weather Plan

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Section 2: System and Organizational Framework

2.1. MSD Wastewater Collection, Transmission and Treatment System

MSD's collection, transmission and treatment systems are detailed in Appendix A.

2.1.1. Collection System

MSD owns and operates a system that transports wastewater by both gravity and pumped systems. The gravity system collects wastewater at the property service connection (PSC) from the point of discharge from homes and businesses, and by using the natural force of gravity conveys it through a series of manholes, collector sewers and interceptors to a point of ultimate treatment in a permitted Publicly Owned Treatment Works (POTW) before being discharged to the Waters of the United States (WUS).

2.1.2. Transmission and Treatment System

Wastewater is conveyed to MSD's network of treatment facilities, which are permitted by the KDEP under a KPDES permit. The treatment process provides the means to achieve beneficial reuse of wastewater biosolids, while treating the wastewater to a level that provides for sustained recreational and commercial uses, as well as natural habitats for aquatic wildlife. The MSD network includes both CSS and SSS treatment, employing a variety of activated sludge treatment processes that have received national awards for operational excellence. Refer to Appendix A for a list MSD Permitted WQTCs and a map illustrating MSD's collection and transmission system components.

Although new sewer connections do not contribute to the root causes identified for existing SSOs, they do contribute additional flow that utilizes available capacity within the system. If the sewers downstream of the capacity request have adequate design capacity, but display wet weather issues, MSD must remove I/I from the credit catchment to create capacity credits prior to the new flow actually being added to the system.

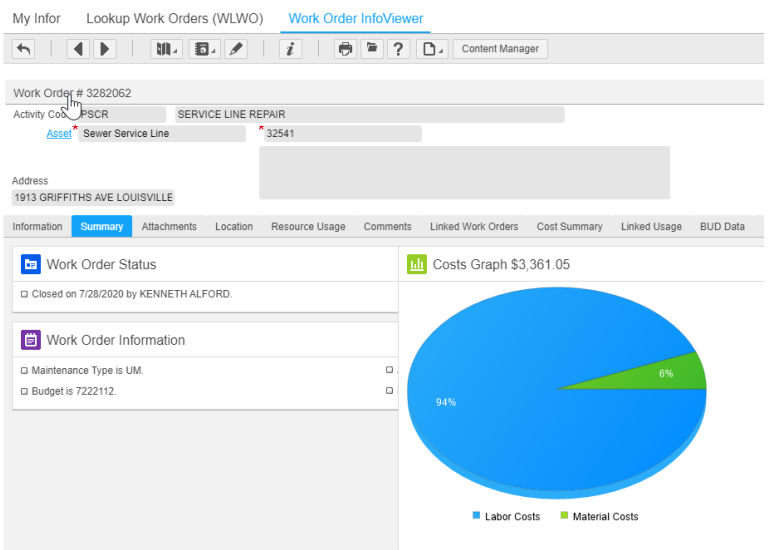
2.2. Capacity Assurance Information Management

The protocols and procedures described within the SCAP require a significant amount of data management. Tracking this data along with process automation and standardization is vital to the success of the capacity assurance program and will improve as the program evolves. This section details the applications and data sources used to implement the SCAP.

2.2.1. Infor Public Sector (IPS)

IPS is the information management software used by MSD to record, track and report information concerning MSD assets. IPS is utilized to track system capacity for treatment centers and pump stations, as well as capacity credits. These tools are utilized for a credit banking system as described in Section 5 to track both earned capacity credits from specific rehabilitation and capital improvement projects, and credit expenditures from approved increases and new additions in wastewater flows. MSD currently uses IPS to track existing, committed, and proposed flows as well as facilities and assets, capital projects, cor-

Figure 2.1. Infor Public Sector (IPS)

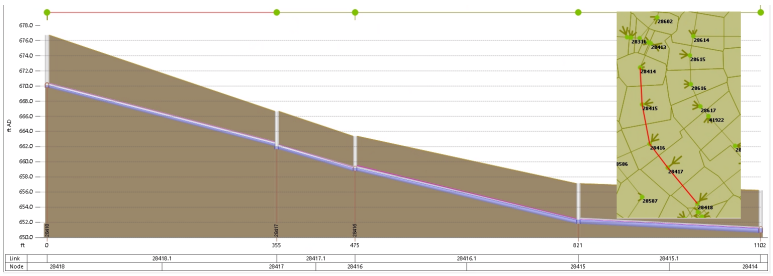


rective actions (work orders), overflows and system deficiencies, and various other data sets relevant to system capacity. It is integrated with the Louisville/Jefferson County Information Consortium's (LOJIC's) Geographic Information System (GIS) to allow users to access a graphical view of assets and it is linked to eB/Alim Web, our document management system. Refer to Figure 2.1 for a screenshot.

2.2.2. InfoWorks Integrated Catchment Model (ICM)

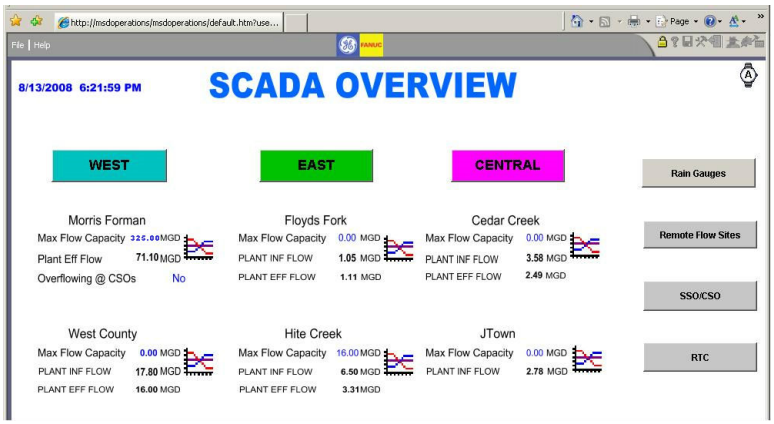
MSD utilizes InfoWorks ICM to evaluate the current capacity in the sewer system and to processcapacity requests on a weekly basis. InfoWorks ICM is a hydraulic modeling software that utilizes a series of nodes, links, and subcatchments to model and predict flows through a sewer system. The nodes and links in the model represent the sewers and manholes throughout MSD's system. As-built data was used to populate the geometric attributes of the existing infrastructure in the model. Subcatchments are delineated throughout the system and are assigned a population based on the estimated number of customers in the area. The subcatchments are assigned to a node and utilize a waste water flow group to emulate the diurnal flow pattern for the area. Runoff surface profiles are also assigned to catchments and are used in combination with rain events to estimate inflow and infiltration into the sanitary sewer system. Flow monitoring data is used to calibrate the data to ensure an accurate representation of observed flows.

Figure 2.3. Infoworks Integrated Catchment Model (ICM)



The calibrated models are used to determine if the existing system has sufficient capacity for the additional flow from proposed developments. Proposed development flows are simulated through the model and the downstream system profile is checked to ensure the peaked dry weather flow remains in the pipe. If the model determines the downstream system does not have sufficient capacity to convey the additional flow, the model will be used to size pipes of sufficient capacity. Data from the InfoWorks ICM are housed within the GIS displaying current sewer capacity and system deficiencies. Refer to Figure 2.3 for a screenshot.

Figure 2.2. Supervisory Control and Data Acquisition (SCADA)



2.2.3. Supervisory Control and Data Acquisition (SCADA), Plant Information System (PI) and iHistorian

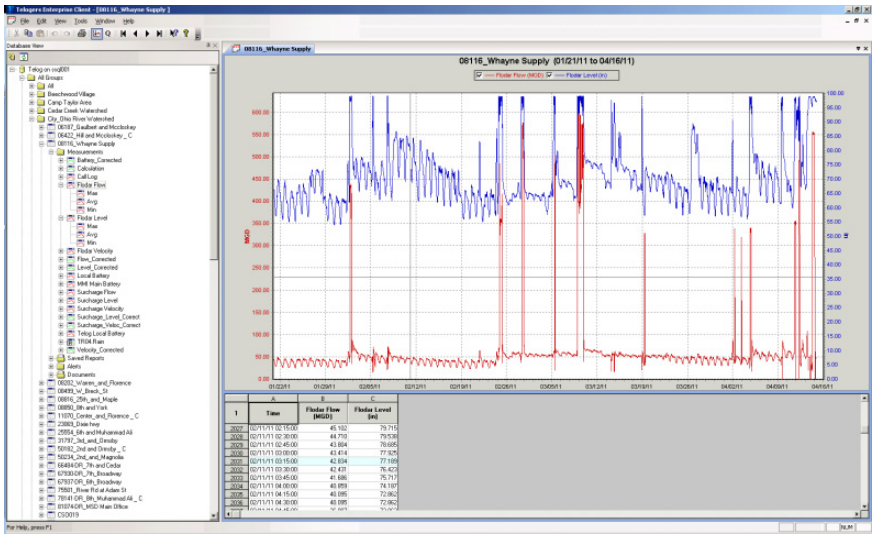
MSD's SCADA system is used for the remote monitoring of pumping stations and WQTCs. Pumping stations are monitored for alarms such as pump problems, station power failures, high wet wells and communication failures. It also monitors the number of pump starts and run times in a 24-hour period. WQTCs are monitored for alarms such as power failure, communication failure, possible blower faults, instantaneous flow values and daily flow values. MSD uses this data for event analysis, model calibration and system operations. Refer to Figure 2.2 for a screenshot.

MSD's SCADA system is connected to the Plant Information System (PI) and iHistorian databases. These two systems pull data from the SCADA system and store the data for records management and reporting purposes.

2.2.4. Telog Monitoring System

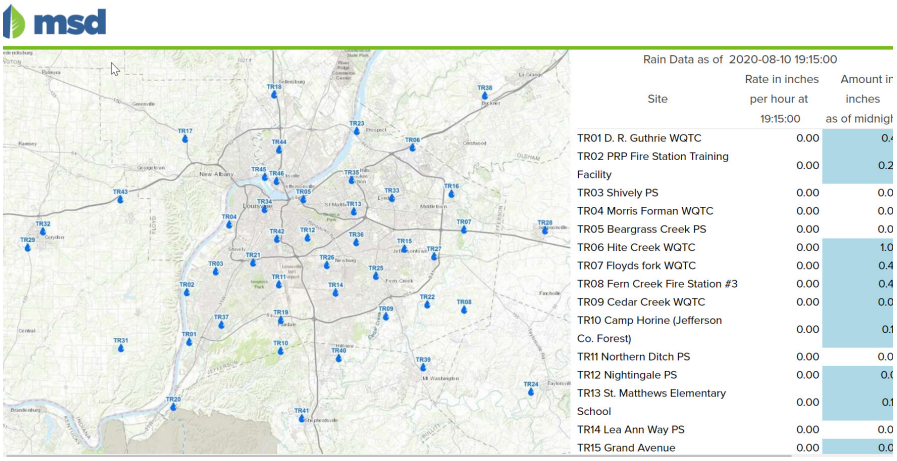
MSD utilizes the Telog Enterprise Client to access remote flow monitoring data that is delivered via telemetry from more than 120 points throughout the sewer collection system. The flow sites enable long-term system trending for dry and wet weather events that MSD uses for event analysis, model calibration and system operations. The data collected includes battery life, flow, velocity and level readings. Refer to Figure 2.4 for a screenshot.

Figure 2.4. Telog



MSD has developed Telog Software to incorporate a monitoring network that integrates an array of information from the rain gauge network, radar rainfall database, United States Geological Survey (USGS) stream and sonde database, PI database and Laboratory Information Management System (LIMS) along with sewer level and flow monitoring information.

Figure 2.5. Rain Gauge Network



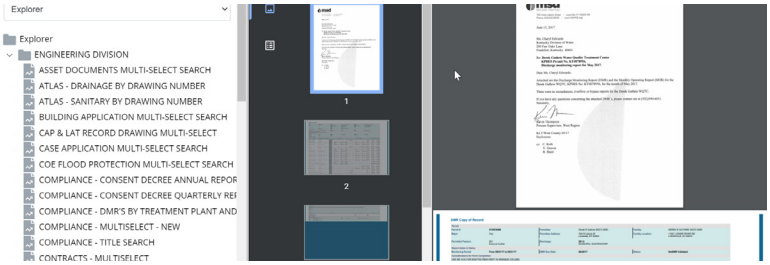
2.2.5. Rain Gauge Network

MSD personnel utilize the rain gauge network to view recorded rainfall amounts and to plan for required resources. The system was initiated in 1991 as a joint effort between MSD and the USGS. The rain gauge network provides geographical coverage of Louisville Metro, surrounding counties and Southern Indiana. Refer to Figure 2.5 for a screenshot.

The rain gauge system serves two primary functions. First, it is used to calibrate MSD's radar rainfall data and provided to a contractor who uses the data to calibrate their rainfall predictions, provided at least two hours in advance. Second, it allows real time reporting on the amount of rainfall in a geographic area. This information is utilized for flash flood emergency response preparation. Rainfall conditions are continuously telemetered to MSD's process control center from each of the gauging stations. Information regarding rainfall in the service area can be obtained from MSD's website at **raingauge.louisvillemsd.org**. The data is refreshed every 5 minutes. The rainfall rate is displayed in inches per hour for each gauge during the previous 5-minute period. A "Daily Total" column displays the total inches of rain recorded at a particular gauge since midnight of the current day. Reports from the database can be run from the web page for any or all of the gauging stations. Radar rainfall data is used for event analysis and model calibration.

2.2.6. Louisville/Jefferson County Information Consortium (LOJIC)

Figure 2.6. eB/Alim Web Document Management Software



LOJIC is a multi-agency partnership begun in 1988 with the mission of building and maintaining a comprehensive GIS to serve Louisville and Jefferson County, Kentucky. Present LOJIC partners include Louisville Metro Government, MSD, the Jefferson County Property Valuation Administrator (PVA) and the Louisville Water Company (LW). Participants share part of the cost and effort involved in the full development and ongoing implementation of LOJIC. LOJIC services have expanded since its inception to include support for processing spatial data for partner service areas outside Jefferson County.

The LOJIC GIS database contains over 740 spatial layers, tables and rasters that include address, administrative, aerial imagery, customer service information, demographics, drainage and hydrology, easements, federal government data, fire/police/emergency data, monitoring/inspection sites, natural resources, planning, planimetric, property, political, recreation, reference, sewer, structures, survey, topographic, transportation/communication, utilities and vegetation. More than 300 users across the partner agencies have been trained in the use of the LOJIC GIS and depend on it for a wide range of mission-critical applications such as land records management, property valuation, community planning, emergency response/911, maintenance of sewer and water networks, flood insurance determination, customer service requests, hydraulic modeling, asset workflow management, address assignment, and numerous public access applications via the Internet. Technical staff supports overall GIS activities across the LOJIC user agencies. LOJIC staff, housed at MSD offices, provide database management, applications development, products/services, training and system network support for all users. For more information on LOJIC, visit **www.lojic.org**.

2.2.7. eB/Alim Web Document Management Software

In 1992, MSD implemented its first electronic document imaging system. The eB/Alim Web Document Management System is now used to access MSD sewer, drainage and flood protection plans, MSD contracts, easements, service request documents, records storage requests, the Compliance Library, vehicle damage claims, work order documents, property damage claim documents, and much more. eB/Alim Web is also the repository of photographs of our major construction projects, signs, manholes and drainage problems. The system now has over 300,000 images and 600+ users including MSD employees and consultants. Many of the documents stored in eB/Alim Web can be accessed from our GIS System and IPS with direct links to the associated records. Refer to Figure 2.6 for a screenshot.

Section 3: System Capacity Protocol

This section outlines the protocol for determining the current peak wet weather capacities for the wastewater collection system, pump stations, and the WQTCs. These protocols, as well as associated data limitations, are discussed for each of the three system elements.

3.1. System Capacity Modeling & Monitoring

To analyze sewer system capacity, many complex factors must be evaluated for each type of facility or asset within a collection system under different scenarios. To accomplish this task, MSD has developed hydraulic models for its entire service area using InfoWorks ICM modeling software. The goal of this modeling is to provide a computer model that mimics the function of the actual sewer system, including sanitary flow and I/I sources (as well as stormwater in the CSS). The sewer system models contain pump stations, hydraulic structures, interceptors, and collector sewers within the MSD service area.

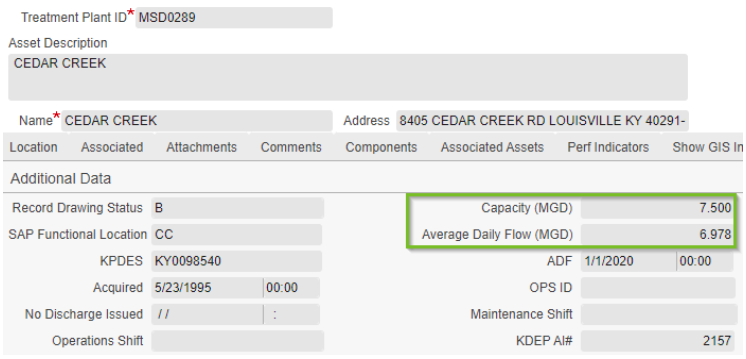
The hydraulic models were developed using LOJIC GIS data, historical hydraulic models, as-built record drawings, survey data, and field data. Model updates, calibration and validation is an ongoing and continuous activity. Changes to the models are based on projects, system needs and the best available data. The models were originally calibrated and validated using flow monitoring and rainfall data collected between January and June of 2007 and have been updated periodically. Within the flow monitoring period, dry weather periods were used to develop average daily user flows while wet weather events were used to analyze collection system response to wet weather and to determine the impacts of I/I. Once calibrated to dry and wet weather data, the models are used to assess existing conditions, qualify and quantify deficiencies, and serve as a tool for future planning and capacity assurance reviews.

For the purposes of the SCAP, a 1.82-inch cloudburst storm event was chosen as the minimum level of protection and applied to the Infoworks hydraulic models to analyze system capacity. These model runs serve as the basis for analyzing current sewer capacity, along with pump station testing, run time monitoring, and flow metering throughout the system. The following sections describe how modeling and monitoring data is used to evaluate capacity at MSD's WQTCs, sanitary pump stations, and throughout MSD's collection system.

3.2. Water Quality Treatment Center Capacity Protocol

Certification of adequate treatment plant capacity is critical because it confirms that at the time the WQTC receives the proposed increased flow, the WQTC will be in compliance for quarterly reporting, and that the new or increased flow will not result in bypasses or diversions prohibited by the KPDES permits. Current peak treatment capacities and ADF limits for MSD's WQTCs have been established. Wet weather capacity at each WQTC is determined using design and monitoring data. ADF limits are established within each WQTC's current KPDES permit. Appendix A lists the current WQTC capacities, which are reviewed and updated annually to evaluate capacity and report evaluation updates and stored in IPS, as shown in Figure 3.1.

Figure 3.1. IPS WQTC ADF



The existing wet weather flow at each WQTC is calculated using the hydraulic models with the peak design wet weather capacities coded into the model. For the purposes of the SCAP, a WQTC is determined to be at peak wet weather capacity when the hydraulic model shows a surcharge condition at the influent pump station or at manholes along the main interceptor leading to the treatment plant. A surcharge condition is defined as a water surface level less than two (2) feet from the top of the influent pump station wetwell or at a manhole rim along the main interceptor leading to the WQTC.

Current ADF is calculated using a 2-year window of WQTC influent flow data. This 2-year window of data is updated annually in IPS. Between these updates, committed and requested capacity from new flow customers are tracked within a database using an estimated flow of 290 gpd per single-family equivalent (see Section 3.2.1 for further discussion). A WQTC is considered to be at capacity when the monitored ADF plus the committed capacity (where capacity charges have been paid) equals or exceeds the permitted ADF. MSD uses the ADF data for future flow forecasting and planning of WQTC upgrades.

3.2.1. Average Daily Flow Evaluation

According to the MSD Design Manual, the design of new infrastructure (collector sewers and small pump stations) is based on 10 State Standards at an average daily design flow of 400 gpd per single-family equivalent (100 gpcd X 4 people/house). This figure is highly conservative in that it is based on average household population sizes during the 1960's and is intended to consider appropriate sizing for future development flows that could potentially enter the system as well as some degree of inflow and infiltration.

For offsetting flows from new capacity requests, MSD developed a flow calculation that more accurately represents single family household discharges using updated average household populations. In order to determine a more accurate average daily design flow per single-family equivalent, MSD researched U.S. Census data (Average household size = 2.4 persons, 2000 US Census data) and past studies (Saturation = 2.9 persons /dwelling, 2011 Floyds Fork Action Plan Study) for more accurate household numbers. Review of this data utilizing 2010 Census data demonstrates that average household saturation in Louisville is 2.7 persons per dwelling, calculated by dividing the total population by the number of active property service connections in the community. Additionally, MSD reviewed influent flows at its regional treatment centers to evaluate these flows compared to design flows calculated from the corresponding contributing service area population.

Based on these studies, utilizing the most conservative, an average daily design flow of 290 gpd (100 gpcd x 2.9 people/house) has been determined to represent a more accurate, yet still conservative, wastewater production per single-family equivalent. Therefore, to calculate the credits needed to offset new flows upstream of capacity-limited areas, this factor of 290 gpd is used to scale the new development flows. For apartment and condominiums of various sizes (1 and 2 bedroom units), the actual population per unit is typically lower than that of a single-family equivalent. However, to calculate credit needs conservatively, MSD has chosen to utilize 2.9 people per unit regardless of unit size. For commercial and industrial, actual water usage records are typically utilized to determine new flow impacts on the sewer system.

3.3. Wastewater Collection Capacity Protocol

Certification of adequate collection capacity is critical because it confirms that each gravity sewer through which the proposed additional flow will pass has adequate capacity to convey both the existing and proposed peak wet weather flows from all new or existing service connections, without causing a surcharge condition.

The existing wet weather peak flow of the collection system is calculated and evaluated using the 1.82-inch cloudburst storm simulation within the InfoWorks ICM hydraulic models. The models indicate areas of possible wet weather surcharging during the design storm simulation. For the purposes of the SCAP, a wet weather surcharge condition is defined as a water surface level within the sewer that is less than two (2) feet from the manhole rim elevation. If the sewer system is in a residential area with historical capacity-related backup complaints, then a surcharge condition is considered to be a water surface level within five (5) feet of the manhole rim. However, if MSD has, pursuant to the SCAP, identified pipe segments or manholes designed to operate under a pressure condition (such as siphons), then the capacity of these pipe segments or manholes shall be evaluated based on their design criteria.

The current design capacity of the collection system is determined using the hydraulic models. Using design standard calculations per 10 State Standards as published by the Great Lakes – Upper Mississippi River Board, if adequate capacity to convey the proposed new peak flow is not available, the customer requesting capacity and MSD must coordinate and determine the measures needed to provide adequate capacity for the proposed

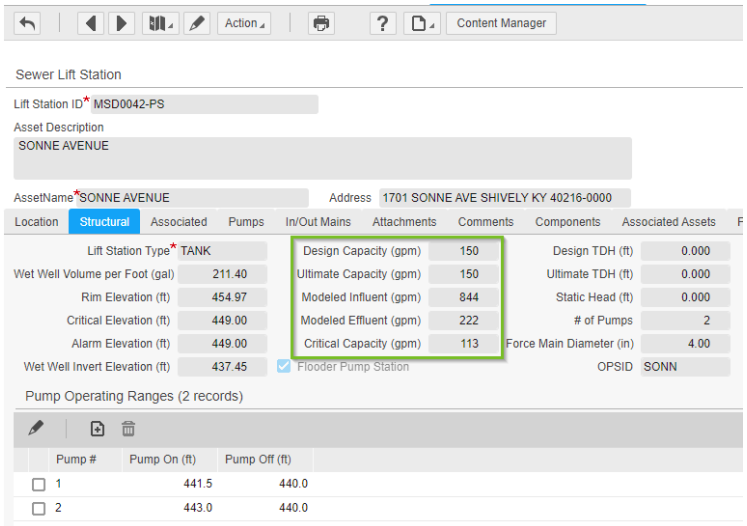
new flow. If the sewers downstream of the capacity request have adequate design capacity, but display wet weather issues, MSD must remove I/I from the credit catchment to create capacity credits prior to the new flow actually being added to the system.

3.4. Pump Station and Force Main Capacity Protocol

Certification of adequate pump station and force main capacity is critical because it confirms that each pump station and associated force main has adequate capacity to transmit the existing peak wet weather flow plus the proposed peak wet weather flow without causing a surcharge condition at the pump station or within the collection system served by the pump station.

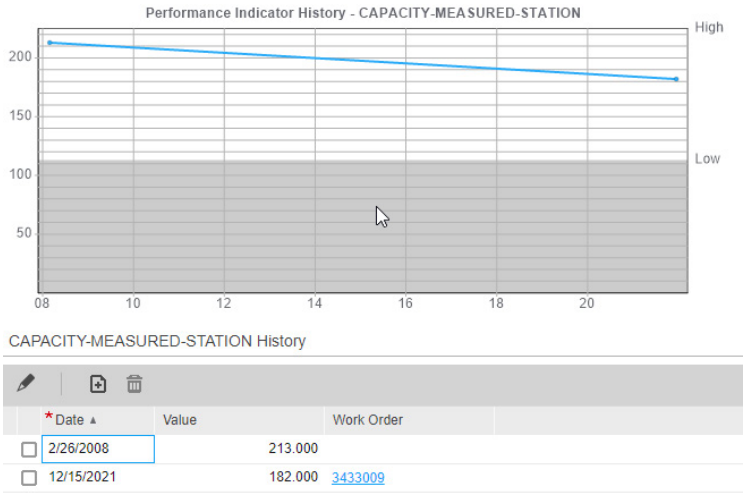
The existing peak wet weather flow at each pump station is calculated and evaluated using the 1.82-inch cloudburst storm simulation within the InfoWorks ICM hydraulic models along with records of high wet wells or documented overflows upstream of the stations. The hydraulic models contain information on all MSD operated pump stations and force mains, which are gathered through a combination of capacity measurements, pump run time analysis, and design data reviews. Using the hydraulic models to simulate pump station and force main capacity provides MSD with a tool to dynamically evaluate all the factors associated with a pump station's capacity, such as wet well and collection system storage, multiple pump configurations, and timing of peak wet weather flows. Design capacity, ultimate capacity, modeled influent and effluent, and critical capacity are stored on the IPS asset as standard fields, shown in Figure 3.2. Combined with the field data collected through monitors and sewer overflow response teams, MSD is able to evaluate the ability of a station to receive additional flow from new capacity requests.

Figure 3.2. IPS Pump Station Standard Data



Because capacity measurements, also known as pump drawdown tests, are the most accurate and up-to-date information that can be obtained for pump stations, MSD periodically performs capacity measurements at pump stations, where possible. The capacity measurement consists of measuring a pump's ability to drawdown, or drop, in the pump station wet-well volume and the corresponding time. After accounting for inflow during the test, the average pump discharge is determined. If there are several pumps, each is tested individually and then in combination with each other. The results are stored in IPS and can be trended over time as shown in Figure 3.3. The drawdown tests results are compared to design capacity, modeled influent, and modeled effluent to note pump stations that are not performing at necessary capacity, and an analysis is performed to determine the next steps. See Appendix B for a pump station drawdown testing form.

Figure 3.3. IPS Pump Station Measured Capacity



For the purposes of the SCAP, a wet weather surcharge condition at a pump station is defined as water surface level less than two (2)

feet from the top of the pump station wetwell or at any manhole rim within the upstream collection system served by the pump station. If the collection system served by the pump station is in a residential area with historical capacity-related backup complaints, then a surcharge condition is considered a water surface level within five (5) feet of the top of the wetwell or at any manhole rim within the upstream collection system served by the pump station.

Adequate design capacity is determined by comparing the peak wet weather flow against the pump station measured capacity found in IPS. If the peak user flow is less than the measured capacity, then the pump station has available capacity for additional proposed peaked flows. If adequate capacity is not available, the developer and MSD's Development Team must determine the measures needed to provide adequate capacity for the proposed peak flow.

Additional design capacity reviews required for pump stations include reviewing the current Lateral Extension Report for each downstream pump station affected by the new flow. The total flow committed for requests with paid capacity charges plus the Maximum Pumping Rate should not exceed the Firm Design Capacity of the Pump Station. Figure 2.2 represents a Pump Station Report generated from Hansen IMS documenting the pump station design capacity, new customer information, and total requested flow upstream of that pump station.

Section 4: Capacity Certification Determination Procedures

The objective of capacity certification is to ensure that system capacity is available starting at the new flow entry point, downstream through the collection system, and ending at the WQTC. Capacity availability must be verified using two different methods, summarized in Section 4.1 and Section 4.2. Details of the process are included in Appendix C.

4.1. Peaked Dry Weather Flow Verification

First, dry weather capacity for the new flow must be verified for the system downstream of the new capacity request utilizing the methodology for peak dry weather flow as outlined in MSD's Design Manual and the 10 States Standards. In cases where the capacity request flows are large or the existing system is suspected to be close to capacity, MSD runs modeling simulations to assess the impact on the downstream system.

If the system can convey this peak flow with no adverse affects, MSD approves the capacity request with all necessary charges. However, if the new flow will cause new problems in the system including at the receiving WQTC, MSD and the developer must determine actions that will mitigate this impact to allow the new flow into the system upon which MSD will issue a conditional approval. If remedial action cannot be agreed upon, MSD will deny the capacity request.

4.2. Wet Weather Verification

Once MSD verifies that peak dry weather capacity is available, MSD must then review the capacity request location to see if wet weather SSOs occur downstream of the new flow location. If a documented overflow exists downstream of the capacity request, MSD is then required to create capacity credits through system improvement and rehabilitation at a ratio of 3 credit gallons for every new gallon approved (3:1 ratio), assuming 290 gallons per single family equivalent.

4.2.1. Flow and Credit Tracking and Planning

MSD tracks credits and flows for two different purposes. One purpose is to demonstrate that actual flow added to the system from approved capacity requests have been offset at the correct 3:1 ratio through completed system and rehabilitation efforts. MSD's objective is to never allow a negative balance develop between actual new flow in the system in relation to the capacity credit balance within each defined capacity credit catchment. Quarterly, MSD updates the actual build out of active developments and the construction completion percentage of MSD rehabilitation or system improvement projects and updates the flow to credit balance sheet for each credit catchment.

MSD's second purpose for flow tracking and credit planning is to project flow build out for approved capacity requests upstream of known overflows, and then facilitating the planning and implementation of capital projects that will generate capacity credits before the new flow is discharged into the system.

For residential, commercial and industrial capacity requests, MSD utilizes the sewer release date of the capacity request for flow contribution. Utilizing these projections, MSD can identify areas in which new rehabilitation or improvement projects must be completed to keep the 'actual' credit balance positive. Therefore, if the 'planned' flows exceed the 'planned' credits, MSD will initiate additional rehabilitation or improvement efforts in the appropriate credit catchments accordingly. In summary, MSD's process for tracking and creating credits must ensure that, prior to new flow from a capacity request actually entering the system, a sufficient number of credits have been created through completed rehabilitation or system upgrades to maintain a positive credit catchment balance.

4.2.2. Sanitary Sewer located in the Combined Sewer System

As stated previously, any CSS is not subject to SCAP requirements; however, sewers in the SSS that flow into the CSS must adhere to SCAP requirements. The procedures for certification and credit banking in these areas will be reviewed and conducted on a case-by-case basis.

4.3. GIS and IPS

The SCAP process requires utilization of the GIS and the IPS system to store, track, and analyze data related to system capacity.

MSD has established GIS layers and databases for analyzing system capacity that include:

- Documented SSOs
- Sanitary sewer collection lines
- Pump station and transmission components
- WQTCs
- System monitoring locations
- Sewershed boundaries
- Hydraulic modeling results for surcharging and constrictions

As MSD's Development and Capacity Review Team evaluates each new flow request, IPS is utilized to document the capacity assurance process and record the pertinent information from the review. In addition, databases within IPS document the new flow customers' location, system capacity requirements, as well as the capacity of the WQTCs, pump stations, and the collection system downstream. When the system is incapable of conveying new flows, IPS tracks denied capacity requests.

4.4. Special Conditions

4.4.1. Certification Exceptions

In some cases, MSD may authorize a request for additional flow to the system even if adequate capacity cannot be certified and credits are not available at the anticipated time of flow initiation. These cases include the following:

- The request eliminates illicit discharges of wastewater to the stormwater system.
- The request is made for an essential service facility. Essential services are defined as critical or essential facilities such as, healthcare facilities, public safety facilities, public schools, other government facilities, or in cases where a pollution or sanitary nuisance (as determined by the local entity responsible for public health) will be eliminated in relation to on-site septic systems.
- A request or internal capital project that diverts existing flow from one sewershed provides an environmental benefit.

However, a subtraction shall be made from the credit bank in an amount equal to the average projected flow from the correction of the illicit wastewater discharge, essential service facility, or diversion of flow. Credits for these exceptions will be generated as quickly as possible.

4.4.2. Redevelopment of Existing Facilities

In some instances, a request will be received requesting flow for a new structure replacing an existing structure that previously contributed flow to the separate sanitary sewer system. In these cases, the previous flow will be subtracted from the projected flow and the residual flow will be assessed according to credit banking procedures.

Section 5: Standard Procedures for Calculating and Tracking Flow Credits

The SCAP requires a standard operating procedure to revise and implement processes to determine if capacity is available in the system. The following sections explain how MSD will accumulate capacity credits through I/I removal projects and estimated flow reduction from these projects, how credits are calculated from I/I removal, and how credits are tracked and distributed to new flow requests within IPS.

5.1. Sewer System Rehabilitation and I/I Removal

As described in Section Section 4, new capacity requests upstream of documented SSOs will generally require three (3) capacity credits for every new gallon approved, assuming 290 gpd per single family equivalent. Commercial and industrial capacity requests typically utilize actual flows from water records of similar developments. The SCAP goal is to ensure new flows do not exacerbate existing system overflow volumes within each credit catchment; therefore, the tracking of I/I removal is very important. MSD continues to execute inspection and rehabilitation projects to remove I/I from the sanitary sewer system. A current list of known overflows and projects to address these overflows is maintained in IPS. An example of this list is included asAppendix D. MSD's Continuing Sanitary Sewer Assessment (CSSA) program outlines the implementation process for the inspection, identification, prioritization, and rehabilitation of sewer line defects. Through this program and other CMOM efforts, capacity restoration projects and capital projects are ongoing and include sewer line replacement, pump station upgrades, main line repairs, and remediation of sewer lines, manholes, and service laterals. All of these projects increase peak wet weather capacity within the sanitary sewer system by removing I/I. With this in mind, the SCAP serves as the platform for tracking flow reduction credits and increasing peak flow conveyance capacity and tracking them against approved capacity requests, deducting credits at a 3:1 ratio within each credit catchment.

