

Memorandum



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To: Brad Kilby
From: Kristen Ballou, PE
Copies: Kevin Timmins, PE, Kirstin Green
Date: February 3, 2015
Subject: Sherwood West Preliminary Concept Plan -
Existing Utilities
Project No.: 17369

Introduction

The purpose of this memorandum is to summarize the existing conditions, opportunities, and constraints for the provision of public services (including water, sanitary sewer, and storm utilities) to the Sherwood West Concept Plan area.

Project Description

The Sherwood West Preliminary Concept Plan is a comprehensive concept plan for the Urban Reserve Area 5B. The study area is nearly 1,300 acres located west of the current city limits. The project is bounded on the east by Hwy 99W, SW Elwert Road, and SW Roy Rogers Road. It is bounded by SW Chapman Road on the South and SW Lebeau Rd and SW Scholls-Sherwood Rd to the north. Site topography generally slopes from west to east, with an elevation difference of approximately 150 to 200 feet.

Water

Existing Conditions

The current Water System Master Plan was completed in August 2005 and is currently being updated. The Master Plan considers all areas within the city limits and the urban growth boundary. The West Sherwood Concept Plan study area is outside of the urban growth boundary and was not included in the Master Plan.

The City's primary water supply is from the Wilsonville Water Treatment Plant, supplemented by groundwater wells and by a connection to the Tualatin-Portland supply main. The City's distribution system includes three service zones supplied by two storage reservoirs and two pumping stations. The Master Plan indicates that additional water supply and storage will be necessary to support future growth in the City.

Opportunities and Constraints

Existing water facilities in or near the study area include a water reservoir, a supply line, and distribution lines.

The Kruger Reservoir is a 3.0 MG reservoir located inside the study area, south of SW Kruger Road and approximately one half mile west of Hwy 99 W. The Kruger Reservoir serves the 455 pressure zone, which provides water to areas above 250 feet elevation. An 18-inch transmission line is located in SW Kruger Road between the reservoir and Hwy 99W. The study area south of SW Handley Street is primarily above the 250 foot elevation level. According to the master plan, the 455 pressure zone can serve areas up to a maximum elevation of 300 feet; however, preliminary calculations by the City Engineer suggest that the Kruger Reservoir could possibly serve elevations up to between 340 feet and 370 feet.

The study area north of SW Handley Street falls primarily within the 380 pressure zone, which serves areas below an elevation of 250 feet. The current 380 pressure zone is served by the Main Reservoir, which has 2.0 MG of storage. The master plan indicates that additional storage may be required to serve future development.

Adjacent to the study area, the 18-inch water main from the Kruger Reservoir extends north in SW Elwert Road for approximately 800 feet. The line then reduces to a 12-inch line and continues north to SW Handley Street. In addition, a short segment of 12-inch waterline has been constructed in Elwert Road in the vicinity of Derby Terrace. Near the north end of the study area, a 16-inch water main located in SW Copper Terrace terminates at SW Edy Rd, approximately 840 feet east of the study area. These waterlines may be locations where future on-site water systems could connect to the existing City of Sherwood water system. See Figure 1 for pressure zone boundaries, existing reservoir locations, and existing water line locations.

Sanitary Sewer

Existing Conditions

The current Sanitary Sewer Master Plan was completed in July 2007 and is currently being updated. The Master Plan considers all areas within the city limits and the urban growth boundary. The West Sherwood Concept Plan study area is outside of the urban growth boundary and was not included in the Master Plan.

The City of Sherwood is served by two sanitary sewer trunk lines, the Sherwood Trunk Sewer (24-inch) which conveys sewage from the Cedar Creek sewage collection basin and the Rock Creek Trunk (18-inch) which conveys sewage from the Rock Creek sewage collection basin. Both trunk lines convey flows to the Sherwood Pump Station, owned by Clean Water Services (CWS), which

sends sewage to the Durham Advanced Wastewater Treatment Plant via the Upper Tualatin Interceptor, also owned by CWS.

