



**CAMERON COUNTY
PURCHASING DEPARTMENT
INVITATION TO RFP**

RFP NUMBER # 230102

RFP TITLE: COUNTY WIDE BROADBAND EXPANSION

DATE DUE: March 14, 2023

DUE NO LATER THAN 3:00 P.M.

RFPs will be opened at the Cameron County Courthouse, 1100 East Monroe Street, Brownsville, Texas in the Purchasing Department – 3rd Floor – Room # 345 at 3:01 p.m. (as per Purchasing Dept. time clock) on deadline due date.

RFPs received later than the date and time above will not be considered.

Please return RFP **ORIGINAL (marked “ORIGINAL”) AND SEVEN (7) COPIES (marked “COPY”)** sets and **an electronic (PDF format file only)** of your proposal for review by evaluation committee in a sealed envelope. Be sure that return envelope shows the RFP Number, Description and is marked “SEALED RFP”.

RETURN RFP TO:

by U.S. mail or delivered to the office of Purchasing Dept., **County Courthouse (Dancy Bldg.)
1100 E. Monroe St, 3rd Floor, Room 345, Brownsville, Texas 78520.**

For additional information, clarifications and/or questions or to request addendum please contact: Ignacio Amezcua or Roberto Luna at (956) 544-0871, E-mail: purchasing@cameroncounty.com.

YOU MUST SIGN BELOW IN INK. FAILURE TO SIGN WILL DISQUALIFY THE OFFER. All prices must be typewritten or written in ink.

Company Name: _____

Company Address: _____

City, State, Zip Code: _____

Telephone No. _____ Fax No. _____ e-mail _____

Historically Underutilized Business (State of Texas) Certification VID Number: _____

Print Name: _____ Signature: _____

How did you find out about this RFP? _____ (ex: Newspaper, Web, Mail)

Is Proposer’s principal place of Business within Cameron County? Yes - No

(Your signature attests to your offer to provide the goods and/or services in this RFP according to the published provision of this bid. When an award letter is issued, this RFP becomes the contract. If a RFP required specific Contract is to be utilized in addition to this RFP, this signed RFP will become part of that contract. When an additional Contract is required a RFP award does not constitute a contract award and RFP / Contract is not valid until contract is awarded by Commissioners Court (when applicable) signed by County Judge) and Purchase Order is issued.

CHECK LIST

Proposers are asked to review the package to be sure that all applicable parts are included. If any portion of the package is missing, notify the Purchasing Department immediately. It is the Proposer's responsibility to be familiar with all the Requirements and Specifications. Be sure you understand the following before you return your RFP packet.

- Cover Sheet**
Your company name, address and your signature (**IN INK**) should appear on this page.
- Instructions to Proposers**
You should be familiar with all of the Instructions to Proposers.
- Special Requirements**
This section provides information you must know in order to make an offer properly.
- Specifications / Scope of Work**
This section contains the detailed description of the product/service sought by the County.

Attachments

- Attachments A, B, C, D, E, F, G, H, I**
Be sure to complete these forms and return with packet.
- Minimum Insurance Requirements**
Included when applicable
- Worker's Compensation Insurance Coverage Rule 110.110**
This requirement is applicable for a building or construction contract.
- Financial Statement**
When this information is required, you must use this form.

Other - Final reminders to double check before submitting RFP

- Is your RFP sealed with RFP #, title, Proposer's Name, & return address, on outside?
- Did you complete, sign and submit page 1?
- Did you provide the number of copies as required on the cover page?
- Did you visit our website for any addendums? <https://www.cameroncounty.us/purchasing-bids-rfpq-addms-tabs/>

If not interested in responding please let us know why e-mail to: Purchasing@co.cameron.tx.us

RFP # 230102
INSTRUCTIONS FOR SUBMITTING RFP'S

These General Instructions apply to all offers made to Cameron County, Texas (herein after referred to as "County") by all prospective vendors (herein after referred to as "Proposers") on behalf of Solicitations including, but not limited to, Invitations to RFP and Requests for Quotes.

Carefully read all instructions, requirements and specifications. Fill out all forms properly and completely. Submit your RFP with all appropriate supplements and/or samples. Prior to returning your sealed RFP response / submittal, all Addendums - if issued - should be reviewed and downloaded by entering the County Purchasing web <https://www.cameroncounty.us/purchasing-bids-rfpq-addms-tabs/>

Addendums Column (updated Addendums). These Addendums must be signed and returned with your RFP in order to avoid disqualification. All Tabulations can also be viewed and downloaded at this site. Annual RFP award information can be accessed at: <https://www.cameroncounty.us/purchasing-bids-rfpq-addms-tabs/>

Review this document in its entirety. Be sure your RFP is complete, and double check your RFP for accuracy.

Cameron County is an Equal Employment Opportunity Employer. Review this document in its entirety. Be sure your RFP is complete, and double check your RFP for accuracy.

GOVERNING FORMS: In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall document, Cameron County's interpretation shall govern. Where substitutions are used, they must be of equivalent value or service, and specified by the Proposer as such, in the columns to the right on the "Minimum Specifications' Forms". The County's specifications may be exceeded and should be noted by the Vendor as such. Any RFP NOT MEETING the Minimum Requirements specified will be rejected.

GOVERNING LAW: This invitation to RFP is governed by the competitive RFP requirements of the County Purchasing Act, Texas Local Government Code, §262.021 et seq., as amended. Offerors shall comply with all applicable federal, state and local laws and regulations. Offeror is further advised that these requirements shall be fully governed by the laws of the State of Texas and that Cameron County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of these requirements.

Questions requiring only clarification of instructions or specifications will be handled verbally. If any questions results in a change or addition to this RFP, the Change(s) and addition(s) will be forwarded to all vendors involved as quickly as possible in the form of a written addendum only. Verbal changes to RFP's must be backed-up by written addendum or written Q/A clarifications which would be posted on County Purchasing Web site. Without written Addendum or written Q / A clarification, verbal changes to RFP will not apply.

Sign the Vendor's Affidavit Notice, complete answers to Attachments A, B, C, D, E, F, G, H, I and return all with your RFP.

CONFLICT OF INTEREST QUESTIONNAIRE:

For vendor or other person doing business with local governmental entity

This questionnaire must be filed in accordance with chapter §176 of the Local Government Code by a person doing business with the governmental entity.

By law this questionnaire must be filed with the records administrator (County Clerk's Office) of the local government not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section §176.006, Local Government Code. A person commits an offense if the person violates Section §176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than September 1 of the year for which an activity described in Section §176.006(a), Local Government Code, is pending and not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.

Please review this entire document, if for any reason there is any information to disclose, relative to any questions in this Conflict of Interest form, you must file with County Clerk's Office subject to above instructions.

can be downloaded at the following web site:

https://www.cameroncounty.us/wp-content/uploads/Purchasing/docs/Conflict_of_Interest_Questionnaire_New_2015_.pdf

DISCLOSURE OF INTERESTS:

This questionnaire must be filed with the records administrator (County Clerk's Office) of the local government and no later than the 7th business day after the person becomes aware of facts that require this statement to be filed. Cameron County, Texas requires all persons or firms seeking to do business with the County to **provide the following information if the person becomes aware of facts that require this statement to be filed.** Every question must be answered. If the question is not applicable, answer with "N/A."

Please review this entire document, if for any reason there is any information to disclose, relative to any questions in this disclosure of interest form, you must file with County Clerk's Office subject to above instructions.

can be downloaded at the following web site:

<https://www.cameroncounty.us/wp-content/uploads/Purchasing/CIS.pdf>

TEXAS ETHICS COMMISSION FORM 1295

All RFPs prior to award or award of Contract by Commissioner's Court will require that the Texas Ethics Commission (TEC) Form 1295 Electronic (on line) Vendor filing procedure be completed by Vendor.

All Vendors being recommended to Commissioners Court for award or renewal of award on Agenda must register and obtain a TEC Certification for the specific award. This Certification Form 1295 must be electronically submitted, printed and notarized. Notarized form must be emailed or delivered to County Purchasing Department making the request for form. This process must be completed prior to Commissioners Court Agenda for approval consideration of RFP award. There is no charge for this TEC online process.

Texas Ethics Commission (TEC) Form 1295 must be completed (by firm - on line "New Form 1295 Certificate of Interested Parties Electronic Filing Application" Site at: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

If any Vendors have questions as to TEC Form 1295 visit the County Purchasing Web site left column tab "Vendor - TEC Form 1295" for more information. TEC Web site links can be found at this location including Question / Answers and Video instructions.

tab Link: <https://www.cameroncounty.us/vendors-tec-form-1295/>

PROPOSER SHALL SUBMIT RFP ON THE FORM PROVIDED, SIGN THE VENDOR AFFIDAVIT, AND RETURN ENTIRE RFP PACKET. In the event of inclement weather and County Offices are officially closed on a Proposal deadline day, RFP's will be received until 2:00 p.m. of the next business day. Proposals will be opened at the Cameron County Courthouse, 1100 East Monroe Street, Brownsville, Texas in the Purchasing Department - 3rd Floor - Room # 345 (as per Purchasing Dept. time clock.

RFP's SUBMITTED AFTER THE SUBMISSION DEADLINE SHALL BE RETURNED UNOPENED AND WILL BE CONSIDERED VOID AND UNACCEPTABLE.

PRESENTATIONS SEQUENCE TO EVALUATION COMMITTEE. Presentations to Evaluation Committee will be sequenced (in order) as determined by the utilization of RANDOM.ORG. Process will be conducted in the Purchasing Dept. with Auditor's designee present.

SUCCESSFUL PROPOSERS WILL BE NOTIFIED BY MAIL. All responding vendors will receive written notification regarding the outcome of award.

PROPOSERS MAY ATTEND PUBLICLY HELD COMM COURT MEETING FOR AWARD OF THIS SOLICITATION. All responding proposers are welcome to attend the publicly held Commissioners Court meeting relative to the outcome / award of this solicitation. Court Meeting agenda date and times may be obtained at the following web site: <https://www.cameroncountytexas.gov/commissioners-court-agendas/>

OPEN RECORDS ACCESS TO ALL INFORMATION SUBMITTED. All information included will be open to the public, other proposers, media as per the Open Records Act and not be confidential in nature. If you deem any information as confidential, it should not be made part of your RFP package.

PLEASE NOTE CAREFULLY

THIS IS THE ONLY APPROVED INSTRUCTION FOR USE ON YOUR RFP. ITEMS BELOW APPLY TO AND BECOME A PART OF TERMS AND CONDITIONS OF RFP. ANY EXCEPTIONS THERETO MUST BE IN WRITING.

1. **ORIGINAL (marked "ORIGINAL") AND SEVEN (7) COPIES (marked "COPY")** sets and **an electronic (PDF format file only) MUST BE SUBMITTED** Each RFP shall be placed in a separate envelope completely and properly identified with the name and number of the RFP. RFP's must be in the Purchasing Department BEFORE the hour and date specified.
2. RFP's **MUST** give full firm name and address of the Proposer. **Failure to manually sign RFP will disqualify it. Person signing RFP should show TITLE or AUTHORITY TO BIND THE FIRM IN A CONTRACT.**
3. RFP's **CANNOT** be altered or amended after deadline time. Any alterations made before deadline time must be initiated by Proposer or his authorized agent. No RFP can be withdrawn after opening time without approval by the Commissioners Court based on a written acceptable reason.
4. The County is exempt from State Sales Tax and Federal Excise Tax. **DO NOT INCLUDE TAX IN RFP.** Cameron County claims exemption from all sales and/or use taxes under Texas Tax Code §151.309, as amended. Texas Limited Sales Tax Exemption Certificates will be furnished upon written request to the Cameron County Purchasing Agent.
5. Any Catalog, brand name or manufacturer's reference used in a RFP invitation is descriptive-NOT restrictive-it is to indicate type and quality desired. RFP's on brand of like nature and quality will be considered. If RFP is based on other than reference specifications, proposal must show manufacturer, brand or trade name, lot number, etc., of article offered. If other than brand(s) specified is offered, illustrations and complete descriptions should be made part of the RFP. If Proposer takes no exception to specifications or reference data, he will be required to furnish brand names, numbers, etc. as specified.

6. Written and verbal inquiries pertaining to RFP's must give RFP Number and Company.
7. NO substitutions or cancellations permitted without written approval of Purchasing Agent.
8. The County reserves the right to accept or reject all or any part of any RFP, waiver minor technicalities. The County of Cameron reserves the right to award by item category or by total RFP. County also reserves the right to award either with or without trade-in, if applicable. Cameron County retains the option to re-solicit at any time if in its best interest and is not automatically bound to renewal or re-solicitation. The County reserves the right to hold all RFPs for 60 days from the due date of receipt without actions. The County reserves the right to add additional County Departments (at a later time during this RFP award) as the need arises. The County also reserves the right to consider utilizing CO-OP Interlocal Agreements if determined to be more advantageous to the County.
9. This is an RFP inquiry only and implies no obligation on the part of Cameron County.
10. Partial RFP's will not be accepted unless awarded by complete category or line item.
11. If PROPOSER takes exception to specifications or reference data, he will be required to provide details etc. as specified.
12. It is expected that the Proposer will meet all state and federal safety standards and laws in effect on the date of the RFP for the item(s) being specified, and the particular use for which they are meant.
13. It is the responsibility of the proposer to ask any and all questions the proposer feels to be pertinent to the proposal. Cameron County shall not be required to attempt to anticipate such questions for proposers. Cameron County will endeavor to respond promptly to all questions asked.
14. Cameron County reserves the right to test equipment, supplies, material and goods proposed for quality, compliance with specifications and ability to meet the needs of the user. Demonstration units must be available for review. Should the goods or service fail to meet requirements and/or be unavailable for evaluation, the proposal is subject to rejection.
16. The County shall have the right to inspect the goods at delivery before accepting them.

PURCHASE ORDER AND DELIVERY: The successful PROPOSER shall not deliver products or provide services without a contract approved by the Cameron County Commissioners Court and a Cameron County Purchase Order signed by an authorized agent of the Cameron County Purchasing Department.

This shall be understood to include bringing merchandise to the appropriate room or place designated by the using department. Every tender or delivery of goods must fully comply with all provisions of these requirements and the specifications including time, delivery and quality. Nonconformance shall constitute a breach which must be rectified prior to expiration of the time for performance. Failure to rectify within the performance period will be considered cause to reject future deliveries and cancellation of the contract by Cameron County without prejudice to other remedies provided by law. **Where delivery times are critical, Cameron County reserves the right to award accordingly.**

NO PLACEMENT OF DEFECTIVE TENDER: Every tender or delivery of goods must fully comply with all provisions of this contract as to time of delivery, quality and the like. If a tender is made which does not fully conform, this shall constitute a breach and Seller shall not have the right to substitute a conforming tender provided, where the time for performance has not yet expired, the Seller may seasonably notify Buyer of their intention to cure and may then make a conforming tender within the contract time but not afterward.

PLACE OF DELIVERY: The place of delivery shall be that set forth on the purchase order. Any change thereto shall be affected by modification as provided for in clause 20, "Modifications", hereof. The terms of this agreement are "no arrival, no sale".

DELIVERY TERMS AND TRANSPORTATION CHARGES: RFP must show number of days required to place material in receiving agency's designated location under normal conditions. Failure to state delivery time obligates Proposer to complete delivery in 24 hours. A five-day difference in delivery promise may break a tie. Unrealistically short or long delivery promises may cause RFP to be disregarded. Consistent failure to meet delivery promises without valid reason may cause removal from Proposer list.

An accurate delivery date must be quoted on the "RFP Form". When there are various items, a delivery date must be included with each item quoted. Freight and shipping charges to Cameron County must be included in the RFP price. Final location will be supplied to the vendor on award of RFP, F.O.B. destination. Delivery locations will be: Various County Building locations. Delivery days after receipt of order (ARO). Specify all (various) dates by categories or item if different.

If delay is foreseen, contractor shall give written notice to Director of Purchasing. The County has the right to extend delivery date if reasons appear valid. Contractor must keep County advised at all times of status of order. Default in promised delivery (without accepted reasons) or failure to meet specifications, authorized the County to purchase supplies elsewhere and charge full increase in cost and handling to defaulting contractor.

Delivery shall be made during normal working hours only, 8:00 a.m. to 5:00 p.m. unless otherwise noted in RFP.

VARIATION IN QUANTITY: The County assumes no liability for commodities produced, processed or shipped in excess of the amount specified herein.

SELLER TO PACKAGE GOODS: Seller will package goods in accordance with good commercial practice. Each shipping container shall be clearly and permanently packed as follows: (a) Seller's name and address; (b) Consignee's name, address and purchase order or purchase release number and the supply agreement number if applicable; (c) Container number and total number of containers, e.g. box 1 of 4 boxes; and (d) the number of the container bearing the packing slip. Seller shall bear cost of packaging unless otherwise provided. Goods shall be suitably packed to secure lowest transportation costs and to conform with requirements of common carriers and any applicable specifications. Buyer's count or weight shall be final and conclusive on shipments not accompanied by packing lists.

SHIPMENT UNDER RESERVATION PROHIBITED: Seller is not authorized to ship the goods under reservation, and no tender of a bill of lading will operate as a tender of goods.

TITLE AND RISK OF LOSS: The title and risk of loss of the goods shall not pass to Buyer until Buyer actually receives and takes possession of the goods at the point or points of delivery.

INSPECTION: Upon receiving item(s), they will be inspected for compliance with the RFP Specifications. If the item(s) do not pass inspection, the vendor will be required to pick up the rejected item(s) at the delivery point, provide the necessary replacement, and return the item(s) to the original point of delivery.

All items proposed shall be new, in first class condition, including containers suitable for shipment and storage (Cameron County prefers recycled packaging whenever possible), unless otherwise indicated in RFP. Verbal agreements to the contrary will not be recognized. All materials and services shall be subject to Purchaser's approval. Unsatisfactory material will be returned at Seller's expense. Cameron County reserves the right to inspect any item(s) or service location for compliance with specifications and requirements and needs of the using department. If an offeror cannot furnish a sample of a RFP item, where applicable, for review, or fails to satisfactorily show an ability to perform, the County can reject the RFP as inadequate.

TESTING: Cameron County reserves the right to test equipment, supplies, material and goods Proposed for quality, compliance with specifications and ability to meet the needs of the user. Demonstration units must be available for review. Should the goods or services fail to meet requirements and/or be unavailable for evaluation, the RFP is subject to rejection. **County user Dept.(s) reserves the right to make the final determination as to equivalents.**

SPECIAL TOOLS AND TEST EQUIPMENT: If the price stated on the face hereof includes the cost of any special tooling or special test equipment fabricated or required by Seller for the purpose of filling this order, such special tooling equipment and any process sheets related thereto shall become the property of the Buyer and to the extent feasible shall be identified by the Seller as such.

INVOICES AND PAYMENTS: (a) Vendor shall submit separate invoices, in duplicate, on each purchase order after each delivery. Invoices shall indicate the purchase order number, shall be itemized and transportation charges, if any, shall be listed separately. A copy of the bill of lading and the freight weigh bill when applicable, should be attached to the invoice. Mail to: Cameron County, ATTN: Auditor's Office, 1100 East Monroe St., Brownsville, Texas 78520. Payment shall not be due until the above instruments are submitted after delivery. Vendors must keep the Auditor advised of any changes in your remittance addresses. (b) County's only obligation to pay Vendor is to pay from funds budgeted and available for the purpose of the purchase. Lack of funds shall render this contract null and void to the extent funds are not available and any delivered but unpaid for goods will be returned to Vendor by the County. (c) Do not include Federal Excise, State or City Sales Tax. County shall furnish tax exemption certificate if required.

Any invoice, which cannot be verified by the contract price and/or is otherwise incorrect, will be returned to the Vendor for correction. Under term contracts, when multiple deliveries and/or services are required, the Vendor may invoice following each delivery and the County will pay on invoice. Contracts providing for a monthly charge will be billed and paid on a monthly basis only. Prior to any and all payments made for good and/or services provided under this contract, the Vendor should provide his Taxpayer Identification Number or social security number as applicable. This information must be on file with the Cameron County Auditor's office. Failure to provide this information may result in a delay in payment and/or back-up withholding as required by the Internal Revenue Services.

Vendor shall submit two (2) copies of an itemized invoice showing RFP number and purchase order number to:

**CAMERON COUNTY AUDITOR
ACCOUNTS PAYABLE
1100 EAST MONROE ST.,
BROWNSVILLE, TEXAS 78520**

Please note that any payment due under this RFP award will be applied towards any debt, including but not limited to delinquent taxes that is owed to Cameron County.

PAYMENT DISCOUNT: Indicate the payment discount (s) available depending on the when invoices are paid. For example, 1/30 means a 1% discount if paid within 30 days, 2/15 means a 2% discount if paid within 15 days, etc. Payment in full will be made within thirty (30) days of delivery, inspection, and receipt of invoice.

All costs quotations must include all the various features needed to satisfy the requirements. Note: No amounts will be paid for the items in this RFP in excess of the amounts quoted.

**CATEGORY A
CAMERON COUNTY, TEXAS
REQUEST FOR QUALIFICATIONS
COUNTY WIDE BROADBAND EXPANSION
RFP # 230102**

You are invited to submit Qualifications for providing COUNTY WIDE BROADBAND EXPANSION services within Cameron County, to meet the needs of Government, Residential and Business subscribers. A Broadband Feasibility study was completed in preparation for this RFP with a full Needs and Gaps Analysis, High Level Network Considerations and Requirements, and Implementation Recommendations. Cameron County is seeking qualified broadband infrastructure and internet service providers to participate in a Public Private Partnership to address the needs and gaps as identified in the study to enhance the state of broadband within the County and provide a foundation for Digital Equity.

The RFP is particularly interested in Proposers' ability to meet the funding eligibility requirements set for in the American Rescue Plan Act of 2021 (ARPA) *Please see Appendix A "FHWA 1273" & Appendix B "Super Circular- Procurement Standards 2 CFR Parts 200.317 – 200.327"*

Cameron County is an Affirmative Action/Equal Opportunity Employer and strives to attain goals for Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) as amended.

1. Introduction

1.1 Network Background

Cameron County is requesting qualifications from Vendors to build, manage and operate a next generation communications network ("Network") that will provide Internet access service to businesses, homes, and community institutions within the Service Area. A baseline of 1 Gbps symmetric service will serve as the definition of "next generation" service for this RFP. Cameron County will provide a variety of forms of support, including (but not necessarily limited to): (i) streamlining access to infrastructure, rights-of-way and inspections; (ii) assistance in demand aggregation; (iii) long-term contracts and support for development of high bandwidth applications to drive adoption; (iv) marketing assistance (including working directly with Vendors, local business leaders and community leaders to increase the revenue opportunities and lower the costs associated with constructing and operating the Network); (v) revising local rules, regulations or requirements to decrease the cost to deploy or operate the Network; and (vi) collaboration with local research and education networks.

The selected Vendor will provide vertically integrated retail services and may operate the Network on a wholesale basis. If it chooses to do so, it will not have to implement an open access requirement to ensure that retail services competitors will be given treatment equal to that it provides to itself. However, the Vendor must not limit the ability of customers to run applications, use services and connect devices of their choice to the Network.

The Vendor will bear all of the costs for the Network, including but not limited to design, engineering, construction, equipment and insurance for the Network, up to the end user drop point or network interface device. In addition, the Vendor will bear all the operating and maintenance costs of the Network. In addition, Vendor should demonstrate a clear upgrade path for the Network to meet future consumer demand and service development needs. Vendor must participate in the Affordable Connectivity Program (ACP) and provide a low-cost option for qualifying households.

Cameron County will not charge Vendor for access to Cameron County's assets and infrastructure except as set forth herein. Cameron County intends the Network to serve as a development platform for innovation, next generation application development, workforce development and job creation throughout the Service Area.

1.2 Overview

The County seeks to make available reliable and affordable high-speed internet/broadband services to as many premises in the County as possible, specifically to underserved or unserved households and businesses, defined as those not currently served by a connection that reliably delivers at least 100 Mbps download speed and 100 Mbps upload speed.

The high-speed internet/broadband services shall specifically provide a service designed to reliably meet or exceed a speed of 100 Mbps download and 100 Mbps upload; or in cases where the symmetrical 100/100 Mbps service is not practicable, provide a service

designed to reliably meet or exceed 100 Mbps download and at least 20 Mbps upload speeds, and be scalable to a minimum of 100 Mbps download and 100 Mbps upload. Interim Rule, 31 C.F.R § 35.6(e)(2), 86 Fed. Reg. 26786, 26823.

The purpose of the RFP is to seek innovative or traditional internet/broadband solutions from one or more Proposers proposing one or multiple solutions over all or portions of the County. From these RFP responses, the County will select the best Proposer(s), to finalize project details by creation and execution of a contract with the County.

The County does not intend to enter the internet/broadband business as a competitive service provider.

The County does not intend to operate the network enterprise it financially supports through this RFP process. The network enterprise will be owned and operated by the selected Proposer, and/or Proposer's subcontractor, as per the contract to be negotiated with the County.

If the Proposer is currently providing service in some areas of the County, the County requires that the Proposer provide similar pricing and service tiers for data services for the Assets in the newly served areas.

This request for proposals does not constitute a contract for services performed or to be performed.

The objectives are to establish a Network that:

1. is able to offer retail broadband services with a guaranteed sustained minimum 1 Gbps dedicated symmetrical transmission speed over each connection provided to a premise;
2. is able to support high quality voice, data and video services;
3. uses fiber-to-the-premises network architecture where able;
4. provide a low-cost option for household internet service;
5. is rolled out and made operational progressively, on a demand driven basis, over 5 years from the date of execution of a contract between Cameron County and the Vendor;
6. promotes the long term economic and community interests of Cameron County and end users; and
7. facilitates opportunities for small and medium enterprises (SMEs) and local enterprises to provide services to the community.

2. **Scope of work**

Vendor shall detail the ability to design, build, install, own, operate and manage the Network. The Network shall have the following features and functionality.

Network Equipment, Design and Technical Specifications.

The Proposer must provide network architecture documentation that shows active equipment locations and where assets will be added.

Network architecture should consider a redundant topology that provides resiliency in the network. While not every component of the network can be redundant, where feasible the Proposer should take steps to make service offerings as resilient as possible.

It is expected that Proposer may have some preexisting core assets (fiber, towers, hut sites, etc.) they intend to utilize in providing services to the proposed service areas. Proposers utilizing pre-existing infrastructure should describe how these Assets fit into their proposed network architecture.

Network Test and Acceptance Standards

The Proposer will be required to demonstrate network performance to specified test standards. These standards will need to be met for services offered and infrastructure built or contracted. Speeds will be tested and proven as negotiated in the contract.

Test standards are outlined in Section 8.

Presence in County

While the successful Proposer will receive a RFP award letter from the County, the County has the option to request best and final offer to the Proposer. The Proposer will be contributing significant capital and operational Assets and shall demonstrate they can successfully deliver internet/broadband where the network is required to offer service.

A significant component of the scoring criteria will be the County's assessment of the Proposer's proposed presence within the County, demonstrating its ability to provide adequate service and support to its customers.

Network Deployment Timing

The County intends the project be deployed in a continuous fashion commencing immediately upon contract execution.

The County desires that all Rural Internet Connectivity Project(s) be completed prior to **September 30, 2026**, preferably sooner, or by the negotiated date of the contract with the County. Within their RFP response, Proposer shall provide a proposed schedule for implementation that reflects the most expeditious timeline possible, including engineering, permitting, licensing, construction, and validation.

Public Safety Services

- Dedicated public safety service network
- Secure public safety access
- Public infrastructure monitoring (e.g., traffic lights, speed cameras, cameras on other public structures)

Retail/Local Services on Integrated Open Network

- Internet access service – residential and business class
- SIP trunking and customized Internet service plans for enterprises and institutions
- Hosted VoIP solutions for small business and residential customers
- Multi-channel video service
- On-demand content delivery
- Customized local content
- Video conferencing
- Hyper-local open technology gateway for local access to cloud-based community application and OTT services
- Support for community innovation research and development efforts

Community Services on Network

- Cooperation on development and implementation of a “Smart Grid” program for stakeholders and customers (e.g. digital technology that allows for two-way communication between the utility and its customers and the sensing along transmission lines)
- Community public service video channels
- Dedicated community health services network
- Health information exchange with secure media access
- Patient center managed telemedicine services
 - Secure portal
 - EMR data extraction from EMR systems (e.g., EPIC, Cerner, etc.)
 - Institutional/physician/clinic/home based access
 - Community health kiosks
 - Managed home health service portfolio
 - Physician-patient secure video network access
- Support for a local application developer community
- Access to cloud-based development environment
- Access to content distribution network (CDN) development and distribution channels

Proposer information requirements, Considerations and Anticipated Contract Terms

The County, at its option, may make a single award for this RFP. The County may also, at its option, make multiple awards. The contract may be awarded on the merits of the whole proposal or only a part of it. By submission of a proposal, each Proposer offers or acknowledges the right of the County to make the award, which is in its best interest. The County may also make no award after the completion of this RFP process.

There is no guarantee a contract will successfully be awarded related to a winning Proposer's response. The County reserves the right to cancel this RFP at any time.

The County is not required to accept the lowest cost proposal.

The County reserves the right to accept any proposal, to reject any or all proposals, to reissue a request for proposals, to waive irregularities and/or informalities in any proposal, and to make the award in any manner deemed in the best interest of the County.

The County reserves the right to reject any proposal if there is cause to believe that such Proposer is not properly qualified to carry out the obligations of the contract and to complete the work contained therein. The County may make such investigation as deemed necessary to determine the ability of the Proposer to perform the work, and the Proposer shall furnish to the County all such information by the date specified by the County.

The County may conduct such investigations as it deems necessary or appropriate to assist in the evaluation of any RFP response and to establish the responsibility, qualifications, and financial ability of the Proposer, their proposed subcontractors, and other persons or organizations submitted within a Proposer's response to do the work to the County's satisfaction within the prescribed time.

The submission of an RFP response will constitute representation by the Proposer that it understands and has complied with the requirements of the RFP. Submission of a response indicates the RFP information provided was sufficient in scope and detail to convey understanding of anticipated terms and conditions for performance of the work.

While not shown in the schedule above, the County reserves the right to conduct interviews of short-listed Proposer(s) prior to making a final selection.

The information contained in proposals submitted for consideration by the County will be held in confidence only to the extent allowable by law. The County will honor specific requests for confidentiality for information of a proprietary nature only to the extent allowed by law if clearly marked by Proposer as "Proprietary" or "Confidential."

All proposals become public documents and are subject to public review (upon request and as allowed by law). "Proprietary" or "Confidential" items should be noted and will not be eligible for public review to the extent allowed by law. During the RFP process itself, and until a contract is awarded or this process is canceled, all information and documents received are confidential.

RFP Proposers assume all costs of preparation of the proposal.

Each Proposer may be requested during the scoring process to provide background history, staff resumes, current capabilities, and financial statements. The County may also request information to support Proposer's track record regarding customer acquisition capabilities and customer service capabilities.

The County may require the successful Proposer(s) to post a letter of credit or performance bond to support its performance obligations. The Proposer shall describe in the RFP response its ability to acquire such surety and denote the limitations of such (e.g., maximum credit lines, bond coverages, etc.)

Startups or new Service Providers with limited performance history are not excluded from participation in the RFP response process; however, they should anticipate providing similar performance and financial due diligence information upon request.

The County reserves the right as a function of the RFP analysis process to require Proposers to identify the source(s) of Proposer's share of project funding.

The County reserves the right to contact references as deemed necessary to complete its analysis.

The County acknowledges the potential for a variety of contract frameworks that may result from this RFP process and subsequent contract negotiations; however, any final contract must comply with County requirements.

If chosen for contract negotiation, the selected Proposer candidate must provide a description of all liability and property insurances that would be in place relative to the contract as outlined in this RFP.

The Proposer will be expected to execute a contract within 45 days of notification they have been selected by the County as an awarded candidate. The County reserves the right to select other candidates if a contract is not executed within the 60-day timeline.

The Proposer should expect that disbursement of County capital fund participation will be coordinated with the achievement of specific, mutually agreed-to project milestones. Additionally, a performance bond, construction bond, letter of credit, or other method of surety will be required for all or certain portions of the project scope.

Network Construction Standards

Proposers should expect that upon successful completion of a negotiated contract for deployment of a rural internet/broadband network, and commencement of work by the selected Proposer.

The selected Proposer will fully engineer and permit the project prior to commencement of construction as a function of the negotiated contract.

Deployment of all fiber and fiber-related infrastructure must comply with all National Electrical Contractors Association (NECA) codes and laws at the local, state, federal, and private land levels as they pertain to fiber optic installations.

Should wireless technology be selected for deployment, all towers, antennas, and other components utilized to deliver wireless internet/broadband must comply with all FCC regulations regarding tower construction, spectrum registration, and applicable state/county authority over zoning and land use regulations. All newly constructed towers shall become the property of the Proposer; however, the county reserves the right to attach signal capability for Central Dispatch. This right will expire after 2 years if unused. No fees may be charged to County for Central Dispatch use the selected

Proposer will be expected to have all routes and tower sites surveyed by a licensed surveyor as well as provide the County with GIS/CAD mapping showing the locations of all facilities deployed and service areas of engineered coverage design(s).

Other construction requirements that are the responsibility of the Proposer include:

- Provide the County with periodic reports of monthly activities and progression towards milestones, such reports to include information as negotiated in the contract.
- Work with all appropriate agencies to obtain all required right of way approvals.
- Obtain all required permits and private easement approvals.
- Coordinate project deployment with all utilities.
- Obtain any necessary contractor licensing issued by the Cameron County Building Department / Commission.
- Provide on-site construction inspections to ensure design.
- Coordinate and resolve third party or private claims.
- Repair any and all damages to private property.
- At all times, maintain an adequate staff of experienced and qualified employees for efficient performance.

At all times, furnish or perform any services in a safe, proper, and professional manner.

2.1 Proposer Qualifications

- A.** Experience in high speed network design and operation – Vendor should provide a statement of experience highlighting [at least 3] similar network systems that it has designed, constructed and operated, including project name, location, size, technology used, and name and phone number for reference contacts. Also indicate whether each system is owned by the Vendor or another entity.
- B.** Financial Stability – Vendor shall submit its two most recent annual financial statements in order to permit analysis of its financial resources. If financial statements are unavailable due to confidentiality reasons, submit recent D&B reports. If Vendor is part of a team, the two most recent annual financial statements for each team member should be submitted. If the Vendor's response includes vendor financing or committed bank or other financing, the two most recent annual financial statements of such equipment vendors and financial institutions should be submitted.
- C.** Staff Technical and Managerial Experience – include a statement of experience and resumes of the project team, including the project manager and other key personnel who will be assigned to this project. Also include a list of any known or anticipated subcontractors along with their roles and responsibilities.
- D.** Evidence of Legal Capacity – include copies of Vendor's most recent federal and Texas annual reports and current licenses to provide telecom/communications services, together with a certification that all Texas business and regulatory registrations/filings/taxes are current, and all internal corporate documents are kept and up to date (e.g. meeting minutes, bylaws, etc.).

3. Administrative Issues

3.1 Availability of the RFP and Amendments

Adobe Acrobat (PDF) and Microsoft Word versions of this RFP are available on the project website at: <https://www.cameroncountytexas.gov/purchasing-bids-rfpq-addms-tabs/> Amendments to the RFP will be posted on the project website at: <https://www.cameroncountytexas.gov/purchasing-bids-rfpq-addms-tabs/> . Any amendments supersede prior provisions and are effective upon posting on the project website, and each potential bidder is responsible for checking the website to learn of any amendments.

3.2 Questions about the RFP

The primary RFP contact for the Cameron County project team is: Mr. Ignacio Amezcua, Cameron County Purchasing Agent, office number: 956-544-0871, e-mail address: Ignacio.amezcua@co.cameron.tx.us

All general correspondence and any questions about this RFP must be submitted in writing to Purchasing Agent via email at: purchasing@co.cameron.tx.us. The Cameron County project team will not entertain any oral contacts regarding this RFP. **The last date for questions will be 5:00 pm Eastern Time on Wednesday, March 1st, 2023.** All questions will be considered to be public and released with an answer via addendum at <https://www.cameroncountytexas.gov/purchasing-bids-rfpq-addms-tabs/> as expeditiously as possible. The identity of the person posing the question will not be disclosed.

Vendors should not contact Cameron County directly. Any attempts to contact Cameron County staff regarding this RFP other than via this email process may be grounds for the Cameron County to reject your submission.

3.3 Additional Material

Vendors are encouraged to review and complete the following material prior to submitting their proposals.

- **Broadband Feasibility Report by CobbFendley EXHIBIT "A"**

3.4 Proposal Format and Certification

Proposals should be organized as per section 4.0 with responses referencing the appropriate corresponding RFP item(s). Proposers should respond to each item at the level of detail at which each is presented or list a variance with a particular item and propose alternate terms and, as applicable, and supply any supportive detail. Proposals not conforming to the proper format or failure to respond to any required items may result in a Proposer's disqualification and/or rejection of the proposal. Where the Proposer is requested to supply information, include that information in the body of the proposal, or reference the attachment where it is included.

A duly authorized officer or agent of the Proposer must sign the proposal. Proposals that are not signed will not be considered. In the case where multiple vendors team to present a proposal, a signature by a duly authorized officer or agent of each entity is required on the proposal, though one entity should be designated the lead entity in the proposal. The lead entity will be the contracting Vendor and will be responsible for subcontracting with its partners.

3.5 Project Calendar

Anticipated Event Dates

- RFP Advertised and issued: 1st add on **Sunday, February 19, 2023** 2nd add on **February 26, 2023 Sunday,**
- Proposals Due: **Tuesday, March 14, 2023**
- Proposal Evaluation Completed by: TENTATIVE Week of March 20-24
- Interviews with finalist firms no later than: **First week of April**
- County Court Agenda presentation to recommend award: **April 11, 2023**
- Award and Letter of Intent for Contract no later than:
- Selected firm begins work no later than:
- Contract finalized no later than:
- First progress report due:

3.6 Proposal Due Date and Submission

Proposals are due by 3:00 p.m. local time on Tuesday, March 14, 2023. Proposals received after the deadline will not be considered. Proposals must be submitted in a sealed envelope marked with RFP # 230102 and the name and address from the Proposer (participant). ORIGINAL (marked "ORIGINAL") AND SEVEN (7) COPIES (marked "COPY") sets in a sealed envelope and an electronic (PDF format file only) in a flash drive are required for any proposal submitted. *Faxed proposals will not be accepted.* Vendors assume the risk of the methods of dispatch or delivery chosen. Office hours for receipt of seal proposals are: Monday through Friday, 8:00 am - 5:00 pm (CST).

3.7 Commencement of Work

The submission of response to this RFP and the subsequent evaluation of that response by Cameron County, does not constitute a contract or any type of agreement between Cameron County and any Proposer for the commencement of work or the performance of any obligation. Only a written contract with Cameron County will authorize the commencement of work or obligate Cameron County on this project.

3.8 Use of Subcontractors

Proposers may use subcontractors to fulfill any obligations in connection with the project. Use of subcontractors shall be subject to all applicable state and federal laws. A Proposer shall remain liable for fulfilling all its obligations on the project, and for any claims or damages arising from the subcontractor's work.

3.9 Applicable Statutes

Cameron County is a public entity. As a result, this RFP is subject to a variety of public procurement requirements, including but not limited to federal and state records disclosure statutes referenced above and the following:

- Small Business obligations
- Local Business obligations
- Minority Business obligations
- Veteran-Owned and Service-Disabled Veteran-Owned Small Businesses
- Economic Development Zone Small Businesses
- Woman-Owned Small Businesses (WOSBs)
- Union/Non-union labor use

3.10 Errors and Omissions in a Response

The responding Proposer is responsible for all errors and omissions in its proposal. If it discovers an error and wishes to withdraw its proposal, the responding vendor should notify the County immediately.

3.11 Errors and Omissions in the RFP

If Cameron County becomes aware of an error or omission in the RFP, it will post a notice on the website. If it discovers an error or omission after the proposals are submitted, it may in its discretion proceed or reissue the RFP. Even if it elects to rebid the RFP, Cameron County will not be liable for any costs or damages incurred by any Proposer in preparing and submitting the original proposal.

3.12 Objections to RFP Terms

Any objections to RFP terms must be conveyed in writing to [the address for RFP questions] and must be submitted by the deadline for submission of questions about the RFP.

3.13 Acceptance of RFP/Response Content

By submitting a proposal, a Proposer certifies that it has read, understood, and agreed to all requirements, terms, and conditions in this RFP, including any and all attachments, exhibits, and appendices. A Proposer may withdraw its proposal prior to the RFP response deadline.

3.14 No Waiver of RFP Provisions

Cameron County may, but is under no obligation to, waive any provision in this RFP at the request of a potential Proposer. Any such waiver shall apply to all potential bidders, and no waiver shall constitute a waiver of any provision not specifically referenced therein.

3.15 Ownership and Confidentiality of Proposals

Cameron County will not pay for any information requested herein, and all proposals submitted become the property of Cameron County. Proposals will not be returned and may be subject to disclosure pursuant to the federal Freedom of Information Act and/or the Texas Public Records Act. Pricing and other information that is an integral part of the proposal cannot be considered confidential after an award has been made. Cameron County may receive information that may be confidential as part of your response. If you believe that any portion of your proposal includes proprietary or other confidential information, please clearly mark it as such and state the basis for your claim to confidential treatment. Unless otherwise required by law, Cameron County will treat the information as confidential and will not disclose it to a third party without your permission. However, pricing and other information that is an integral part of the proposal will likely not be considered confidential after an award has been made.

4. Process and Criteria for Evaluation of Proposals

Proposals will be opened and reviewed internally at the convenience of Cameron County. All proposals will be evaluated and, at Cameron County discretion, an award made to the Vendor who demonstrates the best ability to meet the overall goals of the project, with particular emphasis on the ability to fulfill the scope of work in the most timely and efficient manner. The Cameron County team will initially assess the qualifications of each Vendor submitting a proposal and rank the proposal according to the following point system:

The following scoring matrix shall be used to determine successful Proposer(s).

Criteria	Points	Score
Project Costs and County Contribution	50	
Proposed Cost to County per Total Miles proposed to build	50	
Proposed Solution	30	
Overall deployment timing - priority given to projects that can be done the quickest	6	
Adherence to project requirements to meet Cameron County’s primary priority to build a foundational “backbone” in Cameron County set forth in section 1.2	17	
Potential New Connections	5	
Improvement to currently served premises	2	
Proposer Background, Qualifications, and Capabilities	20	
Proposed County-wide presence	15	
Knowledge, team, and technical competence	3	
Financial stability	2	
TOTAL	100	

Evaluators score by category will be multiplied by the assigned weight for each criteria by vendor then totaled. Scoring for price will be a ratio and based on a pro rata factor of the best price submitted.

Ex: Vendor W - price \$100,000 = 4 points X assigned weight (ie: 25%) = 100 points
 Vendor X – price \$150,000 = 2.66 points X assigned weight (ie: 25%) = 66.6 points
 Vendor Y – price \$200,000 = 2 points X assigned weight (ie: 25%) = 50 points
 $\$100,000 \div \$200,000 = .50 \times 4 = 2 \times 25 = 50$
 $\$100,000 \div \$150,000 = .66 \times 4 = 2.666 \times 25 = 66$

Once RFPs are reviewed and scored, a short list will be compiled. Interviews may be conducted with Proposers determined by total score rankings. Additional information may be required at that time. Negotiations will begin with the Proposer selected for the project. Commissioners Court will make the final selection and possible approval of the contract.

Other Project Evaluation Criteria

In addition to the qualification criteria, Cameron County will examine the extent to which each response meets the criteria below, which are not listed in order of importance. Cameron County will then undertake a comparative assessment of all proposals in order to make a decision as to which proposal(s) should be selected [for further analysis and negotiation]. The evaluation criteria against which proposals will be assessed are:

1. the extent to which the proposal meets Cameron County's objectives for the Network (as set out in **Section 2**). (including, but not limited to, build out requirements/selection of neighborhoods, the level of pre-construction demand commitment required to trigger build out for specific areas, and the proposed price point if demand levels are met);
2. the capability of the Proposer to design, construct, finance, maintain, upgrade and operate the Network;
3. the nature, scope and impact of any local community legislative and/or regulatory changes that are necessary to facilitate the proposal;
4. the cost to Cameron County of the proposal;
5. the acceptability of the contract terms and conditions proposed by the Proposer and the extent to which the proposal departs from the RFP and from Cameron County's proposed commercial terms (if any).

[Once the comparative assessment of the proposals is complete, Cameron County will select the [two] highest-ranked for further negotiations. It will select one at the completion of such negotiations.]

The County reserves the right to reject any proposal if there is cause to believe that such Proposer is not properly qualified to carry out the obligations of the contract and to complete the work contained therein. The County may make such investigation as deemed necessary to determine the ability of the Proposer to perform the work, and the Proposer shall furnish to the County all such information by the date specified by the County.

