

**CONTRACT RESULTING FROM REQUEST FOR PROPOSAL NUMBER 10090072-24-S,
CONSULTANT SERVICES FOR DEVELOPMENT OF BROADBAND INFRASTRUCTURE PLAN**

This Contract (Contract) is entered into by and between the City of San Diego, a municipal corporation (City), and the successful proposer to Request for Proposal (RFP) # 10090072-24-S, CONSULTANT SERVICES FOR DEVELOPMENT OF BROADBAND INFRASTRUCTURE PLAN (Contractor).

RECITALS

On or about 8/4/2023, City issued an RFP to prospective proposers on services to be provided to the City. The RFP and any addenda and exhibits thereto are collectively referred to as the "RFP." The RFP is attached hereto as Exhibit A.

City has determined that Contractor has the expertise, experience, and personnel necessary to provide the services.

City wishes to retain Contractor to develop a comprehensive broadband infrastructure plan as further described in the Scope of Work, attached hereto as Exhibit B. (Services).

For good and valuable consideration, the sufficiency of which is acknowledged, City and Contractor agree as follows:

**ARTICLE I
CONTRACTOR SERVICES**

1.1 Scope of Work. Contractor shall provide the Services to City as described in Exhibit B which is incorporated herein by reference. Contractor will submit all required forms and information described in Exhibit A to the Purchasing Agent before providing Services.

1.2 General Contract Terms and Provisions. This Contract incorporates by reference the General Contract Terms and Provisions, attached hereto as Exhibit C.

**ARTICLE II
DURATION OF CONTRACT**

2.1 Term. This Contract shall be for a period of one (1) year beginning on the Effective Date. City may, in its sole discretion, extend this Contract for four (4) additional one (1) year period(s). Unless otherwise terminated, this Contract shall be effective until completion of the Scope of Services or five (5) years from the Effective Date whichever is earliest. The term of this Contract shall not exceed five years unless approved by the City Council by ordinance.

2.2 Effective Date. This Contract shall be effective on the date it is executed by the last Party to sign the Contract and approved by the City Attorney in accordance with San Diego Charter Section 40.

**ARTICLE III
COMPENSATION**

3.1 Amount of Compensation. City shall pay Contractor for performance of all Services rendered in accordance with this Contract in an amount not to exceed \$500,000.00. ^{JSH}
(The not to exceed amount will be added in this final Contract prior to the final execution of the Contract by the City, with the Contractor's initials indicating acceptance.)

**ARTICLE IV
WAGE REQUIREMENTS**

4.1 Reserved.

**ARTICLE V
CONTRACT DOCUMENTS**

5.1 Contract Documents. The following documents comprise the Contract between the City and Contractor: this Contract and all exhibits thereto, the RFP; Contractor's Proposal; the Notice to Proceed; and the City's written acceptance of exceptions or clarifications to the RFP, if any.

5.2 Contract Interpretation. The Contract Documents completely describe the Services to be provided. Contractor will provide any Services that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for or identified in the Contract Documents. Words or phrases which have a well-known technical or construction industry or trade meaning and are used to describe Services will be interpreted in accordance with that meaning unless a definition has been provided in the Contract Documents.

5.3 Precedence. In resolving conflicts resulting from errors or discrepancies in any of the Contract Documents, the Parties will use the order of precedence as set forth below. The 1st document has the highest priority. Inconsistent provisions in the Contract Documents that address the same subject, are consistent, and have different degrees of specificity, are not in conflict and the more specific language will control. The order of precedence from highest to lowest is as follows:

- 1st Any properly executed written amendment to the Contract
- 2nd The Contract
- 3rd The RFP and the City's written acceptance of any exceptions or clarifications to the RFP, if any
- 4th Contractor's Proposal and Pricing

5.4 Counterparts. This Contract may be executed in counterparts which, when taken together, shall constitute a single signed original as though all Parties had executed the same page.

5.5 Public Agencies. Other public agencies, as defined by California Government Code section 6500, may choose to use the terms of this Contract, subject to Contractor's acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

CONTRACTOR

Columbia Telecommunications Corporation
dba CTC Technology and Energy

Proposer

10613 Concord St

Street Address

Kensington

City

301.933.1488

Telephone No.

info@ctcnet.us

E-Mail

CITY OF SAN DIEGO

A Municipal Corporation

BY:



Print Name:

Claudia Abarca

Director, Purchasing & Contracting Department

Mar 28, 2024

Date Signed

BY:



Signature of
Proposer's Authorized
Representative

Joanne S. Hovis

Print Name

President

Title

9/28/2023

Date

Approved as to form this 28th day of

March, 20²⁴.

MARA W. ELLIOTT, City Attorney

BY: 

Deputy City Attorney

**EXHIBIT A
PROPOSAL SUBMISSION AND REQUIREMENTS**

A. PROPOSAL SUBMISSION

1. Timely Proposal Submittal. Proposals must be submitted as described herein to the Purchasing & Contracting Department (P&C).

1.1 Reserved.

1.2 Paper Proposals. The City will accept paper proposals in lieu of eProposals. Paper proposals must be submitted in a sealed envelope to the Purchasing & Contracting Department (P&C) located at 1200 Third Avenue, Suite 200, San Diego, CA 92101. The Solicitation Number and Closing Date must be referenced in the lower left-hand corner of the outside of the envelope. Faxed proposals will not be accepted.

1.3 Proposal Due Date. Proposals must be submitted prior to the Closing Date indicated on the eBidding System. E-mailed and/or faxed proposals will not be accepted.

1.4 Pre-Proposal Conference. Pre-proposal conference information is noted on the eBidding System.

1.4.1 Proposers are encouraged to attend the pre-proposal conference. Failure to attend does not relieve proposer of the responsibility to fulfill RFP and addenda requirements, and does not relieve Contractors from performing.

1.5 Questions and Comments. Written questions and comments must be submitted electronically via the eBidding System no later than the date specified on the eBidding System. Only written communications relative to the procurement shall be considered. The City's eBidding System is the only acceptable method for submission of questions. All questions will be answered in writing. The City will distribute questions and answers without identification of the inquirer(s) to all proposers who are on record as having received this RFP, via its eBidding System. No oral communications can be relied upon for this RFP. Addenda will be issued addressing questions or comments that are determined by the City to cause a change to any part of this RFP.

1.6 Contact with City Staff. Unless otherwise authorized herein, proposers who are considering submitting a proposal in response to this RFP, or who submit a proposal in response to this RFP, are prohibited from communicating with City staff about this RFP from the date this RFP is issued until a contract is awarded.

2. Proposal Format and Organization. Unless electronically submitted, all proposals should be securely bound and must include the following completed and executed forms and information presented in the manner indicated below:

Tab A - Submission of Information and Forms.

2.1 Exceptions requested by proposer, if any. Proposers must list or reference each specific exception they are requesting to the Scope of Work, the Contract, or the Exhibits thereto. For each requested exception, proposers must provide proposed alternative or amended language in their initial proposal submittal for potential consideration. The proposer must also present written

factual or legal justification for any exception requested to the Scope of Work, the Contract, or the Exhibits thereto.

It is not acceptable for proposers to take exception to terms or conditions in general, with a request to later discuss or negotiate specific terms within the RFP / Contract. Nor is it acceptable to refer to other contracts for alternative language. The City will not consider exceptions addressed elsewhere in the proposal, nor will the City consider exceptions for which no specific alternative or amended language is provided.

Any exceptions to the Contract that have not been accepted by the City in writing are deemed rejected. The City, in its sole discretion, may accept some or all of proposer's exceptions, reject proposer's exceptions and deem the proposal nonresponsive, or award the Contract without proposer's proposed exceptions.

2.2 The Contractor Standards Pledge of Compliance Form.

2.3 Equal Opportunity Contracting forms including the Work Force Report and Contractors Certification of Pending Actions.

2.4 Reserved.

2.5 Reserved.

2.6 Reserved.

2.7 Additional Information as required in Exhibit B.

2.8 Reserved.

2.9 Reserved.

2.10 Reserved.

Tab B - Executive Summary and Responses to Specifications.

2.11 A title page.

2.12 A table of contents.

2.13 An executive summary, limited to one typewritten page, that provides a high-level description of the proposer's ability to meet the requirements of the RFP and the reasons the proposer believes itself to be best qualified to provide the identified services.

2.14 Proposer's response to the RFP.

2.15 An additional, redacted version of Proposer's response to the RFP containing all requested redactions of confidential, proprietary or other information which proposer alleges to be exempt from disclosure under the California Public Records Act, including the legal basis for such exemption, as fully set forth in Section 9. Public Records below.

Tab C - Cost Proposal (Exhibit D. Pricing Summary and Proposed Milestone Schedule). Proposers shall submit a Compensation and Fee Schedule; a complete and detailed cost proposal inclusive of all direct and indirect costs to complete all tasks identified in the Scope of Work. Proposers shall submit a cost proposal in the form and format described herein. Failure to provide cost(s) in the form and format requested may result in proposal being declared non-responsive and rejected.

3. Proposal Review. Proposers are responsible for carefully examining the RFP, the Specifications, this Contract, and all documents incorporated into the Contract by reference before submitting a proposal. If selected for award of contract, proposer shall be bound by same unless the City has accepted proposer's exceptions, if any, in writing.

4. Addenda. The City may issue addenda to this RFP as necessary. All addenda are incorporated into the Contract. The proposer is responsible for determining whether addenda were issued prior to a proposal submission. Failure to respond to or properly address addenda may result in rejection of a proposal.

5. Quantities. The estimated quantities provided by the City are not guaranteed. These quantities are listed for informational purposes only. Quantities vary depending on the demands of the City. Any variations from the estimated quantities shall not entitle the proposer to an adjustment in the unit price or any additional compensation.

6. Quality. Unless otherwise required, all goods furnished shall be new and the best of their kind.

6.1 Items Offered. Proposer shall state the applicable trade name, brand, catalog, manufacturer, and/or product number of the required good, if any, in the proposal.

6.2 Brand Names. Any reference to a specific brand name in a solicitation is illustrative only and describes a component best meeting the specific operational, design, performance, maintenance, quality, or reliability standards and requirements of the City. Proposer may offer an equivalent or equal in response to a brand name referenced (Proposed Equivalent). The City may consider the Proposed Equivalent after it is subjected to testing and evaluation which must be completed prior to the award of contract. If the proposer offers an item of a manufacturer or vendor other than that specified, the proposer must identify the maker, brand, quality, manufacturer number, product number, catalog number, or other trade designation. The City has complete discretion in determining if a Proposed Equivalent will satisfy its requirements. It is the proposer's responsibility to provide, at their expense, any product information, test data, or other information or documents the City requests to properly evaluate or demonstrate the acceptability of the Proposed Equivalent, including independent testing, evaluation at qualified test facilities, or destructive testing.

