CDBG Mitigation Grant Application Proposed Project: Calhoun County Dark Fiber Optic Loop

Calhoun County will mitigate future storm impacts and increase the resiliency of the countywide emergency communication system with the installation of dark fiber optic cable and the purchase of hand-held and vehicle-mounted communication devices. As a coastal county, Calhoun County is susceptible to potentially damaging hurricanes, tropical storms and tropical depressions. Since the County is frequently affected by these events, it is vital that emergency personnel have the ability to respond to emergency situations as they arise. This project will help reduce the vulnerability of local communities to disasters and their effects.

In the past, storm and high wind events have caused interruptions and, at times, complete failure of the county emergency broadcast system due to transmissional use of aerial communication lines that are connected to existing electric/telephone poles. The weight of the broadcast system line, as well as other lines attached to the poles, have caused poles to topple over during storm events. These lines are also subject to windblown debris and falling trees. There is a high potential for severing a connection of the emergency broadcasting system somewhere in the county, as shown during Hurricane Harvey when the entire county-wide communication system stopped working.

The current communication system is being connected to three radio towers that are strategically located around the county and at the county courthouse with funding from a U.S. Housing & Urban Development (HUD) disaster relief grant. Equipment on the towers is being upgraded and the towers are being connected to aerial fiber optic communication lines. The system utilizes a mixture of older hand-held and vehicle-mounted radios to communicate over frequencies. These radios will become obsolete and be discontinued in the very near future, leaving the County with potentially faulty equipment and the citizens of the County in a very vulnerable and life-threating situation.

Under this proposed project, fiber optic cable lines will be installed around the perimeter of the County. The cable lines will be buried underground to be protected from the elements and will have a total of 155 mobiles and 199 portable hand-held radios to pass information through. The buried lines will also have the capability to include cable, internet and other resources that community members could use. The broadcast system's vitality will increase and it will no longer be susceptible to wind and rain failures during future storm events. The secured transition of information will increase the ability to respond to calls and reduce the down time of access to information via cable or internet. With a more resilient network, local communities will be able to adapt to changing conditions and be more able to rapidly recover from disruptions due to emergencies.

This would be a County-wide benefit.

1	*	1
(1	+	
1	TXGLO	/

CDBG-MIT: Budget Justification of Retail Costs (Former Table 2)

A	0.11		UI COIIS									
Applicant/Subrecipient:	Calhou	Calhoun County										
Site/Activity Title:	Fiber l	.oop Commur	nication Imp	provements								
Eligible Activity:			<u>г г</u>						-			
Materials/Facilities/Services	_	\$/Unit	Unit	Quantity	_	Construction	Acq	uisition		Total		
Install fiberoptic cable	\$	35.00	LF	400000	\$	14,000,000.00	\$		\$	14,000,000.00		
Communiction Radio Replacement	\$	8,000.00	EA	350	\$	2,800,000.00	\$	-	\$	2,800,000.00		
	\$	=		0	\$		\$		\$			
	\$	5		0	\$		\$	-	\$			
	\$	<u>1</u>		0	\$	2 4	\$	-	\$	=		
	\$			0	\$	ан С	\$	7 4	\$	-		
	\$	-		0	\$	-	\$	-	\$	-		
	\$			0	\$	-	\$	-	\$	=		
	\$	•		. 0	\$	-	\$	-	\$			
	\$	-		0	\$		\$	3)	\$			
	\$			0	\$	-	\$	25	\$			
	\$			0	\$	-	\$		\$			
	\$	<u> </u>		0	\$	-	\$	11441	\$			
	\$			0	\$		\$	-	\$	-		
	\$			0	\$	-	\$	1	\$	*		
	\$	· · · ·		0	\$		\$	((=)	\$	-		
	\$			0	\$		\$	-	\$	-		
	\$			0	\$	-	\$	-	\$	-		
	\$			0	\$		Ş	1	Ş	1		
	\$	-		0	Ş	-	Ş	-	\$			
TOTAL	\$	8,035.00			\$	16,800,000.00	\$	1	\$	16,800,000.00		
. Identify and explain the annual proj None known at this time 2. Identify and explain any special engi	ected ope neering a	ration and ma	aintenance	costs associated	l wit	th the proposed	activitio	25.				
lone known at this time					-				-			
SCOT		A.S. A.S.			Dat Pho	e: one Number:	10/01 361-	552-	4	509		
	2789 CENSE	SON 2		_	Sign	nature of Registe	F. F.	M gineer/A	rchite	P, P.E.		



205 W. Live Oak • Port Lavaca, TX 77979 • p: (361)552-4509 • f: (361)552-4987 Texas Firm Registration No. F04188

MEMO

To: Calhoun County

From: G&W Engineers, Inc.

Date: October 02, 2020

RE: Engineering Justification Memo for Calhoun County Fiber Loop Communication Improvement

Calhoun County is located in South East Texas along the coast of the Gulf of Mexico. Since Calhoun County is located along the coast the structures within the county are required to be designed to windstorm standards due to the frequent hurricanes and tropical storms that impact the county. Calhoun County is a designated catastrophe area according to TDI and is certainly susceptible to potentially damaging coastal windstorm events. With the county frequently effected by these storm events the emergency broadcast communication system is vital to the ability to respond to the emergency situations as they arise. This project will mitigate future storm impacts and increase the resiliency of the existing emergency communications.

<u>Past</u>

In the past, storm events and high wind events have caused interruptions and at times, complete failure of the emergency broadcast system due the aerial communication lines that are connected to the existing electric/telephone poles. The weight of the broadcast system line added to the other lines attached to the poles have caused poles to topple over during storm events. Also, the lines are subject to windblown debris and falling trees which have occurred frequently. There is a high potential for severing of the connection of the emergency broadcasting system which has led to Calhoun County not being able to communicate during past events. The system has used an aerial communication cables and it has been affected by storm events through the years, including the most recent significant 2017 Hurricane Harvey storm event.

<u>Present</u>

The current system is connected to three radio towers that are strategically located around the County and the County court house. The equipment on the towers have recently been upgraded with the awarded CDBG-DR grant. The towers are currently equipped to be connected to an aerial fiber optic communication line. The current system also utilizes a mixture of older hand-held radios and vehicle mounted radios to communicate over the frequencies. The radios currently in use will become obsolete and be discontinued in the very near future, leaving the County with potentially faulty equipment and the citizens of the County in a very vulnerable and life threating situation.

<u>Future</u>

The proposed project will be the installation of a dark fiber optic cable around the near perimeter of the County which will allow the emergency responders to be able to respond more effectively and reliably. With the addition of the dark fiber optic cable the emergency broadcast system's vitality will increase and it will no longer be susceptible to the wind and rain caused failure in future storm events. The fiber optic cable will be buried underground to be protected from the elements and have a total of 144 fiber optic channels to pass information through. Along with the recent upgrades to the emergency broadcast system via grant funds, the dark fiber optic cable will have the capability to include cable, internet and other resources that connect to the community members with fiber optics. The secured transition of information via cable or internet. With a more resilient network the individuals of the community are more able to adapt to changing conditions and are more able to rapidly recover from disruptions due to emergencies. This project is intended to eliminate any issues with the communication between points during future disaster and will mitigate a very real and serious problem.