As MSD continues to repair, replace, and remediate the sanitary sewer system, credits are accrued on a one capacity credit per one gallon of I/I removal basis. Calculations for estimating I/I removal from various types of repairs and remediation are explained in the following section.

5.2. Estimated Flow Reduction from System Rehabilitation

In order to calculate capacity credits for corrective actions, the flow reduction or added capacity from the corrective actions must be estimated. The following types of corrective actions are anticipated: mainline sewer rehabilitation; pump station rehabilitation and upgrades, storage basin construction, new sewer conveyance construction, manhole rehabilitation, downspout connection removals, foundation drain (sump pump) connection removals, area drain connection removals, and rehabilitation of private sewer service laterals. For sewer and manhole rehabilitation and illicit connection removal, the estimated flow reduction listed in this section is based on values presented in the SCAP by MSD of Greater Cincinnati. Any alternative methods for estimating flow reduction are subject to review by MSD's Development and Capacity Review Team. The calculation of estimated flow reduction, or capacity increase, from each type of corrective action is discussed below. As MSD continues to implement various system improvement projects and gathers I/I reduction data, the credit amounts listed below may be adjusted to reflect updated reduction projections. Such adjustments will include the appropriate technical documentation and will constitute a newly revised date for the SCAP document.

5.2.1. Manhole Rehabilitation

Primary repair mechanisms for manholes include chimney seals, frame and lid replacement, full lining, and mechanical or chemical treatment. The estimated peak flow reduction is determined by severity of structural defects and I/I evidence identified during inspection, location of the defects within the manhole, and the location

of the manhole and its susceptibility to inundation by rainwater during wet weather as defined below, based on criteria from the American Society of Civil Engineers, Manual Practice No. 92.

- **Along a Stream** - Manholes located within the floodway of a FEMA designated 1%-annual-chance (100-year) floodplain.
- **Non-Paved Areas** - Manholes in non-paved areas that do not meet the “along a stream” definition.
- **Paved Areas** - Manholes in paved areas that do not meet the “along a stream” definition.

Manhole inspection observations that indicate heavy or severe structural deterioration will be considered equivalent to a moderate or heavy I/I observation, respectively. Manhole rehabilitation added during construction based on field observation will be considered equivalent to a minor I/I observation. Table 5.1 through Table 5.3 provide the typical peak flow reduction for manhole rehabilitation in the listed locations.

5.2.2. Removal of Illicit Connections to the Sanitary Sewer System

Illicit connections to the sanitary sewer system are direct stormwater inflow sources. Disconnection of these sources can provide significant increases in capacity. Table 5.4 lists estimated peak flow reductions due to the removal of typical illicit connections.

5.2.3. Rehabilitation of Deteriorated Mainline Sewers and Sewer Service Lateral Corrections

Primary repair mechanisms for mainline sewers and sewer service laterals include pipe lining, pipe replacement, and joint seals. The estimated peak flow reductions are determined by location of the mainline sewer and evidence of infiltration during inspection. Service laterals carry the same designation as the mainline to which they are connected.

- **Stream Inundation** - Mainlines located within the floodway of a Federal Emergency Management Agency (FEMA)-designated 1%-annual-chance (100-year) floodplain.
- **Non-Inundation** - Mainlines that do not meet the “Stream Inundation” definition.
- **High Groundwater** - Mainlines with a previous inspection observation of I/I.
- **Low Groundwate**r - Mainlines with no previous inspection observation of I/I.

The estimated peak flow reductions for mainline sewer rehabilitation or replacement (including service laterals) are listed in Table 5.5

5.2.4. Pump Station Rehabilitation and Upgrades

Credits for pump station rehabilitation and upgrades will be calculated by measuring the pre-construction station capacity and post-construction station capacity. The credit amount will be equal to the difference of the two capacities.

5.2.5. New Sewer Conveyance and Storage

Credits for new sewer conveyance will be equal to the full pipe capacity of the new sewer line. Credits for new storage will be equal to the full storage basin capacity.

Table 5.1. Peak Flow Reduction for Manholes along a Stream

MANHOLE SECTION	REDUCTION VALUE (GPD)			
	MINOR I/I	MODERATE I/I	HEAVY I/I	SEVERE I/I
Frame Seal	864	1,728	3,456	6,912
Chimney	864	1,728	3,456	6,912
Cone	864	1,728	3,456	6,912
Wall	432	864	1,728	3,456
Pipe Seal	432	864	1,728	3,456
Bench	432	864	1,728	3,456
Channel	432	864	1,728	3,456

Table 5.2. Peak Flow Reduction for Manholes in Non-Paved Areas

MANHOLE SECTION	REDUCTION VALUE (GPD)			
	MINOR I/I	MODERATE I/I	HEAVY I/I	SEVERE I/I
Frame Seal	328	656	1,313	2,626
Chimney	328	656	1,313	2,626
Cone	328	656	1,313	2,626
Wall	164	328	656	1,313
Pipe Seal	164	328	656	1,313
Bench	164	328	656	1,313
Channel	164	328	656	1,313

Table 5.3. Peak Flow Reduction for Manholes in Paved Areas

MANHOLE SECTION	REDUCTION VALUE (GPD)			
	MINOR I/I	MODERATE I/I	HEAVY I/I	SEVERE I/I
Frame Seal	78	156	311	622
Chimney	78	156	311	622
Cone	78	156	311	622
Wall	39	78	156	311
Pipe Seal	39	78	156	311
Bench	39	78	156	311
Channel	39	78	156	311

Table 5.4. Peak Flow Reduction for Illicit Connections

CONNECTION TYPE	REDUCTION VALUE (GPD)
Area Drain	6,000
Downspout	4,000
Foundation Drain	4,000
Sump Pump	4,000

Table 5.5. Peak Flow Reduction for Mainlines

MAINLINE LOCATION	REDUCTION VALUE (GPD/IDM)
Stream Inundation or High Groundwater	34,000
Non-Inundation and Low Groundwater	60

5.3. Credit Calculations

In order to accrue and track capacity credits for corrective actions, the estimated flow reduction or added capacity from the corrective actions must be calculated. Appendix E provides detailed instructions for calculating rehabilitation credits for sewer lines and manholes.

Figure 5.1 shows an example Rehabilitation Credits Calculation Form from an interceptor rehabilitation project. In this example, only rehabilitation of mainline sewers and manholes took place. The project total credits summarized at the bottom of the sheet are the credits applied to the catchment(s) for the credit banking purposes.

5.3.1. Entering and Tracking Credits in IPS

IPS is used to enter credits from I/I removal or capacity restoration projects. As the rehabilitation projects are completed, the associated credits will be made available in the capacity credit ledger for each capacity credit basin. System rehabilitation performed by MSD is reviewed on an annual basis and credits are updated in catchment areas accordingly. Appendix F provides credit ledgers by catchment area as an example.

Figure 4.2 represents an example SCAP credit form where estimated flow reduction is entered into IPS after an I/I removal project is completed.

IPS is also used to track the catchment where each capacity credit is being used, and where the new flow request credits apply.

5.3.2. Capacity Credit Catchments and Credit Reporting

MSD tracks the balance of new flows coming into the sanitary collection system versus the number of capacity credits available. The credit balances are tracked per capacity credit basins as depicted in Appendix A. Capacity ledgers are included in Appendix G as examples.

Figure 5.1. Example SCAP Rehabilitation Credits Calculation Form

System Capacity Assurance
Rehabilitation Credits Calculation Sheet

Project Name:	Sinking Fork Interceptor Rehabilitation
Budget ID:	H07294
Record No.:	15442
Anticipated Date:	12/23/2008
Completed Date:	12/23/08 & 3/30/09
Credit Catchment	Middle Fork
Calculated By:	Josh Dickerson
Checked By:	Tony Marconi

Removal of Illicit Connections to the Sanitary Sewer System

	Quantity		Credit		Total	
Downspouts	0	x	4,000	=	0	Gallons
Area Drains	0	x	6,000	=	0	Gallons
Foundation Drains	0	x	4,000	=	0	Gallons
Sump Pumps	0	x	4,000	=	0	Gallons

Rehabilitation of Mainline Sewers and Sewer Service Lines

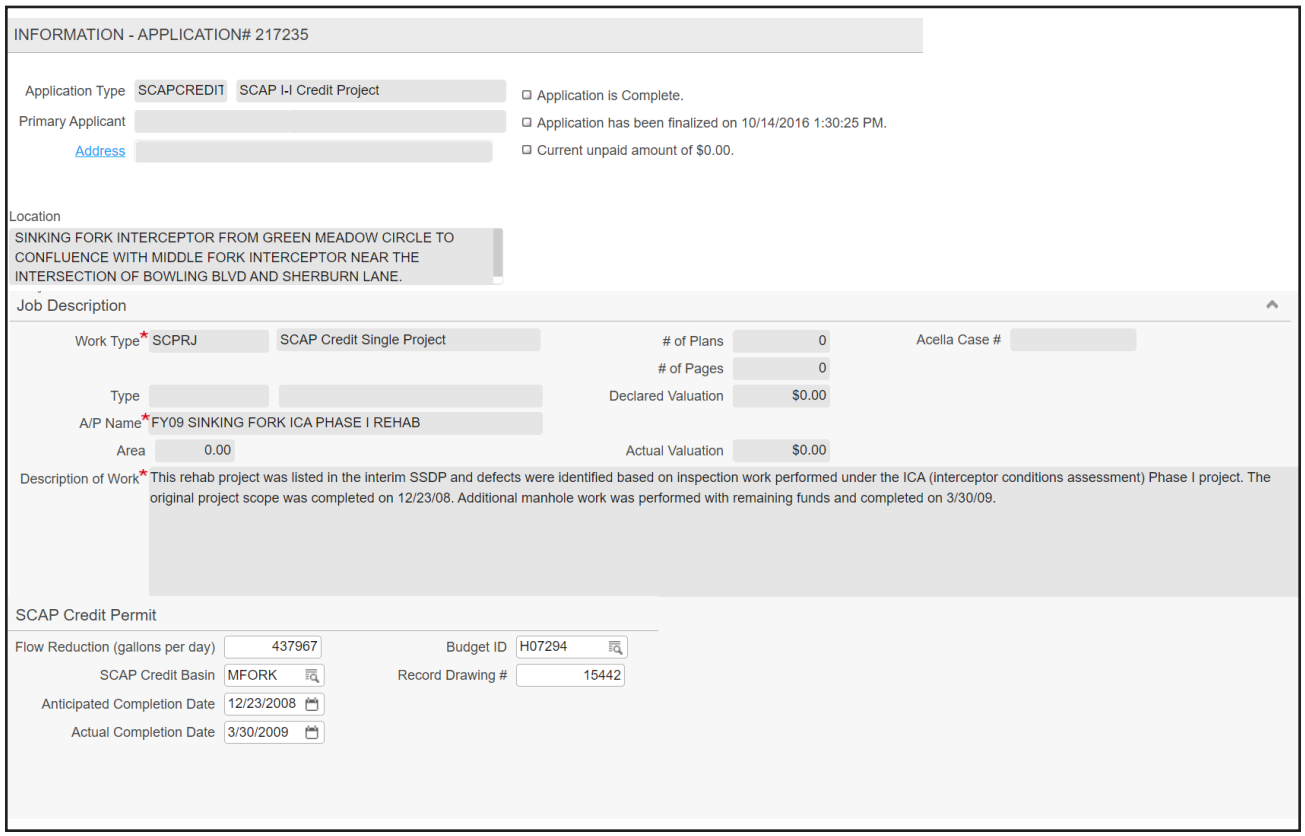
Total from Line Credits Entry Sheet 352,152 Gallons

Manhole Rehabilitation

Total from Manhole Credits Entry Sheet 85,815 Gallons

Project Total Credits 437,967 Gallons

Figure 5.2. Example SCAP Credit in IPS



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Appendix A MSD Collection, Transmission, and Treatment System

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APPENDIX A-1 BULLITT COUNTY SANITATION DISTRICT

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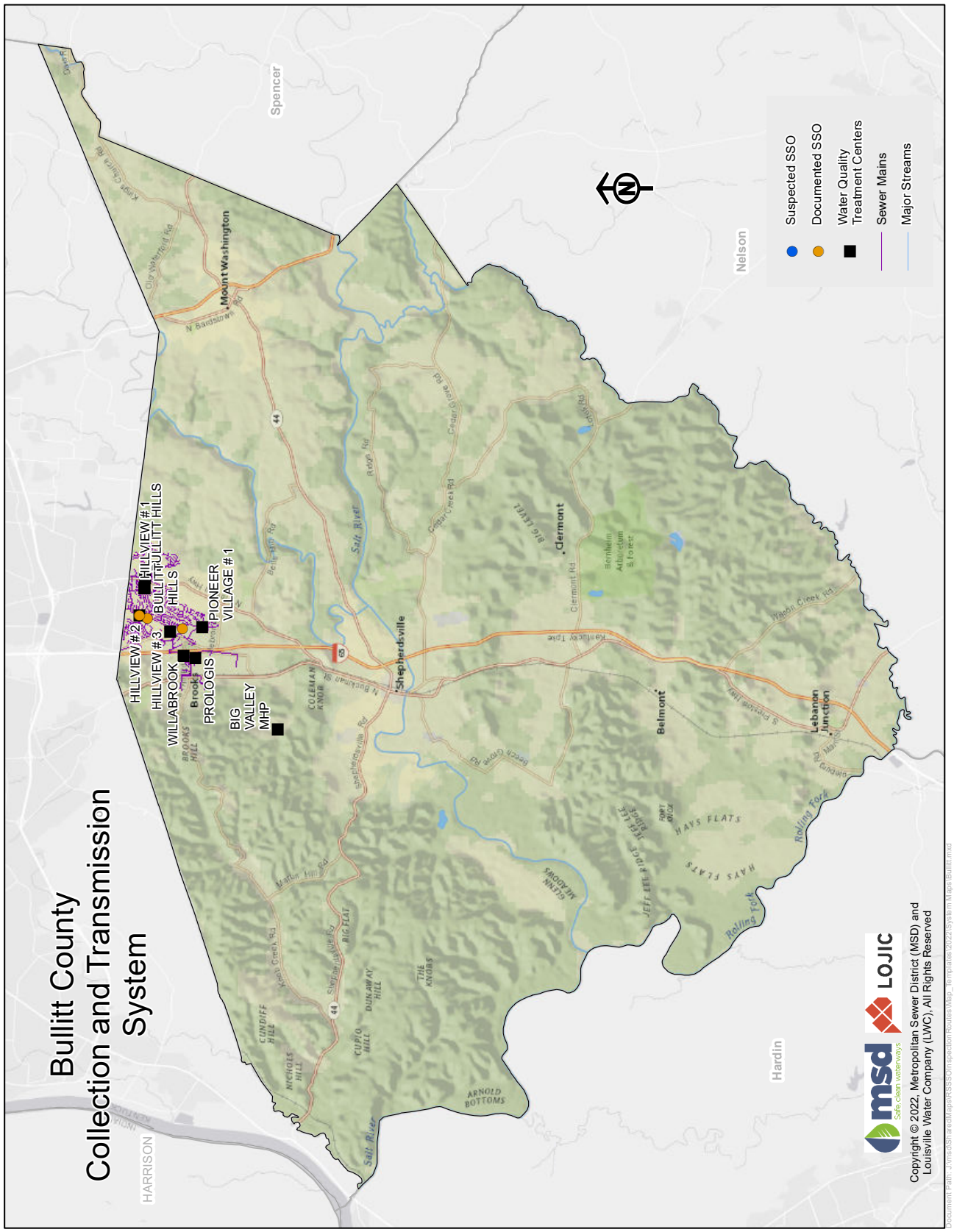
WQTC NAME	ASSET ID	KPDES	CAPACITY (MGD)	ADF (MGD)	INSTALLATION DATE	RECORD DRAWING	SERVICE STATUS	OWNED
BCSD HILLVIEW #1	MSD0506	KY0034151	0.231	0.171	5/1/2001	FLD	I	MSD
BCSD HILLVIEW #2	MSD0507	KY0034169	0.320	0.31	5/1/2001	FLD	I	MSD
BCSD HILLVIEW #3	MSD0508	KY0034177	0.148	0.146	5/1/2001	FLD	I	MSD
BIG VALLEY MHP	MSD0505	KY0072168	0.070	0.018	5/1/2001	FLD	I	MSD
BULLITT HILLS	MSD0509	KY0034801	0.350	0.23	5/1/2001	FLD	I	MSD
PIONEER VILLAGE #1	MSD0512	KY0034185	0.310	0.21	5/1/2001	FLD	I	MSD
PROLOGIS	MSD0515	KY0103900	0.150	0.032	7/1/2021	FLD	I	PMSD
WILLABROOK	MSD0511	KY0094307	0.120	0.129	5/1/2001	FLD	I	MSD
Total			1.699					8

WQTC NAME	SERVICE AREA (MI2)	SANITARY MAINS (MI)	MANHOLES	CATCH BASINS	SANITARY PS	FLOOD PS	CUSTOMERS
BCSD HILLVIEW #1	0	7	151	35	6	-	
BCSD HILLVIEW #2	0	6	114	-	1	-	
BCSD HILLVIEW #3	0	3	61	-	2	-	
BIG VALLEY MHP		-	-	-	-	-	
BULLITT HILLS	2	12	273	-	6	-	
PIONEER VILLAGE #1	1	8	192	-	1	-	
PROLOGIS	1	2	-	-	2	-	
WILLABROOK	2	14	239	-	10	-	
Total	7	53	1,030	35	28	-	4,791


Bullitt County
Collection and Transmission System
Suspected SSO
Documented SSO
Water Quality Treatment Centers
Sewer Mains
Major Streams
HILLVIEW #1
HILLVIEW #2
HILLVIEW #3
BULLITT HILLS
WILLABROOK
PIONEER VILLAGE # 1
PROLOGIS
BIG VALLEY MHP
Mount Washington
Shepherdsville
Clermont
Belmont
Lebanon Junction
Spencer
Nelson
Hardin
HARRISON
Salt River
Rolling Fork
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APPENDIX A-2 JEFFERSON COUNTY

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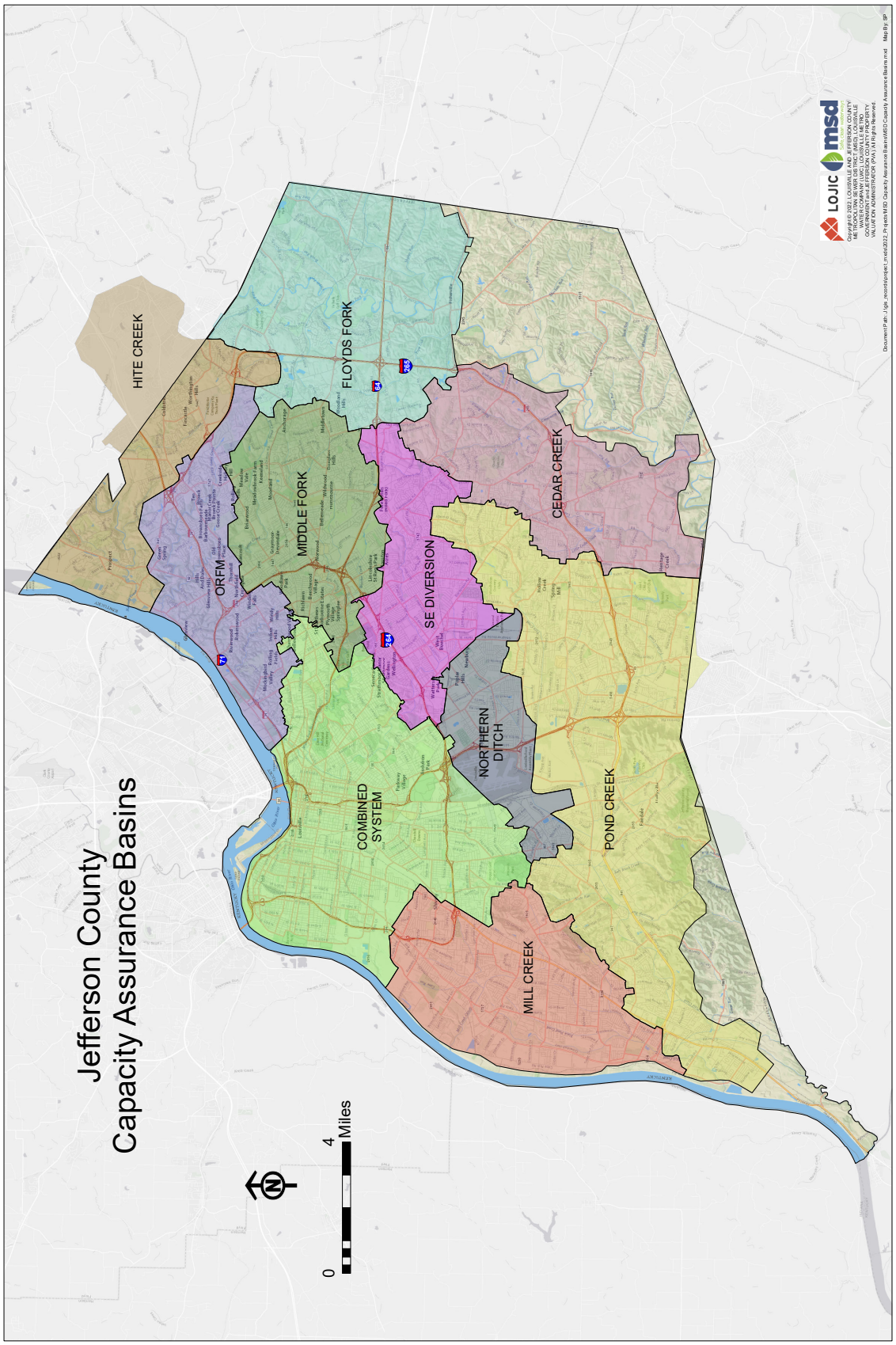
WQTC NAME	ASSET ID	KPDES	CAPACITY (MGD)	ADF (MGD)	INSTALLATION DATE	RECORD DRAWING	SERVICE STATUS	OWNED
CEDAR CREEK	MSD0289	KY0098540	7.500	6.978	6/9/1995	11452-8	I	MSD
DEREK R. GUTHRIE	MSD0277	KY0078956	60.000	50.983	5/31/1986	09198-36	I	MSD
FLOYDS FORK	MSD0294	KY0102784	6.500	3.839	2/20/2001	12445-5	I	MSD
HITE CREEK	MSD0202	KY0022420	6.000	4.099	10/1/1970	07004-1	I	MSD
MORRIS FORMAN	MSD0278	KY0022411	120.000	91.794	2/16/1956	12203-1	I	MSD
Total			200.000					5

WQTC NAME	SERVICE AREA (MI2)	SANITARY MAINS (MI)	MANHOLES	CATCH BASINS	SANITARY PS	FLOOD PS	CUSTOMERS
CEDAR CREEK	34	240	6,086	4,543	35	-	20,371
DEREK R. GUTHRIE	102	920	21,121	16,371	39	3	71,127
FLOYDS FORK	38	215	5,447	4,798	34	-	11,010
HITE CREEK	26	222	5,171	3,815	53	-	12,072
MORRIS FORMAN	134	1,780	40,938	43,257	86	12	148,379
Total	333	3,378	78,763	72,784	247	15	262,959


Jefferson County
Capacity Assurance Basins
HITE CREEK
FLOYDS FORK
MIDDLE FORK
ORFM
SE DIVERSION
CEDAR CREEK
NORTHERN DITCH
COMBINED SYSTEM
POND CREEK
MILL CREEK
0
4
Miles
LOJIC
msd

Additional Activities under the Second Amended Consent Decree

- Each fiscal year by February 28, MSD submits a SCAP Credit Ledger through the end of the previous calendar year in the Second Amended Consent Decree Mid-Year Status Report.
- Each fiscal year by September 30, MSD submits a SCAP Credit Ledger through the end of the previous fiscal year in the Second Amended Consent Decree Annual Report.
- The Mid-Year Status and Second Amended Consent Decree Reports are sent to:
  - **One copy to:**

    Chief, Water Enforcement Branch
    Enforcement and Compliance Assurance Division
    U.S. Environmental Protection Agency, Region 4
    Atlanta Federal Center
    61 Forsyth Street SW
    Atlanta, GA 30303
  - **One copy to:**

    Chief, Environmental Enforcement Section
    Environmental and Natural Resources Division
    U.S. Department of Justice
    Post Office Box 7611
    Washington, DC 20044-7611
  - **Two copies to:**

    Director, Division of Enforcement
    Department of Environmental Protection
    300 Sower Boulevard, 3rd Floor

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APPENDIX A-3 OLDHAM COUNTY ENVIRONMENTAL AUTHORITY

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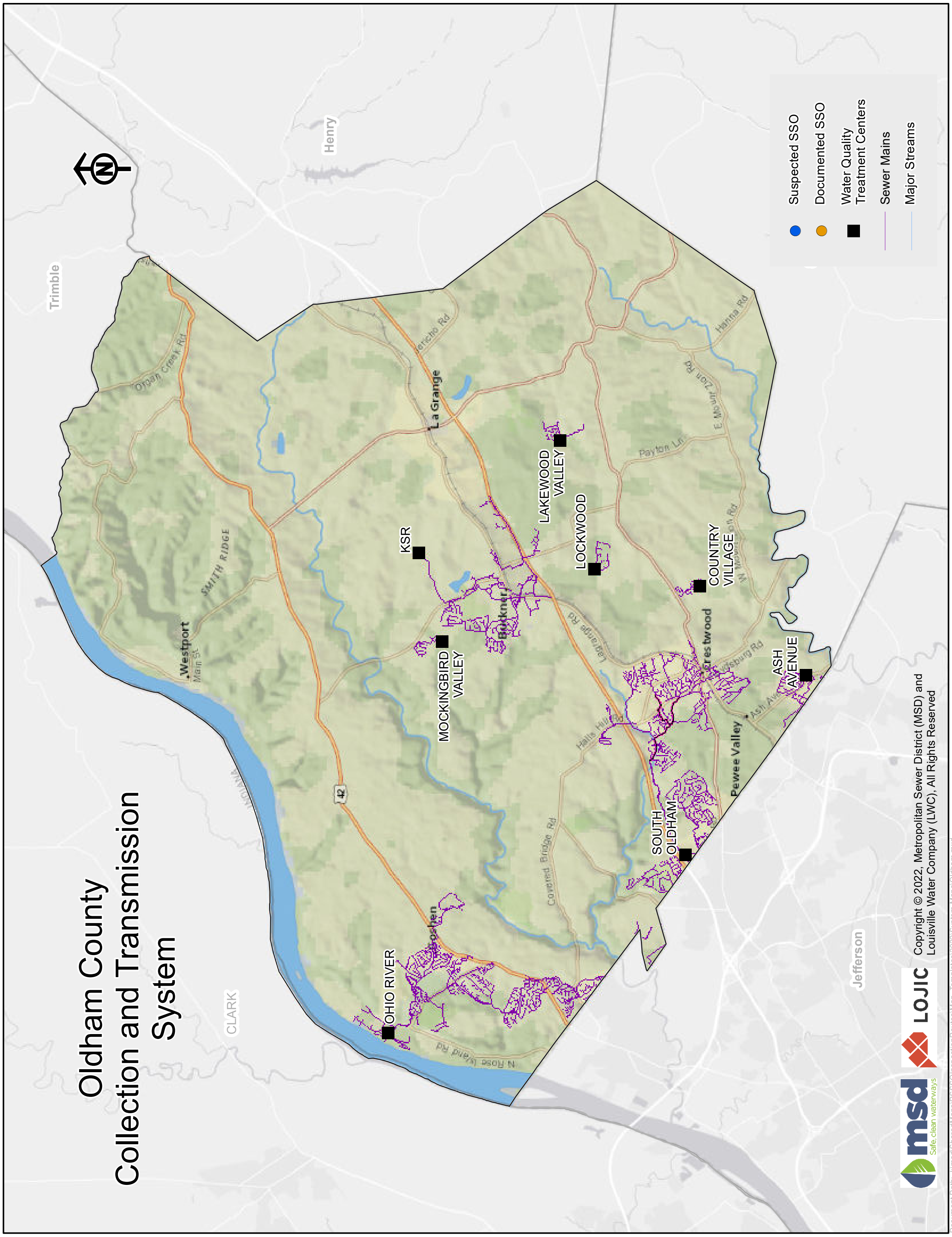
WQTC NAME	ASSET ID	KPDES	CAPACITY (MGD)	ADF (MGD)	INSTALLATION DATE	RECORD DRAWING	SERVICE STATUS	OWNED
ASH AVENUE	MSD0410	KY0024724	0.300	0.257	1/1/1972	13165-7	I	MSD
COUNTRY VILLAGE	MSD0413	KY0060577	0.060	0.069	1/1/1966	16274-1	I	MSD
KSR								
(KY State Reformatory)	MSD0411	KY0040126	1.000	0.786	1/1/1991	16351-2	I	MSD
LAKEWOOD VALLEY	MSD0408	KY0039870	0.100	0.061	1/1/1976	16318-16	I	MSD
LOCKWOOD ESTATES	MSD0412	KY0054674	0.045	0.056	1/1/1975	FLD	I	MSD
MOCKINGBIRD VALLEY	MSD0409	KY0076813	0.040	0.02	1/1/1978	16328-2	I	MSD
OHIO RIVER	MSD0407	KY0106143	1.500	0	1/1/2007	16355-1	I	MSD
SOUTH OLDHAM								
(Oldham County Environmental Authority Regional WWTP)	MSD0414	KY0111716	1.250	0.276	3/14/2016	16360-1	I	MSD
Total			4.295					8

WQTC NAME	SERVICE AREA (MI2)	SANITARY MAINS (MI)	MANHOLES	CATCH BASINS	SANITARY PS	FLOOD PS	CUSTOMERS
ASH AVENUE	1	14	286	116	6	-	
COUNTRY VILLAGE	0	2	69	-	2	-	
LAKEWOOD VALLEY	0	3	70	-	2	-	
MOCKINGBIRD VALLEY	0	2	52	-	2	-	
OHIO RIVER	5	63	1,214	23	25	-	
Total	8	84	1,691	139	37	-	4,835


Oldham County
Collection and Transmission
System
Suspected SSO
Documented SSO
Water Quality
Treatment Centers
Sewer Mains
Major Streams
OHIO RIVER
MOCKINGBIRD
VALLEY
KSR
LAKEWOOD
VALLEY
LOCKWOOD
COUNTRY
VILLAGE
ASH
AVENUE
SOUTH
OLDHAM
La Grange
Westport
Goshen
Crestwood
Buckner
Pewee Valley
SMITH RIDGE
Henry
Trimble
Jefferson
CLARK
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Louisville Water Company (LWC), All Rights Reserved
LOJIC

Appendix A-4 Top Flight Landing

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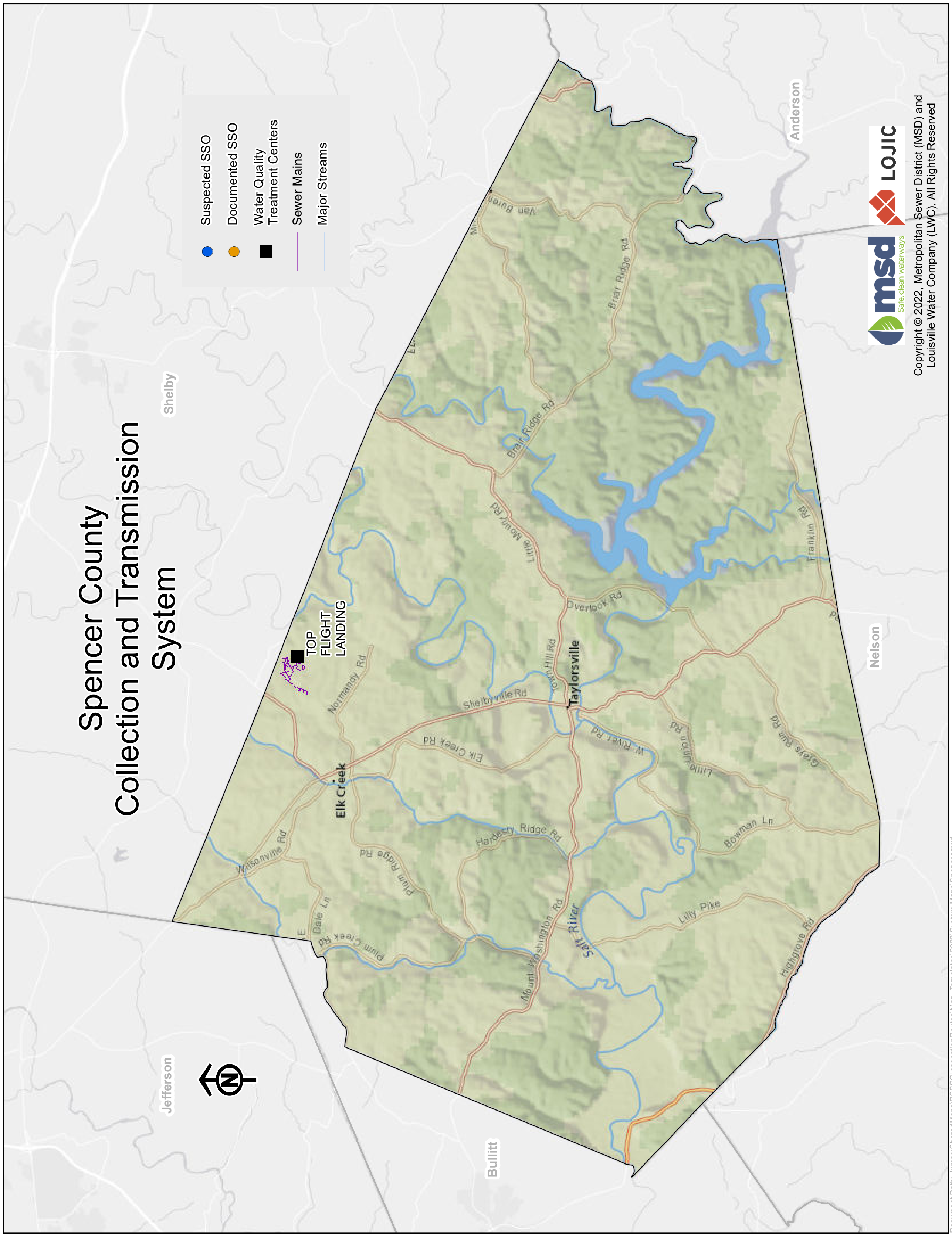
WQTC NAME	ASSET ID	KPDES	CAPACITY (MGD)	ADF (MGD)	INSTALLATION DATE	RECORD DRAWING	SERVICE STATUS	OWNED
TOP FLIGHT LANDING (SPENCER COUNTY) 355 WILLS WAY, TAYLORSVILLE, KY 40071	MSD0600	KY0105074	0.120	0.003	12/1/2002	16843-5	I	PMSD
Total			0.120					1