The County may conduct such investigations as it deems necessary or appropriate to assist in the evaluation of any RFP response and to establish the responsibility, qualifications, and financial ability of the Proposer, their proposed subcontractors, and other persons or organizations submitted within a Proposer's response to do the work to the County's satisfaction within the prescribed time.

The submission of an RFP response will constitute representation by the Proposer that it understands and has complied with the requirements of the RFP. Submission of a response indicates the RFP information provided was sufficient in scope and detail to convey understanding of anticipated terms and conditions for performance of the work.

5.0 Clarification of Proposals

Notwithstanding any other provision of this RFP, Cameron County reserves the right to:

1. Conduct discussions with any or all potential vendors for the purpose of clarification of proposals;
2. Waive, or decline to waive, any defect in any proposal;
3. Accept, reject, or negotiate any or all proposals or the terms of any proposal, or any parts thereof, for the purpose of obtaining the best and final offer;
4. Cancel or amend this RFP or issue other requests for proposals;
5. Select a Vendor or Vendors based on its analysis and evaluation of proposals submitted and request presentations on proposals if it believes further information is appropriate to the decision-making process;
6. Select no proposals at all; or
7. Use any and all concepts presented in any proposal to obtain the most beneficial and effective path to achieving its desired goals for the project.

6.0 RFP Response Format

In an effort to expedite the evaluation of the RFP responses received, Proposers are required to organize proposals in the sequence below.

There is no restriction on the number of pages submitted in the proposal.

1. Cover Sheet
2. Executive Summary of Scope of Work
3. Cost Proposal
4. Technical Approach and Work Plan
5. Company Background
6. Statement of Qualifications
7. Company Financial Statement
8. Appendices

6.1 Cover Sheet

Complete the RFP 'Attachment A: Cover Sheet' worksheet provided.

Provide the full legal name of the Proposer, including any previous names or doing-business-as names. Signature of an owner, corporate officer, or agent authorized by the Proposer is required.

6.2 Executive Summary of Scope of Work

Proposer shall provide an overview of the major features of the RFP submission. Include any suggestions, conclusions, recommendations, or assumptions the Proposer believes are significant to the understanding of the RFP. Sequencing and description of the tasks and/or the time frame for completion of the tasks is required.

6.3 Cost Proposal

Proposer shall provide a detailed breakdown of the total project cost, then clearly indicate the requested County contribution and Proposer's contribution. Attachment C has been provided as a template for the cost proposal. Total project cost shall not include ongoing fees such as licenses, O&M costs, or lease/rent expenses. Additional points will be awarded accordingly for the more Proposer contributes to the total project cost. Should any technical alternatives be included for the County's consideration, a separate cost proposal should be included for each alternative.

6.4 Technical Approach and Work Plan

A detailed scope of work, to include the specific information listed below.

6.5 Technical and Procedural Concerns

Address technical and/or procedural concerns that may influence the proposed project. Proposers should also include any assumptions made within their response.

Explain any type of support required from County personnel.

6.6 Technical Alternatives

Describe any technical alternatives or exceptions to listed specifications. Cite the applicability of alternative approaches/procedures to address County objectives and the advantages to be gained through their use.

Clearly acknowledge the project requirements as outlined in Section 2. Any exceptions the Proposer may have to the project requirements as outlined in in Section 2 of this RFP must be clearly called out and described.

The inability of Proposer's proposal to meet the project requirements and speeds of this RFP is not an automatic means of disqualification. The Proposer shall clearly and thoroughly define any proposed solutions or technical alternatives which may not meet the eligibility requirements of ARPA due to constraints with geography, topography, or excessive costs, but will expand high-speed internet to un/underserved premises.

6.7 Implementation Schedule

In this section of the proposal, the Proposer is to describe the anticipated schedule to deploy, operate, and maintain an Internet/Broadband Network, including anticipated resources required. Proposer should provide a proposed schedule for design, permitting, construction, and initiation of internet/broadband services to the specified areas of the County. The timeline schedule should include key milestones and phasing plans. Should any technical alternatives be included for the County's consideration, a separate schedule should be included for each alternative.

6.8 Staff Capabilities and Experience

Proposer should clearly describe the capabilities, qualifications, and certifications of the staff to be assigned to support the County.

The County realizes that this work effort may require the services of multiple entities organized into a project team. Proposers have the option of engaging the services of subcontractors for completion of this project. If the proposal involves any subcontractors, provide full details on the nature of work to be performed by them.

The division of work assigned to subcontractors must be clearly specified in the Technical Approach and Work Plan section of the Proposal. The subcontractors' qualifications must be detailed in the Company Background section of their proposal. Subcontractor financial statements must also be provided with the Cost Proposal.

6.9 Project Location

Describe proposed project location(s). Provide coverage area Asset narratives as applicable to support the proposed design that demonstrates coverage of the project location within the specified area(s). Provide map(s) outlining Asset placement as applicable to support the proposed design that demonstrates coverage of the project location within the specified area(s).

Clearly state how many premises will be covered and at what levels of service.

6.10 Service Delivery and Design

Provide detailed service delivery and design information, as outlined in the Proposer's submission, to fully describe the service delivery platform being proposed. Provide a detailed narrative and related diagrams outlining the proposed network design, the specific equipment to be used and verification that it meets the standards specified to deliver the products as outlined in Section 2.

For each product being proposed within the scope of this RFP please provide the following information as applicable:

- Downstream speed
- Upstream speed
- Narrative of installation requirements/process.

6.11 Wireless Solutions

Wireless solutions are networks that use wireless to reach rural areas for last mile connectivity. Proposed wireless solutions should provide the following information:

- Map of planned tower locations and expected coverage. Coverage maps shall be modeled using equipment that meets County zoning codes.
- Documented tower characteristics such as type and height.
- Document describing Licensed or Unlicensed wireless spectrum to be utilized.
- Detailed description of last mile line of sight requirements.

6.12 Wireline Solutions

Wireline solutions are networks that utilize fiber or copper (including coaxial cable) for last mile access. Proposed wireline solutions should provide the following information:

- Provide maps describing planned cable installation and preexisting cable routes that support meeting coverage requirements specified in the RFP.

- Document last mile access technology.

6.13 Point-to-Point Solutions

Proposers may also propose any point-to-point data products or business class Internet products.

6.14 Services Required

All proposals are required to include a description of the services required as the Proposer's organization would address support of the deployment, operation, and maintenance for the delivery of internet/broadband network products and services throughout the County. Provide a narrative of the current and/or intended presence in the County (i.e., sales, administrative, customer service personnel) in support of the Internet infrastructure established as a result of this RFP.

7.0 Company Background

Please provide the following information as part of the company background and current capabilities:

- Overview of the company history, number of years in operation, and management team. Also, indicate if the company is currently registered to do business in the State of Texas.
- Overview of the organization's services products and capabilities. Include any brochures or marketing material that would help give the County a better appreciation for its capabilities.
- Outline the company's capacity to handle a project of this size and complexity. If its capacity entails hiring additional staff should the organization be awarded the County contract for this work effort, identify the quantity and type of staff the company envisions adding, and the time frame it anticipates the acquisition to take. The County would prefer that the staff were in place by the time the initial assessment is completed.

7.1 Statement of Qualifications

Provide a description of (up to) three (3) projects similar to the one described in this RFP that the company has deployed within the last five (5) years. Outline services offered, geography covered, network design utilized, and customer types served. For each project provide the contact information. The preference of the County would be to receive a list with both older established sites as well as new installations if possible.

7.2 Company Financial Statement

All Proposers must provide audited financial statements of the entity that would enter a contract with the County (unaudited financial statements are acceptable if Proposer does not have audited financials) from the past three years, and Proposers may also include credit ratings/reports, reference letters from your bank and reference letters from suppliers.

7.3 Appendices

Proposers can attach such documentation as desired to support the RFP response to assist the County to better assess the Proposer's RFP submission. If used, Appendices must be clearly labeled with a purpose for submission.

8. Network and Testing Standards

Proposers will be required to demonstrate network performance to specified test standards. These standards will need to be met for services offered and infrastructure built or contracted.

Test standards will be per user and include the following as outlined:

8.1 Fiber and Cabling Infrastructure:

Proposer shall provide the County with the following testing documentation:

8.1.1 Insertion Loss Test

All optical fiber cables and cable plants shall be tested for insertion loss using Electronic Industries Alliance/Telecommunication Industries Association (EIA/TIA) Standards EIA/TIA 526-14 or EIA/TIA 526-7.

Insertion loss refers to the optical loss of the installed fibers when measured with a test source and power meter (OLTS).

8.1.2 OTDR Testing

The Proposer will be required to test all fiber segments with an optical time domain reflect-o-meter (OTDR). The tests performed are to verify the quality of the installation and for establishing baseline data for future troubleshooting. However, it shall not be used as a measurement of the light loss of the cable.

OTDR measurements should follow procedures outlined in EIA/TIA 455-59, -60, and -61.

The County reserves the right to verify through separate testing the Proposer's test data submitted.

8.2 Wireless Elements:

8.2.1 Coverage Mapping

For all point-to-multipoint wireless technologies, coverage must be tested and documented in a GIS format with documentation provided to the County.

8.2.2 Simulated End User Testing

If a wireless solution is proposed, the County will test Last Mile Elements at a select number of active customer sites per tower deployed. At a minimum, the Proposer will be required to secure and provision one active customer per tower deployed for this test.

To ensure the required coverage specified in **Appendix I**, the County will also test at the maximum product service delivery levels proposed by the Proposer, at three (3) sites selected by the County. These County selected sites will be located within each specified coverage area. The maximum bandwidth size proposed by the Proposer will be tested at each of these County-selected test sites.

If the selected Proposer's proposed point-to-point data and/or business class Internet bandwidth level products, these are also subject to verification testing by the County at the proposed service delivery level speeds in each Coverage Segment Zone proposed.

Simulated User Testing will consist of:

- Downstream throughput at the speeds proposed by Proposer
- Upstream throughput at the speeds proposed by the Proposer
- Latency of 100 ms or less
- Packet Loss: 99.9% or more packets must be passed

8.3 Leased Capacity or Wireless Point-to-point:

RFC 2544 benchmark testing or equivalent. Test should benchmark throughput, latency, and frame loss at multiple frame sizes to ensure performance is within specifications.

All test results will be documented and delivered to the County.

The County reserves the right to test any and all network components delivered to verify quality standards are met.

8.4 Speed testing to the POP:

Applicant will provide premise by premise speed test results to the Point of Presence at the customer premise at the completion of installation, and will provide a random sample of at least 10% of the connected premises on an annual basis

Exhibit A: COVER SHEET

Name of Person, Business or Organization:	
Type of Entity:	
Federal Tax ID Number:	
DUNS Number:	
Contact Person – Name	
Contact Person – Address	
Contact Person – Phone Number(s)	
Contact Person – E-mail address(es)	

By signing this *Cover Sheet* I hereby attest: that I have read and understood all the terms listed in the RFP; have read and understood all terms listed in this proposal; that I am authorized to bind the listed entity into this agreement; and that should this proposal be accepted, I am authorized and able to secure the resources required to deliver against all terms listed within the RFP as published by Cameron County, Texas, including any amendments or addenda thereto except as explicitly noted or revised in my submitted proposal.

Signature of Authorized Representative **Printed Name of Authorized Representative**

Date **Printed Title of Authorized Representative**

Exhibit B: COST PROPOSAL

Complete this form in its entirety. Identify the costs for the services outlined in the RFP. If the Proposer wishes to propose any technical alternatives, please submit those costs on the optional sections of the Cost Proposal form marked Technical Alternatives.

Vendor Name: _____

CATEGORY*	COST ESTIMATE
<i>Total Project Cost</i>	
<i>Total Cameron County Cost</i>	
<i>Total Proposer Cost</i>	
<i>County Contribution as a Percentage of Total Cost</i>	

NOTES:

*Category - please add categories to provide a detailed breakdown of the total project cost. Categories may depend on the proposed technology and solutions.

Exhibit C: TECHNICAL ALTERNATIVES (OPTIONAL)

Use this form to identify costs only if the Proposer has outlined technical alternatives as part of its response to this RFP

Vendor Name: _____

CATEGORY*	COST ESTIMATE
Technical Alternative 1 (SPECIFY)**	
A.	
B.	
C.	
D.	
E.	
Technical Alternative 1 Project Total	
Technical Alternative 2 (SPECIFY)	
A.	
B.	
C.	
D.	
E.	
Technical Alternative 2 Project Total	

Cost Project Total

NOTES:

***Category - please insert the needed categories for the technical alternative. Insert rows as needed to provide the full cost estimate of the technical alternative.**

****Technical Alternative - please be sure to include a cost proposal for each of the technical alternatives provided in the RFP response.**

RFP Title _____

Proposer's Name _____

Date: _____

REFERENCES

Please list three (3) references of current customers who can verify the quality of service your company provides. The County prefers customers of similar size and scope of work to this RFP.

THIS FORM MUST BE RETURNED WITH YOUR RFP.

REFERENCE ONE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ e-mail address: _____

Contract Period: _____ Scope of Work _____

REFERENCE TWO

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ e-mail address: _____

Contract Period: _____ Scope of Work _____

REFERENCE THREE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ e-mail address: _____

Contract Period: _____ Scope of Work _____

THIS FORM MUST BE RETURNED WITH YOUR RFP

STATE OF TEXAS
COUNTY OF CAMERON

AFFIDAVIT

The undersigned certifies that the RFP prices contained in this RFP have been carefully checked and are submitted as correct and final and if RFP is accepted (up thru RFP award date), agrees to furnish any and/or all items upon which prices are offered, at the price(s) and upon the conditions contained in the Specifications.

BEFORE ME, the undersigned authority, A Notary Public in and for the State of _____, on this day personally appeared _____ who, after having first been duly sworn, upon oath did depose and say;

That the foregoing RFP submitted by _____ hereinafter called "Proposer" is the duly authorized agent of said company and that the person signing said RFP has been duly authorized to execute the same. Proposer affirms that they are duly authorized to execute this contract, that this company, corporation, firm, partnership or individual has not prepared this RFP in collusion with any other Proposer. The Proposer is not a member of any trust, pool, or combination to control the price of products or services RFP on, or to influence any person to RFP or not to RFP thereon. I further affirm that the Proposer has not given, offered to give, nor intends to give, at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discounts, trip, favor, or service to a public servant in connection with the submitted RFP. The contents of this RFP as to prices, terms or conditions of said RFP have not been communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this RFP.

Name and Address of Proposer:

Telephone number _____ Fax number _____

Signature

Name: _____ Title: _____

SWORN TO AND SUBSCRIBE BEFORE ME THIS _____ day of _____ 20_____.

Notary Public in and for County _____ State _____

THIS FORM MUST BE RETURNED WITH YOUR RFP

RESIDENCE CERTIFICATION

Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Cameron County requests Residence Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

“Nonresident Proposer” refers to a person who is not a resident.

“Resident Proposer” refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

I certify that _____ is a Resident
(Company Name)
Proposer of Texas as defined in Government Code §2252.001.

I certify that _____ is a Nonresident
(Company Name)
Proposer as defined in Government Code §2252.001 and our principal place of business is

(City and State)

Print Name: _____ Signature: _____

THIS FORM MUST BE RETURNED WITH YOUR RFP

CAMERON COUNTY EXPRESSLY REQUESTS THAT PROPOSERS NOT DISCUSS THIS ENGAGEMENT OR THIS PROPOSER'S PLANS, EXPERIENCE OR CREDENTIALS WITH OTHER PROPOSERS OR ANY MEMBER OF COMMISSIONERS' COURT, ANY COUNTY OFFICIAL, OR ANY EVALUATION COMMITTEE MEMBER APPOINTED BY COMMISSIONERS COURT. EXCLUDED ARE PRE-PROPOSAL CONFERENCES, EVALUATION COMMITTEE SCHEDULED PROPOSER PRESENTATIONS OR PROPOSER INTERVIEWS, OR EVALUATION COMMITTEE SCHEDULED EQUIPMENT OR SERVICES DEMONSTRATIONS. YOU MAY CONTACT THE ASST. AUDITOR / PURCHASING DEPARTMENT AT ANY TIME.

FROM RFP OPENING DATE THROUGH COMMISSIONERS COURT MEETING FOR SELECTION, VENDORS WILL NOT APPROACH THE COUNTY JUDGE OR COMMISSIONERS TO DISCUSS MATTERS PERTAINING TO THIS BID.

01. Has any individual with the firm submitting this Response made any contact with any member of Commissioners Court, any County Official, or an Evaluation Committee member concerning this Invitation to RFP, other than questions to the Assistant County Auditor/Purchasing Officer?

02. Has any individual with the firm submitting this Proposal Response made any contact with any other Proposer concerning this Invitation to RFP?

Signature of person submitting this RFP

Date

THIS FORM MUST BE RETURNED WITH YOUR RFP

ORDER NO. 2007O2005

THE STATE OF TEXAS §
COUNTY OF CAMERON §

ORDER ADOPTING CONTRACTING RULES FOR PERSONS INDEBTED TO COUNTY

WHEREAS, pursuant to V.T.C.A., Local Government Code, Section 262.0276, a commissioner’s court is authorized to adopt rules permitting a county to refuse to enter into a contract or other transaction with a person indebted to the county;

WHEREAS, the Commissioners Court of Cameron County finds it is in the best interest of Cameron County to adopt such rules;

NOW THEREFORE, BE IT ORDERED by the Commissioners Court of Cameron County, that the following rules be adopted regarding Cameron County and persons interested in doing business with Cameron County:

- 1. Cameron County may refuse to enter into a contract or other transaction with a person with a past due debt to Cameron County, including delinquent ad valorem taxes, even if the person is the lowest successful proposer; and
2. For purposes of this Order, a debt is past due if it is not received in the County Treasurer’s Office by the due date in a written agreement or notice, and ad valorem taxes are past due if not received in the County Tax Assessor/Collector’s Office by February 1st following the January 1st on which the ad valorem taxes are due.
3. For purposes of this Order, a person includes an individual, sole proprietorship, corporation, nonprofit corporation, partnership, joint venture, limited liability company, and any other entity that proposes or otherwise seeks to enter into a contract or other transaction with Cameron County requiring approval by the Commissioners Court.

ADOPTED this 13 day of March, 2007.

Taxpayer Identification Number (T.I.N.):

Cameron County Acct #'s: Real Estate Personal Property

01. Is the person or the firm submitting this RFP current with all local and State taxes?

Signature of person submitting this RFP

Date

THIS FORM MUST BE RETURNED WITH YOUR RFP

Certification Regarding Debarment, Suspension Ineligibility

As is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 76, Government-wide Debarment and Suspension, in the Proposer certifies, to the best of his or her knowledge and belief, that both it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency;
- b. Have not within a three-year period preceding this bid/proposal and/or application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction, violation of federal or state antitrust statutes or commission of embezzlement, theft, theory, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a government entity with commission of any of the offenses enumerated herein; and
- d. Have not within a three-year period preceding this bid/proposal and/or application had one or more public transactions terminated of cause or default.

Company name: _____

Signature: _____

Print Name: _____

Title: _____

Telephone Number: _____

Date: _____

If the Proposer is unable to certify to all of the statements in this Certification, such Proposer should attach an explanation to this RFP Response.

THIS FORM MUST BE RETURNED WITH YOUR RFP

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Dale Received

1. Name of vendor who has a business relationship with local governmental entity.

2. **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you become aware that the originally filed questionnaire was incomplete or inaccurate.)

3. Name of local government officer about whom the information is being disclosed.

Name of Officer

4. Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ, as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes

No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

Yes

No

5. Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

6. Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7.

Signature of vendor doing business with the governmental entity

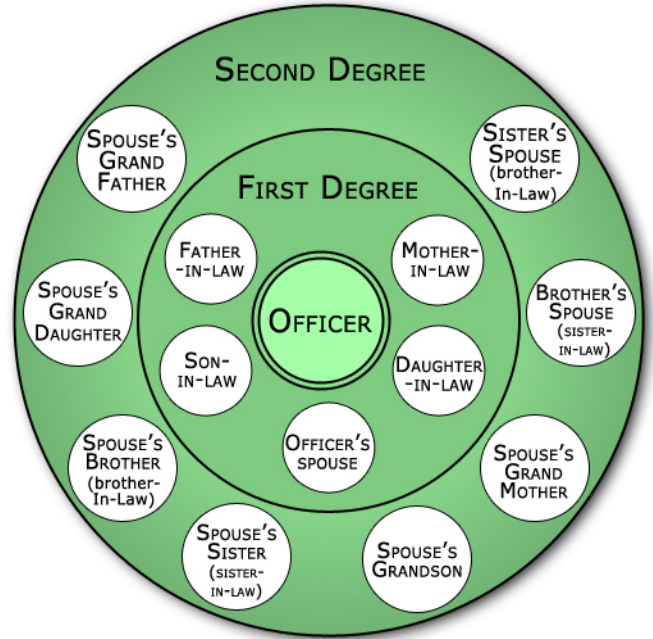
Date

NEPOTISM CHART

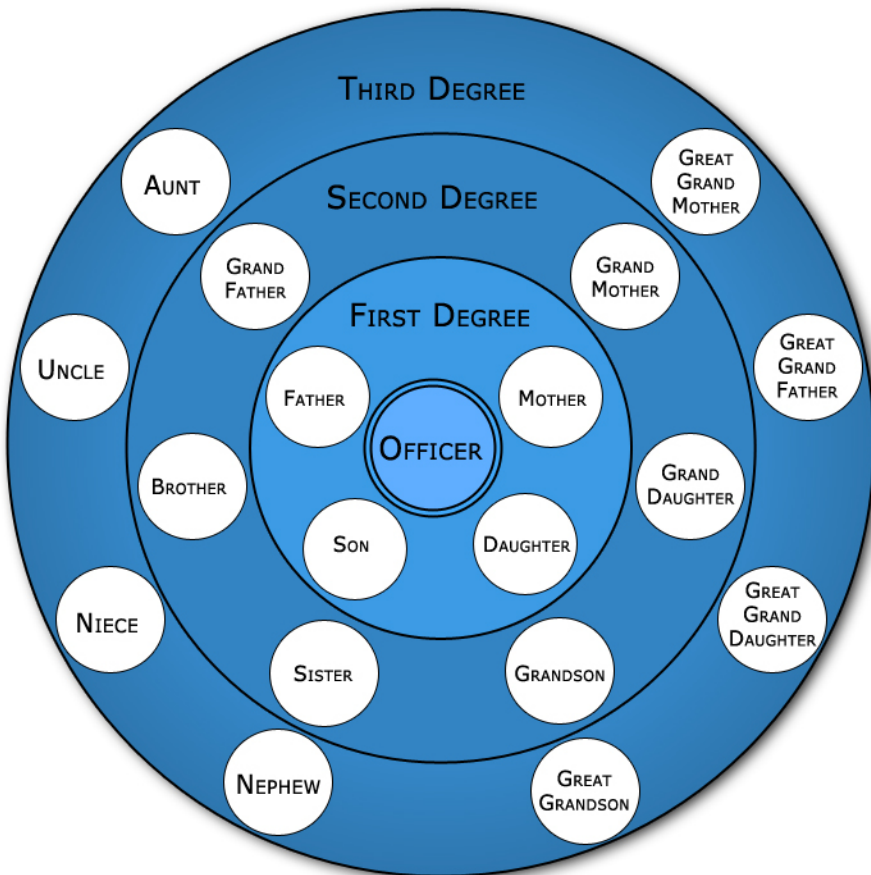
The chart below shows

- **Affinity Kinship** (relationship by marriage)
- **Consanguinity Kinship** (relationship by blood) for purposes of interpreting nepotism as defined in VTCA Government Code, Chapter 573, §§573.021 - .025

AFFINITY KINSHIP Relationship by Marriage



CONSANGUINITY KINSHIP Relationship by Blood



DISCLOSURE OF INTERESTS

MUST BE FILLED OUT AND SUBMITTED WITH THE BID/RFP/RFP
IF DISCLOSING: BIDDER / PROPOSER MUST ALSO FILE WITH THE COUNTY CLERK’S OFFICE
THE PURCHASING DEPT. WILL NOT BE FILING ON THE BIDDER’S BEHALF

Cameron County, Texas requires all persons or firms seeking to do business with the County to provide the following information. Every question must be answered. If the question is not applicable, answer with “N/A.” By law this questionnaire must be filed with the records administrator (County Clerk’s Office) of the local government.

Date _____

FIRM NAME: _____

ADDRESS: _____

FIRM is: 1. Corporation () 2. Partnership () 3. Sole Owner ()
4. Association () 5. Other () _____

DISCLOSURE QUESTIONS

If additional space is necessary, please use the reverse side of this page or attach separate sheet.

1. State the names of each “employee, elected official, or member of Commissioners Court” of Cameron County having Substantial Interest in Business Entity Local Govt. Code 171.002

DISCLOSURE OF INTERESTS (CONTINUED)

- a) For purpose of this chapter, a person has a substantial interest in a business entity if:
 - (1) the person owns 10 percent or more of the voting stock or shares of the business entity or owns either 10 percent or more or \$15,000 or more of the fair market value of the business entity; or
 - (2) funds received by the person from the business entity exceeds 10 percent of the person’s gross income for the previous year.
- b) A person has a substantial interest in real property if the interest is an equitable or legal ownership with a fair market value of \$2,500 or more.
- c) A local public official is considered to have a substantial interest under this section if a person related to the official in the first degree by consanguinity or affinity, as determined under Chapter 573, Government Code, has a substantial interest under this section.

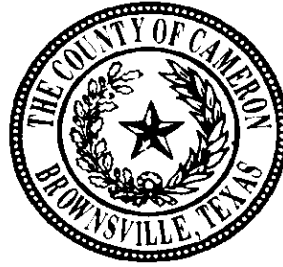
Name	Title	Department

CERTIFICATE

I certify that all information provided is true and correct as of the date of this statement, that I have not knowingly withheld disclosure of any information requested; and that supplemental statements will be promptly submitted to the Cameron County as changes occur.

Certifying Person: _____ Title: _____
 (Type or Print)

Signature of Certifying Person: _____ Date: _____



HOUSE BILL 89 VERIFICATION (REVISED)

I, _____,
[Person Name]

the undersigned representative of _____
[Company or Business Name]

(hereafter referred to as Company) being an adult over the age of eighteen (18) years of age, does hereby depose and verify that the Company named above, under the provisions of Subtitle F, Title 10, Texas Government Code Chapter 2270:

1. Does not currently boycott the country of Israel; and
2. Will not boycott the country of Israel during the term of the contract with Cameron County, Texas.

Signature: _____

Date: _____

Pursuant to Section 2270.001, Texas Government Code:

1. "Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and
2. "Company" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit.
3. Pursuant to Section 2270.002 of the Texas Government Code, Respondent certifies that either (i) it meets an exemption criteria under Section 2270.002; or (ii) it does not boycott Israel and will not boycott Israel during the term of the contract resulting from this solicitation. Respondent shall state any facts that make it exempt from the boycott certification in its Response. (HB 793 – exemptions).

EXEMPTIONS APPLY TO THE FOLLOWING:

- between a governmental entity and a company with less than 10 full-time employees
- has a value of less than \$100,000 paid wholly or partly from public funds of the governmental entity

THIS FORM MUST BE RETURNED WITH YOUR RFP

GENERAL TERMS & CONDITIONS (Requests for Qualifications (RFP))

ADDENDA: If RFP specifications, terms or conditions are revised, the Cameron County Purchasing Department will issue an addendum addressing the nature of the changes and notify interested potential Proposers. Proposers must acknowledge receipt and consideration of any such changes by signing the addendum and including it in the RFP package containing the Proposer's submittal.

ADVERTISING: Unless otherwise required by law, Proposers to County RFPs shall not publish and shall keep confidential their intentions and actions respecting any response to the RFP.

AWARD: Cameron County may hold RFP responses for a period of sixty (60) days. Cameron County reserves the right to reject any or all responses to RFPs. Cameron County reserves the right to award a contract, if any, based on the Proposer's response when compared to the EVALUATION CRITERIA (AS STATED IN THE RFP) and, in accordance with the laws of the State of Texas, reserves the right to waive any formality or irregularity, to make awards to more than one proposer. Commissioners Court reserves the right to determine the method and procedures for the final award of all RFPs at any time they may choose, regardless of the Point System used by the Evaluation Committee.

BONDS: If the contract that may be entered into with the County will likely require a performance guarantee or bond, the Purchasing Department will attach a separate page to the RFP explaining those requirements.

CANCELLATION AND TERMINATION: In any contract resulting from the RFP, the County shall have the right to cancel all or any part of the undelivered portion of the contract if (1) Proposer breaches any of the terms hereof, including, but not limited to, applicable warranties, and/or (2) Proposer becomes insolvent or files for bankruptcy. Such right of cancellation is in addition to, and not in lieu of, any other remedies which the County may have in law or equity. Cancellation of work hereunder shall be effected by the delivery to the Proposer of a "Notice of Cancellation of Undelivered Work" specifying the extent to which performance of work, including all goods and services, under the contract is cancelled and the date upon which such cancellation becomes effective.

The performance of work under any resulting contract may be terminated in whole, or in part, by the County in accordance with this provision. The County shall have the right to terminate all or any part of the contract if (1) the Proposer breaches any of the terms hereof, including, but not limited to, applicable warranties, and/or (2) Proposer becomes insolvent or files for bankruptcy. Such right of termination is in addition to, and not in lieu of, any other remedies which the County may have in law or equity. Termination of work hereunder shall be effected by the delivery to the Proposer of a "Notice of Termination" specifying the extent to which performance of work, including all goods and services, under the contract is terminated and the date upon which such termination becomes effective.

CHANGE ORDERS: No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing by mutual consent of the Proposer and the County.

CONTRACT RENEWALS: Contract Renewals must receive Commissioners Court approval. For contract renewal status and information, please contact Elisa Cisneros at 956-982-5405 e-mail: Elisa.Cisneros2@co.cameron.tx.us Cameron County Purchasing Dept. or Dylbia Jeffries 956-550-1340 djefferies@co.cameron.tx.us at the Cameron County Civil Legal Division. Any price escalations are limited to those stated by the original contract terms. All contracts with a one (1) year renewal option require that the Proposer must notify Cameron County of any anticipated price increases in writing at least three months (90 calendar days) prior to the annual renewal award date unless otherwise specified within the specific provisions of the contract up for renewal. This allows the County sufficient time to find an alternative vendor if possible. If Proposer fails to notify the County within time noted it shall be assumed that there will be no price increase for the following year's award period if renewed. This procedure does not apply to any contract which allows for Open Market Price increases or Cost allowance increases.

DISCRIMINATION: In order to encourage fair employment practices, the Proposer agrees as follows: 1.) Proposer will not discriminate against any employee or Proposer for employment because of race, sex, color, age, religion, handicap, or national origin; 2) in all solicitations or advertisements for employees, the Proposer will state that all qualified Proposers will receive consideration without regard to race, color, sex, age, religion, handicap or national origin; 3) the Proposer will furnish such relevant information and reports as requested by the County for the purpose of determining compliance with these regulations; and 4) failure of the Proposer to comply with these laws will be deemed a breach of contract and it may be cancelled, terminated or suspended in whole or in part as a result thereof.

DISQUALIFICATION OF PROPOSER: Upon submitting a response to this RFP, Proposer certifies that the Proposer has not violated the antitrust laws of this state codified in Texas Business and Commerce Code 15.01, *et seq.*, as amended, or the federal antitrust laws, and has not communicated directly or indirectly its RFP considerations, plan or response to any competitor or any other person engaged in such line of business. Any and all responses may be rejected if the County believes that collusion exists among the Proposers. If multiples are submitted by a Proposer and after all responses to the RFPs are opened one or more of the responses are withdrawn, the result will be that all of the responses submitted by that Proposer will be withdrawn; however, nothing herein prohibits a Proposer from submitting multiples for different products or services.

EVALUATION: All responses will be evaluated in accordance with law and reviewed to assure they are in the best interest of Cameron County. Evaluations shall be based on criteria bearing on price and performance of the items or services in the user environment. Any specific criteria section or sections identified elsewhere in this RFP may be evaluated by one or more evaluators once the basis and details of this process have been approved by the Purchasing Officer and acknowledged by the Evaluation Committee. Detailed information pertaining to this selective evaluation process is available to Proposers and the Commissioners Court upon request. Evaluation sheets and any summary of all responses are subject to review by the Cameron County Purchasing Department and Evaluation Committee's recommendation to Cameron County Commissioners Court. Compliance with all RFP requirements, delivery terms and needs of the using department are considerations in evaluating responses. Pricing is NOT the only criterion for making a recommendation (see criteria and relative importance of price and other evaluation factors, if any, specified elsewhere in this RFP). The Cameron County Purchasing Department reserves the right to contact any Proposer, at any time, to clarify, verify or request information with regard to that Proposer's response. The Cameron County Purchasing Department further reserves the right to hold negotiation discussions with any responsible Proposer determined to be reasonably susceptible of being selected for award in accordance with law.

PROTEST PROCEDURES: Procedure - This protest procedure is available to Proposers responding to this RFP and requesting a debriefing conference.

Debriefing Conference – A debriefing conference must be requested in writing to the Purchasing Department within five (5) business days from the date of the RFP award by the Cameron County Commissioners' Court. Debriefing questions must be submitted in writing to the Purchasing Department no later than two (2) business days before the scheduled date for the Debriefing Conference. These questions will be answered at the debriefing conference. Follow-up questions must be submitted (in writing) no later than one (1) business day after the date of the Debriefing Conference and answered no later than two (2) business days after the date of the Debriefing Conference. Follow-up answers will be sent via e-mail or fax (if e-mail not available). For RFPs, Proposers are given the opportunity to ask questions of the Evaluation Committee relative to their responses and the Committee's scores.

Protests are made: 1. To the Purchasing Department after the debriefing conference. Proposer protests shall be received, in writing, by the Purchasing Department within five (5) business days after the debriefing conference. 2. To the Protest Committee, only after the protest to the Purchasing Department was not satisfactorily resolved. Protests to the Protest Committee shall be made within five (5) business days after the Proposer has received notification from the County Purchasing Department of its decision.

Grounds for protest

1. Errors were made in computing the score.
2. The County failed to follow procedures established in the RFP, the Purchasing policy on acquisitions or applicable state or federal laws or regulations.
3. Bias, discrimination or conflict of interest on the part of an evaluator. Protests not based on these criteria shall not be considered.

Format and Content - Protesting Proposers shall include, in their written protest to the Cameron County Purchasing Department, all facts and arguments upon which they rely. Proposers shall, at a minimum, provide:

1. Information about the protesting Proposer; name of firm, mailing address, phone number and name of individual responsible for submission of the protest.
2. Information about the acquisition and the acquisition method.
3. Specific and complete statement of the County's action(s) being protested.

4. Specific reference to the grounds for the protest.
5. Description of the relief or corrective action requested.
6. For protests to the Protest Committee, a copy of the Purchasing Department's written decision on the protest.

Review Process:

1. Upon receipt of a Proposer's protest, the Purchasing Department shall postpone further steps in the acquisition process until the Proposer protest has been resolved.
2. The Department's internal protest review procedures consist of the following:
 - a) The Purchasing Department shall perform an objective review of the protest by individuals not involved in the acquisition protested. The review shall be based on the written protest material submitted by the Proposer.
 - b) A written decision will be delivered to the Proposer within five business days after receipt of the protest, unless more time is needed. The protesting Proposer shall be notified if additional time is necessary.

Final Determination:

The final determination shall:

1. Find the protest lacking in merit and uphold the agency's action; or
2. Find only technical or harmless errors in the agency's acquisition process, determine the agency to be in substantial compliance, and reject the protest; or 3. Find merit in the protest and provide the agency options which may include recommendations to a) correct its errors and reevaluate all proposals, and/or b) reissue the Proposer solicitation document; or c) make other findings and determine other courses of action as appropriate.

Protest Committee Review Process:

Protests to the Protest Committee may be made only for Protest Committee approved acquisitions, and only after review by County Purchasing Department. Protests of the decisions of County Purchasing Department shall be made by letter to the Protest Committee, who may establish procedures to resolve the protest. Protests shall be received by the Protest Committee within five business days after the decision of Purchasing Department in order to be considered. The Committee's decision is final, with no further administrative appeal available.

FISCAL FUNDING: A multi-year lease or lease/purchase arrangement (if requested by the Special Requirements/Instructions), or any contract continuing as a result of an extension option, must include "fiscal funding out" clause. If, for any reason, funds are not appropriated to continue the lease or contract, said lease or contract shall become null and void on the last day of the current appropriation of funds. After expiration of the lease, leased equipment shall be removed by the Proposer from the using department without penalty of any kind or form to Cameron County. All charges and physical activity related to delivery, installation, removal and redelivery shall be the responsibility of the Proposer.

GRATUITIES AND PROHIBITION AGAINST PERSONAL INTEREST IN CONTRACTS: Any elected or appointed official who has any substantial interest, either direct or indirect, in any business entity seeking to contract with the County, shall, before any vote or decision on any matter involving the business entity, file an affidavit stating the nature and extent of interest and shall abstain from any participation in the matter. This is not required if the vote or decision will not have any special effect on the entity other than its effect on the public. However, if a majority of the governing body is also required to file, and do file similar affidavits, then the member is not required to abstain from further participation. Attached and included in this RFP is a disclosure of all of this Company's business or pecuniary financial relationships with officers or employees of Cameron County or County entities (if any such relationships exist) which must be filled out, attached and included with the RFP response. The County may, by written notice to the Proposer, cancel this contract without liability to Proposer if it is determined by County that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the Proposer, or any agent, or representative of the Proposer, to any officer or employee of Cameron County with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending or the making or any determinations with respect to the performance of such a contract. In the event this contract is cancelled by County pursuant to this provision, County shall be entitled, in addition to any other rights and remedies, to

recover or withhold the amount of the costs incurred by Proposer in providing such gratuities. Proposer guarantees that he has not retained a person to solicit or secure any contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the Proposer for the purpose of securing business.

HISTORICALLY UNDERUTILIZED BUSINESS (HUB) CERTIFICATION: If Proposer is a Certified Historically Underutilized Business (HUB), please include a copy of your HUB Certificate with your response. This information will assist Cameron County in the percentage tracking of HUB utilization.

INSURANCE: The Proposer shall secure and maintain, throughout the duration of the Contract, insurance of such types and in such amounts as may be necessary to protect the Proposer and the interests of the County against all hazards or risks of loss as hereinafter specified. The form and limits of such insurance, together with the insurer, shall be acceptable to the County. It shall be the responsibility of the Proposer to maintain adequate insurance coverage at all times. Failure of the Proposer to maintain adequate coverage shall not relieve the Proposer of any contractual responsibility or obligation.

MAINTENANCE: Maintenance required for equipment requested in RFPs should be available in Cameron County by a manufacturer authorized maintenance facility. Costs for this service shall be shown on the Pricing/Delivery Information form. If Cameron County opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly.

MATERIAL SAFETY DATA SHEETS: Under the "Hazardous Communication Act", commonly known as the "Texas Right To Know Act", a Proposer must provide to the County with each delivery, material safety data sheets which are applicable to hazardous substances defined in the Act. Failure of the Proposer to furnish this documentation will be cause to reject any RFP applying thereto.

NAME BRANDS: Specifications may reference name brands and model numbers. It is not the intent of Cameron County to restrict responses to RFPs in such cases, but to establish a desired quality level of merchandise or to meet a pre-established standard common to similar existing items. Proposers may offer items of equal stature and standard, but the burden of proof of such stature and standard rests with Proposers. Cameron County shall act as sole judge in determining equality and acceptability of products offered.

PRICING: Prices for all goods and/or services shall be firm for the duration of the contract and shall be stated on the Pricing/Delivery Information form. Prices shall be all inclusive: No price changes, additions, or subsequent qualifications will be honored during the term of the contract. All prices must be written in ink or typewritten. Pricing on all transportation, freight, drayage and other charges are to be prepaid by the Proposer and included in the price. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, Proposer MUST indicate the items required and attendant costs or forfeit the right to payment for such items. Where unit pricing and extended pricing differ, unit pricing prevails.

RECYCLED MATERIALS: Cameron County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable specifications as to quantity and quality. County will be the sole judge in determining product preference application.

SCANNED RE-TYPED RESPONSE: If in its RFP response, Proposer either electronically scans, re-types, or in some way reproduces the County's published RFP package, then in event of any conflict between the terms and provisions of the County's published RFP specifications, or any portion thereof, and the terms and provisions of the RFP response made by Proposer, the County's RFP specifications as published shall control. Furthermore, if an alteration of any kind to the County's published RFP specifications is only discovered after the contract is executed and is or is not being performed, the contract is subject to immediate cancellation.

SILENCE OF SPECIFICATIONS: The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. The manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item needed in the RFP. Substitute items will not be accepted unless approved (in advance).

SUPPLEMENTAL MATERIALS: Proposers are responsible for including all pertinent product data in the returned RFP package. Literature, brochures, data sheets, specification information, completed forms requested as part of the RFP package and any other facts which may affect the evaluation and subsequent contract award should be included. Materials such as legal documents and contractual agreements, which the Proposer wishes to include as a condition of the RFP response must also be in the returned RFP response package. Failure to include all necessary and proper supplemental materials may be cause to reject the Proposer's entire RFP.

TITLE TRANSFER: Title and Risk of Loss of goods shall not pass to Cameron County until Cameron County actually receives and takes possession of the goods at the point or points of delivery. Receiving times may vary with the using department. Generally, deliveries may be made between 8:30 a.m. and 4:00 p.m., Monday through Friday. Proposers are advised to consult the using department for instructions. The place of delivery shall be shown under the "Special Requirements/Instructions" section of this RFP package and/or on the Purchase Order as a "Deliver To:" with the address.

USAGE REPORTS: Cameron County reserves the right to request, and receive at no additional cost up to two (2) times during the contract period, a usage report detailing the products and/or services furnished to date under a contract resulting from this RFP. The reports must be furnished no later than five (5) working days after written request and itemize all purchases to date by

Cameron County department with a description, of each item purchased, including the manufacturer, quantity of each item purchased, the per unit and extended price of each item purchased, and the total amount and price of all items purchased.

WARRANTY PRICE: (a) The price to be paid by the County shall be that contained in Proposer's response to the RFP which Proposer warrants to be no higher than Proposer's current prices on orders by others for products of the kind and specification covered by this agreement for similar quantities under similar or like conditions and methods of purchase. In the event Proposer breaches this warranty, the prices of the items shall be reduced to the Proposer's current prices on orders by others, or in the alternative, County may cancel this contract without liability to Proposer for breach or Proposer's actual expense.

(b) The Proposer warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for commission, percentage, brokerage, or contingent fee excepting bona fide employees of bona fide established commercial or selling agencies maintained by the Proposer for the purpose of securing business. For breach or violation of this warranty, the County shall have the right in addition to any other right or rights to cancel this contract without liability and to deduct from the contract price, or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee.

Proposers shall furnish all data pertinent to warranties or guarantees which may apply to items in the RFP.

Proposers may not limit or exclude any implied warranties.

Proposer warrants that products sold and services provided to the County shall conform to the highest commercial and/or professional standards in the industry and laws established by the U.S. Department of Labor, U.S. Department of Homeland Security, Occupational Safety and Health Administration and O.S.H.A. Act of 1970. In the event any product does not conform to OSHA Standards, where applicable, Cameron County may return the product for correction or replacement at the Proposer's expense. If Proposer fails to make the appropriate correction within a reasonable time, Cameron County may correct at the Proposer's expense.

-WARRANTY ITEMS/PRODUCTS: Proposer warrants that products sold and services provided to the County shall conform to the highest commercial and/or professional standards in the industry and laws established by the U.S. Department of Labor, U.S. Department of Homeland Security, Occupational Safety and Health Administration and O.S.H.A. Act of 1970. In the event product does not conform to OSHA Standards, where applicable, Cameron County may return the product for correction or replacement at the Proposer's expense. If Proposer fails to make the appropriate correction within a reasonable time, Cameron County may correct at the Proposer's expense.

Proposer shall not limit or exclude any implied warranties and any attempt to do so shall render this contract voidable at the option of the County.

Proposer warrants that the goods furnished will conform to the specifications, drawings and descriptions listed in the RFP invitation and to the sample(s) furnished by Proposer, if any. In the event of a conflict between the specifications, drawings and descriptions,

the specifications shall govern. All items must be new, in first class condition, unless otherwise specified. The design, strength, and quality of materials must conform to the highest standards of manufacturing practice.

Items supplied under this contract shall be subject to the County's approval. Successful Proposer shall warrant that all items/services shall conform to the proposed specifications and/or all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title. Any items found defective or not meeting specifications shall be picked up and promptly replaced by the successful Proposer at no expense to the County.

SAFETY WARRANTY: As noted above, Proposer warrants that the products sold to County shall conform to the standards promulgated by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970. In the event the product does not conform to OSHA standards, County may return the product for correction or replacement at the Proposer's expense. In the event Proposer fails to make the appropriate correction within a reasonable time, correction made by County will be at Proposer's expense. Have you attached the required warranty information to the RFP (if applicable)? "Yes" or "No"

APPLICABLE LAW

To the extent it is applicable, this agreement shall be governed by the Uniform Commercial Code. Wherever the term "Uniform Commercial Code" is used, it shall be construed as meaning "the Uniform Commercial Code" as adopted in the State of Texas as effective and in force on the date of this agreement. Otherwise, Texas state and federal law shall apply.

