South Milwaukee Water Utility Service Area Plan

November 2025

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1. Introduction

1.1 Background

The City of South Milwaukee is located in southeastern Wisconsin between the cities of Cudahy and Oak Creek with Lake Michigan to the east. The South Milwaukee Water Utility supplies drinking water through their water treatment plant which intakes water from Lake Michigan and provides service to all residents within the City of South Milwaukee and Holy Sepulcher Cemetery in Cudahy. A map of the municipal boundary is shown in figure 1.

Figure 1: South Milwaukee Municipal Boundary

1.2 Purpose

The Wisconsin Department of Natural Resources (WDNR) requires public water supply systems (PWS) serving a population of 10,000 or more that operate their own wells or surface water

intakes to construct a Water Supply Service Area Plan. The purpose of the plan is to ensure PWS can provide an adequate supply of water to customers and maintain compliance with NR854 of the Wisconsin Code as follows:

1. Delineation of the area for which the plan is being prepared
2. An inventory of the sources and quantities of the current water supplies
3. A forecast of the demand for water in the area over the period covered by the plan
4. Identification of alternative options for supplying water
5. An assessment of the environmental and economic impacts of carrying out recommendations of the plan
6. Demonstrate the plan will effectively utilize existing infrastructure
7. Identification of procedures for implementing and updating the plan
8. Analysis of how the report supports and is consistent with comprehensive plans for the service area

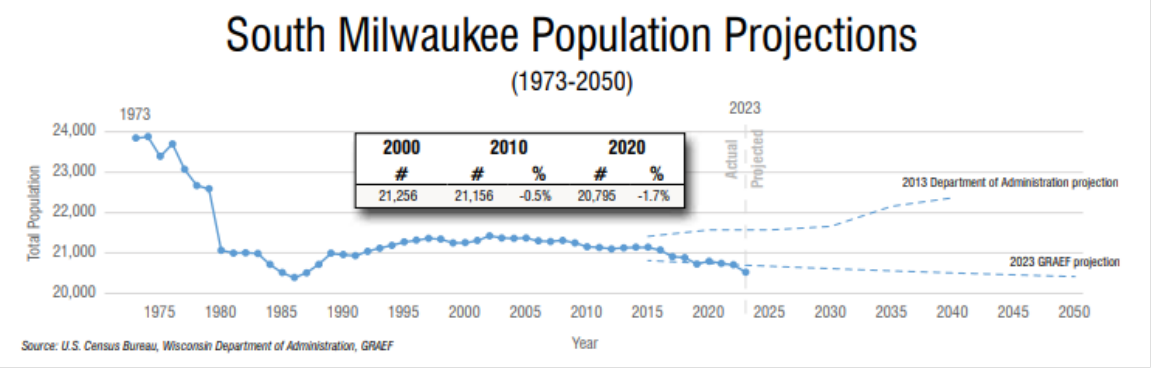
2. Current Conditions

The South Milwaukee Water Utility was established in 1893 to provide safe clean water to the residents and businesses of the City. The Utility has a membrane surface water treatment plant that uses plentiful and high-quality water from Lake Michigan as a water source. The Utility supplied an average of 1.4 million gallons and a peak of 2.2 million gallons of treated water per day in 2024. The treatment plant has the capacity to produce 6.0 million gallons of water per day. This water is delivered to approximately 6,600 customers through 69 miles of underground watermain.

2.1 Population

According to the Wisconsin Department of Administration, the City of South Milwaukee's population was estimated to be 20,233 in 2024, and its future population is projected to be approximately 19,835 in 2050. The City's declining population follows the historical trend as shown in Figure 2 and the overall statewide trend.

Figure 2: Population Trend



2.2 Land Use

The City of South Milwaukee approved its 2050 Comprehensive Plan update on May 20th, 2025. During the previous Comprehensive Plan Update process in 2015-2016, the City and Plan Commission created a Future Land Use Plan, using a "place based" approach to describe the desired future character of the various "places" in and around South Milwaukee. These are shown in figure 4. Places are designated as a Neighborhood, a District, or a Corridor that includes a range of possible uses and/or activities that represent possible acceptable uses for a given parcel.

Throughout 2024 and part of 2025 the City's Plan Commission worked on updating the Comprehensive Plan, keeping the "place based" Future Land Use Plan. The City is nearly fully built out, with most areas consisting of low-density single-family housing. The current parcel zoning map is shown in figure 3. Existing land uses are primarily residential, complemented by commercial and industrial corridors and nodes. To accommodate future population growth, neighborhood areas permit two-family housing and higher-density residential development along arterial streets. The future "place based" land use map is shown in figure 4.

