

Appendix C

Priority Areas

Appendix C

"Priority Areas"

April 20, 2020

As part of this agreement, the City of Hattiesburg is required to correct Sanitary Sewer Overflow (SSO) issues in its WCTS. To accomplish this task, a strategy has been developed to prioritize areas of the City that have the largest number of issues and that have the greatest impact on the WCTS. The following is a narrative description of the development of that strategy and the creation of the delineation of those areas.

The WCTS can be divided into three distinct drainage basins: Laurel Street Basin, Burkett's Creek Basin and the North Lagoon Basin. These drainage basins are in direct relation to the contours of the natural ground which is a desirable trait of gravity sanitary sewer systems. With the three drainage basins, the City has developed over the years, three collection systems and two treatment systems. The systems are named the North Lagoon System and the South Lagoon System. The South Lagoon System is comprised of the Laurel Street Basin and the Burkett's Creek Basin. The North Lagoon is comprised of the North Lagoon Basin.

There are many different types of lines in function, material and size throughout the City's WCTS. The WCTS currently contains approximately 1,370,000 linear feet of gravity sewer lines. The most prevalent material in the WCTS is concrete pipe and 8 inch diameter is the most common size. There are approximately 80,000 linear feet of sewer force mains that serve 79 lift stations in the City. The WCTS contains approximately 5,700 manholes that are composed of either concrete or brick. These manholes vary in diameter and depth depending on their topographic location and placement in the City.

In order to develop a plan of action to comply with this consent decree, the City of Hattiesburg needed to identify the portions of the WCTS that needed immediate action. This was accomplished by using the Sewershed and sewer flow information from the recently completed, City wide sewer flow study, work order and public comment information from the City of Hattiesburg's Water and Sewer Department, the location of known SSO and physical investigation of the WCTS where available.

