3.1 Phase 1 Improvements

3.1.1 Wells

Of first concern is getting more water to the treatment plant. This process starts with improvements at the well field. The current firm capacity of the wells is 8.5 MGD. Issues concerning water quality to a few of the wells have posed problems. Electrical issues at the well fields have also been of concern. There is currently a portable generator that can operate one well if the electricity went out. To overcome these issues, the following items need to be addressed. First, the starters for five of the wells need to be upgraded. To be capable of starting more wells in a power outage, two more portable generators should be purchased. GRW also recommends installing two new conventional wells, along with a new raw water main from the well field to the water treatment plant. This will provide redundancy and increased capacity to the water treatment plant.

3.1.2 Water Treatment Plant

Next, improvements to the water treatment plant are needed. This includes adding another high service pump station, upgrades to the chemical feed systems, and updating the electrical system at the plant. The new high service pump station will be capable of delivering a maximum of 7 MGD to the distribution system through a new transmission main. With both high service pump stations running, a total of 13 MGD will be delivered to the distribution system. This is the predicated peak demand in the year 2025. The proposed new chemical feed building will store and supply the necessary chemicals to treat the raw water. To address safety issues, GRW has recommended switching from chlorine gas to hypochlorite solution disinfection. Other safety issues such as security gates and fences are also recommended.

3.1.3 Distribution System

The proposed transmission main from the new high service pump station will be 36 inches in size and will be capable of delivering 13 MGD to the distribution system. It will extend from the water plant to US 42. A 30-inch main will connect the new 36-inch main back to the existing 24-inch main along Greenhaven Lane.

Oldham County is short of meeting the Public Service Commission (PSC) storage requirement, which is equal to one day average demand plus that required for fire protection. Included in this phase is the construction of two new elevated storage tanks with a combined volume of 3,000,000 gallons. These tanks are under design and will be located at the Dynegy and Woodlawn sites. Along with these new tanks will be large diameter mains to minimize friction loss between the tanks. With the improvements along KY 393, a new 24-inch main is proposed to extend to the Centerfield tank. This will allow Centerfield to float on the hydraulic grade with the rest of the system. Figure 2 shows the proposed distribution system improvements in red.

TABLE 1

PLANNED PHASE 1 SYSTEM IMPROVEMENTS

Project	Description	Estimated Construction Cost (Rounded)
1.1	PROPOSED 36-INCH HIGH SERVICE MAIN FROM THE WATER TREATMENT PLANT TO US 42	$2,620,000
1.2	PROPOSED 30-INCH WATER MAIN ALONG US 42 FROM NEW 36-INCH TRANSMISSION MAIN TO EXISTING 24-INCH	$480,000
1.3	PROPOSED 1,000,000 GALLON WOODLAWN ELEVATED STORAGE TANK	$1,100,000
1.4	PROPOSED 24-INCH WATER MAIN ALONG COMMERCE PARKWAY AND ALLEN LANE TO THE WOODLAWN TANK	$1,020,000
1.5	PROPOSED 2,000,000 GALLON DYNEGY ELEVATED STORAGE TANK	$2,200,000
1.6	PROPOSED 18-INCH WATER MAIN THROUGH THE BUCKNER CROSSING DEVELOPMENT	$320,000
1.7	PROPOSED 24-INCH WATER MAIN ALONG SR 393 TO THE CENTERFIELD STORAGE TANK	$530,000
1.8	PROPOSED IMPROVEMENTS TO THE WATER TREATMENT PLANT	$2,600,000
1.9	PROPOSED 2 NEW CONVENTIONAL WELLS & ELECTRICAL IMPROVEMENT TO THE EXISTING WELLS	$760,000
1.10	PROPOSED RAW WATER MAIN FROM WELLS TO WATER TREATMENT PLANT	$1,030,000
1.11	PROPOSED IMPROVEMENTS TO GREENHAVEN PUMP STATION	$250,000
	SUBTOTAL	**$12,910,000**
	CONTINGENCIES (10%)	**$1,290,000**
	TOTAL	**$14,200,000**