Opportunities and Constraints

Existing sanitary sewer facilities adjacent to or near this site are limited. The Sherwood Interceptor crosses the study area near the northeast corner at Cedar and Chicken Creeks; and any sewer mainlines would need to cross these creeks in order to connect. A 15-inch line is stubbed to Elwert Road at adjacent Derby Terrace. This line connects to a 15-inch line in SW Copper Terrace which flows north to SW Edy Road and connects to the Sherwood Interceptor to the east.

The Brookman Addition is an area within the urban growth boundary on the south end of Sherwood between the city limits and SW Brookman Road. In the Sanitary Sewer Master Plan, this area is identified as Area 54/55. The City, recently constructed a sewer mainline to the boundary of the Brookman Addition. Future projects,, which would occur with the development of the Brookman Addition,, would extend the sewer line into the Brookman Addition, providing sewer access for the West Sherwood Concept Plan study area at Brookman Road, east of Hwy 99 W.

Capacity of the Sherwood Trunk line Sewer and the Sherwood Pump Station will need to be evaluated as part of the Master Plan update.

See Figure 2 for a map of existing sanitary sewer facilities.

Stormwater

Existing Conditions

The current Storm Water Master Plan was completed in June 2007 and is currently being updated. The Master Plan considers all areas within the city limits and the urban growth boundary. The West Sherwood Concept Plan study area is outside of the urban growth boundary and was not included in the Master Plan.

The West Sherwood Concept Plan study area lies primarily within the Chicken Creek Drainage Basin. The basin flows north and northeast along Chicken Creek, which bisects the site. Chicken Creek flows into Cedar Creek at the northeast corner of the study area, west of SW Roy Rogers Road. West Fork Chicken Creek enters the site near the northwest boundary, and flows east into Chicken Creek.

A small portion of the study area in the southeastern corner is part of the Cedar Creek Drainage Basin. On-site runoff enters Goose Creek, which flows from west to east, crosses under Hwy 99 W and reaches Cedar Creek.

The Stormwater Master Plan notes that Chicken and Cedar Creeks have been identified by the EPA as providing habitat for anadromous fish that are listed as threatened under the Federal Endangered Species Act. According to the Storm Water Master Plan, on-site soils fall primarily in Hydrologic Soils Group C, with small areas of Groups B and D. The study area in the vicinity of Chicken and Cedar Creeks and their tributaries have been designated by Metro as riparian corridors, upland wildlife habitat, and aquatic impact areas. Some areas within the riparian corridors are also shown on the National Wetland Inventory.