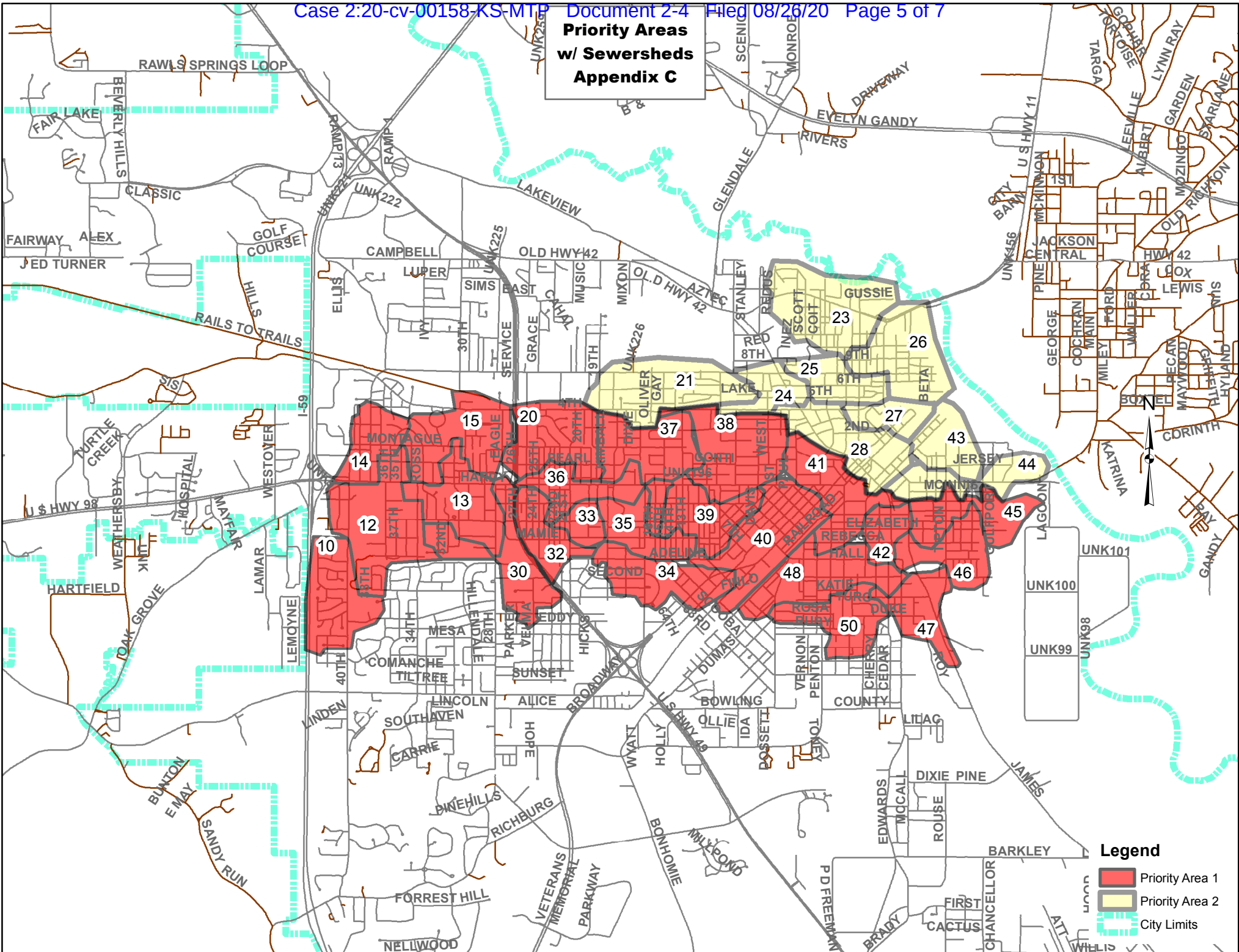
By utilizing work order locations and public comments information, the City was able to identify where the Water and Sewer Department along with its contractors were spending most of their time. This information along with the SSO reports filed by the City revealed areas that seemed to have recurring problems and have an apparent need for further investigation and possible rehabilitation. There was also a limited amount of video information about lines that had shown to be problematic in the past. A review of the video information gave insight to the integrity of sewer collection pipes and manholes in certain areas of the City of Hattiesburg. These tools were all useful in identifying the parts of the WCTS with the most problems, but could not solely show that one area was a higher priority than another in terms of implementing a sewer rehabilitation construction plan.

To accomplish a scientific method for establishing priority, the City of Hattiesburg utilized the data from its recently completed Sanitary Sewer Flow Modeling Project. From this data a ranking system was developed that was based on Rainfall Derived Inflow and Infiltration Rates (RDI/I) and the average size of pipe in the Sewershed expressed in terms of inch-diameter/mile. Since larger flows require larger diameter pipes, these pieces of information can be used to determine which Sewersheds have the highest inflow/infiltration, as well as, which Sewersheds have the highest impact on the overall system.

It should be noted that the results of this analysis must be reviewed with a discerning eye. Anomalies can occur and must be eliminated from the analysis. For example, a small Sewershed with only large diameter lines can appear to be a high priority. This is where knowledge of the overall system and the factor discussed previously must be used to ascertain the true priority of the Sewershed. After a thorough assessment of all the above referenced data, the result was a delineation of two areas that were of higher importance in terms of recurring problems, reported SSO issues and I/I problems as related to the diameter of lines in the area. These areas are denoted on the maps contained in this Appendix. The delineation was drawn along the boundaries of Sewersheds as related to the flow monitoring points in the City's flow monitoring study. Sewersheds were not divided since the flow from the entire Sewershed should be considered and the sources of the RDI/I is not able to be determined at this time.

Implementation of a rehabilitation program in these areas would affect approximately 591,000 linear feet of sewer collection lines, 2,481 manholes and 7,657 connections. The impacted infrastructure and connections make up approximately 43% of the entire WCTS.

