2023 WEBER BASIN WATER CONSERVANCY DISTRICT

PER CAPITA CONSUMPTIVE USE REPORT

BACKGROUND

Senate Bill 119 (SB 119), enacted by the Utah State Legislature in the 2023 session, requires the Weber Basin Water Conservancy District (WBWCD), as a designated reporting district by the Utah Division of Water Resources, to provide an annual reporting of per capita consumptive use (consumptive gallons per capita per day or $GPCD_c$) for each county of the first or second class within its service boundary. Per capita consumptive use is to be used by state agencies and political subdivisions to track progress in water conservation and ensure efficient public water supply management.

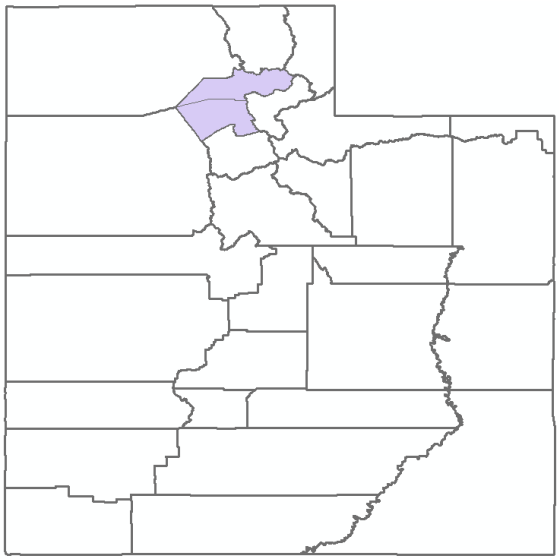

Figure 1.Utah Counties with Davis and Weber Counties highlighted.

WBWCD operates within two counties of the second class; namely, Davis and Weber counties (see Figure 1). Within these counties there are over 30 municipalities, over 100 public water systems, and over 30 secondary water systems. Each system has its own service area boundaries resulting in hundreds of unique water-use areas being served water through different combinations of public and secondary water systems. WBWCD collected water use data from 11 community water systems in Weber County, 17 community water systems in Davis County, 6 secondary water providers in Weber County, and 16 secondary water companies in Davis County (see Tables 1 and 2). These community water systems all serve populations of 3,300 or more in accordance with Utah Code §73-5-8.5(7)(a). WBWCD also received relevant discharge data from five publicly owned treatment works (POTWs) operated by four different sewer districts for calculation of return flow (see Table 3).

CALCULATIONS

Data from numerous water providers was used in the process of calculating representative per capita consumptive use for Davis and Weber counties. This data included metered end use deliveries of treated water provided by the public water suppliers, metered source deliveries of secondary water, monthly discharge volumes from each of the publicly owned treatment work facilities, and 2023 population projections from Kem C. Gardner Policy Institute broken down into smaller geographic areas by the Wasatch Front Regional Council (WFRC) (Traffic Analysis Zones (TAZ)). Using the public water systems service area boundaries as the basic geographic areas for analysis, WBWCD extracted the total volume of treated water, secondary water delivered, and population served. These areas were then grouped by the

county in which they operate. Secondary water deliveries were proportionately distributed based on the percent of their service areas contained within the respective public water system service area boundaries. Return flow credits for each of the areas were also determined using a weighted average based on the percent of the service area within each of the public water system service areas. The calculation for determining consumptive per capita water use was then calculated using equation 1.

$$GPCD_c = \left(\frac{[\Sigma PWS + \Sigma SWS]}{\frac{POP}{365}} \right) - RF$$

Where:

$GPCD_C$ = Consumptive Per Capita Water Use in Gallons per Capita per Day

PWS = Total Metered Treated Water Deliveries

SWS = Total Metered Source Secondary Water Deliveries within the respective PWS with loss assumptions

POP = 2023 Population based on WFRC TAZ boundaries contained within the PWS

RF = Return Flow, weighted average based on percent of the area served within the respective POTW service areas. Calculated based on the minimum monthly average discharge from the applicable POTW.