Opportunities and Constraints

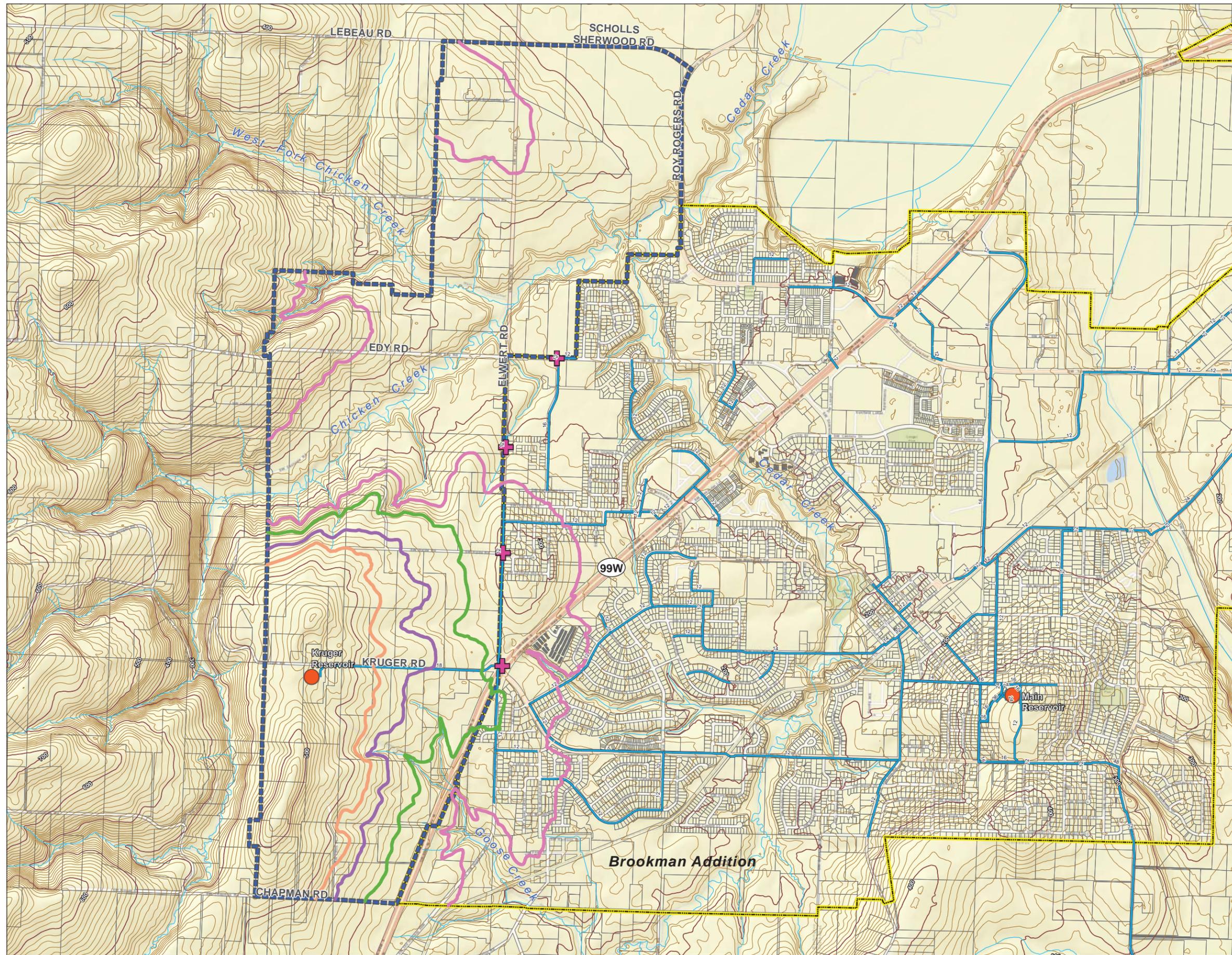
As the study area is undeveloped, there is no existing stormwater infrastructure on-site. As development occurs in the future, stormwater would likely be discharged onto the floodplain of the adjacent creeks and tributaries. The City of Sherwood requires that all stormwater facilities meet the requirements of Clean Water Services Design and Construction Standards for conveyance, water quality treatment, and water quantity treatment. The City has indicated that they prefer to use regional stormwater facilities within this study area.

See Figure 3 for a map of storm drainage basins, creeks, and existing storm water facilities.

