

GBRA's IH-35 Treated Water Delivery System

Raw water supplies from Canyon Reservoir are delivered and treated at the 21 million gallons per day (mgd) San Marcos Water Treatment Plant (WTP) and then delivered to the City of San Marcos through the SMWTP high service pump station or through the 20 mile GBRA IH-35 Treated Water Delivery System (IH-35 TWDS). Of the supply delivered to the San Marcos WTP, up to 9 mgd is treated and taken at the plant for the City of San Marcos. The remaining contracted capacity of 11.8 mgd is used to deliver supplies to City of Kyle, Goforth SUD, Sunfield MUD, City of Buda, and Monarch Utilities, LLP (Table 1). A map of the system, including locations of delivery points (DP), is included in Figure 1.

Table 1. Contracted Treated Supply for the IH-35 Treated Water Delivery System

Entity	Contract (mgd)	Max 2014 (mgd) ²	Delivery Point and Location
City of Kyle	4.86	2.00	Yarrington Rd (1), & Bunton Rd (2)
Goforth SUD ¹	0.94	0.68	Hillside Terrace (3)
Sunfield MUD ¹	4.0	1.11	CR 118 (4)
City of Buda	1.5	1.08	Bonita Vista (5)
Monarch Utilities, LLP	0.5	0.49	Bonita Vista (6)
Total	11.8	5.37	
<small>1 – Contract amounts vary with transfer commitments between Sunfield and Goforth. As of 1/6/2015, Sunfield had transferred 0.46 mgd to Goforth. Combined amount between the two contracts is 4.94 mgd. 2 – Average daily flow rate during the maximum month in 2014 based on GBRA records.</small>			

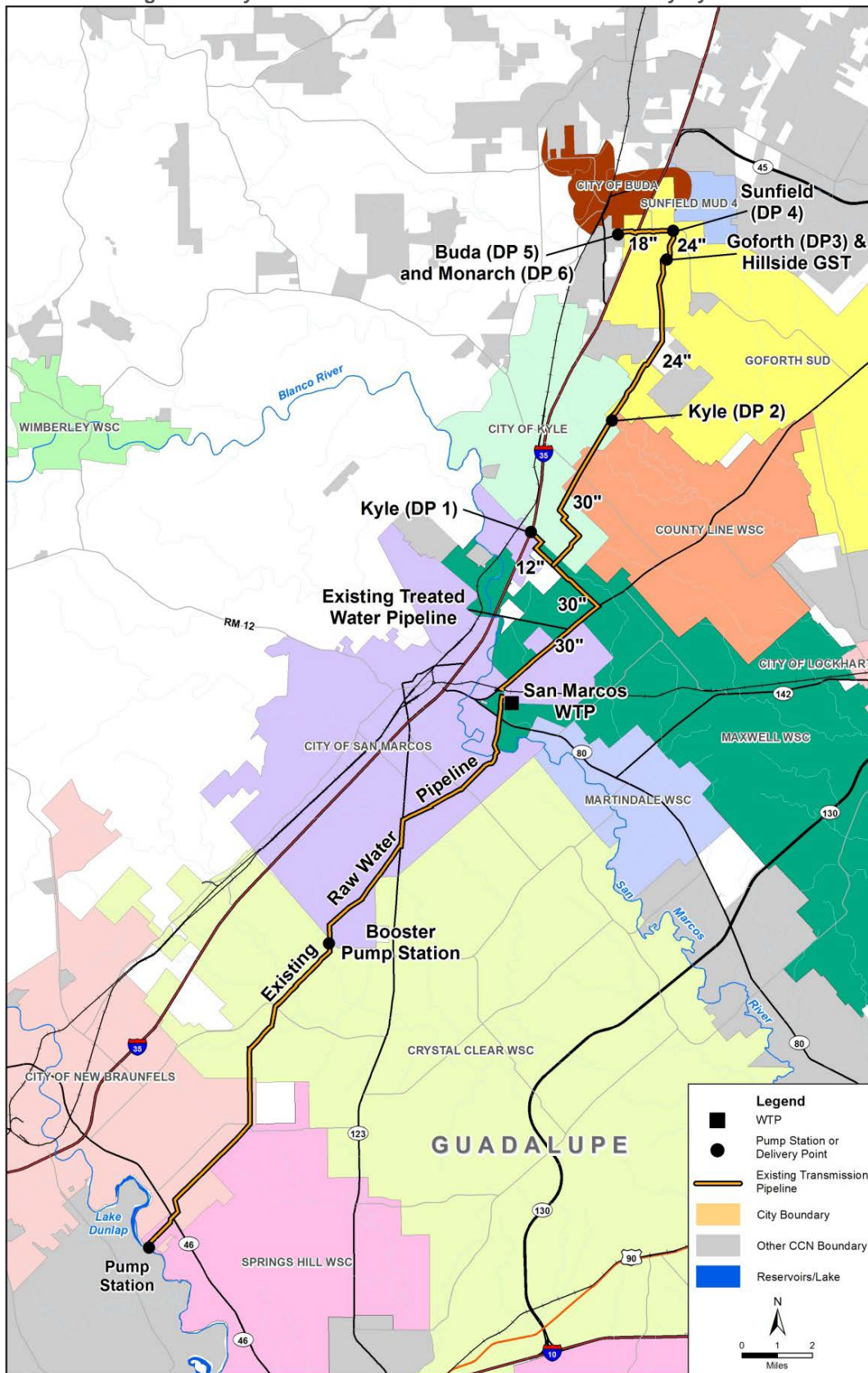
The IH-35 high service pump station (HSPS) at San Marcos WTP uses 500 horsepower pumps (2 duty and 1 standby) to deliver supplies to DPs 1 and 2 and the 1,000,000 and 500,000 gallon Hillside Terrace tanks. From the Hillside Terrace tanks, water supplies are delivered to DPs 3, 4, and 5 from the pressure head based on the water elevation in the tank.