7. Modifications, Withdrawals, or Mistakes. Proposer is responsible for verifying all prices and extensions before submitting a proposal.

7.1 Modification or Withdrawal of Proposal Before Proposal Opening. Prior to the Closing Date, the proposer or proposer's authorized representative may modify or withdraw the proposal by providing written notice of the proposal modification or withdrawal to the City Contact via the eBidding System. E-mail or telephonic withdrawals or modifications are not permissible.

7.2 Proposal Modification or Withdrawal of Proposal After Proposal Opening.

Any proposer who seeks to modify or withdraw a proposal because of the proposer's inadvertent computational error affecting the proposal price shall notify the City Contact identified on the eBidding System no later than three working days following the Closing Date. The proposer shall provide worksheets and such other information as may be required by the City to substantiate the claim of inadvertent error. Failure to do so may bar relief and allow the City recourse from the bid surety. The burden is upon the proposer to prove the inadvertent error. If, as a result of a proposal modification, the proposer is no longer the apparent successful proposer, the City will award to the newly established apparent successful proposer. The City's decision is final.

8. Incurred Expenses. The City is not responsible for any expenses incurred by proposers in participating in this solicitation process.

9. Public Records. By submitting a proposal, the proposer acknowledges that any information submitted in response to this RFP is a public record subject to disclosure unless the City determines that a specific exemption in the California Public Records Act (CPRA) applies. If the proposer submits information clearly marked confidential or proprietary, the City may protect such information and treat it with confidentiality to the extent permitted by law. However, it will be the responsibility of the proposer to provide to the City the specific legal grounds on which the City can rely in withholding information requested under the CPRA should the City choose to withhold such information. General references to sections of the CPRA will not suffice. Rather, the proposer must provide a specific and detailed legal basis, including applicable case law, that clearly establishes the requested information is exempt from the disclosure under the CPRA. If the proposer does not provide a specific and detailed legal basis for requesting the City to withhold proposer's confidential or proprietary information at the time of proposal submittal, City will release the information as required by the CPRA and proposer will hold the City, its elected officials, officers, and employees harmless for release of this information. It will be the proposer's obligation to defend, at proposer's expense, any legal actions or challenges seeking to obtain from the City any information requested under the CPRA withheld by the City at the proposer's request. Furthermore, the proposer shall indemnify and hold harmless the City, its elected officials, officers, and employees from and against any claim or liability, and defend any action brought against the City, resulting from the City's refusal to release information requested under the CPRA which was withheld at proposer's request. Nothing in the Contract resulting from this proposal creates any obligation on the part of the City to notify the proposer or obtain the proposer's approval or consent before releasing information subject to disclosure under the CPRA. Additionally, if the proposer considers any part of its proposal confidential, proprietary, trade secret, or otherwise exempt from disclosure under the CPRA, in addition to the requirements above, proposer must also submit a clearly marked redacted version of the proposal at the time of submittal.

10. Right to Audit. The City Auditor may access proposer's records as described in San Diego Charter section 39.2 to confirm contract compliance.

B. PRICING

1. Fixed Price. All prices shall be firm, fixed, fully burdened, FOB destination, and include any applicable delivery or freight charges, and any other costs required to provide the requirements as specified in this RFP. The lowest total estimated contract price of all the proposals that meet the requirements of this RFP will receive the maximum assigned points

to this category as set forth in this RFP. The other price schedules will be scored based on how much higher their total estimated contract prices compare with the lowest:

$$(1 - \frac{(\text{contract price} - \text{lowest price})}{\text{lowest price}}) \times \text{maximum points} = \text{points received}$$

For example, if the lowest total estimated contract price of all proposals is \$100, that proposal would receive the maximum allowable points for the price category. If the total estimated contract price of another proposal is \$105 and the maximum allowable points is 60 points, then that proposal would receive $(1 - ((105 - 100) / 100) \times 60 = 57$ points, or 95% of the maximum points. The lowest score a proposal can receive for this category is zero points (the score cannot be a negative number). The City will perform this calculation for each Proposal.

2. Taxes and Fees. Taxes and applicable local, state, and federal regulatory fees should not be included in the price proposal. Applicable taxes and regulatory fees will be added to the net amount invoiced. The City is liable for state, city, and county sales taxes but is exempt from Federal Excise Tax and will furnish exemption certificates upon request. All or any portion of the City sales tax returned to the City will be considered in the evaluation of proposals.

3. Escalation. An escalation factor is not allowed unless called for in this RFP. If escalation is allowed, proposer must notify the City in writing in the event of a decline in market price(s) below the proposal price. At that time, the City will make an adjustment in the Contract or may elect to re-solicit.

4. Unit Price. Unless the proposer clearly indicates that the price is based on consideration of being awarded the entire lot and that an adjustment to the price was made based on receiving the entire proposal, any difference between the unit price correctly extended and the total price shown for all items shall be offered shall be resolved in favor of the unit price.

C. EVALUATION OF PROPOSALS

1. Award. The City shall evaluate each responsive proposal to determine which proposal offers the City the best value consistent with the evaluation criteria set forth herein. The proposer offering the lowest overall price will not necessarily be awarded a contract.

2. Sustainable Materials. Consistent with Council Policy 100-14, the City encourages use of readily recyclable submittal materials that contain post-consumer recycled content.

3. Evaluation Process.

3.1 Process for Award. A City-designated evaluation committee (Evaluation Committee) will evaluate and score all responsive proposals. The Evaluation Committee may require proposer to provide additional written or oral information to clarify responses. Upon completion of the evaluation process, the Evaluation Committee will recommend to the Purchasing Agent that award be made to the proposer with the highest scoring proposal.

3.2 Reserved.

3.3 Mandatory Interview/Oral Presentation. The City will require proposers to interview and/or make an oral presentation if one or more proposals score within fifteen (15) points or less of the proposal with the highest score. Only the proposer with the highest scoring proposal and those proposers scoring within fifteen (15) points or less of the highest scoring proposal will be asked to interview and/or make an oral presentation. Interviews and/or oral presentations will be made to the Evaluation Committee in order to clarify the proposals and to answer any questions. The interviews and/or oral presentations will be scored as part of the selection process. Additionally, the Evaluation Committee may require proposer’s key personnel to interview. Interviews may be by telephone and/or in person. Multiple interviews may be required. Proposers are required to complete their oral presentation and/or interviews within seven (7) workdays after the City’s request. Proposers should be prepared to discuss and substantiate any of the areas of the proposal submitted, as well as proposer’s qualifications to furnish the subject goods and services. Proposer is responsible for any costs incurred for the oral presentation and interview of the key personnel.

3.4 Discussions/Negotiations. The City has the right to accept the proposal that serves the best interest of the City, as submitted, without discussion or negotiation. Contractors should, therefore, not rely on having a chance to discuss, negotiate, and adjust their proposals. The City may negotiate the terms of a contract with the winning proposer based on the RFP and the proposer’s proposal or award the contract without further negotiation.

3.5 Inspection. The City reserves the right to inspect the proposer’s equipment and facilities to determine if the proposer is capable of fulfilling this Contract. Inspection will include, but not limited to, survey of proposer’s physical assets and financial capability. Proposer, by signing the proposal agrees to the City’s right of access to physical assets and financial records for the sole purpose of determining proposer’s capability to perform the Contract. Should the City conduct this inspection, the City reserves the right to disqualify a proposer who does not, in the City’s judgment, exhibit the sufficient physical and financial resources to perform this Contract.

3.6 Evaluation Criteria. The following elements represent the evaluation criteria that will be considered during the evaluation process:

	MAXIMUM EVALUATION POINTS
A. Responsiveness to the RFP.	15
1. Requested information included and thoroughness of response	
2. Acceptance of City standard documents, including Terms and Conditions, Statement of Work, and other provisions	
B. Personnel Experience and Qualifications with Similar Engagements.	35
1. Demonstrated experience providing services of a similar size and scope to that of the City's requirements	
2. References that are supportive of the stated experience and the provision of quality services.	
3. Demonstrated consulting experience in broadband analysis and plan development	

	MAXIMUM EVALUATION POINTS
4. Suitability of proposed engagement team including, but not limited to subject matter expertise in projects of similar scope and complexity	
C. Technical Approach.	20
1. Demonstrated clear and comprehensive proposed approach that will deliver a high quality, efficient, effective, and timely broadband plan	
2. Demonstrated clear and comprehensive approach to community and stakeholder engagement	
D. Price.	5
E. Mandatory Oral Interviews.	25
1. Demonstrated understanding of City's goals and requirements	
2. Clarity of responses	
3. Confidence in ability to deliver	
SUB TOTAL MAXIMUM EVALUATION POINTS:	100
F. Participation by Small Local Business Enterprise (SLBE) or Emerging Local Business Enterprise (ELBE) Firms*	12
FINAL MAXIMUM EVALUATION POINTS INCLUDING SLBE/ELBE:	112

*The City shall apply a maximum of an additional 12 percentage points to the proposer's final score for SLBE OR ELBE participation. Refer to Equal Opportunity Contracting Form, Section V.

D. ANNOUNCEMENT OF AWARD

1. Award of Contract. The City will inform all proposers of its intent to award a Contract in writing.

2. Obtaining Proposal Results. No solicitation results can be obtained until the City announces the proposal or proposals best meeting the City's requirements. Proposal results may be obtained by: (1) e-mailing a request to the City Contact identified on the eBidding System or (2) visiting the P&C eBidding System to review the proposal results. To ensure an accurate response, requests should reference the Solicitation Number. Proposal results will not be released over the phone.

3. Multiple Awards. City may award more than one contract by awarding separate items or groups of items to various proposers. Awards will be made for items, or combinations of items, which result in the lowest aggregate price and/or best meet the City's requirements. The additional administrative costs associated with awarding more than one Contract will be considered in the determination.

E. PROTESTS. The City's protest procedures are codified in Chapter 2, Article 2, Division 30 of the San Diego Municipal Code (SDMC). These procedures provide unsuccessful proposers

with the opportunity to challenge the City's determination on legal and factual grounds. The City will not consider or otherwise act upon an untimely protest.

F. SUBMITTALS REQUIRED UPON NOTICE TO PROCEED. The successful proposer is required to submit the following documents to P&C **within ten (10) business days** from the date on the Notice to Proceed letter:

1. Insurance Documents. Evidence of all required insurance, including all required endorsements, as specified in Article VII of the General Contract Terms and Provisions.

2. Taxpayer Identification Number. Internal Revenue Service (IRS) regulations require the City to have the correct name, address, and Taxpayer Identification Number (TIN) or Social Security Number (SSN) on file for businesses or persons who provide goods or services to the City. This information is necessary to complete Form 1099 at the end of each tax year. To comply with IRS regulations, the City requires each Contractor to provide a Form W-9 prior to the award of a Contract.