WQTC NAME	SERVICE AREA (MI2)	SANITARY MAINS (MI)	MANHOLES	CATCH BASINS	SANITARY PS	FLOOD PS	CUSTOMERS
Total	-	-	-	-	-	-	-


Spencer County
Collection and Transmission
System
Suspected SSO
Documented SSO
Water Quality
Treatment Centers
Sewer Mains
Major Streams
TOP
FLIGHT
LANDING
Taylorsville
Elk Creek
Shelby
Anderson
Nelson
Bullitt
Jefferson
Salt River
Van Buren Rd
Briar Ridge Rd
Little Mount Rd
Overlook Rd
Normandy Rd
Shelbyville Rd
Elk Creek Rd
W. River Rd
Little Union Rd
Glens Run Rd
Bowman Ln
Hardesty Ridge Rd
Waterford Rd
Plum Ridge Rd
Dale Ln
Plum Creek Rd
Mount Washington Rd
Lilly Pike
Highgrove Rd
Taylorsville Lake Rd
Mt. Washington Rd
Waterford Rd
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Appendix B Lateral Extension Procedures, Forms, and Process

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Appendix B-1 Just-In-Time Submittals Process

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Just In Time Diagram for Lateral Extensions

May 7, 2008

	SUBMITTAL 1 CAPACITY	SUBMITTAL 2 DESIGN	SUBMITTAL 3 MYLARS	PERMITS, CONTRACTS & PAYMENTS		SUB 5.1 (If needed)	SUBMITTAL 6 CONSTRUCTION
				SUBMITTAL 4	SUBMITTAL 5		
LE DOCUMENTS	REQUEST FOR SANITARY SEWER CAPACITY FORM SITE LOCATION MAP	**APPROVED** REQUEST FOR SANITARY SEWER CAPACITY FORM APPLICATION FOR APPROVAL OF CONSTRUCTION DOCUMENTS PLANS DIV OF WATER SEWERAGE APPLICATION WITH: • APPLICATION FEE • USGS QUAD MAP • SERVICE AREA MAP DESIGN PLANS SUMMARY OF PROPERTY TYPE AND UNITS TO BE SERVED COMPUTATION SHEET FOR SANITARY SEWER DESIGN PROPOSED PROJECT PLAN SPECIAL PROVISIONS ROADWAY PLANS (if needed) COPIES OF LETTERS TRANSMITTING PLANS TO VARIOUS UTILITIES (if needed) PUMP STATION SERVICE AREA MAP WITH FLOWS • CALCULATIONS • SPECIFICATIONS (if needed) RESERVATION OF CAPACITY (if needed)	MYLARS	LETTER OF APPROVAL FROM THE DOW SITE DISTURBANCE FORM RAILROAD CROSSING PERMIT APPLICATION (if needed) KTC ENCROACHMENT PERMIT APPLICATION (if needed) LATERAL EXTENSION OF BOUNDARIES AGREEMENT WITH: • PROPERTY DEED • PERFORMANCE BOND WITH POWER OF ATTORNEY • MAINTENANCE BOND WITH POWER OF ATTORNEY • CERTIFICATE OF LIABILITY INSURANCE • ACCEPTED BID PROPOSAL SIGNED WITH ENCROACHMENT DATA • EASEMENT PLATS OR EXTENSION OF BOUNDARIES AGREEMENT WITH: • PROPERTY DEED	CAPACITY CHARGE PAYMENT (or LETTER OF CREDIT) LETTER OF APPROVAL FROM FIRST CLASS CITY (if needed) DOW STREAM CROSSING PERMIT (if needed) CORPS OF ENGINEERS STREAM CROSSING PERMIT (if needed) RECAPTURE CHARGE (if needed) TELEMETRY PAYMENT (if needed) METRO ENCROACHMENT PERMIT (if needed)	REDLINE and/or SHOP DRAWINGS (if needed)	SWORN STATEMENT OF FINAL PAYMENT – CONTRACTOR SWORN STATEMENT OF FINAL PAYMENT – DEVELOPER AS BUILT CERTIFICATION LETTER TO DOW AS BUILT DRAWINGS AVAILABLE FOR CONNECTION WORKSHEET
REVIEWS	CAPACITY ENGINEERING REVIEW	ENGINEERING DESIGN REVIEW	MYLARS REVIEW	CONTRACT 1 REVIEW CONTRACT 2 REVIEW (if needed) LEPLAT REVIEW (if needed)		DRAWING REVIEW (if needed)	AS BUILT REVIEW CONTRACT 3 REVIEW
	CAPACITY STATUS LETTER	CAPACITY WORKSHEET & DESIGN STATUS LETTER	DOW CERTIFICATION LETTER	NOTICE TO PROCEED LETTER		APPROVAL STAMP (if needed)	SEWER RELEASE NOTIFICATION LETTER

Le Just In Time Submittals Diag

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APPENDIX B-2 DOWNSTREAM FACILITIES CAPACITY REQUEST FORM

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MSD
Metropolitan Sewer District

DOWNSTREAM FACILITIES CAPACITY REQUEST

FOR MSD USE ONLY

Date: MM/DD/YYYY

Sewer Service Area:

Name of Development:

Address of Development:

Block & Lot of Development:

Owner/Developer:

Name:

Company:

Street:

City, State, Zip:

Telephone #:

E-Mail Address:

Design Firm/Contact:

Name:

Company:

Street:

City, State, Zip:

Telephone #:

E-Mail Address:

Closest Sewer Connection:

Record Number: **Manhole Number**:

Wastewater Treatment Plant Service Area:

Attach Map with Site Labels & Manhole (**SUBMITTALS WITHOUT A MAP WILL BE REJECTED**)

Show Calculation:

Amount of Flow (Based on MSD Standards): GPD

Number of: **Homes**:

Apts.: One BDR: Two BDR: Three BDR:

Condos: One BDR: Two BDR: Three BDR:

Commercial (Describe):

Industrial (Describe):

Pump Station Needed: Yes ☐ No ☐ **Recapture Area**: **Yes** ☐ **No** ☐

ADDITIONAL COMMENTS:

For MSD Projects Only:

Budget ID # _____

Estimated Completion Date: _____

DOWNSTREAM FACILITIES CAPACITY REQUEST

FOR MSD USE ONLY

LE Record Number: _____

IOAP Project Area: ☐

Enterprise Zone: ☐

SCAP Basin: _____

Capacity Determination:

☐ **Approved**

☐ **Conditional Approval with downstream Inflow and Infiltration Fees**

☐ **Conditional Approval**:

_____

_____

Flow: _____

Until: _____

If you wish to reserve capacity beyond the 90-day reservation period, please call the Development Team Manager)

☐ **Not Approved**:

MSD: _____ **Date:** _____

Please retain this form to submit with Application for Approval of Sanitary Sewer Projects

Comments:

Downstream Facilities Capacity Request
Submittal Assistance Document

The Downstream Facilities Capacity Request (DFCR) is submitted for the purpose of determining if capacity exists for your Lateral Extension Project. Included with the submittal of the DFCR must be a Site Location Map with the parcel(s) to be served noted.

MSD seeks to provide a prompt definitive determination of capacity on your project. Diligent submittal of information on the DFCR and Site Location Map documents is essential. Submittals that include omissions and/or erroneous information can lead to delayed determination of capacity on your project. Anywhere there is information requested on the DFCR form, and that information does not apply to your project, at a minimum insert "NA". A short explanation of why information is not included on the DFCR maybe helpful in making a prompt capacity determination on your project.

Below is information that will help you provide the essential information needed to determine capacity for your project.

1. **Date** - is the date that the form is completed for submittal to MSD. (MSD will stamp the document with the received date upon reception of the submittal at MSD).

2. **Name of Development** - if the development does not currently have a name, or will not be named, reference the development by street name accompanied with the word which best describes the development type. For instance, East Broadway Commercial Development, Grandview Apartments, Bardstown Road Condos, etc.

3. **Address/Tax Block/ Lot of Development** – please provide both the property address, and Tax Block / Lot number. If a valid address does not exist, tax block and lot will suffice. If the project will exist on more than one address, please provide those addresses also.

4. **Owner/Developer's Name** –include an owner or developer contact name. Inclusion of the Owner/Developer name will assist MSD in communications that may eliminate delays.

5. **Owner/Developer's Address** – address where Owner/Developer contact name will receive mail.

6. **Owner/Developer's Tel. No**. – include the telephone number that will most likely lead to immediate contact of Owner/Developer Contact Name. Inclusion of more than one telephone number is welcomed.

7. **Closest Sewer Connection**:
   - Record Number
   - Manhole Number
   - MSD Atlas Page
   - Wastewater Treatment Plant Service Area

   This information is readily attainable in the MSD Sewer Atlas. For information on how to attain a MSD Sewer Atlas, call MSD Customer Relations at 587-0603. The Closest Sewer Connection information is also attainable by calling MSD Customer Relations at 587-0603 and speaking to a Customer Relations agent.

8. **Amount of Flow** – the MSD Design Manual, pages 8-18 through 8-20, include the information needed to calculate the amount of flow from the development to the MSD system. The Design Manual Information can be retrieved from MSD's website at http://www.msdlouky.org/insidemsd/pdfs/designmanual02/Chapt08-2000.pdf.

9. **Pump Station needed –** the designation of whether a pump station is needed is required to assess if your project can be developed.

10. **Recapture Area –** if you do not know whether your project resides in a recapture area**,** you may call MSD Customer Relations at 587-0603 to get the answer.

Downstream Facilities Capacity Request
Site Location Map

The Site Location Map (SLM) is used to determine the general location of the project for which sanitary sewer capacity is sought. The SLM maybe a copy of a USGS map, Sewer Atlas map, Topographical map, MapsCo map, or any similar map which can easily depict the location of your project in MSD's service area.

The SLM must include a North arrow designation and drawn boundaries of the development site.

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APPENDIX B-3 LATERAL EXTENSION IPS WORK INSTRUCTIONS

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Capacity Assurance Process

Work Instruction

Document Date

May 30, 2022

Revision Date

N/A

Written by:

Scarlett Stapleton

Revised by:

N/A

Contents

Purpose

This purpose of this Work Instruction is to document the Capacity Assurance process within the Infor (IPS) database. This process considers, and approves or denies, new or additional flow to a Water Quality Treatment Center and its associated infrastructure. The Capacity Assurance process is the first step in completing a Lateral Extension (LAT EXT) application.

Applicability

This work instruction applies to the following departments:

- Engineering – Development Review
- Engineering – Construction Inspection
- Engineering – Regulatory Compliance & Asset Management

Responsibility

The Engineering Regulatory Compliance and Asset Management Administrator is responsible for the procedure. The Engineering Regulatory Compliance and Asset Management Analyst is responsible for maintaining the IPS system. Engineering Development Review staff are responsible for reviewing applications, issuing permits, and completing applications within IPS. Engineering Construction Inspection staff are responsible for performing field inspections and recording results.

Process Overview

This IPS procedure includes reference to the following documents:

1. Planning and Development Lateral Extension – Capacity Assurance Process
2. Planning and Development Lateral Extension – Plan Review
3. Planning and Development Lateral Extension – Existing PSC Application Processing
4. Planning and Development Lateral Extension – New PSC Application Processing
5. GIS – Lateral Extension Procedure

Input / Pre-Start Requirements / Before You Begin

This work instruction assumes the following:

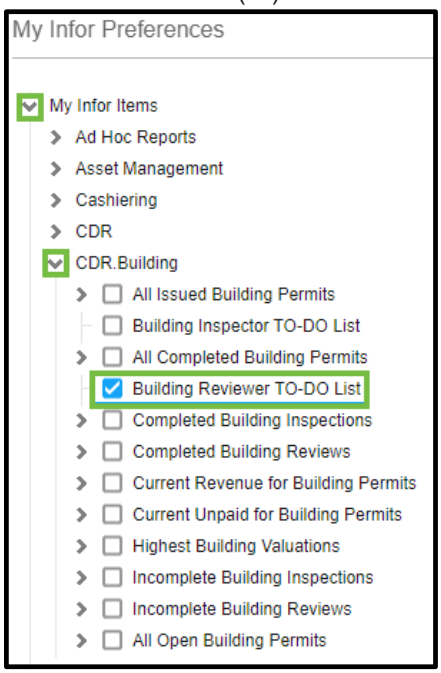
1. User has been created in IPS. If you do not know your IPS credentials, contact the helpdesk (helpdesk@louisvillemsd.org).
    a. Role: **Eng Dev Review**
        i. Licenses: **CDR**, **CDR Building Permits**
    b. Role: **Cashiering Supervisor**
        i. License: **Cashiering, CDR, CDR Building Permits**
2. Employee ID has been created in IPS. If you do not know your employee ID, contact your supervisor.

Instructions

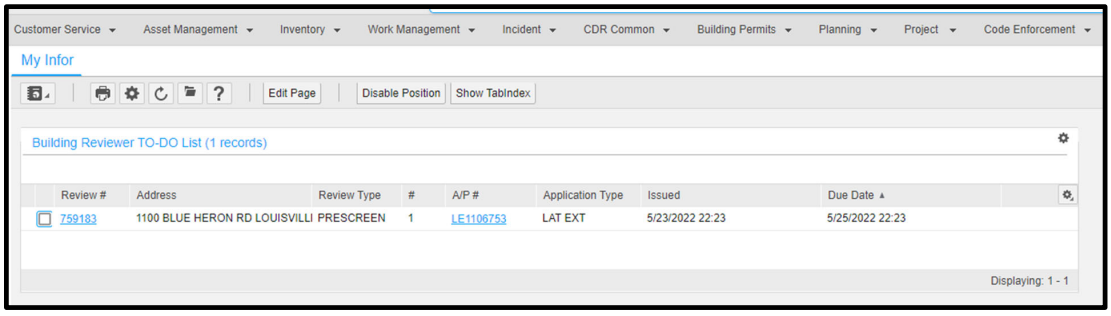
My Infor Page Setup – Building Reviewer TO-DO List

Follow the instructions below to set-up your **My Infor** IPS Dashboard. This procedure will display any reviews that have been assigned to you on your

1. Login to Infor IPS. The **My Infor** page will open.
2. Click the **My Infor** (⚙) button. The **My Infor Preferences** window will appear.
3. Click the **nodes** (›) to expand them (⌄) to view the items available to add to your My Infor page.
4. Navigate the tree to **My Infor Items** > **CDR.Building**.
5. Click the **checkbox** (☑) next to the **Building Reviewer TO-DO List**



6. Click the **Save** button. The report will now load on your **My Infor** page.

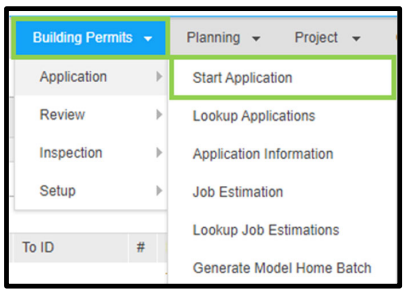


7. To customize the **Building Reviewer TO-DO List** refer to the Setting Preferences with My Infor Guidance Document.

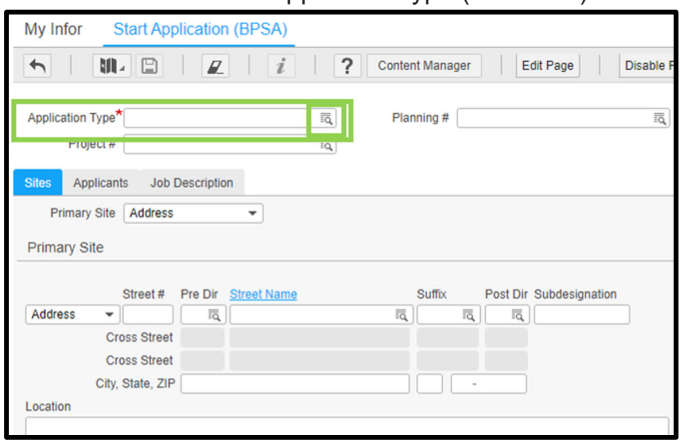
Creating the Application – Application Added Milestone

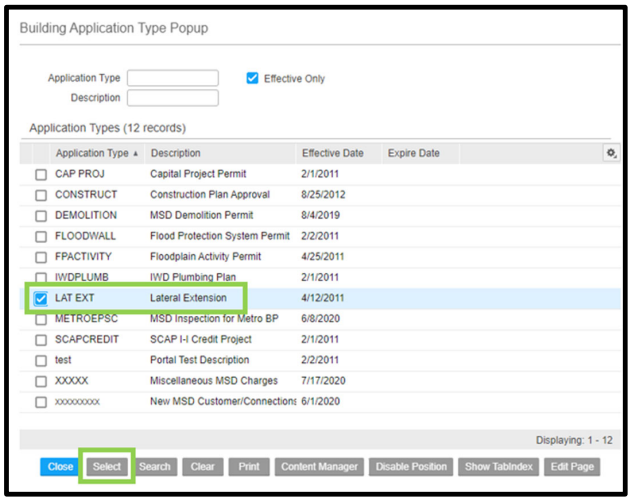
The **Capacity Assurance** process starts by entering basic information from the customers Capacity Request Package into IPS. This milestone creates the LAT EXT application and assigns it to a Development Review Engineer in the Development Review department.

1. Login to IPS. Select the **Building Permits** module then **Application** and **Start Application**.

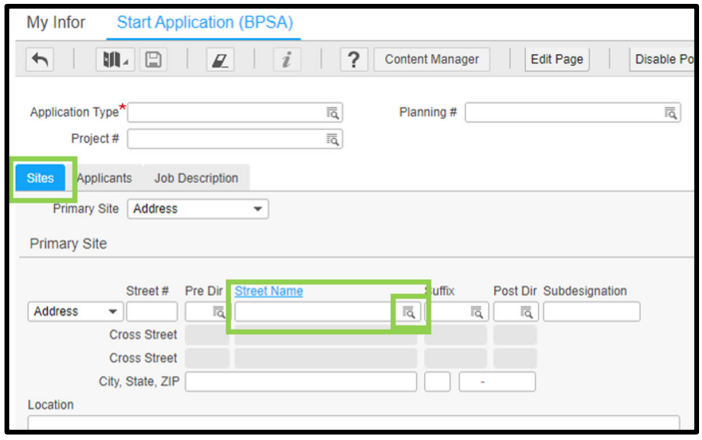


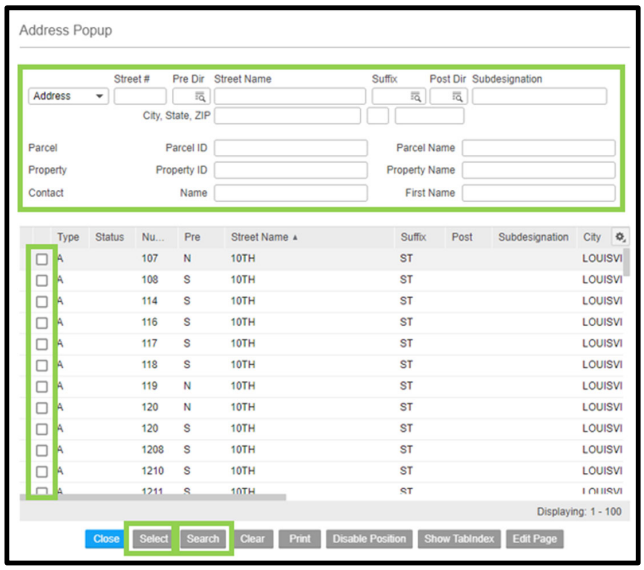
2. Click the **Popup** (🔍) at the end of the **Application Type** field. Select the **checkbox** (☑) next to the **Lateral Extension** application type (**LAT EXT**) then click the **Select** button.



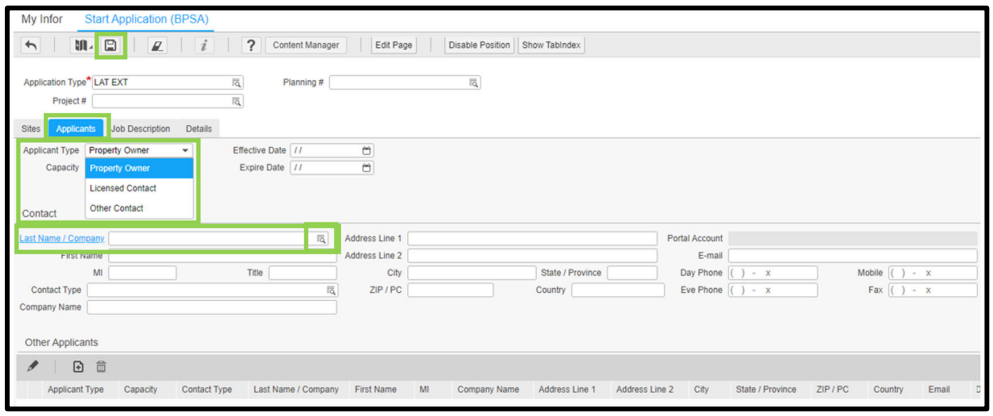


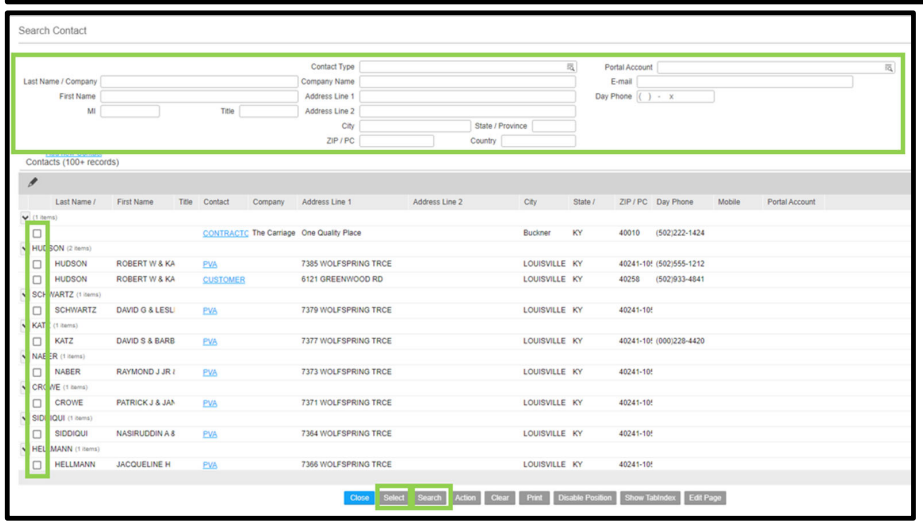
3. On the **Sites** tab, add a **Primary Site** to the application (i.e., the location where work will take place). Click the **Address Popup** located at the end of the **Street Name** field. Enter address information in the top portion of the Popup then click the **Search** button. Select the **checkbox** (☑) next to the address then click the **Select** button to close the Popup.



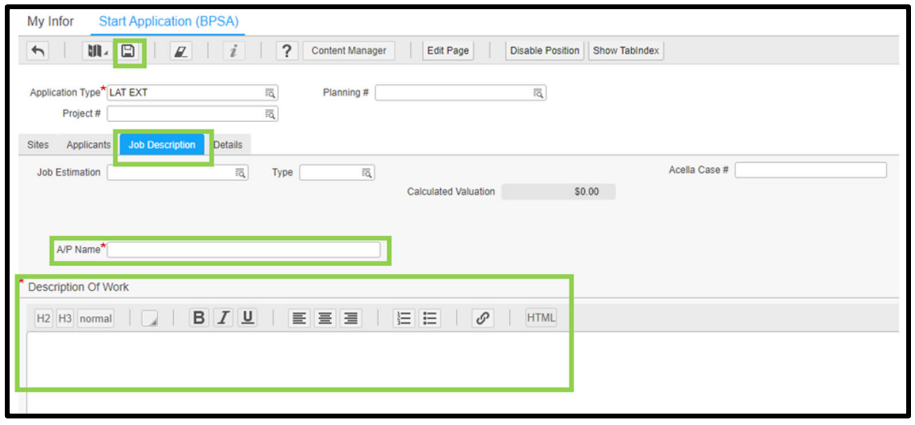


4. Add a **Contact** to the application on the **Applicants** tab. Select the **Applicant Type** from the dropdown then add the **Contact** by clicking the **Search Contact popup** at the end of the **Last Name/Company** field. See the *Guidance – Searching for Contacts* document for further instructions.



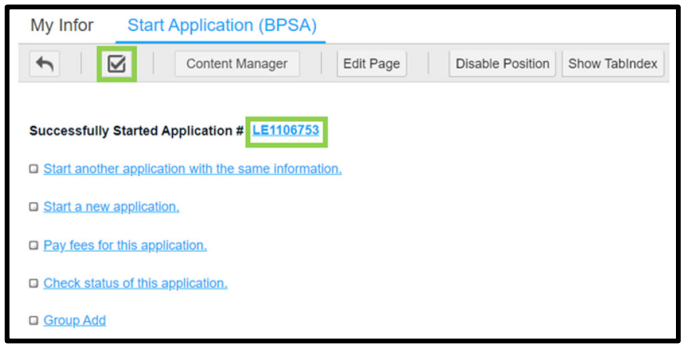


5. Click the **Job Description** tab. Enter the name of the applicant or project in the **A/P Name** field. Provide a brief description of the work to be performed by the applicant in the **Description of Work** field. Click the **Save** ( ) button in the top left to create the application.



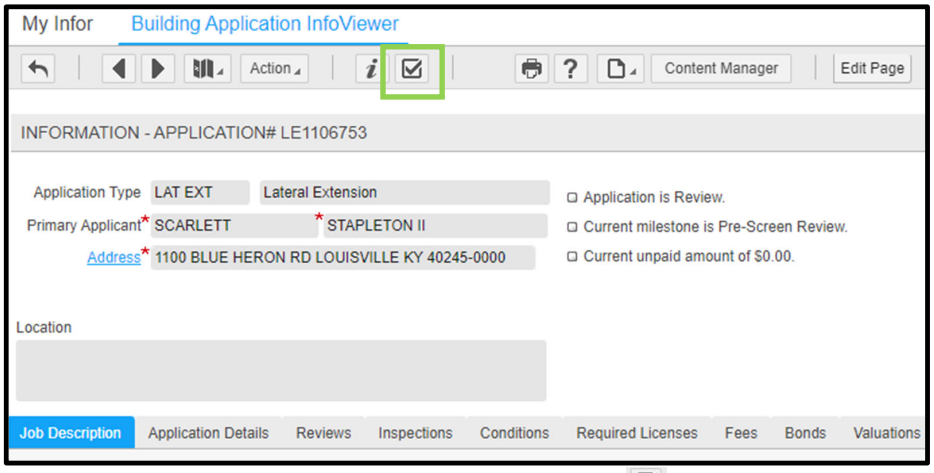
6. A **confirmation window** will appear depicting the application's number - it has now entered the **Pre-Screen Review** milestone and will be assigned to a Development Review Engineer in the Development Review department. Click the application number to open the new LAT EXT

application. Click the **Check Status** ( ) button to view the input items required to continue processing the application (see further instructions in Checking the Status of the Application).

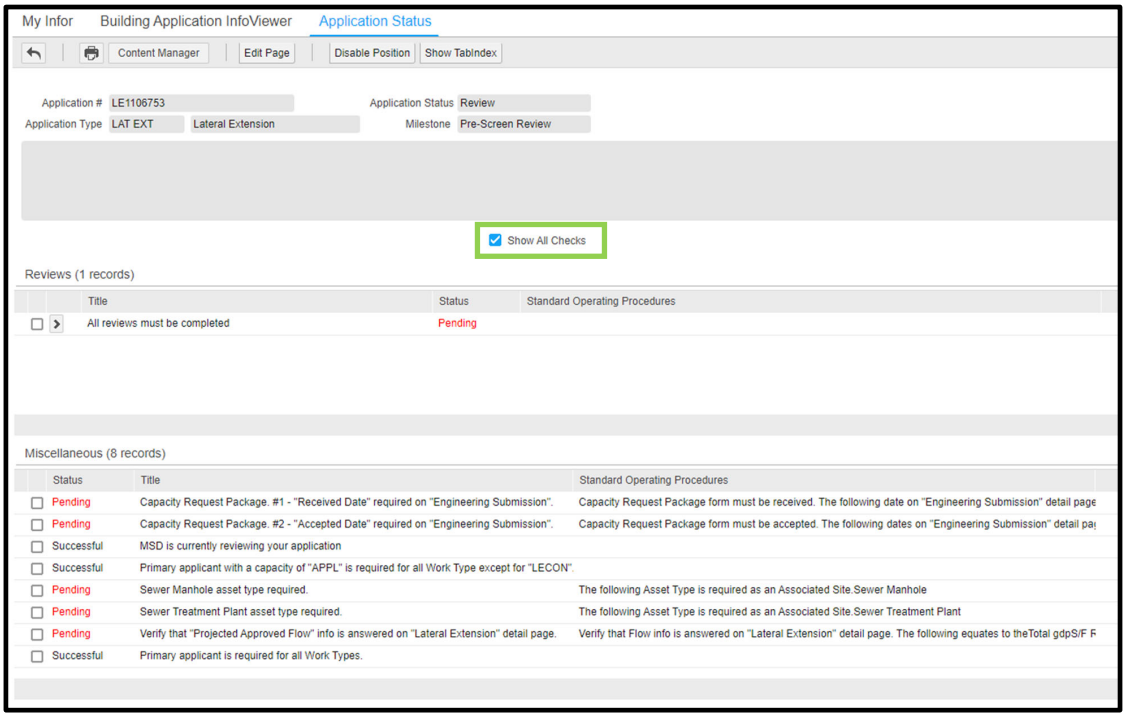


Checking the Status of the Application

The status of an application can always be checked by clicking the **Check Status** ( ) button to view the input items required to process the application through the milestones.



1. Once an application is open, click the **Check Status** ( ) button.
2. The **Application Status** window will appear with the Application Status and current Milestone
    a. Click the Show All Checks **checkbox** ( ) to display successfully completed input items and pending input items.

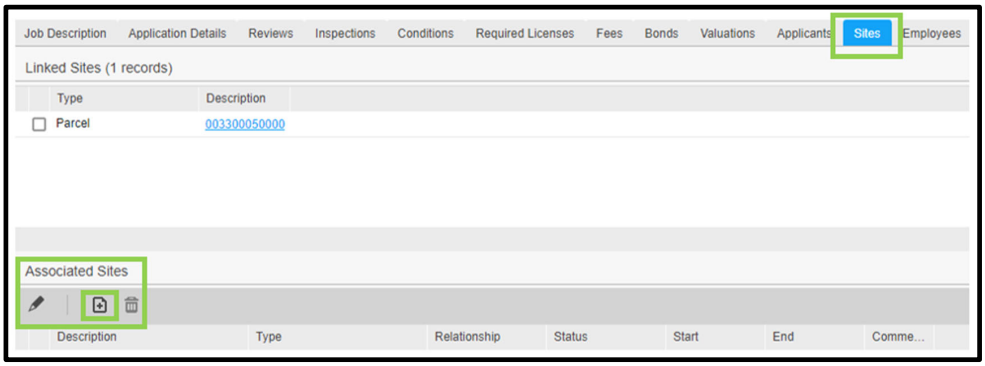


Pre-Screen Review Milestone

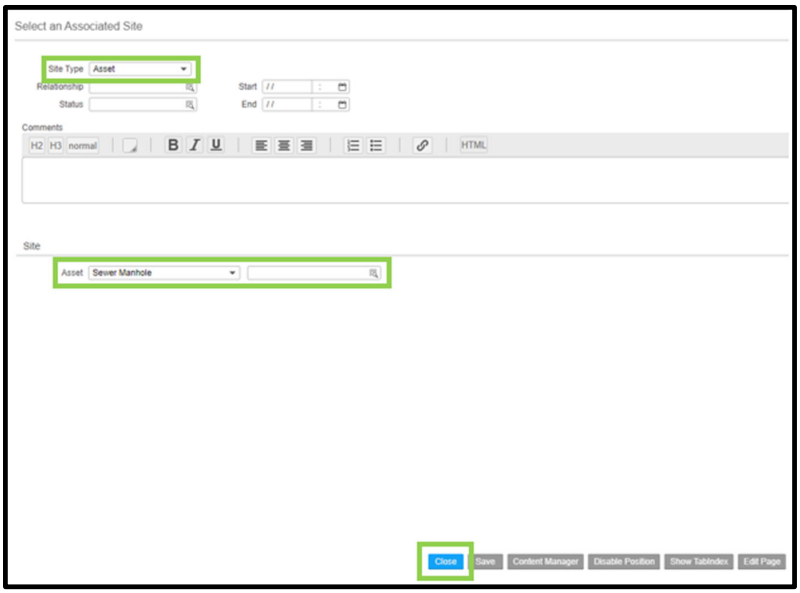
The Pre-screen Review milestone is assigned to an Development Review Engineer in the Development Review department. The Engineer will enter data into the LAT EXT application from the Capacity Request Package that was submitted by the customer as well as data received after performing a sewer trace, using Upstream. See the document *Guidance – Performing a Sewer Trace* for further instructions on this task.

Adding Asset Types to the Application

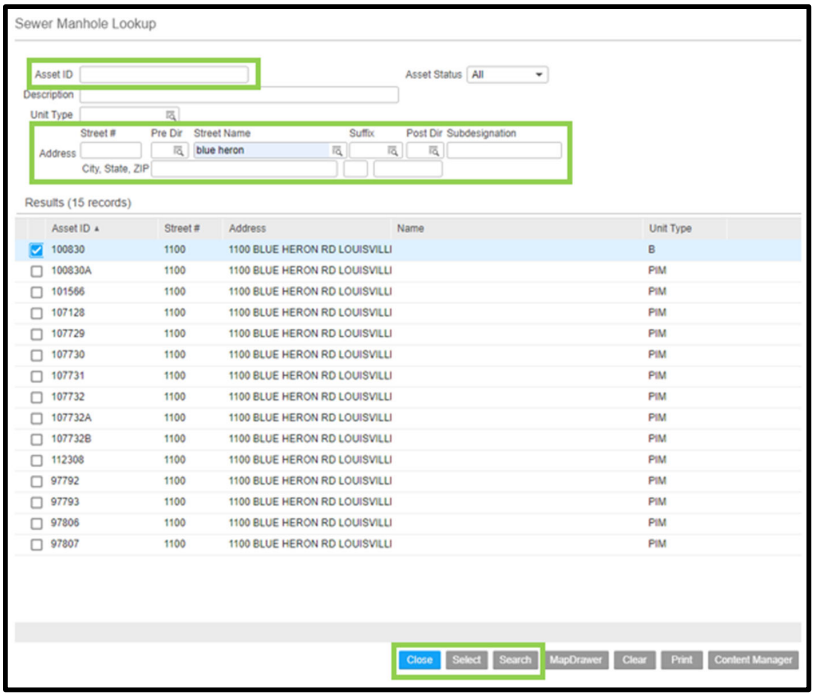
1. Enter the closest sewer manhole on the **Sites** tab. In the **Associated Sites** area of the **Sites** tab, click the **Edit** icon ( ) then the **Add** button ( ). The **Select an Associated Site** popup opens.