Water losses for each of the secondary water systems were estimated using smaller sample sets of metered secondary and metered treated water within the PWS service area for validation.

As more accurate data and more meter data is obtained in the future WBWCD anticipates this process increasing in accuracy and is committed to working with its customers' agencies in accomplishing this improvement.

RESULTS

Weber County's 2023 representative per capita consumptive use was 129 gallons per day.

Davis County's 2023 representative per capita consumptive use was 133 gallons per day.

	Weber County	Davis County
PWS	11	17
Secondary Companies	6	16
Treated AF	29067	35415
Secondary AF	33090	49524
Population	250355	357346
Treated GPCD	104	88
Secondary GPCD	118	124
Total GPCD	222	212
Return Flow Credit	93	80
Consumptive GPCD	129	133

COMMUNITY WATER SYSTEM	COUNTY	POPULATION
Bona Vista Water Improvement District	Weber	30,724
Bountiful City Water	Davis	37,636
Boyer Hill Military Housing	Davis	3,573
Centerville City Water System	Davis	17,804
Clearfield City	Davis	32,024
Clinton City Water	Davis	22,585
Farmington Culinary Water System	Davis	26,068
Fruit Heights City Water System (Culinary)	Davis	6,129
Hooper Water Improvement District	Weber	13,971
Kaysville City Culinary Water System	Davis	29,466
Layton City	Davis	78,242
North Ogden Municipal Water	Weber	25,308
North Salt Lake City Water System (Culinary)	Davis	20,335
Ogden City Water System	Weber	83,815
Pleasant View City Culinary Water	Weber	10,067
Riverdale City	Weber	9,204
Roy Municipal Water System	Weber	38,396
South Davis Water District (Culinary)	Davis	9,622
South Ogden City	Weber	16,883
South Weber City Culinary Water	Davis	7,556
Sunset City Water System	Davis	5,718
Syracuse City (Culinary)	Davis	33,789
Taylor-West Weber Water Improvement District	Weber	10,366
Washington Terrace City	Weber	8,812
West Bountiful City Water System	Davis	5,688
West Haven SSD	Weber	2,808
West Point Culinary Water System	Davis	8,980
Woods Cross City Water System	Davis	12,132

Table 1. Community Water Systems in Davis and Weber Counties

SECONDARY WATER SYSTEMS	COUNTY
Benchland	Davis
Bountiful Irrigation	Davis
Centerville Deuel Creek	Davis
DWCCC Clinton West Point	Davis
DWCCC Kaysville Layton	Davis
DWCCC South Weber	Davis
DWCCC West Layton	Davis
Fruit Heights	Davis
Haight's Creek	Davis
Hooper Irrigation	Weber
Layton	Davis
Mountain View	Weber
North Salt Lake City Water System (Irrigation)	Davis
Roy Water	Weber
South Davis Irri	Davis
South Ogden Con	Weber
South Weber Irrigation	Davis
South Weber WID	Davis
Syracuse	Davis
WBWCD	Davis/Weber
Weber Box Elder	Weber

Table 2. Secondary Water Providers

SEWER DISTRICT	POPULATION
Central Davis Sewer District	60,469
Central Weber Sewer Improvement District	215,065
North Davis Sewer District	238,512
South Davis Sewer District	105,789