ASSIGNMENT DELEGATION: No right, obligation or interest in this contract shall be assigned or delegated to another by Proposer without the written permission of the County. Any attempted assignment or delegation by Proposer shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.

CONTRACT OBLIGATION: Cameron County Commissioners Court must award any resulting contract and the County Judge or other person authorized by the Cameron County Commissioners Court must sign the contract before it becomes binding on Cameron County or the Proposer. Department Heads are NOT authorized to sign agreements for Cameron County. Binding agreements shall remain in effect until all products and/or services covered by this RFP – have been delivered and accepted and all contract requirements have been satisfied.

ERRORS AND OMISSIONS: Errors and Omissions in the RFP or any provision herein described will not be construed as to relieve the Proposer of any responsibility or obligation requisite to the complete and satisfactory implementation, operation, and support of all obligations under any resulting contract.

FORCE MAJEURE: If, by reason of Force Majeure, either party hereto shall be rendered unable wholly, or in part, to carry out its obligations under this RFP and any resulting contract, then such party shall give notice and full particulars of Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch. The term "Force Majeure" as employed herein, shall mean acts of God, strikes, lockouts, or other industrial disturbances, act of public enemy, orders of any kind of government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightening, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraint of government and people, civil disturbances, explosions, breakage or accidents to machinery, pipelines or canals, or other causes not reasonably within the control of the party claiming such inability. It is understood and agreed that the settlement of strikes and lockouts shall be entirely with the discretion of the party having the difficulty, and that the above requirement that any Force Majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable in the judgment of the party having the difficulty.

HOLD HARMLESS AGREEMENT: The successful Proposer shall indemnify and hold Cameron County harmless from all claims for personal injury, death and/or property damage resulting directly or indirectly from Proposer's performance. Proposer shall procure and maintain, with respect to the subject matter of this RFP, appropriate insurance coverage including, as a minimum, public liability and property damage with adequate limits to cover Proposer's liability as may arise directly or indirectly from work performed and goods or services sold under the terms of this RFP. Certification of such coverage must be provided to the County upon request.

INFRINGEMENTS: There will be no warranty by County against infringements. As part of this contract for sales, Proposer agrees to ascertain whether goods manufactured in accordance with the specifications attached to this agreement will give rise to the rightful claim of any third person by way of infringement or the like. County makes no warranty that the production of goods according to the specification will not give rise to such a claim, and in no event shall County be liable to Proposer for indemnification in the event that Proposer gets sued on the grounds of infringement or the like. If Proposer is of the opinion that an infringement or the like will result, Proposer shall notify County to that effect in writing within two (2) weeks after the signing of this agreement. If County does not receive notice and is subsequently held liable for the infringement or the like, Proposer will hold County harmless. If Proposer in good faith ascertains that production of the goods in accordance with the specifications will result in infringement or the like, this contract shall be null and void, except that County will pay Proposer the reasonable cost of Proposer's search as to infringement. The Proposer agrees to protect the County from claims involving infringement of patents or copyrights.

INTERPRETATION PAROLE EVIDENCE: Unless a separate contract or addendum hereof is prepared and entered into following the award of this RFP to a successful Proposer, this writing is intended by the parties as a final expression of the terms of this RFP and the general terms of any resulting contract. No course of prior dealings between the parties and no usage of the trade shall be relevant to supplement or explain any term. Acceptance or acquiescence in a course of performance rendered under this RFP and any resulting contract shall not be relevant to determine meaning even though the accepting or acquiescing party has knowledge of the performance and opportunity for objection. Whenever a term defined by the Uniform Commercial Code is used in this agreement, the definition contained in the Code is to Control, if applicable.

LATE RESPONSES: RFP responses must be received by the County before the hour and date specified. Responses received after the time and date specified will be disqualified and may be returned to sender. The County is not responsible for lateness or non-delivery of mail, delivered to wrong office, carrier, etc.

MODIFICATIONS: This contract can be modified or rescinded only by a writing signed by both of the parties or their duly authorized agents.

O.S.H.A: Proposer must meet all Federal and State OSHA requirements.

REMEDIES: The successful Proposer and County agree that both parties have all rights, duties, defenses and remedies available under law.

RIGHT TO ASSURANCE: During the RFP process and any resulting contract, whenever a Proposer or County in good faith has reason to question the other's intent to perform, demand may be made that the other party give written assurance of intent. In the event that a demand is made, and no assurance is given within five (5) days, such failure may be treated as an anticipatory repudiation of the RFP and any resulting contract.

SEVERABILITY: If any section, subsection, paragraph, sentence, clause, phrase or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

VENUE: Both parties agree that venue for any litigation arising from this contract shall lie in Cameron County, Texas.

PROPOSER SHALL CONFIRM ACCEPTANCE OF RFB TERMS: The Proposer shall specifically state acceptance of these terms and conditions as a basis for providing the County with a response to this RFP.

THESE TERMS INCORPORATED: These General Terms and Conditions shall be incorporated in the response to the RFP and any resulting contract to this RFP. The Proposer shall specifically state acceptance of these terms and conditions as a basis for providing the County with a response to this RFP.

OTHER TERMS: The Proposer shall state any exceptions desired to these terms and conditions and may suggest alternate wording that addresses the intent of the term or condition. The County may accept or reject any suggestions in accordance with law.

REQUIRED CONTRACT CLAUSES FOR CONTRACTS UNDER FEDERAL AWARD

2 C.F.R. § 200.327 & 2 C.F.R. PART 200, APPENDIX II, REQUIRED CONTRACT CLAUSES FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS

The United States Office of Management and Budget (OMB) issued in 2 C.F.R. 200: *Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards* (Uniform Guidance). Subpart D: Post Federal Award Requirements: **2 CFR §§200.317-200.327** of the Uniform Guidance contain provisions applicable to procurements made with federal grant funding. [Except as otherwise provided, updated Post Federal Award Requirements (i.e.: 2 CFR §§200.317-200.327) apply to declarations and awards issued on or after November 12, 2020]. <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200#subject-group-ECFR45ddd4419ad436d> See Appendix "B"

As a non-Federal entity, the County of Cameron's ("County") contracts must contain the applicable contract clauses described in Appendix II to the Uniform Guidance (Contract Provisions for non-Federal Entity Contracts Under Federal Awards), which are set forth below. (2 C.F.R. §200.327). If applicable, the following clauses shall supersede any existing, similar clauses stated within the bid document, contract, and/or Terms and Conditions. *The term "Contractor" used herein refers to the proposer, bidder or other entity/individual responding to the applicable procurement packet.*

If applicable, the regulations in 2 CFR, Part 200 and Appendix II to the Uniform Guidance, as it may be amended from time to time, and the contract clauses below, are incorporated by reference as part of this procurement packet and any resulting agreement.

To procure goods and services using funds under a federal grant or contract, specific federal laws, regulations, and requirements may apply in addition to those under state law. The following provisions are required and apply when federal funds are expended by the County of Cameron for any contract resulting from this procurement process.

1. Remedies.

- a. Applicability. This requirement applies to all Federal grant and cooperative agreement programs.

- b. Standard. Contracts for more than the simplified acquisition threshold currently set at \$150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate. See 2 C.F.R. Part 200, Appendix II, A.

c. Statement. Pursuant to Federal Rule (A) above, when federal funds are expended by the County, the County reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party. Contractor shall comply with all applicable Federal, State of Texas, and local laws, rules, and regulations and shall obtain all applicable licenses and permits for the conduct of its business and the performance of the services, and any provision of equipment and material (“Applicable Law”). All transactions related to any of the Contract Documents shall be governed by the laws of the State of Texas, and trial of any action brought in connection with the bid or the Contract Documents shall be held exclusively in a state court in the County of Cameron, Texas.

2. Termination for Cause and Convenience.

a. Applicability. This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. All contracts in excess of \$10,000 shall address termination for cause and for convenience by the non-Federal entity including the manner by which it will be affected and the basis for settlement as follows. See 2 C.F.R. Part 200, Appendix II, B.

c. Statement. *Termination*. County may terminate this Agreement for any reason upon ten (10) days written notice to the other party. County may terminate this Agreement immediately upon written notice if Contractor breaches this Agreement. In the event of any termination, Contractor shall promptly deliver to the County any and all Work Materials prepared for the County prior to the effective date of such termination, all of which shall become County’s sole property. After receipt of the Work Materials, County will pay Contractor for the services which the County determines were satisfactorily performed as of the effective date of the termination.

Excuses for Non-Performance. Either party shall be absolved from its obligations under this contract when and to the extent that performance is delayed or prevented (and in the County of Cameron’s case when and to the extent that its need for the articles, materials or work to be supplied hereunder is reduced or eliminated) by reason of acts of God, fire explosion, war riots, strikes, labor disputes, or governmental laws, orders or regulations.

Default. If Contractor or Subcontractor shall breach any provision hereof or shall become insolvent, enter voluntary or involuntary bankruptcy or receivership proceedings or make an assignment to the benefit of creditors, County of Cameron shall have the right (without limiting any other rights or remedies which it may have hereunder or by operation of law) to terminate this contract by written notice to Contractor whereupon County shall be relieved of all further obligation hereunder except the obligation to pay the reasonable value of Contractor’s prior performance (at not exceeding the contract rate), and Contractor shall be liable to County for all costs incurred by County in completing or procuring the completion of performance in excess of the contract price herein specified. The County’s right to require strict performance of any obligation hereunder shall not be affected by any previous waiver, forbearance of course of dealing. Time is of the essence thereof.

3. Equal Employment Opportunity.

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. Except as otherwise provided under 41 C.F.R. Part 60, all contracts that meet the definition of “*federally assisted construction contract*” in 41 C.F.R. § 60-1.3 must include the equal opportunity clause provided under 41 C.F.R. § 60- 1.4(b), in accordance with Executive Order 11246, *Equal Employment Opportunity* (30 Fed. Reg. 12319, 12935, 3 C.F.R. Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, *Amending Executive Order 11246 Relating to Equal Employment Opportunity*, and implementing regulations at 41 C.F.R. Part 60 (Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor). See 2 C.F.R. Part 200, Appendix II, C.

c. Key Definitions:

(1) *Federally Assisted Construction Contract.* The regulation at 41 C.F.R. § 60-1.3 defines a “federally assisted construction contract” as any agreement or modification thereof between any applicant and a person for construction work which is paid for in whole or in part with funds obtained from the Government or borrowed on the credit of the Government pursuant to any Federal program involving a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, or any application or modification thereof approved by the Government for a grant, contract, loan, insurance, or guarantee under which the applicant itself participates in the construction work.

(2) *Construction Work.* The regulation at 41 C.F.R. § 60-1.3 defines “construction work” as the construction, rehabilitation, alteration, conversion, extension, demolition or repair of buildings, highways, or other changes or improvements to real property, including facilities providing utility services. The term also includes the supervision, inspection, and other onsite functions incidental to the actual construction

d. Statement: Contractor will comply with the Nondiscrimination Civil Rights Act of 1964, as amended and all Federal regulations relative to nondiscrimination in Federally assisted programs. The regulation at 41 C.F.R. Part 60-1.4(b) requires the insertion of the following contract clause:

“During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor

agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- (3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States."

4. Davis Bacon Act and Copeland Anti-Kickback Act.

- a. Applicability of Davis-Bacon Act. The Davis-Bacon Act only applies to the emergency Management Preparedness Grant Program, Homeland Security Grant Program, Nonprofit Security Grant Program, Tribal Homeland Security Grant Program, Port Security Grant Program, and Transit Security Grant Program. **It does not apply to other Federal grant and cooperative agreement programs, including the Public Assistance Program.**

- b. Standard. All prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3144 and 3146-3148) as supplemented by Department of Labor regulations at 29 C.F.R. Part 5 (Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction).

In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week.

The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

In contracts subject to the Davis-Bacon Act, the contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations at 29 C.F.R. Part 3 (Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States). The Copeland Anti-Kickback Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to FEMA or applicable Federal entity. See 2 C.F.R. Part 200, Appendix II, ¶ D.

- c. Statement. The regulation at 29 C.F.R. § 5.5(a) does provide the required contract clause that applies to compliance with both the Davis-Bacon and Copeland Acts. However, as discussed in the previous subsection, the Davis-Bacon Act does not apply to Public Assistance recipients and subrecipients. In situations where the Davis-Bacon Act does not apply, neither does the Copeland “Anti-Kickback Act.” However, for purposes of grant programs where both clauses do apply, FEMA or applicable Federal entity requires the following contract clause:

“Compliance with the Copeland “Anti-Kickback” Act.

- (1) *Contractor.* The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- (2) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as Federal requirements may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- (3) *Breach.* A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.”

5. **Contract Work Hours and Safety Standards Act.**

- a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.
- b. Standard. Where applicable (see 40 U.S.C. § 3701), all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5.

Under 40 U.S.C. § 3702, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week.

The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. See 2 C.F.R. Part 200, Appendix II, E.

The regulation at 29 C.F.R. § 5.5(b) provides the required contract clause concerning compliance with the Contract Work Hours and Safety Standards Act:

- c. Statement.

“Compliance with the Contract Work Hours and Safety Standards Act.

- (1) *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- (3) *Withholding for unpaid wages and liquidated damages.* The County of Cameron shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- (4) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.”

6. Rights to Inventions Made Under a Contract or Agreement.

- a. Applicability: Stafford Act Disaster Grants. This requirement **does not apply to the Public Assistance**, Hazard Mitigation Grant Program, Fire Management Assistance Grant Program, Crisis Counseling Assistance and Training Grant Program, Disaster Case Management Grant Program, and Federal Assistance to Individuals and Households – Other Needs Assistance Grant Program, as FEMA or Federal awards under these programs do not meet the definition of “funding agreement.”

b. Standard. If the FEMA or Federal award meets the definition of “funding agreement” under 37 C.F.R. § 401.2(a) and the non-Federal entity wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the non-Federal entity must comply with the requirements of 37 C.F.R. Part 401 (Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements), and any implementing regulations issued by FEMA or applicable awarding agency. See 2 C.F.R. Part 200, Appendix II, F.

c. Key Definition: The regulation at 37 C.F.R. § 401.2(a) currently defines “funding agreement” as any contract, grant, or cooperative agreement entered into between any Federal agency, other than the County of Cameron, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal government. This term also includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as defined in the first sentence of this paragraph.

7. Clean Air Act and the Federal Water Pollution Control Act.

a. Applicability and Standard: Contracts of amounts in excess of \$150,000 must contain a provision that requires the contractor to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency. See 2 C.F.R. Part 200, Appendix II, G.

b. Statement: Included in contracts as provided in section “7a” above.

- (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. and the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- (2) The contractor agrees to report each violation to the Federal awarding agency (e.g. Federal Emergency Management Agency-FEMA) and the Regional Office of the Environmental Protection Agency. Contractor understands and agrees that each violation reported to the County of Cameron will, in turn, be reported as required to assure notification to the Federal awarding agency and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by the applicable Federal awarding agency (e.g. FEMA).

8. Debarment and Suspension.

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. Non-Federal entities and contractors are subject to the debarment and suspension regulations implementing Executive Order 12549, *Debarment and Suspension* (1986) and Executive Order 12689, *Debarment and Suspension* (1989) at 2 C.F.R. Part 180 and the Department of Homeland Security's regulations at 2 C.F.R. Part 3000 (Non-procurement Debarment and Suspension).

These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities. See 2 C.F.R. Part 200, Appendix II, H; and Chapter IV, 6.d and Appendix C, 2. A contract award must not be made to parties listed in the SAM Exclusions. SAM Exclusions is the list maintained by the General.

Services Administration that contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. SAM exclusions can be accessed at www.sam.gov See 2 C.F.R. § 180.530; Chapter IV, 6.d and Appendix C, 2.

In general, an "excluded" party cannot receive a Federal grant award or a contract within the meaning of a "covered transaction," to include subawards and subcontracts. This includes parties that receive Federal funding indirectly, such as contractors to recipients and subrecipients. The key to the exclusion is whether there is a "covered transaction," which is any non-procurement transaction (unless excepted) at either a "primary" or "secondary" tier. Although "covered transactions" do not include contracts awarded by the Federal Government for purposes of the non-procurement common rule and DHS's implementing regulations, it does include some contracts awarded by recipients and subrecipient.

Specifically, a covered transaction includes the following contracts for goods or services:

- (1) The contract is awarded by a recipient or subrecipient in the amount of at least \$25,000.
- (2) The contract requires the approval of FEMA or applicable Federal entity, regardless of amount.
- (3) The contract is for Federally-required audit services.
- (4) A subcontract is also a covered transaction if it is awarded by the contractor of a recipient or subrecipient and requires either the approval of FEMA or applicable Federal entity or is in excess of \$25,000.

c. Statement. The following provides a debarment and suspension clause. It incorporates a method of verifying that contractors are not excluded or disqualified:

For maximum protection, provide a print or electronic document for every prime and subcontractor, from www.sam.gov in order to ensure that they are not debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities.

This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. §180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

This certification is a material representation of fact relied upon by (insert name of subrecipient). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (name of state City serving as recipient and name of subrecipient), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.”

9. Byrd Anti-Lobbying Amendment.

- a. **Applicability:** This requirement applies to all Federal grant and cooperative agreement programs.
- b. **Standard.** Contractors that apply or bid for an award of \$100,000 or more must file the required certification. See 2 C.F.R. Part 200, Appendix II, I; 44 C.F.R. Part 18; Chapter IV, 6.c; Appendix C, 4. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any City, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. See Chapter IV, 6.c and Appendix C, 4.
- c. **Statement.** The following statement in bold provides a Byrd Anti-Lobbying contract clause:

(IF APPLICABLE, PLEASE FILL IN BLANKS AND SIGN)

“Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended)

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.”

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each bid or offer exceeding \$100,000)

The undersigned Contractor, _____ certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form- LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for

making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying

Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date

10. **Procurement of Recovered Materials.**

a. **Applicability:** This requirement applies to all Federal grant and cooperative agreement programs.

b. **Standard.** A non-Federal entity that is a **state agency or agency of a political subdivision** of a state and its contractors must comply with Section 6002 of the Solid Waste Disposal Act, Pub. L. No. 89-272 (1965) (codified as amended by the Resource Conservation and Recovery Act at 42 U.S.C. § 6962). See 2 C.F.R. Part 200, Appendix II, ¶ J; 2 C.F.R. § 200.323; *PDAT Supplement*, Chapter V, 7.

The requirements of Section 6002 include procuring only items designated in guidelines of the EPA at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired by the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

c. **Statement.** The following provides the clause that a state agency or agency of a political subdivision of a state and its contractors can include in contracts meeting the above contract thresholds:

(1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA- designated items unless the product cannot be acquired—

(i) Competitively within a timeframe providing for compliance with the contract performance schedule;

(ii) Meeting contract performance requirements; or

(iii) At a reasonable price.

(2) Information about this requirement, along with the list of EPA-designate items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

(3) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.”

11. **Prohibition on Contracting for Covered Telecommunications Equipment or Services – 2 CFR § 200.216 (FEMA Interim Policy #405-143-1 effective August 13, 2020).**

a. **Applicability:** This requirement applies to all Federal grant and cooperative agreement programs and/or as provided below, and is effective August 13, 2020.

- b. Standard. A non-Federal entity is prohibited against using federal funds to purchase telecommunications and video surveillance equipment and services (such as but not limited to mobile phones, land lines, internet, video surveillance, and cloud servers) from certain companies/entities in covered foreign countries for national security reasons. This regulation is being incorporated into federal grants and contracts received by the County through 2 CFR 200.216 and/or Federal Acquisition Regulations (FAR) clause 52.204-25; as well as guidance provided through Federal Emergency Management Agency (FEMA) Policy #405-143-1. See 2 C.F.R. Part 200, Appendix II, ¶ K

Currently, applicable federal provisions provide that Covered Foreign country means the People’s Republic of China and covered telecommunications equipment or services means –

- i. Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation, (or any subsidiary or affiliate of such entities);
- ii. For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- iii. Telecommunications or video surveillance services provided by such entities or using such equipment; or
- iv. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

The definition of “Affiliate” can be found in FAR 2.101. Listing of subsidiaries and affiliates can be found in Supplement Number 4 to 15 CFR Part 744.

- c. Statement. Federal awards recipients and subrecipients, as well as their contractors and subcontractors, include the following required contract clause in applicable new, extended, or renewed contracts and subcontracts as per the provisions discussed above.

PROHIBITION ON CONTRACTING FOR COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES

- (a) Definitions. As used in this clause, the terms backhaul; covered foreign country; covered telecommunications equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the

meaning as defined in FEMA Policy, #405-143-1 Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services As used in this clause

(b) Prohibitions.

- (1) Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.
- (2) Unless an exception in paragraph (c) of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to:
 - (i) Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
 - (ii) Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
 - (iii) Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or
 - (iv) Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c) Exceptions.

- (1) This clause does not prohibit contractors from providing—
 - a. A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
 - b. Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.
- (2) By necessary implication and regulation, the prohibitions also do not apply to:
 - a. Covered telecommunications equipment or services that:

- i. Are not used as a substantial or essential component of any system; and
 - ii. Are not used as critical technology of any system.
- b. Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

(d) Reporting requirement.

(1) In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in paragraph (d)(2) of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.

(2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause:

(i) Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts and other contractual instruments.

12. Domestic Preferences for Procurements

a. Applicability: This requirement of this section must be included in all subawards including all contracts and purchase orders for work or products under Federal award applies to all contracts and purchase orders for work or products using federal funds.

b. Standard. As appropriate, and to the extent consistent with law, Non-Federal Entities should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products or materials produced in the United States. This includes,

but is not limited to, iron, aluminum, steel, cement, and other manufactured products. See 2 C.F.R. Part 200.322 and 2 C.F.R. Part 200, Appendix II, L

c. Statement. The following provides the required Domestic Preferences for Procurements contracts clause that is incorporated herein by reference.

“Domestic Preference for Procurements

As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.

For purposes of this clause:

- *Produced in the United States* means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- *Manufactured products* mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.”

ADDITIONAL REQUIRED CONTRACT CLAUSES FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS WITH THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

Additional FEMA or applicable Federal Requirements. In addition to the requirements above, non-Federal entity contracts under Federal award subject to financial assistance from FEMA are required to contain the following additional contract clauses. The Uniform Guidance authorizes FEMA to require additional provisions for non-Federal entity contracts. FEMA, pursuant to this authority, requires or recommends the following:

These clauses are incorporated by reference as part of this procurement packet and any resulting agreement.

1. Changes.

- a. Standard. To be eligible for FEMA assistance under the non-Federal entity’s Federal grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope. FEMA or applicable Federal entity recommends, therefore, that a non-Federal entity include a changes clause in its contract that describes how, if at all, changes can be made by either party to alter the method, price, or schedule of the work without breaching the contract. The language of the clause may differ depending on the nature of the contract and the end-item procured.

- b. Statement. The following provides a contract clause regarding access to records:

“The contractor shall secure written authorization before proceeding with any additional work, whether requested by the County or required to complete the contract. The cost for any changes to the contract price, whether requested by the County or the Contractor will be approved only after submitting the contractor’s true costs for the work and related equipment costs and site expenses.”

2. Access to Records.

- a. Standard. All non-Federal entities must place into their contracts a provision that all contractors and their successors, transferees, assignees, and subcontractors acknowledge and agree to comply with applicable provisions governing Department and FEMA or applicable Federal entity access to records, accounts, documents, information, facilities, and staff. See DHS Standard Terms and Conditions, v 3.0, XXVI (2013).

- b. Statement. The following provides a contract clause regarding access to records:

“Access to Records. The following access to records requirements applies to this contract:

- (1) The contractor agrees to provide the City of Concord, the FEMA or applicable Federal Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- (2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- (3) The contractor agrees to provide the FEMA or applicable Federal Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.”

3. DHS Seal, Logo, and Flags.

- a. Standard. All non-Federal entities must place in their contracts a provision that a contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS City officials without specific FEMA or applicable Federal entity pre-approval. See DHS Standard Terms and Conditions, v3.0, XXV (2013).

- b. Statement. The following provides a contract clause regarding DHS Seal, Logo, and Flags:

“The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS City officials without specific FEMA or applicable Federal entity pre-approval.”

4. **Compliance with Federal Law, Regulations, and Executive Orders.**

- a. Standard. All non-Federal entities must place into their contracts an acknowledgement that FEMA or applicable Federal financial assistance will be used to fund the contract along with the requirement that the contractor will comply with all applicable Federal law, regulations, executive orders, and FEMA or applicable Federal policies, procedures, and directives.
- b. Statement. The following provides a contract clause regarding Compliance with Federal Law, Regulations and Executive Orders:

“This is an acknowledgement that Federal financial assistance will be used to fund the contract only. The contractor will comply will all applicable Federal law, regulations, executive orders, FEMA or applicable Federal policies, procedures, and directives.”

5. **No Obligation by Federal Government.**

- a. Standard. The non-Federal entity must include a provision in its contract that states that the Federal Government is not a party to the contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.
- b. Statement. The following provides a contract clause regarding no obligation by the Federal Government:

“The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.”

6. **Program Fraud and False or Fraudulent Statements or Related Acts.**

- a. Standard. The non-Federal entity must include a provision in its contract that the contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to its actions pertaining to the contract.
- b. Statement. The following provides a contract clause regarding Fraud and False or Fraudulent Related Acts:

“The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor’s actions pertaining to this contract.”

7. **FEMA Contract requirement regarding Prohibition on Contracting for Covered Telecommunications Equipment or Services – 2 CFR § 200.216 (FEMA Interim Policy #405-143-1 effective August 13, 2020).**

FEMA recipients and subrecipients and their contractors and subcontractors are required per 2 C.F.R. Part 200, Appendix II K to include a contract provision in all FEMA-funded contracts and subcontracts, including any purchase orders. To satisfy this requirement, the contract provision found in Number 11 above is incorporated by reference by the County of Cameron in all new, extended, or renewed contracts and subcontracts. Applicable County contractors and subcontractors shall also comply with the applicable law and requirements. (See Number 11 above).

8. **FEMA Contract requirement regarding Domestic Preferences for Procurements**

For purchases in support of FEMA declarations and awards issued on or after November 12, 2020, all FEMA recipients and subrecipients are required per 2 C.F.R. Part 200, Appendix II ¶ L to include in all contracts and purchase orders for work or products the contract provision included in number 12 above encouraging domestic preference for procurements.

Contractor agrees to comply with all federal, state and local laws, rules, regulations and ordinances, as applicable. It is further acknowledged that the Contractor read and understands all provisions, laws, acts, regulations, etc. as specifically noted above and certifies compliance with the same.

Vendor's Name/Company Name:

Printed Name and Title of Authorized Representative:

Signature of Authorized Representative:

Date: _____

Appendix A

FHWA 1273

I. General

II. Nondiscrimination III. No segregated Facilities
FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final

- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60- 1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

- 1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
 - a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.
 - b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the job training."
- 2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.
- 3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
 - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
 - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.
 - d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
- 4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.
 - a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.
 - b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
 - c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.
- 5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

- a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.
- b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).
- c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
- d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions:

If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

- a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
- b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
- c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.
- d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

- a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
- b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

- a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
- b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract.

The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

- (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
- (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
- (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA 1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

Super Circular – Procurement Standards 2 CFR Parts 200.317 – 200.327

Procurement Standards <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200#subject-group-ECFR45ddd4419ad436d>

§ 200.317 Procurements by states.

When procuring property and services under a Federal award, a State must follow the same policies and procedures it uses for procurements from its non-Federal funds. The State will comply with §§ 200.321, 200.322, and 200.323 and ensure that every purchase order or other contract includes any clauses required by § 200.327. All other non-Federal entities, including subrecipients of a State, must follow the procurement standards in §§ 200.318 through 200.327.

§ 200.318 General procurement standards.

(a) The non-Federal entity must have and use documented procurement procedures, consistent with State, local, and tribal laws and regulations and the standards of this section, for the acquisition of property or services required under a Federal award or subaward. The non-Federal entity's documented procurement procedures must conform to the procurement standards identified in §§ 200.317 through 200.327.

(b) Non-Federal entities must maintain oversight to ensure that contractors perform in accordance with the terms, conditions, and specifications of their contracts or purchase orders.

(c)

(1) The non-Federal entity must maintain written standards of conduct covering conflicts of interest and governing the actions of its employees engaged in the selection, award and administration of contracts. No employee, officer, or agent may participate in the selection, award, or administration of a contract supported by a Federal award if he or she has a real or apparent conflict of interest. Such a conflict of interest would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from a firm considered for a contract. The officers, employees, and agents of the non-Federal entity may neither solicit nor accept gratuities, favors, or anything of monetary value from contractors or parties to subcontracts. However, non-Federal entities may set standards for situations in which the financial interest is not substantial or the gift is an unsolicited item of nominal value. The standards of conduct must provide for disciplinary actions to be applied for violations of such standards by officers, employees, or agents of the non-Federal entity.

(2) If the non-Federal entity has a parent, affiliate, or subsidiary organization that is not a State, local government, or Indian tribe, the non-Federal entity must also maintain written standards of conduct covering organizational conflicts of interest. Organizational conflicts of interest means that because of relationships with a parent company, affiliate, or subsidiary organization, the non-Federal entity is unable or appears to be unable to be impartial in conducting a procurement action involving a related organization.

(d) The non-Federal entity's procedures must avoid acquisition of unnecessary or duplicative items. Consideration should be given to consolidating or breaking out procurements to obtain a more economical purchase. Where appropriate, an analysis will be made of lease versus purchase alternatives, and any other appropriate analysis to determine the most economical approach.

(e) To foster greater economy and efficiency, and in accordance with efforts to promote cost-effective use of shared services across the Federal Government, the non-Federal entity is encouraged to enter into state and local intergovernmental agreements or inter-entity agreements where appropriate for procurement or use of common or shared goods and services. Competition requirements will be met with documented procurement actions using strategic sourcing, shared services, and other similar procurement arrangements.

(f) The non-Federal entity is encouraged to use Federal excess and surplus property in lieu of purchasing new equipment and property whenever such use is feasible and reduces project costs.

(g) The non-Federal entity is encouraged to use value engineering clauses in contracts for construction projects of sufficient size to offer reasonable opportunities for cost reductions. Value engineering is a systematic and creative analysis of each contract item or task to ensure that its essential function is provided at the overall lower cost.

(h) The non-Federal entity must award contracts only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement. Consideration will be given to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources. See also [§ 200.214](#).

(i) The non-Federal entity must maintain records sufficient to detail the history of procurement. These records will include, but are not necessarily limited to, the following: Rationale for the method of procurement, selection of contract type, contractor selection or rejection, and the basis for the contract price.

(j)

(1) The non-Federal entity may use a time-and-materials type contract only after a determination that no other contract is suitable and if the contract includes a ceiling price that the contractor exceeds at its own risk. Time-and-materials type contract means a contract whose cost to a non-Federal entity is the sum of:

(i) The actual cost of materials; and

(ii) Direct labor hours charged at fixed hourly rates that reflect wages, general and administrative expenses, and profit.

(2) Since this formula generates an open-ended contract price, a time-and-materials contract provides no positive profit incentive to the contractor for cost control or labor efficiency. Therefore, each contract must set a ceiling price that the contractor exceeds at its own risk. Further, the non-Federal entity awarding such a contract must assert a high degree of oversight in order to obtain reasonable assurance that the contractor is using efficient methods and effective cost controls.

(k) The non-Federal entity alone must be responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements. These issues include, but are not limited to, source evaluation, protests, disputes, and claims. These standards do not relieve the non-Federal entity of any contractual responsibilities under its contracts. The Federal awarding agency will not substitute its judgment for that of the non-Federal entity unless the matter is primarily a Federal concern. Violations of law will be referred to the local, state, or Federal authority having proper jurisdiction.

[[85 FR 49543](#), Aug. 13, 2020, as amended at [86 FR 10440](#), Feb. 22, 2021]

§ 200.319 Competition.

(a) All procurement transactions for the acquisition of property or services required under a Federal award must be conducted in a manner providing full and open competition consistent with the standards of this section and [§ 200.320](#).

(b) In order to ensure objective contractor performance and eliminate unfair competitive advantage, contractors that develop or draft specifications, requirements, statements of work, or invitations for bids or requests for proposals must be excluded from competing for such procurements. Some of the situations considered to be restrictive of competition include but are not limited to:

(1) Placing unreasonable requirements on firms in order for them to qualify to do business;

(2) Requiring unnecessary experience and excessive bonding;

(3) Noncompetitive pricing practices between firms or between affiliated companies;

(4) Noncompetitive contracts to consultants that are on retainer contracts;

(5) Organizational conflicts of interest;

(6) Specifying only a “brand name” product instead of allowing “an equal” product to be offered and describing the performance or other relevant requirements of the procurement; and

(7) Any arbitrary action in the procurement process.

(c) The non-Federal entity must conduct procurements in a manner that prohibits the use of statutorily or administratively imposed state, local, or tribal geographical preferences in the evaluation of bids or proposals, except in those cases where applicable Federal statutes expressly mandate or encourage geographic preference. Nothing in this section preempts state licensing laws. When contracting for architectural and engineering (A/E) services, geographic location may be a selection criterion provided its application leaves an appropriate number of qualified firms, given the nature and size of the project, to compete for the contract.

(d) The non-Federal entity must have written procedures for procurement transactions. These procedures must ensure that all solicitations:

(1) Incorporate a clear and accurate description of the technical requirements for the material, product, or service to be procured. Such description must not, in competitive procurements, contain features which unduly restrict competition. The description may include a statement of the qualitative nature of the material, product or service to be procured and, when necessary, must set forth those minimum essential characteristics and standards to which it must conform if it is to satisfy its intended use. Detailed product specifications should be avoided if at all possible. When it is impractical or uneconomical to make a clear and accurate description of the technical requirements, a “brand name or equivalent” description may be used as a means to define the performance or other salient requirements of procurement. The specific features of the named brand which must be met by offers must be clearly stated; and

(2) Identify all requirements which the offerors must fulfill and all other factors to be used in evaluating bids or proposals.

(e) The non-Federal entity must ensure that all prequalified lists of persons, firms, or products which are used in acquiring goods and services are current and include enough qualified sources to ensure maximum open and free competition. Also, the non-Federal entity must not preclude potential bidders from qualifying during the solicitation period.

(f) Noncompetitive procurements can only be awarded in accordance with [§ 200.320\(c\)](#).

§ 200.320 Methods of procurement to be followed.

The non-Federal entity must have and use documented procurement procedures, consistent with the standards of this section and [§§ 200.317](#), [200.318](#), and [200.319](#) for any of the following methods of procurement used for the acquisition of property or services required under a Federal award or sub-award.

(a) ***Informal procurement methods.*** When the value of the procurement for property or services under a Federal award does not exceed the *simplified acquisition threshold (SAT)*, as defined in [§ 200.1](#), or a lower threshold established by a non-Federal entity, formal procurement methods are not required. The non-Federal entity may use informal procurement methods to expedite the completion of its transactions and minimize the associated administrative burden and cost. The informal methods used for procurement of property or services at or below the SAT include:

(1) ***Micro-purchases*** -

(i) ***Distribution.*** The acquisition of supplies or services, the aggregate dollar amount of which does not exceed the micro-purchase threshold (See the definition of *micro-purchase* in [§ 200.1](#)). To the maximum extent practicable, the non-Federal entity should distribute micro-purchases equitably among qualified suppliers.

(ii) ***Micro-purchase awards.*** Micro-purchases may be awarded without soliciting competitive price or rate quotations if the non-Federal entity considers the price to be reasonable based on research, experience, purchase history or other information and documents it files accordingly. Purchase cards can be used for micro-purchases if procedures are documented and approved by the non-Federal entity.

(iii) ***Micro-purchase thresholds.*** The non-Federal entity is responsible for determining and documenting an appropriate micro-purchase threshold based on internal controls, an evaluation of risk, and its documented procurement procedures. The micro-purchase threshold used by the non-Federal entity must be authorized or not prohibited under State, local, or tribal laws or regulations. Non-Federal entities may establish a threshold higher than the Federal threshold established in the Federal Acquisition Regulations (FAR) in accordance with [paragraphs \(a\)\(1\)\(iv\)](#) and [\(v\)](#) of this section.

(iv) ***Non-Federal entity increase to the micro-purchase threshold up to \$50,000.*** Non-Federal entities may establish a threshold higher than the micro-purchase threshold identified in the FAR in accordance with the requirements of this section. The non-Federal entity may self-certify a threshold up to \$50,000 on an annual basis and must maintain documentation to be made available to the Federal awarding agency and auditors in accordance with [§ 200.334](#). The self-certification must include a justification, clear identification of the threshold, and supporting documentation of any of the following:

- (A) A qualification as a low-risk auditee, in accordance with the criteria in [§ 200.520](#) for the most recent audit;
- (B) An annual internal institutional risk assessment to identify, mitigate, and manage financial risks; or,
- (C) For public institutions, a higher threshold consistent with State law.

(v) **Non-Federal entity increase to the micro-purchase threshold over \$50,000.** Micro-purchase thresholds higher than \$50,000 must be approved by the cognizant agency for indirect costs. The non-federal entity must submit a request with the requirements included in [paragraph \(a\)\(1\)\(iv\)](#) of this section. The increased threshold is valid until there is a change in status in which the justification was approved.

(2) **Small purchases -**

(i) **Small purchase procedures.** The acquisition of property or services, the aggregate dollar amount of which is higher than the micro-purchase threshold but does not exceed the simplified acquisition threshold. If small purchase procedures are used, price or rate quotations must be obtained from an adequate number of qualified sources as determined appropriate by the non-Federal entity.

(ii) **Simplified acquisition thresholds.** The non-Federal entity is responsible for determining an appropriate simplified acquisition threshold based on internal controls, an evaluation of risk and its documented procurement procedures which must not exceed the threshold established in the FAR. When applicable, a lower simplified acquisition threshold used by the non-Federal entity must be authorized or not prohibited under State, local, or tribal laws or regulations.

(b) **Formal procurement methods.** When the value of the procurement for property or services under a Federal financial assistance award exceeds the SAT, or a lower threshold established by a non-Federal entity, formal procurement methods are required. Formal procurement methods require following documented procedures. Formal procurement methods also require public advertising unless a non-competitive procurement can be used in accordance with [§ 200.319](#) or [paragraph \(c\)](#) of this section. The following formal methods of procurement are used for procurement of property or services above the simplified acquisition threshold or a value below the simplified acquisition threshold the non-Federal entity determines to be appropriate:

(1) **Sealed bids.** A procurement method in which bids are publicly solicited and a firm fixed-price contract (lump sum or unit price) is awarded to the responsible bidder whose bid, conforming with all the material terms and conditions of the invitation for bids, is the lowest in price. The sealed bids method is the preferred method for procuring construction, if the conditions.

(i) In order for sealed bidding to be feasible, the following conditions should be present:

(A) A complete, adequate, and realistic specification or purchase description is available;

(B) Two or more responsible bidders are willing and able to compete effectively for the business; and

(C) The procurement lends itself to a firm fixed price contract and the selection of the successful bidder can be made principally on the basis of price.

(ii) If sealed bids are used, the following requirements apply:

(A) Bids must be solicited from an adequate number of qualified sources, providing them sufficient response time prior to the date set for opening the bids, for local, and tribal governments, the invitation for bids must be publicly advertised;

(B) The invitation for bids, which will include any specifications and pertinent attachments, must define the items or services in order for the bidder to properly respond;

(C) All bids will be opened at the time and place prescribed in the invitation for bids, and for local and tribal governments, the bids must be opened publicly;

(D) A firm fixed price contract award will be made in writing to the lowest responsive and responsible bidder. Where specified in bidding documents, factors such as discounts, transportation cost, and life cycle costs must be considered in determining which bid is lowest. Payment discounts will only be used to determine the low bid when prior experience indicates that such discounts are usually taken advantage of; and

(E) Any or all bids may be rejected if there is a sound documented reason.

(2) **Proposals.** A procurement method in which either a fixed price or cost-reimbursement type contract is awarded. Proposals are generally used when conditions are not appropriate for the use of sealed bids. They are awarded in accordance with the following requirements:

(i) Requests for proposals must be publicized and identify all evaluation factors and their relative importance. Proposals must be solicited from an adequate number of qualified offerors. Any response to publicized requests for proposals must be considered to the maximum extent practical;

(ii) The non-Federal entity must have a written method for conducting technical evaluations of the proposals received and making selections;

(iii) Contracts must be awarded to the responsible offeror whose proposal is most advantageous to the non-Federal entity, with price and other factors considered; and

(iv) The non-Federal entity may use competitive proposal procedures for qualifications-based procurement of architectural/engineering (A/E) professional services whereby offeror's qualifications are evaluated and the most qualified offeror is selected, subject to negotiation of fair and reasonable compensation. The method, where price is not used as a selection factor, can only be used in procurement of A/E professional services. It cannot be used to purchase other types of services through A/E firms that are a potential source to perform the proposed effort.

(c) ***Noncompetitive procurement.*** There are specific circumstances in which noncompetitive procurement can be used. Noncompetitive procurement can only be awarded if one or more of the following circumstances apply:

(1) The acquisition of property or services, the aggregate dollar amount of which does not exceed the micro-purchase threshold (see [paragraph \(a\)\(1\)](#) of this section);

(2) The item is available only from a single source;

(3) The public exigency or emergency for the requirement will not permit a delay resulting from publicizing a competitive solicitation;

(4) The Federal awarding agency or pass-through entity expressly authorizes a noncompetitive procurement in response to a written request from the non-Federal entity; or

(5) After solicitation of a number of sources, competition is determined inadequate.

§ 200.321 Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms.

(a) The non-Federal entity must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

(b) Affirmative steps must include:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

(4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;

(5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and

(6) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in [paragraphs \(b\)\(1\)](#) through [\(5\)](#) of this section.

§ 200.322 Domestic preferences for procurements.

(a) As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.

(b) For purposes of this section:

(1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

§ 200.323 Procurement of recovered materials.

A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at [40 CFR part 247](#) that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

§ 200.324 Contract cost and price.

(a) The non-Federal entity must perform a cost or price analysis in connection with every procurement action in excess of the Simplified Acquisition Threshold including contract modifications. The method and degree of analysis is dependent on the facts surrounding the particular procurement situation, but as a starting point, the non-Federal entity must make independent estimates before receiving bids or proposals.

(b) The non-Federal entity must negotiate profit as a separate element of the price for each contract in which there is no price competition and in all cases where cost analysis is performed. To establish a fair and reasonable profit, consideration must be given to the complexity of the work to be performed, the risk borne by the contractor, the contractor's investment, the amount of subcontracting, the quality of its record of past performance, and industry profit rates in the surrounding geographical area for similar work.

(c) Costs or prices based on estimated costs for contracts under the Federal award are allowable only to the extent that costs incurred or cost estimates included in negotiated prices would be allowable for the non-Federal entity under [subpart E of this part](#). The non-Federal entity may reference its own cost principles that comply with the Federal cost principles.

(d) The cost plus a percentage of cost and percentage of construction cost methods of contracting must not be used.

§ 200.325 Federal awarding agency or pass-through entity review.

(a) The non-Federal entity must make available, upon request of the Federal awarding agency or pass-through entity, technical specifications on proposed procurements where the Federal awarding agency or pass-through entity believes such review is needed to ensure that the item or service specified is the one being proposed for acquisition. This review generally will take place prior to the time the specification is incorporated into a solicitation document. However, if the non-Federal entity desires to have the review accomplished after a solicitation has been developed, the Federal awarding agency or pass-through entity may still review the specifications, with such review usually limited to the technical aspects of the proposed purchase.

(b) The non-Federal entity must make available upon request, for the Federal awarding agency or pass-through entity pre-procurement review, procurement documents, such as requests for proposals or invitations for bids, or independent cost estimates, when:

- (1) The non-Federal entity's procurement procedures or operation fails to comply with the procurement standards in this part;
- (2) The procurement is expected to exceed the Simplified Acquisition Threshold and is to be awarded without competition or only one bid or offer is received in response to a solicitation;
- (3) The procurement, which is expected to exceed the Simplified Acquisition Threshold, specifies a “brand name” product;
- (4) The proposed contract is more than the Simplified Acquisition Threshold and is to be awarded to other than the apparent low bidder under a sealed bid procurement; or
- (5) A proposed contract modification changes the scope of a contract or increases the contract amount by more than the Simplified Acquisition Threshold.

(c) The non-Federal entity is exempt from the pre-procurement review in [paragraph \(b\)](#) of this section if the Federal awarding agency or pass-through entity determines that its procurement systems comply with the standards of this part.

(1) The non-Federal entity may request that its procurement system be reviewed by the Federal awarding agency or pass-through entity to determine whether its system meets these standards in order for its system to be certified. Generally, these reviews must occur where there is continuous high-dollar funding, and third-party contracts are awarded on a regular basis;

(2) The non-Federal entity may self-certify its procurement system. Such self-certification must not limit the Federal awarding agency's right to survey the system. Under a self-certification procedure, the Federal awarding agency may rely on written assurances from the non-Federal entity that it is complying with these standards. The non-Federal entity must cite specific policies, procedures, regulations, or standards as being in compliance with these requirements and have its system available for review.