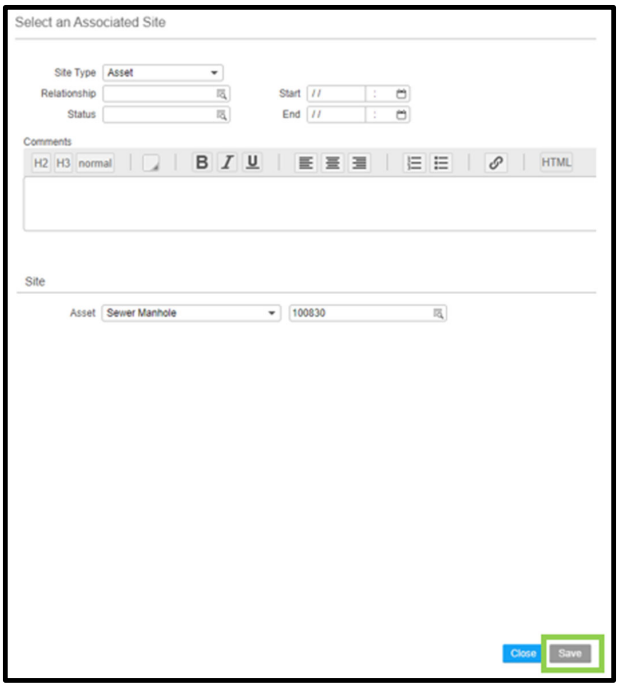
2. Select **Asset** from the **Site Type** field dropdown menu. In the **Site** area, select **Sewer Manhole** from the **Asset** field then click the popup at the end of the field to open the **Sewer Manhole Lookup** window.

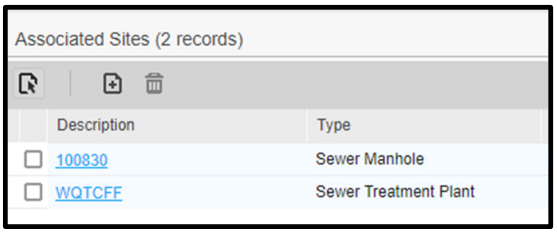


3. Enter the Asset ID of the sewer manhole (from the sewer trace task) in the **Asset ID** field or enter the address of the **Primary Site** and click **Search**. Select the **checkbox** (☑) next to the sewer manhole and click **Select**.



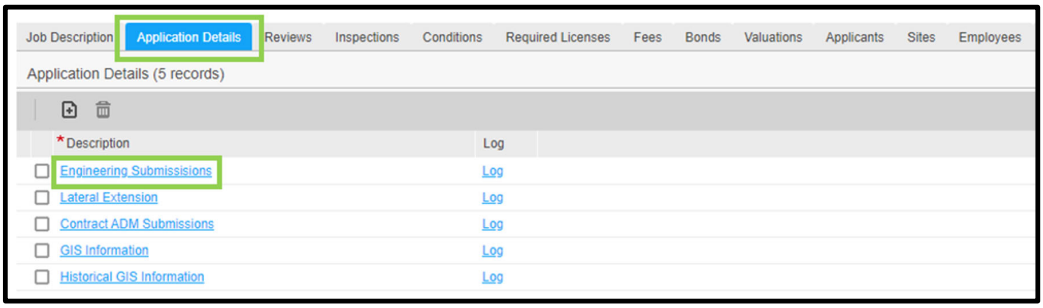
4. Click Save on the **Select an Associated Site** popup. The windows will close and the sewer manhole, along with its associated Water Quality Treatment Center, will be added to the Associated Sites list.



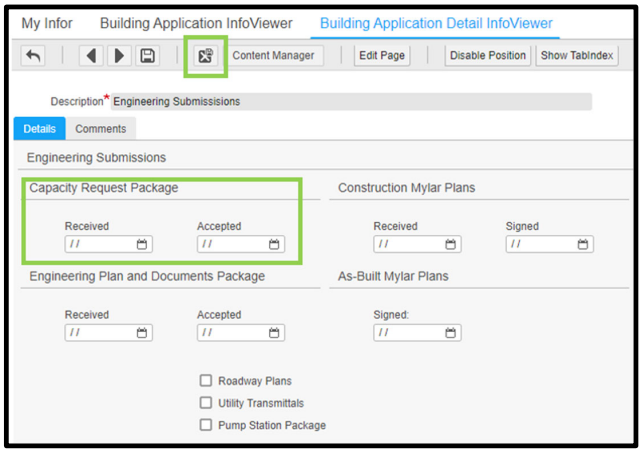


Updating the Engineering Submissions Detail Page

1. Click the **Application Details** tab then click the **Engineering Submissions** hyperlink. This will open the **Engineering Submissions Detail Page**.

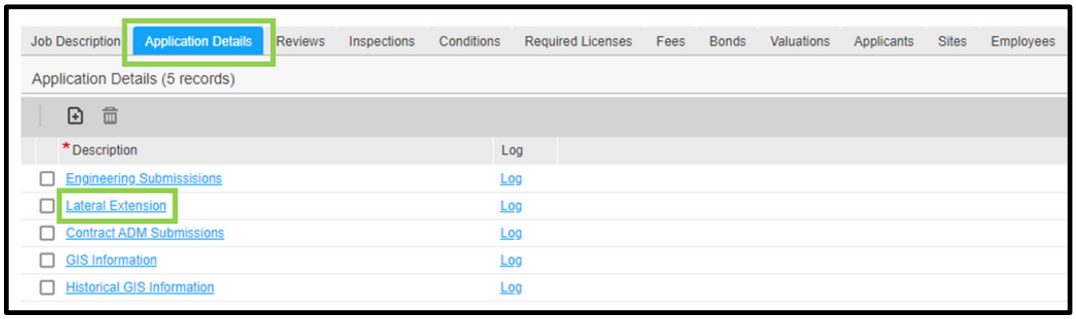


2. In the **Capacity Request Package** area, enter the date that MSD received the customers' Capacity Request Package in the **Received** field. Then enter the date that MSD confirmed all necessary documentation to be included in the Capacity Request Package (e.g., Site Plan, application, etc.) in the **Accepted** field. Click the **Save and Close** ( ) button.

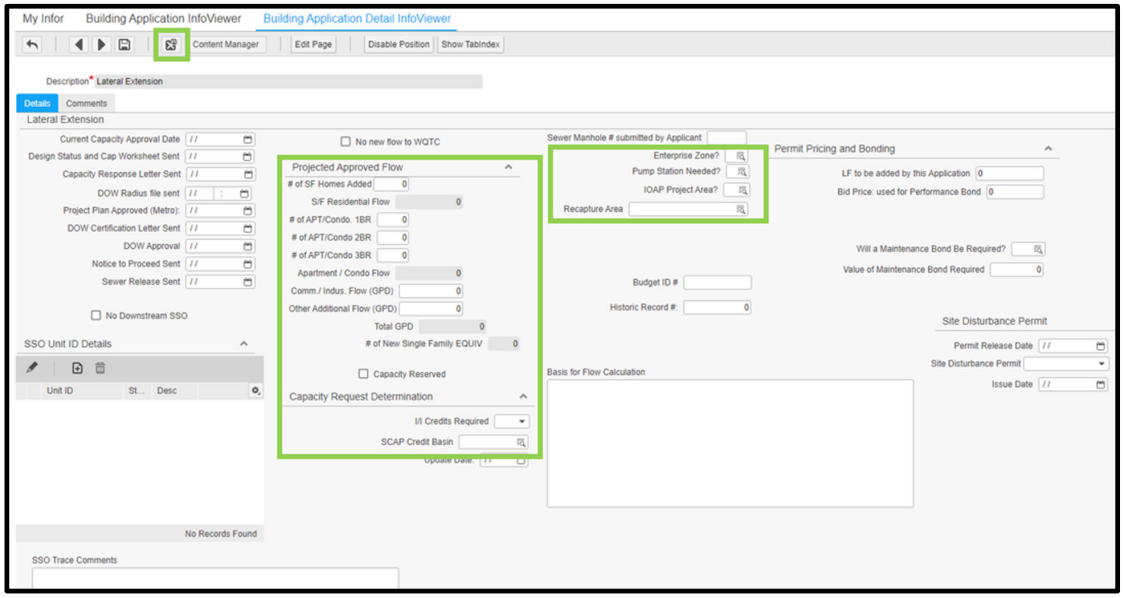


Updating the Lateral Extension Detail Page

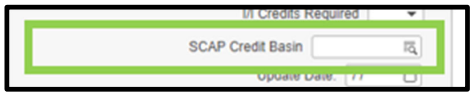
1. Click the **Application Details** tab then click the **Lateral Extension** hyperlink. This will open the **Lateral Extension Detail Page**.

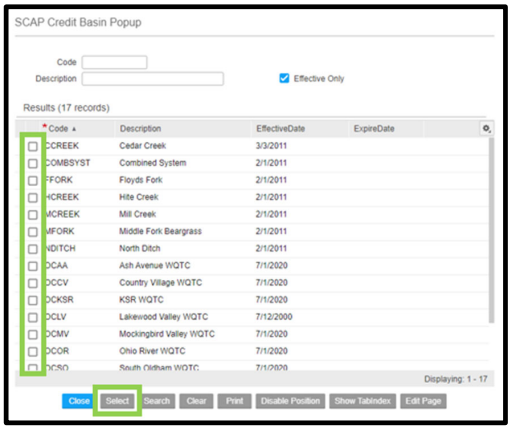


2. Using information submitted with the Capacity Request Package, complete the fields in the center of the **Lateral Extension Detail Page** including the **Projected Approved Flow** and **Capacity Request Determination** areas.
    a. In the **Projected Approved Flow** area, enter the number of Single-Family homes or Apartments/Condos, if applicable. Enter the flow, in gallons per day (GPD) from Commercial/Industrial customers or Other Additional Flow types, if applicable.
    b. In the **Capacity Request Determination** area, select yes or no from the **I/I Credits Required** dropdown menu if Inflow/Infiltration (I/I) credits are required for the **Primary Site**.

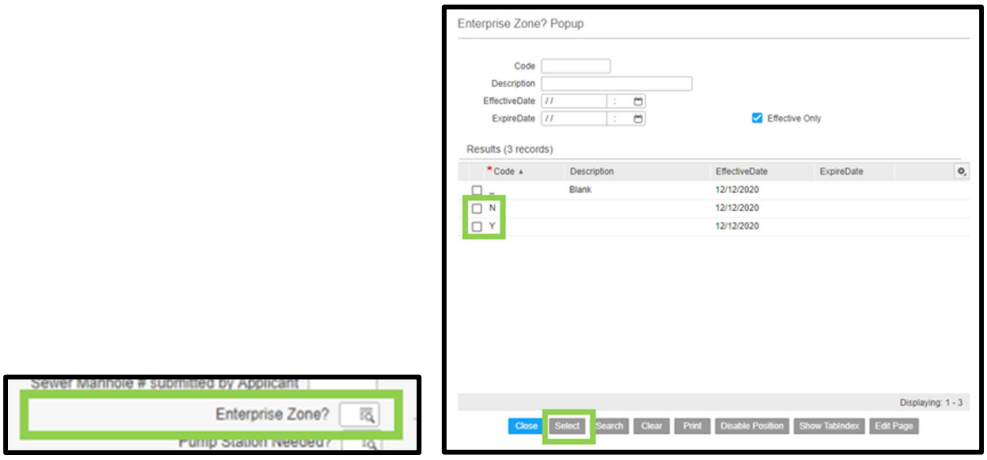


3. Click the **Popup** (🔍) button at the end of the **SCAP Credit Basin** field. Select the **checkbox** (☑) next to the **SCAP Credit Basin** associated with the application then click the **Select** button.

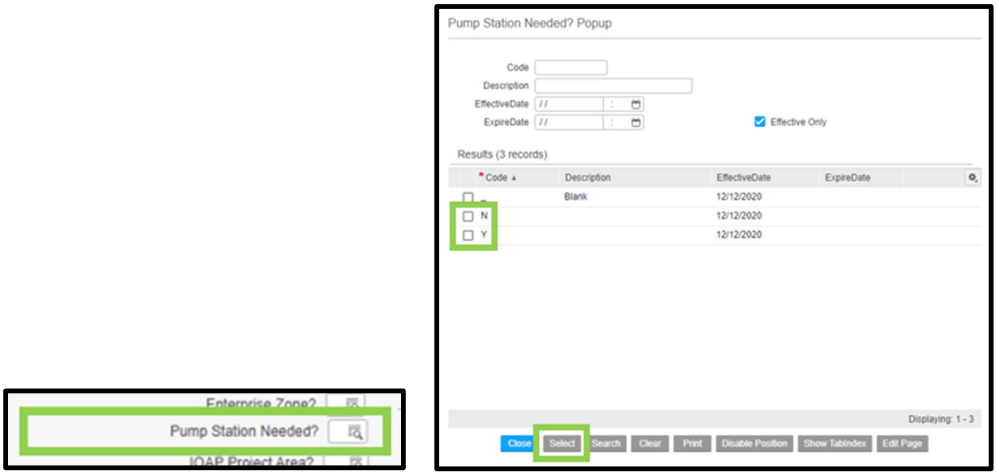




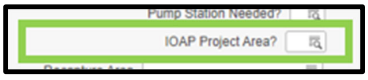
4. Click the **Popup** (🔍) button at the end of the **Enterprise Zone?** field. Select the **checkbox** (☑) next to **Yes** or **No** – the **Enterprise Zone** is generally within the Combined Sewer Overflow area, check with the Development Review Department Manager if unknown. Click the **Select** button to close the **Popup**.

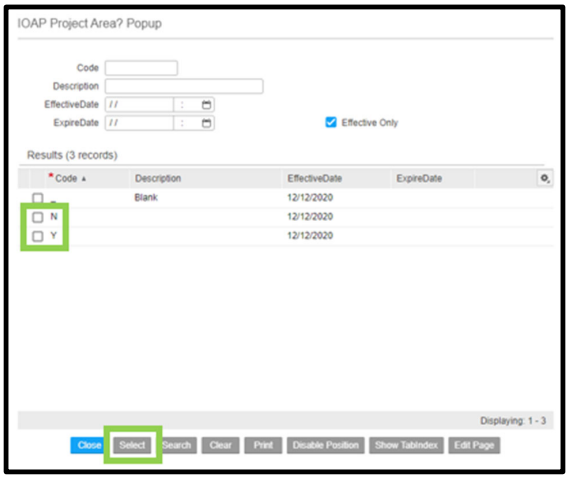


5. Click the **Popup** (🔍) button at the end of the **Pump Station Needed?** field. Select the **checkbox** (☑) next to **Yes** or **No.** Check with the Development Review Department Manager if unknown. Click the **Select** button to close the **Popup**.

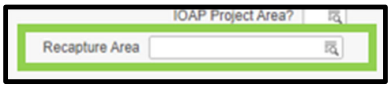


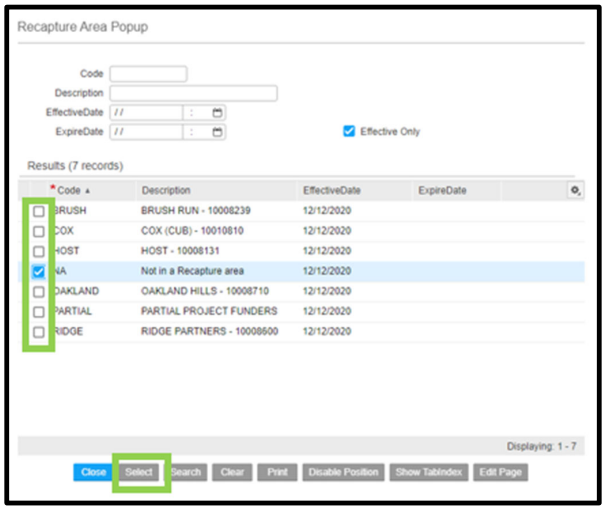
6. Click the **Popup** (🔍) button at the end of the **IOAP Project Area?** field. Select the **checkbox** (☑) next to **Yes** or **No** – the **IOAP Project Area** is generally within the Combined Sewer Overflow/Sanitary Sewer Overflow areas, check with the Development Review Department Manager if unknown. Click the **Select** button to close the **Popup**.



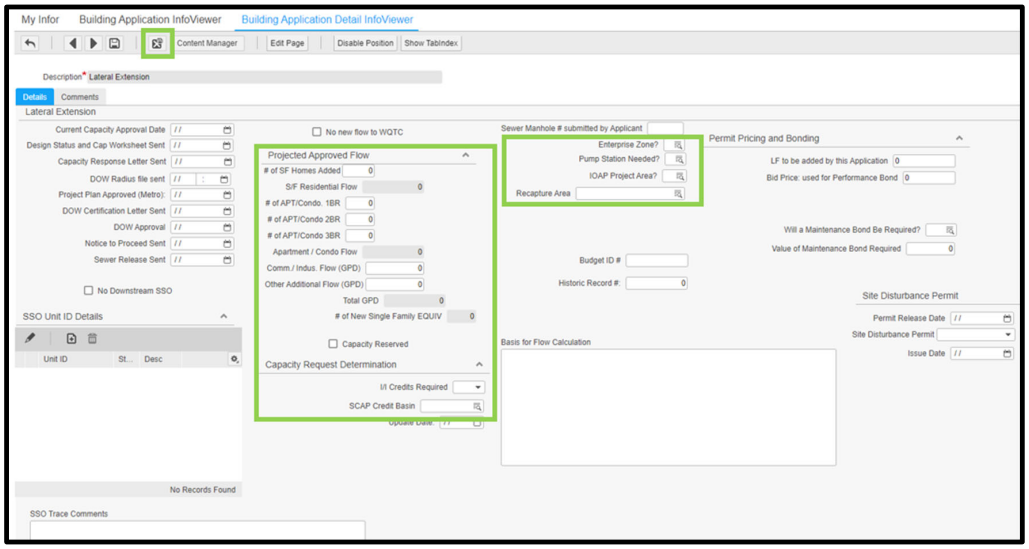


7. Click the **Popup** (🔍) button at the end of the **Recapture Area** field. Select the **checkbox** (☑) next to the applicable **Recapture Area** or **NA** if the **Primary Site** is not in a **Recapture Area**. Check with the Development Review Department Manager if unknown. Click the **Select** button to close the **Popup**.



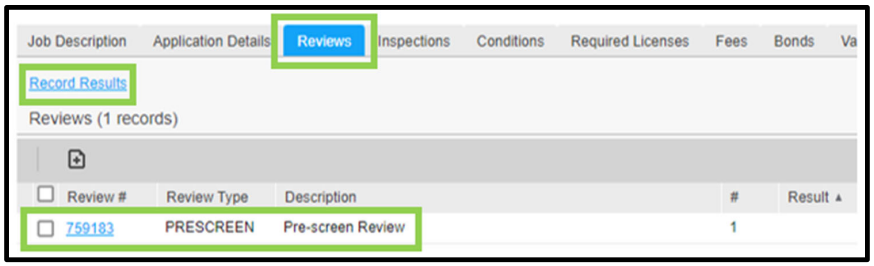


8. Click the **Save and Close** (💾) button.

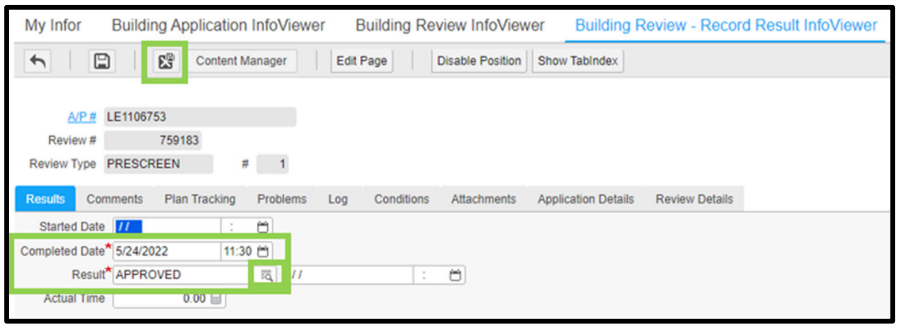


Completing the Pre-screen Review

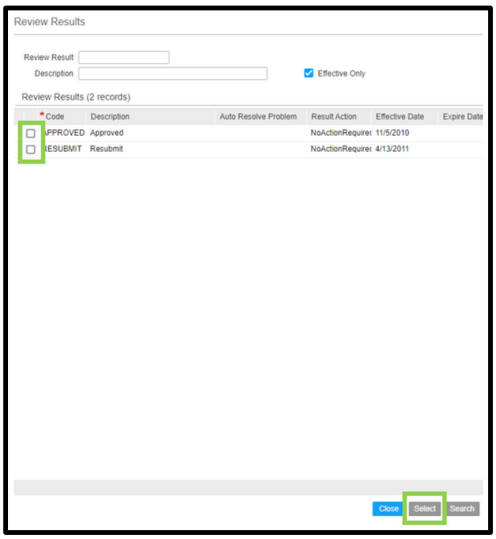
1. Click the **Reviews** tab then select the **checkbox** (☑) next to the **PRESCREEN Review #** hyperlink. Next, click the **Record Results** hyperlink.



2. The **Building Review - Record Result InfoViewer** Page opens. Enter the date that this **Review** is being completed in the **Completed Date** field. Click the **Popup** (🔍) button at the end of the **Result** field.

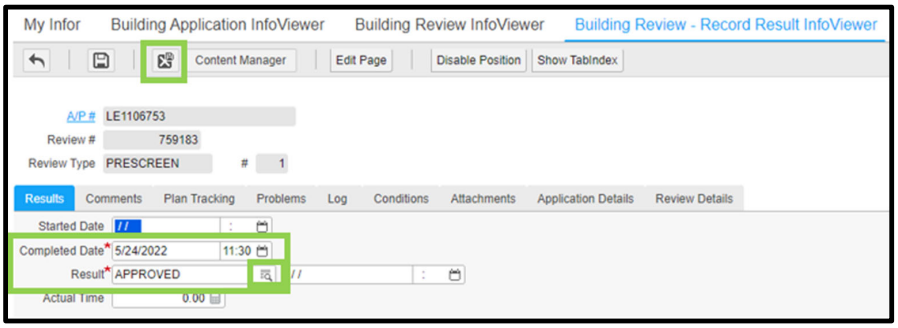


3. Select the **checkbox** (☑) next to **APPROVED** or **RESUBMIT**. Use the table below to determine which code to use. Click the **Select** button.



Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	When customer submittals are approved, and no further information is required by MSD.	Capacity Assurance
RESUBMIT	Resubmit	No	When MSD requires edits, changes, or additional information from the customer - the review clock will stop.	Capacity Assurance

4. Click the **Save and Close** ( ) button. The application will automatically move to the **Capacity Assurance** milestone if **APPROVED** was selected.

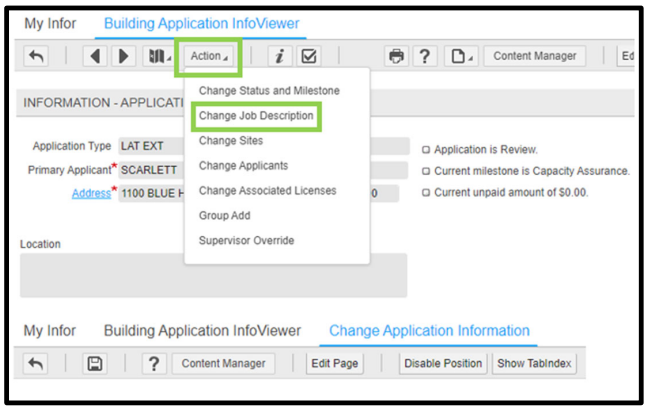


Capacity Assurance Milestone

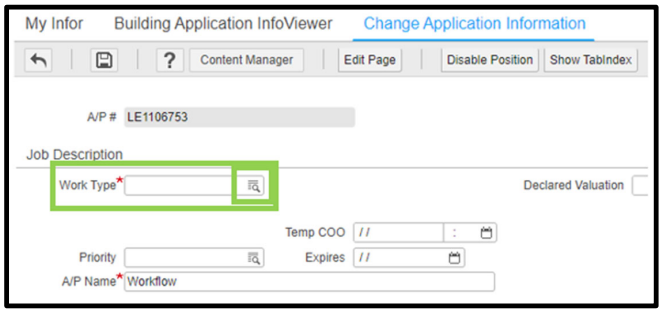
The **Capacity Assurance** milestone is generally assigned to the same Development Review Engineer in the Development Review Department that completed the **Pre-Screen Review**. The Engineer will continue to enter data into the LAT EXT application from the Capacity Request Package and Sewer Trace in addition to preparing the application for consideration, and approval, during weekly Capacity Assurance meetings.

Updating the Job Description Work Type

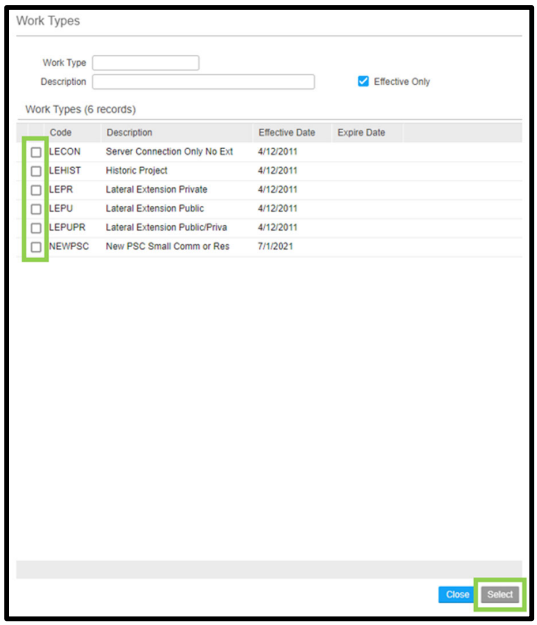
1. From the **Action Menu**, select **Change Job Description**. The **Change Application Information** Page will open.



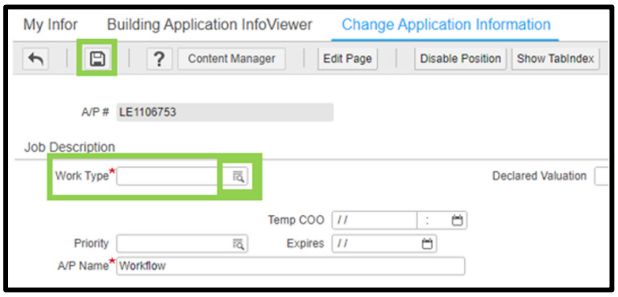
2. Click the **Popup** ( ) button at the end of the **Work Type** field.



3. Select the **checkbox** ( ) next to the appropriate **Work Type** code. Check with the Development Review Department Manager if unknown. Click the **Select** button.

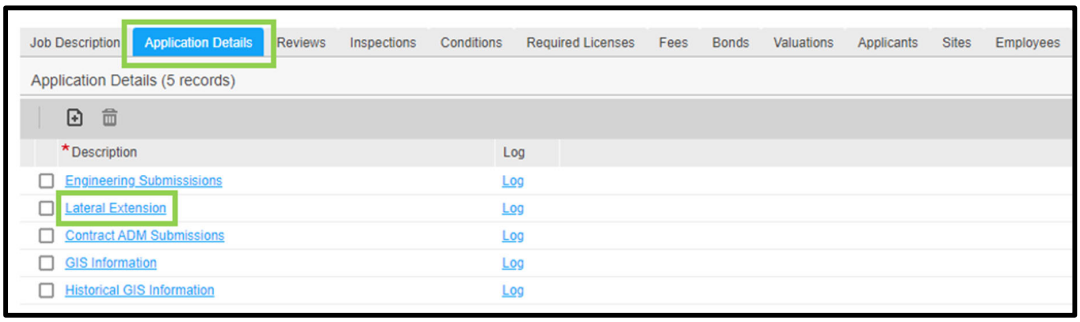


4. Click the **Save (** **)** button to close the **Change Application Information** Page.

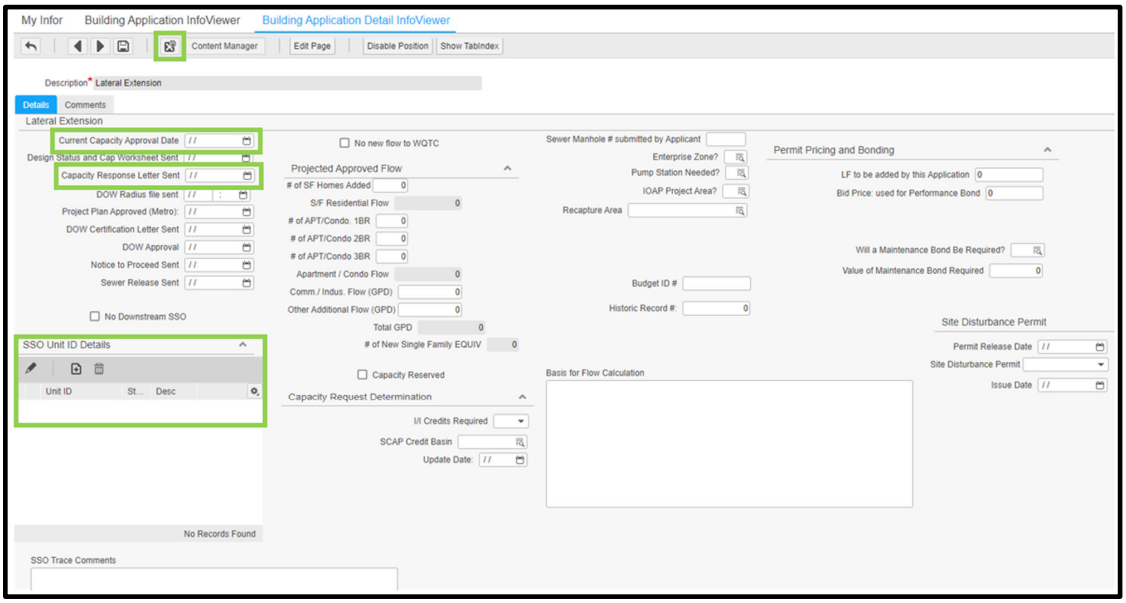


Updating the Lateral Extension Detail Page

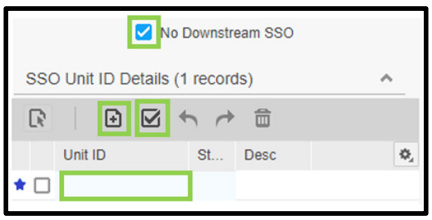
1. Click the **Application Details** tab then click the **Lateral Extension** hyperlink. This will open the **Lateral Extension Detail Page**.



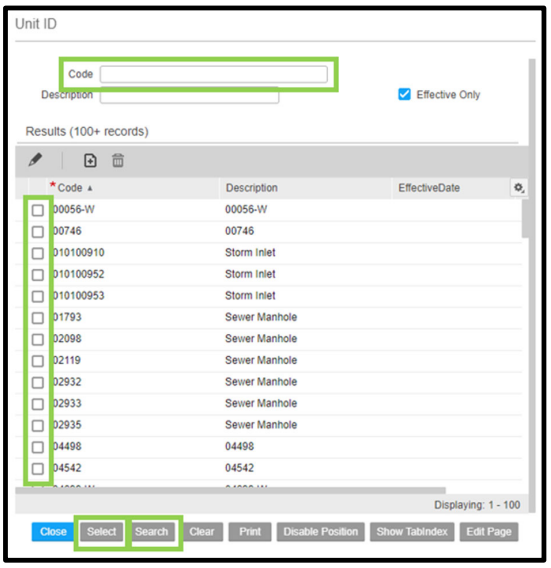
2. Complete the fields on the left side of the **Lateral Extension Detail Page** including the **Lateral Extension** and **SSO Unit ID Details** areas.
    a. Enter the date that the Capacity Assurance team approved the requested flow from the customer in the **Current Capacity Approval Date** field. This date is generally concurrent with weekly MSD Capacity Assurance meetings.
    b. Enter the date that the Capacity Response letter was sent to the customer in the **Capacity Response Letter Sent** field. This date is generally concurrent with weekly MSD Capacity Assurance meetings.



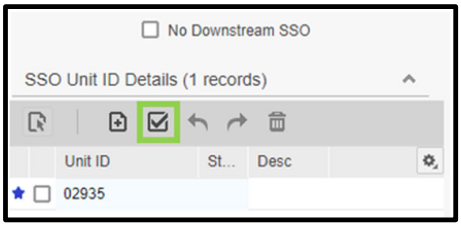
a. Using information collected from the **Sewer Trace**, complete the **SSO Unit ID Details** area. If the **Sewer Trace** revealed no downstream SSOs, select the **checkbox** (☑) next to **No Downstream SSO**. If the **Sewer Trace** did reveal a downstream SSO, click the **Add** (⊞) button to add a new row to the grid below. Next, click the **empty field** in the **Unit ID** column to open the **Unit ID** Popup.



b. Enter the SSO Id in the **Code** field at the top of the **Unit ID Popup**. Click the **Search** button. Select the **checkbox** (☑) next to the correct SSO then click the **Select** button.

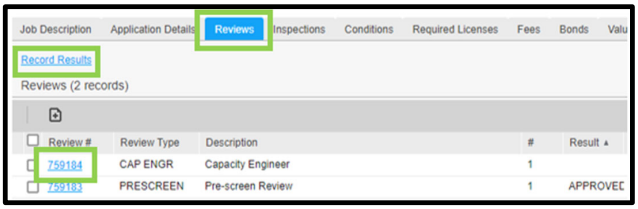


c. Click the **Approve** (☑) button to save the SSO to the grid.

