

INFRASTRUCTURE IMPROVEMENT PLAN

Regarding infrastructure improvement. There are several things that need to be done throughout the system, being replacing aging and non-functioning pumps, pump motors, aging meters, master meters, PRV valves, and service lines. We will start and go through this system by system. There are eight total systems that we need to focus on.

LOUELLEN PWS# KY0480498

The first system is Louellen system. We have a total of three pump stations with a total of two motors and two pumps per station in each pump station. They are heat and telemetry (SKADA) the systems work, and the pumps and motors are 7 to 10 years old we need to get spare pump and motor for these pump stations because as of right now there is no Spare pumps or motors for the system (pump and motor cost is \$6,000.00 X1 pump and motors are the same in each station). Also on the telemetry side, we need to get a spare processor and radio for the systems (processor is \$1,800.00, the radio is \$2,500 X1 the radios and processors are the same in all three pump stations). The tanks in the systems need to be inspected and is planned to do in 2024. The last inspection was over 10 years ago. The Louellen tank has been plated and welded once before and may need to be in the future replaced with a new tank in the system. We also need to work on several hydrants and valves throughout the system and install zoning meters to make it easier to do leak detection throughout the system for better leak detention.

KENVIR PWS# KY0480603

The next system we are going to talk about is the Kenvir system and this system we have two tanks, this system also has SKSDA. We have the Black Mountain tank which that tank needs inspected and. we need to work on the fence around that tank. There is a very extensive piece of the fence that is missing, The Disney tank is a skid tank (Holds 25,000 gallons it also needs inspected and if inspection requires replaced (Inspection in 2024). The pump station in the Disney area needs to be upgraded to a above ground pump station and doing so needs new pumps and Maintenance done to that system including service line, and fire hydrants, also needs to be zoned off for leak detection. In Kenvir system we also have the Ages area this area consists of a skid tank (25,000 gallons) this tank also needs an inspection done and if inspection required replace tank (inspection to be done 2024). The Ages pump station needs a spare motor and pump ordered.

COXTON PWS# KY0480265

The Coxton system is a gravity fed from the Kitts master meter, which is supplied from Harlan Municipal Waterworks. It is a simple system, and it goes into the Brookside

and Coxton areas. There are meters in the system that need to be replaced and there are several meters in that system that are not reading properly and need to be replaced. Also, far hydrants and valves need to be made more accessible for future use and the system needs to be zoned off to better do leak detection.

DAYHOIT

The system we are going to discuss is the Dayhoit system. This system has one pump station and one buster pump station and one tank. This tank needs to be inspected. The telemetry at this tank needs to be updated due to deterioration throughout the years. They also need to fence around this tank to protect it from vandalism and or theft. They are also PRV's in the system that need to be (three PRV at \$5,500 each), rebuilt or replaced to prevent pressure spikes throughout the system which is the Watts Creek area in the Dayhoit system. The next part of the day system that needs attention is the booster pump station on highway 3451. It has been started on being upgraded and abandoned and is now running in manual continuously, it needs to be finished and a new pump and new motor for the right-hand side of this station so that it will work in automatic the way it is intended to (plus needs a spare pump and motor purchased \$20,000 to finish). This system also needs meter replacement and zoned off to better do leak detection.

WALLINS PWS# KY0480572

The next system is the Wallins system. There is three tanks and three pump stations in this system. the Daniels Mountain pump station as two variable frequency drive that run the motors that need to be replaced and updated. There is one pump that has a seal leaking that needs to be rebuilt and we also need spare pumps and motor for this station. The heater at the Daniel Mountain pump station needs to be replaced at the pump station (\$500) the Daniels Mountain tank needs to be inspected. Also, there is a PRV station on Daniels Mountain. This PRV station needs to have a new PRV (\$5,500.00) installed in it so that it can better suit the reduction in pressure throughout the Wallins system. Throughout this system are several fire hydrants that is a non-functional due to overtightening or failure due to not having regular maintenance done. The next tank is the Banner fork pump station and tank. This pump station is a relative new pump station and all it needs is a spare motor and pump purchase for hit so that we will have redundancy. The Banner Fork tank is fairly new, but it needs inspection (happening in 2024).

GREEN HILLS PWS# KY0480341

The next system we are going to talk about is the Green Hills system. This system needed work when acquired by Black Mountain Utility District. We will start by talking about this system and then break down what the plan is going forward. There

are eight pump stations, and one buster pump station in this system. There are five tanks in this system, several valves air release valves and a PVC line that ranged from eight to fourteen feet in depth. There's no record of the last time this tank was inspected. There are four pump stations feeding the Pine Mountain tank. There are several issues we need to address with these pumps, the variable frequency drives (VFD) need to be replaced (\$3,000X4). There are two motors and pumps per station, all the motors and pumps are the same so if we get one spare pump it can be used throughout all four stations. We also need some kind of hoist system that we can move from pump station to pump station to do the maintenance work on these motors and pumps. The next thing is the PRV at the bottom of the mountain that feeds the Davis tank and the Bigalow tank. We need to put in new PRV 's with electronic solenoids so we can control them through timers and better control the tanks. Davis tank needs inspected, and pressure washed. The Bigelow tank is an older tank. We need to get the tank inspected and to see what needs to be done to it repaired, replaced or still in working order. We are going to discuss the Divide tank it needs inspected and that is all it needs as far as I know unless inspection shows different. The Divide pump station has one pump that doesn't work and one that works, and they run off a timer we need to get two pumps and motors so we can have a spare pump and motor. The area that we are going to discuss is the Shepherd tank. The Shepherd tank needs inspected and the pump station at the Shepherd tank needs new motors, new pumps, and an inspection (4,300X3). This next pump station pumps up to the Shepherd tank is the Salt Trace pump station, this pump station needs a complete overhaul, electrical, pump motors and some plumbing issues along with the valves in front of the motors that close off when the pump shut down \$40,000). The next area is the Harlan/Bell pump station. This pump station is a new pump station. It has one motor that does not work and one pump that does not work. We need a new motor and pump for it and we need an update on the variable frequency drives for they are aging and need replaced (\$8,500).