According to system modeling analyses performed by TRC¹, the TWDS has a total capacity of 11.8 mgd. These analyses indicate that a maximum of 3.2 mgd can be delivered to DP 5 and 6 without negative pressures in the system. The modeled flow rate to DP 5 and 6 is approximately 1.2 mgd greater than the combined contracted amount for Monarch Utilities, LLP and City of Buda.

Summary Considerations

1. GBRA's IH-35 TWDS has 11.8 mgd of capacity, which is fully contracted (but not fully used).
2. System hydraulic modeling indicates that a maximum of 3.2 mgd of this 11.8 mgd can be conveyed to Buda's delivery point. However, to deliver this amount would require reductions of committed capacity at one or more of the other delivery points
3. Operating rules at the Hillside Terrace tanks may have to be adjusted to facilitate additional deliveries to Buda and maintain minimum pressures.
4. The maximum amount of water delivered in 2014 was about 45% of the system capacity². Canyon Reservoir water supplies may, therefore, be available on an interim basis until contract holders grow into their full contract amounts.
5. Three options have been discussed among the Hays County technical group³ for delivering additional 1 mgd to Buda between 2017 and 2023 using the TWDS.
 - o Option A - Kyle shares supply to Buda until 2023 utilizing the HCPUA Sharing Agreement. Kyle is reviewing their projected demands to determine if there is sufficient reserve supply to meet Kyle and Buda's need in the interim period.
 - o Option B - San Marcos shares their supply utilizing available capacity in the TWDS for the interim period or until demand on the TWDS approaches 11.8 mgd.
 - o Option C - San Marcos shares 1 mgd of supply with Buda utilizing TWDS capacity under an agreement with Kyle to wheel supplies through the interconnect with Kyle and San Marcos.

Figure 1. Layout of the GBRA IH-35 Treated Water Delivery System



¹ TRC. Letter from Charles Sheler. IH-35 Water Transmission Main WaterCAD Models. March 20, 2009.

² Darel Ball. Personal communication. March 6, 2015.

³ March 25, 2015 meeting with representatives for Kyle, Buda, San Marcos, HCPUA, GBRA, and Hays County