Data was collected using public resources via SANDAG, City of San Diego website, and an online GIS program. First, the service area was identified, and parcel information was extracted from SANDAG. The extracted data was organized by zoning codes through excel which created seven zone categories: four residential, two commercial, and one industrial. These findings were then compared to the City of San Diego Official Zoning Map to verify no discrepancies in obtained zoning data.

Further inspection was needed to determine population density for the four residential zones. Examination through google maps determined which residential areas were single family homes, duplexes, condos, or apartment buildings. Assumptions for population density was determined based on the building type: 3.5, 7, 32 person per acre for single family homes, duplexes/condos, and apartment buildings.

Through review of google maps a school and hospital were discovered in the service area. The hospital was zoned as commercial therefore, the area of the parcel was rounded to 5 acres and subtracted from sum of commercial zone acreage. The school’s area was also rounded to 5 acres and no subtraction was needed for the school as it was not counted in any of the seven zones.

After organizing the zones and properties, calculations could be made by aid of the City of San Diego Water Facility Design Guidelines. The average annual water demands for the service area of all residential, commercial, industrial, with one school, and one hospital was determined to be 0.6 MGD. The peak hour demand and the maximum day demand was determined to be 2.52 MGD and 1.14 MGD, respectively. Finally, the fire demand for this service area was determined to be 0.8 Mgpm.

Lake Murray is the water service for this area connected by a 6000 ft pipe. The treatment facility and storage tank will be located as shown below. The location chosen is an open parking lot presumably purchasable. Sustainability concerns for this project:

* Environmental impact on Mission Trails Regional Park Lake Murray
* Social and economical impact on construction across the I-8 and the Green Line Trolley

Map

Description automatically generated

 