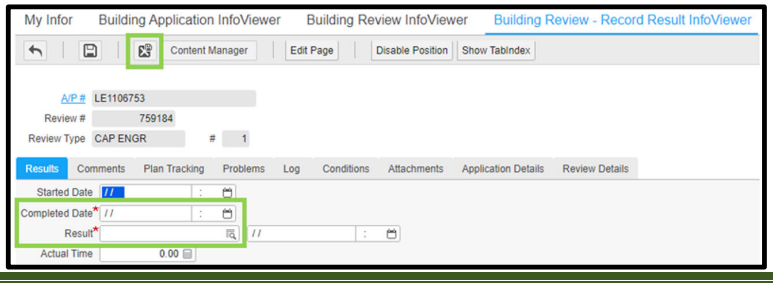


Completing the Capacity Assurance Review

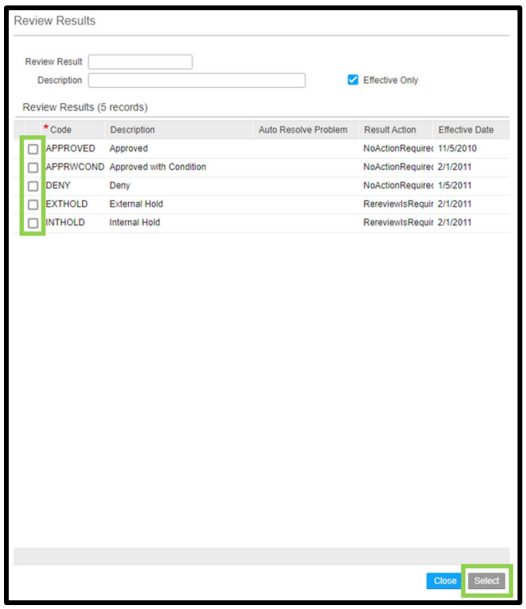
1. Click the **Reviews** tab then select the **checkbox** (☑) next to the **CAP ENGR Review #** hyperlink. Next, click the **Record Results** hyperlink.



2. The **Building Review - Record Result InfoViewer** Page opens. Enter the date that this **Review** is being completed in the **Completed Date** field. Click the **Popup** (🔍) button at the end of the **Result** field.

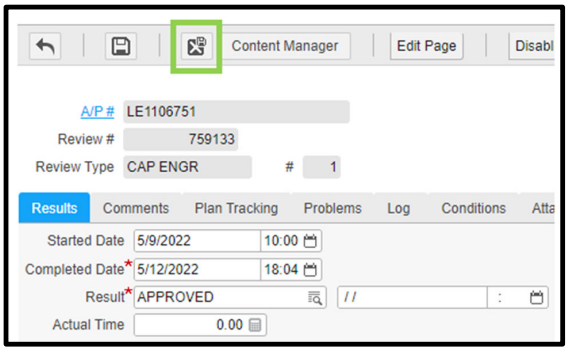


3. Select the **checkbox** ( ) next to the appropriate C**ode**. Use the table below to determine which code to use. Click the **Select** button.



Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	When customer submittals are approved, and no further information is required by MSD.	Work Type Review
APPRWCOND	Approved with Condition	No	When MSD has approved the new, or additional, flow but requires additional documentation or construction such as easement documents or an additional pump station.	Work Type Review
DENY	Deny	No	Customer Capacity Request is denied.	Complete
EXTHOLD	External Hold	No	Customer request to hold the application	Work Type Review
INTHOLD	Internal Hold	No	MSD puts the application on hold after the Capacity Assuance meeting (e.g., may need further asset location information, discussion with Operations staff, etc.)	Work Type Review

4. Click the **Save and Close** ( ) button. The application will automatically move to the next milestone if **APPROVED** or **APPRWCOND** was selected.



Next Steps

Based upon the Work Type selected during this milestone, the application will follow one of six application processing paths to approval, and completion. The Capacity Assurance approval is effective for 90 days. If an application has not progressed through the next few milestones within this timeframe, the applicant must resubmit their application and repeat the Capacity Assurance milestone. Consult one of the three following Work Instructions to complete this LAT EXT application:

- Planning and Development Lateral Extension – Plan Review (LEHIST, LEPR, LEPU, LEPUPR)
- Planning and Development Lateral Extension – Existing PSC Application Processing (LECON)
- Planning and Development Lateral Extension – New PSC Application Processing (NEWPSC)

Lateral Extension Plan Review

Work Instruction

Document Date

May 4, 2022

Revision Date

May 27, 2022

Written by:

Kristie Mallory

Revised by:

Kristie Mallory

Contents

Purpose

The purpose of this task is to record lateral extension activities that occur within the MSD service area. This document describes the process to create, issue, and close a lateral extension building permit in IPS.

Applicability

This work instruction applies to the following divisions and departments:

- Engineering – Development Review
- Engineering – Construction Inspection
- Engineering – Regulatory Compliance & GIS
- Executive – Information Governance and Records

Responsibility

The Engineering Regulatory Compliance & Asset Management Administrator is responsible for the procedure. The Engineering Regulatory Compliance and Asset Management Analyst is responsible for maintaining the IPS system. Engineering Development & Stormwater Services Development Review staff are responsible for reviewing applications and issuing permits within IPS. Engineering Construction Inspection staff are responsible for performing field inspections and recording results.

Process Overview

The Planning and Development Building Permit – Lateral Extension Activity process includes the following elements:

1. Planning and Development Lateral Extension – Capacity Assurance Process
2. Planning and Development Lateral Extension – Plan Review
3. Planning and Development Lateral Extension – Existing PSC Application Processing
4. Planning and Development Lateral Extension – New PSC Application Processing
5. GIS – Lateral Extension Procedures
6. Records – Lateral Extension Documents

Input / Pre-Start Requirements / Before You Begin

This work instruction assumes the following:

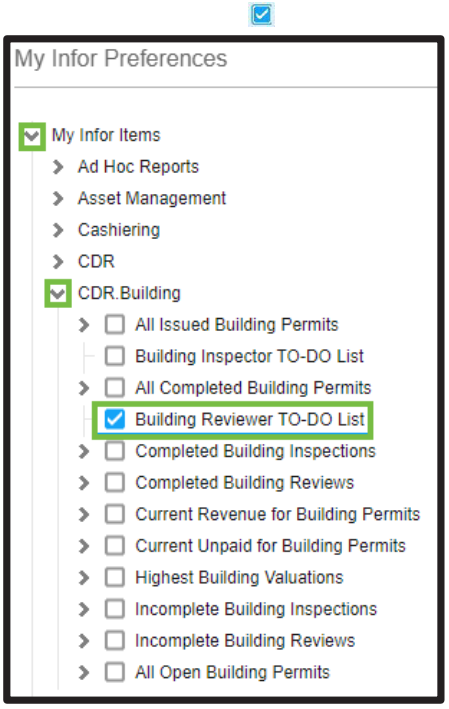
1. User has been created in IPS. If you do not know your IPS credentials, contact IPS Support.
    a. Role: **Eng Dev Review**
        i. License(s): **CDR, CDR Building Permits**
2. Employee ID has been created in IPS. If you do not know your employee ID, contact your supervisor.

Instructions

My Infor Page Setup – Building Reviewer TO-DO List

1. Login to Infor IPS. The **My Infor** page will open.

4. Navigate the tree to **My Infor Items** > **CDR.Building**.

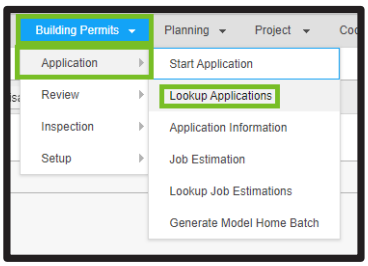


6. Click the **Save** button. The report will now load on your **My Infor** page.
7. To customize the Building Reviewer TO-DO List refer to the *Setting Preferences with My Infor guidance document.*

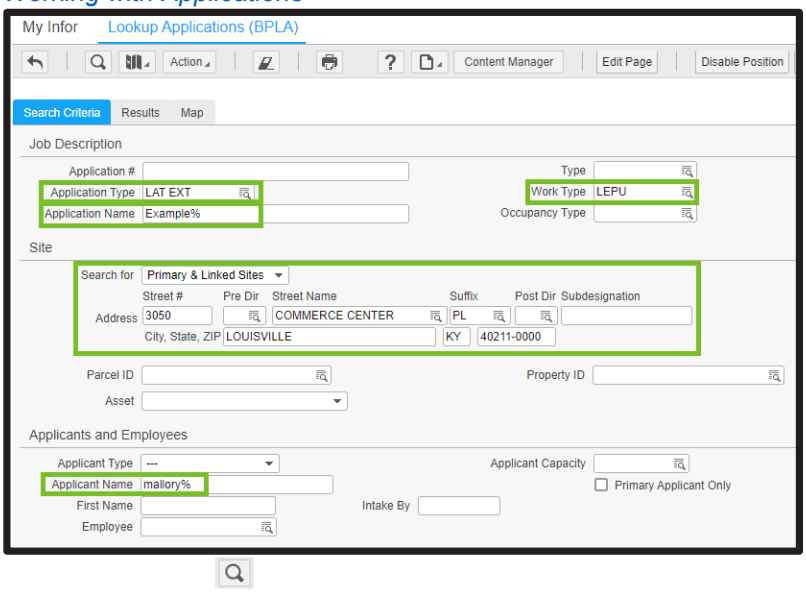
Search for LE Application

If the Lateral Extension Application does not appear in the Building Reviewer TO-DO List, use the Lookup Application function.

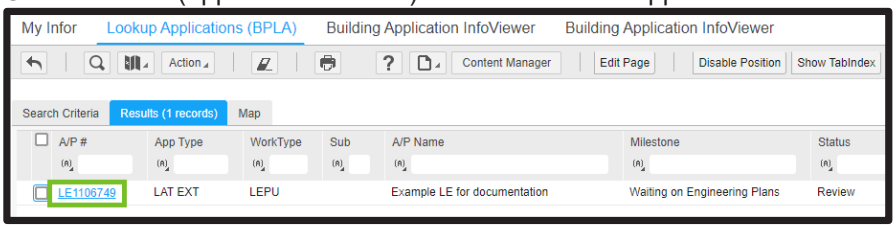
1. Log in to IPS.
2. The **My Infor** page will open.



4. Enter search criteria (e.g. Address, Application Name, Applicant Name, etc.) in the Lookup Applications (BPLA) window. For tips on searching for applications use the *Building Permits – Working with Applications*

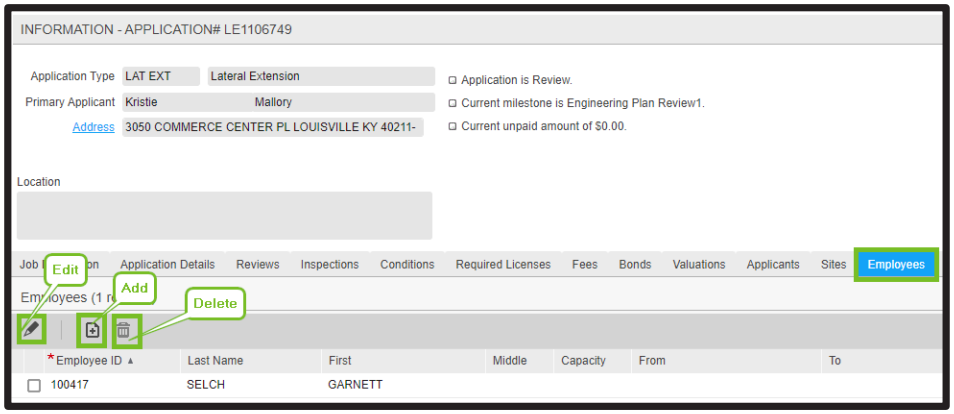


6. Click the **A/P#** (application number) link to launch the Application InfoViewer.



Plan Reviewer Assignment

The following steps assume the user has search for appropriate LE and opened the Building Application InfoViewer. **IMPORTANT** LE applications should only have 1 Employee ID on the Employees grid because future reviews will be assigned to the employee on the employees tab. If there is more than one employee on the grid, the reviews may not be assigned to the correct employee. If there is no employee on the grid, then future reviews will not be assigned.



2. To **Add** and Employee

   i. If you do not know the Employee ID of the plan reviewer, click the **Popup** ( ) and search for the Employee ID. *Refer to the Resources – Employee Lookup guidance document for more information to search for Employee IDs.*

      1. Alternately, click the **checkbox** ( ) on the desired record and click the **Select** button.

3. To **Edit** the Employee
   a. Click the **Edit** ( ) button

      i. If you do not know the Employee ID of the plan reviewer, click the **Popup** ( ) and search for the Employee ID *Refer to the Resources – Employee Lookup guidance document for more information to search for Employee IDs.*
      ii. **Double click** the desired employee record from the search results to add it to the grid.

4. To **Remove** an Employee:

Log Initial Engineering Plans Submission

The following steps assume a plan reviewer has been assigned to the project, and the user has searched for the application launched the Building Application InfoViewer

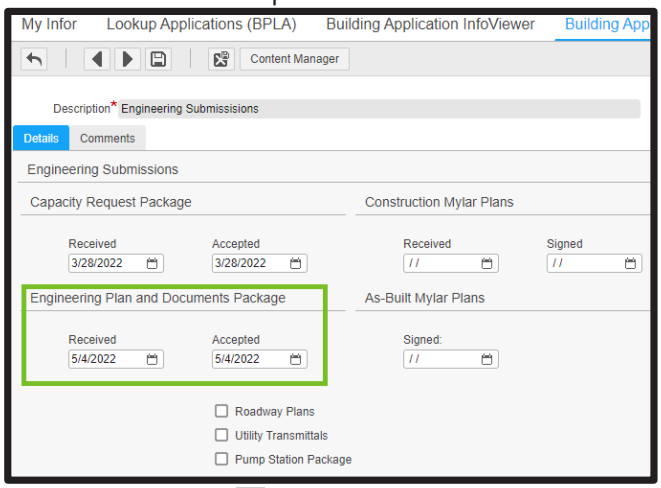
1. Confirm this will be the initial Engineering Plans submission by clicking the **Status Check** (☑) button.

Linear Feet of Sanitary Line

section of this document.

b. If the Application Status indicates "***A customer resubmit log is required***", then proceed to the Add Customer Resubmit (CUSTRESUB) Log portion of this document.
c. If the Application Status does not have either of the above status checks, further investigation is needed. Contact your supervisor or IPS Support Group for direction on how to proceed.

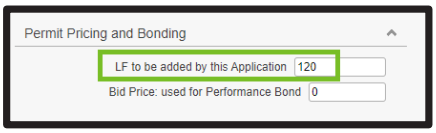
a. From the Building Application InfoViewer, click the **Application Details** tab.
b. Open the **Engineering Submissions** detail page by clicking the description link.
c. Enter the **Received** and **Accepted** dates the engineering plan and documents package was received and accepted.



Linear Feet of Sanitary Line

Prior to the LE ENGR review being completed the linear feet of sanitary line must be totaled from the plans and entered in IPS. The linear feet of sanitary line will be used to calculate sanitary asset inspection fees.

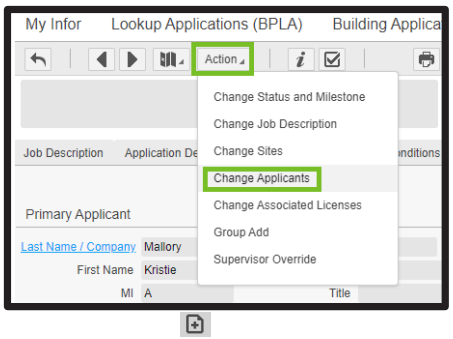
1. From the **Building Application InfoViewer**, click the **Application Details** tab.
2. Click the **Lateral Extension** detail page.



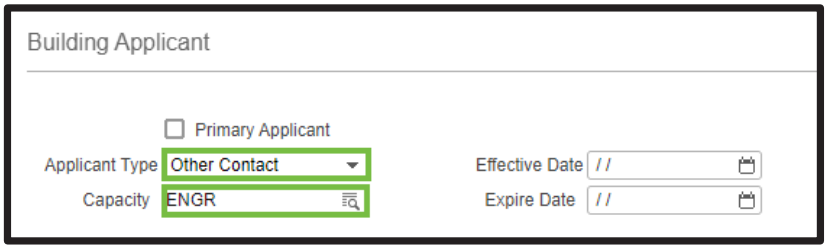
Add Contact with Capacity ENGR

Prior to the LE ENGR review being completed the Building Application must have an applicant with the capacity of ENGR. The following steps describe how to either add a new contact and give them the capacity of ENGR, or how to edit an existing contact.

1. **Add** a new Contact:
   a. Click the **Applicants** tab.

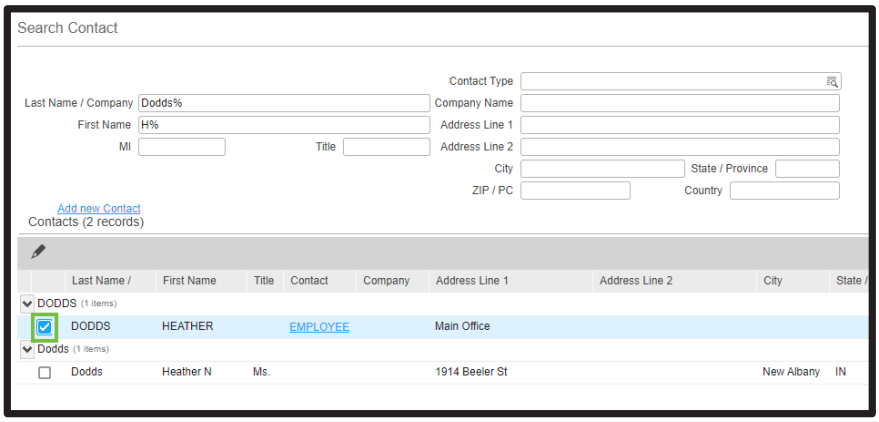


   d. In the Building Applicant popup window, change the Applicant Type to **Other Contact**.



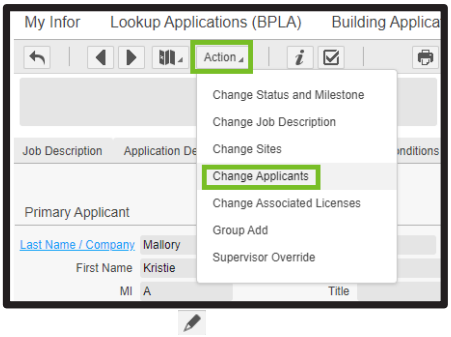
   f. Enter the contact's email address, or other identifying criteria into the fields. *For tips on searching for contacts review the information in the Resources – Contacts*

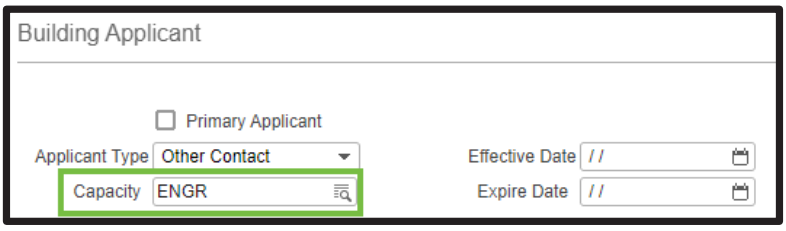
   g. Click the **Last/Name Company Popup** ( ) button to search for a contact based on the criteria in the step above.
   h. **Double click** the desired employee record from the search results to add it to the grid.



i. Click the **Save** button at the bottom of the Building Applicant window.

2. **Edit** an existing contact:
   a. Click the **Applicants** tab.



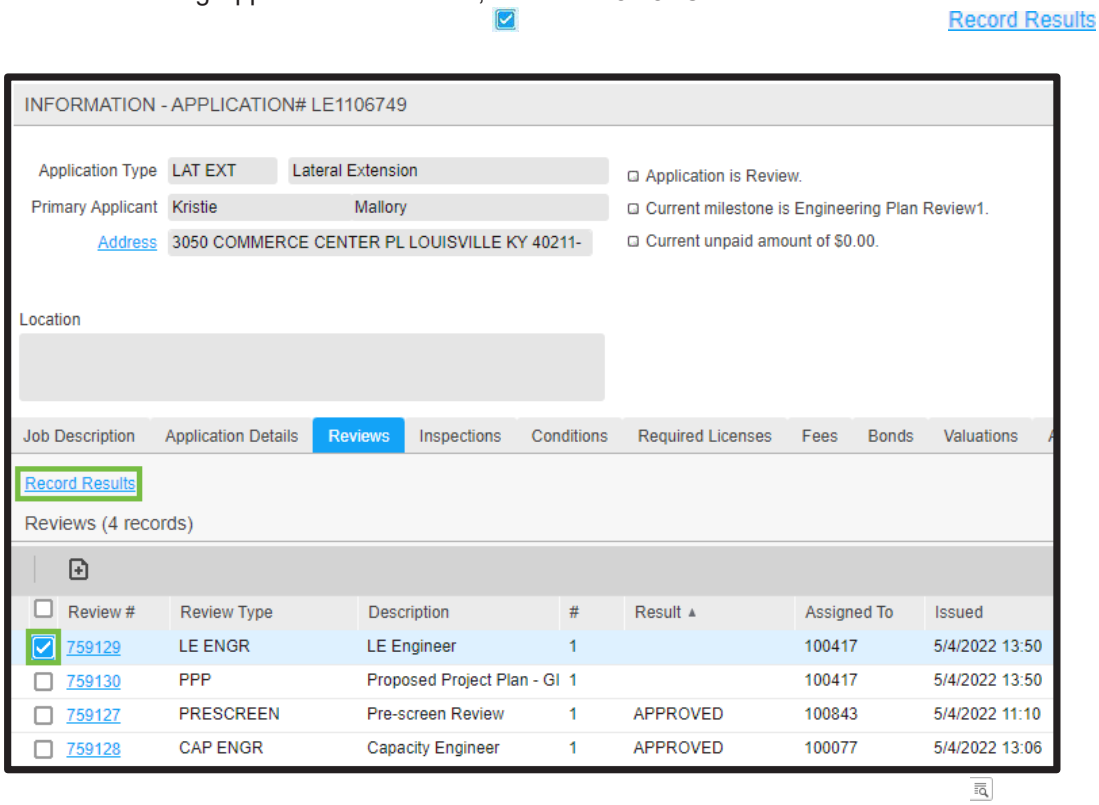


e. Click the **Save** button at the bottom of the Building Applicant window.

Complete LE ENGR Review

After the above steps have been completed, the first LE ENGR Review can be resulted, and the application will progress to the next milestone.

1. From the Building Application InfoViewer, click the **Reviews** tab.



Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	Customer submittals are approved, add, and no further information is required by MSD.	Add Review Fees
RESUBMIT	Resubmit	No	When MSD requires edits, changes, or additional information from the customer – the review clock will stop.	Add Review Fees

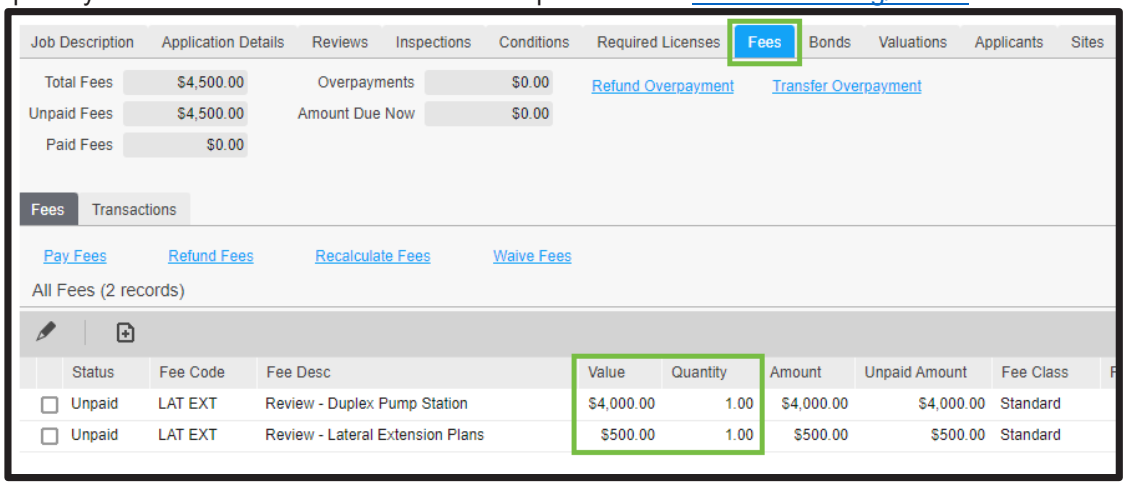
4. **Double click** the desired review result record.

Review Assessed Review Fees

After the initial Engineering plans have been reviewed, review fees will be added to the application. Confirm the accuracy of the fees on the application and approve the review to send an automated email invoice to all the applicants.

1. From the Building – Application InfoViewer, click the **Fees** tab.
2. The **Review – Duplex Pump Station** and the **Review – Lateral Extension Plans** charges will be added based on data in the Lateral Extension Detail page. Review and verify the correct

quantity and amount of the fees based on the published on louisvillemsd.org/Rates.

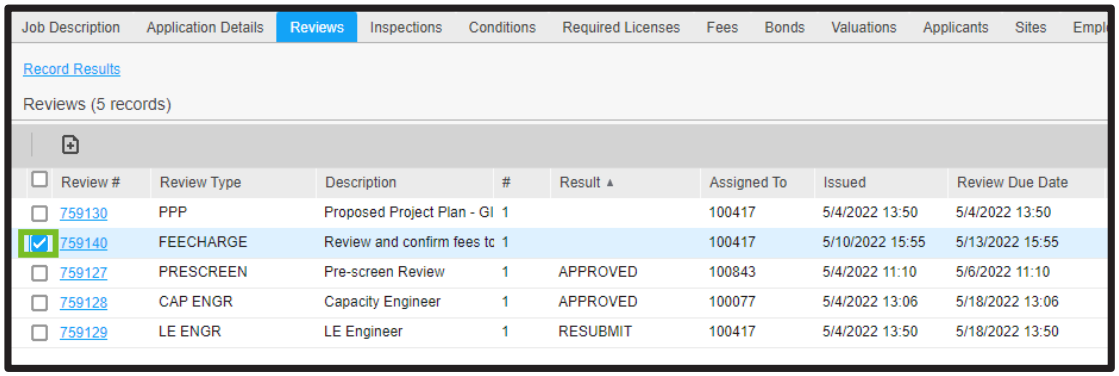


3. If a fee amount of quantity is not correct, review the information in the ***CDR – Working with Fees*** *guidance document.*

Complete the FEECHARGE Review

After the assessed fees have been reviewed, complete the FEECHARGE Review to send an email notification to all applicants on the Lateral Extension application.

1. From the Building Application InfoViewer, click the **Reviews** tab.



3. Enter a **Completed Date** time in the Completed Date time field.

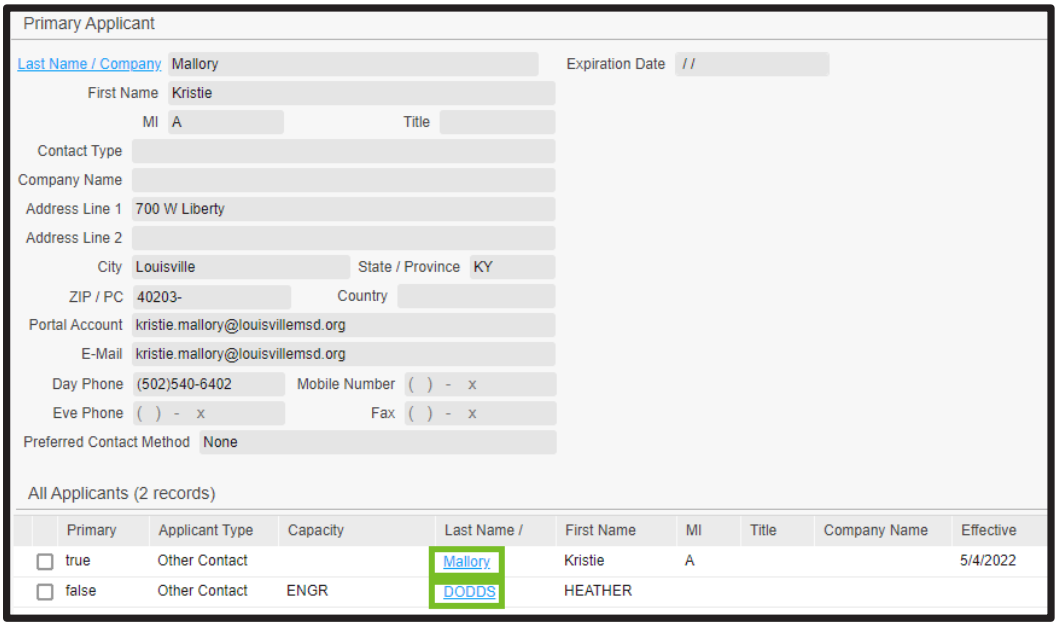
Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	Fees are correct and an email invoice can be sent to the customer.	Awaiting Fee Payment

5. **IMPORTANT!** Approved is the only review result option. When the review is complete an email invoice will be sent to all applicants.
6. **Double click** the desired review result record.

Verify IPS Sent Email Invoice

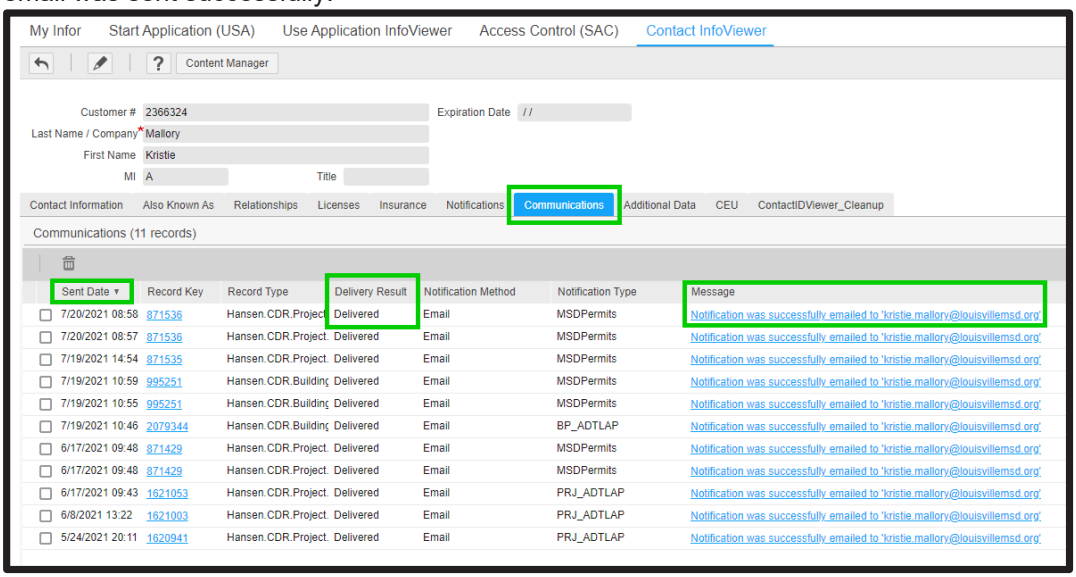
After the FEECHARGE Review is completed the Lateral Extension application will move to a new milestone. This will trigger IPS to send an email invoice notification to all applicants.

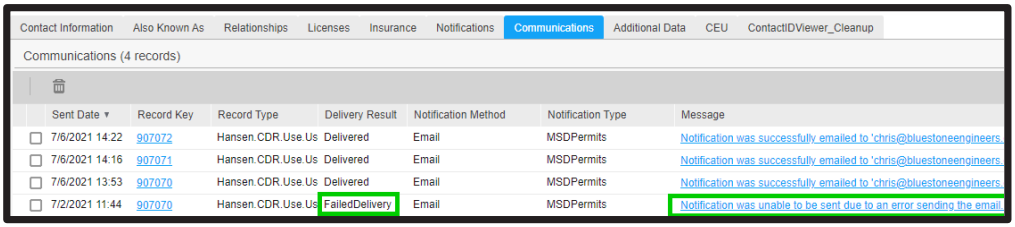
1. From the Building Application InfoViewer, click the **Applicants** tab.



3. From the **Contact InfoViewer** window, click the **Communications** tab.
4. **Sort** the records in the Communications grid, to view the most recent by clicking the **Sent Date** header.

5. **Review** the **Delivery Result** and **Message** columns on the communications tab to verify if the email was sent successfully.





Awaiting Review Fee Payment

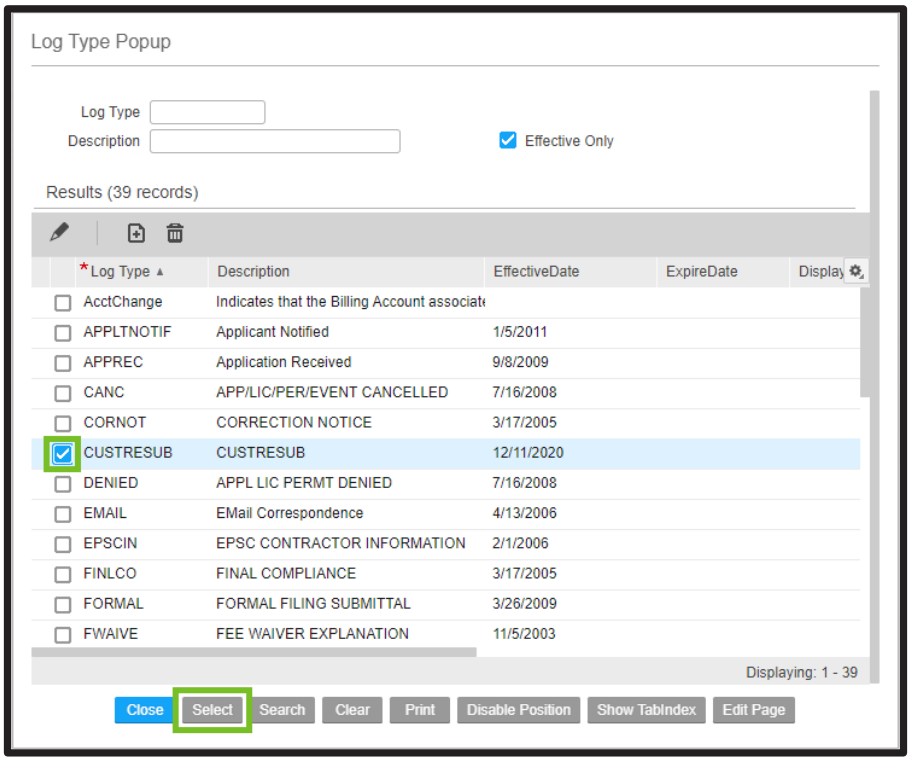
After the Review Fees are assessed and email invoice is sent, the review fees must be paid before another plan review will be added to the application. Check the status of the fee payment, by performing a Status Check on the application. Customer may pay online through the eservices portal as a logged in user or as a guest using the application number (e.g. LE1106749) or submit a check payment to customer service that includes the application number on the check.