§ 200.326 Bonding requirements.

For construction or facility improvement contracts or subcontracts exceeding the Simplified Acquisition Threshold, the Federal awarding agency or pass-through entity may accept the bonding policy and requirements of the non-Federal entity provided that the Federal awarding agency or pass-through entity has made a determination that the Federal interest is adequately protected. If such a determination has not been made, the minimum requirements must be as follows:

- (a) A bid guarantee from each bidder equivalent to five percent of the bid price. The “bid guarantee” must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.
- (b) A performance bond on the part of the contractor for 100 percent of the contract price. A “performance bond” is one executed in connection with a contract to secure fulfillment of all the contractor's requirements under such contract.
- (c) A payment bond on the part of the contractor for 100 percent of the contract price. A “payment bond” is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

§ 200.327 Contract provisions.

The non-Federal entity's contracts must contain the applicable provisions described in appendix II to this part.

PART 200 - UNIFORM ADMINISTRATIVE REQUIREMENTS, COST PRINCIPLES, AND AUDIT REQUIREMENTS FOR FEDERAL AWARDS <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200>

Code of Federal Regulations

Subpart D – Post Federal Award Requirements

<https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-D>

Subpart D [Post Federal Award Requirements](#) 200.300 – 200.346

- § 200.300 [Statutory and national policy requirements.](#)
- § 200.301 [Performance measurement.](#)
- § 200.302 [Financial management.](#)
- § 200.303 [Internal controls.](#)
- § 200.304 [Bonds.](#)
- § 200.305 [Federal payment.](#)
- § 200.306 [Cost sharing or matching.](#)
- § 200.307 [Program income.](#)
- § 200.308 [Revision of budget and program plans.](#)
- § 200.309 [Modifications to Period of Performance.](#)

[Property Standards](#)

[200.310 – 200.316](#)

- § 200.310 [Insurance coverage.](#)
- § 200.311 [Real property.](#)
- § 200.312 [Federally-owned and exempt property.](#)
- § 200.313 [Equipment.](#)
- § 200.314 [Supplies.](#)
- § 200.315 [Intangible property.](#)
- § 200.316 [Property trust relationship.](#)

[Procurement Standards](#)

[200.317 – 200.327](#)

- § 200.317 [Procurements by states.](#)
- § 200.318 [General procurement standards.](#)
- § 200.319 [Competition.](#)
- § 200.320 [Methods of procurement to be followed.](#)
- § 200.321 [Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms.](#)
- § 200.322 [Domestic preferences for procurements.](#)
- § 200.323 [Procurement of recovered materials.](#)
- § 200.324 [Contract cost and price.](#)
- § 200.325 [Federal awarding agency or pass-through entity review.](#)
- § 200.326 [Bonding requirements.](#)
- § 200.327 [Contract provisions.](#)

[Performance and Financial Monitoring and Reporting](#) [200.328 – 200.330](#)

- § 200.328 [Financial reporting.](#)
- § 200.329 [Monitoring and reporting program performance.](#)
- § 200.330 [Reporting on real property.](#)

[Subrecipient Monitoring and Management](#) [200.331 – 200.333](#)

- § 200.331 [Subrecipient and contractor determinations.](#)
- § 200.332 [Requirements for pass-through entities.](#)
- § 200.333 [Fixed amount subawards.](#)

[Record Retention and Access](#) [200.334 – 200.338](#)

- § 200.334 [Retention requirements for records.](#)
- § 200.335 [Requests for transfer of records.](#)
- § 200.336 [Methods for collection, transmission, and storage of information.](#)
- § 200.337 [Access to records.](#)
- § 200.338 [Restrictions on public access to records.](#)

[Remedies for Noncompliance](#) [200.339 – 200.343](#)

- § 200.339 [Remedies for noncompliance.](#)
- § 200.340 [Termination.](#)
- § 200.341 [Notification of termination requirement.](#)
- § 200.342 [Opportunities to object, hearings, and appeals.](#)
- § 200.343 [Effects of suspension and termination.](#)

[Closeout](#) [200.344](#)

- § 200.344 [Closeout.](#)

[Post-Closeout Adjustments and Continuing Responsibilities](#) [200.345](#)

- § 200.345 [Post-closeout adjustments and continuing responsibilities.](#)

[Collection of Amounts Due](#) [200.346](#)

- § 200.346 [Collection of amounts due.](#)

EXHIBIT “A”

CobbFendley & Associates, Inc.

Broadband Feasibility Study

FINAL – FEBRUARY 16, 2023



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Broadband Feasibility Study

Prepared for:
Cameron County, TX



FINAL - FEBRUARY 16, 2023

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1 EXECUTIVE SUMMARY

Broadband networks, while once an emerging technology and luxury service, today can be looked at as the fourth utility alongside water, gas, and electricity¹. It is critical to the functionality of everyday needs, providing access to information, increasing home safety, and enhancing the overall quality of life. It is also still a technology, evolving in its form and function and inspiring innovation in its application as a foundational aspect of other technological advancements.

Cameron County prioritized its residents by exploring a greater understanding of their needs and their customer experience. A lack of providers, the costs of technologies, and poor customer services are a variety of reasons why Cameron County felt a need to improve broadband for its residents. With this understanding and the goal to improve access to reliable, available, and affordable high-speed broadband internet services, Cameron County officials formed a Broadband Improvement Initiative and approved the contract to develop this Broadband Feasibility Study. Through this study, the needs and gaps for broadband within the County are identified, and a high-level design (HLD) of fiber-optic based infrastructure across the County was proposed with necessary strategy and with associated cost-estimates. All of this helps demonstrate a potential broadband infrastructure build plan which can be implemented through federal grant programs and partnerships.

The County recognizes the need for more competition in terms of internet service providers for its residents. Using the content of the study and the proposed HLD, the County has options that may help provide various solutions to fix their needs. Through the use of Public-Private Partnerships (PPP), a potential network build out would be able to connect essential county-owned facilities, potentially provide the County with an opportunity to earn revenue through leasing infrastructure, incentivize service providers to build affordable last-mile connectivity, increase future-proof broadband coverage across the county, and therefore increase internet options for the residential communities across the county.

The proposed network design seeks to provide middle mile infrastructure to provide adequate capacity for last-mile connectivity. Our analysis shows that the main fiber backbone and distribution, once built, will allow for network infrastructure to reach Unserved and Underserved communities, paving the way to incentivize internet service providers with a less costly last-mile build. This solution suggests the application for several grants and promotes partnerships with private sector providers who have a vested interest within this region. Construction of the proposed network infrastructure is recommended to be completed in phases, aligning with grant funding timelines with consideration for densification and prioritization of needs.

Given the critical nature of this infrastructure and the reality that broadband networks have not been equally nor adequately deployed across communities, there has been a historic investment of funding from Federal, State, and Local levels in addressing the issues to close the digital divide and promote digital equity. The Infrastructure Investment and Jobs Act (IIJA) has prioritized broadband infrastructure allocating \$65 billion in federal funds to be administered across several federal agencies working on broadband deployment. Of the total allocation, \$45 billion will be administered by the National Telecommunications and Information Administration (NTIA) through the "Internet for All" programs with the goal of providing affordable, reliable high-speed internet to every American across the country².

These federal agencies developed standards for determining adequate access to broadband and therefore associated eligibility for funding. "Unserved" areas are considered anywhere that receives internet speeds below 25 Mbps download and 3 Mbps upload followed by "Underserved" areas being anywhere with internet speeds below 100 Mbps download and 20 Mbps upload. Community anchor institutions should have speeds of at least 1 Gbps symmetrical (1/1 Gbps). CobbFendley's base recommendation for this Broadband Improvement Initiative is a network solution that meets or exceeds a minimum of 100Mbps symmetrical (100 /100Mbps) speed for residential service.

¹ [Rethinking the Fourth Utility Connectivity Conundrum \(bbcmag.com\)](https://www.bbcmag.com/rethinking-the-fourth-utility-connectivity-conundrum)

² [Biden-Harris Administration Launches \\$45 Billion "Internet for All" Initiative to Bring Affordable, Reliable High-Speed Internet to Everyone in America | U.S. Department of Commerce](https://www.commerce.gov/press-releases/2021/11/16/biden-harris-administration-launches-45-billion-internet-for-all-initiative-to-bring-affordable-reliable-high-speed-internet-to-everyone-in-america)

2 STUDY ORIGIN AND OVERVIEW

Many of our residents do not have adequate access to this critical infrastructure and in order to understand the specific areas that are in need of improved internet or support in connecting to existing networks, the County is conducting an internet improvement study to gain this information and develop recommendations for how to design and implement internet improved networks throughout the County.

The federal government has committed to bring Internet to All across the United States and we want to make sure that goal is achieved here in Cameron County. The feasibility study is a critical first step to make sure we understand the extent of the need for improved infrastructure. The data collected and recommendations developed in the study can be used to develop a Public Private Partnership to bring federal funding to Cameron County for this critical project.

- Eddie Treviño Jr.
The Cameron County Judge

3 VISION

The vision for the County-wide broadband solution includes the following major elements:

- Bridge the digital divide in the community by creating robust access to broadband for government entities, educational facilities, partners, and underserved communities to enhance digital equity.
- Take inventory of existing network assets and determine the root causes for low adoption and outline a plan for expanding broadband offerings throughout Cameron County.
- Explore potential partnerships that would help Cameron implement the most feasible, sustainable, and innovative broadband access in the community.
- Develop a High-Level Design (HLD) that creates connectivity in Underserved areas, increasing the overall broadband coverage, and providing more options for broadband services and applications for residents and stakeholders alike.
- Connecting public facilities and critical infrastructure, supporting public services, with a reliable, secure, and modernized broadband network.

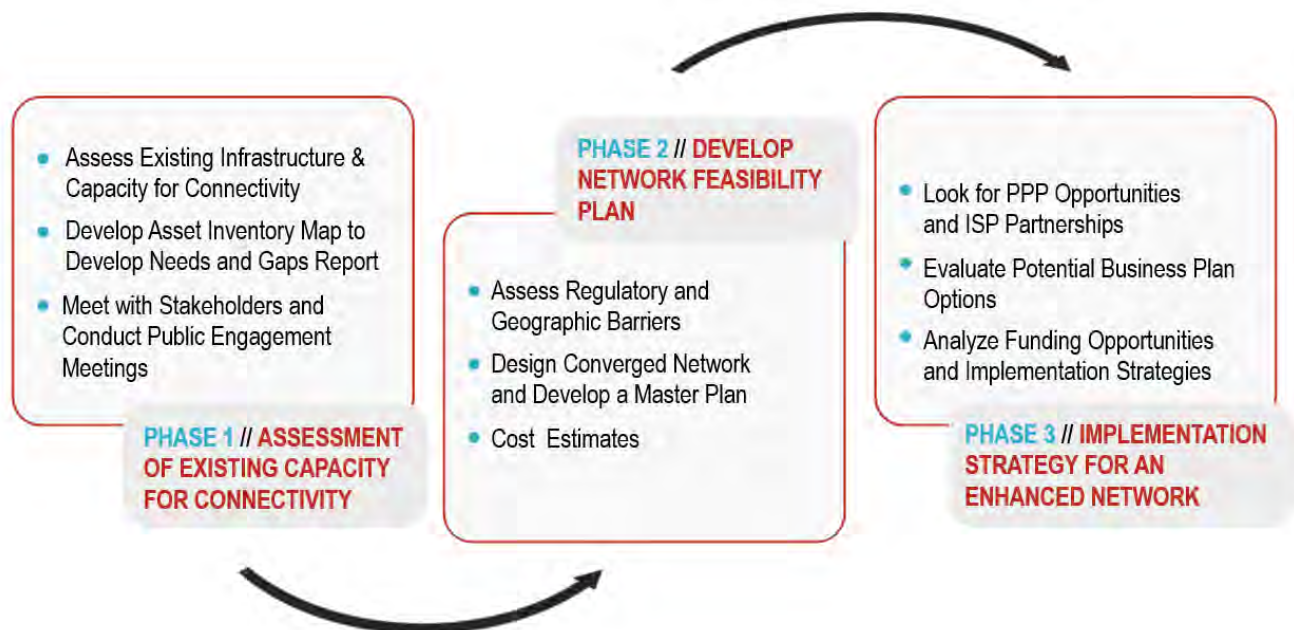


Figure 1: Broadband Improvement Initiative Workflow Process

4 RECOMMENDATIONS

As a concluding element of Phase I: Broadband Feasibility Study, the following recommendations are presented for the County to consider towards implementation in Phase II of the Broadband Implementation Plan. Our recommendations are as follows:

- 1) Publish a Request for Proposal (RFP) to identify an Internet Service Provider for potential Public-Private Partnerships (PPP):** The County's goal for this project is to connect its residents to high-speed internet as efficiently as possible. The County recognizes that partnering with an established Internet Service Provider (ISP) is the most effective way to accomplish that goal for its community. The County can work with providers and broadband services partners to determine the optimal network build and apply for implementation funding. As outlined in the study, there are several funding options for implementation that would enable the County to support broadband expansion throughout its community.

There are providers currently operating within the County boundaries, with several others seeking to invest in the near term. An RFP process will enable Cameron County to further explore applicable business models and expand on potential PPP contract structure and terms, allowing for a well-informed partner selection and implementation plan. The goals of the RFP would be to:

- Evaluate the potential for developing public/private partnerships with providers and broadband services partners to implement.
- Evaluate the various applicable broadband solutions presented concerning the Study findings and recommendations based on the existing conditions in Cameron County boundaries.
- Understand the financial model structure and overall costs for the project(s) and analyze financial risk and benefits within the partnership.

Evaluation criteria and requirements from potential bidders would include:

- If a respondent is an internet service provider, they must participate in (or are actively applying to) the Affordable Connectivity Program (ACP).
- Provide evidence of past performance and ability to provide a low-cost option for reliable internet service.
- Ability to supply levels of service per NTIA requirements.
- Documentation of existing assets in and around Cameron County, preferably concerning updated Fixed Broadband Deployment Data for FCC Form 477.
- Documentation of any funding applied for in the region.

- 2) Work with Regional Partners to develop a digital equity strategy for the Lower Rio Grande Valley:** Cameron County and its regional partners in the Lower Rio Grande Valley (LRGV) including neighboring communities, LRGVDC, Connect Humanity, UT-RGV, The Valley Baptist Legacy Foundation, and private sector partners are all working together to ensure that adequate funding is allocated for the implementation of broadband in the LRGV. As a Persistent Poverty Region recognized by the Federal government, the LRGV should be prioritized for the State and Federal Funding programs dedicated to broadband. The reliance on the current State and National Broadband Maps stated level of connectivity as the driving eligibility criteria hinders Cameron County from being considered for the full level of funding it needs to connect its residents to reliable high speed internet. It is recommended that the County and its partners continue to collaborate on ways to address the discrepancy between the data and eligibility with the reality of connectivity to secure adequate funding for implementation.

3) Apply for Competitive Funding Sources for Implementation: The IJA provides an unprecedented amount of funding for infrastructure projects that impact our daily lives including specific funding sources for expanding broadband access across the County. A review of the various funding sources that can be utilized for broadband infrastructure can be found in the later section titled FUNDING ANALYSIS and key programs are listed below. A major program to focus on is the state-led Digital Equity Program. This funding will flow through the state to ensure communities have the skills, technology, and capacity needed to reap the full benefits of our digital economy. The Affordable Connectivity Program should also be promoted and utilized throughout the community where barriers to adoption are due to financial constraints. While the level of eligibility based on the current maps is an impediment to securing adequate funding, the County in partnership with the selected ISP through the RFP can evaluate the various funding mechanisms that can be utilized to drive implementation and provide reliable, affordable internet to the residents of Cameron County.

Table 1: Cameron County Broadband Specific Funding Opportunities

Grant Program	Funding Agency	Description	Timeline	Total Allocation
Bringing Online Opportunity to Texans (BOOT) Program- Capital Projects Fund ³	U.S. Department of Treasury- American Rescue Plan Act (ARPA)	The program is designed to provide internet service with speeds of 100/100 mbps to households and businesses that are deemed eligible (in eligible areas that have 80% Unserved)	Spring 2023	\$363.8 million
Digital Equity Capacity Grant Program	National Telecommunications and Information Administration (NTIA)	States to implement plans and promote digital inclusion; additionally, the program funds an annual grant program for five years.	Fall 2023	BDO was awarded \$3.1 million to develop the State Digital Equity Plan
Broadband Equity, Access, And Deployment (BEAD) Program ⁴	National Telecommunications and Information Administration (NTIA)	Through state allocation and planning, this program intends to expand high-speed internet access by funding planning, infrastructure deployment and adoption programs.	Fall 2023	\$42.5 Billion (\$100 million initial to Texas)

³ Capital Projects Fund. U.S. DEPARTMENT OF THE TREASURY. <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/capital-projects-fund#:~:text=The%20American%20Rescue%20Plan%20provides,to%20the%20public%20health%20emergency>. Published 2022. Accessed June 1, 2022.

⁴ Broadband Equity, Access, and Deployment (BEAD) Program | Internet for All. Internetforall.gov. <https://www.internetforall.gov/program/broadband-equity-access-and-deployment-bead-program>. Published 2022. Accessed June 1, 2022.

5 ABOUT COBBFENDLEY

CobbFendley is a civil engineering and surveying firm with expertise in providing planning and design services related to communications infrastructure. Now in its 43rd year of providing broadband consulting services to the municipal and private sector, CobbFendley understands the importance of broadband infrastructure and formed an internal Broadband Department to focus on the planning, design, and technology associated with these important projects. The team includes dedicated personnel who have worked with public and private clients to plan, design, and implement fiber networks that improve the lives of businesses and residents in their communities. CobbFendley supports its clients with leading feasibility studies, business planning/strategy advising, engineering, and implementation support services across a full range of functional areas. Clients include existing broadband operators as well as entities considering deploying these systems, with services and expertise covering the full potential of the industry including local telephone, video entertainment, high-speed Internet access, and smart grid systems across a full range of broadband network technologies.

The consultant team would like to thank County staff that led this initiative, providing input and guidance throughout the process.

County Judge, Eddie Treviño Jr.
Commissioner Pct. 1 Sofia Benavides
Commissioner Pct. 2 Joey Lopez
Commissioner Pct. 3 David Garza
Commissioner Pct. 4 Gus Ruiz
County Administrator, Pete Sepulveda Jr.
Deputy County Administrator, Dan Serna
Deputy County Administrator, Xavier Villarreal
Assistant County Administrator, Anthony Lopez
Cameron County IT Department, CIO, Sergio Moore

6 CURRENT STATE OF BROADBAND IN CAMERON COUNTY, TX

The extent of broadband infrastructure within Cameron County dictates the number of internet services residents have available to choose from. While there are options available in a variety of price and internet speeds, there is a majority of fixed wireless solutions that have a significantly higher price. According to the United States Census Bureau⁵, the median household income within Cameron County is about 31% lower than the statewide average. In the sections below, internet service options, broadband infrastructure, homes served, and potential barriers will all be explored.

Section Highlights

- CURRENT BROADBAND STANDARDS ARE OUTDATED (25 MBPS/ 3 MBPS)
- OPTIONS ARE ADEQUATE BUT HIGH COSTS PREVENT ADOPTION RATES
- INCUMBENT PROVIDERS DO NOT HAVE COMPREHENSIVE COVERAGE

Notes:

- When discussing internet speeds, the written form may occasionally be seen in the format of "Y/Z" or "YxZ" where Y is the download speed (typically with units of Mbps), and where Z is the upload speed (also typically with units of Mbps).

6.1 Internet Service in Cameron County

At present, the official definition of broadband by the FCC is internet speeds of 25Mbps download and 3Mbps upload. This was officially determined in 2015 by the FCC when at that time the definition of broadband was last set in 2010 as 4x1 Mbps. It is important to note that even speeds of 25/3 are not necessarily sufficient to meet the growing needs of the populace, especially among students, remote working professionals, and public servants. The minimum speeds for broadband set by the FCC were based upon perceived sufficient internet usage in 2015 and mainly focused on internet browsing, email, and limited streaming media (i.e., primarily download-focused). Videoconferencing and other common applications in recent years demand high bandwidth in the upload direction as well.

For example, at the home of a family of four, if two children are attending classes using Zoom and two adults are using their broadband connections to attend occasional meetings, send e-mail, and do research, their combined required bandwidth could easily exceed this FCC-minimum level of broadband service. Bandwidth needs are constantly increasing, so even supposed "sufficient" speeds by today's standards will be inadequate soon based on network technology trends and emerging smart applications. There is an increasing demand to update the FCC definition and minimum standard of broadband to 100 Mbps symmetrical (100 Mbps download/100 Mbps upload), which we used as a benchmark when evaluating current service offerings as it relates to a sustainable broadband solution.

The following figures and table illustrate the available internet services offered in Cameron County, separated by standards met, based on information gathered from ConnectedNation and the FCC's Form 477 from October 2022. The limitation of the FCC's Form 477 data is that the service provider's exact service areas are not granular and instead based on census tracts or blocks. Service offerings may vary depending on where the internet search occurs, and although an offering is present in one address within a census block does not mean it is available everywhere. This method that the FCC determines this information should be kept in mind when reviewing the following figures and tables throughout this study.

⁵ U.S. Census Bureau QuickFacts: Cameron County, Texas; Texas; Texas. Census Bureau QuickFacts. <https://www.census.gov/quickfacts/fact/table/cameroncountytexas,TX/PST045221> Published 2022. Accessed December 20, 2022.

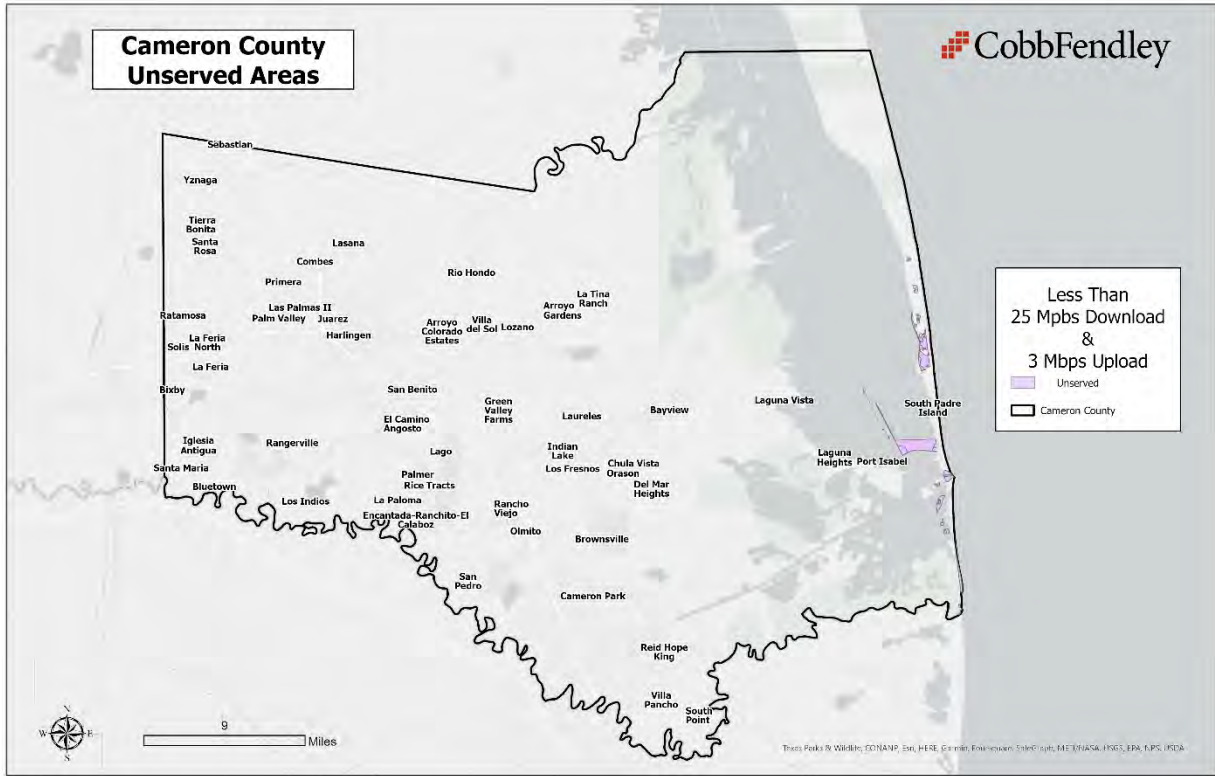


Figure 2: Unserved Communities in Cameron (Lacking 25/3 Mbps)

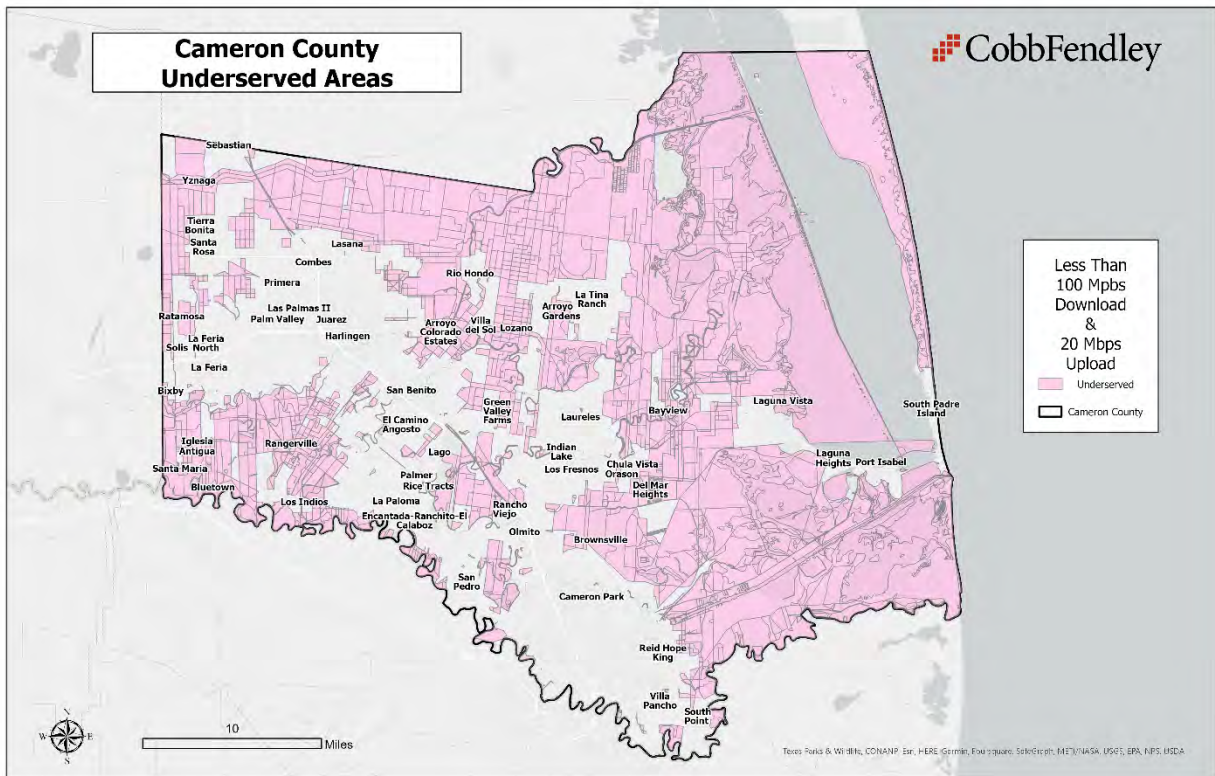


Figure 3: Underserved Communities in Cameron (Lacking 100/20 Mbps)

When reviewing the current state of broadband within Cameron County, the data suggests that coverage is present but at previously capped offerings. In Figure 2, nearly all of the county can be seen as served by offering at least 25/3 speeds nearly everywhere. There are some communities within the coastal side of the county that are still experiencing unserved coverage, and those should be seen as a priority for future updates. Then, when reviewing Figure 3, we see that ultimately the 100/20 underserved threshold is where the majority of gaps in network coverage exists throughout Cameron County. The major city regions of the county are showing as served, but otherwise the rural adjacent communities are underserved.

Table 2: Current Internet Offerings in Cameron County

PROVIDER NAME	TECHNOLOGY	MAXIMUM DOWNLOAD SPEED (Mbps)	MAXIMUM UPLOAD SPEED (Mbps)
Smartcom Telephone, LLC	Fiber	10000	10000
AT&T Southwest	Fiber	1000	1000
Spectrum	Cable	940	35
Gigabit Communications, LLC	Fixed Wireless	100	50
AT&T Southwest	DSL	100	20
Twin Wireless, Inc.	Fixed Wireless	100	10
Smith Internet Solutions	Fixed Wireless	40	6
Valley Telephone Cooperative, Inc.	DSL	25	10
Valley Telephone Cooperative, Inc.	Fiber	25	10
G5 Internet	Fixed Wireless	25	3
T-Mobile USA, Inc.	Fixed Wireless	25	3
VTX Communications, LLC	Fixed Wireless	25	3
Sinlar Broadband	Fixed Wireless	24	1
Gulf Coast Broadband	Fixed Wireless	15	15

Within this table above, green fonts represent “meeting future standards” of at least offering above 100/20 speeds, orange fonts represent “meeting current standards” of offering speeds between 25/3 and 100/20, and red fonts represent “not meeting current standards” with speeds offered below 25/3.

When comparing these figures to Table 2, all of the available options within Cameron County can be seen from the data as of January 31, 2022. With the rurality of the county, fixed wireless opportunities represent the majority of options available, and the majority of these options do not meet the underserved threshold. With what is remaining within Table 2, there are 5 total offerings throughout the county that meet future needs of at least offering 100/20 speeds.

To then compare these offering using the information that could be verified, the average price of each speed tier is as follows:

- Meets Future Standards: \$144/ month
- Meets Current Standards: \$87/ month
- Does Not Meet Current Standards: \$67/ month

None of the fiber or DSL solutions could be verified, so for future-proofing options, the average price per month can be seen as follows based on broadband technology type:

- Fiber: N/A
- Cable: \$50/ month
- Fixed Wireless: \$167/ month
- DSL: N/A

The future of broadband is through the convergence of multiple network types and platforms but, at the core, modernization requires a strong fiber backbone and wireless infrastructure that can deliver heavy bandwidth services. With future-proofing of the network in mind, it is important to recognize that existing communication technologies are limited to meet the increasing capacity demands.

A recent article by Brookings raised the concern that the funding efforts to bridge the digital divide cannot be limited to the minimum broadband standard and goes further into why the proposed symmetrical standard will change the way we need to look at existing broadband infrastructure. "By stipulating the deliverable must be 100 Mbps symmetrical, the legislation leaves the door open should other technology come along. But the reality today is that only fiber can provide high-speed 100 Mbps in both directions"⁶.

For the data shown in Table 2, many of the internet plans offered do not meet the current or proposed broadband criteria, let alone the recommended speeds. It should also be noted that these speeds are typically only obtainable under perfect conditions which cannot typically occur in the home or the business. In the locations that do offer broadband services, many of the plans could be unaffordable for these communities (as can be seen in later figures). The broadband networks proposed in this study will allow and promote more ISPs with more advanced network architectures and will fill in the gaps of the current services offered to help serve more of the disproportionately impacted communities at affordable pricing.

⁶ Wheeler T. Don't replace the digital divide with the "not good enough divide". Brookings. <https://www.brookings.edu/blog/techtank/2021/06/21/dont-replace-the-digital-divide-with-the-not-good-enough-divide/>. Published 2022. Accessed June 1, 2022.

6.2 Fiber Network Infrastructure in Cameron County

In the two figures below, the public records for existing fiber can be seen for both Long Haul Networks and Metro Networks. While these fiber network lines may not be responsible for directly providing fiber to the home, it does help highlight where essential infrastructure is currently located within Cameron County. As seen in Figure 4 the long-haul networks appear to run north and south from the City of Harlingen. AT&T, Arnelion, Fiberlight, Level 3, Sprint, and Windstream are all present, but based on the current services offered only AT&T appears to provide services in the county.

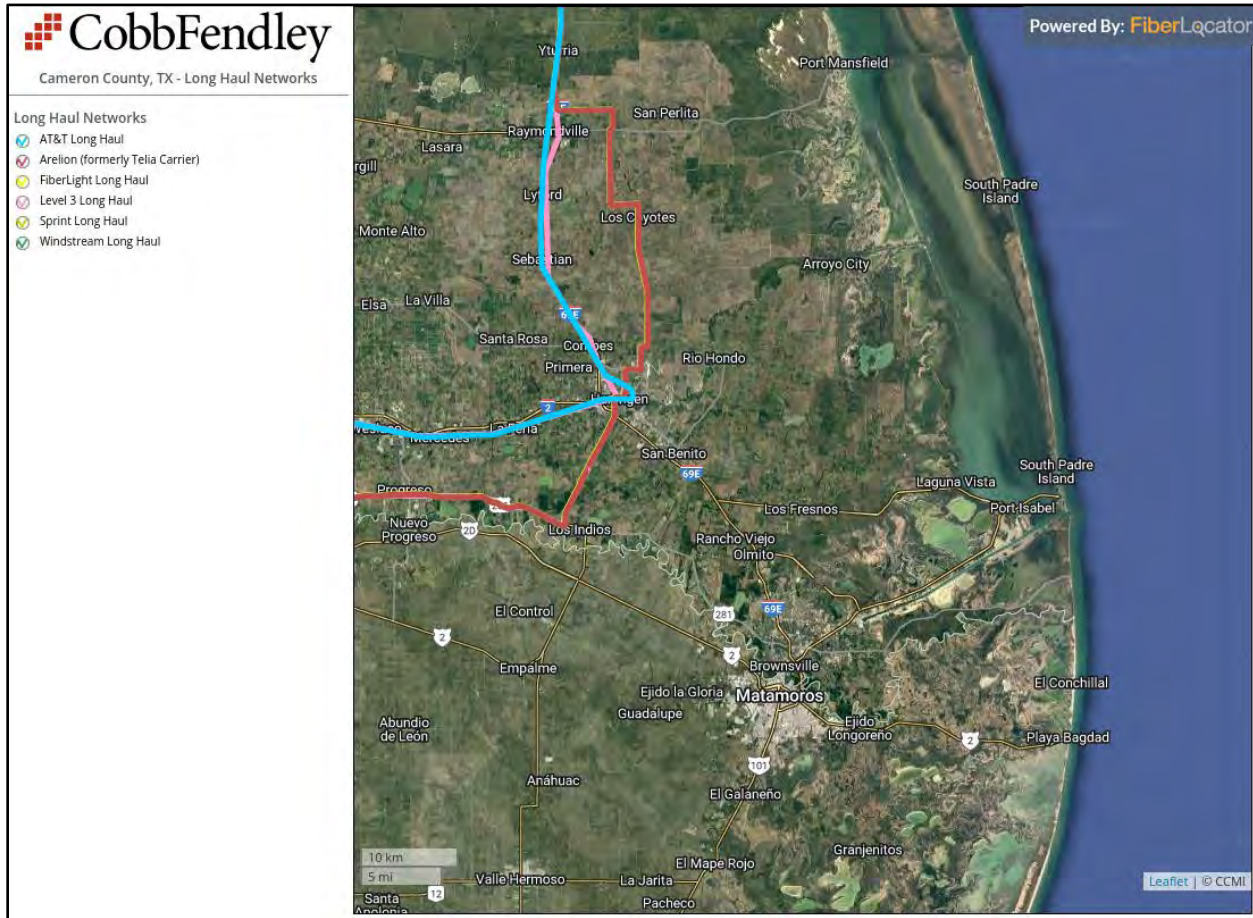


Figure 4: Long Haul Networks Within Cameron County

In review of Figure 5, the business-related metro network helps formulate a better understanding of the fiber distribution infrastructure conditions. Crown Castle, ExteNet Systems, Fiberlight, Hudson Fiber, LOGIX, Smartcom, Texas Lone Star, WANRack and Windstream can all be seen to be present throughout the county limits, but Smartcom covers the largest portion of the region. Smartcom offering fiber services to residents, according to the FCC Form 477 data, makes sense based on the amount of infrastructure they currently have in the county.

Various companies have fiber running through Cameron County but compared to the data in Table 2, the extent of the network architecture is primarily being used as fixed wireless network broadband technology and not fiber to the home. The strengths of each method will be explained more in detail later in this report, but the lack of fiber networks providing internet to homes in Cameron is a concern.

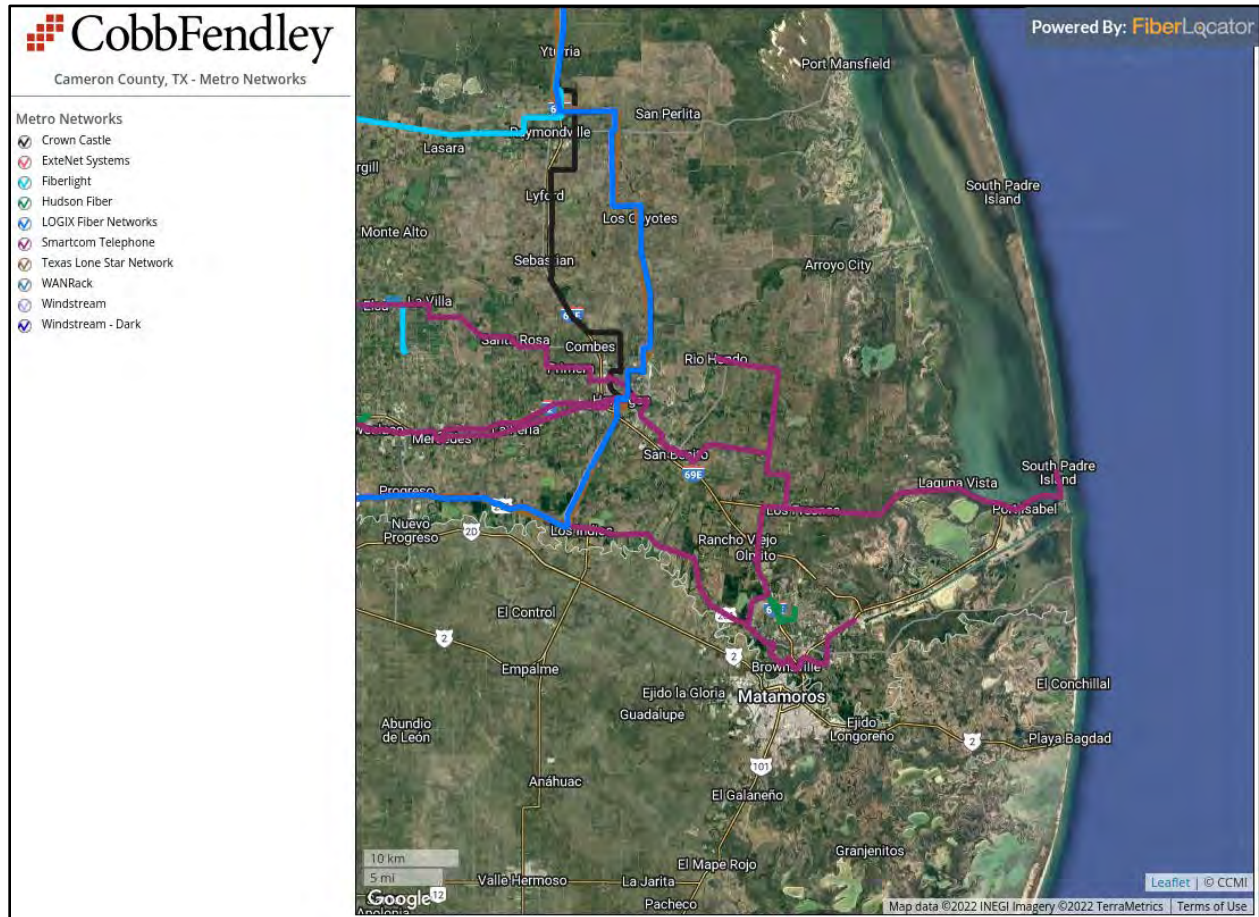


Figure 5: Metro Networks Within Cameron County

6.3 Cameron County Homes Served with Broadband

Table 3: Percent of Households Served with Broadband in Cameron County

Cameron County, 119,631 Households				
Speeds	Cable	DSL	Fiber	Fixed Wireless
10 x 1 Mbps (Percent of Households Served)	93.5%	9.14%	3.57%	99.37%
25 x 3 Mbps (Percent of Households Served)	93.5%	5.7%	3.4%	99.37%
50 x 5 Mbps (Percent of Households Served)	93.5%	5.37%	2.09%	29.02%
100 x 10 Mbps (Percent of Households Served)	93.5%	3.21%	2.01%	29.02%

Table 3, which was collected from ConnectedNation⁷, highlights the percentage of homes in Cameron County that have the opportunity to receive internet based on various technologies. It is worth noting how a few of these trends resonate with the other data reviewed in this section. Cable covers nearly the entire county, which is safe to assume since it is the technology of previous years. It's no surprise that this would be offering near complete coverage.

The fact that 29% of the County can offer fixed wireless broadband solutions at future-proof speeds is optimistic since it is more feasible to offer these solutions in some areas compared to fiber. This percentage is echoed by the data within Table 2 as the main source of broadband networks to the home, at least compared to fiber. However, the concerning issue is that fiber broadband solutions only cover about 2% of the county for the future-proof solution.

Allconnect.com⁸ summarized it well when it stated, "As the world evolves, fiber internet can adapt and continue serving consumers and businesses with high-speed data." Fiber is essential to the growth of technology services offered, and as depicted in later sections of this report, can help enhance an overall upgrade to economic development and quality of life. For Cameron to better succeed, fiber-based networks need to be more prevalent in home and business operations.

⁷ Planning | Connected Texas. Connectednation.org. <https://connectednation.org/texas/planning/>. Published 2022. Accessed June 1, 2022.

⁸ What's Different Between Fiber-Optic And Coaxial Cables?. Allconnect. <https://www.allconnect.com/blog/fiber-vs-coaxial-cable>. Published 2022. Accessed June 1, 2022.

6.4 Potential Barriers to Additional Infrastructure

Physical and geographic barriers are often overlooked as having an impact on broadband services, but they can be a valid deterrent to utility construction as the natural and manmade boundary features can be costly to build across and significantly delay the project in permitting. In reviewing Figure 6 there appear to be only a few barriers that may limit or prevent additional infrastructure or potential delays in engineering and construction timelines.

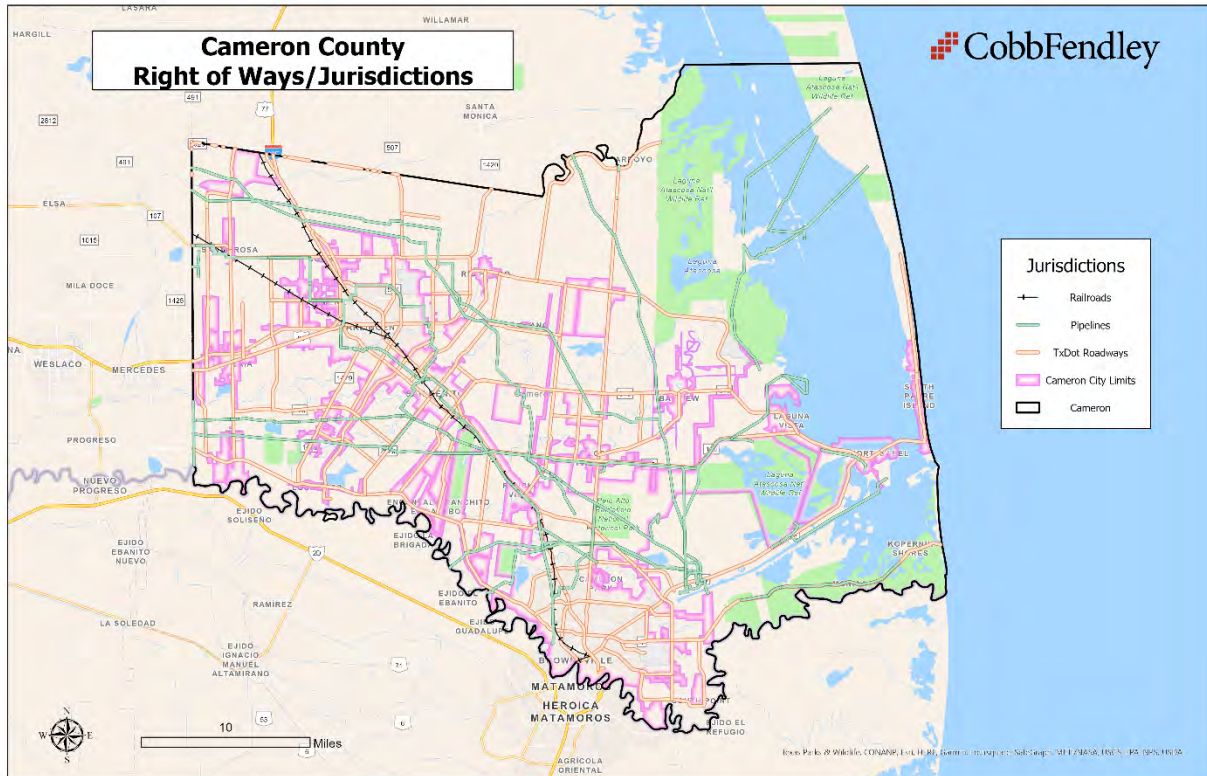


Figure 6: Permitting Jurisdictions in Cameron

In Figure 6, the many water bodies, railroads, and other entities within Cameron County area are illustrated. Based on the previous figure, the water bodies, are primarily located to the East of the County and do not appear to prevent any major infrastructure from being permitted. However, the main potential permitting issues could be the abundance of pipelines and the railroad within the county, especially in the central area.