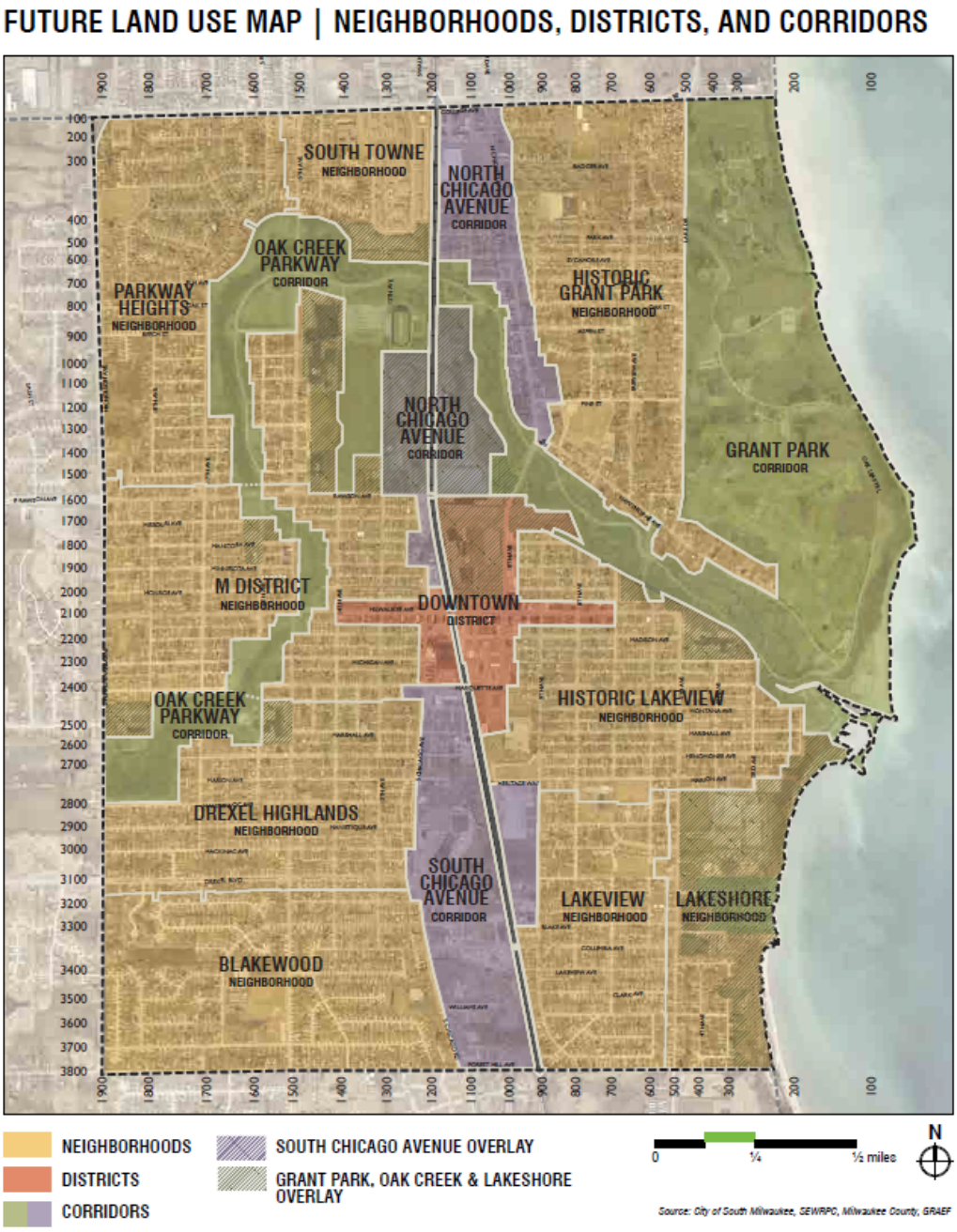
Figure 3: Existing Land Use-Parcels

EXISTING LAND USE – PARCELS

	LAND USE	ACREAGE	%
	Vacant	83.33	3%
	Public & School	139.38	6%
	Commercial	123.00	5%
	Industrial	175.72	7%

	LAND USE	ACREAGE	%
	Churches	44.72	2%
	Park	656.87	26%
	Multi-family Residential	281.79	11%
	Single-family Residential	981.64	39%
	Total	2,486.43	