Table 1. Sewer Districts

MAPS

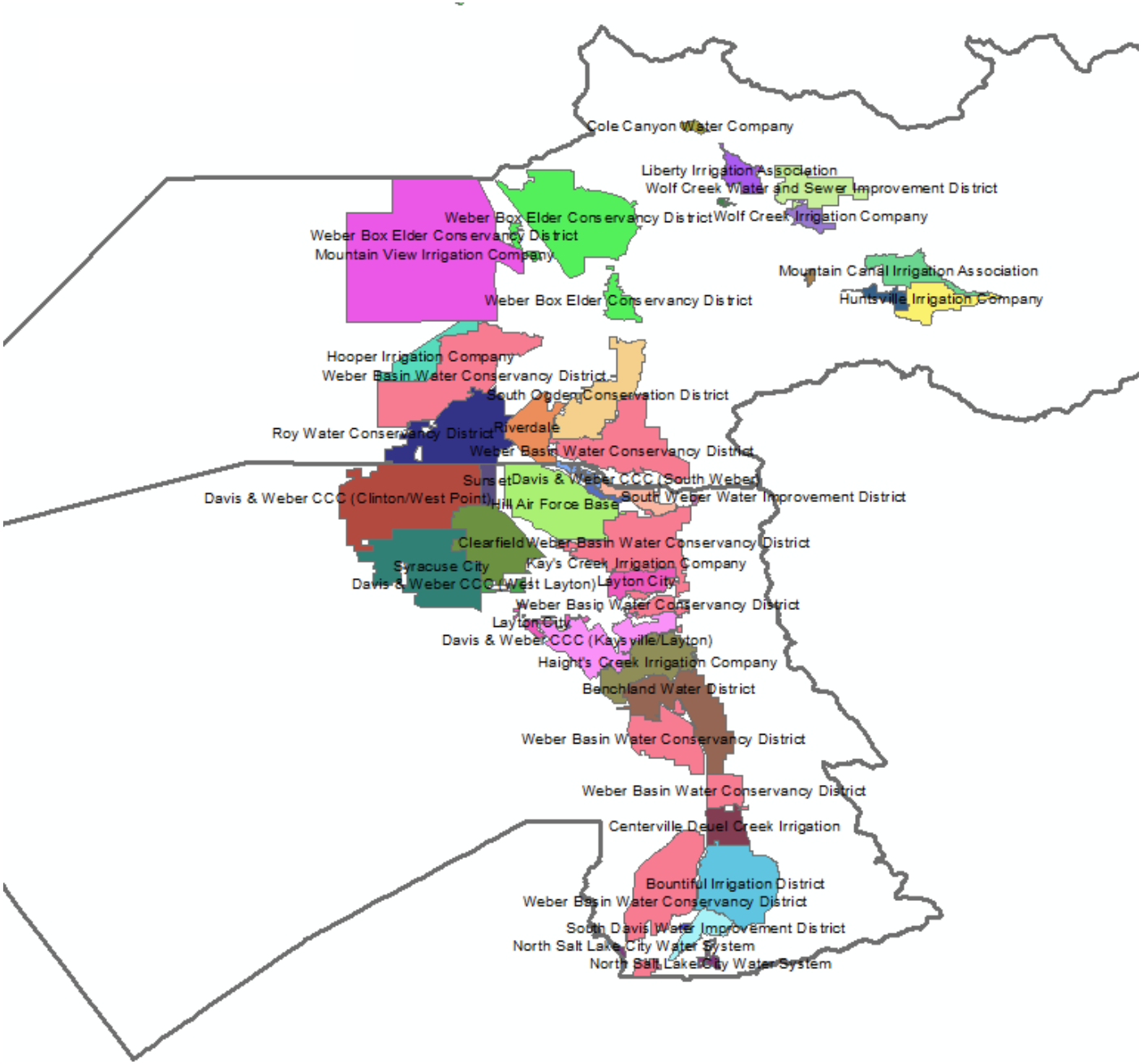

Figure 2. Secondary Water Provider Service Area Boundaries with County Boundaries