Union Pacific Railroad Company (UPRR) facilities runs through parallel to US 83 and directly through the City of Harlingen and Brownsville. However, due to the topography of Cameron County, additional routes could be planned ahead of time to avoid the congested railroad area.

Finally, most routes across the county would likely occur on TXDOT-owned roadways, as already seen in Figure 3 & Figure 4, and the remaining construction would likely occur within the respective cities' right of way (ROW) and the county's ROW. This should cause minimal external issues when completing permitting or construction.

7 PUBLIC OUTREACH

As a part of Cameron County's Broadband Improvement Initiative, it was essential to collaborate with public and private entities to ensure the community's broadband needs were represented. Public outreach also included stakeholder engagement, which helped CobbFendley evaluate everything from existing conditions to potential partnerships, as well as increased awareness and participation in the survey to ensure feedback from the community was well represented. This collective outreach helped contextualize the additional data points gathered in the Needs and Gaps Analysis to determine the feasibility and scope for broadband expansion throughout the County.

Section Highlights

- 1,413 HOUSEHOLDS IN DOOR-TO-DOOR SURVEYING
- 215 MILES OF NEIGHBORHOODS SURVEYED
- 200 ADDITIONAL SURVEYS RECEIVED THROUGH SAMPLING EFFORT

7.1 Community Engagement

A robust and inclusive community outreach effort was a top priority for Cameron County in the study, to ensure that residents were well represented and that their needs could be accurately considered in the County's efforts to expand broadband. In addition to the discovery sessions with regional partners and private companies, the CobbFendley consultant team designed a public engagement strategy in collaboration with County leaders and community partners to ensure effective public outreach.

The consultant team and County staff met individually with the Cameron County Judge and each Commissioner in order to understand each precinct's unique broadband needs, identify key areas of interest and determine how to best promote the survey and speed test to their community members. The strategy focused on ensuring all materials were presented in bi-lingual messaging and utilized local communication outlets and press to gain widespread participation. There was also an ongoing opportunity for feedback to give multiple opportunities for residents to take the survey and speed test. The consultant team also recognized the need to provide more localized and individual outreach to underrepresented areas in the County and conducted door-to-door surveys to meet this need.

The areas of focus, listed in Table 4 for the door-to-door surveys were created based on the feedback from Commissioners and reviewing the existing FCC data maps for areas that seemed over-represented on the broadband coverage data. The door-to-door surveys were conducted over the course of several weeks and as real-time results from the online survey and speed test were analyzed. Areas in the County that were underrepresented in the results were prioritized to take samples in the door-to-door campaign to try and fill in gaps in the data representation. Special consideration and attention were given to the Colonias throughout the County to make sure the members in these historically overlooked communities were represented.

Teams comprised of 2-3 bilingual speakers were dispatched with a script, flyers (English and Spanish), and a letter of support from the County Judge. Team members carried cell phones and tablets for assistance with the survey if necessary to help address the digital divide knowledge gap where applicable and gain accurate survey data. A snapshot of the survey results is shown below.

Table 4: List of Colonias and Neighborhoods in Door-to-Door Effort

Locations of Colonias and Neighborhoods in Sample Surveying Effort		
Santa Maria	FM 508 / Combes	Laguna Vista
Santa Maria ISD	San Benito Area	Arroyo City
Bluetown	San Benito ISD	Rio Hondo
Los Indios	Green Valley Farms	Bayview
El Ranchito	FM 281 Military Highway	Tio Cano / Santa Rosa
La Paloma	FM 506	Port Isabel
Riverside Middle School	FM 107	South Padre Island

The door-to-door sample areas listed in Table 4 show a diverse cross-section of the County. Across the County, areas that were depicted as being Served by current provider-driven FCC data, but were identified as likely Underserved by local officials and community leaders, were in fact Underserved when a localized speed test was conducted, confirming the inaccuracy in the FCC data from October 2022. In the Colonias, there was an abundance of satellite dishes or wifi to premise apparatus' being used as the primary source of service and many of the residents who were at home during the day did not have any service at all. After concluding the door-to-door sampling, over 80% of the residents approached had heard of the survey and were very eager to participate.

7.1.1 Public Residential Survey

The residential survey was launched in September 2022 and the data gathered from the launch of the survey through November 5, 2022, totaled 2360 responses. This data has been analyzed and utilized in the Needs and Gaps Analysis for the study.

Starting with Figure 7, most residents use their connections for social media, streaming, and other forms of entertainment. While the internet has become a primary source of entertainment for many people, it has also become a method of creating a living or education. Both factors can be seen as the main influence: education/school and remote work are included as the primary uses for the internet by the respondents of Cameron County.

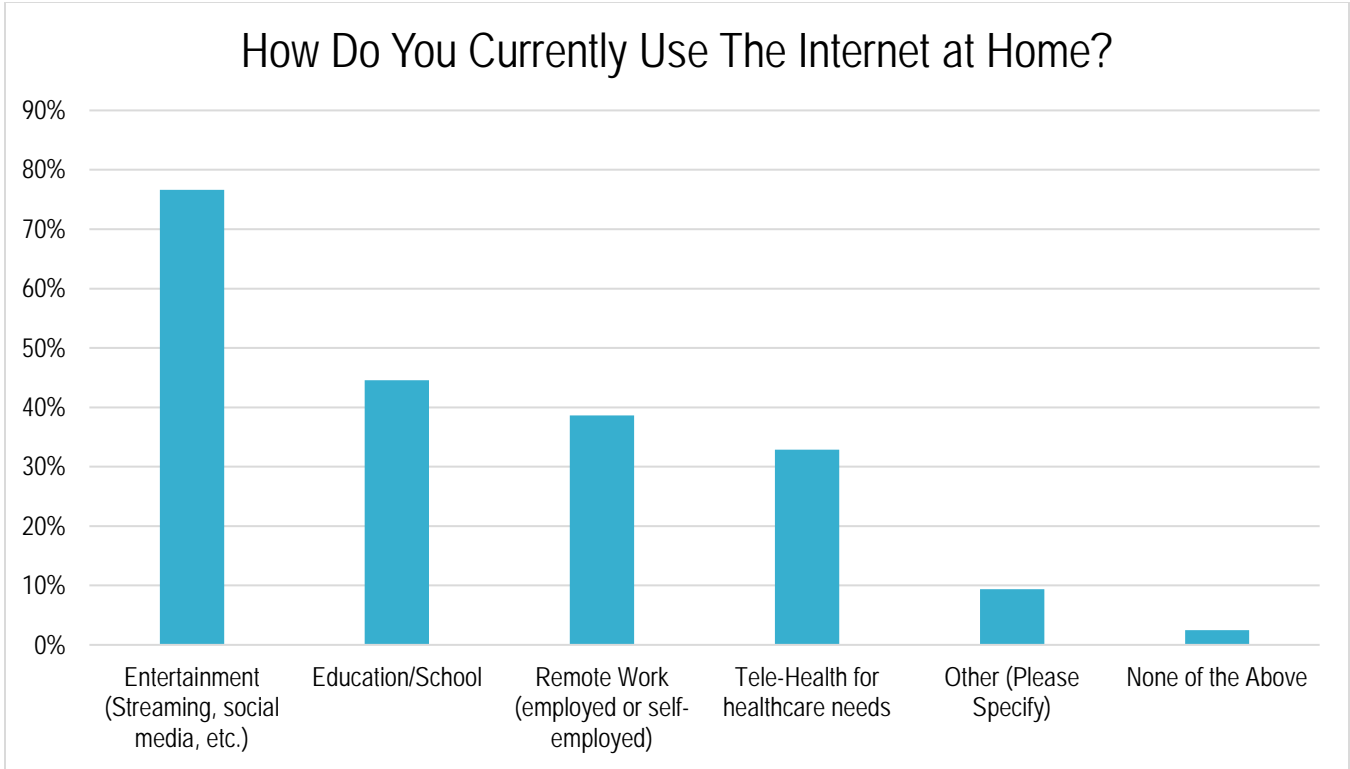


Figure 7: Residential Survey Question – How Do You Currently Use the Internet at Home?

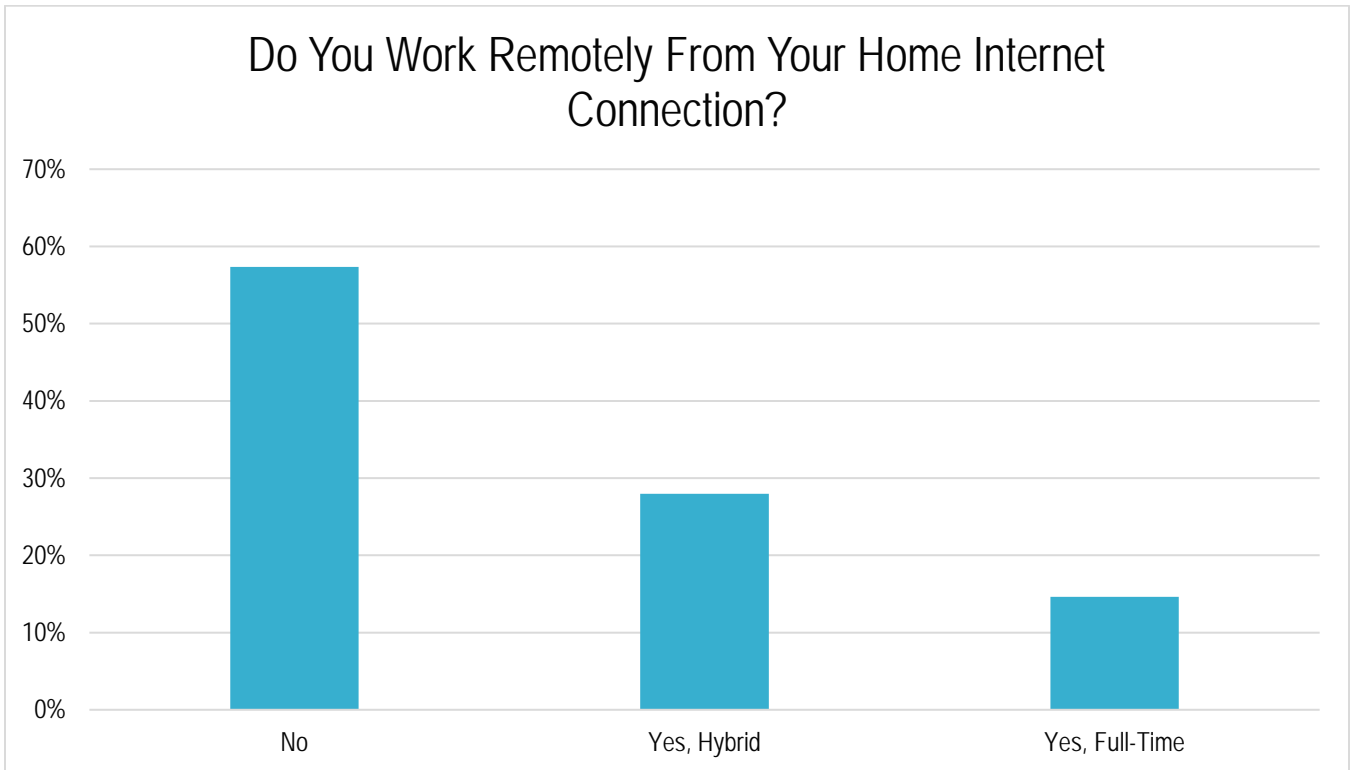


Figure 8: Do You Work Remotely from Your Home Internet Connection?

During the pandemic, Cameron County families felt the devastating effects of not having a reliable home internet connection when trying to complete schoolwork remotely. Numerous students shared their stories of how difficult it was to perform school assignments by having to find public internet connections or alternative sources. In this survey, more than 43% of residents use their internet service to connect remotely to work or school as seen in Figure 8. Remote learning has now become normative on some level and for students to excel there must be a fast and reliable connection to the internet at home. Currently, many households in the County cannot subscribe to high-speed broadband at an affordable price to conduct business or continue their education and are forced to exclude that from their current options. Connecting residents to affordable high-speed internet so that students can succeed, and families can find improved economic access to opportunities is the County's top priority in conducting this study.

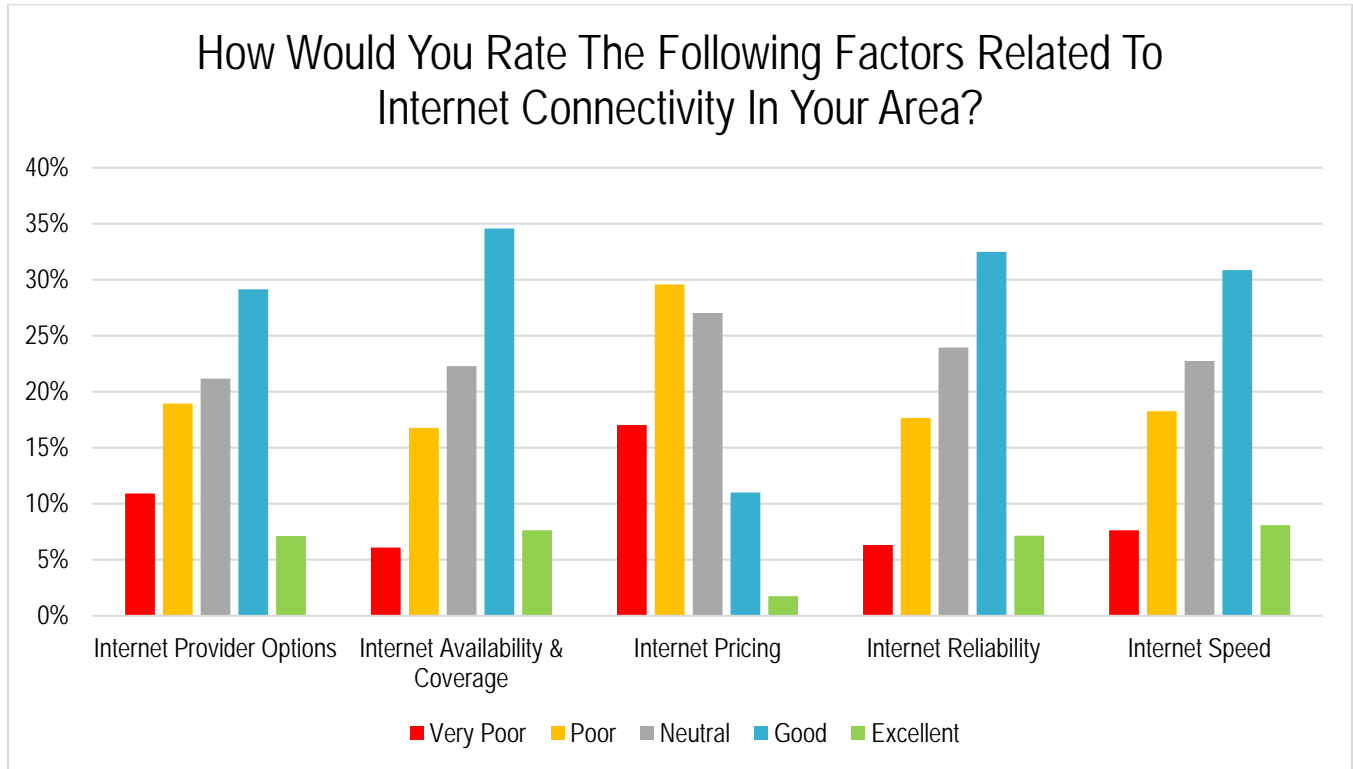


Figure 9: Residential Survey Question - How Would You Rate The Following Factors Related to Internet Connectivity in Your Area?

Table 5: Survey Score Based on Internet Connectivity Ratings

Survey Score	
Internet Provider Options	61
Internet Availability & Coverage	492
Internet Pricing	-1160
Internet Reliability	390
Internet Speed	319

The results in Figure 9 and Table 5 help highlight the ultimate need for this study. The information within Table 5 is sourced from Figure 9 specifically but is represented numerically instead of graphically. Table 5's data was created by giving a score to each response of "Very Poor", "Poor", "Neutral", good, "Excellent", or not applicable with the values of -2, -1, 0, 1, and 2, respectfully (were not applicable did not receive scoring). Based on the number of responses, these values were then calculated. In this question, residents were asked their opinion on provider options, coverage, pricing, reliability, and speed.

The responses to these questions overall were quite varied, and this is where Table 5 provides additional context to the overall response. To get a sense of where consensus opinion would be, a negative score in Table 5 would be on the "Poor" side, a positive value would be on the "Good" side, and something close to zero would be on the "Neutral" side.

As can be seen in Table 5, the poorest response was internet pricing. The sentiment for this option scoring "low" ultimately provides additional context for the need of the study as digital equity and adoption are the overall driving demands for upgrading the broadband infrastructure in Cameron County.

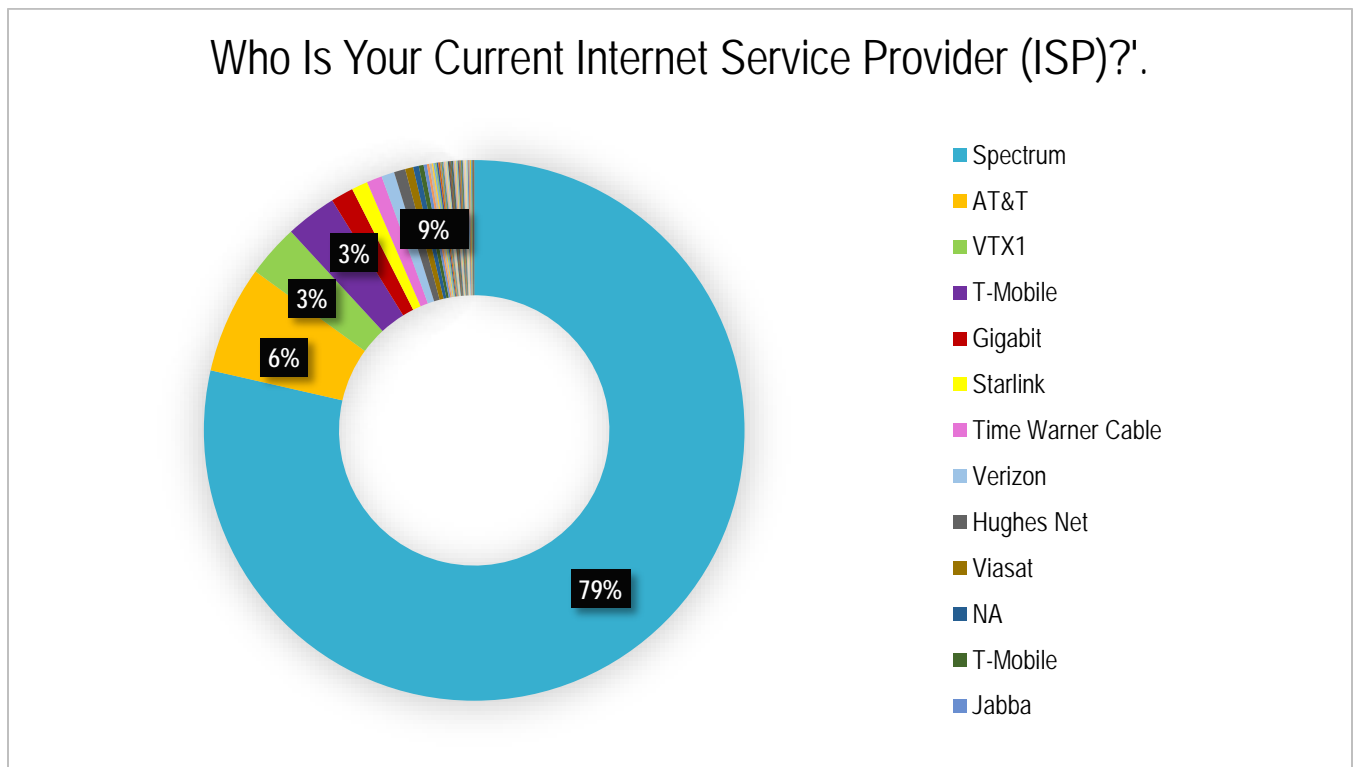


Figure 10: Residential Survey Question - Who is your Current Internet Service Provider?

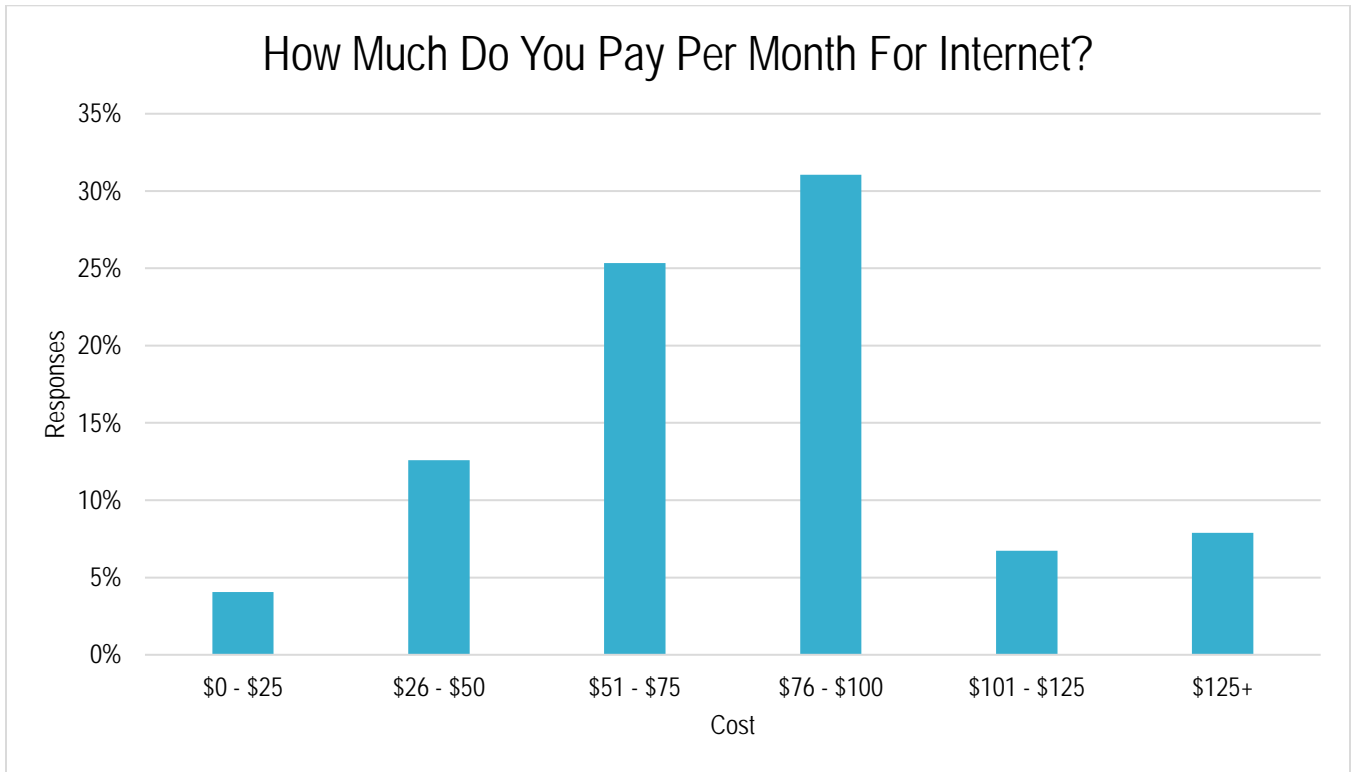


Figure 11: Residential Survey Question – How Much Do You Pay Per Month for Internet?

In Figure 11, the cost of service is above average for the residents of Cameron County, with nearly more than 30% of the respondents attesting to paying in the range of \$76-100. This is illustrated by Figure 10 where almost all respondents subscribe to a single provider.

Because of how hectic day-to-day life can be, an option was created to capture responses from those residents who were interested in taking the Speed Test but were not connected through their home internet connection at that moment. Every resident was given the option to input their information in order to receive a “Follow-Up” Survey where a link to the Speed Test as well as information on the Affordable Connectivity Program was given. This proved to be an interactive and important way to reach out to residents, the “Follow Up” Survey was sent twice a week from September 2022 to November 2022.

7.1.2 Speed Test Results

In addition to the survey that was administered throughout the community, a speed test was also provided for residents to take so that real-world applications of the advertised speeds could be reviewed.

This speed test was hosted on the internal servers of speedtest.net from Ookla and embedded in the survey response platform. After running the speed test, respondents then inputted their speed test results into the survey platform. Some of the data gathered may include outliers due to human error in reporting, tests taken outside of home connection or out-of-town responses. With that in mind, all results are presented below except for results that were gathered from tests taken outside of the state of Texas and outside of the Cameron County area.

The results of the speed test are as follows. Table 6 below displays the upload and download speeds in terms of both median and average for the three figures shown above. Since the use of the median helps eliminate outlier answers compared to the average it was necessary to include it.

Table 6: Average Speed Test Results Based on Provider

Provider Name	Number of Responses	Average Download (Mbps)	Average Upload (Mbps)	Median Download (Mbps)	Median Upload (Mbps)	Average Latency (ms)
Spectrum	1624	72	140	12	77	30
AT&T	133	18	22	1	6	58
VTX1	65	14	13	2	8	27
T-Mobile	81	81	73	35	31	68
Other	457	35	57	10	28	31

Table 7 below displays the maximum and minimum values recorded for both upload and download speeds.

Table 7: Maximum and Minimum Speed Test Results Based on Provider

Provider Name	Maximum Download Speed (Mbps)	Minimum Download Speed (Mbps)	Maximum Upload Speed (Mbps)	Minimum Upload Speed (Mbps)
Spectrum	1002	0	1041	0
AT&T	440	0	478	0
VTX1	175	1	89	1
T-Mobile	452	0	214	0
Other	398	0	421	0

Compared to the survey results, only about 88% of respondents also completed a speed test (2070 total). From the information shown in Table 6, 100 symmetrical is still the recommended criteria from this study moving forward, and none of the providers met this criterion. In terms of latency, optimal speeds would be considered in the 20-40 range and anything quicker than 20 (less than) would be great. Spectrum with the most amount of responses (79% total) has a response time from the average latency recorded of 30 ms. This most likely indicates a fiber-based backbone for Spectrum although they likely complete the in-home process with existing co-axial connections.

In Table 7 it's worth discussing the results of the maximum and minimum values recorded from the speed tests. While this could just be a result of speed test flaws, it's concerning that nearly all of the minimum values for download and upload speeds are nearly 0 Mbps, with the exception of VTX1 Broadband upload speed. The maximum values recorded from Spectrum indicate that services in the area could be meeting the future-proof needs of 100/20 as designated by NTIA and with a full fiber-to-the-home (FTTH) connection in infrastructure then these upload speeds could become even more symmetrical.

8 NEEDS AND GAP ANALYSIS

Residents, businesses, schools, and local governments require an affordable, capable, and reliable communications infrastructure to operate efficiently, which cannot be accomplished with patchwork coverage and non-competitive pricing tiers that are not valued-based on the quality of service (QoS) for the end customer. The concept and impact of the digital divide is finally under a national spotlight largely due to the COVID-19 pandemic. Without a comprehensive understanding of the root causes of lack of infrastructure in a particular region, a meaningful solution that is uniquely catered to address the broadband gap and the community's needs cannot be developed.

8.1 Needs Determination

The current state of broadband infrastructure within the region and the digital equity gap can be validated through research and information gathering completed as a part of this study. Aside from public data analysis regarding accessibility, affordability, and adoption, three additional components are considered: community and stakeholder feedback, economic development, and network capabilities.

8.1.1 Regional Priorities and Demand Points

Through conversations with Cameron County staff and stakeholder participation, "Demand Points" reflecting a priority list of sites that will benefit most from improved and reliable broadband connections have been established. While stakeholder and community engagement efforts were conducted as a task throughout this study process, some key highlights to deduce applicable needs will be included here as well.

Critical County owned facilities are a priority to connect with a proposed buried fiber line. These locations include the various public safety and administrative buildings, Port and Bridge infrastructure, key community centers and hubs. The need to help bring updated network services to these locations will be considered in the high-level design and proposed business model for the County.

8.2 Potential Gaps Within Broadband Infrastructure and Understanding the Data Sources

From a federal standpoint, the Broadband needs and gap analysis is extremely high level and trend-based at best. Until recently, the Federal Communication Commission (FCC) has been the single source of broadband coverage data, which is gathered primarily through FCC Form 477, which ISPs are required to submit twice a year. The primary issue with these forms is that they capture limited data at a census block granularity, ultimately providing an inaccurate analysis of broadband availability at the consumer level within that census block. If a fixed provider (provides services to fixed devices/locations, i.e., ethernet or Wi-Fi to fixed devices) offers service to a single household, the entire census block reflects this service regardless of whether any other household has broadband service from this provider.

As a result, in rural census blocks, the gap analysis is severely misrepresented. In addition, mobile providers (services to mobile devices, i.e., smartphones and tablets) only need to submit maps of their coverage area by broadband technology. Conversely, the FCC's broadband coverage maps and data do not provide an adequate single source for determining broadband needs, which ultimately feed reports on qualifying metrics for state and/or federal funding and assistance. The FCC is aware of this and has admitted the need for an overhaul of this data and has created a Broadband Data Task Force and various web-based tools and broadband experience repositories to capture data outside of the single source form.

Section Highlights

- THE BIGGEST FACTOR FOR RESIDENTS AND BUSINESSES IN CAMERON COUNTY IS THE HIGH PRICE OF INTERNET SERVICES, ESPECIALLY FOR RESIDENTS ON FIXED TO LOW-INCOME
- THE HIGH COSTS COUPLED WITH A LACK OF OPTIONS, HAS LED TO MANY RESIDENTS HAVING TO ACQUIRE SERVICES THAT DO NOT PROVIDE RELIABLE HIGH-SPEED INTERNET

Non-profit, state and local entities have created working groups and committees that strive to collect better broadband data to help communities determine the needs, understand the cause, and consult on the development and implementation of applicable broadband solutions. The FCC recently updated its mapping in December 2022 and CobbFendley will work to incorporate the new data for the County once operational and accessible.

ConnectedNation Texas is a statewide initiative funded by the Texas Rural Funders to support all Texans in leveraging for broadband opportunities. ConnectedNation expands upon existing Form 477 data and aims to provide more localized and accurate reports of broadband coverage and technologies.

8.2.1 Identifying Lack of Adoption Areas

While the FCC data may be misleading when reviewed as a single, isolated source, it does provide a sounding board to contrast with further research of the existing conditions and feedback through meaningful stakeholder engagement. The approach for this Broadband Improvement Study was to start by collecting the latest publicly available broadband data as a foundation, build in new layers that provide additional content for analysis, and overlay the proposed network footprint and service requirements.

Many of the following figures and maps below may use ConnectedNation⁹ resources and data which are ultimately derived from FCC Form 477¹⁰ data from October 2022. All the collected information was used to help identify areas of need that will be utilized in building out the High-Level Design in the next phase of the study.

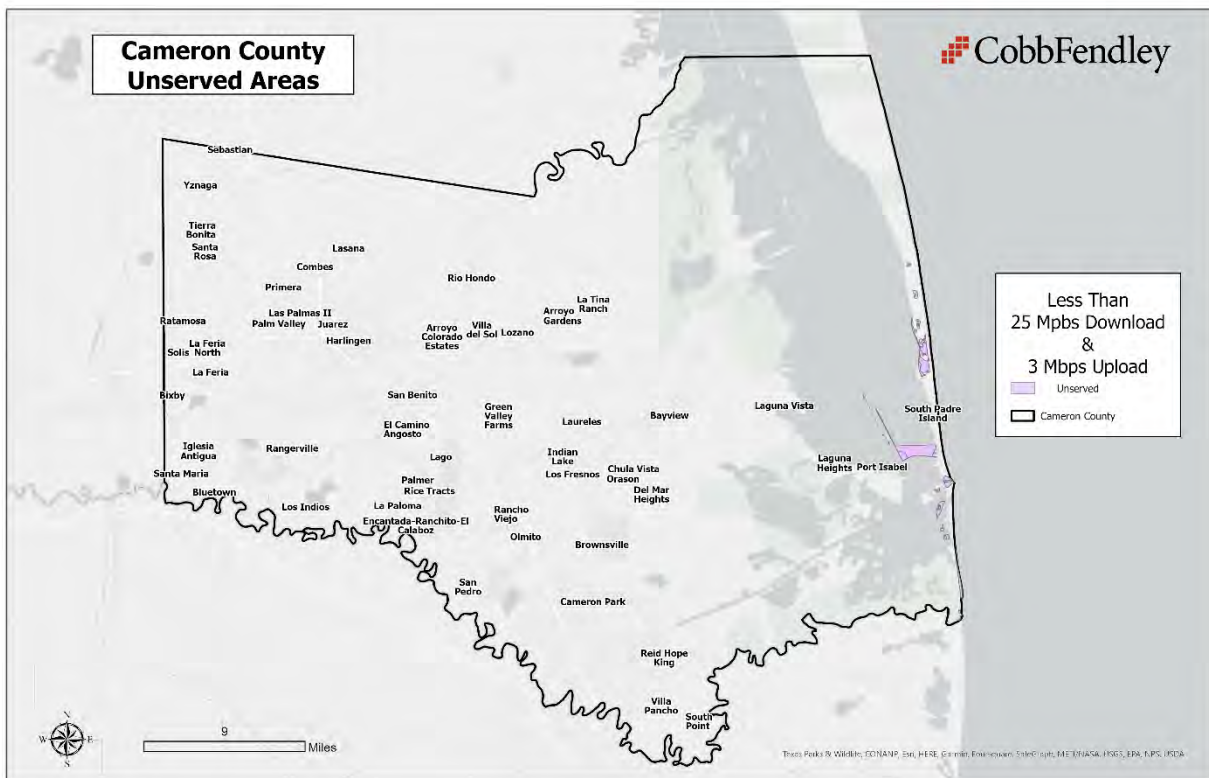


Figure 12: Unserved Areas in Cameron (Lacking 25/3 Mbps)

⁹ <https://gis.connectednation.org/portal/apps/webappviewer/index.html?id=9e10c6120228435ca35c759fac3d805e>

¹⁰ <https://www.fcc.gov/economics-analytics/industry-analysis-division/form-477-resources>

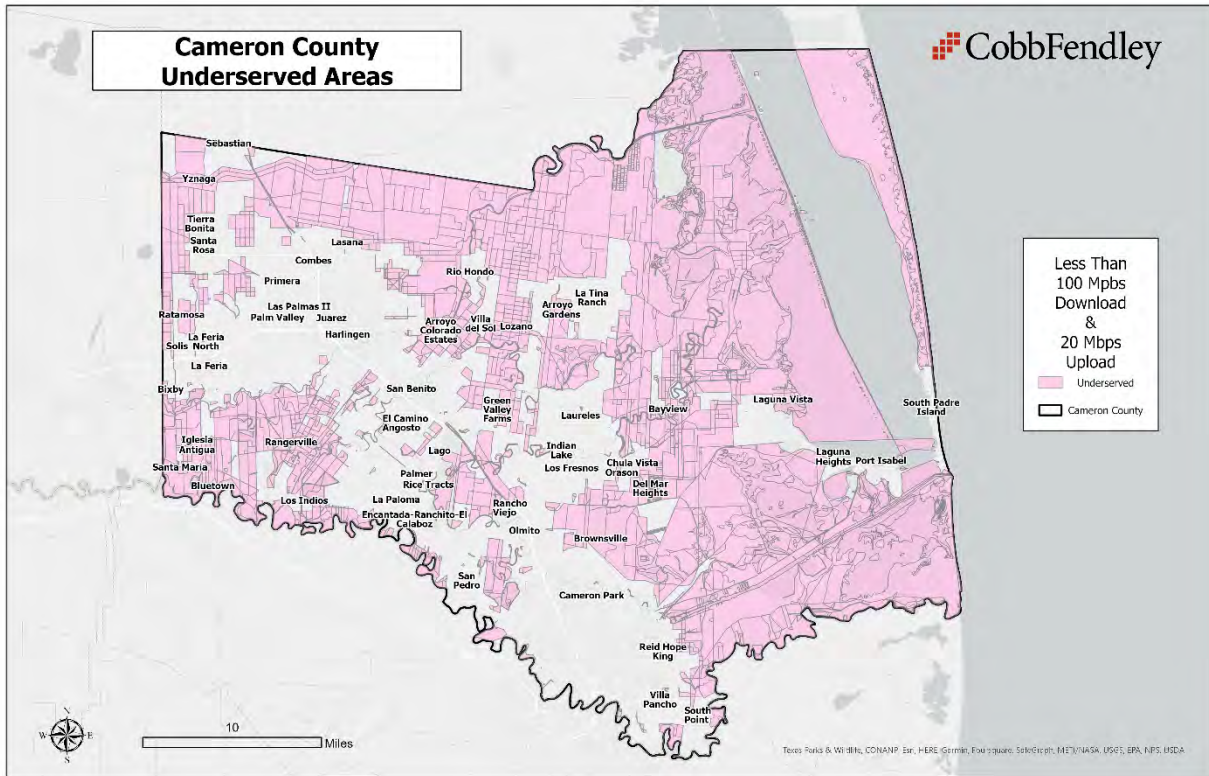


Figure 13: Underserved Areas in Cameron (Lacking 100/20 Mbps)

As mentioned throughout this report, the FCC currently defines “broadband” as internet speeds consisting of at least 25/ 3 Mbps. Many in the industry consider this standard to be outdated but it is currently used by many programs to consider who is “Unserved”. Even agencies like the National Telecommunications and Information Administration (NTIA) are evaluating their “Underserved” locations as having no access to 100/ 20 Mbps. The recommendation throughout this report will be 100 Mbps symmetrical download and upload speed (100/100), but for the sake of current public information and requirements, the figures shown throughout this Needs and Gaps section, and the rest of the report, will focus on the 25/ 3 Mbps and 100/ 20 Mbps speeds dictated by these programs.

Figure 12 & Figure 13 depict areas throughout the County that are deemed Unserved and Underserved by FCC data. Figure 6 shows only a few areas that are deemed Unserved and given the data collected through Public Outreach it directly contradicts this Federal data and grossly underestimates the number of Unserved households. Figure 7 shows areas that are deemed Underserved and this map shows a much higher proportion of the population. While being deemed Underserved will still ensure the County can be eligible for funding in these areas, we know that the priority will be on connecting Unserved residents before addressing Underserved, creating a significant disadvantage for Cameron County based on the FCC data filings.

There is also a range in not only the level of service but provider options throughout the County. As shown in Figure 14, some areas have only one option while more urban areas have upwards of seven provider options. Those living in rural areas are also likely experiencing other cost-burden factors, where lacking access to adequate broadband can compound socio-economic factors. The following figures can also help determine what other reasons may be leading to a potential lack of adoption for the residents of Cameron County.