3. Business Tax Certificate. Unless the City Treasurer determines a business is exempt, all businesses that contract with the City must have a current business tax certificate.

4. Consultant Award Tracking Form.

5. Conflict of Interest Certification Form.

6. Sensitive Information Authorization Acknowledgement Form. Administrative Regulation 90.64. Contractor acknowledges and shall comply with the requirements in City of San Diego Administrative Regulation 90.64 PROTECTION OF SENSITIVE INFORMATION AND DATA to ensure the confidentiality and protection of sensitive information and data against unauthorized use. Contractor shall sign the City of San Diego "**Sensitive Information Authorization Acknowledgement Form- City Contractors/Vendors**" which includes a Policy Summary (pertinent excerpts from City Administrative Regulation 90.64). A copy of Administrative Regulation 90.64 is attached as Exhibit F to this Contract and is incorporated herein by reference.

The City may find the proposer to be non-responsive and award the Contract to the next highest scoring responsible and responsive proposer if the apparent successful proposer fails to timely provide the required information or documents.

EXHIBIT B SCOPE OF SERVICES

A. INTRODUCTION

Located in Southwest California, the coastal City of San Diego with a population close to 1.4 million residents and 372.4 square miles shares borders with the country of Mexico in the South. The second largest city in California and eighth largest in the nation, it lies on approximately 200 deep canyons and hills separating its [mesas](#), creating small pockets of natural open space scattered throughout the city and giving it a hilly geography. Interstate 8 runs from East to West and divides the City between under-resourced communities such as Barrio Logan that lack internet access at some of the highest rates in San Diego County and more affluent and well-connected communities in the Northwest¹.

The City has a high Digital Divide compared to other major metros in California. While an estimated 53,000 households in the City lack home internet (ACS 2014- 2018) in areas hardest hit by the pandemic such as the federally designated San Diego Promise Zone², more than 28% of households report having no broadband internet access whatsoever.

The City has demonstrated an ongoing commitment to achieving Digital Equity and Inclusion through their initiative, *SD Access 4 All*³. The City's overarching goal under this initiative is to ensure all residents have access to affordable, high quality broadband connectivity; access to devices, tools and skills necessary to use technology; and publicly accessible environments conducive to remote learning and distance work. Tasked by City Council and the Mayor's Office with connecting low-income households to the internet, the City's Digital Equity working group was established in 2021 prompted by the conditions and impact of Covid-19. To optimize on the efforts underway through *SDAccess4All*, the city understands the need to accelerate the deployment of resilient and robust broadband internet infrastructure and access.

B. OPTIONAL PRE-PROPOSAL CONFERENCE

All proposers are recommended to attend an optional pre-proposal conference. The pre-proposal conference will be held on **Tuesday, August 15, 2023 from 9:00 a.m. to 10:00 a.m.** via Microsoft Teams using the following link:

Microsoft Teams meeting
(Join on your computer, mobile app or room device)

[Click here to join the meeting](#)

Meeting ID: 295 457 609 642 / Passcode: NbjHhj

[Download Teams](#) | [Join on the web](#)

Or call in (audio only): +1 945-468-5511,,751748767# / Phone Conference ID: 751 748 767#

¹ <https://storymaps.arcgis.com/stories/f204b9b88ea4483b8a0d46c8d099c3a7>

² <https://www.sandiego.gov/economic-development/sdpromisezone>

³ <https://www.sandiego.gov/sdaccess>

C. PROJECT BACKGROUND AND SCOPE

Great strides have been taken to advance digital equity at the regional, state and federal level. Senate Bill 156 was signed into law in 2021 by Governor Newsome, allocating over \$6 Billion to equitable broadband access. This funding will support deployment of a statewide middle mile network that is planned to intersect sections of the City of San Diego in addition to last mile infrastructure projects. The federal Infrastructure and Jobs Act allocates \$65 Billion to “expand broadband in communities across the U.S., create more low-cost broadband service options, subsidize the cost of service for low-income households, and provides funding to address the digital equity and inclusion needs in our communities.”

The County of San Diego recently released a Comprehensive Broadband Plan which focuses on rural unincorporated areas. The San Diego Regional Association of Governments (SANDAG) is engaged in similar broadband planning efforts to construct a regional fiber ring. SANDAG acts as the region’s digital equity convenor by leading San Diego’s Digital Divide Task Force. Companies in the private sector and government agencies including SANDAG, Caltrans, the North County Transit District (NCTD), and the Metropolitan Transit System (MTS) have invested in fiber to operate services and systems.

Gaps to equitable broadband access exist in the City of San Diego due to what is understood to be aging digital infrastructure, low competition among internet providers, a lack of broadband penetration in low-income communities and affordability barriers². The City of San Diego owns fiber networks for operational use and manages permitting for broadband deployment. The city may benefit from centralized coordination around fiber and digital infrastructure asset usage, management and planning. The City is without a broadband master plan from which to conduct a study of digital assets, understand need and barriers to broadband access and develop strategic solutions to increase long-term access. The City intends to receive an actionable, comprehensive Broadband Master Plan that specifically aims to gather and study key information, provide analysis on the current broadband access landscape and make recommendations to increase access, adoption, and affordability in identified locations.

Goals of the project include:

1. Increase access and affordability for broadband in the City with a focus on underserved communities, low-income housing residents, and public serving City facilities;
2. Meet State of California standards for broadband speeds;
3. Position the City to coordinate, leverage and implement state and federal broadband infrastructure investments and policy;
4. Identify how City and public resources can be utilized to increase broadband access and affordability;
5. Identify public-private partnerships and how they can be leveraged to increase broadband access and affordability; and
6. Align with City’s commitment to equity, sustainability, and City of San Diego Strategic Plan.

The City expects to receive Proposals for the required services in the range of \$300,000 to \$500,000.

D. RFP OBJECTIVES. The City intends to award a contract to an experienced consultant to develop a comprehensive broadband infrastructure plan.

The Consultant shall build upon work conducted by entities bordering the City of San Diego and operating within its jurisdiction to ensure that there is a comprehensive and coordinated approach for the San Diego region.

The plan should:

- Evolve through a data driven and participatory planning process that incorporates key stakeholders who are integral to project objectives and, appropriately centers communities most impacted by the digital divide.

Study and integrate as appropriate relevant City of San Diego equity and digital equity efforts and strategies, related policies e.g. Dig Once, plans e.g. Climate Action Plan, City of San Diego Strategic Plan and partnerships.

- Develop a baseline set of data and measurable metrics on broadband access.
- Identify, map and leverage, public and private digital infrastructure assets within the City of San Diego. Determine areas of high need and designate priority locations for broadband access projects in accordance with project goals.
- Deliver actionable, evidence backed solutions and concept level designs as appropriate to achieve long-term, affordable last mile broadband of 100 symmetrical upload/download speed wherever possible.
- Proposed solutions and concept level designs should be specific and achievable within the City of San Diego.
- Proposed solutions and concept level designs should be supported with (but not limited to) the following:
 - business cases;
 - governance and operational models;
 - Cost models
 - market soundings; and
 - matched to funding sources

E. TASKS AND DELIVERABLES. The tasks and deliverables shown below represent a high-level summary of the requirements. Consultant is responsible for the detailed tasks and deliverables outlined on pages 7-13 of Appendix A.

Consultant shall abide by all requirements listed in Appendix C (GIS Policies and Procedures and Addendums) pertaining to the use of GIS data.

- 1. Project Initiation.** Upon being awarded the contract, Consultant is expected to achieve a thorough knowledge of San Diego's digital equity landscape along with applicable digital equity efforts, policies, plans and initiatives relevant to this project.

Consultant shall work together with City staff and stakeholders to refine execution steps for each project phase.

Consultant shall prioritize a robust stakeholder engagement process and in alignment with established City community engagement guidelines wherever applicable, with an emphasis on equity and amplifying the voices of San Diego neighborhoods and populations most impacted by the Digital Divide. Consultant shall work with City staff and SDHC to identify relevant stakeholder groups as well as formulate and execute an inclusive stakeholder engagement effort which may include community leaders, business owners, SDHC supported residents, government agencies, anchor institutions (healthcare, education, workforce development, large employers) wireless carriers, wireless and wireline providers, independent competitive local exchange carriers (CLECs), electric utilities, and other relevant parties critical to the success of a comprehensive broadband planning effort.

The stakeholder engagement effort should be designed to ensure depth of participation within a partner-centric approach prioritizing the lived experience of neighborhoods most impacted by the Digital Divide. The design of this effort should reflect the purpose of each identified stakeholder group, and the methods to be used for communicating the initiative.

Please see Appendix B for a non-comprehensive list of community groups to consider for community engagement.

2. Phase 1 – Data Gathering. Data gathered during this phase will be foundational for the Broadband Master Plan and future work plan actions.

Deliverable A: Digital Infrastructure Gap & Asset Analysis. Consultant shall conduct interviews with internal stakeholder departments and SDHC along with various levels of government, anchor institutions, wireless carriers, wireless and wireline providers, independent CLECs, electric utilities, and other relevant parties. In addition, the firm shall analyze existing data and information from various sources including, but not limited to, databases emanating from SANDAG and San Diego County's broadband access planning efforts, the California Interactive Broadband Map, the National Telecommunications Information Administration, and Federal Communications Commission. The firm will also prepare a digital infrastructure Gap and Asset Analysis.

Task A1 – Community Broadband Access mapping market and needs assessment of businesses and residences.

Task A2 – City of San Diego Digital infrastructure inventory and assessment

Task A3 – San Diego Housing Commission Property Assessment

- All SDHC/HDP properties assessed using at a minimum mapping and additional strategies to be designed
- On-site assessments for a sample set of properties

Task A4 – Digital infrastructure Private and non-City Public Asset Inventory and Assessment

Deliverable B: Market Feedback & Broadband Equity Opportunity Assessment
(Concurrent with Tasks A1-A4).

Task B1 – Conduct market assessments and solicit market feedback

3. **Phase 2 – Strategy and Recommendations.** Consultant shall develop the final report in discussion with the City’s Broadband Master Plan working group and key digital equity partners, all of whom will be incorporated into the planning process. Decisions made in this phase will inform phase three.

Deliverable C: City of San Diego Broadband Master Plan Comprehensive Report. All Tasks listed below shall include recommendations specifically aligned with City of San Diego circumstances and specific broadband access goals; where determined applicable, case studies shall be supplied of projects deemed successful as well as case studies of projects deemed unsuccessful.