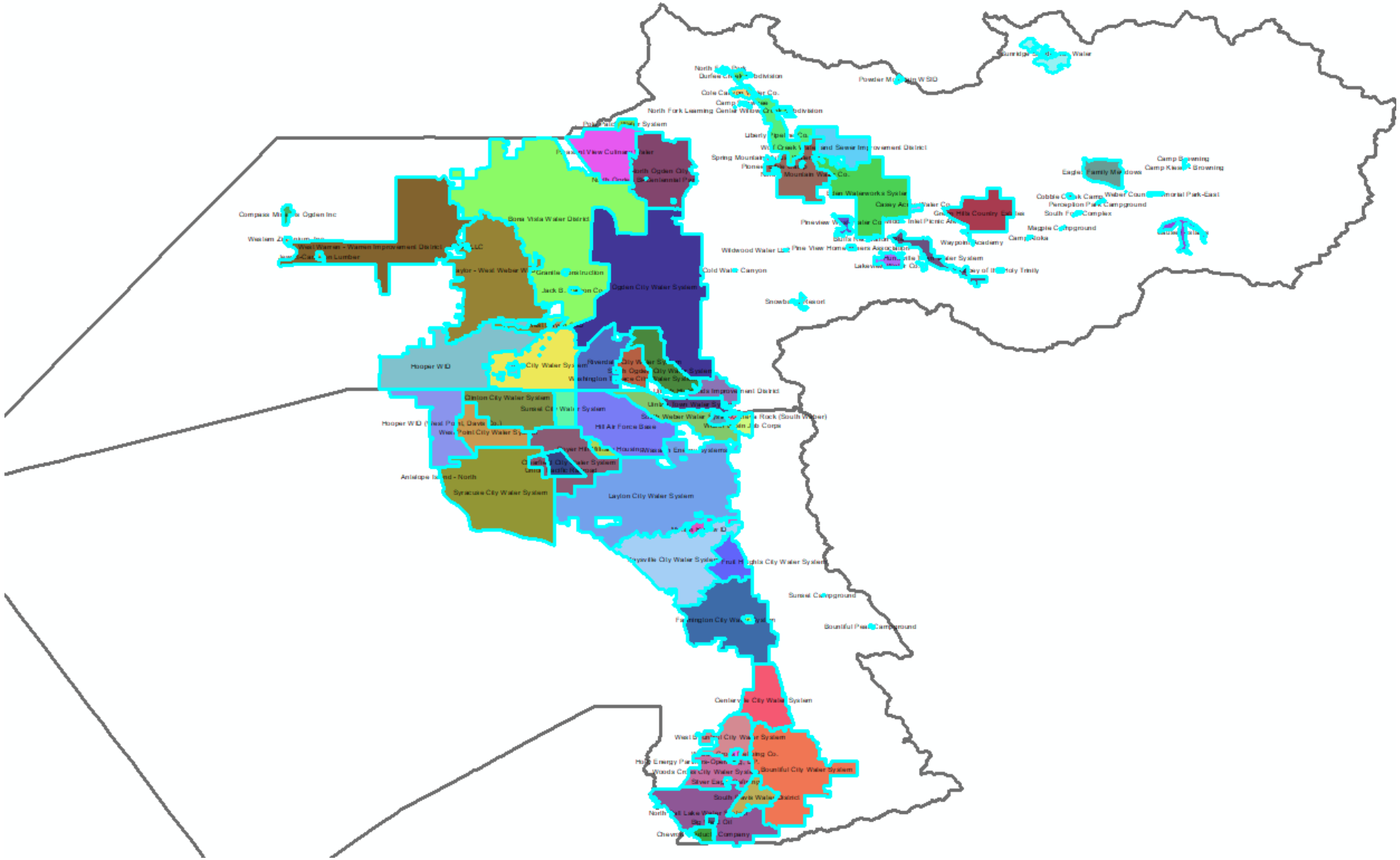

Figure 3. Community Water System Service Area Boundaries with County Boundaries