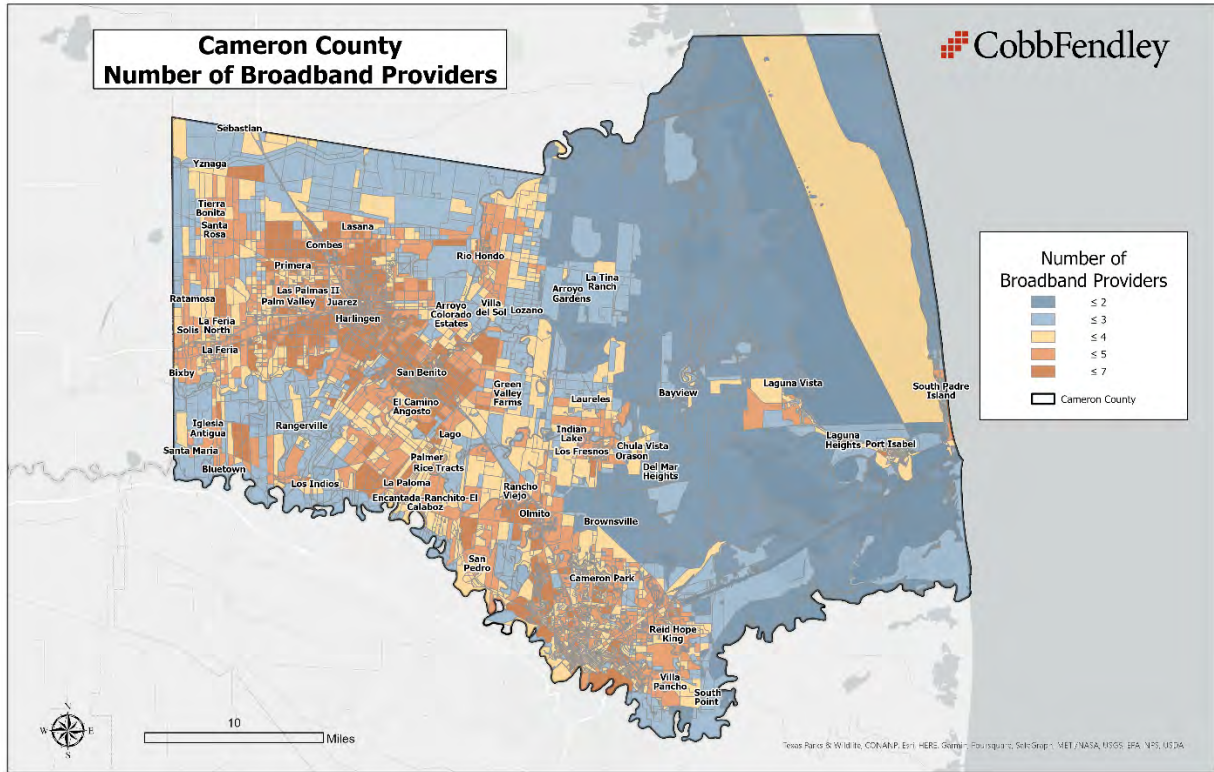


Figure 14: Number of Broadband Providers

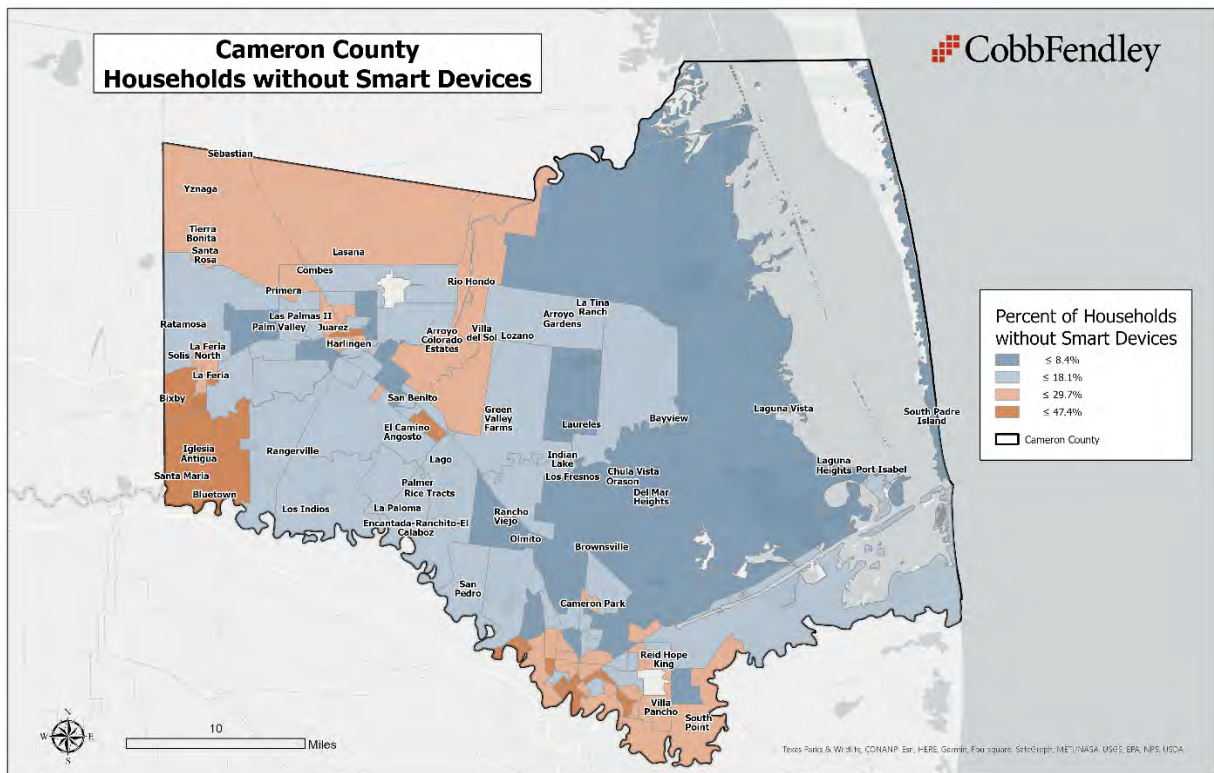


Figure 15: Percent of Households Without Smart Devices

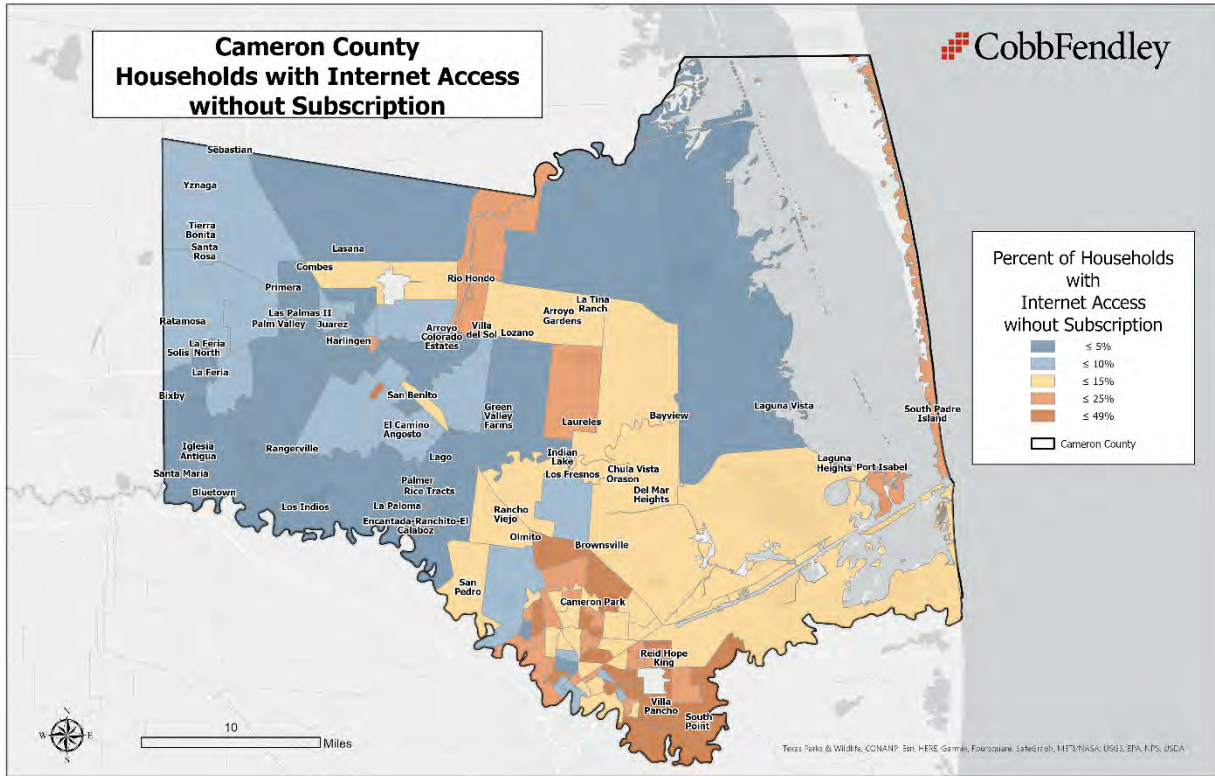


Figure 16: Percent of Households Without an Internet Subscription

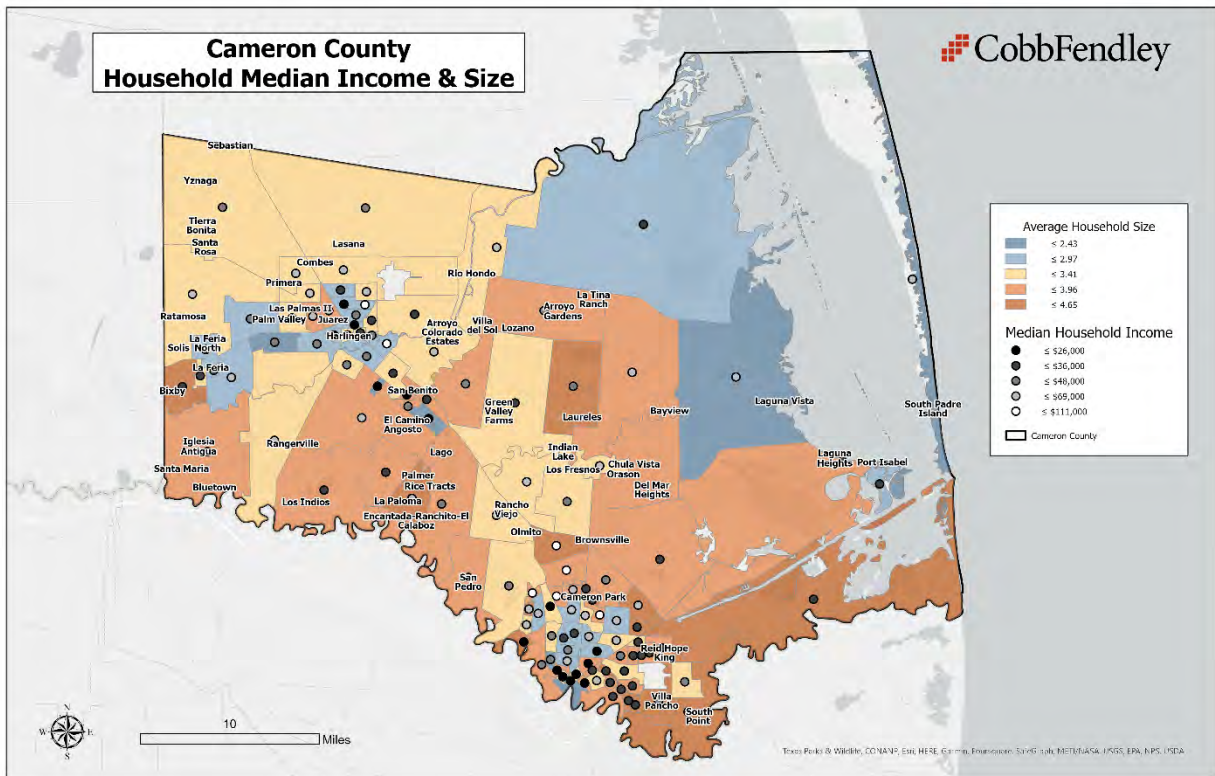


Figure 17: Average Household Size and Household Median Income

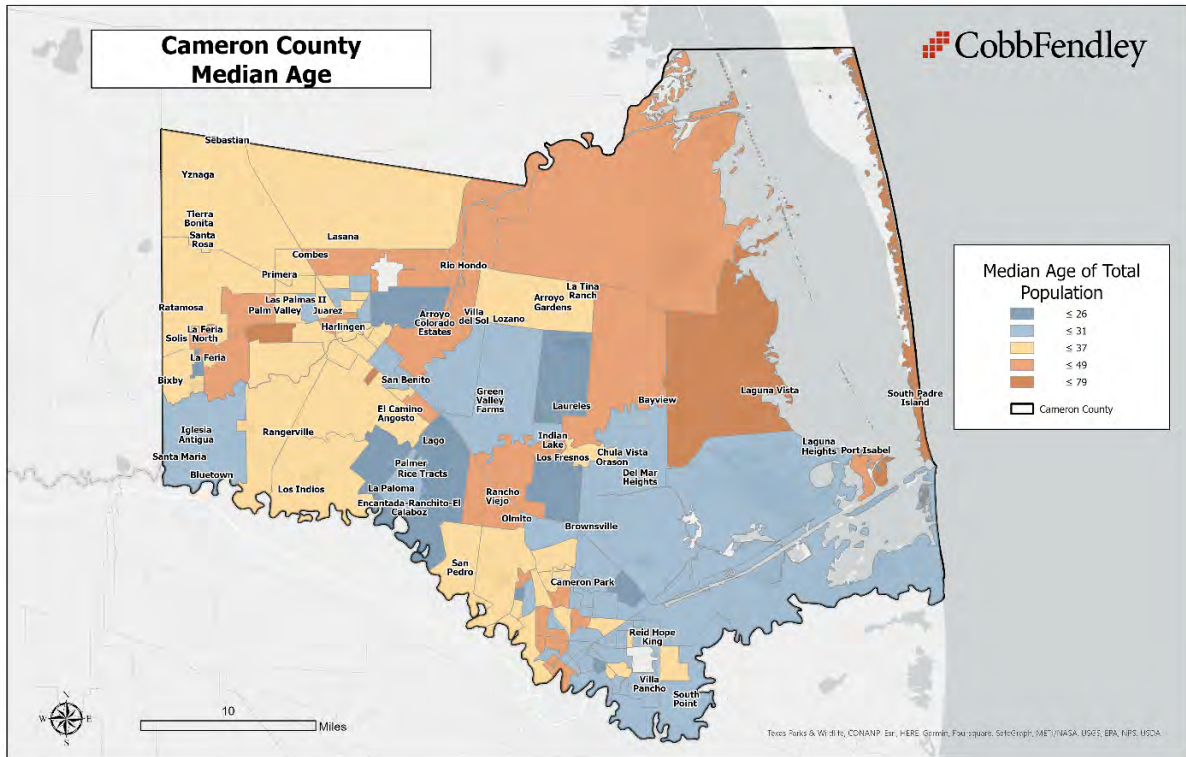


Figure 18: Median Age of Cameron County Residents

The most common factors for lack of adoption typically include customer age, lack of providers, poor customer services, income/cost of technologies, and digital literacy. The figures above help showcase how these typical national-based trends may show reasons for a lack of broadband adoption within Cameron County. To begin the review of federally collected data, Figure 15 & Figure 16 help showcase broadband related data that was collected for County residents, while Figure 17 & Figure 18 help show general demographic-based data.

One of the main factors that leads directly to a lack of adoption is access. While that typically means having physical infrastructure and availability at one's home or business, it also means having a device that is able to use this amenity. In Figure 15, the census tracts where residents do not have the necessary devices needed to adequately experience the full extent of broadband services, which includes a computer, smartphone, or tablet, is highlighted. Overall, there are varied responses to this data set that shows anywhere from 4% of households to nearly 7% of households. The communities that are within the Western and Southern parts of the County, indicate the area most in need of these devices.

In Figure 16, the percentage of households who have internet access but are not subscribed, shows that a large portion of the Southern part of the County, between 25-49% of the residents in each of those census blocks does not have a subscription even though one is offered.

When it comes to analyzing the median household income of a community, it is also helpful to add an additional layer of household size. There is an assumption that can be made that, in general, a larger household size will have less disposable income available compared to a single person or a married couple with no kids. Within Figure 17 when reviewing cost first, the larger black circles highlight the responses that recorded the median income on the lower end of the results. While generally, this is quite spread across the County overall, it is worth noting that again the areas within the Northwest as well as the East communities experience lower incomes in general.

Finally, when reviewing Figure 18, the median age for Cameron County residents, this is an additional data set that can be compared to the other trends described earlier. The census tracts of bigger families with lower income additionally shows a lower overall age which is to be expected. But areas across the Northern half of the County show a higher median age. These more rural areas likely represent more retired residents overall, especially with smaller household sizes seen in Figure 17. Age is a factor that may typically indicate more of a digital literacy need or lack of a desire to adopt, but some areas here do coincide with the other figures and trends presented above.

8.3 Reasons for Cameron County's Lack of Adoption

Based on all of the figures presented within this section, the following factors that lead to a lack of adoption will be reinstated and summarized:

- Lower Income Households & Cost of Services and Devices
 - The figures showing the households without an active internet subscription show many areas of the county with 25-50% of that population not having an active subscription. While the provider maps show that there is the opportunity for access to coverage, if the price is outside of the affordability range, then families aren't able to connect and have a reliable connection.
- Lack Of Providers
 - The lack of ISPs offering affordable, reliable high speed internet options in the County is a likely cause for the higher price and lack of adoption due to limited factors of competition. As seen in Figure 8, the number of providers varies throughout the County and even where there are multiple providers, the quality and price of the service is still a barrier to access.
- Digital Literacy
 - While many of the factors discussed contribute to digital literacy, it is hard to quantify digital literacy overall. The important thing to note about digital literacy is that for those who currently do not adopt broadband services for whatever the reasons (access, costs, etc), then the digital divide will expand exponentially for these residents. Technology is evolving at a rapid pace, and any communities that experience digital literacy must be addressed. With cost being the biggest factor for lack of adoption in Cameron County, digital literacy may not be the reason for additional adoption today, but in the future it will be.

8.4 Emergency Management and Additional Considerations

Emergency management, especially as it relates to security functions and healthcare, typically requires secure and dedicated channels which do not share bandwidth within the network. Through this study, various emergency management and healthcare facilities, including Port and Bridge infrastructure, public safety and hospitals, have been identified which will benefit from local connectivity while also ensuring the security and integrity of sensitive data that may stay local within the network or go into VPN-based (Virtual Private Network) cloud charting systems, patient databases, etc. Depending on how advanced a hospital and its specialty is, there can be a broad range of content of varying sizes from text charting to high-resolution scans and videos for surgical documentation.

Healthcare facilities within this region need to have the network capacity to expand and take advantage of bandwidth-heavy applications to stay competitive and provide the best care for the local populace. Wireless facilities play a large role in connecting mobile devices for emergency services such as fire and police. These wireless facilities are more reliable when they have fiber backhaul connections to central facilities where they can manage connections to an array of applicable databases. Having interconnectivity between emergency service facilities would greatly increase the effectiveness of law enforcement and emergency response by consolidating network assets and removing costly leased lines.

9 HIGH-LEVEL DESIGN & NETWORK CONSIDERATIONS

9.1 Map Development Approach

The High-Level Design (HLD) serves as a visual representation of the necessary broadband infrastructure footprint required to address the needs and gaps as explored in prior sections with the primary goal of proposing network infrastructure and solutions which provides residents with options for affordable and reliable internet. The HLD also allows the county and anchor institutions to interconnect their public services-based facilities. The development of this HLD requires first understanding factors which dictate network design criteria and bringing these in as visual overlays onto the map of Cameron County.

Beginning with defining the various boundaries, the external county line for Cameron County was the primary extent during design and analysis. Additional jurisdictional internal boundaries and limits were then analyzed such as TxDOT controlled ROW, Colonias, cities, railroads, water authorities, state or federal lands, and any other reference that may impact the initiative and subsequent project focus area. Next, additional spatial data is overlaid to highlight identified demand points and determine areas of need within the established focus area. Through stakeholder engagement with public entities, various communities and facilities were identified as lacking the necessary broadband services to effectively serve their communities and these locations were added to the map. Market research layers, such as Unserved (25/3Mbps) and Underserved (100/20Mbps) communities were also overlaid and contrasted with public and other stakeholder feedback to develop a proposed network infrastructure footprint for the initiative.

Finally, existing assets, such as private sector network fiber and towers, as well as any public network infrastructure, were overlaid as a reference, before adding any proposed facilities as part of the HLD. As partnership is a potential focus to moving forward with implementation, understanding where infrastructure exists was necessary in determining where the gaps in coverage currently are located throughout the county. Many other factors were researched, and reference layers were developed and reviewed which provided additional perspective as to the existing network landscape and geographical barriers, such as drainage channels and railroads. These reference layers help visualize cause and effect in terms of lack of connectivity in hard-to-reach areas, and shape routing design to minimize costly crucial crossings, while still providing middle mile access.

Having completed this background research, data accumulation, and overlay of mapped products set the stage for a considerate and deliberate High-Level Design where all relevant factors are present and informing in design decisions.

It should be noted that routing for a High-Level Design does not include detailed alignments at the street level, with considerations for the right of way, easements, existing utilities, permitting design requirements, or final construction methodology. Routing at the high level does allow for providing an overall order or magnitude and is the foundation for a successful Low-Level Design and engineering.

Section Highlights

- THE AREAS OF NEED WITHIN CAMERON COUNTY SPREAD ACROSS THE ENTIRE BOUNDARY.
- POTENTIAL PARTNERSHIPS GIVE OPPORTUNITIES TO REDUCE COUNTY-WIDE BUILD OPERATIONS WHILE EXPANDING OPPORTUNITIES TO HELP SERVE COLONIAS AND OTHER COMMUNITIES WITH MINIMAL LAST MILE IMPLEMENTATION.

9.2 High-Level Design for a County-Wide Middle Mile

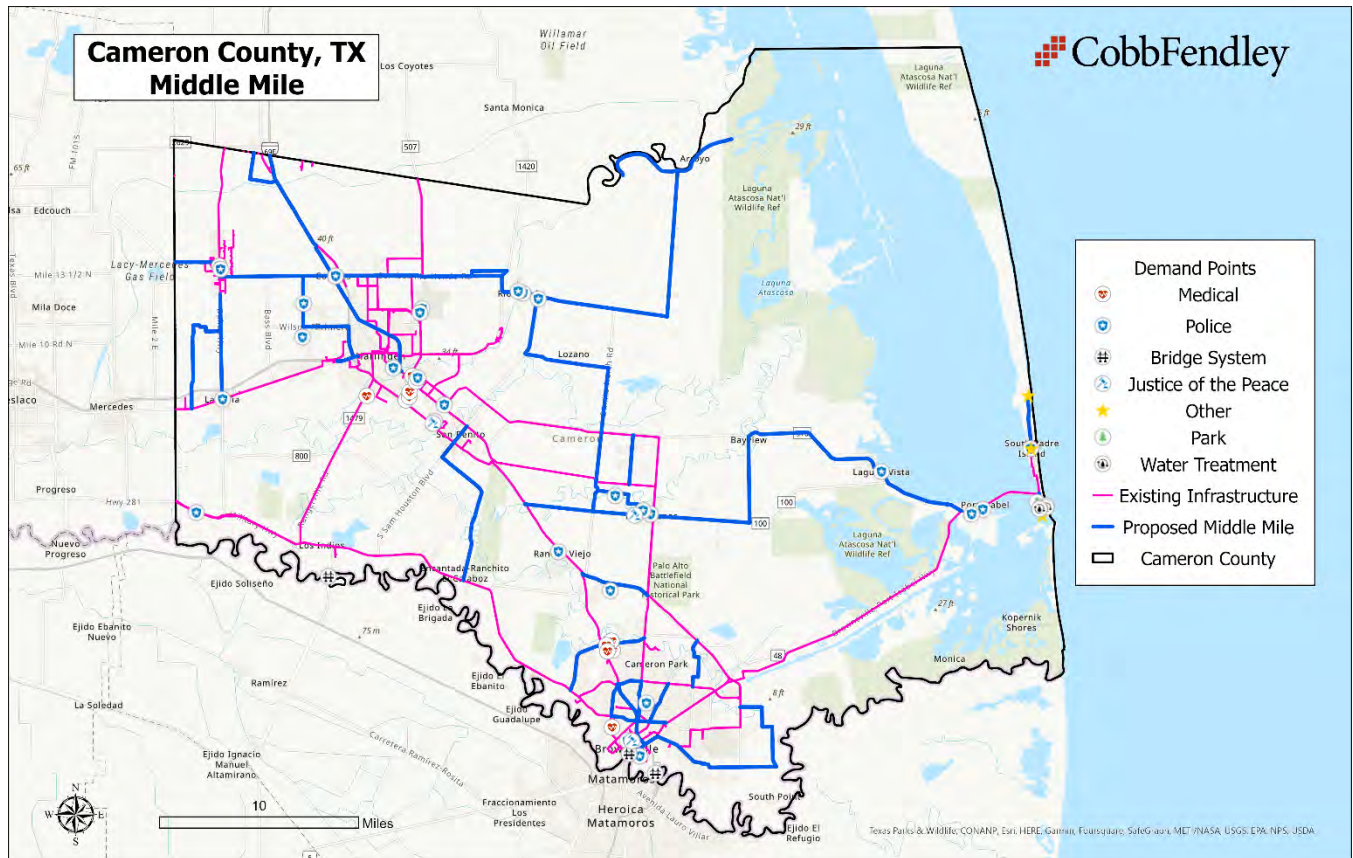


Figure 19: Cameron County Middle Mile HLD

The middle mile High-Level Design, as represented in Figure 19, consists of the priority elements as decided upon by both CobbFendley and Cameron County. Details of the infrastructure components which together make up a proposed middle mile network throughout the county can be seen below.

North is up and the map scale is set for ten miles.

The legend on the right-hand side of the map includes the following elements:

- Demand Points such as Medical Facilities, Police Stations, International Bridges, Justice of the Peace locations, Public Parks, Water Treatment Plants, as well as other stakeholder recommended locations.
- Fiber infrastructure that is both existing and proposed for this HLD
- The Cameron County border

More information on each of these elements can be seen on the following page.

9.2.1 Demand Points

The point locations on the HLD represent various facilities and utilities that were deemed necessary for connectivity within the County. The locations that were labeled above as "Other" are located within the South Padre Island area and include the Cameron County Amphitheater, the South Padre Island Community Center, the Sea Ranch Marina, and the South Padre Island Equestrian and Events Centre. Additionally, the requested Park areas to be included were the Isla Blanca Park and the Cameron County Parks and Recreation facility. The Isla Blanca Park facilities include the RV Park and the Park Pavilion.

The other remaining locations included are Medical Facilities, Police Stations, International Bridges, Justice of the Peace locations, and Water Treatment Plants. These locations are spread across the county, and no specific locations were asked to be deemed priority. All locations were included where applicable.

9.2.2 Existing Infrastructure

As determined through this feasibility study process, plans for implementation may likely include potential partnership opportunities found through the Request for Proposals (RFP) procedure. Using publicly sourced information, fiber infrastructure from the various stakeholders that were engaged with through this study can be seen included here as shown with the pink lines. While greenfield designs, where everything is proposed with no consideration for existing infrastructure, is occasionally ideal for high-level situations, there is too much existing high-speed broadband infrastructure to not have to consider. Most of the county has existing infrastructure in relative proximity to the deemed Areas of Need, as seen in a later figure. The Proposed Middle Mile was designed around the existing infrastructure of the stakeholders.

9.2.3 Proposed Middle Mile

These lines represent linear routing of proposed conduit and fiber paths within the network middle mile and includes about 941,000 linear feet of design fiber infrastructure, as shown with the blue lines. As next-steps towards implementation will determine more precise locations and material sizes, only approximate routes were designed. For cost purposes later within this report, all middle mile fiber was assumed to be sized at 144, but in an effort to be mostly conservative with pricing. The primary backbone and backhaul route was proposed to create ring topologies where applicable for county needs with redundancy in mind, to connect communities that are determined as a need, and finally to connect to potential options of existing infrastructure from various stakeholders.

The potential loop routing additions encompass the eastern, the western, and southern regions of the county helping facilitate access for connectivity to the identified county and anchor institution locations. For residents, this could reduce any additional last mile construction scope for potential providers, as seen in later figures. The conduit and fiber along this route are upsized for 2-1.25" conduits, to account for significant network traffic, allocating both physical spaces with spare conduit, and fiber allocations for various network components such as backhaul for Tier 1 transport, localized transport and backhaul, and the various front haul applications (FTTx).

For last mile to all the demand points the network route is proposed to use 12 strands of fiber to converge from outside plant (OSP) operations to inside plant (ISP) to help fully interconnect the county's buildings and utilities. An estimate of 250 linear feet was assumed for this operation, and should be viewed as a conservative and overly estimated value. Some locations may be within proximity of other demand points or existing connections, and may not be necessary for a full 250 feet. However, as most of these facilities are public or emergency related, the connectivity of these demand points is essential to allow for safety of connectivity during emergencies and ensuring communication during the most important of circumstances.

Other inside plant considerations to the network build for connections to core network facilities such as data centers, distribution points of presence (POPs), customer premises, and other network assets outside of the public ROW are likely to be decided upon by potential partners. Additionally, the main consideration for routing design of the HLD can be seen below in the determined Areas of Need. These communities shown in the associated map can be found below.

9.2.4 Determined Areas of Need

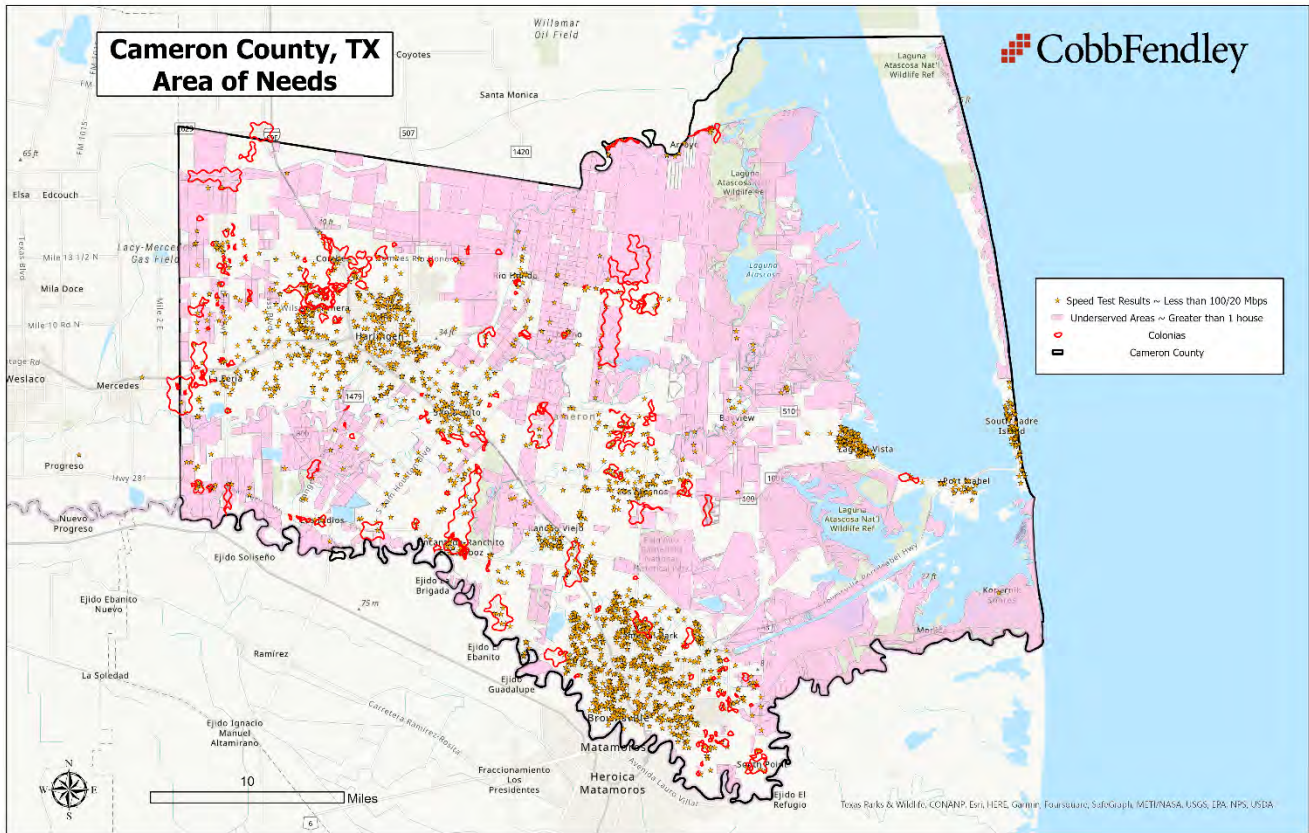


Figure 20: Cameron County Areas of Need

When determining routes within the HLD, it was important to line up the design to match that of the existing infrastructure, but also areas that show a need for broadband resources. What was chosen to be a “need” comes from potential funding sources, current FCC household data, and survey results from this study. The design from this study aims to reach as many of these areas of need as possible.

Specifically, the criteria chosen for Figure 20 includes:

- Speed Test results received from this study’s specific survey that were shown to be less than 100 Mbps for download speeds and 20 Mbps for upload speeds. These locations on the map above are shown as the point locations using a star icon for where the survey was recorded and were filtered to include these speed thresholds.
- Any Underserved census blocks that contain more than one house. Again, the speed threshold for this is 100/20 Mbps, but this was where the FCC and the ISPs deemed do not contain these values for cabled infrastructure. The number of house addition was included since many areas of this county include natural resources that do not include any residents. This way any likely serving area would be shown. These polygons are shown in pink.
- Colonias were included since among other basic necessities that are often lacking for this communities, broadband is also missing from many of these areas. The local, state, and federal governments are all actively looking to address these needs included with specific funding opportunities to help provide broadband access to these communities. These areas are shown as polygons with red borders.

9.2.5 High-Level Design of Last Mile Connections

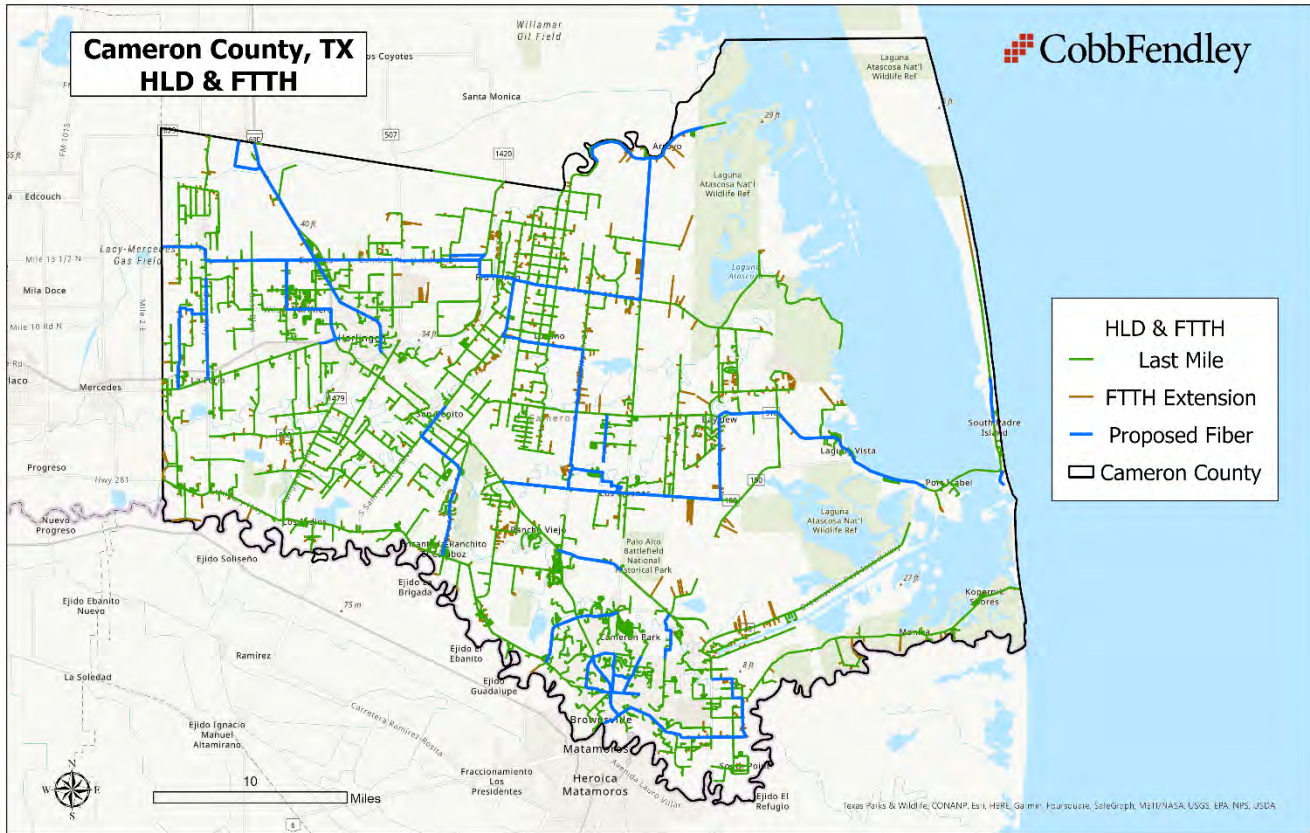


Figure 21: Cameron County Last Mile HLD

To supplement a residential focused fiber network build out, a last mile design with an emphasis on FTTH to the deemed areas of need has also been created, as seen above in Figure 21. Last mile details are rarely shared between providers and counties/municipalities, so the last mile design effort should be viewed as a greenfield design, unlike the middle mile design.

This last mile design was built off of the proposed middle mile, but does not include the existing infrastructure that was used previously on the middle mile design. The assumption was made that the public information for this fiber infrastructure is to be used for transport and not last mile distribution. With that assumption in place, the last mile design shown above will likely have overlap between existing infrastructure and may be redundant.

To help serve the 26,542 homes that were included within the Colonias, underserved, and poor speed test areas shown above in the areas of need, this would include about 5.6million linear feet of last mile fiber and conduit (green lines) as well as additional approximate 5million linear feet in FTTH specific fiber (brown lines).

9.3 Methodology for Design

The Outside Plant (OSP) is the physical manifestation of a fiber-optic network within the public right of way (ROW) as it is the most visible component of the network. A fiber-based, centralized core network, focused on supporting an access network for internet/data services. Foundationally, this allows for flexibility in access architectures that last-mile providers can implement and converge to meet the market needs. Both fiber wireline and wireless broadband solutions can facilitate the last-mile while meeting the service level requirements recommended in this study and set by NTIA for funding eligibility.

OSP includes the civil engineering and construction to design and install underground conduits, fiber optic cables, handholes, and splicing cases among various other components. The outside plant is designed, constructed, and implemented per both jurisdictional and owner standards. In this case, there were not excess jurisdictional standards to be met regarding applicable clearances from existing utilities, placement in the ROW following required typical cross section alignments, and other specified design and construction standards. Placing the fiber route within TXDOT or Cameron County ROW was the priority where possible.

TxDOT ROWs already contain most long-haul utilities and have utility pole infrastructure, green space for buried construction, and a utility accommodation process in place to allow for simplified design, permitting, and construction measures. Geographical barriers do not appear to have played a role in restricting infrastructure development.

In this High-Level Design, the focus is primarily on the middle mile infrastructure need, while suggesting the last-mile providers consider all manners of broadband technology solutions to reach the designated areas of need. The design has the potential for scalable applications and is recommended as the primary access network architecture where applicable.

9.3.1 Network Topologies to Serve Urban and Rural Markets

While the cities typically have a significant urban population, the expansive neighboring communities contain varying degrees of rurality. As there are established broadband needs in both urban and rural areas, the middle mile footprint needs to distribute out in all directions and to each corner of the designated boundary, so that each fiber cable, or spoke, can be centrally located for an effective serving area. In new fiber builds with no existing infrastructure, known in the industry as “greenfield,” this approach is used to start with a centralized location in the middle of the marker, then start dividing that marking into quadrants, representing the sub-service areas that need to be served.

It is important to reiterate that although the middle mile does not route directly through each community, additional laterals and last-mile services to all other targeted areas can now be connected to this network, given the established proximity and improved feasibility through this effort

By extending fiber from the centralized location across the middle of these quadrants, any demand points on either side of the fiber can be tied into the network without extensive laterals going from one end to the other. The middle mile leverages a couple of network topology elements to position the network to capture as many census blocks that meet as many broadband-needs criteria as possible.

The “ring” based topology allows for redundant connections to demand points by the lateral extensions connecting back to core network infrastructure, which are “self-healing” or have the ability to redirect connections if any part of the ring is damaged or undergoing maintenance. Many business and commercial properties require this kind of connection as it eliminates or at least reduces any downtime for network maintenance or damages.

9.3.2 Aerial Attachment Considerations

The necessity of accessing existing pole infrastructure needs to be included in the High-Level Design, understanding the positives and negatives of a purely underground solution, such as the potential impact to construction costs and timelines. In areas with harder soil conditions, boring and trenching can be incredibly expensive and may delay project timelines. Where the hard soil conditions overlap with existing utility pole infrastructure, pole attachment for an aerial route is recommended. While Cameron County soils are mostly favorable towards buried construction, the availability of pole infrastructure should be considered to reduce additional disturbance of the ROW and can be leveraged to mitigate maintenance issues associated with flood-prone areas. Buried fiber is generally more protected, as it is less exposed to wind events or damages from traffic accidents or vandalism. Aerial attachments of the fiber-optic cable include the following conditional benefits:

- The cost to attach to poles is generally cheaper than burying underground, especially within hard rock conditions, although some pole owners may have increased pricing due to terrain demands.
- The time to completion for this method of fiber routing is typically faster compared to underground trenching or boring, even though pole analysis for each pole needs to be conducted before attachment.
- Construction of aerial attachments is less likely to damage existing utilities within the ROW given the visibility of existing attachments and power conductors. SUE or utility locates are required to avoid conflict with existing buried facilities which are not visible to the contractor.
- When repairs are needed to fiber attached to a pole, the procedures and timing are more efficient which greatly reduces downtime.

9.3.3 Material and Capacity Considerations

As previously discussed throughout this study, existing broadband infrastructure is present throughout the greater county area and so the potential for overbuilding is a factor that should be considered given the eligibility requirements for NTIA grant funding. As such, it is even more important to leverage these existing assets to reduce overall build costs and minimize overbuild. Fiber, conduit, handholes, facilities with space for collocated equipment, poles, and tower structures should be considered when exploring partnerships. Compatibility with the proposed infrastructure is especially important as existing assets may not have the required capacity from a physical space perspective in conduit and ducts or available dark fiber in existing cables. When sizing for capacity, both physical and network aspects are considered.

The proposed conduit system would consist of 2-2" HDPE pipes, allowing space for overpulling additional fibers, maintenance, and potentially leasing. Fiber cables would be upsized to allow for growth in the middle mile and any distribution directly off the cable to demand points along the route. The additional capacity in the proposed fiber cables promotes growth, redundancy, and a potential source of revenue via dark fiber leasing. Any laterals and ring routed design help carry the bulk of the network across the county and facilitate fiber lateral construction to help expand the network to various locations that could be considered last mile, which includes any stakeholder-provided demand points or tower locations.

For the transition from outside plant to inside plant, whether at tower locations, demand points, or anywhere else, responsible fiber sizing and allocations ensure proper connectivity in case of emergency and additionally will promote growth for nearby future projects.

For the capacity of the network, the most crucial factor to consider is scalability. The capacity of a large county-sized network will not experience the same demand today that it does ten to 20 years from now. As the surge capacities for each identified demand point and future demand points are unknown, a lower capacity is manageable and can increase as the network traffic is monitored and analyzed. This is the most economical and responsible method to scale the network capacity. While this does not necessarily impact the routing, it is important to consider in terms of the inside plant facilities the relative space needed for equipment and associated costs. Network technologies have allowed for existing infrastructure to yield more capacity than when originally placed by smarter network routing and multiplexing.

When reviewing network capacity, it is important to understand that there is traffic that stays within the network to communicate within and between the connected facilities, and there is also traffic that needs to leave the network and connect to a larger access network such as the internet. Traffic that leaves the network requires transport circuits, the capacity of which is dependent upon the scale and consistency of the traffic. When determining the transport capacity, it is important to consider that this is easily scalable and does not need to be sized to the future anticipated growth of the network.

From a cost-savings perspective, transport capacity should be estimated to meet the immediate needs, monitored, and increased as the network grows. This concept not only applies to transport, but also all network links or connections. The estimated capacity requirements for demand points based on their function or as recommended by the stakeholders can be seen below in Table 8.

Table 8: Proposed Capacity Based Upon Location Type

Location Type	Proposed Capacity per Location (GB)
AIRPORTS/ INT NTL BRIDGES	1-3
LOCAL GOV. FACILITIES	1
FIRE STATIONS	1
MEDICAL	1-3
POLICE/SHERIFF	1-3
SCHOOL	5-10

Another key concept when considering capacity is bandwidth management, which consists of understanding that advanced fiber networks can control traffic in ways that individual links are making efficient use of bandwidth through techniques such as multiplexing. What this translates to is that individual capacity estimates for customers represent the absolute maximum capacity needs which will rarely, if ever, be required at a given time. These links share bandwidth where applicable and so the determination of the network capacity is not simply a summation of all estimated max capacities. Instead, it is based on an estimation of the surge capacities.

As the surge capacities for each currently identified demand or future point is unknown, it is logical to begin with a lower capacity that is manageable and increases as the network traffic is monitored and analyzed. This is the most economical and responsible method to scale the network capacity. It is also the reason that future proofing and modularity of network components are critical as they need to have the ability to scale with the network from both a distribution and capacity standpoint.

With the understanding of the concepts above and capacity estimates for all demand points, it was determined that a good starting point for the network would be two 40GB transport circuits for redundant connections to the access network. The backhaul links should be 100GB between network data centers and distribution POPs. Individual demand points in the middle mile will have anywhere from 100Mb-10GB links depending on their classification and anticipated needs. However, as proposed infrastructure is likely to be a part of a growing network, the ideal partner should be able to cover these estimates, if not more.

The High-Level Design as presented in this section represents the collective understanding of the existing conditions, needs and gap analysis, stakeholder/partner capabilities and assets, broadband network design criteria, and with consideration for scalability, future-proofing, economic growth, and regional connectivity.

9.4 Additional Considerations for Broadband Network Implementation

Network implementation is one of the most complex and challenging portions of establishing a broadband network. Preliminary engineering was conducted as a necessary part of this study to determine capacity requirements of the proposed network footprint, network equipment, efforts to ensure modularity and future-proofing of the network, and external environmental constraints in constructability and sustainability. Most of these items below are needed for the greenfield design approach, and less likely for potential partnerships as providers may already have these matters covered for future-proof scenarios. However, with any proposed infrastructure the additional capacities and materials are likely to consider growth of the supporting implementation elements. More information can be found on these topics below.

9.4.1 Network Architecture

Network architectures such as Gigabit Passive Optical Networks (GPON) share capacity among multiple customers and are typically seen in fiber-to-the-home network builds. The latest variant of this architecture is XGS-PON (or 10 Gigabit Symmetrical PON) which follows the same concept but is not limited to 1GB connections and can support variable optics up to 10GB which can be used to service thirty-two or more large customers requiring up to 10GB services on the same active link.

Fixed wireless last mile solutions also provide an opportunity to share capacity between multiple customers, with the advantage of reducing the wireline fiber build into the customer premise while also providing high-quality wireless connections required in an advanced broadband network. While GPON and XGS-PON are more efficient from a distribution fiber standpoint, fixed wireless solutions provide the necessary flexibility in last mile connections. These proposed network infrastructures must be able to support these architectures and therefore building a robust core network in the OSP with scalable capacity equipment is crucial.

9.4.2 Data Center and POP Considerations

The physical plant must correlate with and complement the network equipment that will ultimately facilitate and manage the network connection. Data centers and distribution Points of Presence (POPs) are where the distribution and core networks converge and connect to transport networks through centralized network equipment.

Data centers are the primary facilities that transport connections house the core/edge routers which manage the network. These locations can be centralized or diversified on opposite ends of the network to provide physical separation for ISP connections. Robust power supply, storage, and management are required at these locations to condition or rectify power and allow the network to operate reliably. Placement of these facilities is dependent on network topology and suitability criteria such as flood adverse locations, security, access to sustainable power sources, and necessary space to accommodate equipment and network staff.

POPs differ from Data Centers in that they contain mainly distribution equipment and do not typically receive the ISP transport connection and core/edge routing equipment. Distribution POPs are placed centrally, along the backhaul, in customer-heavy areas where the distribution OSP can be condensed and reduced in terms of the physical plant to individual customers. POPs can be as small as a handhole in the public Right of Way where the network can tie into other networks and leased lines or as large as a Data Center depending on the required function.

Depending on the capacity needs of the area the POP will distribute into, the required space will likely be no larger than a large storage closet or small room to house distribution switches, patch panels, power supply, and cooling systems. Data Center and POP facilities, like the equipment they contain, need to be scalable and should consider the feasibility of future expansion in considering suitable locations.

9.4.3 Local Public Policy for Implementation

Ordinances, design manuals, and permitting requirements should be updated and clarified to protect the ROW, but also streamline processes for partners of this initiative, as well as other broadband expansion projects. Civil engineering design considers constructability to develop both an economical design, on behalf of the client, and a feasible design, to ensure the contractor is set up for success. Constructability considerations include understanding soil conditions and the method of construction that is most conducive, whether that is aerial construction, directional drilling, plowing, or trenching. Having a clear-cut process is an enticement for broadband providers as this reduces costly delays and frustration for all parties.

Municipal Engineering and Public Works should have a defined role and involvement in all proposed broadband projects, for both visibility and strengthening relationships with local providers. Successful implementation of the fiber network requires that the preliminary and detailed design engineering work be thoughtful and comprehensive to support the subsequent construction effort, without delay and need for change orders.

9.4.4 Procurement & Equipment

Another critical component of the implementation is continued refinement of the network build Order of Magnitude (OOM) into the detailed bill of materials (BOM), cost estimates, and schedules. The OOM serves as a project charter document that guides the client in the procurement process, especially considering the global shortages and increasing price tag of essential network materials such as HDPE and fiber cable, which are experiencing more than 26-week lead times and quotes are only held for weeks to months at best as demand surges. Given the state of the industry when it comes to the supply chain, it is essential that the OOM is flexible and adaptive to quickly swap out various materials and equipment to provide insight on the updated costs and ensure compatibilities.