Task C1 – Comprehensive summary report of benchmark data drawing from phase one findings

Task C2 – Identification of priority project area/s based on composite information and rubric priority formula

Task C3 – Comprehensive Funding Plan

Task C4 – Analysis, models, design and recommendations for strategic and purpose-aligned public/private partnerships

Task C5 – Broadband Model Analysis and Recommendations

Task C6 – Strategic recommendations to integrate, leverage and optimize existing, planned and future City of San Diego initiatives, projects and assets

Task C7 – Governance, ownership, and partnership strategy recommendations

Task C8 – Digital Equity Adoption & Implementation Plan

Task C9 – City of San Diego Socio-Economic impact and Historical Analysis of Community Internet Access

Task C10 – Concept Level Digital Infrastructure Design and technical specifications

Task C11 – Presentations for City Executive Leadership and Stakeholders

Following the conclusion of Phase 2, the City will review options and recommendations presented in the Comprehensive Broadband Master Plan Report. The City will identify specific tactics and projects for the Consultant to take action on in Phase 3 to make them concept level ready.

4. **Phase 3 – Delivery Readiness.** The goal of this phase is to take the actions necessary to have identified priority broadband infrastructure projects, concept level, pre-construction ready build solution.

Deliverable D: City of San Diego Equitable Broadband & Technology Access 3 and 5 year Workplan containing Infrastructure Design & Implementation Roadmap for Identified Priority Projects.

The workplans shall contain at a minimum:

- Network scope and costs; System-level design including proposed routes, infrastructure, technical specifications, build timing, associated costs, and schematic diagrams;
- Phased implementation plan containing a deployment roadmap including but not limited to updated physical and virtual blueprints of the existing and planned network infrastructure;
- Preliminary network design and technical specifications;
- Recommended Business and Delivery Model, public/private partnership models. cost share models, JPAs, fiber sharing agreements;
- Cost model
- Organizational and governance structure;
- Identification of specific funding sources and required resources;
- Template agreements required for implementation efforts;
- Applicable work product for environmental impact studies, engineering studies, and any other studies that may be needed to make broadband infrastructure projects shovel ready.;
- Descriptions of any potential regulatory or legal issues, including any necessary right of entry permitting ; and
- Guidance on necessary future RFP processes, including preparation of a statement of work for such studies.

Task D1 – Presentations for City Executive Leadership and Stakeholders

5. **Phase 4 – Committee and Council Action.** Final Deliverable. Consultant maybe required to prepare, present, and answer questions (onsite) at briefings, Budget and Government Efficiency Committee and City Council meetings, at the City’s sole discretion.

F. SERVICES DELIVERY. Services will be delivered to the City via a mix of onsite and offsite delivery.

Onsite attendance (at City facilities in downtown San Diego) and document preparation will be required for presentations to the City’s Budget and Government Efficiency Committee, City Council, and any other meetings the City deems to be key as part of the delivery of Services.

Offsite delivery for other document reviews and project meetings will be facilitated via online meetings (e.g., Teams). It is envisioned that many of the hours consumed under this engagement will be performed offsite.

G. SERVICES VOLUME. Service hours required for the project will be as determined by the Consultant for the firm, fixed price engagement.

Payment for services will be processed via progress payments, based on the City’s approval and the completion of the detailed Schedule/Milestones/Deliverables agreed upon by the Consultant and the City after award.

H. OTHER REQUIREMENTS. Proposers shall complete Exhibit E, Interrogatories Response Template which includes the following:

1. Proposer Key Personnel, Experience, Qualifications, and Certifications, including:

- Proposer's Background and Experience: The Proposer must include a company overview including (5) years of related experience to the services being requested in this RFP and provide examples of (2) previous engagements within the past (5) years with similar scope;
- Resumes: The Proposer must include brief resumes for personnel that will be assigned to the project, if awarded the contract. The resumes must identify expertise in the above Scope of Work. Proven work experience combined with related education will be means of substantiating expertise;
- Sub-contractors: The Proposer will disclose to the City the name(s) and location(s) of any third party sub-contracted under this Contract Agreement for the Services; and
- References: The Proposer will provide references or cite past redacted examples of work product.

2. Project Management Plan and Overall Approach.

- High level project plan (Microsoft Project Gantt chart, or equivalent);
- Explanation of the roles of the proposed project team;
- Explanation of the role of the City (including time commitments);
- Description of a recommended team structure;
- List of key personnel functions, staffing profiles and responsibilities; and
- High level explanation of how you plan to deliver an essential work product necessary to have broadband infrastructure projects shovel ready.

I. PRICING SUMMARY, PROPOSED MILESTONE SCHEDULE, AND COMPENSATION & FEE SCHEDULE

1. Pricing Summary and Proposed Milestone Schedule (Exhibit D). Proposers shall complete the Pricing Summary and Proposed Milestone Schedule (Exhibit D) including:

- complete all tables including hours by task/deliverable and cost associated with each;
- provide a proposed milestone payment schedule based on the tasks and deliverables pricing provided in Exhibit D.

2. Services Pricing. Proposers shall also submit their own Compensation & Fee Schedule; a complete and detailed cost proposal inclusive of all direct and indirect costs to complete all tasks identified in the Scope of Work. A detailed cost breakdown shall be provided identifying:

- number of staff hours and hourly rates for each professional and support/administrative staff person committed to this effort;
- estimate of all direct costs, such as materials and reproduction costs; and
- estimate of any subconsultant services. The total price must be stated as a total, not to exceed price for all the services and deliverables described in the Scope of Work; and
- Proposed milestones linked to the tasks and deliverables outlined in Appendix A.

Note: The City rates per the above Pricing Template must be inclusive of any travel or expenses incurred through the provision of Services in the cost of the Services,

within their Proposal. The City will not accept any invoices for any expenses or costs incurred outside of Vendor fixed fees or hourly rates.

3. Fixed-Price Deliverables Pricing. The City reserves the right under this Contract to negotiate with Consultant, in good faith, the delivery of Services as described in Exhibit B – Scope of Services on a fixed-fee basis, as-and-when required.

J. DEPARTMENT REPRESENTATIVE. The Department Representative for this Contract is identified in the Notice to Proceed and is responsible for overseeing and monitoring this Contract.

EXHIBIT C – CITY’S GENERAL TERMS AND CONDITIONS

(Please see attached)



THE CITY OF SAN DIEGO
GENERAL CONTRACT TERMS AND PROVISIONS
APPLICABLE TO GOODS, SERVICES, AND CONSULTANT CONTRACTS

ARTICLE I SCOPE AND TERM OF CONTRACT

1.1 Scope of Contract. The scope of contract between the City and a provider of goods and/or services (Contractor) is described in the Contract Documents. The Contract Documents are comprised of the Request for Proposal, Invitation to Bid, or other solicitation document (Solicitation); the successful bid or proposal; the letter awarding the contract to Contractor; the City's written acceptance of exceptions or clarifications to the Solicitation, if any; and these General Contract Terms and Provisions.

1.2 Effective Date. A contract between the City and Contractor (Contract) is effective on the last date that the contract is signed by the parties and approved by the City Attorney in accordance with Charter section 40. Unless otherwise terminated, this Contract is effective until it is completed or as otherwise agreed upon in writing by the parties, whichever is the earliest. A Contract term cannot exceed five (5) years unless approved by the City Council by ordinance.

1.3 Contract Extension. The City may, in its sole discretion, unilaterally exercise an option to extend the Contract as described in the Contract Documents. In addition, the City may, in its sole discretion, unilaterally extend the Contract on a month-to-month basis following contract expiration if authorized under Charter section 99 and the Contract Documents. Contractor shall not increase its pricing in excess of the percentage increase described in the Contract.

ARTICLE II CONTRACT ADMINISTRATOR

2.1 Contract Administrator. The Purchasing Agent or designee is the Contract Administrator for purposes of this Contract, and has the responsibilities described in this Contract, in the San Diego Charter, and in Chapter 2, Article 2, Divisions 5, 30, and 32.

2.1.1 Contractor Performance Evaluations. The Contract Administrator will evaluate Contractor's performance as often as the Contract Administrator deems necessary throughout the term of the contract. This evaluation will be based on criteria including the quality of goods or services, the timeliness of performance, and adherence to applicable laws, including prevailing wage and living wage. City will provide Contractors who receive an unsatisfactory rating with a copy of the evaluation and an opportunity to respond. City may consider final evaluations, including Contractor's response, in evaluating future proposals and bids for contract award.

2.2 Notices. Unless otherwise specified, in all cases where written notice is required under this Contract, service shall be deemed sufficient if the notice is personally delivered or deposited in the United States mail, with first class postage paid, attention to the Purchasing Agent. Proper notice is effective on the date of personal delivery or five (5) days after deposit in a United States postal mailbox unless provided otherwise in the Contract. Notices to the City shall be sent to:

Purchasing Agent
City of San Diego, Purchasing and Contracting Division
1200 3rd Avenue, Suite 200
San Diego, CA 92101-4195

ARTICLE III COMPENSATION

3.1 Manner of Payment. Contractor will be paid monthly, in arrears, for goods and/or services provided in accordance with the terms and provisions specified in the Contract.

3.2 Invoices.

3.2.1 Invoice Detail. Contractor's invoice must be on Contractor's stationary with Contractor's name, address, and remittance address if different. Contractor's invoice must have a date, an invoice number, a purchase order number, a description of the goods or services provided, and an amount due.

3.2.2 Service Contracts. Contractor must submit invoices for services to City by the 10th of the month following the month in which Contractor provided services. Invoices must include the address of the location where services were performed and the dates in which services were provided.

3.2.3 Goods Contracts. Contractor must submit invoices for goods to City within seven days of the shipment. Invoices must describe the goods provided.

3.2.4 Parts Contracts. Contractor must submit invoices for parts to City within seven calendar (7) days of the date the parts are shipped. Invoices must include the manufacturer of the part, manufacturer's published list price, percentage discount applied in accordance with Pricing Page(s), the net price to City, and an item description, quantity, and extension.

3.2.5 Extraordinary Work. City will not pay Contractor for extraordinary work unless Contractor receives prior written authorization from the Contract Administrator. Failure to do so will result in payment being withheld for services. If approved, Contractor will include an invoice that describes the work performed and the location where the work was performed, and a copy of the Contract Administrator's written authorization.

3.2.6 Reporting Requirements. Contractor must submit the following reports using the City's web-based contract compliance portal. Incomplete and/or delinquent reports may cause payment delays, non-payment of invoice, or both. For questions, please view the City's online tutorials on how to utilize the City's web-based contract compliance portal.

3.2.6.1 Monthly Employment Utilization Reports. Contractor and Contractor's subcontractors and suppliers must submit Monthly Employment Utilization Reports by the fifth (5th) day of the subsequent month.