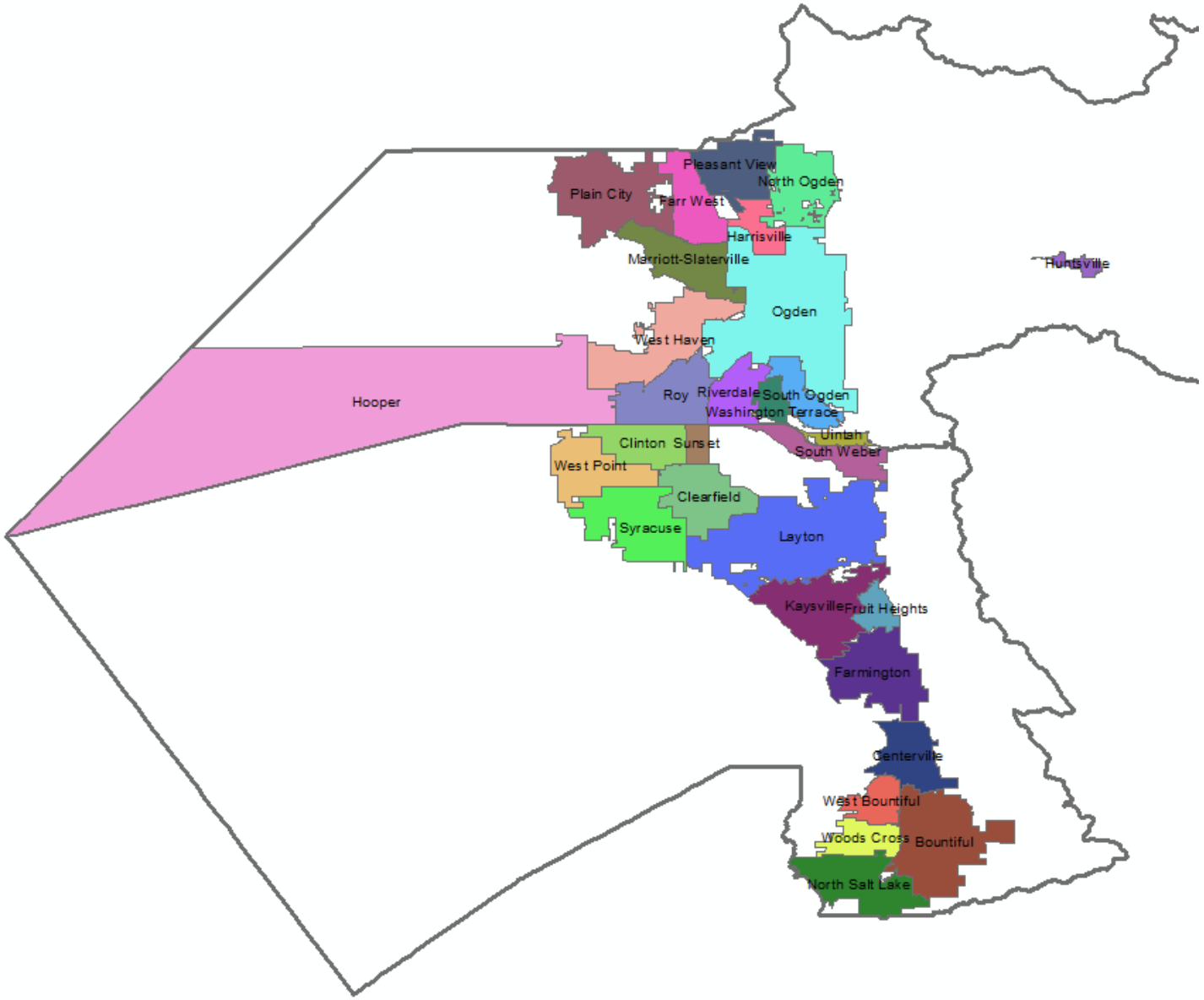

Figure 4. Municipality Service Area Boundaries with County Boundaries