Add Customer Resubmit (CUSTRESUB) Log

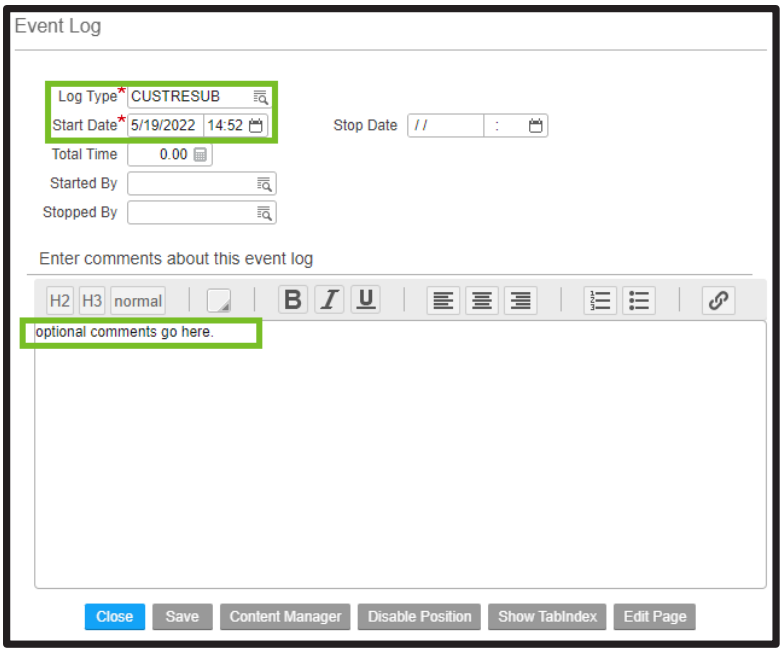
Anytime an applicant re-submit plans or documents for MSD to review and approved, log the submission of those documents on the application Logs tab.

1. From the **Building Application InfoViewer**, click the **Logs** tab.

4. **Double click** the **CUSTRESUB** Log Type.



5. Enter the date and/or time the documents were submitted to MSD in the Start Date field.



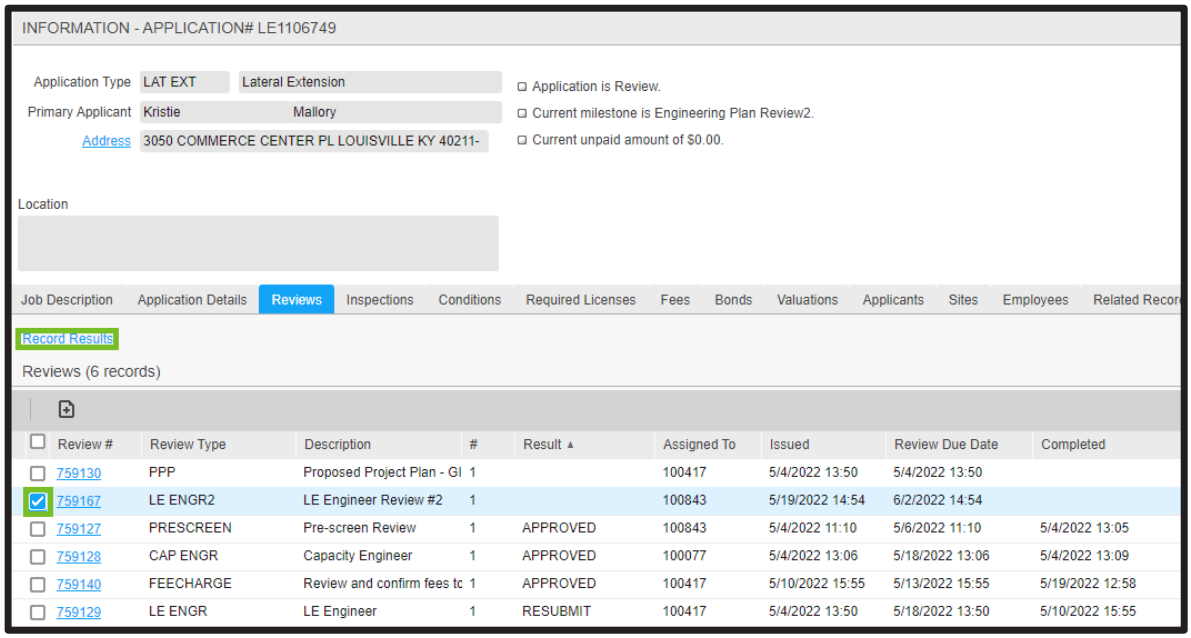
7. Click **Save**.

Complete LE ENGR2 Review

After the above steps have been completed, the first LE ENGR Review can be completed, and the application will progress to the next milestone.

1. From the Building Application InfoViewer, click the **Reviews** tab.

Record Results



Review #	Review Type	Description	#	Result	Assigned To	Issued	Review Due Date	Completed
759130	PPP	Proposed Project Plan - GI	1		100417	5/4/2022 13:50	5/4/2022 13:50	
759167	LE ENGR2	LE Engineer Review #2	1		100843	5/19/2022 14:54	6/2/2022 14:54	
759127	PRESCREEN	Pre-screen Review	1	APPROVED	100843	5/4/2022 11:10	5/6/2022 11:10	5/4/2022 13:05
759128	CAP ENGR	Capacity Engineer	1	APPROVED	100077	5/4/2022 13:06	5/18/2022 13:06	5/4/2022 13:09
759140	FEECHARGE	Review and confirm fees tc	1	APPROVED	100417	5/10/2022 15:55	5/13/2022 15:55	5/19/2022 12:58
759129	LE ENGR	LE Engineer	1	RESUBMIT	100417	5/4/2022 13:50	5/18/2022 13:50	5/10/2022 15:55

3. Enter the date and time the review was completed in the **Completed Date** field.

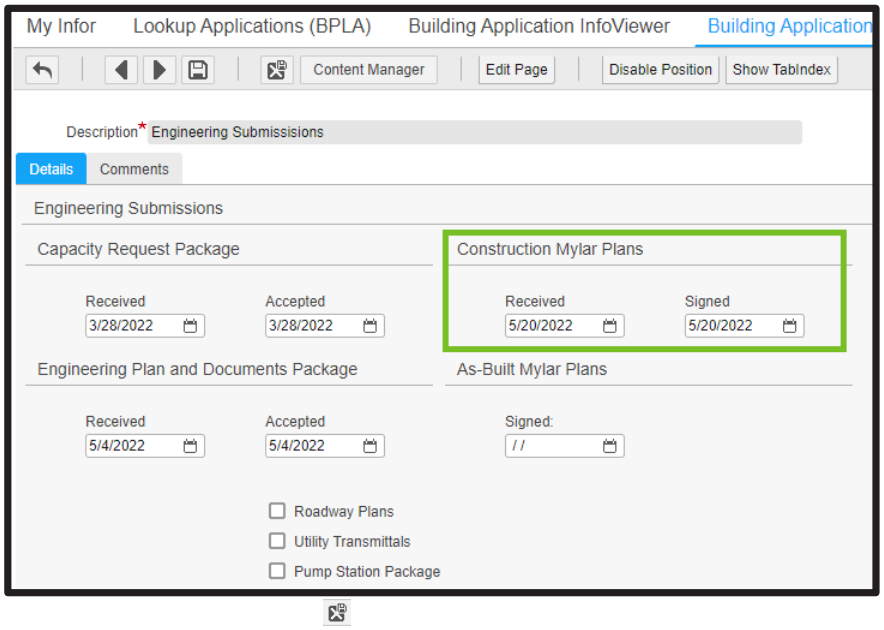
Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	Customer submittals are approved, add, and no further information is required by MSD.	Waiting on Mylars
RESUBMIT	Resubmit	No	When MSD requires edits, changes, or additional information from the customer – the review clock will stop.	Eng Plan Revisions2

   i. Alternately, click the **checkbox** ( ) on the desired record and click the **Select** button.

Log Receipt of Mylars

Record the Received and Signed date of the Construction Mylars on the Engineering Submissions detail page.

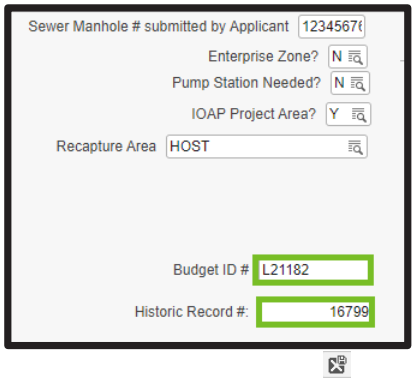
1. From the Building Application InfoViewer, click the **Application Details** tab.
2. Open the **Engineering Submissions** detail page by clicking the description link.



Add Budget ID and Record Number

The Record number is an auto generated number from a tracking spreadsheet managed by the Development and Stormwater Manager. The Budget ID is a number generated in SAP and obtained by emailing the Budget and Financial Reporting Manager. Once the number is created in SAP, the Plan Reviewer will enter that information into the Lateral Extension detail page in IPS.

1. From the Building Application InfoViewer, click the **Application Details** tab.
2. Open the **Lateral Extension** detail page by clicking the description link.

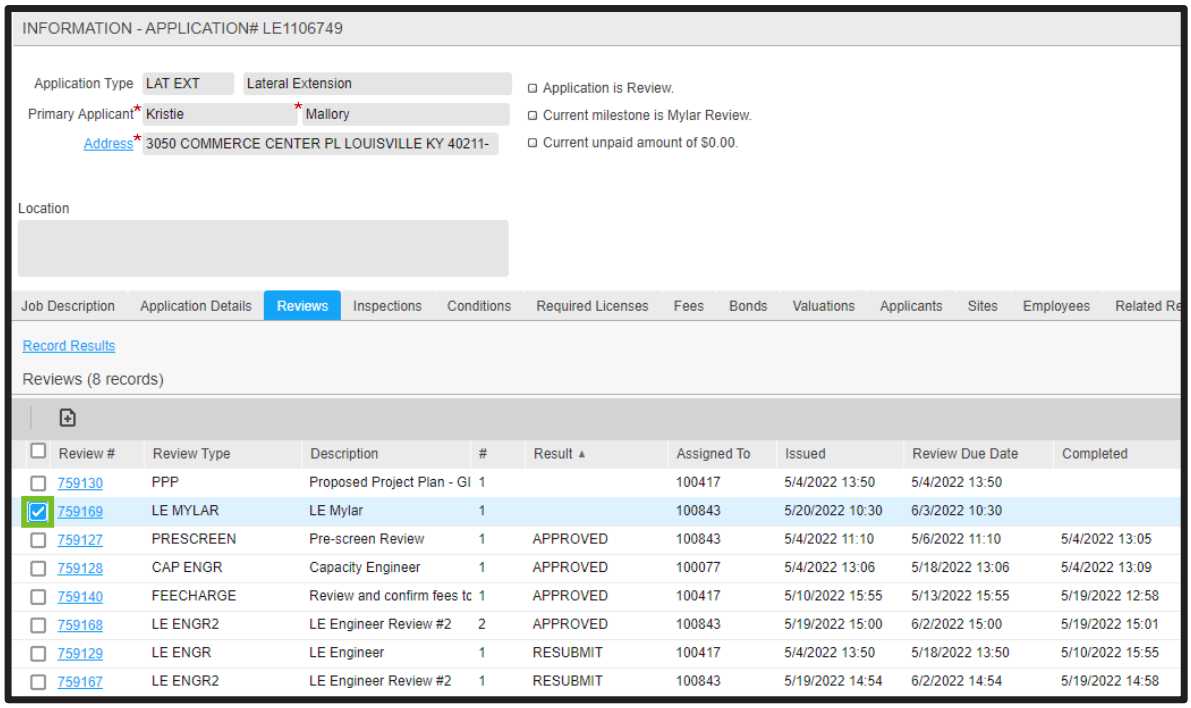


Complete LE MYLAR Review

After the above steps have been completed, the first LE MYLAR Review can be completed.

1. From the Building Application InfoViewer, click the **Reviews** tab.

Record Results



3. Enter the date and time the review was completed in the **Completed Date** field.

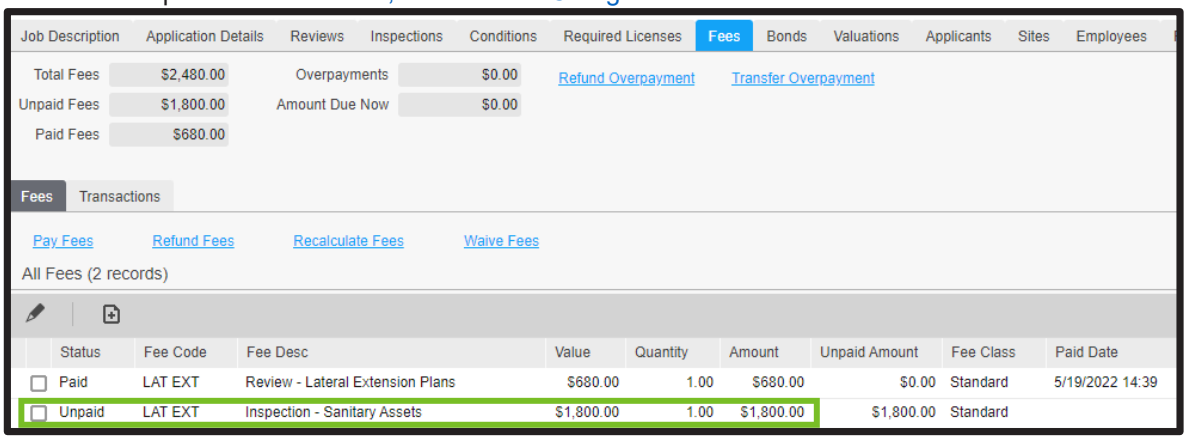
Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	Customer submittals are approved, add, and no further information is required by MSD.	Add Inspection Fees
RESUBMIT	Resubmit	No	When MSD requires edits, changes, or additional information from the customer – the review clock will stop.	Mylar Review Revision

5. **Double click** the desired review result record.

Review Assessed Inspection Fees

After the Mylars have been reviewed and approved, inspection fees will be added to the application. Confirm the accuracy of the fees on the application and approve the review to send an automated email invoice to all the applicants.

1. From the **Building :Application InfoViewer**, click the **Fees** tab.
2. The **Inspection – Sanitary Assets** charges will be added based on the **LF to be added by this Application** in the Lateral Extension Detail page.. Review the quantity and amount of the fees based on the published on Rates, Rentals and Charges



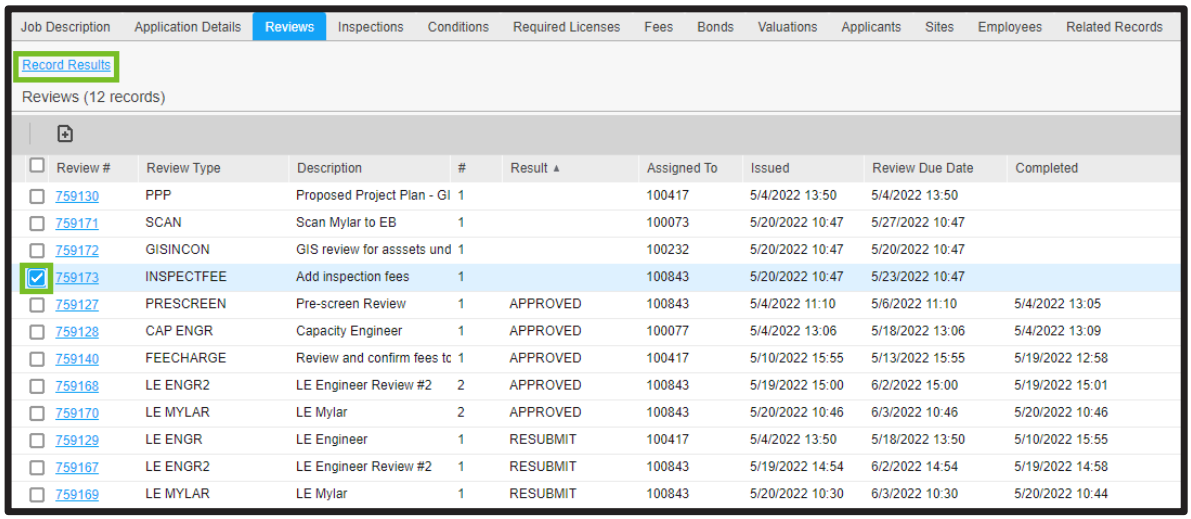
3. If the assessed inspection needs to be adjusted, recalculated, or waived, use the ***CDR – Working with Fees*** *guidance document*.

Complete INSPECTFEE Review

After the assessed inspection fees have been reviewed, complete the INSPECTFEE Review to send an email notification to all applicants on the Lateral Extension application.

1. From the Building Application InfoViewer, click the **Reviews** tab.

Record Results



Review #	Review Type	Description	#	Result	Assigned To	Issued	Review Due Date	Completed
759130	PPP	Proposed Project Plan - GI	1		100417	5/4/2022 13:50	5/4/2022 13:50	
759171	SCAN	Scan Mylar to EB	1		100073	5/20/2022 10:47	5/27/2022 10:47	
759172	GISINCON	GIS review for asssets und	1		100232	5/20/2022 10:47	5/20/2022 10:47	
759173	INSPECTFEE	Add inspection fees	1		100843	5/20/2022 10:47	5/23/2022 10:47	
759127	PRESCREEN	Pre-screen Review	1	APPROVED	100843	5/4/2022 11:10	5/6/2022 11:10	5/4/2022 13:05
759128	CAP ENGR	Capacity Engineer	1	APPROVED	100077	5/4/2022 13:06	5/18/2022 13:06	5/4/2022 13:09
759140	FEECHARGE	Review and confirm fees tc	1	APPROVED	100417	5/10/2022 15:55	5/13/2022 15:55	5/19/2022 12:58
759168	LE ENGR2	LE Engineer Review #2	2	APPROVED	100843	5/19/2022 15:00	6/2/2022 15:00	5/19/2022 15:01
759170	LE MYLAR	LE Mylar	2	APPROVED	100843	5/20/2022 10:46	6/3/2022 10:46	5/20/2022 10:46
759129	LE ENGR	LE Engineer	1	RESUBMIT	100417	5/4/2022 13:50	5/18/2022 13:50	5/10/2022 15:55
759167	LE ENGR2	LE Engineer Review #2	1	RESUBMIT	100843	5/19/2022 14:54	6/2/2022 14:54	5/19/2022 14:58
759169	LE MYLAR	LE Mylar	1	RESUBMIT	100843	5/20/2022 10:30	6/3/2022 10:30	5/20/2022 10:44

3. Enter a **Completed Date** time in the Completed Date time field.

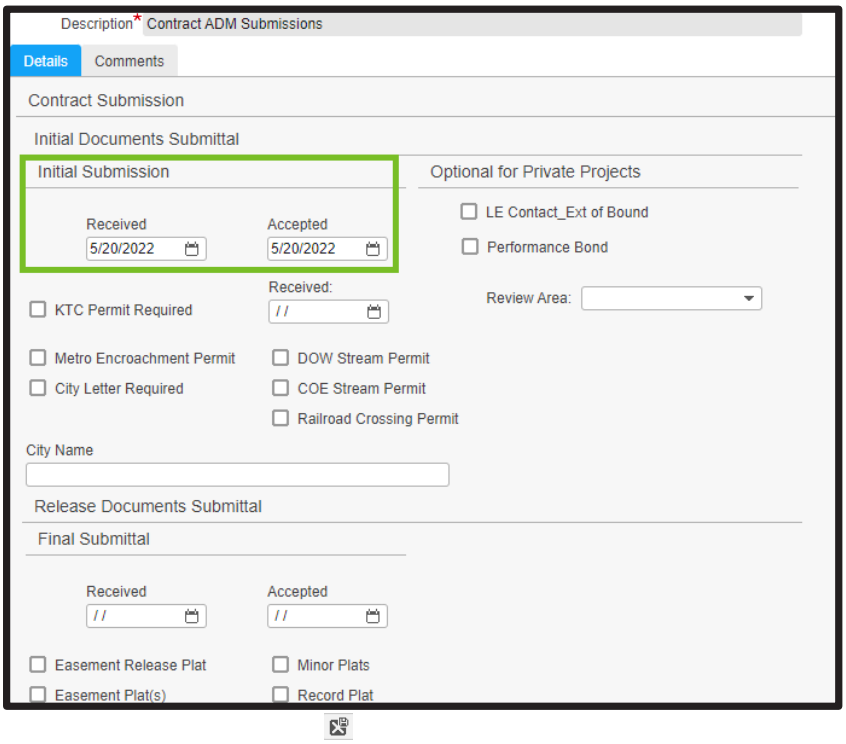
Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	Fees are correct and ready to send an invoice email to applicants.	Waiting on Contract Docs

5. **IMPORTANT!** Approved is the only review result option. When the review is complete an email invoice will be sent to all applicants.
6. **Double click** the desired review result record.

Log Receipt of Contract Documents

The Mylar received date is added to the Engineering Submissions detail page.

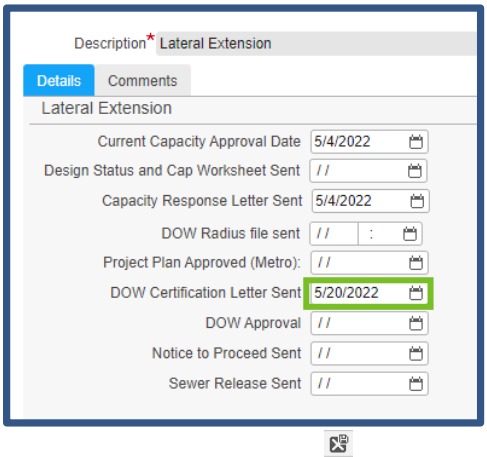
1. From the **Building Application InfoViewer**, click the **Application Details** tab.
2. Open the **Contract ADM Submissions** detail page by clicking the description link.



Add DOW Certification Letter Sent Date to Detail Page

Before the contract document can be reviewed, the Kentucky Division of Water must be notified of the project.

1. From the Building Application InfoViewer, click the **Application Details** tab.
2. Open the **Lateral Extension** detail page by clicking the description link.

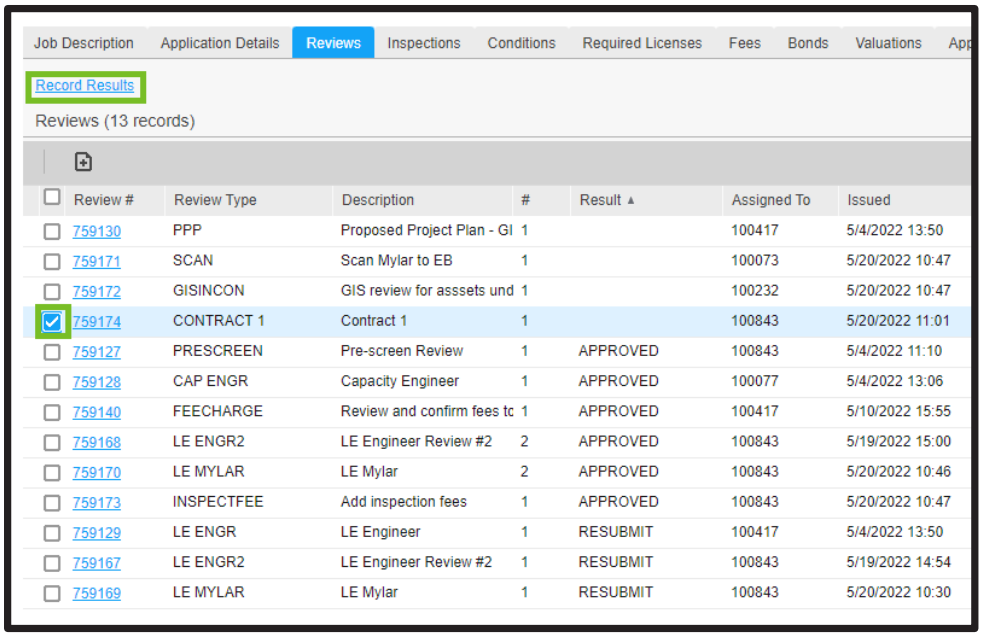


Complete CONTRACT 1 Review

After the above steps have been completed, the first CONTRACT 1 Review can be completed and the application will progress to the next milestone.

1. From the Building Application InfoViewer, click the **Reviews** tab.

Record Results



Review #	Review Type	Description	#	Result	Assigned To	Issued
759130	PPP	Proposed Project Plan - GI	1		100417	5/4/2022 13:50
759171	SCAN	Scan Mylar to EB	1		100073	5/20/2022 10:47
759172	GISINCON	GIS review for asssets und	1		100232	5/20/2022 10:47
759174	CONTRACT 1	Contract 1	1		100843	5/20/2022 11:01
759127	PRESCREEN	Pre-screen Review	1	APPROVED	100843	5/4/2022 11:10
759128	CAP ENGR	Capacity Engineer	1	APPROVED	100077	5/4/2022 13:06
759140	FEECHARGE	Review and confirm fees tc	1	APPROVED	100417	5/10/2022 15:55
759168	LE ENGR2	LE Engineer Review #2	2	APPROVED	100843	5/19/2022 15:00
759170	LE MYLAR	LE Mylar	2	APPROVED	100843	5/20/2022 10:46
759173	INSPECTFEE	Add inspection fees	1	APPROVED	100843	5/20/2022 10:47
759129	LE ENGR	LE Engineer	1	RESUBMIT	100417	5/4/2022 13:50
759167	LE ENGR2	LE Engineer Review #2	1	RESUBMIT	100843	5/19/2022 14:54
759169	LE MYLAR	LE Mylar	1	RESUBMIT	100843	5/20/2022 10:30

3. Enter the date and time the review was completed in the **Completed Date** field.

Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	Customer submittals are approved, add, and no further information is required by MSD.	Collect Inspection Fees
RESUBMIT	Resubmit	No	When MSD requires edits, changes, or additional information from the customer – the review clock will stop.	Initial Contract Revisions

5. **Double click** the desired review result record.

Awaiting Inspection Fee Payment

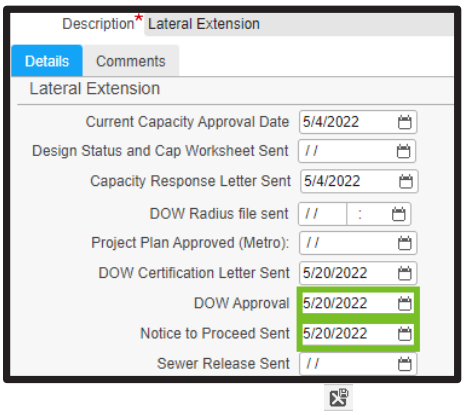
After the Fees are assessed and email invoice is sent, the fees must be paid before another plan review will be added to the application. Check the status of the fee payment, by performing a Status Check on the application. Customer may pay online through the eservices portal as a logged in user or

as a guest using the application number (e.g. LE1106749) or submit a check payment to customer service that includes the application number on the check.

Issue Notice to Proceed

To issue the notice to proceed, the Plan Review will need to update the Lateral Extension Detail page with the DOW approval and the Notice to Proceed date.

1. From the **Building Application InfoViewer**, click the **Application Details** tab.
2. Open the **Lateral Extension** detail page by clicking the description link.



Review Assessed Impact Fees

After the Notice to Proceed has been sent the Lateral Extension Charge worksheet will be updated to reflect the applicable charges. Review the assessed fees and verify the amounts match the Lateral Extension Charge worksheet emailed to the customer.

1. From the **Building – Application InfoViewer**, click the **Fees** tab.
2. Compared the fees assessed by IPS for Capacity, Inflow & Infiltration, Telemetry, and Recapture areas to the Lateral Extension Charge worksheet. IPS assessed fees are based on information in the Lateral Extension Detail page and rates from Rates, Rentals and Charges

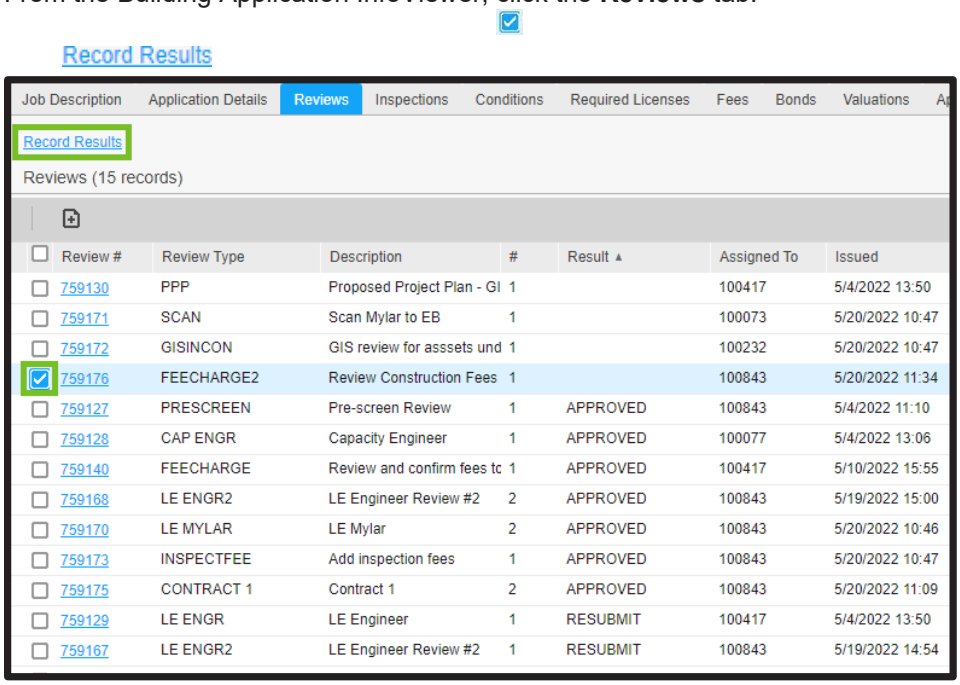
Status	Fee Code	Fee Desc	Value	Quantity	Amount	Unpaid Amount	Fee Class
Paid	LAT EXT	Review - Lateral Extension Plans	$680.00	1.00	$680.00	$0.00	Standard
Paid	LAT EXT	Inspection - Sanitary Assets	$1,800.00	1.00	$1,800.00	$0.00	Standard
Unpaid	LAT EXT	Recapture - Developer - Host LLC	$29.69	2000.00	$59,380.00	$59,380.00	Standard
Unpaid	LAT EXT	Impact - Inflow & Infiltration (I&I)	$1.00	2000.00	$2,000.00	$2,000.00	Standard
Unpaid	LAT EXT	Impact - Capacity Charge	$1,486.40	5.00	$7,432.00	$7,432.00	Standard
Unpaid	LAT EXT	Recapture - MSD - Host LLC	$0.30	2000.00	$600.00	$600.00	Standard

3. If the assessed inspection needs to be adjusted, recalculated, or waived, use the ***CDR – Working with Fees*** *guidance document.*

Complete FEECHARGE2 Review

After the assessed fees have been reviewed, complete the FEECHARGE2 Review to send an email notification to all applicants on the Lateral Extension application.

1. From the Building Application InfoViewer, click the **Reviews** tab.



3. Enter a **Completed Date** time in the Completed Date time field.

Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	When the fees are correct and an email invoice can be sent to the customer.	Collect Impact Fees

5. **IMPORTANT!** Approved is the only review result option. When the review is complete an email invoice will be sent to all applicants.

   i. Alternately, click the **checkbox** ( ) on the desired record and click the **Select** button.

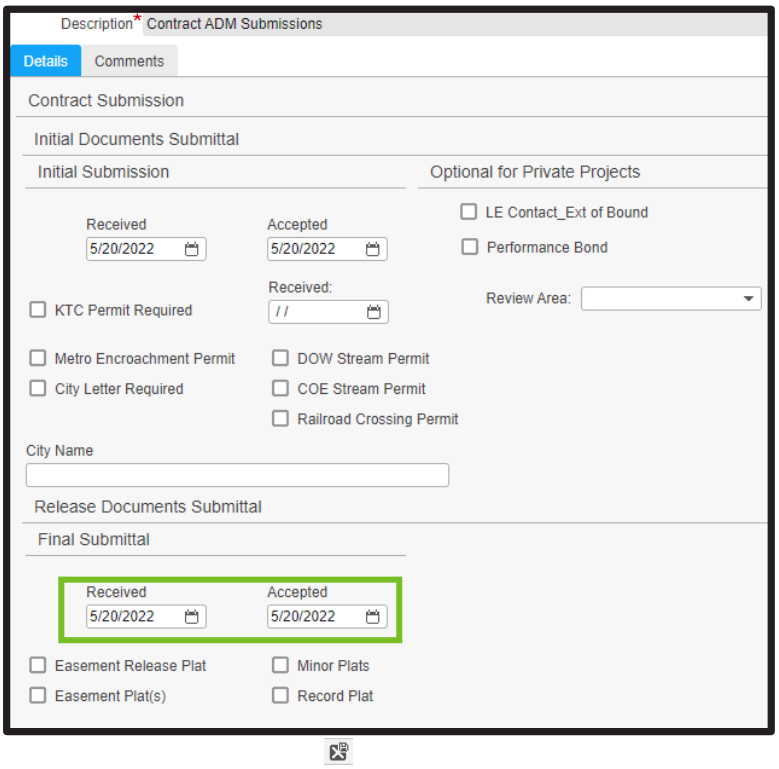
Inspection Milestone

When the application is in the inspection milestone, the IPS and Inspector app interface will import inspections, and inspection results into the LE application. The application will stay in this milestone until the final contract documents are received.

Log Receipt of Final Contract Documents

The Contract documents received date is added to the Engineering Submissions detail page.

1. From the Building Application InfoViewer, click the **Application Details** tab.
2. Open the **Contract ADM Submissions** detail page by clicking the description link.

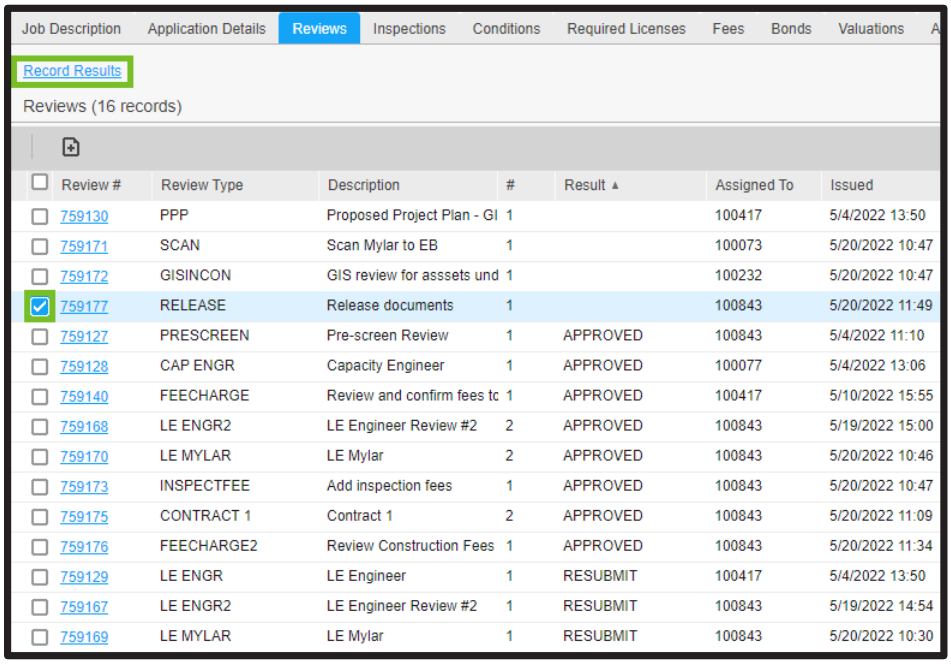


Complete RELEASE Review

After the above steps have been completed, the first RELEASE Review can be completed, and the application will progress to the next milestone.