3.2.6.2 Monthly Invoicing and Payments. Contractor and Contractor's subcontractors and suppliers must submit Monthly Invoicing and Payment Reports by the fifth (5th) day of the subsequent month.

3.3 Annual Appropriation of Funds. Contractor acknowledges that the Contract term may extend over multiple City fiscal years, and that work and compensation under this Contract is contingent on the City Council appropriating funding for and authorizing such work and compensation for those fiscal years. This Contract may be terminated at the end of the fiscal year for which sufficient funding is not appropriated and authorized. City is not obligated to pay Contractor for any amounts not duly appropriated and authorized by City Council.

3.4 Price Adjustments. Based on Contractor's written request and justification, the City may approve an increase in unit prices on Contractor's pricing pages consistent with the amount requested in the justification in an amount not to exceed the increase in the Consumer Price Index, San Diego Area, for All Urban Customers (CPI-U) as published by the Bureau of Labor Statistics, or 5.0%, whichever is less, during the preceding one year term. If the CPI-U is a negative number, then the unit prices shall not be adjusted for that option year (the unit prices will not be decreased). A negative CPI-U shall be counted against any subsequent increases in the CPI-U when calculating the unit prices for later option years. Contractor must provide such written request and justification no less than sixty days before the date in which City may exercise the option to renew the contract, or sixty days before the anniversary date of the Contract. Justification in support of the written request must include a description of the basis for the adjustment, the proposed effective date and reasons for said date, and the amount of the adjustment requested with documentation to support the requested change (e.g. CPI-U or 5.0%, whichever is less). City's approval of this request must be in writing.

ARTICLE IV SUSPENSION AND TERMINATION

4.1 City's Right to Suspend for Convenience. City may suspend all or any portion of Contractor's performance under this Contract at its sole option and for its convenience for a reasonable period of time not to exceed six (6) months. City must first give ten (10) days' written notice to Contractor of such suspension. City will pay to Contractor a sum equivalent to the reasonable value of the goods and/or services satisfactorily provided up to the date of suspension. City may rescind the suspension prior to or at six (6) months by providing Contractor with written notice of the rescission, at which time Contractor would be required to resume performance in compliance with the terms and provisions of this Contract. Contractor will be entitled to an extension of time to complete performance under the Contract equal to the length of the suspension unless otherwise agreed to in writing by the Parties.

4.2 City's Right to Terminate for Convenience. City may, at its sole option and for its convenience, terminate all or any portion of this Contract by giving thirty (30) days' written notice of such termination to Contractor. The termination of the Contract shall be effective upon receipt of the notice by Contractor. After termination of all or any portion of the Contract, Contractor shall: (1) immediately discontinue all affected performance (unless the notice directs otherwise); and (2) complete any and all additional work necessary for the orderly filing of

documents and closing of Contractor's affected performance under the Contract. After filing of documents and completion of performance, Contractor shall deliver to City all data, drawings, specifications, reports, estimates, summaries, and such other information and materials created or received by Contractor in performing this Contract, whether completed or in process. By accepting payment for completion, filing, and delivering documents as called for in this section, Contractor discharges City of all of City's payment obligations and liabilities under this Contract with regard to the affected performance.

4.3 City's Right to Terminate for Default. Contractor's failure to satisfactorily perform any obligation required by this Contract constitutes a default. Examples of default include a determination by City that Contractor has: (1) failed to deliver goods and/or perform the services of the required quality or within the time specified; (2) failed to perform any of the obligations of this Contract; and (3) failed to make sufficient progress in performance which may jeopardize full performance.

4.3.1 If Contractor fails to satisfactorily cure a default within ten (10) calendar days of receiving written notice from City specifying the nature of the default, City may immediately cancel and/or terminate this Contract, and terminate each and every right of Contractor, and any person claiming any rights by or through Contractor under this Contract.

4.3.2 If City terminates this Contract, in whole or in part, City may procure, upon such terms and in such manner as the Purchasing Agent may deem appropriate, equivalent goods or services and Contractor shall be liable to City for any excess costs. Contractor shall also continue performance to the extent not terminated.

4.4 Termination for Bankruptcy or Assignment for the Benefit of Creditors. If Contractor files a voluntary petition in bankruptcy, is adjudicated bankrupt, or makes a general assignment for the benefit of creditors, the City may at its option and without further notice to, or demand upon Contractor, terminate this Contract, and terminate each and every right of Contractor, and any person claiming rights by and through Contractor under this Contract.

4.5 Contractor's Right to Payment Following Contract Termination.

4.5.1 Termination for Convenience. If the termination is for the convenience of City an equitable adjustment in the Contract price shall be made. No amount shall be allowed for anticipated profit on unperformed services, and no amount shall be paid for an as needed contract beyond the Contract termination date.

4.5.2 Termination for Default. If, after City gives notice of termination for failure to fulfill Contract obligations to Contractor, it is determined that Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of City. In such event, adjustment in the Contract price shall be made as provided in Section 4.3.2. City's rights and remedies are in addition to any other rights and remedies provided by law or under this Contract.

4.6 Remedies Cumulative. City's remedies are cumulative and are not intended to be exclusive of any other remedies or means of redress to which City may be lawfully entitled in case of any breach or threatened breach of any provision of this Contract.

ARTICLE V ADDITIONAL CONTRACTOR OBLIGATIONS

5.1 Inspection and Acceptance. The City will inspect and accept goods provided under this Contract at the shipment destination unless specified otherwise. Inspection will be made and acceptance will be determined by the City department shown in the shipping address of the Purchase Order or other duly authorized representative of City.

5.2 Responsibility for Lost or Damaged Shipments. Contractor bears the risk of loss or damage to goods prior to the time of their receipt and acceptance by City. City has no obligation to accept damaged shipments and reserves the right to return damaged goods, at Contractor's sole expense, even if the damage was not apparent or discovered until after receipt.

5.3 Responsibility for Damages. Contractor is responsible for all damage that occurs as a result of Contractor's fault or negligence or that of its' employees, agents, or representatives in connection with the performance of this Contract. Contractor shall immediately report any such damage to people and/or property to the Contract Administrator.

5.4 Delivery. Delivery shall be made on the delivery day specified in the Contract Documents. The City, in its sole discretion, may extend the time for delivery. The City may order, in writing, the suspension, delay or interruption of delivery of goods and/or services.

5.5 Delay. Unless otherwise specified herein, time is of the essence for each and every provision of the Contract. Contractor must immediately notify City in writing if there is, or it is anticipated that there will be, a delay in performance. The written notice must explain the cause for the delay and provide a reasonable estimate of the length of the delay. City may terminate this Contract as provided herein if City, in its sole discretion, determines the delay is material.

5.5.1 If a delay in performance is caused by any unforeseen event(s) beyond the control of the parties, City may allow Contractor to a reasonable extension of time to complete performance, but Contractor will not be entitled to damages or additional compensation. Any such extension of time must be approved in writing by City. The following conditions may constitute such a delay: war; changes in law or government regulation; labor disputes; strikes; fires, floods, adverse weather or other similar condition of the elements necessitating cessation of the performance; inability to obtain materials, equipment or labor; or other specific reasons agreed to between City and Contractor. This provision does not apply to a delay caused by Contractor's acts or omissions. Contractor is not entitled to an extension of time to perform if a delay is caused by Contractor's inability to obtain materials, equipment, or labor unless City has received, in a timely manner, documentary proof satisfactory to City of Contractor's inability to obtain materials, equipment, or labor, in which case City's approval must be in writing.

5.6 Restrictions and Regulations Requiring Contract Modification. Contractor shall immediately notify City in writing of any regulations or restrictions that may or will require Contractor to alter the material, quality, workmanship, or performance of the goods and/or services to be provided. City reserves the right to accept any such alteration, including any resulting reasonable price adjustments, or to cancel the Contract at no expense to the City.

5.7 Warranties. All goods and/or services provided under the Contract must be warranted by Contractor or manufacturer for at least twelve (12) months after acceptance by City, except automotive equipment. Automotive equipment must be warranted for a minimum of 12,000 miles or 12 months, whichever occurs first, unless otherwise stated in the Contract. Contractor is responsible to City for all warranty service, parts, and labor. Contractor is required to ensure that warranty work is performed at a facility acceptable to City and that services, parts, and labor are available and provided to meet City's schedules and deadlines. Contractor may establish a warranty service contract with an agency satisfactory to City instead of performing the warranty service itself. If Contractor is not an authorized service center and causes any damage to equipment being serviced, which results in the existing warranty being voided, Contractor will be liable for all costs of repairs to the equipment, or the costs of replacing the equipment with new equipment that meets City's operational needs.

5.8 Industry Standards. Contractor shall provide goods and/or services acceptable to City in strict conformance with the Contract. Contractor shall also provide goods and/or services in accordance with the standards customarily adhered to by an experienced and competent provider of the goods and/or services called for under this Contract using the degree of care and skill ordinarily exercised by reputable providers of such goods and/or services. Where approval by City, the Mayor, or other representative of City is required, it is understood to be general approval only and does not relieve Contractor of responsibility for complying with all applicable laws, codes, policies, regulations, and good business practices.

5.9 Records Retention and Examination. Contractor shall retain, protect, and maintain in an accessible location all records and documents, including paper, electronic, and computer records, relating to this Contract for five (5) years after receipt of final payment by City under this Contract. Contractor shall make all such records and documents available for inspection, copying, or other reproduction, and auditing by authorized representatives of City, including the Purchasing Agent or designee. Contractor shall make available all requested data and records at reasonable locations within City or County of San Diego at any time during normal business hours, and as often as City deems necessary. If records are not made available within the City or County of San Diego, Contractor shall pay City's travel costs to the location where the records are maintained and shall pay for all related travel expenses. Failure to make requested records available for inspection, copying, or other reproduction, or auditing by the date requested may result in termination of the Contract. Contractor must include this provision in all subcontracts made in connection with this Contract.

5.9.1 Contractor shall maintain records of all subcontracts entered into with all firms, all project invoices received from Subcontractors and Suppliers, all purchases of materials and services from Suppliers, and all joint venture participation. Records shall show name, telephone number including area code, and business address of each Subcontractor and Supplier, and joint venture partner, and the total amount actually paid to each firm. Project relevant records, regardless of tier, may be periodically reviewed by the City.

5.10 Quality Assurance Meetings. Upon City's request, Contractor shall schedule one or more quality assurance meetings with City's Contract Administrator to discuss Contractor's performance. If requested, Contractor shall schedule the first quality assurance meeting no later than eight (8) weeks from the date of commencement of work under the Contract. At the quality assurance meeting(s), City's Contract Administrator will provide Contractor with feedback, will note any deficiencies in Contract performance, and provide Contractor with an opportunity to address and correct such deficiencies. The total number of quality assurance meetings that may be required by City will depend upon Contractor's performance.