ROSSPOINT PWS# KY0480650

The next system we're going to talk about is the Rosspoint system. This system starts at the Harlan Master meter on highway 421 and runs down highway 413. This system has copper service lines that need to be replaced (that will be in our water loss surcharge spending plan). There is a pump station labeled Putney pump station. This pump station needs pumps and motors(\$5,700X2). There is one tank in the Putney part of the Rosspoint area. This tank needs to be inspected. Other than that, this tank is in is in good shape there are hydrants within the system that addressed and maintained most of all this system has a lot of copper service line that need to be replaced on our side. (we are going to try to get this done through the water loss searcher charge money). Also, we need to zone off the system to be able to do leak detection better.

SUKEY RIDGE PWS# KY0480461

The next system is Sukey Ridge. This system has one pump station and one tank. The tank in this system needs to be inspected and or cleaned if inspection requires it. The system has a lot of service lines that are PVC on the utility's side. These lines need to be replaced because they are prone to leaking. The PRV throughout the system needs to be checked and rebuilt or replaced to keep from having too much pressure to keep the service lines from leaking. Telemetry may need an upgrade, for it is the main telemetry that feeds all the SKADA into the office. We also need to zone off the system to be able to do leak detection in a more efficient way.

This is the thing throughout our systems that need to be managed and maintenance done to and or replaced. We will be doing continues leak detection and moving to the goal of 15% or below on water loss.

OFFICE/BILLING SOFTWARE AND FEILD EQUIPMENT

We need to have a plan in place to where we are constantly rotating our vehicle inventory for the field when one gets to the end of its life that we have the finical stability to replace it We are in the process of purchasing a new backhoe through the KIA clean water money that was granted that will help on our equipment. We also have an excavator that needs shop work done on it and we need to plan it ASAP. We have one truck which is a 1500 Chevrolet that has 279,000 miles on it. It has started to use about a quart and a half of oil every two weeks it needs replaced we have a 1500 Chevrolet white that has 249,000 miles on it. It will soon need to be replaced, we do have two 2001 Ford rangers, one of them has 77,000 miles on it and the other one has 55,000 miles on it. These vehicles are leased and are in very good shape. We have also purchased to Chevy Colorado, and both are in good shape one has 32,000 miles on it when purchased and the other had 7,000 miles on it when purchased. We have a Ford F250 diesel that we use to pull the excavator. This truck, which is in decent shape for the job will soon need a motor of \$15,000. We also have a ram 2500 that is our spare pulling vehicle. This truck has 179,000 miles on it, and this is the shape of inventory.

In the office we have new computers that was updated last year 2022 and they are in very good shape. The office furniture is in good shape and the only thing that the office needs to do is we need a new Bill in for that has Customer portals customer pay online and work order apps to make our jobs more efficient, efficient in the field and to save on costly running around to get work orders and to go fulfill them with a new system we are our field agents would be able to do all of this on their phones, and it would save time and gas for the district

Supplies we keep a good amount of supplies to fix any repair that comes up for all sizes of pipe that we have throughout the system. We have plenty of supplies to fit service lines. Service line leaks are one of the biggest problems that we suffer through due to

improper installation when first put in that contribute to a lot of our leaks. we stay ahead on supplies by having blanket orders with three different vendors therefore, as the brass becomes available, that is fittings, connection, connectors, nipples, reducers, hymax meter boxes, setters meter box lids all of us that we have in case something comes up and we need it to replace something

Meters there are a lot of meters in the system that are over 10 years old. We are working to replace them. We have ordered \$400,000 worth of meters and radios for our system. Our system uses the Mueller radio reading system. The radios that were installed when they went with the system were the hot rod radios, which are obsolete now and we are having to replace them with updated radios. These are good radios, and they seem to be working well. We are going to be continuously changing out meters until we get compliant with the 10-year life span. we are looking into getting a test bench to test our meters in house so if there is a complaint about a meter that we can bring it in and test it and if we find problems be able to make it right with a customer and or replace or put back into service

Black Mountain Utility District knows that all of this can't happen overnight, so in going forward this is our infrastructure improvement plan. We have money for a lot of the motors and pumps to be replaced throughout the system through the KIA grant that we was awarded so a lot of these motors and pumps will be taken care of, and all the tank inspections will be taken care of out of this Grant money And all other stuff throughout the system, we are hoping that through the water loss surcharge money that the PSC approved us the collect that we can use hit for a lot of service line changes, and a lot of the other stuff that is problematic in our system.