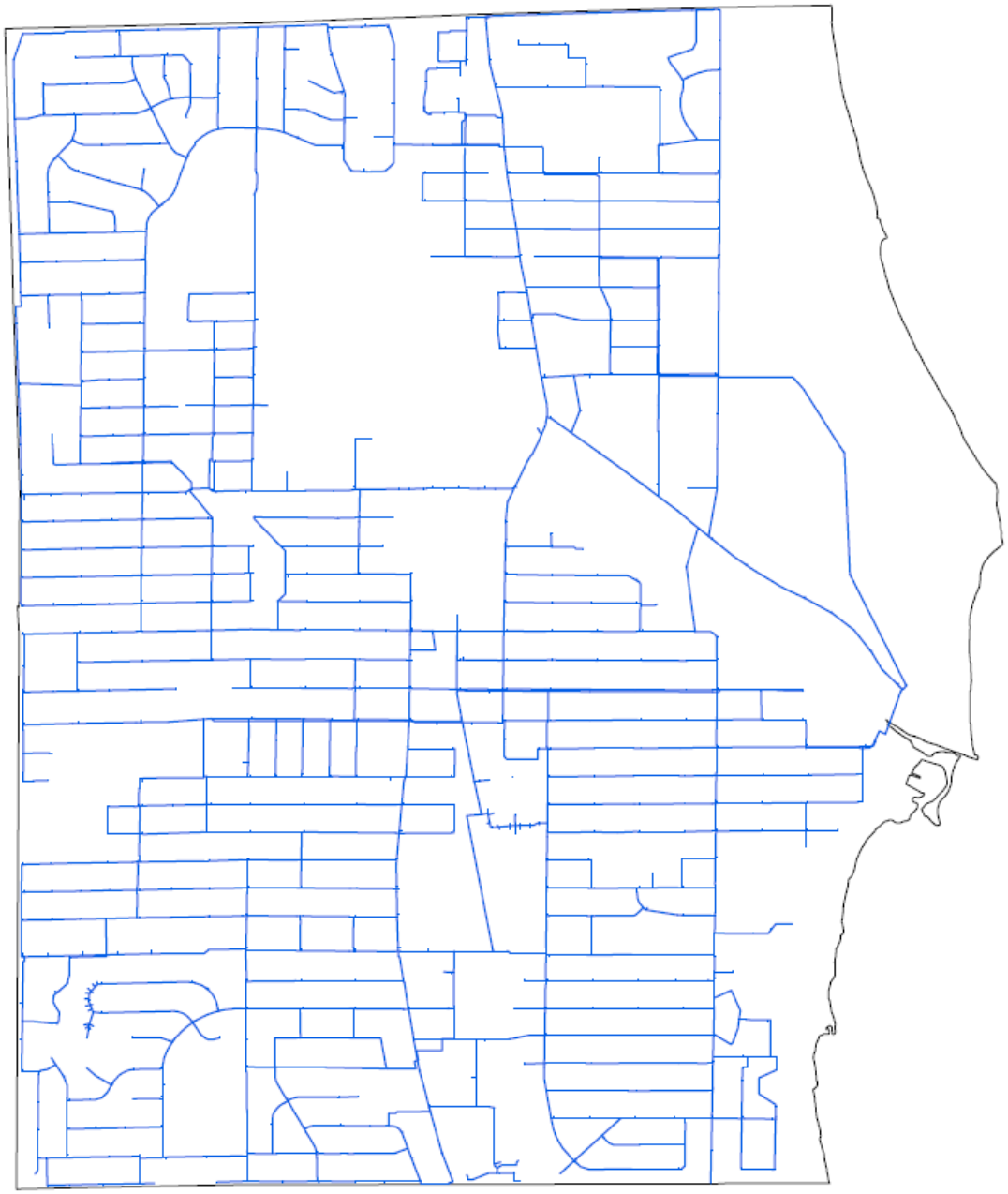
Figure 4: Future Land Use Map



2.3 Water Supply Service Area

The South Milwaukee Water Utility's service area is within the city itself and serves all customers within the municipal boundary and one customer outside the boundary as shown in figure 5. For the purposes of this plan, the entire South Milwaukee municipal limits are considered the overall Water Supply Service Area.