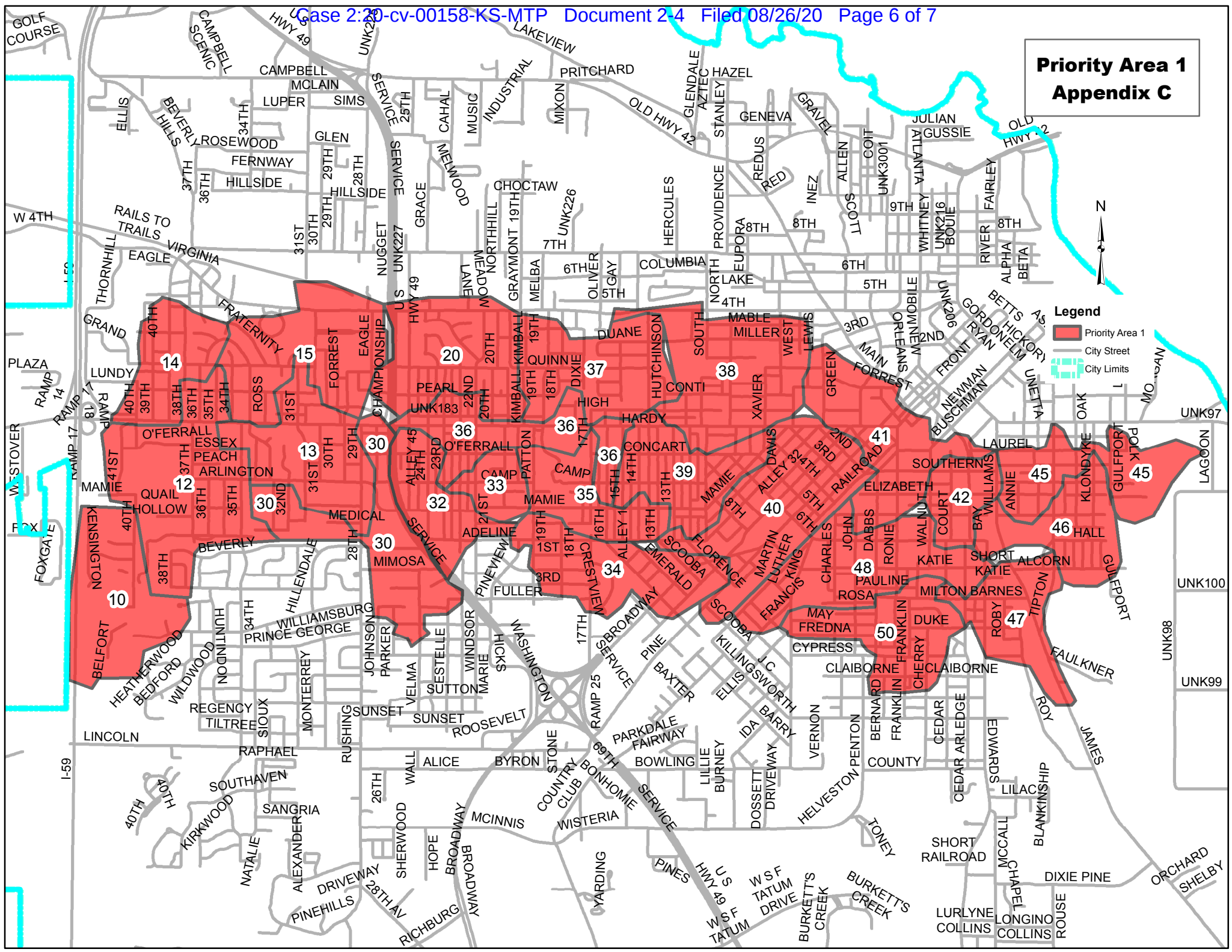
**Priority Areas
w/ Sewersheds
Appendix C**



Legend

- Priority Area 1
- Priority Area 2
- City Limits

Priority Area 1 Appendix C



Legend




- Priority Area 1
- City Street
- City Limits



Priority Area 2 Appendix C



Legend

-  Priority Area 2
-  City Street
-  City Limits