5.11 Duty to Cooperate with Auditor. The City Auditor may, in his sole discretion, at no cost to the City, and for purposes of performing his responsibilities under Charter section 39.2, review Contractor's records to confirm contract compliance. Contractor shall make reasonable efforts to cooperate with Auditor's requests.

5.12 Safety Data Sheets. If specified by City in the solicitation or otherwise required by this Contract, Contractor must send with each shipment one (1) copy of the Safety Data Sheet (SDS) for each item shipped. Failure to comply with this procedure will be cause for immediate termination of the Contract for violation of safety procedures.

5.13 Project Personnel. Except as formally approved by the City, the key personnel identified in Contractor's bid or proposal shall be the individuals who will actually complete the work. Changes in staffing must be reported in writing and approved by the City.

5.13.1 Criminal Background Certification. Contractor certifies that all employees working on this Contract have had a criminal background check and that said employees are clear of any sexual and drug related convictions. Contractor further certifies that all employees hired by Contractor or a subcontractor shall be free from any felony convictions.

5.13.2 Photo Identification Badge. Contractor shall provide a company photo identification badge to any individual assigned by Contractor or subcontractor to perform services or deliver goods on City premises. Such badge must be worn at all times while on City premises. City reserves the right to require Contractor to pay fingerprinting fees for personnel assigned to work in sensitive areas. All employees shall turn in their photo identification badges to Contractor upon completion of services and prior to final payment of invoice.

5.14 Standards of Conduct. Contractor is responsible for maintaining standards of employee competence, conduct, courtesy, appearance, honesty, and integrity satisfactory to the City.

5.14.1 Supervision. Contractor shall provide adequate and competent supervision at all times during the Contract term. Contractor shall be readily available to meet with the City. Contractor shall provide the telephone numbers where its representative(s) can be reached.

5.14.2 City Premises. Contractor's employees and agents shall comply with all City rules and regulations while on City premises.

5.14.3 Removal of Employees. City may request Contractor immediately remove from assignment to the City any employee found unfit to perform duties at the City. Contractor shall comply with all such requests.

5.15 Licenses and Permits. Contractor shall, without additional expense to the City, be responsible for obtaining any necessary licenses, permits, certifications, accreditations, fees and approvals for complying with any federal, state, county, municipal, and other laws, codes, and regulations applicable to Contract performance. This includes, but is not limited to, any laws or regulations requiring the use of licensed contractors to perform parts of the work.

5.16 Contractor and Subcontractor Registration Requirements. Prior to the award of the Contract or Task Order, Contractor and Contractor's subcontractors and suppliers must register with the City's web-based vendor registration and bid management system. The City may not award the Contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified by the City, the City reserves the right to rescind the Contract award and to make the award to the next responsive and responsible proposer of bidder.

ARTICLE VI INTELLECTUAL PROPERTY RIGHTS

6.1 Rights in Data. If, in connection with the services performed under this Contract, Contractor or its employees, agents, or subcontractors, create artwork, audio recordings, blueprints, designs, diagrams, documentation, photographs, plans, reports, software, source code, specifications, surveys, system designs, video recordings, or any other original works of authorship, whether written or readable by machine (Deliverable Materials), all rights of Contractor or its subcontractors in the Deliverable Materials, including, but not limited to publication, and registration of copyrights, and trademarks in the Deliverable Materials, are the sole property of City. Contractor, including its employees, agents, and subcontractors, may not use any Deliverable Material for purposes unrelated to Contractor's work on behalf of the City without prior written consent of City. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City, without the prior written consent of the City.

6.2 Intellectual Property Rights Assignment. For no additional compensation, Contractor hereby assigns to City all of Contractor's rights, title, and interest in and to the content of the Deliverable Materials created by Contractor or its employees, agents, or subcontractors, including copyrights, in connection with the services performed under this Contract. Contractor

shall promptly execute and deliver, and shall cause its employees, agents, and subcontractors to promptly execute and deliver, upon request by the City or any of its successors or assigns at any time and without further compensation of any kind, any power of attorney, assignment, application for copyright, patent, trademark or other intellectual property right protection, or other papers or instruments which may be necessary or desirable to fully secure, perfect or otherwise protect to or for the City, its successors and assigns, all right, title and interest in and to the content of the Deliverable Materials. Contractor also shall cooperate and assist in the prosecution of any action or opposition proceeding involving such intellectual property rights and any adjudication of those rights.

6.3 Contractor Works. Contractor Works means tangible and intangible information and material that: (a) had already been conceived, invented, created, developed or acquired by Contractor prior to the effective date of this Contract; or (b) were conceived, invented, created, or developed by Contractor after the effective date of this Contract, but only to the extent such information and material do not constitute part or all of the Deliverable Materials called for in this Contract. All Contractor Works, and all modifications or derivatives of such Contractor Works, including all intellectual property rights in or pertaining to the same, shall be owned solely and exclusively by Contractor.

6.4 Subcontracting. In the event that Contractor utilizes a subcontractor(s) for any portion of the work that comprises the whole or part of the specified Deliverable Materials to the City, the agreement between Contractor and the subcontractor shall include a statement that identifies the Deliverable Materials as a “works for hire” as described in the United States Copyright Act of 1976, as amended, and that all intellectual property rights in the Deliverable Materials, whether arising in copyright, trademark, service mark or other forms of intellectual property rights, belong to and shall vest solely with the City. Further, the agreement between Contractor and its subcontractor shall require that the subcontractor, if necessary, shall grant, transfer, sell and assign, free of charge, exclusively to City, all titles, rights and interests in and to the Deliverable Materials, including all copyrights, trademarks and other intellectual property rights. City shall have the right to review any such agreement for compliance with this provision.

6.5 Intellectual Property Warranty and Indemnification. Contractor represents and warrants that any materials or deliverables, including all Deliverable Materials, provided under this Contract are either original, or not encumbered, and do not infringe upon the copyright, trademark, patent or other intellectual property rights of any third party, or are in the public domain. If Deliverable Materials provided hereunder become the subject of a claim, suit or allegation of copyright, trademark or patent infringement, City shall have the right, in its sole discretion, to require Contractor to produce, at Contractor’s own expense, new non-infringing materials, deliverables or works as a means of remedying any claim of infringement in addition to any other remedy available to the City under law or equity. Contractor further agrees to indemnify, defend, and hold harmless the City, its officers, employees and agents from and against any and all claims, actions, costs, judgments or damages, of any type, alleging or threatening that any Deliverable Materials, supplies, equipment, services or works provided under this contract infringe the copyright, trademark, patent or other intellectual property or proprietary rights of any third party (Third Party Claim of Infringement). If a Third Party Claim

of Infringement is threatened or made before Contractor receives payment under this Contract, City shall be entitled, upon written notice to Contractor, to withhold some or all of such payment.

6.6 Software Licensing. Contractor represents and warrants that the software, if any, as delivered to City, does not contain any program code, virus, worm, trap door, back door, time or clock that would erase data or programming or otherwise cause the software to become inoperable, inaccessible, or incapable of being used in accordance with its user manuals, either automatically, upon the occurrence of licensor-selected conditions or manually on command. Contractor further represents and warrants that all third party software, delivered to City or used by Contractor in the performance of the Contract, is fully licensed by the appropriate licensor.

6.7 Publication. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City without prior written consent from the City.

6.8 Royalties, Licenses, and Patents. Unless otherwise specified, Contractor shall pay all royalties, license, and patent fees associated with the goods that are the subject of this solicitation. Contractor warrants that the goods, materials, supplies, and equipment to be supplied do not infringe upon any patent, trademark, or copyright, and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City, its elected officials, officers, and employees from all liability, loss and damages, whether general, exemplary or punitive, suffered as a result of any actual or claimed infringement asserted against the City, Contractor, or those furnishing goods, materials, supplies, or equipment to Contractor under the Contract.

ARTICLE VII INDEMNIFICATION AND INSURANCE

7.1 Indemnification. To the fullest extent permitted by law, Contractor shall defend (with legal counsel reasonably acceptable to City), indemnify, protect, and hold harmless City and its elected officials, officers, employees, agents, and representatives (Indemnified Parties) from and against any and all claims, losses, costs, damages, injuries (including, without limitation, injury to or death of an employee of Contractor or its subcontractors), expense, and liability of every kind, nature and description (including, without limitation, incidental and consequential damages, court costs, and litigation expenses and fees of expert consultants or expert witnesses incurred in connection therewith and costs of investigation) that arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, any goods provided or performance of services under this Contract by Contractor, any subcontractor, anyone directly or indirectly employed by either of them, or anyone that either of them control. Contractor's duty to defend, indemnify, protect and hold harmless shall not include any claims or liabilities arising from the sole negligence or willful misconduct of the Indemnified Parties.

7.2 Insurance. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or

in connection with the performance of the work hereunder and the results of that work by Contractor, his agents, representatives, employees or subcontractors.

Contractor shall provide, at a minimum, the following:

7.2.1 Commercial General Liability. Insurance Services Office Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

7.2.2 Commercial Automobile Liability. Insurance Services Office Form Number CA 0001 covering Code 1 (any auto) or, if Contractor has no owned autos, Code 8 (hired) and 9 (non-owned), with limit no less than \$1,000,000 per accident for bodily injury and property damage.

7.2.3 Workers' Compensation. Insurance as required by the State of California, with Statutory Limits, and Employer’s Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.

7.2.4 Professional Liability (Errors and Omissions). For consultant contracts, insurance appropriate to Consultant’s profession, with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.

If Contractor maintains broader coverage and/or higher limits than the minimums shown above, City requires and shall be entitled to the broader coverage and/or the higher limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.

7.2.5 Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions:

7.2.5.1 Additional Insured Status. The City, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of Contractor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to Contractor’s insurance (at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 if a later edition is used).

7.2.5.2 Primary Coverage. For any claims related to this contract, Contractor's insurance coverage shall be primary coverage at least as broad as ISO CG 20 01 04 13 as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, officials, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it.

7.2.5.3 Notice of Cancellation. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to City.

7.2.5.4 Waiver of Subrogation. Contractor hereby grants to City a waiver of any right to subrogation which the Workers' Compensation insurer of said Contractor may acquire against City by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation endorsement from the insurer.

7.2.5.5 Claims Made Policies (applicable only to professional liability). The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, Contractor must purchase "extended reporting" coverage for a minimum of five (5) years after completion of work.

7.3 Self Insured Retentions. Self-insured retentions must be declared to and approved by City. City may require Contractor to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City.

7.4 Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-VI, unless otherwise acceptable to City.