Figures

Figure I
Existing Conditions

Sherwood West
Water System

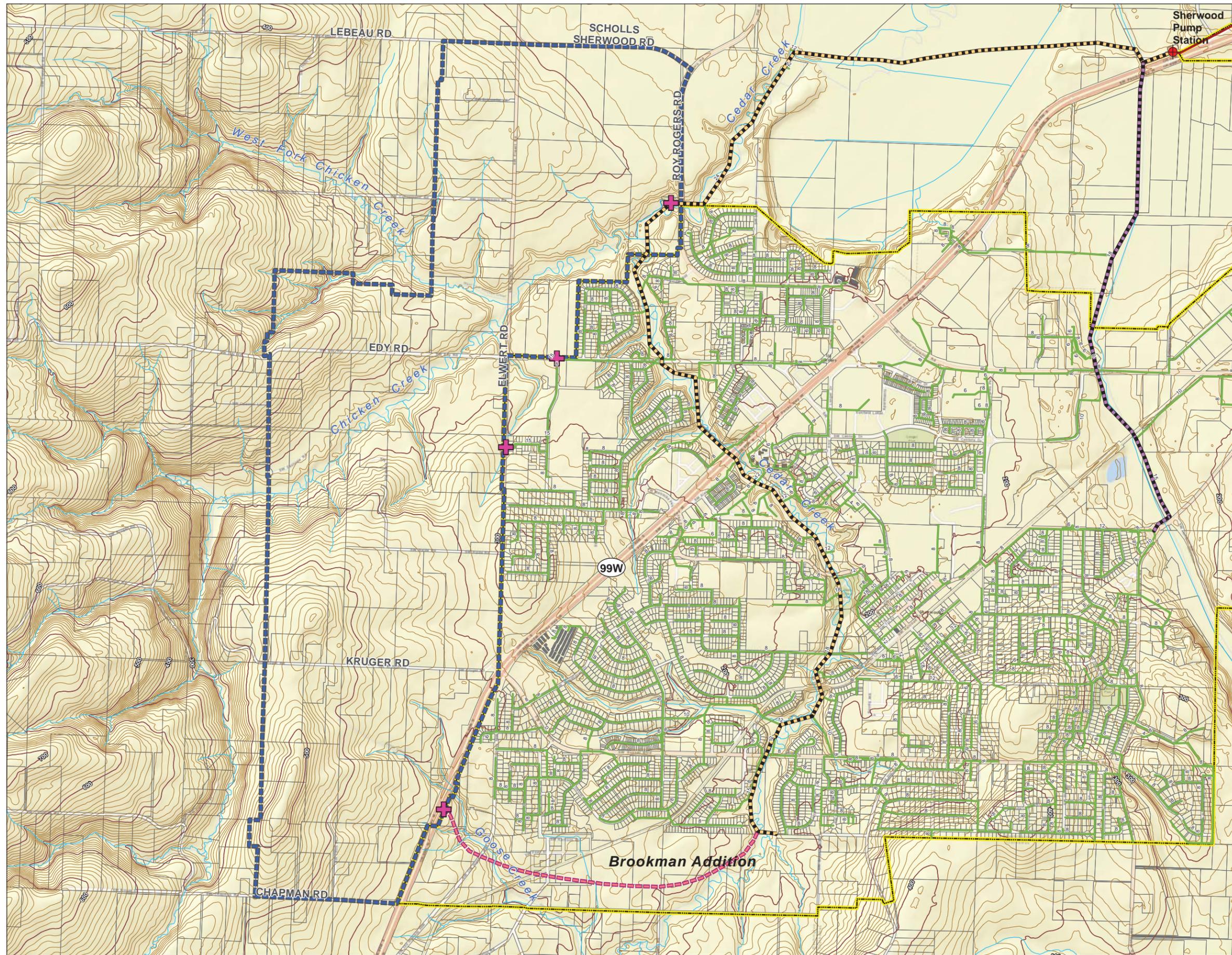


-  Study Area
-  Water Main (12" diameter & greater)
-  Water Reservoir
-  Potential Connection Point
-  380' Pressure Zone
-  455' Pressure Zone Per Master Plan
-  455' Pressure Zone Lower Limit (Estimate)
-  455' Pressure Zone Upper Limit (Estimate)
-  10ft Contour
-  100ft Contour
-  Stream
-  Tax Lot
-  Urban Growth Boundary