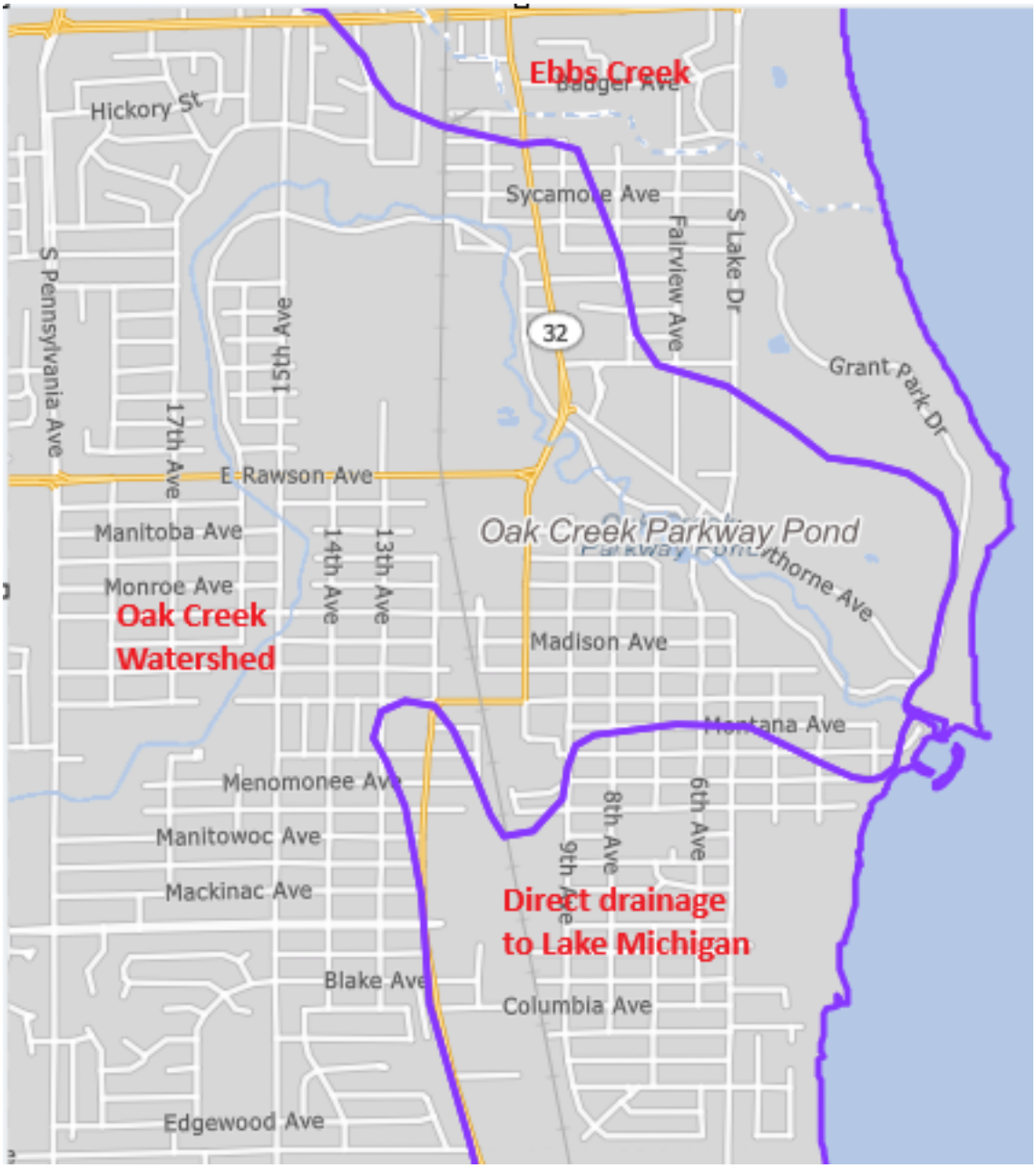
Figure 5: South Milwaukee Water Distribution System