City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State of California and is included on the List of Approved Surplus Lines Insurers (LASLI list). All policies of insurance carried by non-admitted carriers are subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7.5 Verification of Coverage. Contractor shall furnish City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive Contractor's obligation to provide them. City reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

7.6 Special Risks or Circumstances. City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

7.7 Additional Insurance. Contractor may obtain additional insurance not required by this Contract.

7.8 Excess Insurance. All policies providing excess coverage to City shall follow the form of the primary policy or policies including but not limited to all endorsements.

7.9 Subcontractors. Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that City is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a format at least as broad as the CG 20 38 04 13 endorsement.

ARTICLE VIII BONDS

8.1 Payment and Performance Bond. Prior to the execution of this Contract, City may require Contractor to post a payment and performance bond (Bond). The Bond shall guarantee Contractor's faithful performance of this Contract and assure payment to contractors, subcontractors, and to persons furnishing goods and/or services under this Contract.

8.1.1 Bond Amount. The Bond shall be in a sum equal to twenty-five percent (25%) of the Contract amount, unless otherwise stated in the Specifications. City may file a claim against the Bond if Contractor fails or refuses to fulfill the terms and provisions of the Contract.

8.1.2 Bond Term. The Bond shall remain in full force and effect at least until complete performance of this Contract and payment of all claims for materials and labor, at which time it will convert to a ten percent (10%) warranty bond, which shall remain in place until the end of the warranty periods set forth in this Contract. The Bond shall be renewed annually, at least sixty (60) days in advance of its expiration, and Contractor shall provide timely proof of annual renewal to City.

8.1.3 Bond Surety. The Bond must be furnished by a company authorized by the State of California Department of Insurance to transact surety business in the State of California and which has a current A.M. Best rating of at least "A-, VIII."

8.1.4 Non-Renewal or Cancellation. The Bond must provide that City and Contractor shall be provided with sixty (60) days' advance written notice in the event of non-renewal, cancellation, or material change to its terms. In the event of non-renewal, cancellation, or material change to the Bond terms, Contractor shall provide City with evidence of the new source of surety within twenty-one (21) calendar days after the date of the notice of non-renewal, cancellation, or material change. Failure to maintain the Bond, as required herein, in full force

and effect as required under this Contract, will be a material breach of the Contract subject to termination of the Contract.

8.2 Alternate Security. City may, at its sole discretion, accept alternate security in the form of an endorsed certificate of deposit, a money order, a certified check drawn on a solvent bank, or other security acceptable to the Purchasing Agent in an amount equal to the required Bond.

ARTICLE IX CITY-MANDATED CLAUSES AND REQUIREMENTS

9.1 Contractor Certification of Compliance. By signing this Contract, Contractor certifies that Contractor is aware of, and will comply with, these City-mandated clauses throughout the duration of the Contract.

9.1.1 Drug-Free Workplace Certification. Contractor shall comply with City's Drug-Free Workplace requirements set forth in Council Policy 100-17, which is incorporated into the Contract by this reference.

9.1.2 Contractor Certification for Americans with Disabilities Act (ADA) and State Access Laws and Regulations: Contractor shall comply with all accessibility requirements under the ADA and under Title 24 of the California Code of Regulations (Title 24). When a conflict exists between the ADA and Title 24, Contractor shall comply with the most restrictive requirement (i.e., that which provides the most access). Contractor also shall comply with the City's ADA Compliance/City Contractors requirements as set forth in Council Policy 100-04, which is incorporated into this Contract by reference. Contractor warrants and certifies compliance with all federal and state access laws and regulations and further certifies that any subcontract agreement for this contract contains language which indicates the subcontractor's agreement to abide by the provisions of the City's Council Policy and any applicable access laws and regulations.

9.1.3 Non-Discrimination Requirements.

9.1.3.1 Compliance with City's Equal Opportunity Contracting Program (EOCP). Contractor shall comply with City's EOCP Requirements. Contractor shall not discriminate against any employee or applicant for employment on any basis prohibited by law. Contractor shall provide equal opportunity in all employment practices. Prime Contractors shall ensure that their subcontractors comply with this program. Nothing in this Section shall be interpreted to hold a Prime Contractor liable for any discriminatory practice of its subcontractors.

9.1.3.2 Non-Discrimination Ordinance. Contractor shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring or treatment of subcontractors, vendors or suppliers. Contractor shall provide equal opportunity for subcontractors to participate in subcontracting opportunities. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result

in Contract termination, debarment, or other sanctions. Contractor shall ensure that this language is included in contracts between Contractor and any subcontractors, vendors and suppliers.

9.1.3.3 Compliance Investigations. Upon City's request, Contractor agrees to provide to City, within sixty calendar days, a truthful and complete list of the names of all subcontractors, vendors, and suppliers that Contractor has used in the past five years on any of its contracts that were undertaken within San Diego County, including the total dollar amount paid by Contractor for each subcontract or supply contract. Contractor further agrees to fully cooperate in any investigation conducted by City pursuant to City's Nondiscrimination in Contracting Ordinance. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.4 Equal Benefits Ordinance Certification. Unless an exception applies, Contractor shall comply with the Equal Benefits Ordinance (EBO) codified in the San Diego Municipal Code (SDMC). Failure to maintain equal benefits is a material breach of the Contract.

9.1.5 Contractor Standards. Contractor shall comply with Contractor Standards provisions codified in the SDMC. Contractor understands and agrees that violation of Contractor Standards may be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.6 Noise Abatement. Contractor shall operate, conduct, or construct without violating the City's Noise Abatement Ordinance codified in the SDMC.

9.1.7 Storm Water Pollution Prevention Program. Contractor shall comply with the City's Storm Water Management and Discharge Control provisions codified in Division 3 of Chapter 4 of the SDMC, as may be amended, and any and all applicable Best Management Practice guidelines and pollution elimination requirements in performing or delivering services at City owned, leased, or managed property, or in performance of services and activities on behalf of City regardless of location.

Contractor shall comply with the City's Jurisdictional Urban Runoff Management Plan encompassing Citywide programs and activities designed to prevent and reduce storm water pollution within City boundaries as adopted by the City Council on January 22, 2008, via Resolution No. 303351, as may be amended.

Contractor shall comply with each City facility or work site's Storm Water Pollution Prevention Plan, as applicable, and institute all controls needed while completing the services to minimize any negative impact to the storm water collection system and environment.

9.1.8 Service Worker Retention Ordinance. If applicable, Contractor shall comply with the Service Worker Retention Ordinance (SWRO) codified in the SDMC.

9.1.9 Product Endorsement. Contractor shall comply with Council Policy 000-41 which requires that other than listing the City as a client and other limited endorsements, any advertisements, social media, promotions or other marketing referring to the City as a user of a product or service will require prior written approval of the Mayor or designee. Use of the City Seal or City logos is prohibited.

9.1.10 Business Tax Certificate. Unless the City Treasurer determines in writing that a contractor is exempt from the payment of business tax, any contractor doing business with the City of San Diego is required to obtain a Business Tax Certificate (BTC) and to provide a copy of its BTC to the City before a Contract is executed.

9.1.11 Equal Pay Ordinance. Unless an exception applies, Contractor shall comply with the Equal Pay Ordinance codified in San Diego Municipal Code sections 22.4801 through 22.4809. Contractor shall certify in writing that it will comply with the requirements of the EPO.

9.1.11.1 Contractor and Subcontract Requirement. The Equal Pay Ordinance applies to any subcontractor who performs work on behalf of a Contractor to the same extent as it would apply to that Contractor. Any Contractor subject to the Equal Pay Ordinance shall require all of its subcontractors to certify compliance with the Equal Pay Ordinance in its written subcontracts.

ARTICLE X CONFLICT OF INTEREST AND VIOLATIONS OF LAW

10.1 Conflict of Interest Laws. Contractor is subject to all federal, state and local conflict of interest laws, regulations, and policies applicable to public contracts and procurement practices including, but not limited to, California Government Code sections 1090, *et. seq.* and 81000, *et. seq.*, and the Ethics Ordinance, codified in the SDMC. City may determine that Contractor must complete one or more statements of economic interest disclosing relevant financial interests. Upon City's request, Contractor shall submit the necessary documents to City.

10.2 Contractor's Responsibility for Employees and Agents. Contractor is required to establish and make known to its employees and agents appropriate safeguards to prohibit employees from using their positions for a purpose that is, or that gives the appearance of being, motivated by the desire for private gain for themselves or others, particularly those with whom they have family, business or other relationships.

10.3 Contractor's Financial or Organizational Interests. In connection with any task, Contractor shall not recommend or specify any product, supplier, or contractor with whom Contractor has a direct or indirect financial or organizational interest or relationship that would violate conflict of interest laws, regulations, or policies.

10.4 Certification of Non-Collusion. Contractor certifies that: (1) Contractor's bid or proposal was not made in the interest of or on behalf of any person, firm, or corporation not identified; (2) Contractor did not directly or indirectly induce or solicit any other bidder or proposer to put in a sham bid or proposal; (3) Contractor did not directly or indirectly induce or

solicit any other person, firm or corporation to refrain from bidding; and (4) Contractor did not seek by collusion to secure any advantage over the other bidders or proposers.

10.5 Hiring City Employees. This Contract shall be unilaterally and immediately terminated by City if Contractor employs an individual who within the twelve (12) months immediately preceding such employment did in his/her capacity as a City officer or employee participate in negotiations with or otherwise have an influence on the selection of Contractor.

ARTICLE XI DISPUTE RESOLUTION

11.1 Mediation. If a dispute arises out of or relates to this Contract and cannot be settled through normal contract negotiations, Contractor and City shall use mandatory non-binding mediation before having recourse in a court of law.

11.2 Selection of Mediator. A single mediator that is acceptable to both parties shall be used to mediate the dispute. The mediator will be knowledgeable in the subject matter of this Contract, if possible.

11.3 Expenses. The expenses of witnesses for either side shall be paid by the party producing such witnesses. All other expenses of the mediation, including required traveling and other expenses of the mediator, and the cost of any proofs or expert advice produced at the direct request of the mediator, shall be borne equally by the parties, unless they agree otherwise.

11.4 Conduct of Mediation Sessions. Mediation hearings will be conducted in an informal manner and discovery will not be allowed. The discussions, statements, writings and admissions will be confidential to the proceedings (pursuant to California Evidence Code sections 1115 through 1128) and will not be used for any other purpose unless otherwise agreed by the parties in writing. The parties may agree to exchange any information they deem necessary. Both parties shall have a representative attend the mediation who is authorized to settle the dispute, though City's recommendation of settlement may be subject to the approval of the Mayor and City Council. Either party may have attorneys, witnesses or experts present.