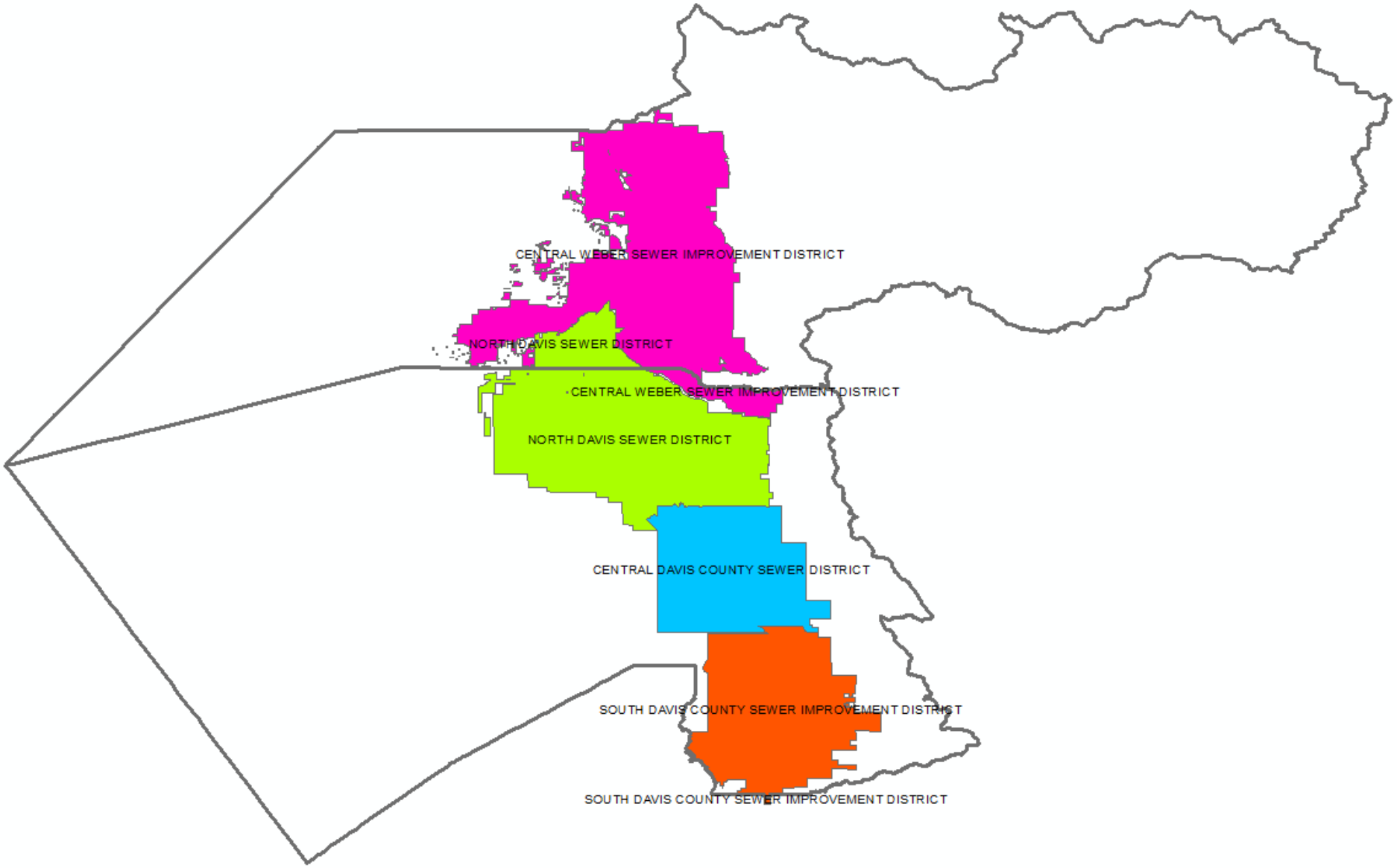

Figure 5. Sewer District Service Area Boundaries with County Boundaries