1. From the Building Application InfoViewer, click the **Reviews** tab.

Record Results



Review #	Review Type	Description	#	Result	Assigned To	Issued
759130	PPP	Proposed Project Plan - GI	1		100417	5/4/2022 13:50
759171	SCAN	Scan Mylar to EB	1		100073	5/20/2022 10:47
759172	GISINCON	GIS review for asssets und	1		100232	5/20/2022 10:47
759177	RELEASE	Release documents	1		100843	5/20/2022 11:49
759127	PRESCREEN	Pre-screen Review	1	APPROVED	100843	5/4/2022 11:10
759128	CAP ENGR	Capacity Engineer	1	APPROVED	100077	5/4/2022 13:06
759140	FEECHARGE	Review and confirm fees tc	1	APPROVED	100417	5/10/2022 15:55
759168	LE ENGR2	LE Engineer Review #2	2	APPROVED	100843	5/19/2022 15:00
759170	LE MYLAR	LE Mylar	2	APPROVED	100843	5/20/2022 10:46
759173	INSPECTFEE	Add inspection fees	1	APPROVED	100843	5/20/2022 10:47
759175	CONTRACT 1	Contract 1	2	APPROVED	100843	5/20/2022 11:09
759176	FEECHARGE2	Review Construction Fees	1	APPROVED	100843	5/20/2022 11:34
759129	LE ENGR	LE Engineer	1	RESUBMIT	100417	5/4/2022 13:50
759167	LE ENGR2	LE Engineer Review #2	1	RESUBMIT	100843	5/19/2022 14:54
759169	LE MYLAR	LE Mylar	1	RESUBMIT	100843	5/20/2022 10:30

3. Enter the date and time the review was completed in the **Completed Date** field.

Code	Description	Required Rereview?	When to use	Next Milestone
APPROVED	Approved	No	Customer submittals are approved, add, and no further information is required by MSD.	Release for Connection
RESUBMIT	Resubmit	No	When MSD requires edits, changes, or additional information from the customer – the the review clock will stop.	Release Docs Review Resubmit

5. **Double click** the desired review result record.

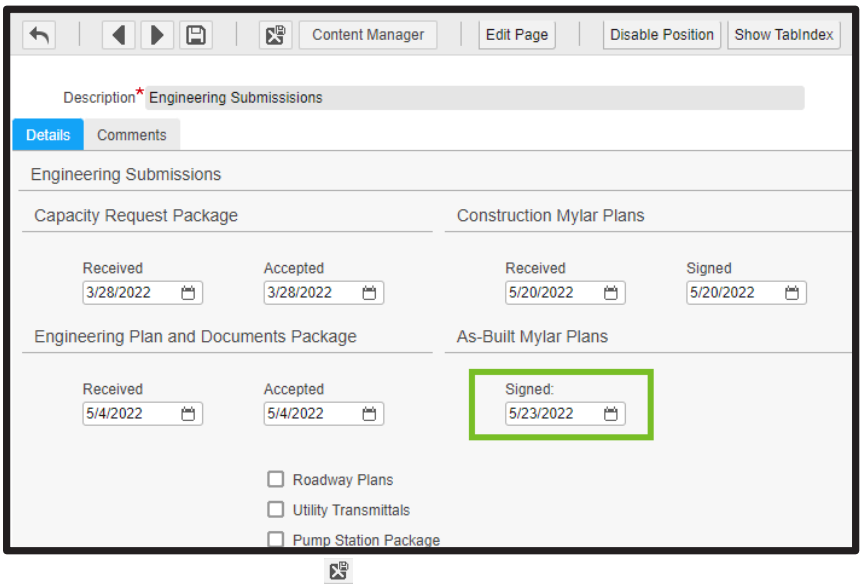
Pay All Remaining Fees

After the release documents have been approved, all remaining fees must be paid (e.g. Capacity, Inflow & Infiltration, etc.). Check the status of the fee payment, by performing a Status Check or reviewing fees status on the Fees tab on the application. Customer may pay online through the eservices portal as a logged in user or as a guest using the application number (e.g. LE1106749) or submit a check payment to customer service that includes the application number on the check.

Log Receipt of As Built Mylars

The as-built mylar documents signed date is added to the Engineering Submissions detail page.

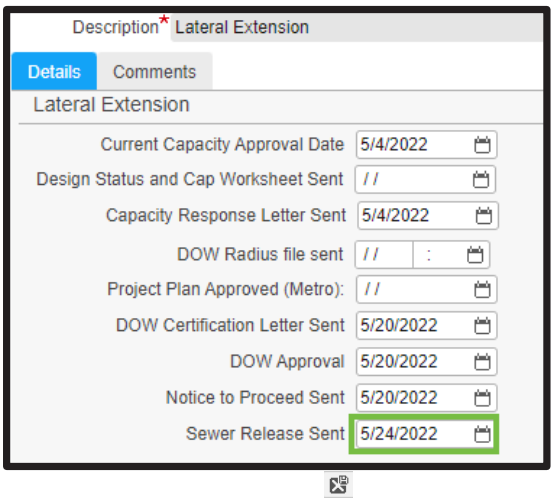
1. From the **Building Application InfoViewer**, click the **Application Details** tab.
2. Open the **Engineering Submissions** detail page by clicking the description link.



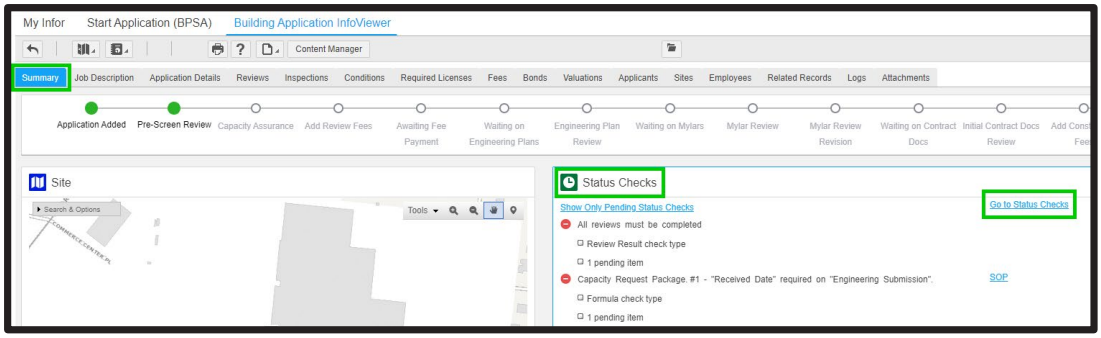
Enter Sewer Release Date

After the As Built plans have been approved, and all fees have been paid, the sewer release date can be set.

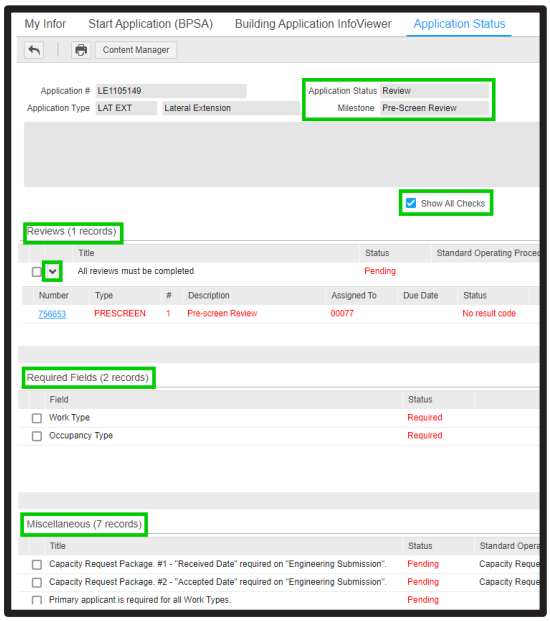
1. From the **Building Application InfoViewer**, click the **Application Details** tab.
2. Open the **Lateral Extension** detail page by clicking the description link.



Check Permit Status



a. Click the Show All Checks **checkbox** ( ) to display successfully completed input items and pending input items.



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APPENDIX C SAMPLE SCAP CREDIT LEDGER AND PROJECTION

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FIELD	DEFINITION
CREDIT BASIN	Basin where the debit or credit will be applied.
APPLICATION	Unique application number given by IPS.
APPLICATION NAME	The name of the development or SCAP credit project as entered into IPS.
TYPE	Indicates the type of project. SCAPCREDIT will be a credit in the ledger as generated by system rehabilitation, LAT EXT will be a debit in the ledger as related to new flow to be added to the system.
FLOW	Flow required based on 10 State Standards 400 gpcd.
RELEASE DATE	Lateral Extension capacity release date or credit project completion date.
APPROVED CREDIT REQUIRED or FLOW REDUCTION	Total credits generated by capital improvements or debits based on requested flow (based on calculations defined in SCAP Documentation).
RUNNING TOTAL	Balance based on credits generated by capital improvements or debits based on requested flow (based on calculations defined in SCAP Documentation).

CREDIT BASIN	APPLICATION	APPLICATION NAME	TYPE	FLOW	RELEASE DATE	APPROVED CREDIT REQUIRED OR FLOW REDUCTION	RUNNING TOTAL
Cedar Creek	235533	MAINTENANCE WORK FY06 AUG-FY09 NOV - CEDAR CREEK	SCAPCREDIT		11/1/2008	6,521	6,521
Cedar Creek	362688	MAINTENANCE WORK FY09A - CEDAR CREEK	SCAPCREDIT		12/31/2008	5	6,526
Cedar Creek	236380	FY09 FAIRMOUNT ROAD MH REHAB	SCAPCREDIT		6/5/2009	10,734	17,260
Cedar Creek	362689	MAINTENANCE WORK FY09B - CEDAR CREEK	SCAPCREDIT		6/30/2009	201	17,461
Cedar Creek	SC1011254	MAINTENANCE WORK FY10A - CEDAR CREEK	SCAPCREDIT		12/31/2009	347	17,808
Cedar Creek	SC1011255	MAINTENANCE WORK FY10B - CEDAR CREEK	SCAPCREDIT		6/30/2010	194	18,002
Cedar Creek	SC1011259	MAINTENANCE WORK FY11A - CEDAR CREEK	SCAPCREDIT		12/31/2010	1,720	19,722
Cedar Creek	SC1011262	MAINTENANCE WORK FY11B - CEDAR CREEK	SCAPCREDIT		6/30/2011	934	20,656
Cedar Creek	SC1011264	MAINTENANCE WORK FY12A - CEDAR CREEK	SCAPCREDIT		12/31/2011	269	20,925
Cedar Creek	SC1011267	MAINTENANCE WORK FY12B - CEDAR CREEK	SCAPCREDIT		6/30/2012	814	21,739
Cedar Creek	SC1005519	CONTRACTED WORK FY12 - CEDAR CREEK	SCAPCREDIT		9/10/2012	21,321	43,060
Cedar Creek	320989	FY12 LITTLE CEDAR CREEK I/I REHABILITATION	SCAPCREDIT		9/27/2012	652,907	695,967
Cedar Creek	263934	ST JAMES CROSSINGS	LAT EXT	9,000	11/30/2012	(19,575)	676,392
Cedar Creek	196927	SONIC SPRINGS	LAT EXT	3,600	12/5/2012	(7,830)	668,562
Cedar Creek	350057	FMC EAST LOUISVILLE #1673-3	LAT EXT	3,400	1/29/2013	(7,395)	661,167
Cedar Creek	SC1074160	MAINTENANCE WORK FY13 JAN-JUN - CEDAR CREEK	SCAPCREDIT		6/30/2013	4,443	665,610
Cedar Creek	SC1005524	CONTRACTED WORK FY13 - CEDAR CREEK	SCAPCREDIT		8/19/2013	425	666,035
Cedar Creek	14SC1000	MAINTENANCE WORK FY13A - CEDAR CREEK	SCAPCREDIT		12/31/2013	2,220	669,737
Cedar Creek	SC1082184	MAINTENANCE WORK FY14 JUL-DEC - CEDAR CREEK	SCAPCREDIT		12/31/2013	1,482	667,517
Cedar Creek	13LE1155	RAISING CANE'S CEDARLOOK DRIVE	LAT EXT	1,175	5/23/2014	(2,556)	667,181
Cedar Creek	SC1082223	MAINTENANCE WORK FY14 JAN-JUN- CEDAR CREEK	SCAPCREDIT		6/30/2014	4,729	671,910
Cedar Creek	SC1082493	MAINTENANCE WORK FY15 JUL-DEC-CEDAR CREEK	SCAPCREDIT		12/30/2014	4,583	676,493
Cedar Creek	239030	POPLAR LAKES PH 1	LAT EXT	18,000	1/26/2015	(39,150)	637,343
Cedar Creek	13LE1003	Bardstown Woods Sec 6	LAT EXT	5,200	5/26/2015	(11,310)	626,033
Cedar Creek	SC1082496	MAINTENANCE WORK FY15 JAN-JUN-CEDAR CREEK	SCAPCREDIT		6/30/2015	21	626,054
Cedar Creek	LE916330	Altawood Development	LAT EXT	1,600	9/14/2015	(3,480)	622,574
Cedar Creek	SC1006188	CONTRACTED WORK FY15 - CEDAR CREEK	SCAPCREDIT		9/25/2015	1	622,903
Cedar Creek	SC1003694	CONTRACTED WORK FY16 - CEDAR CREEK	SCAPCREDIT		9/25/2015	328	622,902
Cedar Creek	SC1082497	MAINTENANCE WORK FY16 JUL-DEC-CEDAR CREEK	SCAPCREDIT		12/30/2015	16	622,919
Cedar Creek	LE915727	BARDSTOWN WOODS SEC 7	LAT EXT	4,400	5/25/2016	(9,570)	613,349
Cedar Creek	SC1082498	MAINTENANCE WORK FY16 JAN-JUN-CEDAR CREEK	SCAPCREDIT		6/30/2016	169	613,518
Cedar Creek	LE981692	Meredith Machinery	LAT EXT	400	8/9/2016	(870)	612,648
Cedar Creek	SC1006171	CONTRACTED WORK FY14 - CEDAR CREEK	SCAPCREDIT		10/26/2016	45,900	658,548
Cedar Creek	SC1082499	MAINTENANCE WORK FY17 JUL-DEC-CEDAR CREEK	SCAPCREDIT		12/30/2016	2,396	660,944
Cedar Creek	LE979589	Air Hydro Power Expansion	LAT EXT	3,120	2/9/2017	(6,786)	654,158
Cedar Creek	LE979025	Single Family Residence	LAT EXT	2,000	3/8/2017	(4,350)	649,808
Cedar Creek	SC1082500	MAINTENANCE WORK FY17 JAN-JUN-CEDAR CREEK	SCAPCREDIT		6/30/2017	3,464	653,272

CREDIT BASIN	APPLICATION	APPLICATION NAME	TYPE	FLOW	RELEASE DATE	APPROVED CREDIT REQUIRED OR FLOW REDUCTION	RUNNING TOTAL
Cedar Creek	SC1107176	CONTRACTED WORK FY17 - CEDAR CREEK	SCAPCREDIT		7/11/2017	309	653,581
Cedar Creek	SC1107180	FY17 PROVIDENCE COURT PS REHABILITATION	SCAPCREDIT		7/21/2017	1,275	654,856
Cedar Creek	LE974484	Blue Sky Logistical Center	LAT EXT	2,250	7/26/2017	(4,894)	649,962
Cedar Creek	LE983107	Poplar Lakes Phase 3	LAT EXT	12,000	8/14/2017	(26,100)	623,862
Cedar Creek	LE971176	Cedar Ridge	LAT EXT	18,800	10/24/2017	(40,890)	582,972
Cedar Creek	SC1082501	MAINTENANCE WORK FY18 JUL-DEC-CEDAR CREEK	SCAPCREDIT		12/30/2017	3,067	586,039
Cedar Creek	LE1027406	Chenoweth Run, LLC	LAT EXT	1,600	3/13/2018	(3,480)	582,559
Cedar Creek	LE1005655	Carrier Court	LAT EXT	400	4/2/2018	(870)	581,689
Cedar Creek	SC1107051	FY18 BARDSTOWN RD I/I REMEDIATION	SCAPCREDIT		6/25/2019	22,963	604,652
Cedar Creek	LE1048252	Landherr Estates Phase II	LAT EXT	17,600	7/23/2019	(38,280)	566,372
Cedar Creek	LE1039387	Tuscany Ridge Section 3	LAT EXT	8,000	8/16/2019	(17,400)	548,972
Cedar Creek	LE1015579	Glenmary Commons	LAT EXT	8,800	9/12/2019	(19,140)	499,382
Cedar Creek	LE1049657	Little Spring Farm, Section 4B	LAT EXT	14,000	9/12/2019	(30,450)	518,522
Cedar Creek	LE978334	Houchens Industries	LAT EXT	780	10/2/2019	(1,697)	497,685
Cedar Creek	LE1049477	Hearthstone Meadows	LAT EXT	14,400	1/30/2020	(31,320)	466,365
Cedar Creek	LE1085520	Jefferson Trace Blvd. Sewer Extension	LAT EXT	400	2/27/2020	(870)	465,495
Cedar Creek	LE1099947	Cedar Creek Subdivision - Section 1	LAT EXT	16,000	9/10/2020	(34,800)	430,695
Cedar Creek	LE1057197	Cedar Brook Subdivision Section 4	LAT EXT	1,200	10/27/2020	(2,610)	428,085
Cedar Creek	LE1105493	Heritage Creek East Lot 384 PSC	LAT EXT	400	2/19/2021	(870)	427,215
Cedar Creek	LE1089846	Cedar Brook Subdivision, Section 5A FKA 5	LAT EXT	16,400	11/3/2021	(35,670)	391,545
Cedar Creek							391,545

CREDIT BASIN	CURRENT BALANCE	PROJECTED	PROJECTED BALANCE
Cedar Creek	391,545	67,776	459,321
Combined System	10,254,160	147,856	10,402,016
Floyds Fork	(508,326)	4,131,251	3,622,925
Hite Creek	2,458,209	(201,741)	2,256,468
Middle Fork Beargrass	1,815,716	(865,875)	949,841
Mill Creek	438,344	4,708	443,052
Northern Ditch	192,802	-	192,802
Ohio River Force Main	1,332,298	410,306	1,742,604
Pond Creek	4,976,608	(170,454)	4,806,154
Southeast Diversion	3,343,051	(44,370)	3,298,681

APPENDIX D PUMP STATION DRAWDOWN TESTING FORM

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Pump Station Draw Down Test
Field Data Sheet

PUMP STATION NAME: Sonne Ave **DATE** 2/26/2008

MSD FACILITY NUMBER: 0042

PUMP(s) Tested (eg. 1 of 2; 1 and 2 of 3) 1 of 2

I. BASE INFORMATION

PUMP MANUFACTURER		LEAD LEVEL	3
MODEL		LAG LEVEL	4
HP		LAG LEVEL	
IMPELLER SIZE		LAG LEVEL	
		HIGH ALARM	13.3
		PUMP SHUT OFF	1

PUMP DESIGN 150 GPM TDH

	DIAMETER OR LENGTH (FEET)	WIDTH (FEET)	AREA SQ FEET	GALLON PER VERT FT
WET WELL DIAMETER (LENGTH x WIDTH)	6		28	211

AREA OF WET WELL (0.785 x Diameter ^2) OR L X W

II. DRAW DOWN TEST (2 PARTS-A. DETERMINE AVERAGE INFLOW THEN DO B. DETERMINE AVERAGE PUMP DOWN FLOWS. DO ALL OF TEST 1 A&B, THEN TEST 2, A & B THEN TEST 3, A & B)

A. DETERMINE AVERAGE INFLOWS

(MEASURE TIME IT TAKES WET WELL TO FILL THE MINIMUM DISTANCE IN FEET FROM TABLE 1)

	TEST 1				TEST 2				TEST 3			
	HEIGHT		TIME		HEIGHT		TIME		HEIGHT		TIME	
	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS
START	4		0.0	0.0	3.7		0.0	0.0			0.0	0.0
END	3.6		2	34	1.1		19	58				
TOTAL	0.40 FEET		2.57 MINUTES		2.60 FEET		19.97 MINUTES		0.00 FEET		0.00 MINUTES	

33 GPM INFLOW RATE (HEIGHT /TIME)

28 GPM INFLOW RATE (HEIGHT /TIME)

GPM INFLOW RATE (HEIGHT /TIME)

30 **GPM AVERAGE INFLOW RATE**

B. DETERMINE AVERAGE PUMP DOWN FLOWS

(MEASURE TIME IT TAKES WET WELL TO PUMP DOWN FROM HIGH LEVEL ALARM TO LOW LEVEL AUTO OFF)

	TEST 1				TEST 2				TEST 3			
	HEIGHT		TIME		HEIGHT		TIME		HEIGHT		TIME	
	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS
START (High Level Alarm)	1		0.0	0.0	1		0.0	0.0			0.0	0.0
END	3.9		3	43	4		3	43				
TOTAL	2.90 FEET		3.72 MINUTES		3.00 FEET		3.72 MINUTES		0.00 FEET		0.00 MINUTES	

195 (HEIGHT /TIME+GPM AVE INFLOW RATE)

201 GPM PUMP FLOW RATE (HEIGHT /TIME+GPM AVE INFLOW RATE)

(HEIGHT /TIME+GPM AVE INFLOW RATE)

198 **GPM AVERAGE PUMP RATE**

CELLS THAT SHOW UP IN RED ARE FORMULAS

Pump Station Draw Down Test
Field Data Sheet

PUMP STATION NAME: Sonne Ave **DATE** 2/26/2008

MSD FACILITY NUMBER: 0042
PUMP(s) Tested (eg. 1 of 2; 1 and 2 of 3) 2 of 2

I. BASE INFORMATION

PUMP MANUFACTURER		LEAD LEVEL	3
MODEL		LAG LEVEL	4
HP		LAG LEVEL	
IMPELLER SIZE		LAG LEVEL	
		HIGH ALARM	13.3
		PUMP SHUT OFF	1

PUMP DESIGN 150 GPM TDH

	DIAMETER OR LENGTH (FEET)	WIDTH (FEET)	AREA SQ FEET	GALLON PER VERT FT
WET WELL DIAMETER (LENGTH x WIDTH)	6		28	211

AREA OF WET WELL (0.785 x Diameter ^2) OR L X W

II. DRAW DOWN TEST (2 PARTS-A. DETERMINE AVERAGE INFLOW THEN DO B. DETERMINE AVERAGE PUMP DOWN FLOWS. DO ALL OF TEST 1 A&B, THEN TEST 2, A & B THEN TEST 3, A & B)

A. DETERMINE AVERAGE INFLOWS
(MEASURE TIME IT TAKES WET WELL TO FILL THE MINIMUM DISTANCE IN FEET FROM TABLE 1)

	TEST 1				TEST 2				TEST 3			
	HEIGHT		TIME		HEIGHT		TIME		HEIGHT		TIME	
	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS
START	4		0.0	0.0			0.0	0.0			0.0	0.0
END	1.1		16	58								
TOTAL	2.90 FEET		16.97 MINUTES		0.00 FEET		0.00 MINUTES		0.00 FEET		0.00 MINUTES	
	36 GPM INFLOW RATE (HEIGHT /TIME)				GPM INFLOW RATE (HEIGHT /TIME)				GPM INFLOW RATE (HEIGHT /TIME)			

36 **GPM AVERAGE INFLOW RATE**

B. DETERMINE AVERAGE PUMP DOWN FLOWS
(MEASURE TIME IT TAKES WET WELL TO PUMP DOWN FROM HIGH LEVEL ALARM TO LOW LEVEL AUTO OFF)

	TEST 1				TEST 2				TEST 3			
	HEIGHT		TIME		HEIGHT		TIME		HEIGHT		TIME	
	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS
START (High Level Alarm)	1		0.0	0.0	1.1		0.0	0.0			0.0	0.0
END	4		3	46	4.1		3	32				
TOTAL	3.00 FEET		3.77 MINUTES		3.00 FEET		3.53 MINUTES		0.00 FEET		0.00 MINUTES	
	204 (HEIGHT /TIME+GPM AVE INFLOW RATE)				216 GPM PUMP FLOW RATE (HEIGHT /TIME+GPM AVE INFLOW RATE)				(HEIGHT /TIME+GPM AVE INFLOW RATE)			

210 **GPM AVERAGE PUMP RATE**

CELLS THAT SHOW UP IN RED ARE FORMULAS

Pump Station Draw Down Test
Field Data Sheet

PUMP STATION NAME: Sonne Ave **DATE** 2/26/2008

MSD FACILITY NUMBER: 0042

PUMP(s) Tested (eg. 1 of 2; 1 and 2 of 3) 1&2 of 2

I. BASE INFORMATION

PUMP MANUFACTURER	
MODEL	
HP	
IMPELLER SIZE	

LEAD LEVEL	3
LAG LEVEL	4
LAG LEVEL	
LAG LEVEL	
HIGH ALARM	13.3
PUMP SHUT OFF	1

PUMP DESIGN 2 @ 150 GPM TDH

	DIAMETER OR LENGTH (FEET)	WIDTH (FEET)	AREA SQ FEET	GALLON PER VERT FT
WET WELL DIAMETER (LENGTH x WIDTH)	6		28	211

AREA OF WET WELL (0.785 x Diameter ^2) OR L X W

II. DRAW DOWN TEST (2 PARTS-A. DETERMINE AVERAGE INFLOW THEN DO B. DETERMINE AVERAGE PUMP DOWN FLOWS. DO ALL OF TEST 1 A&B, THEN TEST 2, A & B THEN TEST 3, A & B)

A. DETERMINE AVERAGE INFLOWS

(MEASURE TIME IT TAKES WET WELL TO FILL THE MINIMUM DISTANCE IN FEET FROM TABLE 1)

	TEST 1				TEST 2				TEST 3			
	HEIGHT		TIME		HEIGHT		TIME		HEIGHT		TIME	
	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS
START	4		0.0	0.0	4		0.0	0.0			0.0	0.0
END	1.1		20	18	2		13	11				
TOTAL	2.90 FEET		20.30 MINUTES		2.00 FEET		13.18 MINUTES		0.00 FEET		0.00 MINUTES	

30	GPM INFLOW RATE (HEIGHT /TIME)	32 GPM INFLOW RATE (HEIGHT /TIME)
		GPM INFLOW RATE (HEIGHT /TIME)

31 **GPM AVERAGE INFLOW RATE**

B. DETERMINE AVERAGE PUMP DOWN FLOWS

(MEASURE TIME IT TAKES WET WELL TO PUMP DOWN FROM HIGH LEVEL ALARM TO LOW LEVEL AUTO OFF)

	TEST 1				TEST 2				TEST 3			
	HEIGHT		TIME		HEIGHT		TIME		HEIGHT		TIME	
	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS	FEET	INCHES	MINUTES	SECONDS
START (High Level Alarm)	2		0.0	0.0	1		0.0	0.0			0.0	0.0
END	4		2	21	4		3	28				
TOTAL	2.00 FEET		2.35 MINUTES		3.00 FEET		3.47 MINUTES		0.00 FEET		0.00 MINUTES	

211	(HEIGHT /TIME+GPM AVE INFLOW RATE)	214 GPM PUMP FLOW RATE (HEIGHT /TIME+GPM AVE INFLOW RATE)
		(HEIGHT /TIME+GPM AVE INFLOW RATE)

213 **GPM AVERAGE PUMP RATE**

CELLS THAT SHOW UP IN RED ARE FORMULAS

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APPENDIX E OVERFLOW ABATEMENT PROJECT CROSSWALK

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PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
ADMIRAL WAY PS & FM UPGRADES	AM	93703	AMADMIRALWAYPS
ADMIRAL WAY PS & FM UPGRADES	AM	93705	AMADMIRALWAYPS
BARDSTOWN RD PS IMPROVEMENTS	SSDP-SSO	88545	S_CC_CC_MSD1025_S_03_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	08426	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	08427	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	08429	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	08430	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	08431	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	085100290046A	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	18654	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	49647	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	85055	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	85075	C_SF_MF_B
BUECHEL TRUNK SEWER REHABILITATION	AEAP	85097	C_SF_MF_B
CINDERELLA PS ELIMINATION	SSDP-SSO	102339	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	SSDP-SSO	35309	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	SSDP-SSO	60679	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	SSDP-SSO	MSD1013-PS	S_PO_WC_PC04_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	104289	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28249	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28250	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28336	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28340	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28413	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28414	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28415	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28416	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28417	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28451	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28452	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28453	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP-SSO	28711	S_JT_JT_NB02_M_01_C
FOX HARBOR IN-LINE STORAGE	SSO	62769	S_HC_HN_NB03_S_09A_A_A
GUNPOWDER PS IN-LINE STORAGE	SSDP-SSO	MSD1055-LS	S_HC_HN_NB02_S_09A_C_B
IDLEWOOD IN-LINE STORAGE	SSDP-SSO	28984	S_CC_CC_70158_M_09A_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
IDLEWOOD IN-LINE STORAGE	SSDP-SSO	28985	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP-SSO	28998	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP-SSO	63094	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP-SSO	63095	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP-SSO	70158	S_CC_CC_70158_M_09A_C
KAVANAUGH RD PS IMPROVEMENTS	SSDP-SSO	MSD1085-PS	S_HC_HC_MSD1085_S_03_A
LANTANA PS ELIMINATION	AM	25484	AMLANTANAPS
LANTANA PS ELIMINATION	AM	93719	AMLANTANAPS
LEVEN PS ELIMINATION	SSDP-SSO	36419	S_PO_WC_PC10_M_01_C
LEVEN PS ELIMINATION	SSDP-SSO	MSD1019-PS	S_PO_WC_PC10_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP-SSO	67997	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP-SSO	67999	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP-SSO	86423	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP-SSO	86424	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP-SSO	89196	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP-SSO	89197	S_CC_CC_67997_M_01_C
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	02932	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	02933	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	02935	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	08537	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	08935-SM	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	115183	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	115184	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	115185	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	15194	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	15195	S_MISF_MF_NB01_M_01_C_A1-2

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	17618	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	23211	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	23212	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	24553	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	27005	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	27007	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	27008	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	27012	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	30376	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	40471	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	40471A	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	40471C	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	40559	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	43726	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	45796	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	45829	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	45835	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	45900	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	47034	S_MISF_MF_NB01_M_01_C_A1-2

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	47582	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	47583	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	47593	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	47596	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	47603	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	47604	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	48864	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	51160	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	51161	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	51180	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	51221	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	65070	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	72288	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	72289	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	74512	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	74513	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	74520	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	84155	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	90700	S_MISF_MF_NB01_M_01_C_A1-2

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	96672	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	96673	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	BU05074039	S_MISF_MF_NB01_M_01_C_A1-2
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP-SSO	IS021A-SI	S_MISF_MF_NB01_M_01_C_A1-2
MONTICELLO PS ELIMINATION	SSDP-SSO	27969	S_JT_JT_NB04_M_01_A
MONTICELLO PS ELIMINATION	SSDP-SSO	MSD0151-PS	S_JT_JT_NB04_M_01_A
SUTHERLAND INTERCEPTOR	SSDP-SSO	16649	S_SD_MF_NB05_M_01_A

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Appendix F I/I Removal Capacity Credit Calculation Instructions

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Appendix F-1 SCAP Credit IPS Work Instructions

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SCAP Rehabilitation Credit Processing

Work Instruction

Document Date

November 26, 2018

Revision Date

May 4, 2022

Written by:

Milad Ebrahimi

Revised by:

Heather N. Dodds

Contents

Purpose

This document describes the process for staff to add and update System Capacity Assurance Plan (SCAP) credit applications within IPS.

Applicability

This work instruction applies to the following departments:

1. Engineering – Regulatory Compliance and Asset Management

Responsibility

The Engineering Regulatory Compliance & Asset Management Administrator is responsible for the procedure. The Regulatory compliance and Asset Management Analyst is responsible for processing the work. The Technical Services Engineer is responsible for executing the work. The Construction Inspector is responsible for documenting the work.

Process Overview

The Sewer Infrastructure Rehabilitation process includes the following elements:

1. Infrastructure Rehabilitation Project Creation, Management, & Closeout
2. Infrastructure Rehabilitation Project Documentation
3. LINE Work Orders
4. Sanitary Work Processing
5. Lateral Sliplining
6. Creating Rehabilitation Maps
7. **SCAP Rehabilitation Credit Processing**

Input / Pre-Start Requirements / Before You Begin

This work instruction assumes the following:

1. User has been created in IPS. If you do not know your IPS credentials, contact helpdesk.
   a. License(s): **CDR Building**
   b. Role(s): **Hansen Support Team**
2. Access to Microsoft Access on Horizon Desktop
3. Access to eB/Alim web
   a. Container(s): Building Application

Instructions

Preparing for Capital Project Credit Estimates

1. **C**reate work orders to support the rehabilitation project in IPS in accordance with the work instruction **Infrastructure Rehabilitation Project Creation, Management, & Closeout**. Note the IPS group project number(s) of interest for processing.
2. Navigate to W:\DATA\Consent Decree\CMOM\Capacity Assurance\Credits\Completed Credit Calcs_SCAP Credits for Rehab.
3. Create a folder with a place holder for the application number using the naming convention SCXXXX PROJECT AREA – FYXX I&I.
4. Save a copy of the IIRM workbook created in step 1 to the folder created in step 3 using the naming convention FYXX Project Name Work Orders.
5. Open the workbook.
6. Hide the **Additional Work** worksheet.
7. If there is more than one SCAP credit basin represented in the workbook, filter the **Sewer Mains**, **Sewer Manholes**, and **Sewer Service Lines** worksheets to the projects of interest.
8. Copy and paste the file 0_Template SCAP Workbook 2016-03-19.xlsx into the new folder. Rename the file FYXX Project Name SCAP Workbook YYYY-MM-DD ESTIMATE.xlsx.