3. Existing Water Supply System and Sources

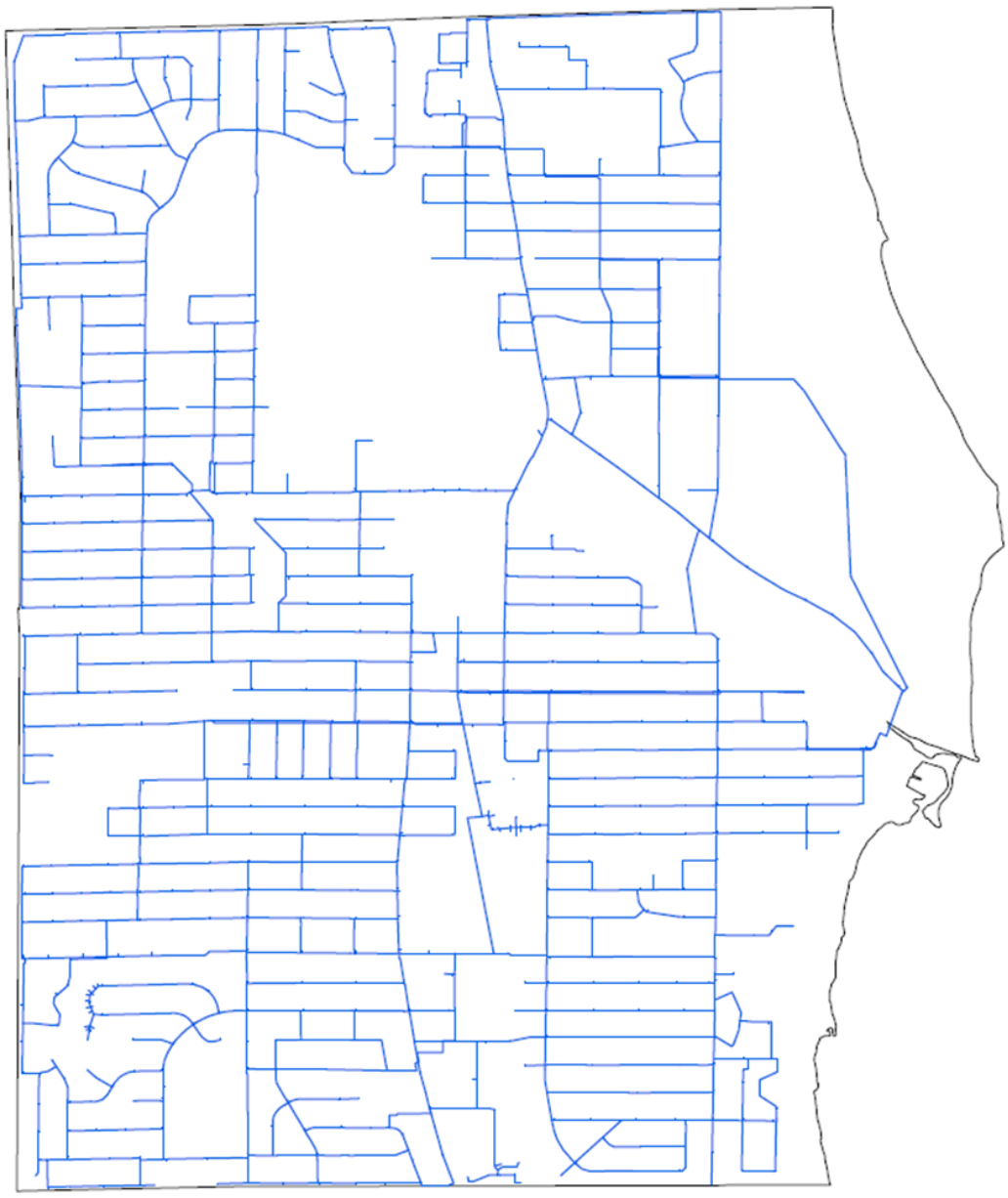
Surface water resources, consisting of lakes, ponds, rivers, creeks, and perennial streams and their associated wetlands, floodplains, and shorelands, form important elements of the natural resource base. Figure 6 depicts watersheds and surface water resources within the City. The City of South Milwaukee is situated within several watersheds, including the Oak Creek, Ebbs Creek, and the Lake Michigan direct drainage area, each of which ultimately drain into Lake Michigan. The entire eastern boundary of the City consists of Lake Michigan shoreline.

Figure 6 South Milwaukee surface water drainage



The South Milwaukee Water Utility uses Lake Michigan as its freshwater supply. Based on the 2024 Public Service Commission of Wisconsin (PSC) reports, the City has 363,710 feet of water main, 6,675 meters, and 659 hydrants throughout the distribution system. A map of the current system is shown in Figure 7.

Figure 7: South Milwaukee Water Utility Distribution Map



The City of South Milwaukee has its own Wastewater Treatment Facility. This facility has a design treatment capacity of 6 MGD and is sufficiently sized to treat current and future demand.

4. Water Use by Customer Sector

The City submits water use data to the PSC and is used to quantify water usage by each customer class. Figure 8 illustrates the customer class in 2024. Figure 9 illustrates the percentage of consumption by customer class in 2024

Figure 8: 2024 Customer Class

Figure 9: 2024 Metered Sales

Residential customers account for approximately 91% of the utility's customers and 71% of the total water usage.