Changes in equipment and materials during the procurement process may have impacts on the OSP design and ISP equipment may lose functionality that provides for future-proofing, modularity, and sustainability of the network. Therefore, it is essential to implementation that the services and materials procurement effort is collaborative and deliberate so that these impacts are discussed and weighed before making final decisions so that there is not an excessive redesign of the network through a continually varying BOM. Partnering with well-established operators in the telecommunications industry or contracting purchasing cooperative services presents the most favorable options for procurement, which is key in enabling the implementation of the broadband network build.

9.4.5 Potential Solutions for Cost Savings

Some additional solutions that may aim to reduce costs can be seen below.

- Co-locate POPs in existing public facilities that meet the suitability criteria.
- Utilize spare duct and available fiber capacity in an existing fiber network by a third-party provider.
- Utilize wholesale pricing for material procurement with a regional approach.
- Utilize plough construction in TXDOT ROW rural segments.
- Modularize the ISP – “Buy as You Go” Model.
- Bulk Procurement and Construction of OSP for better pricing/schedule in a competitive environment.

9.4.6 Operations And Maintenance

To ensure proper performance, regular maintenance will be needed to repair any problems with the fiber network. One benefit of a fiber network is the low amount of maintenance needed to keep the system up and running. The system should work properly unless there is specific damage that occurs somewhere in the network. It is recommended that to reduce the risk of damage to fiber infrastructure that the contractor should install tracer wire with the conduit. The cost estimates above include tracer wire for both middle and last mile operations.

The current outlook for maintenance responsibilities is that the partnership collaboration will lead to hiring an operator who would perform all maintenance. During the build phase of the route, the contractor is responsible for the build until it is completed. Therefore, the costs are covered by the builder for any issues that occur during the build phase such as cracked handholes. As the equipment ages, the maintenance needs will grow, especially in more rural areas. Maintenance costs will not be consistent from month to month, especially in the early years of the equipment where they are expected to be more minimal.

To ensure proper performance of the fiber network, some level of permanent staff will likely be needed to monitor the system and perform regular preventative and reactive maintenance. The operator may be planning on leasing fiber strands out to commercial clients for internet access on behalf of the County, and the operator will need staff in place to manage all billings for commercial client use of the network. Effort levels for County staff are dependent on terms of potential partnerships. Maintenance for the end equipment for each run of fiber located at the network hubs will need to be routinely checked and maintained by qualified IT staff.

10 COST ESTIMATE

10.1 Infrastructure Costs for Reference Middle and Last Mile Designs

Based on the breakdown of the High-Level Design, there will be two Cost Estimates provided for each factor of discussion. There will include a cost representing a county-wide middle mile buildout with a focus to include the areas of need while potentially leveraging existing assets through brownfield operations and then another additional cost representing an estimated last mile based on the proposed middle mile that cannot take existing infrastructure into account and would be considered greenfield. Last mile costs will be shown as high based on the design, but it is likely that this may include existing assets with potential partners.

Table 9: Labor and Materials Cost Estimate – Middle and Last Mile Routes

Total Cost Estimate (Year 0 - Construction Phase)		
Cost Factor	Middle Mile	Last Mile
Materials	\$4,564,070	\$34,977,540
Labor	\$12,778,540	\$79,319,130
SUM	\$17,342,610	\$114,296,670
Total Cost	\$131,639,280	

The cost for this broadband network can be broken down into two main categories for this project i.e., Materials and Labor. Both of which come with specific assumptions and unit costs and can each be split into various subcategories. Table 9 shows these costs for both the middle mile and last mile, as well as a total for both.

The materials included are using recent prices from a local vendor, but with the current material shortages and supply chain issues in many fields, it is recommended to use these values as an estimate. For that reason, both Table 10 & Table 11 below include a lower and upper range associated with various costs, which may represent more accurate costs in the future.

Table 10: Cost Estimate Ranges – Middle Mile Route

Type of Cost	Lower Range	Upper Range
Underground Labor	\$9,273,000	\$13,909,000
Underground Materials	\$3,277,000	\$4,915,000
Splice Labor	\$224,000	\$335,000
Splice Materials	\$29,000	\$43,000
ISP Labor	\$728,000	\$1,092,000
ISP Materials	\$347,000	\$520,000

Table 11: Cost Estimate Ranges –Last Mile Route

Type of Cost	Lower Range	Upper Range
Underground Labor	\$53,065,000	\$79,597,000
Underground Materials	\$25,129,000	\$37,694,000
Splice Labor	\$5,083,000	\$7,625,000
Splice Materials	\$1,274,000	\$1,910,000
ISP Labor	\$5,309,000	\$7,963,000
ISP Materials	\$1,581,000	\$2,371,000

The fiber and conduit routes were determined based on current and future demands, promote redundancy, and allow for expansion or leasing options, should the county be interested. For middle mile route sizing, fiber sizes of 12FO minimum and 144FO maximum were picked, where the larger size is to accommodate the middle mile infrastructure and the smaller size is for demand point based inside plant, also built to include redundancy. For last mile, 96FO sized fiber was decided upon as a conservative estimate since this should include adequate representation of material for distribution purposes.

To accommodate for redundancy or any future building, it was also decided to include 2 – 1.25" HDPE conduits for fiber placement underground. There are natural water bodies and railroads that will need crossings, and including more ducts helps aid future adaptations to this fiber build by minimizing construction and labor costs. This size and quantity of conduit will also help promote safety within the network by having those spare ducts available.

As this design is expected to expand of existing network assets, handhole placement and spacing was assumed using factors such as spacing, numbers of demand points, and number of estimated people served. Based on the fiber size and the natural conditions, a 17" x 30" x 24" handhole seems proficient to meet the needs of this network in many of these communities within the county, a 30" x 48" x 36" handhole is sufficient between middle mile and last mile distribution, and finally a much larger and rural based handhole could be used in the areas between the larger cities sized at 30" x 60" x 36".

Splicing was considered for both middle and last mile efforts and the transition from outside plant (OSP) to inside plant (ISP) was also considered for middle mile demand points. The assumptions for these conditions include prep splice closures based on sizing, fusion splicing ribbon or loose tube, splitters, and more. For plant transition, the assumptions include 1.25" Plenum Interconnect ducts, Hoffman boxes, building entrances, core drilling, 4" EMT, drop cable, and 12F for approximately 250' per demand point, and more.

The material prices are then determined to be based on the linear footage for each project, the size of the fiber, and more. The breakdown of these linear footage values and other additional quantities can be seen below in Table 12 & Table 13:

Table 12: Material Quantities – Middle Mile Route

<u>Fiber Size</u>	<u>Linear Footage</u>
144F	941,238
12F	20,000
Estimated Slack	15,912
<u>Conduit Size</u>	<u>Linear Footage</u>
2-1.25"	941,238
<u>Handhole</u>	<u>Quantity</u>
36" x 60" x 36"	318

Table 13: Material Quantities – Last Mile Route

<u>Fiber Size</u>	<u>Linear Footage</u>
96F	5,592,293
Estimated Slack	943,165
<u>Conduit Size</u>	<u>Linear Footage</u>
2-1.25"	5,592,293
<u>Handhole</u>	<u>Quantity</u>
17" x 30" x 24"	13,271
30" x 48" x 36"	5,592

Additional considerations for labor should include traffic control, mobilization, engineering, administration, and contingency. The construction estimates were derived from local vendors, and the remaining costs were based on federal communications studies for fiber optic construction. Construction Engineering pertains to inspection, oversight, and field engineering (not detailed design). These assumptions may not reflect the current landscape which includes inflation, supply chain issues, and material shortages but estimates can be seen below in Table 14. These percentage costs are not included in any of the values shown above. The costs of electronics are also not included here.

Table 14: Additional Cost Estimate Assumptions

Traffic Control	7% of Total Labor Cost
Mobilization	9% of Total Labor Cost
Construction Engineering	10% of Total Labor Cost
Administration	7% of Total Labor Cost
Contingency	20% of Total Labor Cost

To assume the estimated timeline using the various types of crews, Table 15 below highlight the expected time per 1 crew for each boring, fiber, and splicing based on the number of weeks for the middle mile route.

The assumptions that were included in these crew timelines include 2,000 linear feet per day for bore crews and 6,500 linear feet per day for fiber crews and 400 splices per day for splicing crews.

To decrease the time to completion, more crews could be hired at additional costs.

Table 15: Estimated Work Crew Costs – Middle Mile Route

Crew Type	Number of Weeks
Bore Crew Days	95
Fiber Crew Days	32
Splicing Crew Days	1

As detailed in additional sections, the expected Operations and Maintenance cost estimate can be seen below in Table 16 & Table 17. Depending on the business model chosen by Cameron County, the source of funding may alter these amounts or who specifically would be in charge of paying these costs.

Table 16: Operations and Maintenance Estimate – Middle Mile Route

Network Details		
Approximate Milage	Network Cost	Capacity
178	~\$18,000,000	100GB 10GB
Maintenance Details		
Maint. Terms	Monthly Maint. Cost	Maint. Cost Estimate
20 Years	~\$18,000	0.1% Network Cost
Operations Details		
Managed Service Terms	Monthly Service Cost	Operations Cost Estimate
7 Year	~\$7,200	0.04% Network Cost

Table 17: Operations and Maintenance Estimate – Last Mile Route

<u>Network Details</u>		
Approximate Milage	Network Cost	Capacity
1,059	~\$115,000,000	100GB 10GB
<u>Maintenance Details</u>		
Maint. Terms	Monthly Maint. Cost	Maint. Cost Estimate
20 Years	~\$115,000	0.1% Network Cost
<u>Operations Details</u>		
Managed Service Terms	Monthly Service Cost	Operations Cost Estimate
7 Year	~\$46,000	0.04% Network Cost

10.2 Additional Considerations for Data Center, POP Locations, and Towers

Data Center and POP Location construction and upgrades were not considered in the materials estimate. The proposed solution would require at least one Data Center (a large room with specific HVAC and electrical needs), one large Pop Location (located within a spare room/ closet), and a smaller POP location (an external large handhole) per each major city within the county. As expected through the county going with an RFP process, these may be managed by a potential partner and may not need to be managed in any form by county staff. Materials needed for these locations would include port line cards, breakout cables, aggregation cards, transceivers, chassis shelves, DDOS appliances, distribution switches, firewalls, patch panels, servers, batteries, rectifier systems, generators, mounting hardware, and other various building upgrades. Data Centers and POPs are available to collocate with established county-owned buildings and would therefore not require the purchase of new facilities. A passive infrastructure model would be the most cost-effective way for the county to include these locations.

Similar to the data center and POP location considerations, the same thoughts need to apply to that of towers for fixed wireless solutions as well. It is not the preferred method for supplying residential internet in Cameron County, but additional information should be considered. Whether the plan is to collocate on existing towers or propose new towers, different factors apply to either situation. When considering the collocation process for towers, it can be roughly assumed that collocation itself will range from \$30-75k per tower. The price is determined by the number of antennas or radios currently installed on the tower as well as what would be on the ground.

For ground equipment, factors that can impact pricing would be determining the number of cabinets required does there need to be a generator installed, what is the current situation of sending power to the tower from the local energy provider, the ease of access at the tower, and more. If proposing a new tower is a viable option, then costs for this situation will vary based on the height of the tower with costs ranging from \$100-200k per tower should be expected. For adequate consideration of locations, the ground conditions for foundations, tower ancillaries, and ground equipment are required. If the tower height needs to be higher than anticipated then the amount and types of equipment will need to be updated to reflect those changes which will also impact costs.

Furthermore, outside of material and labor costs, additional considerations for towers will include various regulatory requirements. Each tower proposed will need several environmental studies completed that range from geotechnical soil analysis, to bird flight path migratory patterns, and even protected wetland or tribal area evaluation. The FCC has regulatory compliance documents that will need to be completed which include NEPA, SHPO, Tribal, 1A/2C, and more. All of these considerations, and more, can be further detailed in supplementary developments.

11 FUNDING ANALYSIS

Federal sources state that 30 million Americans do not have access to at least minimally acceptable internet speeds and according to the Economic Co-operation and Development (OECD), among 35 countries studied, the United States has the second highest broadband costs. Recognizing these facts, Congress, through the Bipartisan Infrastructure Deal identified broadband as a high priority from the initial drafting of the Infrastructure Investment and Jobs Act (IIJA). The final bill allocated \$65 billion (out of \$1.2 trillion) to several federal agencies with the goal of ensuring every American has access to reliable high-speed internet.¹¹

To achieve this goal, 4 key initiatives were identified:

1. Deploy future-proof connectivity to all Americans.
2. Provide broadband subsidies for low-income users.
3. Provide funding to accelerate the Country's progress toward addressing both broadband access and adoption challenges.
4. Provide funding to address digital literacy and digital equity.

11.1 State Broadband Development Office

One of the key components of the IIJA was the decision to place a majority of the funding in the Broadband Equity, Access and Deployment program (BEAD), with the responsibility for administering these funds falling to each state government and US territories' representatives. Each entity is required to develop a state-wide plan for how they will administer the funds to new infrastructure projects at the local level and in order to do so, had to establish a State Broadband Deployment Office (BDO). Some states already had offices overseeing broadband policy and deployment while others have had to form one at the direction of the funding guidelines. In Texas, the State BDO is overseen by the Comptroller of Public Accounts office.¹² The Texas BDO office's mission is to:

- Create an accurate broadband map of eligible vs. ineligible areas for financial assistance. The map will have a challenging process to dispute any perceived inaccuracies.
- Establish a long-term, statewide plan that addresses strategies and goals for expanding access to and further adoption of broadband service.
- Award grants or other financial instruments to meet the goals of the plan.
- Set the effective threshold speed for broadband service (25 Mbps download/3 Mbps upload).
- Engage in outreach to communities regarding the expansion.
- Address barriers for future expansion efforts.

As a part of the BDO's mission to create a statewide plan, the Comptroller held 12 regional listening tours in communities across Texas to gain insights about internet access and collect input for the plan.¹³ The BDO office produced a Toolkit to assist local communities, service providers, and stakeholders with information and resources to identify community needs and gaps, develop effective leadership strategies for implementation, and analyze funding opportunities.¹⁴

Section Highlights

- \$65 BILLION IN FUNDING ALLOCATED FOR BROADBAND CONNECTIVITY PROGRAMS
- LEVERAGING THESE FUNDING SOURCES WITH PRIVATE/LOCAL MATCH THROUGH PPP WILL INCREASE OVERALL IMPACT
- CAMERON COUNTY HOUSEHOLDS SHOULD GO TO [GETINTERNET.GOV](https://www.getinternet.gov) TO SEE IF THEY QUALIFY AND APPLY FOR THE AFFORDABLE CONNECTIVITY PROGRAM

¹¹ Fact Sheet: The Bipartisan Infrastructure Deal | The White House. The White House. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/06/fact-sheet-the-bipartisan-infrastructure-deal/>. Published 2022. Accessed June 1, 2022.

¹² Mission. Comptroller.texas.gov. <https://comptroller.texas.gov/programs/broadband/leadership/%23mission>. Published 2022. Accessed June 1, 2022.

¹³ Texas Broadband Listening Tour. Comptroller.texas.gov. <https://comptroller.texas.gov/programs/broadband/communities/tour.php>. Published 2022. Accessed June 1, 2022.

¹⁴ Texas Broadband Development Office. Comptroller.texas.gov. <https://comptroller.texas.gov/programs/broadband/toolkit/>. Published 2022. Accessed June 1, 2022.

The Texas BDO developed the following chart to display the current known funding allocations to Texas for broadband initiatives. The \$100 million per state listed under BEAD includes an initial \$5 million in planning funds for each state to develop its five-year plan. As the State develops the plan, the information gathered and analyzed as a part of this study will be presented to the Texas BDO for review and inclusion in the state planning efforts where applicable.

The \$500.5 million listed under American Rescue Plan Act - Coronavirus Capital Projects Fund, is the fund which will include the newly approved Bringing Online Opportunities to Texans (BOOT) program. The BDO was recently approved to allocate \$363.8 million of these funds through a competitive grant program designed to fund last mile broadband infrastructure projects throughout the state. The BDO states that the program will prioritize projects that serve historically socio-economically disadvantaged communities who are deemed eligible by the State BDO's Broadband maps.

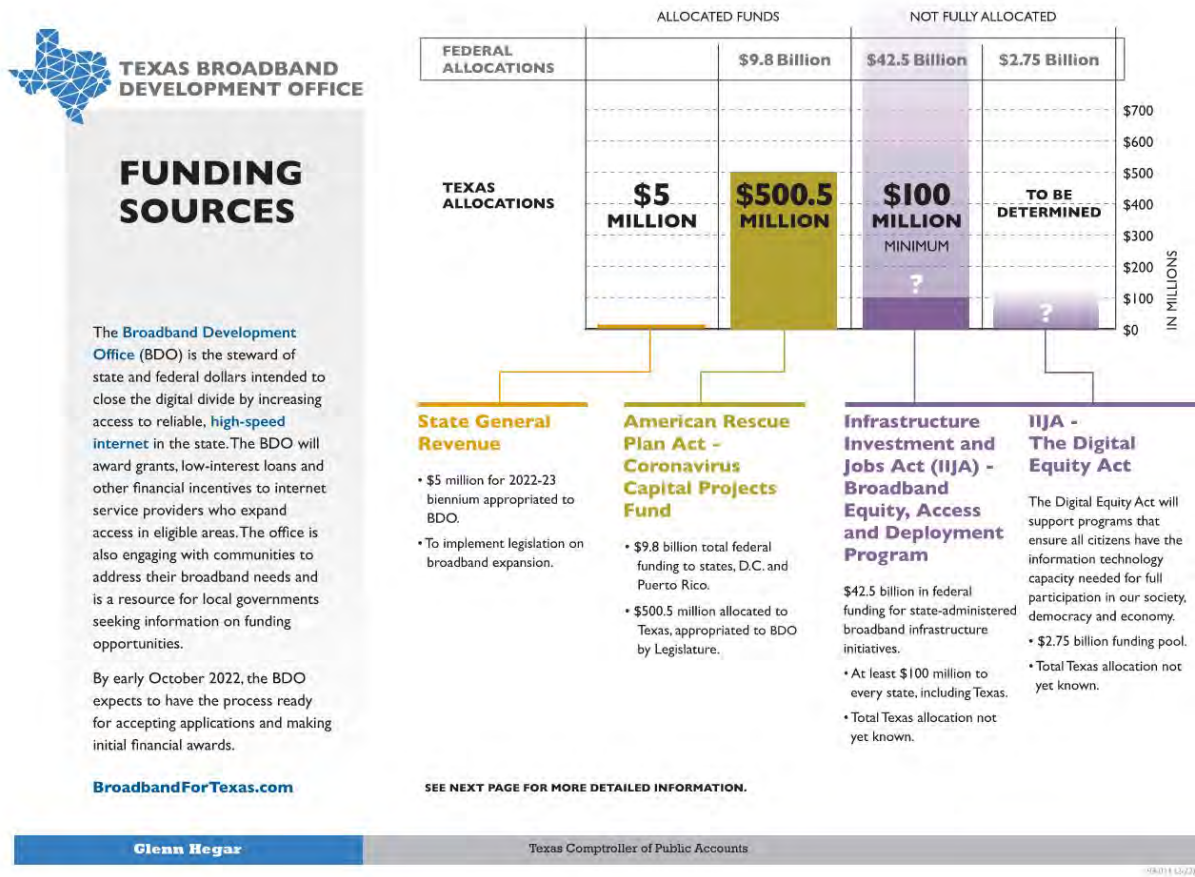


Figure 22: Breakdown of IIJA Funding to Texas BDO

11.1.1 Affordable Connectivity Program

Under the terms of the Affordable Connectivity Program (ACP), an eligible household that signs up for the program will receive a discount of up to \$30/month on any internet service plan a participating provider offers. The ACP is the largest high-speed internet affordability program in our nation's history.

Under the terms of the ACP, an eligible household that signs up for the program will receive a discount of up to \$30/month on any internet service plan a participating provider offers. It is estimated that 48 million households—or nearly 40% of households in the country—qualify for the ACP based on the following eligibility criteria:

- Supplemental Nutrition Assistance Program (SNAP), formerly known as Food Stamps
- Medicaid
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Supplemental Security Income (SSI)
- Federal Public Housing Assistance (FPHA)
- Veterans Pension and Survivors Benefit
- Free and Reduced-Price School Lunch Program or School Breakfast Program, including at U.S. Department of Agriculture (USDA) Community Eligibility Provision schools
- Federal Pell Grant (received in the current award year)
- Lifeline
- Certain Tribal assistance programs, including Bureau of Indian Affairs General Assistance, Head Start (only households meeting the income qualifying standard), Tribal Temporary Assistance for Needy Families (Tribal TANF), and Food Distribution Program on Indian Reservations
- Meets the eligibility criteria for a participating broadband provider's existing low-income internet program.

11.2 Key Programs for Cameron County Consideration

Three key programs for Cameron County to consider being an applicant or partner on applying include the following programs. There are various factors for consideration, including match requirements, levels of service, partnership agreements and other factors, that would impact which funding source(s) should be applied to and leveraged collectively to try and bring as much funding to the County as possible.

Table 18: Funding Opportunities

Grant Program	Funding Agency	Description	Timeline	Total Allocation
Bringing Online Opportunity to Texans (BOOT) Program- Capital Projects Fund ¹⁵	U.S. Department of Treasury- American Rescue Plan Act (ARPA)	The program is designed to provide internet service with speeds of 100/100 mbps to households and businesses that are deemed eligible (in eligible areas that have 80% Unserved)	Spring 2023	\$363.8 million
Digital Equity Capacity Grant Program	National Telecommunications and Information Administration (NTIA)	States to implement plans and promote digital inclusion; additionally, the program funds an annual grant program for five years.	Fall 2023	BDO was awarded \$3.1 million to develop the State Digital Equity Plan
Broadband Equity, Access, And Deployment (BEAD) Program ¹⁶	National Telecommunications and Information Administration (NTIA)	Through state allocation and planning, this program intends to expand high-speed internet access by funding planning, infrastructure deployment and adoption programs.	Fall 2023	\$42.5 Billion (\$100 million initial to Texas)

¹⁵ Capital Projects Fund. U.S. DEPARTMENT OF THE TREASURY. <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/capital-projects-fund#:~:text=The%20American%20Rescue%20Plan%20provides,to%20the%20public%20health%20emergency>. Published 2022. Accessed June 1, 2022.

¹⁶ Broadband Equity, Access, and Deployment (BEAD) Program | Internet for All. Internetforall.gov. <https://www.internetforall.gov/program/broadband-equity-access-and-deployment-bead-program>. Published 2022. Accessed June 1, 2022.

12 SUMMARY

The need for modernized and resilient broadband networks has been highlighted in recent weather and health events, such as the Winter storm Uri and the Coronavirus Pandemic, respectively, which have demonstrated a clear societal dependency on communication networks for response, communal interaction, and access to telehealth. Broadband network access and connectivity should be viewed as a commodity in improving the overall quality of life. Given the varying accessibility and rates of adoption of broadband networks around the country, there are now historic-level funding opportunities from the Federal, State, and Local levels to achieve digital equity. Cameron County should be a valid and competitive applicant for this funding in the Capital Projects Fund, Broadband Equity, access and Deployment (BEAD) Program, and the Digital Equity (DE) Program.

Cameron County can be impacted both immediately and over time by the advantages that will result from investment in this critical infrastructure. The building, operation, and maintenance of the network expansion will create immediate job opportunities within the market. There will also be increased potential for enhanced economic development as a result of greater access to and dependability of high-speed internet. The County's investment in this infrastructure is essential to Cameron County's ability to expand its digital transformation footprint, foster countywide growth, and ensure residents and constituents have the fundamental access they need to improve their quality of life.

APPENDIX

13 APPENDIX 1 - ACRONYMS

ACRONYM	MEANING
ACP	Affordable Connectivity Program
ADSL	Asymmetric Digital Subscriber Line
AMR	Automatic Meter Reading System
BOM	Bill Of Materials
BDC	Broadband Data Collection
BDO	Broadband Deployment Office
BEAD	Broadband Equity, Access, And Deployment
BOT	Build Operate Transfer
CBRS	Citizens Broadband Radio Service
CRA	Community Reinvestment Act
CAF	Connect America Funds
COG	Council Of Governments
DDoS	Distributed Denial-Of-Service
OECD	Economic Co-Operation And Development
ESC	Education Service Center
EBB	Emergency Broadband Benefit Program
EMS	Emergency Medical Services
EOC	Emergency Operations Centers
FCC	Federal Communications Commission
FPHA	Federal Public Housing Assistance
FTTH	Fiber To The Home
FTTP	Fiber To The Premise
GLO	General Land Office
GIS	Geographic Information Systems
Gb	Gigabit
GPON	Gigabit Passive Optical Networks
Gbps	Gigabits Per Second
GDP	Gross Domestic Product
HDPE	High-Density Polyethylene
HLD	High-Level Design
ISD	Independent School District
IT	Information And Technology
IJJA	Infrastructure Investment And Jobs Act
ISP	Inside Plant Implementation
ISP	Internet Service Providers
KMZ	Keyhole Markup Language
LEA	Local Education Agency
LTE	Long-Term Evolution
LMI	Low- And Moderate-Income

MGI	Mckinsey Global Institute
Mb	Megabit
Mbps	Megabits Per Second
MPLS	Multi-Protocol Label Switching
NTIA	National Telecommunications And Information Administration
NG911	Next Generation 911
OSS/BSS	Operations And Business Support Systems
OOM	Order Of Magnitude
OSP	Outside Plant Implementation
POP	Points Of Presence
PALs	Priority Access Licenses
PWI	Public Welfare Investments
PPP	Public-Private Partnerships
PSAP	Public-Safety Answering Point
QoS	Quality Of Service
RFI	Request For Information
RFP	Request For Proposals
RFQ	Request For Qualifications
ROI	Return On Investment
ROW	Right Of Way
RDOF	Rural Digital Opportunity Fund
SHR	Self-Healing Ring
SNAP	Supplemental Nutrition Assistance Program
SSI	Supplemental Security Income
TxDOT	Texas Department Of Transportation
Tribal TANF	Tribal Temporary Assistance For Needy Families
USDA	United States Department Of Agriculture
USAC	Universal Service Administrative Company
UAR	Utility Accommodation Rules
VPN	Virtual Private Network
WISP	Wireless Internet Service Providers
WIC	Women, Infants, And Children

14 APPENDIX 2 - GLOSSARY OF TERMS

(Sourced from Broadband.Money¹⁷ and NTIA¹⁸)

0-9	
3G	The term for the 3rd generation wireless telecommunications standards usually with network speeds of less than 1 Mbps
4G	The term for 4th generation wireless telecommunications standards usually with network speeds greater than 1 Mbps.
5G	The term for emerging 5th generation wireless telecommunications standards usually associated with network speeds of up to 1 Gbps or more
63-20 Financing	In Revenue Ruling 63-20 the IRS ruled that, in certain circumstances, bonds issued by a nonprofit corporation (the "Nonprofit") will be considered issued on behalf of a Governmental Unit – thus allowing the interest on such bonds to be eligible for tax-exempt treatment. A 63-20 financing may help avoid certain political and legal hurdles that otherwise might be present if the Governmental Unit were to issue the bonds directly.
A	
Aerial Installation	A type of fiber optic cable that is usually used for outside installation on poles. Due to its installation environment, the design of aerial fiber optic cable must consider how to protect it from destruction by nature or man-made damage.
Affidavit	A written declaration or statement that is sworn or affirmed before a person who has authority to administer an oath. Affidavits verify the legitimacy of a claim and are used in conjunction with witness statements or other related evidence in a dispute or a criminal matter. The person who signs the affidavit must be personally aware of the facts contained within, and he or she must swear that the affidavit is 100% true.
Affordable Connectivity Program (ACP)	Under the Infrastructure Investment and Jobs Act, the previous Emergency Broadband Benefit Program has been renamed the Affordable Connectivity Program. Although the program's benefit has been lowered from \$50/month to \$30/month, the definitions and operative terms of the program remain intact. Under those definitions, an Affordable Connectivity offer is one that is affordable for four-person household that includes two dependents under age 18 and has an income 136% of poverty line. IJJA Section 60502, "Broadband Affordability". For white-labeled, turnkey ACP automation, please contact Ready.
Asymmetric	When the upload and download speeds do not match. A rate of 10 Mbps down/1 Mbps up would be asymmetric.
Asymmetrical Digital Subscriber Line (ADSL)	A form of Internet service communications technology that delivers constantly accessible data transmissions over copper telephone lines. ADSL is a common brand of DSL and has download speeds between 2 and 6 Mbps and upload speeds reaching 512 Kbps.

¹⁷ Glossary of Broadband Grant Terms. Broadband.money. <https://broadband.money/broadband-grant-terms>. Published 2022. Accessed June 1, 2022.

¹⁸ Broadband Glossary. Broadbandusa.ntia.doc.gov. https://broadbandusa.ntia.doc.gov/sites/default/files/publication-pdfs/bbuser_broadband_glossary.pdf. Published 2022. Accessed June 1, 2022.

Asynchronous Transfer Mode (ATM)	A transmission method where information is re-structured into cells. It is asynchronous due to the fact that the recurrence of cells from an individual user is not necessarily periodic.
Attestation	The process for scrutinizing the authenticity of a document by corroborating every detail given on it and then manifesting it authentic with the sign and stamp of verifying personnel on it.
Average Revenue Per User (ARPU)	The term is used by companies that offer subscription services to clients. It is a measure of the revenue generated by one subscriber per unit time, typically per year or month. It is a particularly useful measurement for companies in the telecommunications industry, which relies on subscribers or users.
B	
BEAD Timelines	Eligible entities decide whether to participate in the BEAD program, which will provide ~\$42B for infrastructure planning and implementation. If they choose to, they need to submit a letter of intent to NTIA by the deadline. To read in more details about the multitude of deadlines for the BEAD program, as well as any newly established deadlines from the National Telecommunications and Information Administration themselves, refer to our Timeline of Key Milestones and Grant Application Deadlines.
Backbone	The Internet is really a network of networks, and the large trunk lines that connect them are referred to as the "backbone." It can also be thought of as being like the highway system: the interstate highways are the backbones that connect regions that have highway networks of their own.
Bandwidth	In the world of Internet service, bandwidth has come to mean the speed of Internet service, measured in bits per second. Not to be confused with bandwidth referring to a range of radio wave frequencies, which may be used in more technical discussions about how data is transferred.
Bank Loan	An amount of money loaned at interest by a bank to a borrower, usually on collateral security, for a certain period of time.
Bit	A bit is the basic unit of information in computing. The name comes from "binary digit," and each bit has one value, either 1 or 0, or on and off. It usually takes eight bits to represent one character of text; a group of eight bits makes a byte. Data file sizes are measured in bytes while data speed is measured in bits.
Broadband	Shorthand term for any high-speed Internet access that is faster than dial-up and, unlike dial-up, is always on. Over the years, as what we use the Internet for has demanded a larger capacity for moving data, different entities have set speed definitions for broadband, implying that an Internet-access service shouldn't be called "broadband" or "high-speed" unless it meets a certain speed level.
Broadband Deployment Accuracy And Technological Availability (DATA) Act	Passed on March 10, 2020, just prior to the significant shutdown occasioned by the coronavirus pandemic, the Broadband Deployment Accuracy and Technological Availability (DATA) Act established new guidelines and rules for the Federal Communications Commission's production of broadband availability and deployment maps. The rules effectively require an address-by-address inventory of broadband. These requirements are codified at 47 U.S.C. Section 642.
Broadband Deployment Accuracy And Technological Availability (DATA) Act Maps	Under the Infrastructure Investment and Jobs Act, funding eligibility for areas that are "Unserved" and "Underserved" will be determined by

	reference to the Broadband DATA Maps created under the Broadband DATA Act. IIJA, Section 60103.
Broadband Equity, Access And Deployment Program (BEAD) Program	A \$42.45B formula grant program directed towards states and territories with the objective of closing the availability gap, as Congress finds that "access to affordable, reliable, high-speed broadband is essential to full participation in modern life in the United States."
Broadband Initiatives Program (BIP)	The Broadband Infrastructure Program is a \$288 million broadband deployment program directed to partnerships between a state, or one or more political subdivisions of a state, and providers of fixed broadband service to support broadband infrastructure deployment to areas lacking broadband, especially rural areas.
Broadband Technology Opportunities Program (BTOP)	The Broadband Technology Opportunities Program (BTOP) is an approximately \$4 billion grant program administered by NTIA to help bridge the technological divide; create jobs; and improve education, health care, and public safety in communities across the country. Funded by the American Recovery and Reinvestment Act of 2009, BTOP projects are deploying broadband Internet infrastructure, enhancing and expanding public computer centers, and encouraging the sustainable adoption of broadband service.
Buried Fiber Deployment	Buried fiber deployments are buried below the layer where the soil freezes so they are immune to wind and ice damage. This means that underground deployments are often more reliable than aerial routes, especially where poor weather is common.
Burstable	Authorizes a connection to exceed its specified speed, normally up to a set maximum capacity for a period of time.
Burst Speed	A method which momentarily allots additional bandwidth to consumer's services for short periods of time.
Byte	A unit of digital information that most commonly consists of eight bits. Historically, the byte was the number of bits used to encode a single character of text in a computer and for this reason it is the smallest addressable unit of memory in many computer architectures.
C	
Cable	A category of broadband Internet access that uses the infrastructure of cable TV network to provide Internet services. Cable Internet provides connectivity from the Internet service provider (ISP) to the end users in a similar manner as digital subscriber line (DSL) and fiber-to-the-home (FTTH).
Capital Expenditures (Capex)	A category of broadband Internet access that uses the infrastructure of cable TV network to provide Internet services. Cable Internet provides connectivity from the Internet service provider (ISP) to the end users in a similar manner as digital subscriber line (DSL) and fiber-to-the-home (FTTH).
Capital Structure	Also Known As: Capital Structure - The structure of all capital that is invested into a company. At a high level, this means that the capital stack includes both the equity and the debt invested to date. More specifically, though, this means all types of both equity and debt. That means both common and preferred equity, and both junior and senior debt. These categories can be further split. You can have different types of preferred equity, for example.

<p>Census Block</p>	<p>The smallest geographic area for which the Bureau of the Census collects and tabulates decennial census data. Generally small in area. In a city, a census block looks like a city block bounded on all sides by streets. Census blocks in suburban and rural areas may be large, irregular, and bounded by a variety of features, such as roads, streams, and transmission lines. In remote areas, census blocks may encompass hundreds of square miles. Census blocks are grouped into block groups, which are grouped into census tracts.</p>
<p>Challenge Process</p>	<p>The process of grant applicants engaging communities they intend to serve, and the right of refusal held by communities for broadband grant applications.</p> <p>Each Eligible Entity shall develop and describe in the Initial Proposal, a transparent, evidence-based, fair, and expeditious challenge process under which a unit of local government, nonprofit organization, or broadband service provider can challenge a determination made by the Eligible Entity in the Initial Proposal as to whether a particular location or community anchor institution within the jurisdiction of the Eligible Entity is eligible for grant funds.</p>
<p>Churn</p>	<p>Churn rate, sometimes known as attrition rate, is the rate at which customers stop doing business with a company over a given period of time. Churn may also apply to the number of subscribers who cancel or don't renew a subscription. The higher your churn rate, the more customers stop buying from your business.</p>
<p>Coax</p>	<p>A type of cable used to transmit data, the internet, video and voice communications. A coax cable is made up of an aluminum and copper shield with an outer plastic jacket with the dielectric insulator helping to minimize signal loss.</p>
<p>Common Equity</p>	<p>The amount that all common shareholders have invested in a company. Most importantly, this includes the value of the common shares themselves. However, it also includes retained earnings and additional paid-in capital.</p>
<p>Communications Act Of 1934</p>	<p>Signed into law by Franklin D. Roosevelt, the Communications Act of 1934 created a unified regulatory system for communications. Among other things, it created the Federal Communications Commission, which replaced the Federal Radio Commission, and took over the regulation of interstate telephone services from the Interstate Commerce Commission. The central principle of the act was that a comprehensive nationwide communications system "with adequate facilities at reasonable charges" was good for the country.</p>
<p>Community Anchor Institution (CAI)</p>	<p>An entity such as a school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community support organization that facilitates greater use of broadband service by vulnerable populations, including, but not limited to, low-income individuals, unemployed individuals, children, the incarcerated, and aged individuals.</p>
<p>Conduit Financing</p>	<p>A means for private companies, nonprofit organizations (NPO), and public entities to raise capital via tax-exempt municipal bonds to fund large-scale projects that typically benefit the general public. Such projects can include</p>

	hospitals, airports, industrial and housing projects, public facilities, and schools.
Connect America Fund (CAF)	The Connect America Fund was unveiled in 2011 as part of the Universal Service Fund, redesigned to help fund Internet infrastructure in the nation's high-cost areas. CAF put a new emphasis on Internet service.
Connecting Minority Communities Pilot Program (CMC) Pilot Program	The Connecting Minority Communities Pilot Program is a \$268 million NTIA grant program to Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and Minority-Serving Institutions (MSIs) for the purchase of broadband internet access service and eligible equipment or to hire and train information technology personnel. The CMC grant program was established by the Consolidated Appropriations Act of 2021 to support MSIs and their surrounding communities.
Consolidated Appropriations Act Of 2021	The Consolidated Appropriations Act of 2021 created the \$980 million program to provide grants to expand regular and remote broadband access and adoption by Tribal entities, the \$268 million Connecting Minority Communities Pilot Program, and the Emergency Broadband Benefit.
Content Provider	A website or organization that handles the distribution of online content such as blogs, videos, music or files.
Co-Op	Also Known As: Co-Op - An autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned enterprise. Cooperatives are democratically owned by their members, with each member having one vote in electing the board of directors.
Customer Premises Equipment (CPE)	Refers to any piece of connected equipment that is used for accessing the Internet or generally accessing services on a provider network, whether directly or indirectly connected to that network. CPE can be provided by the telecommunications provider, such as a cable operator, telephone company or satellite provider. These companies either rent this equipment to the customer, provide it at no charge as part of the service, or allow a customer to purchase and provide their own equipment.
D	
Dark Fiber	Fiber that is in place but not being used for broadband services. ("non-lit" fiber, also see "Lit Fiber").
Data Packet	Data is sent over the Internet as packets. One file is divided into many packets when it is sent, then reassembled into one file again at its destination. Using packets allows data to travel much faster since the individual packets are smaller than the original file and can travel separately over different routes before reassembling.
Debt	Debt is an obligation that requires one party, the debtor, to pay money or other agreed-upon value to another party, the creditor. Debt is a deferred payment, or series of payments, which differentiates it from an immediate purchase.
Debt/EBITDA	A ratio measuring the amount of income generated and available to pay down debt before covering interest, taxes, depreciation, and amortization expenses. Debt/EBITDA measures a company's ability to pay off its incurred debt.

Demand Point Passed (DPP)	Total number of active and potential subscribers that an ISP's network could service.
Digital Divide	The Digital Divide, or Digital Canyon, is the gap between people who have access to affordable, reliable Internet service (and the skills and gadgets necessary to take advantage of that access) and those who lack it.
Digital Equity	Recognizes that digital access and skills are now required for full participation in many aspects of society and the economy. Digital Equity links Digital Inclusion to social justice and highlights that a lack of access and/or skills can further isolate individuals and communities from a broad range of opportunities.
Digital Inclusion	Implies that individuals and communities have access to robust broadband connections; Internet enabled devices that meet their needs; and the skills to explore, create and collaborate in the digital world.
Digital Literacy	The ability to leverage current technologies, such as smartphones and laptops, and Internet access to perform research, create content and interact with the world.
Digital Skills	Any skills related to operating digital devices or taking advantage of digital resources.
Digital Subscriber Line (DSL)	A group of technologies used to transmit data over telephone lines. DSL made high-speed Internet access possible for ordinary consumers without having to do a great deal of rewiring. "ADSL" stands for asymmetric digital subscriber line, meaning the data travels downstream and upstream at different rates.
Data Over Cable System Interface Specification (DOCSIS)	The international telecommunications standard for cable signaling data and spectrum sharing.
E	
Earnings Before Interest Taxes Depreciation And Amortization (EBITDA)	A company or project's earnings before interest, taxes, depreciation, and amortization is a measure of a company's profitability of the operating business only, thus before any effects of indebtedness, state-mandated payments, and costs required to maintain its asset base.
Economic Development Incentive	An array of benefits designed to promote new business activity or to encourage business or job retention. These benefits principally encompass tax and economic incentives provided by federal, state, or local governmental bodies. Other entities, such as utilities and non-profits, can also make incentives available for these purposes. They accord the recipient, in some manner, a monetary benefit (i.e., tax incentives) or an in-kind benefit (e.g., state regulatory releases of environmental liability, municipal/county infrastructure improvements).
Eligible Community Anchor Institution	A Community Anchor Institution that lacks access to gigabit-level broadband service. IIJA, Section 60102.
Eligible Entity	Under the Infrastructure, Investment and Jobs Act, an "eligible entity" is a state, a territory, the District of Columbia, or an eligible Tribal entity. IIJA, Section 60102.
Enterprise Value (EV)	A measure of a company's total value. It is a combination of the value of common stock, preferred stock, cash, and debt. Determining the value of public companies is much easier than private companies which don't make their financials available to the public. You can use the comparable company analysis approach, which involves looking for similar public companies. Using findings from a private company's closest public

	competitors, you can determine its value by using the EBITDA or enterprise value multiple.
Equity	The value that would be returned to a company's shareholders if all of the assets were liquidated and all of the company's debts were paid off. Equity financing involves selling a stake in your company or project in return for a cash investment. Unlike a loan, equity finance doesn't carry a repayment obligation. Instead, investors buy shares in the company in order to make money through dividends (a share of the profits) or by eventually selling their shares.
F	
FCC Registration Number (FRN)	The FCC Registration Number (FRN) is a 10-digit unique identifying number that is assigned to entities doing business with the Federal Communications Commission. The FRN is obtained through the Commission Registration System (CORES).
Feasibility Study	An analysis that considers all of a project's relevant factors—including economic, technical, legal, and scheduling considerations—to ascertain the likelihood of completing the project successfully.
Federal Communications Commission (FCC)	The FCC was created by the Communications Act of 1934 and today regulates "interstate communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia and U.S. territories."
Fiber	A fiber optic cable is made up of bundles of hair-thin strands of very pure glass or plastic. Data passes over them in the form of light pulses created by lasers. Because of the purity of the glass or plastic, data can travel much farther and faster on fiber than on copper wires with much less loss of data.
Fiber-To-The-Curb (FTTC)	The installation and use of optical fiber cable directly to curbs near homes or businesses. Coaxial cable or another medium carries signals the short distance from the curb to the home or business. As such, this system is inexpensive to employ. The basic idea of fiber to curb technology is that suitable wires can carry high-speed signals at short distances. The twisted wire pairs or coaxial cables have acceptable bandwidth loss while sending signals only a few hundred feet. Also known as integrated fiber in the loop (IFITL).
Fiber-To-The-Home (FTTH)	Equipment used in fiber access deployments where fibers extend all the way to the end-user premises and the equipment is designed and optimized for use in residential applications.
Fiber-To-The-Node (FTTN)	Equipment used in fiber access deployments where fibers extend to the network connection point/box/node in a neighborhood and no farther.
Fiber-To-The-Premises (FTTP)	The installation and use of optical fiber from a central point directly to individual buildings such as residences, apartment buildings and businesses to provide high-speed internet access.
Fixed Wireless Broadband Access	The use of wireless devices/systems in connecting two fixed locations, such as offices or homes. The connections occur through the air, rather than through fiber, resulting in a less expensive alternative to a fiber connection.
Formula Grant	A United States federal grant specifying a precise formula in the legislation creating the program. Formula grants include quantifiable elements, such as population, amount of tax effort, proportion of

	population unemployed or below poverty level, density of housing, or rate of infant mortality.
G	
General Obligation (GO) Bond	A municipal bond backed solely by the credit and taxing power of the issuing jurisdiction rather than the revenue from a given project. General obligation bonds are issued with the belief that a County will be able to repay its debt obligation through taxation or revenue from projects. No assets are used as collateral.
Grant Adjusted Yield On Cost (YOC)	The percentage an unlevered broadband project pays out per year in EBITDA based on the initial cost of the project but the grant is subtracted from total project cost.
Grant Anticipation Note (GAN)	Short-term municipal financing issued in anticipation of receiving a grant from the federal government or one of its agencies.
Gross Profit Margin	<p>Is net sales less the cost of goods sold (COGS). In other words, it's the amount of money a company retains after incurring the direct costs associated with producing the goods it sells and the services it provides. The higher the gross margin, the more capital a company retains, which it can then use to pay other costs or satisfy debt obligations. Companies use gross margin, gross profit, and gross profit margin to measure how their production costs relate to their revenues. For example, if a company's gross margin is falling, it may strive to slash labor costs or source cheaper suppliers of materials.</p> <p>Alternatively, it may decide to increase prices, as a revenue-increasing measure. Gross profit margins can also be used to measure company efficiency or to compare two companies of different market capitalizations.</p>
Guaranteed Bank Loan	A guaranteed loan is backed by a third party, and if the borrower defaults, the third party repays the loan.
H	
High Cost Area	<p>A "high-cost area" is an Unserved area in which the head of the National Telecommunications and Information Administration determines that the cost of deploying broadband service is higher than the average cost of deploying broadband service to other Unserved areas. The head of NTIA has flexibility in making the determination, also considering:</p> <ul style="list-style-type: none"> -the remote location of the area -the population density of the area -the unique topography of the area -a high rate of poverty <p>-any other factor that contributes to the cost of deploying broadband service</p> <p>IIJA, Section 60102.</p>
I	
Incumbent And Competitive Local Exchange Carriers (ILEC)	Before the Telecommunications Act of 1996, telephone companies operated as legal monopolies in defined territories of service, called exchanges. After the 1996 act and its emphasis on competition, these carriers became incumbent local exchange carriers in their operating territories. At the same time competing local exchange carriers were

	allowed to enter any territory, build their own infrastructure, and offer services.
Indefeasible Right Of Use (IRU)	The effective long-term lease (temporary ownership) of a portion of the capacity of an international cable. IRUs are specified in terms of a certain number of channels of a given bandwidth. IRU is granted by the company or consortium of companies that built the (usually optical fiber) cable. Some IRU legal agreements forbid resale of the capacity ownership. For at least one major international cable owner, an IRU ownership period is granted for 25 years. An IRU gives a large-scale Internet service provider (ISP) the ability to assure its own customers of international service on a long-term basis.
Industrial Development Bond (IRB)	Municipal debt securities issued by a government agency on behalf of a private sector company and intended to build or acquire factories or other heavy equipment and tools.
Infrastructure Investment & Jobs Act	Passed by the Senate on August 10, 2021, by the House of Representatives on November 5, 2021, and is expected to be signed into law by President Joe Biden on November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA) is a landmark bipartisan bill providing \$65 billion in funding for broadband infrastructure and deployment.
Inside Plant (ISP)	All cabling and equipment installed in a telecommunications facility.
Interconnection	The linking of numerous telecommunications networks to exchange user traffic.
Internet Protocol	The computer language that allows all the above-mentioned technologies to speak to each other. Before the invention of Internet protocol (IP), telephone networks could only transfer data on other telephone networks, cable networks on other cable networks and so on. IP makes the transfer of data technology-neutral, allowing networks everywhere to transfer data anywhere.
Internet Service Provider (ISP)	An organization that provides services for accessing, using, or participating in the Internet. Internet service providers can be organized in various forms, such as commercial, community-owned, non-profit, or otherwise privately owned.
L	
Last-Mile	The term that describes the last link connecting the provider's network to the customer's premises, either a house or a business. The last-mile is the most expensive part of the network to build or upgrade because of the number of units involved. One fiber cable may be trenched down a street, but there may be twenty houses on the street that need to be connected. Upgrading the copper cable connection between each house and the fiber in the street would be the last-mile. This last link can also be the reason customers often don't receive the level of Internet speed advertised by their provider. Since data travels more slowly on copper compared to fiber, when the data hits the copper, it slows down.
Latency/ Ping	The reaction time of your connection. How quickly your device gets a response after you've sent out a request. A low latency (fast ping) means a more responsive connection. Latency is measured in milliseconds (ms).