Preparing for Capital Project Final Credits

1. **Close** work orders to support the rehabilitation project in IPS in accordance with the work instruction **Infrastructure Rehabilitation Project Creation, Management, & Closeout**. Note the IPS group project number(s) of interest for processing.
2. Navigate to W:\DATA\Consent Decree\CMOM\Capacity Assurance\Credits\Completed Credit Calcs_SCAP Credits for Rehab. Locate the folder for the project(s).
3. Copy and paste the FYXX Project Name SCAP Workbook YYYY-MM-DD ESTIMATE.xlsx. Rename the file FYXX Project Name SCAP Workbook YYYY-MM-DD.xlsx.

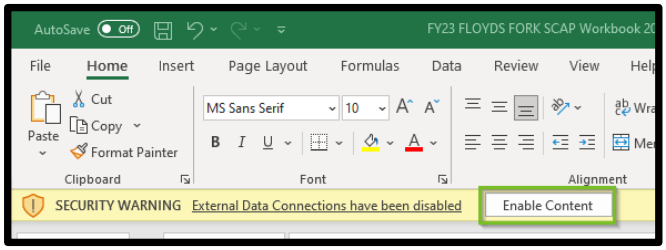
Calculate Capital Project Credits

1. Open the SCAP Tool located at W:\DATA\Consent Decree\CMOM\Capacity Assurance\Credits\Completed Credit Calcs_SCAP Credits for Rehab\SCAP Tool v2022-01.accdb.
2. Enter the IPS group project number(s) and click **Export SCAP Files**.
   a. If there is no group project for one of the asset types, use one of the group projects for a different asset type to prevent errors.
   b. If prompted for a password enter J,Em4@px.

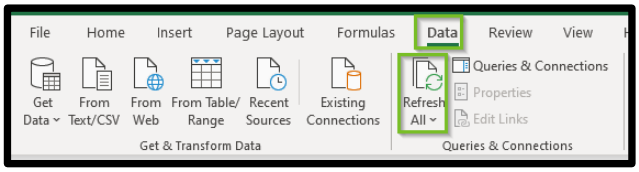
3. When the export is complete, a popup will appear. Click **OK**.

4. Open the file created for the credit estimate or final credits.

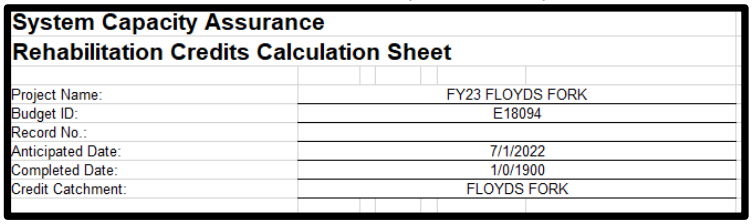
a. If a security warning appears, click **Enable Content**.



5. Click **Data** and **Refresh All** to update the workbook will update to reflect work orders and their SCAP credits.



6. Update the project data in the header, including **Project Name, Budget ID, Record No** (if applicable), **Anticipated Date, Completed Date** (if applicable), and **Credit Catchment**.



System Capacity Assurance
Rehabilitation Credits Calculation Sheet

Project Name:	FY23 FLOYDS FORK
Budget ID:	E18094
Record No.:	
Anticipated Date:	7/1/2022
Completed Date:	1/0/1900
Credit Catchment:	FLOYDS FORK

7. Verify that the data tables on the Format_SMH and Format_SMN_SSL tables are totaling correctly at the bottom. The number of rows may need to be adjusted.
8. Print the entire workbook to PDF and save file in the folder.

Create and Submit Building Permit Application

This section discusses the process to create an IPS Building Permit Application. For more information on working with applications, refer to the guidance document Building Permits – Working with Applications.

Use the following attributes to complete the application.

Project Type	Capital Project	Maintenance
Application Type	SCAPCREDIT	SCAPCREDIT
Address	700 W Liberty St	700 W Liberty St
Location	Project area	SCAP credit basin
Applicant	MSD	MSD
Work Type	SCPRJ	SCGRP
A/P Name	FYXX I/I REMEDIATION – Project Area	MAINTENANCE WORK FYXX – Project Area
Description of work	Description of work performed	Description of work performed
Flow reduction	Total calculated flow reduction	Total calculated flow reduction
SCAP Credit Basin	SCAP credit basin	SCAP credit basin

Project Type	Capital Project	Maintenance
Anticipated Completion Date	Project due date	N/A
Actual Completion Date	Only for completed projects – date of last work order completed	Date of last work order completed
Budget ID	Budget ID	N/A
Record Drawing #	Record Drawing (if applicable)	N/A

Upload Supporting Documentation to eB

1. Save and re-open the permit application in IPS.
2. Upload supporting documentation to ALIM Web. For more information on uploading documents to ALIM Web, refer to the guidance document ALIM Web Documents.

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Appendix F-2 Sample SCAP Calculation Excerpt

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System Capacity Assurance
Rehabilitation Credits Calculation Sheet

Project Name:	FY20 NIGHTINGALE
Budget ID:	H16074
Record No.:	
Anticipated Date:	9/30/2021
Completed Date:	9/2/2021
Credit Catchment:	SOUTHEAST DIVERSION

Removal of Illicit Connections to the Sanitary Sewer System

	Quantity		Credit		Total	
Downspouts	0	x	4,000	=	0	Gallons
Area Drains	0	x	6,000	=	0	Gallons
Foundation Drains	0	x	4,000	=	0	Gallons
Sump Pumps	0	x	4,000	=	0	Gallons

Rehabilitation of Mainline Sewers and Sewer Service Lines

Total from High Priority Line Credits	0	Gallons
Total from Medium Priority Line Credits	0	Gallons
Total from Line Credits	415,750	Gallons

Manhole Rehabilitation

Total from High Priority Manhole Credits	0	Gallons
Total from Medium Priority Manhole Credits	0	Gallons
Total from Manhole Credits Entry Sheet	324,008	Gallons

Project High Priority Credits	0	
Project Medium Priority Credits	0	
Project Total Credits	**739,758**	**Gallons**

4/28/2022

Manhole Credits Entry

		Frame			Chimney			Cone			Wall			Pipe Seal			Bench			Channel		Total
MH ID	Location	Repaired	Severity	Credit	Repaired	Severity	Credit	Repaired	Severity	Credit	Repaired	Severity	Credit	Repaired	Severity	Credit	Repaired	Severity	Credit	Repaired	Severity	Credits
73114	Paved	YES	MINOR	78	YES	MINOR	78	NO	NONE	-	NO	NONE	-	NO	NONE	-	NO	NONE	-	NO	NONE	156
73664	Non-Paved	YES	MINOR	328	YES	MINOR	328	YES	MINOR	164	YES	MINOR	164	YES	MINOR	164	NO	NONE	-	-		1,476
78932	Paved	YES	MINOR	78	YES	MINOR	78	NO	NONE	-	NO	NONE	-	NO	NONE	-	NO	NONE	-	-		156
83593	Paved	YES	MINOR	78	YES	MINOR	78	NO	NONE	-	NO	NONE	-	NO	NONE	-	NO	NONE	-	-		156
94603	Paved	YES	MINOR	78	YES	MINOR	78	NO	NONE	-	NO	NONE	-	NO	NONE	-	NO	NONE	-	-		156
Total																						**324,008**

FY20 SEDC SCAP Workbook 2022-04-22.xlsx

Pipe Credits Entry 4/28/2022

Segment ID	Length (FT)	Length Repaired (FT)	Diameter (in)	IDM Repaired	Along Stream	Credit
SSL 23617	31	29	6	0.033	No	2
SSL 70167	37	37	6	0.042	Yes	1,430
SSL 219700070000A	50	42	4	0.032	No	2
SSL 70150	33	33	6	0.038	Yes	1,275
SSL 081G01190000A	31	31	6	0.035	No	2
SSL 081J02540000A	31	30	6	0.034	No	2
SSL 27662	31	28	6	0.032	No	2
SSL 173391	7	7	6	0.008	Yes	270
SSL 7279	30	25	6	0.028	No	2
SSL 081G00950000A	30	30	6	0.034	No	2
SSL 081G00350000A	31	31	6	0.035	No	2
SSL 28241	31	30	6	0.034	No	2
SSL 081M01570000A	31	30	6	0.034	No	1,159
SSL 082H01030000A	30	30	6	0.034	No	2
SSL 112549D	33	30	0	0.023	Yes	773
SSL 28015	31	29	6	0.033	No	2
SSL 27257	31	147	6	0.167	Yes	10,161
SSL 36892	31	27	6	0.031	No	2
SSL 112552	6	23	6	0.026	Yes	889
SSL 112522	31	6	6	0.007	Yes	232
						415,750

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APPENDIX F-3 SAMPLE WORK ORDER DOCUMENTATION EXCERPT

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FY20 SEDC SCAP Work Orders 2022-04-22.xlsx

Project	Description
H16074	NIGHTINGALE REHAB

WO#	HOUSE	PRE	STREET	SUFFIX	POST	UPID	DOWNID	DIAM	LENGTH	MATERIAL	SURFACE	DEPTH	WO GRID.GRID	ACTIVITY	QUANTITY	UNITS	COMPLETED
3200856	3427		ALLISON	WAY		22002	22044-BD	10	311	VCP	Pavement	9	57492	MAIN - CURED-IN-PLACE PIPE	316	LF	5/13/2020
3200032	2931		AVON	RD		18912	18911	8	382	VCP	Pavement	8	57524	MAIN - CURED-IN-PLACE PIPE	384	LF	3/10/2020
3200326	3705		BARDSTOWN	RD		73111	72561	8	110	VCP	Pavement	8	62004	MAIN - CURED-IN-PLACE PIPE	110	LF	6/4/2021
3200326	3705		BARDSTOWN	RD		73111	72561	8	110	VCP	Pavement	8	57572	MAIN - CURED-IN-PLACE PIPE	110	LF	6/4/2021
3200326	3705		BARDSTOWN	RD		73111	72561	8	110	VCP	Pavement	8	60306	MAIN - POINT REPAIR	1	EA	1/5/2021
3200049	4124		BARDSTOWN	RD		18046	49489	8	50.57	VCP	Pavement	10	62005	MAIN - CURED-IN-PLACE PIPE	52	LF	5/3/2021
3200132	2208		BASHFORD MANOR	LN		18313	18312	8	291.5	VCP	Pavement	10	57537	MAIN - CURED-IN-PLACE PIPE	298	LF	1/27/2021
3200132	2208		BASHFORD MANOR	LN		18313	18312	8	291.5	VCP	Pavement	10	60307	MAIN - POINT REPAIR	1	EA	11/16/2020
3471694	2902		BRINKEY	WAY		18407	18408	8	211	VCP	Pavement	6	62108	MAIN - CURED-IN-PLACE PIPE	208	LF	7/27/2021
3471695	2914		BRINKEY	WAY		18409	18410	8	233	VCP	Pavement	7	62109	MAIN - CURED-IN-PLACE PIPE	232	LF	7/26/2021
3471696	2924		BRINKEY	WAY		18410	18411	8	138	VCP	Pavement	6	62110	MAIN - CURED-IN-PLACE PIPE	137	LF	7/27/2021
3200785	3538		BROCKTON	LN		47956	18517	8	225	VCP	Pavement	7	57505	MAIN - CURED-IN-PLACE PIPE	227	LF	3/13/2020
3200864	3116		CAWEIN	WAY		18864	18862	10	345	VCP	Pavement	8	57514	MAIN - CURED-IN-PLACE PIPE	354	LF	2/5/2021
3200864	3116		CAWEIN	WAY		18864	18862	10	345	VCP	Pavement	8	58922	MAIN - POINT REPAIR	1	EA	6/24/2020
3200390	3116		CAWEIN	WAY		18865	18863	18	351	RCP	Pavement	8	57521	MAIN - CURED-IN-PLACE PIPE	362	LF	6/14/2021
3200620	3212		CAWEIN	WAY		18860	18862	8	421	VCP	Pavement	6	60517	MAIN - POINT REPAIR	1	EA	2/5/2021
3200620	3212		CAWEIN	WAY		18860	18862	8	421	VCP	Pavement	6	60291	MAIN - POINT REPAIR	1	EA	11/16/2020
3200620	3212		CAWEIN	WAY		18860	18862	8	421	VCP	Pavement	6	60065	MAIN - POINT REPAIR	1	EA	11/16/2020
3471699	3701		CHATHAM	RD		49283	18193	8	297.8	VCP	Pavement	7	62113	MAIN - CURED-IN-PLACE PIPE	300	LF	7/21/2021
3471688	3709		CHATHAM	RD		18193	18194	8	105	VCP	Pavement	7	62098	MAIN - CURED-IN-PLACE PIPE	103	LF	7/21/2021
3471689	3713		CHATHAM	RD		18194	18195	8	140	VCP	Pavement	9	62099	MAIN - CURED-IN-PLACE PIPE	143	LF	7/21/2021
3471690	3717		CHATHAM	RD		18195	18196	8	334	VCP	Pavement	10	62100	MAIN - CURED-IN-PLACE PIPE	340	LF	6/4/2021
3471693	3738		CHATHAM	RD		18197	18196	8	205	VCP	Pavement	7	62101	MAIN - CURED-IN-PLACE PIPE	208	LF	7/19/2021
3471692	3742		CHATHAM	RD		18198	18197	8	85	VCP	Pavement	7	62102	MAIN - CURED-IN-PLACE PIPE	87	LF	7/19/2021
3471691	3802		CHATHAM	RD		18199	18198	8	284	VCP	Pavement	7	62103	MAIN - CURED-IN-PLACE PIPE	287	LF	6/23/2021
3471698	3810		CHATHAM	RD		18200	18199	8	213	VCP	Pavement	7	62104	MAIN - CURED-IN-PLACE PIPE	215	LF	7/19/2021
3471660	3822		CHATHAM	RD		18403	18404	10	319.79	VCP	Pavement	8	62107	MAIN - CURED-IN-PLACE PIPE	319	LF	7/30/2021
3471659	3830		CHATHAM	RD		18402	18403	10	326	VCP	Pavement	9	62106	MAIN - CURED-IN-PLACE PIPE	325	LF	7/22/2021
3471661	3837		CHATHAM	RD		18401	18187	8	232.8	VCP	Pavement	6	62105	MAIN - CURED-IN-PLACE PIPE	230	LF	7/6/2021
3200833	3411		DEIBEL	WAY		22042	22043	8	367	VCP	Pavement	8	57491	MAIN - CURED-IN-PLACE PIPE	375	LF	2/3/2021
3200833	3411		DEIBEL	WAY		22042	22043	8	367	VCP	Pavement	8	58928	MAIN - POINT REPAIR	99	EA	10/20/2020
3200833	3411		DEIBEL	WAY		22042	22043	8	367	VCP	Pavement	8	60519	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	4/2/2021
3200597	2828		DELL BROOKE	AVE		18469	18468	8	430	VCP	Pavement	6	57560	MAIN - CURED-IN-PLACE PIPE	429	LF	2/4/2021
3200597	2828		DELL BROOKE	AVE		18469	18468	8	430	VCP	Pavement	6	60520	MAIN - POINT REPAIR	1	EA	1/26/2021
3200406	3502		DILKON	CT		18377	18376	8	150	VCP	Pavement	9	62010	MAIN - CURED-IN-PLACE PIPE	148	LF	6/24/2021
3200645	3110		DOGWOOD	DR		18822	18823-BD	8	398	VCP	Pavement	7	57510	MAIN - CURED-IN-PLACE PIPE	401	LF	5/11/2020
3200464	3100		DOREEN	WAY		18568	18569	8	451	VCP	Pavement	5	58944	MAIN - POINT REPAIR	2	EA	6/23/2020
3200461	3116		DOREEN	WAY		18569	18570	8	451	VCP	Pavement	8	57508	MAIN - CURED-IN-PLACE PIPE	451	LF	2/6/2021
3200461	3116		DOREEN	WAY		18569	18570	8	451	VCP	Pavement	8	58945	MAIN - POINT REPAIR	2	EA	6/23/2020
3200306	3802		DOWNING	WAY		18060	18129	8	406.7	VCP	Pavement	7	57551	MAIN - CURED-IN-PLACE PIPE	403	LF	1/20/2021
3200306	3802		DOWNING	WAY		18060	18129	8	406.7	VCP	Pavement	7	57587	MAIN - POINT REPAIR	1	EA	6/18/2021
3200844	3204		ELLIS	WAY		18833	18866	8	265	VCP	Pavement	7	57518	MAIN - CURED-IN-PLACE PIPE	268	LF	5/12/2020
3471700	2909		EXPLORER	DR		20353	18194	8	298.5	VCP	Pavement	0	62112	MAIN - CURED-IN-PLACE PIPE	300	LF	7/26/2021
3200168	3610		GLENCREEK	LN		18490	71748	8	146	VCP	Pavement	10	57555	MAIN - CURED-IN-PLACE PIPE	107	LF	5/11/2020
3200224	3733		GLENMEADE	RD		18169	18168	8	209	VCP	Pavement	8	62015	MAIN - CURED-IN-PLACE PIPE	205	LF	7/16/2021
3200100	3741		GLENMEADE	RD		49246	18169	8	294	VCP	Grass	10	62017	MAIN - CURED-IN-PLACE PIPE	298	LF	7/20/2021
3200489	3744		GLENMEADE	RD		18167	18168	8	411.8	VCP	Pavement	7	62018	MAIN - CURED-IN-PLACE PIPE	415	LF	7/15/2021
3200226	3745		GLENMEADE	RD		49247	49246	8	189	VCP	Grass	8	62019	MAIN - CURED-IN-PLACE PIPE	189	LF	7/20/2021
3200598	3748		GLENMEADE	RD		18166	18167	8	139	VCP	Pavement	6	62020	MAIN - CURED-IN-PLACE PIPE	134	LF	7/15/2021
3200357	3754		GLENMEADE	RD		18165	18166	8	195	VCP	Pavement	6	62021	MAIN - CURED-IN-PLACE PIPE	194	LF	7/14/2021
3200873	3764		GLENMEADE	RD		18164	18165	8	431	VCP	Pavement	6	62022	SERVICE LINE - CURED-IN-PLACE PIPE	437	LF	7/14/2021
3200875	3700		GREENWICH	RD		65755	26644	12	158.57	VCP	Grass	7	57552	MAIN - CURED-IN-PLACE PIPE	127	LF	6/17/2021
3471653	3706		GREENWICH	RD		18177	71738	10	289	VCP	Pavement	9	62085	MAIN - CURED-IN-PLACE PIPE	288	LF	7/29/2021
3471651	3806		GREENWICH	RD		18174	18175	10	263.36	VCP	Pavement	13	62084	MAIN - CURED-IN-PLACE PIPE	263	LF	7/29/2021
3471652	3808		GREENWICH	WAY		18174-T	18174	10	57.5	VCP	Pavement	0	62082	MAIN - CURED-IN-PLACE PIPE	58	LF	7/28/2021
3471650	3814		GREENWICH	WAY		18172	18174-T	10	35.8	VCP	Pavement	12	62081	MAIN - CURED-IN-PLACE PIPE	35	LF	7/28/2021
3200819	2204		HEATHER	LN		71081	71080	8	164	VCP	Grass	4	62023	MAIN - CURED-IN-PLACE PIPE	165	LF	6/23/2021
3200249	2206		HEATHER	LN		18602	18603	8	176.5	VCP	Pavement	7	62026	MAIN - CURED-IN-PLACE PIPE	176	LF	7/9/2021
3200508	2206		HEATHER	LN		71079	18602	8	299.54	VCP	Pavement	7	62025	MAIN - CURED-IN-PLACE PIPE	302	LF	6/29/2021
3200918	2206		HEATHER	LN		71080	71079	8	207.04	VCP	Grass	7	62024	MAIN - CURED-IN-PLACE PIPE	209	LF	5/27/2021

WO#	HOUSE	PRE	STREET	SUFFIX	POST	UNITID	SURFACE	DEPTH	WO GRID.GRID	ACTIVITY	QUANTITY	UNITS	COMPLETED
3185574	3120		TALISMAN	RD		18545	Pavement	6	56797	MANHOLE - REPLACE STANDARD CASTING		1 EA	3/30/2020
3185721	3134		TALISMAN	RD		18546	Pavement	6	57022	MANHOLE - EPOXY LINE		6 FT	4/19/2021
3185721	3134		TALISMAN	RD		18546	Pavement	6	57021	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	6/10/2021
3185721	3134		TALISMAN	RD		18546	Pavement	6	59342	MANHOLE - INSTALL WATERTIGHT CASTING		1 EA	
3185721	3134		TALISMAN	RD		18546	Pavement	6	57023	MANHOLE - REPLACE STANDARD CASTING		1 EA	4/2/2020
3185843	3146		TALISMAN	RD		18547	Pavement	6	61067	MANHOLE - CHIMNEY SEAL EXTENSION		1 EA	6/7/2021
3185843	3146		TALISMAN	RD		18547	Pavement	6	57212	MANHOLE - EPOXY LINE		6 FT	4/19/2021
3185843	3146		TALISMAN	RD		18547	Pavement	6	57211	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	6/7/2021
3185843	3146		TALISMAN	RD		18547	Pavement	6	57213	MANHOLE - INSTALL WATERTIGHT CASTING		1 EA	3/17/2020
3185211	3148		TALISMAN	RD		18548	Pavement	6	56197	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	
3185211	3148		TALISMAN	RD		18548	Pavement	6	56198	MANHOLE - INSTALL WATERTIGHT CASTING		1 EA	3/12/2020
3185728	3156		TALISMAN	RD		18480	Pavement	5	59343	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	
3185728	3156		TALISMAN	RD		18480	Pavement	5	59045	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	5/12/2020
3185728	3156		TALISMAN	RD		18480	Pavement	5	58358	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	5/12/2020
3185728	3156		TALISMAN	RD		18480	Pavement	5	58380	MANHOLE - INSTALL WATERTIGHT CASTING		1 EA	6/30/2020
3185728	3156		TALISMAN	RD		18480	Pavement	5	57031	MANHOLE - RAISE / LOWER TO GRADE		1 EA	5/14/2020
3185761	3600		TAYLORSVILLE	RD		47957	Pavement	4	57081	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		0 EA	4/6/2020
3185761	3600		TAYLORSVILLE	RD		47957	Pavement	4	57082	MANHOLE - REPLACE STANDARD CASTING		1 EA	5/14/2020
3185339	3620		TAYLORSVILLE	RD		47962	Pavement	8	56421	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		0 EA	4/6/2020
3185339	3620		TAYLORSVILLE	RD		47962	Pavement	8	56422	MANHOLE - REPLACE STANDARD CASTING		1 EA	6/29/2020
3186032	3701		TAYLORSVILLE	RD		47963	Grass	10	58834	MANHOLE - CHIMNEY SEAL EXTENSION		1 EA	
3186032	3701		TAYLORSVILLE	RD		47963	Grass	10	57486	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	4/7/2020
3186032	3701		TAYLORSVILLE	RD		47963	Grass	10	57487	MANHOLE - REALIGN FRAME		0 EA	4/7/2020
3186032	3701		TAYLORSVILLE	RD		47963	Grass	10	57488	MANHOLE - REPLACE STANDARD CASTING		1 EA	1/27/2020
3185674	3701		TAYLORSVILLE	RD		47964	Grass	9	59046	MANHOLE - CHIMNEY SEAL EXTENSION		0 EA	7/22/2020
3185674	3701		TAYLORSVILLE	RD		47964	Grass	9	59344	MANHOLE - CHIMNEY SEAL EXTENSION		1 EA	
3185674	3701		TAYLORSVILLE	RD		47964	Grass	9	56943	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		0 EA	7/22/2020
3185674	3701		TAYLORSVILLE	RD		47964	Grass	9	58359	MANHOLE - LOCATE		0 EA	7/22/2020
3185674	3701		TAYLORSVILLE	RD		47964	Grass	9	56944	MANHOLE - REPLACE STANDARD CASTING		0 EA	7/22/2020
3185419	3707		TAYLORSVILLE	RD		47965	Grass	11	58835	MANHOLE - CHIMNEY SEAL EXTENSION		0 EA	4/7/2020
3185419	3707		TAYLORSVILLE	RD		47965	Grass	11	59047	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	4/7/2020
3185419	3707		TAYLORSVILLE	RD		47965	Grass	11	59345	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	
3185419	3707		TAYLORSVILLE	RD		47965	Grass	11	56557	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	4/7/2020
3185419	3707		TAYLORSVILLE	RD		47965	Grass	11	56558	MANHOLE - REPLACE STANDARD CASTING		1 EA	1/27/2020
3185813	3723		TAYLORSVILLE	RD		47966	Grass	9	58836	MANHOLE - CHIMNEY SEAL EXTENSION		0 EA	4/7/2020
3185813	3723		TAYLORSVILLE	RD		47966	Grass	9	59346	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	
3185813	3723		TAYLORSVILLE	RD		47966	Grass	9	59048	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	4/7/2020
3185813	3723		TAYLORSVILLE	RD		47966	Grass	9	57168	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	4/7/2020
3185813	3723		TAYLORSVILLE	RD		47966	Grass	9	57169	MANHOLE - REPLACE STANDARD CASTING		1 EA	1/27/2020
3185712	3732		TAYLORSVILLE	RD		18871	Pavement	7	59347	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	
3185712	3732		TAYLORSVILLE	RD		18871	Pavement	7	58838	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	4/14/2020
3185712	3732		TAYLORSVILLE	RD		18871	Pavement	7	59049	MANHOLE - CHIMNEY SEAL EXTENSION		0 EA	4/14/2020
3185712	3732		TAYLORSVILLE	RD		18871	Pavement	7	57011	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	
3185712	3732		TAYLORSVILLE	RD		18871	Pavement	7	57012	MANHOLE - REPLACE STANDARD CASTING		1 EA	2/13/2020
3185424	3732		TAYLORSVILLE	RD		47967	Grass	10	58837	MANHOLE - CHIMNEY SEAL EXTENSION		0 EA	4/7/2020
3185424	3732		TAYLORSVILLE	RD		47967	Grass	10	59050	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	4/7/2020
3185424	3732		TAYLORSVILLE	RD		47967	Grass	10	59348	MANHOLE - CHIMNEY SEAL EXTENSION		2 EA	
3185424	3732		TAYLORSVILLE	RD		47967	Grass	10	56561	MANHOLE - INSTALL MECHANICAL CHIMNEY SEAL		1 EA	4/7/2020
3185424	3732		TAYLORSVILLE	RD		47967	Grass	10	56562	MANHOLE - REPLACE STANDARD CASTING		1 EA	1/27/2020
3185271	3735		TAYLORSVILLE	RD		18898	Pavement	9	59051	MANHOLE - CHIMNEY SEAL EXTENSION		3 EA	4/14/2020
3185271	3735		TAYLORSVILLE	RD		18898	Pavement	9	59349	MANHOLE - CHIMNEY SEAL EXTENSION		3 EA	
3185271	3735		TAYLORSVILLE	RD		18898	Pavement	9	58839	MANHOLE - CHIMNEY SEAL EXTENSION		0 EA	4/14/2020

WO#	HOUSE	PRE	STREET	SUFFIX	POST	UPID	DOWNID	MAINDIAM	DIAM	LENGTH	MATERIAL	SURFACE	DEPTH	WO GRID.GRID	ACTIVITY	QUANTITY	UNITS	COMPLETED
3203106	3419		ALLISON	WAY		22002	22044-BD	10	6	31		Pavement	7	62003	MAIN - POINT REPAIR	1	EA	6/17/2021
3204149	2927		AVON	RD		18912	18911	8	6	30		Pavement	8	57935	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	4/27/2020
3202071	2929		AVON	RD		18912	18911	8	6	30		Pavement	8	57709	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	4/22/2020
3201031	2931		AVON	RD		18912	18911	8	0	0		Pavement	8	57602	SERVICE LINE - CURED-IN-PLACE PIPE	26	LF	4/24/2020
3202407	3705		BARDSTOWN	RD		49668	73111	8	0	0		Pavement	5	60063	SERVICE LINE - POINT REPAIR	1	LF	1/5/2021
3202896	2210		BASHFORD MANOR	LN		18313	18312	8	6	30		Pavement	9	57799	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	3/3/2021
3203931	2211		BASHFORD MANOR	LN		18313	18312	8	6	30		Pavement	8	57914	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	3/3/2021
3204422	2212		BASHFORD MANOR	LN		18313	18312	8	6	30		Pavement	10	57962	SERVICE LINE - CURED-IN-PLACE PIPE	25	LF	3/31/2021
3201647	3118		CAWEIN	WAY		18865	18863	18	6	31		Pavement	5	57666	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	3/10/2021
3201101	3120		CAWEIN	WAY		16259-ST	16259	8	6	31		Pavement	6	60516	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	3/10/2021
3201112	3122		CAWEIN	WAY		18865	18863	18	6	31		Pavement	6	57614	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	3/11/2021
3201646	3124		CAWEIN	WAY		18865	18863	18	6	31		Pavement	5	57665	SERVICE LINE - CURED-IN-PLACE PIPE	31	LF	3/11/2021
3204214	3201		CAWEIN	WAY		18833	18866	8	6	31		Pavement	6	57942	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	11/5/2020
3204214	3201		CAWEIN	WAY		18833	18866	8	6	31		Pavement	6	60064	SERVICE LINE - POINT REPAIR	1	LF	11/15/2020
3202140	3209		CAWEIN	WAY		18865	18863	18	6	31		Pavement	6	57723	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	3/11/2021
3203732	3210		CAWEIN	WAY		18860	18862	8	6	31		Pavement	5	60742	SERVICE LINE - POINT REPAIR	1	LF	2/5/2021
3201104	3211		CAWEIN	WAY		18865	18863	18	6	31		Pavement	5	60725	SERVICE LINE - POINT REPAIR	1	LF	2/5/2021
3204387	3400		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57959	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	4/1/2021
3203437	3402		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57862	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	3/12/2021
3202366	3403		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57759	SERVICE LINE - CURED-IN-PLACE PIPE	23	LF	3/31/2021
3201843	3404		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57684	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	3/8/2021
3202904	3405		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57800	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	3/8/2021
3201054	3406		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57605	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	3/9/2021
3204888	3407		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	58008	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	3/9/2021
3203689	3408		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57886	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	4/2/2021
3201595	3409		DEIBEL	WAY		22042	22043	8	6	31		Pavement	6	57659	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	3/9/2021
3203860	2814		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	6	57907	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	5/10/2021
3203266	2815		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	4	57837	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	5/10/2021
3201781	2816		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	6	57674	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	5/7/2021
3204282	2817		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	5	57945	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	5/7/2021
3202295	2818		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	6	57744	SERVICE LINE - CURED-IN-PLACE PIPE	15	LF	4/21/2021
3201198	2819		DELL BROOKE	AVE		18469	18468	8	6	31	CPP	Pavement	5	57622	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/23/2021
3201459	2821		DELL BROOKE	AVE		18469	18468	8	0	0		Pavement	6	57640	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/21/2021
3202210	2823		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	5	57735	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/23/2021
3201739	2824		DELL BROOKE	AVE		18469	18468	8	6	31	CPP	Pavement	6	57672	SERVICE LINE - CURED-IN-PLACE PIPE	20	LF	4/27/2021
3201240	2825		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	5	57625	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/28/2021
3203075	2826		DELL BROOKE	AVE		18469	18468	8	6	30		Pavement	6	57817	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	5/3/2021
3204794	2827		DELL BROOKE	AVE		18469	18468	8	6	31		Pavement	5	57992	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	5/5/2021
3201462	2828		DELL BROOKE	AVE		18469	18468	8	0	0		Pavement	6	57641	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	5/5/2021
3202672	3022		DOGWOOD	DR		18822	18823-BD	8	6	34	CPP	Pavement	8	57781	SERVICE LINE - CURED-IN-PLACE PIPE	21	LF	12/4/2020
3204737	3102		DOGWOOD	DR		18822	18823-BD	8	6	30		Pavement	7	57988	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	12/2/2020
3202137	3103		DOGWOOD	DR		18822	18823-BD	8	6	30		Pavement	4	57720	SERVICE LINE - CURED-IN-PLACE PIPE	31	LF	12/3/2020
3203702	3104		DOGWOOD	DR		18822	18823-BD	8	6	31		Pavement	7	57888	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	12/2/2020
3204699	3105		DOGWOOD	DR		18822	18823-BD	8	6	31		Pavement	4	57985	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	11/11/2020
3203704	3106		DOGWOOD	DR		18822	18823-BD	8	6	31		Pavement	7	57890	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	11/12/2020
3203703	3107		DOGWOOD	DR		18822	18823-BD	8	6	31		Pavement	4	57889	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	11/11/2020
3201641	3108		DOGWOOD	DR		18822	18823-BD	8	6	31		Pavement	5	57664	SERVICE LINE - CURED-IN-PLACE PIPE	24	LF	11/12/2020
3203701	3109		DOGWOOD	DR		18822	18823-BD	8	6	30		Pavement	4	57887	SERVICE LINE - CURED-IN-PLACE PIPE	28	LF	11/12/2020
3203176	3111		DOGWOOD	DR		18822	18823-BD	8	6	31		Pavement	4	57826	SERVICE LINE - CURED-IN-PLACE PIPE	29	LF	11/13/2020
3201258	3118		DOREEN	WAY		18569	18570	8	6	31		Pavement	5	57629	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/7/2021
3202311	3121		DOREEN	WAY		18569	18570	8	6	31		Pavement	5	57747	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/7/2021
3201257	3122		DOREEN	WAY		18569	18570	8	6	31		Pavement	5	57628	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/7/2021
3204386	3123		DOREEN	WAY		18569	18570	8	6	31		Pavement	5	57958	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/6/2021
3203390	3125		DOREEN	WAY		18569	18570	8	6	31		Pavement	5	57858	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	4/6/2021
3202030	3722		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	57701	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	2/23/2021
3202030	3722		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	60744	SERVICE LINE - POINT REPAIR	1	LF	1/4/2021
3204769	3723		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	60727	SERVICE LINE - POINT REPAIR	1	LF	1/4/2021
3204326	3724		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	57951	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	2/22/2021
3204637	3725		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	57976	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	2/22/2021
3203345	3726		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	57845	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	2/12/2021
3204643	3727		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	57977	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	2/12/2021
3203778	3800		DOWNING	WAY		18060	18129	8	6	31		Pavement	6	57899	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	2/8/2021
3201535	3801		DOWNING	WAY		18061	18060	8	6	31		Pavement	7	60308	SERVICE LINE - CURED-IN-PLACE PIPE	30	LF	2/8/2021
3204697	3201		ELLIS	WAY		18833	18866	8	6	31		Pavement	9	57984	SERVICE LINE - CURED-IN-PLACE PIPE	27	LF	11/5/2020
3203382	3202		ELLIS	WAY		18833	18866	8	6	30		Pavement	6	57855	SERVICE LINE - CURED-IN-PLACE PIPE	25	LF	11/4/2020


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