0 400 800 1,600 Feet



Figure 2
Existing Conditions
Sherwood West
Sanitary Sewer System

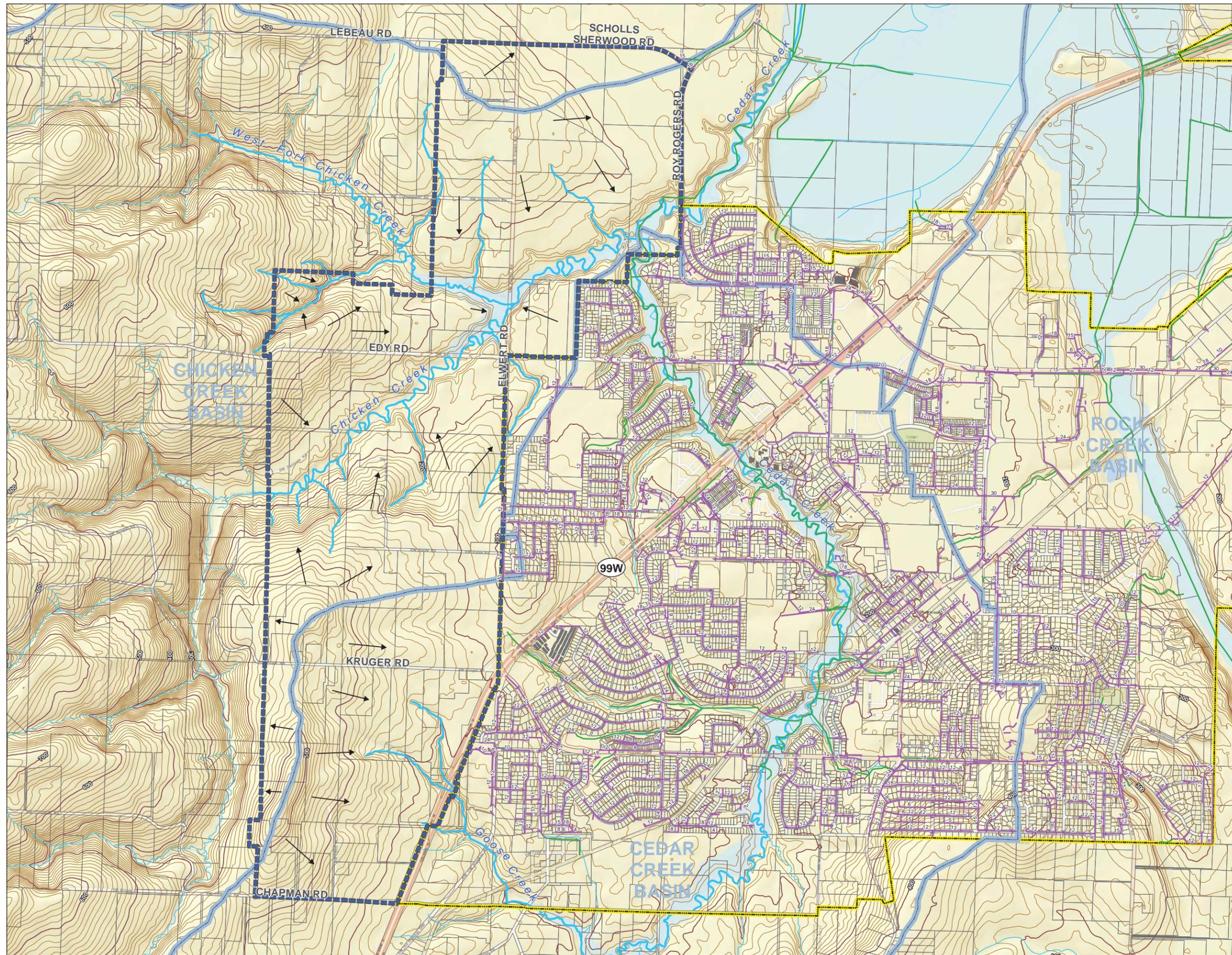


-  Study Area
-  Sanitary Sewer - Gravity Main
-  Sanitary Sewer - Force Main
-  Rock Creek Trunkline
-  Sherwood Trunkline
-  Future Trunkline Extension
-  Potential Connection Point
-  Sanitary Sewer - Pump Station
-  10ft Contour
-  100ft Contour
-  Stream
-  Tax Lot
-  Urban Growth Boundary

0 400 800 1,600 Feet



Figure 3
Existing Conditions
Sherwood West
Stormwater System



-  Study Area
-  Stormwater Basin
-  Storm Facility - Open Conveyance
-  Storm Facility - Closed Conveyance
-  Direction of Flow
-  10ft Contour
-  100ft Contour
-  Stream
-  100-year Floodplain
-  Tax Lot
-  Urban Growth Boundary

0 400 800 1,600 Feet