Letter Of Credit (LOC)	A letter from a bank guaranteeing that a buyer's payment to a seller will be received on time and for the correct amount. In the event that the buyer is unable to make a payment on the purchase, the bank will be required to cover the full or remaining amount of the purchase.
Limited-Tax General Obligation Pledge	Asks the issuing local government to raise property taxes if necessary to meet existing debt service obligations. However, this increase is bound by a statutory limit. With limited-tax general obligation pledges, governments can still use a part of already-levied property taxes, use another stream of income, or raise property taxes to an amount equating to existing debt service payments to answer its debt obligations.
Lit Fiber	An active fiber optic cable capable of transmitting data.
Loan	A type of credit vehicle in which a sum of money is lent to another party in exchange for future repayment of the value or principal amount. In many cases, the lender also adds interest and/or finance charges to the principal value which the borrower must repay in addition to the principal balance.
Local Area Network (LAN)	A group of network devices that are on a high-speed connection and typically within the same building or location.
Local Coordination	The process of grant applicants engaging communities they intend to serve, and the right of refusal among communities held by communities for broadband. Language in the local coordination component is going to drive community
Local Multipoint Distribution Service (LMDS)	A wireless broadband service that uses microwave signals to render communications service – voice, data, Internet – to customers within the Last Mile.
Low-Cost Broadband Service Option	Under the Infrastructure, Investment and Jobs Act, each state will submit to NTIA its own definition of a "low-cost broadband service option." Each state's definition shall apply to the award recipients that receive funds from the state in question. "Nothing in this title may be construed to authorize the Assistant Secretary or the National Telecommunications and Information Administration to regulate the rates charged for broadband service." IJJA Section 60102, subsection (h)(5)(D).
Long Term Evolution (LTE)	A 4G wireless broadband technology that provides speeds up to 100 Mbps download and 30 Mbps upload.
M	
Make Ready Work	Before an Internet Service Provider (or any company) can add a new attachment or line to a utility pole, the existing attachments may need to be moved around so that the pole can be made ready to handle a new attachment or line. This is known as 'Make Ready Work.' The reason Make Ready Work is necessary is that, under Federal Law, to prevent the risk of outages or other issues, lines on utility poles must be spaced a certain distance apart from each other based on how many lines are on the pole. Under federal guidelines, Make Ready Work must occur sequentially, meaning that attachments can only be moved in the order with which they were originally placed on the line. This process can create massive delays, as well as other large disruptions in high traffic areas, such as alongside major roadways. In addition, the make ready work can take months, or even years, to complete as every company involved must send out their own approved contractor to move only their respective

	<p>attachment. Each contractor must also schedule their work to not conflict with other contractors performing Make Ready Work, as well as taking into account other local factors, such as weather, traffic, and maintenance work (such as road paving). These factors must be considered as the United States primarily uses aerial work platforms to perform Make Ready Work.</p>
<p>Match Funding</p>	<p>The portion of the project or program costs that are not paid by the funding agency. If the award is federal, only non-federal expenses qualify as cost sharing. Most broadband grant programs require between 25% to 50% matching capital. Common private match capital sources include equity, debt, and forward-receivables purchases. For more information about match capital including capital providers, see the Match Capital channel.</p> <p>Notes - Sub-grantees are required to provide a contribution of at least 25% derived from non-Federal funds (or funds from a Federal regional commission or authority), except in high-cost areas. Waivers to match can be granted at the discretion of NTIA.</p> <p>Eligible Sources - While most applicants will get their match capital from their own balance sheet, or through a combination of equity and / or debt investors, the match may also be provided by the State, a unit of local government, a utility company, a cooperative, a nonprofit organization, a for-profit company, regional planning or governmental organization, a Federal regional commission or authority, or an combination thereof. May include in-kind contributions and may include funds that were provided to an Eligible Entity or sub-grantee under:</p> <ul style="list-style-type: none"> -Families First Coronavirus Response Act -The CARES Act -Consolidated Appropriations Act 2021 -The American Rescue Plan Act of 2021 -Any amendment made by an Act described above <p>For definition, Federal regional commission or authority means:</p> <ul style="list-style-type: none"> -Appalachian Regional Commission -Delta Regional Authority -Denali Commission -Northern Border Regional Commission
<p>Mezzanine Debt</p>	<p>Any subordinated debt or preferred equity instrument that represents a claim on a company's assets which is senior only to that of the common shares. Mezzanine financings can be structured either as debt or preferred stock. Mezzanine debt bridges the gap between debt and equity financing and is one of the highest-risk forms of debt—being subordinate to pure debt but senior to pure equity.</p>
<p>middle mile/ Backhaul</p>	<p>The section of the network that connects the last-mile portion of the network to the service provider's core network, where the services such as broadband, TV, and phone service originate from. More specifically, any broadband infrastructure that does not connect directly to an end-user location, including an anchor institution; and includes leased dark fiber, interoffice transport, backhaul, carrier-neutral internet exchange facilities, carrier-neutral submarine cable landing stations, undersea cables, transport connectivity to data centers, special access transport, and other similar services; and wired or private wireless broadband infrastructure,</p>

	including microwave capacity, radio tower access, and other services or infrastructure for a private wireless broadband network, such as towers, fiber, and microwave links.
Millimeter Wave	Millimeter waves are also known as extremely high frequency (EHF). It's a radio frequency that would allow transmission frequencies between 30 GHz and 300 GHz, compared to 5 GHz frequencies used by previous mobile devices. It also has wavelengths between 1 mm and 10 mm, compared to the several-dozen centimeter wavelengths possessed by smartphones' current radio waves. At this point in time, millimeter waves are only used by radar systems like satellites. But mobile network providers have already started utilizing EHF in various ways, making it a new and promising approach. There are two ways to increase the speed of wireless data transmission. The first is increasing spectrum utilization. The second is increasing the spectrum bandwidth, often seen as a more simple and direct approach. That is the approach that millimeter waves would provide for 5G to increase transmission speeds.
Mobile	Mobile wireless Internet, accessed via smartphones. Data is transferred between cell phone towers, which are connected to the service provider by fiber.
Multiple Dwelling Unit	Residential duplexes, triplexes, fourplexes, apartment buildings, condominiums, mobile home parks, trailer courts, or similar types of multiple dwelling unit arrangements on one parcel of land.
Municipal Bond	A debt security issued by a state, municipality, or county to finance its capital expenditures, including the construction of highways, bridges, or schools. They can be thought of as loans that investors make to local governments. Municipal bonds are often exempt from federal taxes and most state and local taxes (for residents), making them especially attractive to people in higher income tax brackets.
N	
National Telecommunications And Information Administration (NTIA)	The National Telecommunications and Information Administration is an agency of the U.S. Department of Commerce. The NTIA resides within the Executive Branch of the federal government, and is the president's principal advisor of telecommunications matters. By contrast, the Federal Communications Commission - the other agency with significant telecommunications- and broadband-related responsibilities - is an independent agency outside of the official purview of the White House. NTIA has existed since 1978 and has numerous communications responsibilities. It is the principal federal agency responsible for administering grants and funding under the Infrastructure Investment and Jobs Act.
Network Node	A connection point in a communications network. Each node is an endpoint for data transmissions or redistribution. Nodes have either a programmed or engineered capability to recognize, process and forward transmissions to other network nodes.
Nielsen's Law Of Internet Bandwidth	A high-end user's connection speed grows by 50% per year.

<p>Notice Of Funding Opportunities (NOFO)</p>	<p>Notice of Funding Opportunities (NOFO) describe the requirements under which a federal agency will award grants for funding as instructed by a specific law. In this case, it's the Infrastructure, Investment, and Jobs Act, Public Law 117-58, November 15th, 2021.</p> <p>The Infrastructure, Investment, and Jobs Act, provides new federal funding for the Assistant Secretary to make grants on a competitive basis for the deployment of broadband infrastructure. It also provides funding for middle mile projects, tribal broadband funding and digital inclusion and digital equity activities</p>
<p>O</p>	
<p>Open Access Network</p>	<p>Networks that offer wholesale access to network infrastructure or services provided on fair and reasonable terms with some degree of transparency and nondiscrimination.</p>
<p>Operating Margin (EBITDA Margin)</p>	<p>A measure of a company's operating profit as a percentage of its revenue. Knowing the EBITDA margin allows for a comparison of one company's real performance to others in its industry. EBITDA margin is calculated by dividing EBITDA by revenue.</p>
<p>Optical Line Terminal (OLT)</p>	<p>The device that serves as your ISP's endpoint of the passive optical network (PON). The OLT also provides the interface between a PON and your ISP's core network. Simply put, an OLT is ISP equipment. The OLT is the device that exists at your ISP's central hub. An OLT has a few purposes:</p> <ul style="list-style-type: none"> -Control the information flowing upstream and downstream. -Convert the standard signals used by fiber optic service to the frequency and framing used by a PON system. -Coordinate the multiple analog or digital signals that are combined into one signal (called multiplexing) that happens between the ONT conversion devices. <p>The upstream channel transmits different types of data and voice traffic from users to the ISP. The downstream channel is what receives data, voice and video traffic and sends it to all ONT devices on your network.</p>
<p>Optical Network Terminal (ONT)</p>	<p>The device that serves as the telecommunication chain's endpoint of the PON on your end. Another abbreviation to know is an ONU, which stands for Optical Network Unit. ONU and ONT are often used interchangeably. More or less, they are the same. Simply put, an ONT/ONU refer to the user side equipment.</p> <p>The ONT/ONU is the device that exists at your home or office. The ONT acts as an optical modem and communicates with your ISP through a fiber optical cable. The ONT sends user data upstream to the OLT and receives data on the downstream channel.</p> <p>ONT and OLT are essential devices in a PON network system.</p>
<p>Outside Plant (OSP)</p>	<p>In civilian telecommunications, outside plant refers to all of the physical cabling and supporting infrastructure (such as conduit, cabinets, tower or poles), and any associated hardware (such as repeaters) located between a demarcation point in a switching facility and a demarcation point in another switching center or customer premises.</p>
<p>P</p>	

<p>Packet Loss</p>	<p>Occurs when a packet of data being sent over the internet is not received or is incomplete. This is described in percentage of packets lost compared to packets sent. Packet loss in most cases is a result of poor signal/line quality.</p>
<p>Peering And Transit Agreements</p>	<p>Agreements that govern moving one entity's data traffic over another entity's network. With peering agreements, network owners allow each others' traffic to move over their networks at no cost or in some kind of cost-sharing arrangement. With transit agreements, the entity that wants to move the data (it may be an ISP or a content provider like Netflix) must pay the network owner to use their network. If a provider moves its own customers' data on its own network (e.g., sending an email to someone served by the same provider), there are no fees. If two entities don't have an agreement, the data may have to travel farther around on networks they do have agreements with, which can also slow traffic down.</p>
<p>Point of Presence (POP)</p>	<p>The particular place or facility where local Internet service providers connect to other networks. Distance from the Point of Presence can affect service availability and pricing.</p>
<p>Point To Point</p>	<p>A Point to Point Connection is a private data connection securely connecting two or more locations for private data services. A point to point connection is a closed network data transport service which does not traverse the public Internet and is inherently secure with no data encryption needed. Point to Point connections are available in a range of bandwidth speeds including point to point T1, point to point Ethernet or point to point DS3. A point to point connection provides unparalleled quality of service (QoS) as it is not a shared service (a private line) and follows the same direct network path every time. Point to Point links are used by businesses to provide reliable, secure point to point network data service for applications including credit card processing, file sharing, data backup, point to point VOIP, and video conferencing. A point to point network can also be configured to carry voice, video, Internet, and data services together over the same point to point connection. Point to Point circuits are also known as a Point to Point Link, Private Line, Leased Line, or Data Line.</p>
<p>Preferred Equity</p>	<p>A type of shareholder class. When a company files for bankruptcy, equity and debt holders are paid in a specific order that is dependent on the type of financing they are holding (also called the capital stack): 1. Bondholders (debt) 2. Preferred equity 3. Common stock</p>
<p>Project Finance</p>	<p>Project finance is the funding (financing) of long-term infrastructure using a non-recourse or limited recourse financial structure. The debt and equity used to finance the project are paid back from the cash flow generated by the project.</p>
<p>Public-Private Partnership (PPP)</p>	<p>Arrangements in which a governmental unit engages a private party to deliver an integrated solution for the design, construction, financing, operation and/or management of new or existing government-owned infrastructure projects.</p>
<p>Public Utility Company</p>	<p>An organization that maintains the infrastructure for a public service (often also providing a service using that infrastructure). Public utilities are subject to forms of public control and regulation ranging from local community-based groups to statewide government monopolies. Public utilities are meant to supply goods/services that are considered essential;</p>

	water, gas, electricity, telephone, and other communication systems represent much of the public utility market.
R	
Revenue Bond	A category of municipal bond supported by the revenue from a specific project, such as a toll bridge, highway, or local stadium. Revenue bonds that finance income-producing projects are thus secured by a specified revenue source. Typically, revenue bonds can be issued by any government agency or fund that is managed in the manner of a business, such as entities having both operating revenues and expenses.
Revolving Credit Line	A type of financing that allows a borrower to maintain an open credit line up to a specified limit and make minimum monthly payments based on the balance and interest rate per the credit agreement. A revolving credit line typically comes with a variable interest rate set by a bank, meaning it can fluctuate with market conditions.
Rights-of-Way (ROW)	ROW are legal rights to pass through property owned by another. ROW are frequently used to secure access to land for digging trenches, deploying fiber, constructing towers and deploying equipment on existing towers and utility poles.
Rural Digital Opportunity Fund (RDOF)	<p>The RDOF is the latest iteration of the FCC’s universal service fund (USF), more recently referred to as the Connect America Fund (CAF). This program was developed decades ago to fund the construction and operation of telecommunications networks, and later, broadband networks. The goal of the program was to ensure comparable telecommunications services at affordable costs to rural Americans, to be on par with their urban counterparts. The initial focus of the USF was telephone service, but it has shifted focus in recent years to broadband service through the CAF.</p> <p>The RDOF is an extension of the CAF and will provide \$20.4 billion in funding over a ten-year period to support broadband networks in rural communities across the country. The funding roots of RDOF come from traditional high-cost universal service funding previously earmarked for territories served by large “price cap” telecom carriers such as CenturyLink, Frontier, AT&T, and Verizon. Historically, the FCC provided this funding directly to these legacy telecom carriers to support broadband service in the rural communities served by them. But RDOF changed this process significantly.</p>
Rural Electrical Cooperatives (RECs)	<p>Electric cooperatives play a vital role in transforming communities. They are energy providers that act as engines of economic development in rural areas, responsible for 42% of U.S. electric distribution lines. These local energy and technology providers are shaped by the specific needs of the communities they serve, powering over 20 million businesses, homes, farms, and schools in 48 states.</p> <p>RECs are eligible to apply for and win IJA broadband funding.</p>

Rural Utility Service	A division of the U.S. Department of Agriculture, Rural Utility Service grew out of the Depression-era Rural Electrification Administration. Its mission is to help provide public utilities—water and sewer, electrification, and telecommunications—to rural areas through public-private partnerships providing loans and grants. RUS is one of three agencies that make up USDA Rural Development (including Rural Business-Cooperative Service and Rural Housing Service).
S	
Satellite Internet	Internet service provided via satellite. Satellite can be the only option for remote residents, but it is generally considered slow, less reliable, and more expensive than other options if and when they are available.
Secured Debt	Debt that is backed by property, like a car or a house. Should you default on the repayment of the loan or debt, the creditor can take the collateral instead of opening a debt collection on your record or suing you for payments.
Security	A certificate or other financial instrument that has monetary value and can be traded. Securities are generally classified as either equity securities, such as stocks and debt securities, such as bonds and debentures.
Senior Debt	Borrowed money that a company must repay first if it goes out of business.
Simple Agreement For Future Equity (SAFE)	An agreement between an investor and a company that provides rights to the investor for future equity in the company similar to a warrant, except without determining a specific price per share at the time of the initial investment.
Spectrum	A conceptual tool used to organize and map the physical phenomena of electromagnetic waves. These waves propagate through space at different radio frequencies, and the set of all possible frequencies is called the electromagnetic spectrum.
Subgrantee	The government or other legal entity to which a subgrant is awarded and which is accountable to the grantee for the use of the funds provided. Under the Infrastructure, Investment and Jobs Act, the grantee must be an eligible entity.
Subordinated Debenture	An unsecured loan or bond that ranks below other, more senior loans or securities with respect to claims on assets or earnings. In the case of borrower default, creditors who own subordinated debt will not be paid out until after senior bondholders are paid in full.
Subsidiarity	Subsidiarity is a principle of social organization that holds that social and political issues should be dealt with at the most immediate (or local) level that is consistent with their resolution.
Symmetric	When the upload and download speeds match. A rate of 10 Mbps down/10 Mbps up would be symmetric.
T	
Take Rate	The percentage of potential subscribers who are offered the service that actually do subscribe. Within the context of information infrastructure investment, take rate has become a byword for network viability and success, making it a key economic driver of the investment.
Tax-Exempt Debt	An investment in which the income produced is free from federal, state, and/or local taxes. Most tax-exempt securities come in the form of municipal bonds, which represent obligations of a state, territory or

	County. For some investors, U.S. Savings Bond interest may also be free from federal income taxes.
Taxable Debt	A debt security whose return to the investor is subject to taxes at the local, state, or federal level, or some combination thereof. An investor trying to decide whether to invest in a taxable bond or tax-exempt bond should consider what they will have left in income after taxes are taken.
Telecommunications Act Of 1996	The Telecommunications Act of 1996 was the first significant overhaul of United States telecommunications law in more than sixty years, amending the Communications Act of 1934. The Act, signed by President Bill Clinton, represented a major change in American telecommunication law, since it was the first time that the Internet was included in broadcasting and spectrum allotment. According to the Federal Communications Commission (FCC), the goal of the law was to "let anyone enter any communications business – to let any communications business compete in any market against any other." The legislation's primary goal was deregulation of the converging broadcasting and telecommunications markets.
Telemedicine	The use of high-speed, high-capacity Internet to support long-distance healthcare services, patient and provider education and enhanced healthcare administration.
Tier 1, 2, 3	Classification indicating the size of a service provider. Tier 1 providers are the largest, such as AT&T, CenturyLink, Zayo, and Verizon, with network systems that span the globe. They can generally send data anywhere without having to pay transit fees, either because they own the network or they have peering agreements with other networks. A Tier 2 network "peers" with many networks, but also has to pay some transit fees. A Tier 3 service provider must pay transit fees to access the Internet.
Tribal Broadband Connectivity Program	The Tribal Broadband Connectivity Program is a \$980 million program directed to tribal governments to be used for broadband deployment on tribal lands, as well as for telehealth, distance learning, broadband affordability, and digital inclusion. NTIA is continuing to review the more than 280 applications received during the application window, which closed on Sept. 1, 2021. The Tribal Broadband Connectivity Program will announce additional awards on a rolling basis as they go through NTIA's review process.
U	
Underserved	A location that, as determined in accordance with the broadband DATA maps, is (1) Not an Unserved location, and (2) Lacks access to reliable broadband service with a speed of not less than 100 megabits per second for downloads, 20 megabits per second for uploads, and a latency sufficient to support real-time, interactive applications.
Underserved Service Project	According to the BEAD Program, a project in which not less than 80% of broadband-serviceable locations served by the project are Unserved locations or Underserved locations.

<p>Universal Service Fund</p>	<p>A central principle of the Communications Act of 1934 was that all Americans should have access to a basic level of telecommunications service—universal service—and many policies were enacted to carryout that goal. The Telecommunications Act of 1996 created the Universal Service Fund, a pool of money collected from telecommunications companies and used for building and maintaining telecommunications infrastructure and services in high-cost areas. Four programs are supported by the Fund: the High-Cost Program, Lifeline Program, Rural Health Care Program, and Schools and Libraries Program. Telecommunications companies may charge a Universal Service Fund fee back to customers to help recover some of their contribution to the program.</p>
<p>Unlevered Returns</p>	<p>The implied rate of return a company expects to earn without the effect of debt.</p>
<p>Unlimited-Tax General Obligation Pledge</p>	<p>Is similar to the limited-tax pledge. The only difference is that the local government is asked to increase property tax rates to necessary levels — up to a maximum of 100% — to cover delinquencies from taxpayers. Residents must first agree to increase property taxes to the necessary amounts required for the bonds.</p>
<p>Unsecured Debt</p>	<p>Debt that is not backed by an asset pledged as collateral.</p>
<p>Unservd</p>	<p>A broadband-serviceable location, as determined in accordance with the broadband DATA maps, that has no access to broadband service or lacks access to reliable broadband service with a speed of not less than 25 megabits per second for downloads, 3 megabits per second for uploads, and a latency sufficient to support real-time, interactive applications.</p>
<p>Unservd Service Project</p>	<p>According to the BEAD Program, a project in which not less than 80% of broadband-serviceable locations served by the project are Unserved locations.</p>
<p>Upload And Download</p>	<p>The direction of the data between the end user and the service provider. Something moving “upstream” or “uploading” is moving from the end user’s computer or device to the service provider, while data moving “downstream” or “downloading” is moving from the service provider to the end user. When referring to speed, “10 down” means data is moving downstream to the end user at a rate of 10 megabits per second or Mbps, while “1 up” means data is moving at a rate of 1 Mbps up from the end user. Downstream is important in applications like streaming video, while upstream is important for end users who need to send large files somewhere, for instance, to a customer or to a hospital.</p>
<p>W</p>	
<p>Wi-Fi</p>	<p>A technology that produces a wireless local area network allowing a computer or other device to connect to the Internet wirelessly. Equipment in the device communicates with the Wi-Fi router, which is connected to the network with some type of physical cable or wire. Depending on the system’s power, the area can be as small as a room or cover several square miles. Examples include the Wi-Fi router in a home, a hotspot at a coffee shop, or citywide Wi-Fi networks. Wi-Fi is a trademark of the Wi-Fi Alliance, an organization that certifies equipment for interoperability. A generic term is “wireless local area network.”</p>

Wireless	A short name for fixed wireless (as opposed to mobile wireless). Fixed wireless technology transmits data between two fixed antennas using radio waves, including microwaves. Unlike Wi-Fi, the radio beams are often kept narrow to keep up the strength of the signal. Antennas are preferably set up high on buildings since line of sight is necessary.
WISP	An ISP that provides service through a wireless network.
Working Capital/ Net Working Capital	The difference between a company's current assets—such as cash, accounts receivable/customers' unpaid bills, and inventories of raw materials and finished goods—and its current liabilities, such as accounts payable and debts. A measure of a company's liquidity and short-term financial health.
Y	
Yield On Cost (YOC)	The percentage an unlevered broadband project pays out per year in EBITDA based on the initial cost of the project. This metric is useful to compare the potential return to investors across multiple geographic regions when all project assumptions are held constant.

15 APPENDIX 3 - BUSINESS MODEL OPTIONS

Cameron County has made it clear that the next steps after this study towards implementation are likely to occur from partnership opportunities through an RFP Process. In that situation, many of the various business models that an entity could choose from when helping expand a broadband network will be dependent on which company matches with the county through their next steps. However, while additional details or projects may grow out of this study, supplementary options are included below that can help the county grow its broadband presence.

There are multiple, applicable business models to consider for county broadband projects with middle mile, last-mile, and digital equity components. These models are determined and shaped based on available funding opportunities, potential partner capabilities and levels of investment, community and public utility stakeholder input, actual demand and anticipated take rates, forecasted economic output, and regulatory framework at the regional and national level. Fortunately, there are many diverse funding opportunities and a tiered range of options to build catered versions of these models since the needs of counties/municipalities and broadband infrastructure are not the same.

The models listed below should be considered base ownership and operation models and would then be further developed and defined through subsequent phases.

15.1 Considerations For Business Model Selection & Partnership

Before evaluating and planning for the appropriate business model, some base considerations will conceptualize the necessity, values, and risks of county broadband networks in any form. The first and most apparent consideration is the necessity of county involvement further than the promotion of the issues and driving initiatives to improve broadband access and adoption. This study presents findings and data which can help inform this consideration. In many cases, the study and initiative itself drive private sector action and spur modernization of incumbent networks and draw attention to new providers to saturate the market. While there may be some private sector movement, there is no guarantee that it will be to the extent that the county envisions and there are still additional incentives for the county to play a role in broadband development.

Counties/municipalities can benefit from improved broadband network infrastructure in their network operations and applications across departments and public service components, such as Supervisory Control and Data Acquisition (SCADA) and Automatic Meter Reading system (AMR) for public utilities. Cities and counties are often considered a tier one commercial account for providers and so they are a potential benefactor in the initiative and an attraction for partners to provide commercial services.

Local governments can influence how broadband deployments are implemented through public policy, which can serve as both an incentive in a partnership and to manage the public ROW and protect community interests. Regardless of the selected model, or variant, those counties/municipalities and jurisdictions involved in the initiative must consider their standards when it comes to new broadband infrastructure. Local governments can introduce further financial incentives in the form of subsidies or tax credits, incentivizing providers and adoption. County infrastructure can be leveraged as broadband assets and reduce costs or provide revenue generation. This concept applies to existing assets such as water towers and properties for collocated ISP facilities in addition to any broadband-specific assets the County may own as a part of a proposed network.

In exploring these models, the County and partners must consider shared risks and incentives, areas of expertise and resourcing, and take measures to ensure a healthy competitive market.

15.2 Ownership & Operations Models

There are three primary models based on the level of involvement of counties/municipalities and private partners, across three network service components: Infrastructure, Access, and Service. The infrastructure component consists of civic components such as conduits, poles, dark fiber, and handholes. The access component comprises electronics and services to “power” the network and connect it to transport networks. The service component covers providing the actual commercial and residential services to the end customers.

The three models reflect the inclusion of one or more of these components, starting with the least involvement in the infrastructure component, adding access, and then finally service. Respectively, these models are: Passive Infrastructure or Infrastructure Only, Wholesale or Operator Owned, and Fully Integrated or Full-Retail Service. We have provided multiple common terminologies as these vary across county broadband model studies.

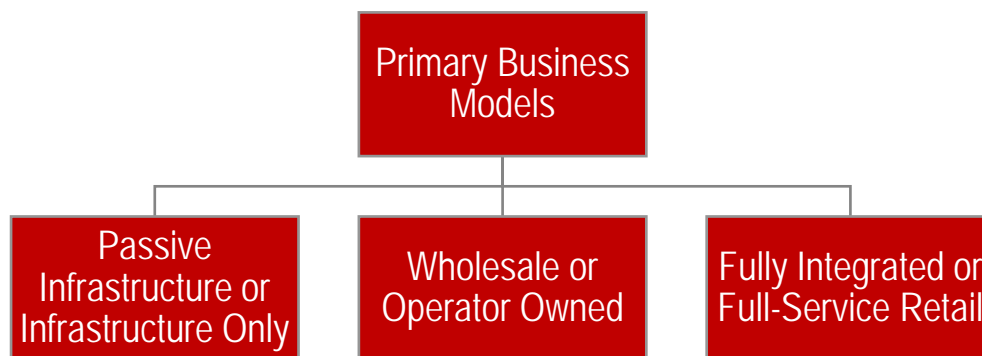


Figure 23: Public Business Models

It is important to note that there are accessory models within these base models such as Open Access, Public Policy Only, Public Services, Commercial Only, and Residential Only. These accessory models focus on specific needs within the base structure, for example, a County may want to pursue a Wholesale model where they provide both infrastructure and access components, but only for target commercial customers (Commercial Only) or local government facilities (Public Services). The Open Access model is inherent in both the Passive Infrastructure and Wholesale models where there is a neutral operator and can be used to promote healthy competition of providers at the access and service levels. Depending on the range of scope for the county broadband initiative, there may be multiple models and accessory models to serve different purposes.

15.2.1 Passive Infrastructure | Infrastructure - Only

In this model, the County’s involvement is limited to facilitating some or all the passive infrastructure needed for the broadband network. Passive infrastructure only includes the labor and network materials at the physical layer, such as conduit, dark fiber (fiber not being actively used), utility poles, towers, buildings, and properties for Data Centers and POPs. This infrastructure is usually the most costly and essential to support the network but does not include the necessary transport equipment and connections for access or equipment and provisioning for internet services. A private sector provider or operator would manage the access and service components.

The County has the option to own and lease or sell some or all its infrastructure to broadband service providers or operators. This model allows for fully open access at both the access and service levels given the County enters an agreement with a neutral operator where the network infrastructure is available to both access providers and service providers.

Typically, the passive infrastructure does not include residential development as this is often costly and there are many implications in the access and service levels that need to be considered in the design and implementation. This model is effective to incentivize operators and providers to serve otherwise cost-prohibitive areas of need. If the County retains ownership of the infrastructure and opts for the leasing option, there needs to be a clear delineation in the agreement with the operator or provider as to maintenance.

Ownership of the infrastructure may be beneficial to the County given fixed costs, indefinite use, ability to influence the cost to consumers, ensure equal access across the communities, and can be leveraged for public services and applications. These benefits of ownership need to be weighed with the cost and resources required for maintenance, competitive rates for lease while ensuring ROI, and the potential for the open access components to dissuade providers from entering the market.

15.2.1.1 Lease and Selling Options

The following are options the County would have in terms of the sale or lease of infrastructure assets:

1. Purchase Agreement: County would be paid upfront or through annual payments and transfer titles
2. Indefeasible Right of Use: County would be paid upfront with annual maintenance payments for a certain capacity of their fiber for ~10-20 years
3. Lease: County would be paid monthly for use of infrastructure assets for ~3-5 years
4. Asset Swap: County could exchange assets and would transfer titles accordingly

These options also apply from the opposite perspective, should the County look to purchase or lease infrastructure from operators or providers.

15.2.2 Wholesale | Operator Owned

The Wholesale model increases the involvement of the Passive Infrastructure Model to include the County facilitating the access component, including all necessary equipment and transport services to activate the network. In this scenario, the County could be the neutral operator, responsible for providing wholesale broadband access to private operators or providers. The County may still opt to engage a private operator as they typically prefer to own the access component and sell to providers.

This is often a large step toward a full-blown Fully Integrated model and requires increased staffing and expertise. For this reason, Public Private Partnerships are often a more viable solution for counties/municipalities considering this option. From an open access perspective, there is still full competition from service providers as the access component is now the responsibility of the county.

When a county owns the access component and does not contract an operator, there is typically more hesitation from private providers to use the county's network given the relative experience the county has in managing wholesale services and the risks associated. Benefits include more control over the selection of quality service providers and revenue options in wholesale broadband access to operators and providers.

As with the previous model, maintenance, and operations costs will increase and consideration should be taken in that broadband technologies are constantly evolving and require more frequent investment than other utilities.

15.2.3 Fully Integrated | Full-Service Retail

With the addition of the service components, the Fully Integrated Model requires comprehensive involvement from the County as the broadband service provider. Counties/municipalities can provide middle mile and last-mile services to residential and commercial customer services from end to end. The County owns the network and can often converge this with other public utilities for billing simplicity and other verticals.

The County is responsible for operations, management, construction, maintenance, network monitoring, billing, marketing, retail offerings, troubleshooting, and customer service. While this model can create significant value, it also assumes the most risk and should only be considered when no willing and capable private sector providers are eager to enter the market or provide the level of services required to meet the needs of the communities. This Full-Service Retail model looks attractive and garners public attention when implemented as there have been remarkable success stories, such as the City of Mont Belvieu, TX's "MBLink," there have also been many failures that can put a County in financial hardship and the burden falls to taxpayers.

Another consideration with this model is that it eliminates the open access concept as the new county ISP would be considered a competitor with private sector providers at all levels. There is space within this model to still allow for healthy competition when the county ISP only serves Unserved or Underserved markets that the private sector has not elected to serve. While a county ISP does need to consider ROI and healthy financial operations, the goals of the County for their ISP often focus on other factors such as promoting local competition to bolster the local economy and target areas that require subsidy or at-cost services to promote adoption.

Successful county ISPs using this model often have advanced economies which can steady concerns over the financial risks in taking on such an initiative. Any County considering this model should strongly evaluate its expertise, capabilities, resources, and the overall necessity of this make-or-break model.

15.3 Accessory Models

The base models above are not rigid and can be catered to the unique needs and capabilities of the County to assume different levels of responsibility and investment. Accessory models accentuate or serve as sub-models to represent some of the more common options associated. As mentioned previously, different models can serve various project scopes as a part of the broadband initiative and so there is no need to resort to a one model-fits-all mentality.

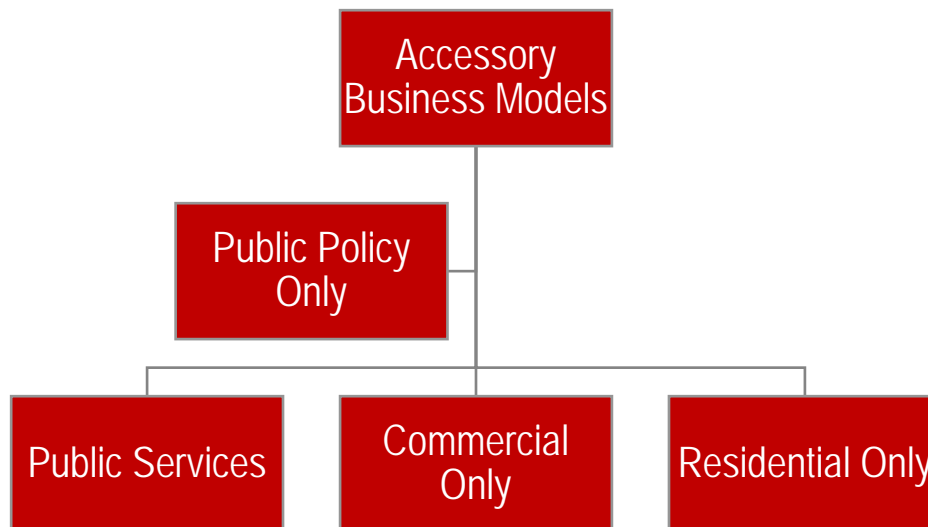


Figure 24: Accessory Business Models

15.3.1 Public Policy Only

In a Public Policy Only model, the County can still play a role in promoting broadband expansion through the available policy tools at their disposal, and without having to invest in any of the infrastructure, access, and service components. Consider this model at the lowest end of the risk spectrum, where the County and local government entities facilitate private sector investment through streamlining jurisdictional processes and red tape that might otherwise delay or deter broadband expansion efforts.

Through public policy, counties/municipalities can promote an “ISP Friendly” market and may influence the improvement of services or expansion into areas of need, but it is unlikely that this level of investment will incentivize private providers where they cannot profit.

15.3.2 Public Services

The Public Services model relies on county and local public entity support to address broadband needs solely for public entity facilities and relative applications. Oftentimes, counties/municipalities look to improve their internal services in conjunction with broadband initiatives focused on residential and commercial services. Public sector IT groups typically look to reduce operational and service costs associated with leased lines and Multiprotocol Label Switching (MPLS) networks by building their dark fiber and providing data services to other public organizations.

This model can be considered in isolation, focused on building interconnects between ISDs, public utility buildings, governmental buildings, Emergency Operations Centers (EOCs), and public safety assets. There are many benefits to this which indirectly improve the quality of life for communities that rely on these public services and facilities. Counties/municipalities may also leverage private sector competition to provide these services to incentivize private investment in the residential and commercial areas of need. All three base models can be catered towards strictly public services, where the County can determine its level of involvement.

15.3.3 Commercial Only

Similar to Public Services, The Commercial Only model can utilize one of the three base models to focus strictly on providing commercial services to businesses and commercial properties. The availability of capable commercial services is a huge economic growth driver by attracting businesses to the market and retaining those already currently in place. Most modern, large companies require multiple, redundant connections from tier one providers and so attracting multiple capable providers to the market in the middle mile space can be very impactful.

Counties/municipalities can directly offer these services through the Fully Integrated base model but should consider if their presence in the commercial service space would deter the necessary private sector saturation. As commercial customers are often in the middle mile space, open access is a possibility here where there is a known necessity for multiple providers to provide these multiple, redundant services. Commercial Only can be implemented as a separate scope or as part of a larger initiative including public and residential services.

15.3.4 Residential Only

Residential Only is a sub-model to the three base models in which the County would focus solely on involvement in providing residential services. As this is one of the more costly and complex targeted services, in most cases, private providers have the expertise to deploy and operate in residential markets. The risk and investment associated with providing residential services are higher than that of commercial and public services, and regarding digital equity, the greatest needs are often with residents in the Unserved and Underserved communities, and this is where the county's influence can make a significant impact.

A Passive Infrastructure model, catered towards residential only would be a logical, catered model for a County looking to incentivize private provider saturation. However, open access potential would be limited as residential customers do not require redundant service connections and private providers will likely avoid using infrastructure owned by a County in this space. Residential Only can be implemented as a separate scope or as part of a larger initiative including public and residential services.

15.4 Business Model Funding

Another layer to the business model determination is the funding aspect, representing tangible investment and risk assumed by the parties involved. Funding a component of a broadband network does not necessarily translate to unique ownership of specific assets as there is a need to ensure that the right party focuses on their area of expertise. For example, while a County may elect to cover the costs of the access components to spur the development of a network, they may have no intention of handling the installation, operations, or maintenance of this component as they do not have the resources nor expertise to manage.

As touched on in the business model outlined above, there are benefits to the County in ownership such as being able to promote open access, lease, and generally have more control over the network. On the other hand, there is an increased risk of crowding out the private sector or discouraging their investment, the learning curve in obtaining the expertise and training to manage and operate, and costs of maintenance and frequent technology upgrades. Weighing all these considerations in mind, a county must determine the feasibility and necessity of public funding or public-private partnership funding.

In isolation, a county broadband network can be funded entirely through public sector means such as bonding, grants, loans, and Community Reinvestment Act (CRA) or Public Welfare Investments (PWI). Other than grants requiring no match, the County has all the financial burden and would not offset costs through private sector investment. As the private sector is constantly looking for where to expand and invest to grow their business, a public-private partnership leverages this pending investment and reduces risk for the county.

15.5 Public Private Partnerships (PPPs)

Public-Private Partnerships take the best of both worlds where all parties focus on their areas of expertise and share the risks and benefits associated with the network development. PPPs can allow counties/municipalities to attract private capital when it would not be feasible otherwise¹⁹. Collectively, the partnership compartmentalizes and accommodates all aspects of the network, leveraging assets from both the private and public sectors for mutual benefit. The initial infrastructure investment, operational and maintenance costs, and revenue sharing are all considered in the following PPP contracts.

Table 19: Various Forms of Broadband Public Private Partnerships

Contract	Network Funding	Network Operations	Subscription Fees Collected By	Revenue Share To
Third-Party Run	County	Private Operator	County	Private Operator
Lease	County	Private Operator	Private Operator	County
Special Purpose Vehicle	Both	Both	Both	Both
Build Operate Transfer	Private Operator	Private Operator	County	Private Operator
Concession	Private Operator	Private Operator	Private Operator	County

15.5.1 County-Funded PPP Networks

In a Third Party Run Service Contract, the network is funded and built by the County, but the connectivity and end-user services are provided by a private operator. Subscription fees are collected by the County, possibly through existing utility billing services. The County then transfers a share of the revenue to a private operator to cover costs of operations, maintenance, and quality of service (QOS) expenditures. Allows for a return on capital.

In a Lease Contract, the network is funded and built by the County and then leased by the private operator, who in turn provides connectivity and services. Subscription fees are collected by a private operator and a portion of the revenue is transferred to the County to cover the network rental fees.

In a Special Purpose Vehicle Contract, the network is co-financed, built, and operated by the County and private operator, who both share in the return on investment.

¹⁹ Municipal Broadband Networks—Opportunities, Business Models, Challenge. Ifc.org. https://www.ifc.org/wps/wcm/connect/publications_ext_content/ifc_external_publication_site/publications_listing_page/municipal+broadband+networks. Published 2022. Accessed June 1, 2022.

15.5.2 Private Sector-Funded PPP Networks

In a Build Operate Transfer (BOT) Contract, the County facilitates private investment through a “tender,” such as a Request for Information (RFI), Request for Qualifications (RFQ), or Request for Proposals (RFP) to a private operator to fund, build, and operate the network. Subscription fees are collected by the County, possibly through existing utility billing services. The County then transfers a share of revenue to the private operator to cover operations, maintenance, and QOS expenditures which may allow for a return on Capital.

In a Concession Contract, the network is funded, built, and operated by a private operator. Subscription fees are collected by the private operator as well. This contract requires that the county allows the private operator access to it's resources or assets such as utility poles and ducts. Concession fees are paid to the County for use of their assets.²⁰

15.6 Managed Services

Partnerships are not limited to private operators or providers but can also include broadband services companies that do not necessarily own or provide direct internet services. These companies can support the County and their partners in the service activation and service assurance aspects of the network. As previously mentioned, broadband networks are dynamic and complex in comparison to traditional utilities and require substantial expertise, in which the County, and sometimes even the operator or internet service provider, needs external resources.

Managed services are typically catered, modular solutions which fill in the implementation and operational components of the network to include monitoring, troubleshooting, performance analysis, inventory management, cybersecurity, and much more. For a County considering more extensive involvement and ownership, or in a partnership with smaller private operators, managed services companies can assist in standing up the network and making necessary connections to operations and business support systems (OSS/BSS), including billing and notification systems.

Managed services should be considered early in the broadband network development and not as an afterthought when operations suffer or there are delays due to unforeseen complications. Under a Full Retail Service Model, managed services can be essential to round out the County team, providing necessary resources and even training leading towards a potential transfer to a county-run or sponsored ISP.

²⁰ Municipal Broadband Networks—Opportunities, Business Models, Challenge. Ifc.org. https://www.ifc.org/wps/wcm/connect/publications_ext_content/ifc_external_publication_site/publications_listing_page/municipal+broadband+networks. Published 2022. Accessed June 1, 2022.