5. Water Use Forecast

Future water usage for the City is expected to maintain its historical trend of 1.3 MGD as population declines, consumption decreases with improved efficiency and conservation practices, and climate change.

6. Water Supply Options and Plan

Two water supply options were evaluated on cost to supply water service to the City of South Milwaukee.

Option 1 – Continued service through the South Milwaukee Water Treatment Plant

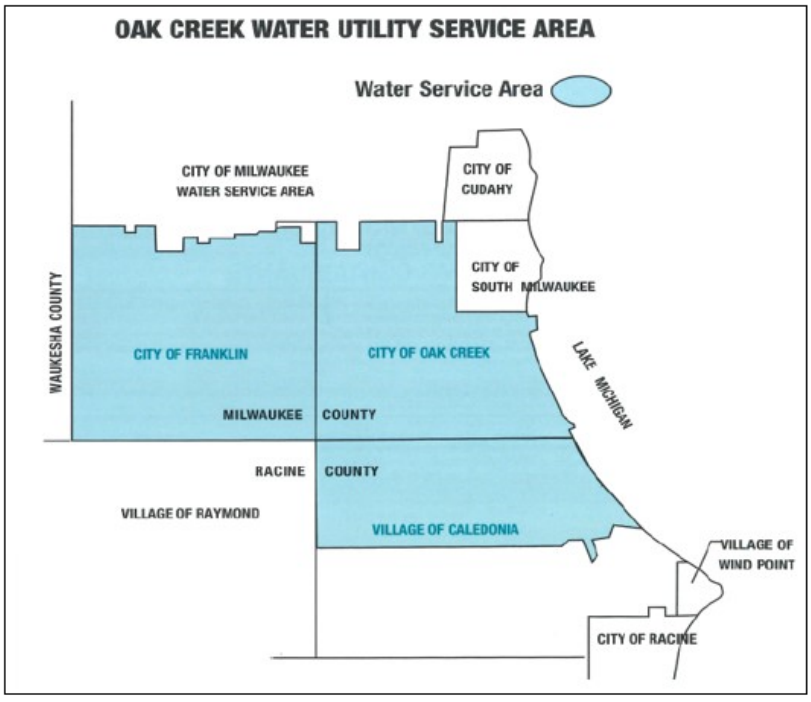
Option 2 – Purchase water from Oak Creek Water Utility.

Option 1 consists of the continued use of the water treatment plant and its surface intake to Lake Michigan. The City of South Milwaukee has made significant investments into the utility to deliver safe water to the City's residents and businesses.

Option 2 consists of purchasing water from the Oak Creek Water Utility. As shown in Figure 10, Oak Creek Water Utility serves multiple municipalities and has a common border with the City of South Milwaukee. There are three emergency interconnects between South Milwaukee and Oak Creek. There is an option to evaluate these connections, and potential to add more to purchase water from the Oak Creek Water Utility. To obtain the annual cost of purchasing water from Oak Creek Water Utility, the City would have to obtain a rate from Oak Creek and use their average water usage per day of 1.3 MGD to calculate their annual costs. In addition, there would be contract costs and initial connection costs associated with purchasing water from Oak Creek. The infrastructure investments made at the South Milwaukee Water Utility would ultimately need to be paid for, which have maturity dates of 2028 and 2039.

Currently, it is unlikely that South Milwaukee would be able to obtain DNR approval to transition to Oak Creek water while the City of South Milwaukee continues to have lead service lines. The polyphosphate corrosion control chemical, which is required by the DNR for South Milwaukee, is not added to the water in Oak Creek, as they do not have any lead service lines.

Figure 10: Oak Creek Water Utility Service Area



7. Water Diversion

7.1 Environmental and Economic Impacts

Due to costs of previous South Milwaukee Water Utility upgrades and additional connection costs to the Oak Creek Water Utility, it is advised that the City continue to use its water treatment facility and surface intake to Lake Michigan as an alternative to purchasing water from the Oak Creek Water Utility. The City's present water supply is adequate, secure, and has minimal environmental effects on Lake Michigan.

7.2 Approval

7.3 Implementation and Enforcement

The City will monitor water use and population as they continue to change and update the plan as necessary. These updates will be based on internal discussion within the utility and any requirements set by the PSC.

7.4 Plan Consistency

This report aligns with the City of South Milwaukee's Comprehensive Plan regarding land use and estimates from the Wisconsin Department of Administration. The South Milwaukee Water Utility has the capacity to meet this plan.