11.5 Mediation Results. Any agreements resulting from mediation shall be memorialized in writing. The results of the mediation shall not be final or binding unless otherwise agreed to in writing by the parties. Mediators shall not be subject to any subpoena or liability, and their actions shall not be subject to discovery.

ARTICLE XII MANDATORY ASSISTANCE

12.1 Mandatory Assistance. If a third party dispute or litigation, or both, arises out of, or relates in any way to the services provided to the City under a Contract, Contractor, its agents, officers, and employees agree to assist in resolving the dispute or litigation upon City's request. Contractor's assistance includes, but is not limited to, providing professional consultations,

attending mediations, arbitrations, depositions, trials or any event related to the dispute resolution and/or litigation.

12.2 Compensation for Mandatory Assistance. City will compensate Contractor for fees incurred for providing Mandatory Assistance. If, however, the fees incurred for the Mandatory Assistance are determined, through resolution of the third party dispute or litigation, or both, to be attributable in whole, or in part, to the acts or omissions of Contractor, its agents, officers, and employees, Contractor shall reimburse City for all fees paid to Contractor, its agents, officers, and employees for Mandatory Assistance.

12.3 Attorneys' Fees Related to Mandatory Assistance. In providing City with dispute or litigation assistance, Contractor or its agents, officers, and employees may incur expenses and/or costs. Contractor agrees that any attorney fees it may incur as a result of assistance provided under Section 12.2 are not reimbursable.

ARTICLE XIII MISCELLANEOUS

13.1 Headings. All headings are for convenience only and shall not affect the interpretation of this Contract.

13.2 Non-Assignment. Contractor may not assign the obligations under this Contract, whether by express assignment or by sale of the company, nor any monies due or to become due under this Contract, without City's prior written approval. Any assignment in violation of this paragraph shall constitute a default and is grounds for termination of this Contract at the City's sole discretion. In no event shall any putative assignment create a contractual relationship between City and any putative assignee.

13.3 Independent Contractors. Contractor and any subcontractors employed by Contractor are independent contractors and not agents of City. Any provisions of this Contract that may appear to give City any right to direct Contractor concerning the details of performing or providing the goods and/or services, or to exercise any control over performance of the Contract, shall mean only that Contractor shall follow the direction of City concerning the end results of the performance.

13.4 Subcontractors. All persons assigned to perform any work related to this Contract, including any subcontractors, are deemed to be employees of Contractor, and Contractor shall be directly responsible for their work.

13.5 Covenants and Conditions. All provisions of this Contract expressed as either covenants or conditions on the part of City or Contractor shall be deemed to be both covenants and conditions.

13.6 Compliance with Controlling Law. Contractor shall comply with all applicable local, state, and federal laws, regulations, and policies. Contractor's act or omission in violation of applicable local, state, and federal laws, regulations, and policies is grounds for contract

termination. In addition to all other remedies or damages allowed by law, Contractor is liable to City for all damages, including costs for substitute performance, sustained as a result of the violation. In addition, Contractor may be subject to suspension, debarment, or both.

13.7 Governing Law. The Contract shall be deemed to be made under, construed in accordance with, and governed by the laws of the State of California without regard to the conflicts or choice of law provisions thereof.

13.8 Venue. The venue for any suit concerning solicitations or the Contract, the interpretation of application of any of its terms and conditions, or any related disputes shall be in the County of San Diego, State of California.

13.9 Successors in Interest. This Contract and all rights and obligations created by this Contract shall be in force and effect whether or not any parties to the Contract have been succeeded by another entity, and all rights and obligations created by this Contract shall be vested and binding on any party's successor in interest.

13.10 No Waiver. No failure of either City or Contractor to insist upon the strict performance by the other of any covenant, term or condition of this Contract, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this Contract, shall constitute a waiver of any such breach of such covenant, term or condition. No waiver of any breach shall affect or alter this Contract, and each and every covenant, condition, and term hereof shall continue in full force and effect without respect to any existing or subsequent breach.

13.11 Severability. The unenforceability, invalidity, or illegality of any provision of this Contract shall not render any other provision of this Contract unenforceable, invalid, or illegal.

13.12 Drafting Ambiguities. The parties acknowledge that they have the right to be advised by legal counsel with respect to the negotiations, terms and conditions of this Contract, and the decision of whether to seek advice of legal counsel with respect to this Contract is the sole responsibility of each party. This Contract shall not be construed in favor of or against either party by reason of the extent to which each party participated in the drafting of the Contract.

13.13 Amendments. Neither this Contract nor any provision hereof may be changed, modified, amended or waived except by a written agreement executed by duly authorized representatives of City and Contractor. Any alleged oral amendments have no force or effect. The Purchasing Agent must sign all Contract amendments.

13.14 Conflicts Between Terms. If this Contract conflicts with an applicable local, state, or federal law, regulation, or court order, applicable local, state, or federal law, regulation, or court order shall control. Varying degrees of stringency among the main body of this Contract, the exhibits or attachments, and laws, regulations, or orders are not deemed conflicts, and the most stringent requirement shall control. Each party shall notify the other immediately upon the identification of any apparent conflict or inconsistency concerning this Contract.

13.15 Survival of Obligations. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with this Contract, as well as all continuing obligations indicated in this Contract, shall survive, completion and acceptance of performance and termination, expiration or completion of the Contract.

13.16 Confidentiality of Services. All services performed by Contractor, and any sub-contractor(s) if applicable, including but not limited to all drafts, data, information, correspondence, proposals, reports of any nature, estimates compiled or composed by Contractor, are for the sole use of City, its agents, and employees. Neither the documents nor their contents shall be released by Contractor or any subcontractor to any third party without the prior written consent of City. This provision does not apply to information that: (1) was publicly known, or otherwise known to Contractor, at the time it was disclosed to Contractor by City; (2) subsequently becomes publicly known through no act or omission of Contractor; or (3) otherwise becomes known to Contractor other than through disclosure by City.

13.17 Insolvency. If Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the Contract, written notification of the bankruptcy to the Purchasing Agent and the Contract Administrator responsible for administering the Contract. This notification shall be furnished within five (5) days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of City contract numbers and contracting offices for all City contracts against which final payment has not been made. This obligation remains in effect until final payment is made under this Contract.

13.18 No Third Party Beneficiaries. Except as may be specifically set forth in this Contract, none of the provisions of this Contract are intended to benefit any third party not specifically referenced herein. No party other than City and Contractor shall have the right to enforce any of the provisions of this Contract.

13.19 Actions of City in its Governmental Capacity. Nothing in this Contract shall be interpreted as limiting the rights and obligations of City in its governmental or regulatory capacity.

Cost Proposal

CTC proposes to perform the tasks described in Appendix A for an estimated total, not-to-exceed cost of \$495,100. CTC will invoice the client, based on an agreed project timeline and milestone schedule, upon the completion of tasks. We will not bill based on the estimated breakout of hours.

As requested in Exhibit D, Pricing Summary and Proposed Milestone Schedule, we have provided the estimated hours per task or an estimated cost per deliverable.

Table 1. Project Initiation
(Milestone Percentage = 5%)

Deliverable	Description	Total Hours	Total Cost
Project Initiation	Stakeholder Engagement and Planning	40	\$10,500
Total – Initiation Deliverable		40	\$10,500

Phase 1 – Data Gathering

Table 2. Deliverable A. Digital Infrastructure Gap & Asset Analysis
(Milestone Percentage = 14%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
A1	Community Broadband Access mapping: market and needs assessment of businesses and residences	80	\$18,500
A2	City of San Diego Digital infrastructure inventory and assessment	60	\$17,500
A3	San Diego Housing Commission Property Assessment	40	\$10,500
A4	Digital Infrastructure Private and Public Asset Inventory and Assessment	80	\$18,500
Totals – Deliverable A		260	\$65,000

Table 3. Deliverable B. Market Feedback & Broadband Equity Opportunity Assessment.
(Milestone Percentage = 6 %)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
B1	Conduct market assessments and solicit market feedback	80	\$26,400
Totals – Deliverable B		80	\$26,400

Phase 2 – Strategy and Recommendations

Table 4. Deliverable C. City of San Diego Broadband Master Plan Comprehensive Report
(Milestone Percentage = 30%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
C1	Comprehensive summary report of benchmark data drawing from phase one findings	20	\$6,600
C2	Identification of priority project area/s based on composite information and rubric priority formula	80	\$26,400
C3	Comprehensive Funding Plan	80	\$26,400
C4	Analysis, models, design and recommendations for strategic and purpose-aligned public/private partnerships	200	\$81,200
C5	Broadband Model Analysis and Recommendations	60	\$17,500
C6	Strategic recommendations to integrate, leverage and optimize existing, planned and future City of San Diego initiatives, projects and assets	80	\$26,400
C7	Governance, ownership, and partnership strategy recommendations	40	\$13,200
C8	Digital Equity Adoption & Implementation Plan	20	\$6,600
C9	City of San Diego Socio-Economic impact and Historical Analysis of Community Internet Access	40	\$13,200
C10	Concept Level Digital Infrastructure Design and technical specifications	120	65,000
C11	Presentations for City Executive Leadership and Stakeholders	20	\$6,600
Totals – Deliverable C		760	\$289,100

Phase 3 – Delivery Readiness

Table 5. Deliverable D. Digital Infrastructure Gap & Asset Analysis

(Milestone Percentage = 30%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
D	Digital Equity Implementation Plan	240	\$93,600
Total – Deliverable D		240	\$93,600

Phase 4 – Committee and Council Action

Table 6. Final Deliverable. Consultant will be required to prepare, present, and answer questions (onsite) at briefings, Budget and Government Efficiency Committee and City Council meetings.

(Milestone Percentage = 15%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
Final	Committee and Council Action	40	\$10,500
Total – Final Deliverable		40	\$10,500

Table 7. Deliverable Cost and Milestone Summary:

Phase	Deliverable	Description	Total Hours (by Deliverable)	Total Cost (by Deliverable)	Milestone Percentage
Project Initiation	N/A	Stakeholder Engagement	40	\$10,500	5%
1	A	Digital Infrastructure Gap & Asset Analysis	260	\$65,000	14%
1	B	Market Feedback & Broadband Equity Opportunity Assessment	80	\$26,400	6%
2	C	City of San Diego Broadband Master Plan Comprehensive Report	760	\$289,100	30%
3	D	Digital Equity Implementation Plan	240	\$93,600	30%
4	Final	Committee and Council Action Preparation and Participation	40	\$10,500	15%
TOTAL – ALL DELIVERABLES			1420	\$495,100	100%

CTC reserves the right to adjust budgeted hours, moving resources and time from one task to another, as needed, as long as it does not exceed the fixed fee.

This estimate does not include costs associated with any potential supplementary requests made throughout the project timeline. Should the client request additional resource time or services outside of scope, CTC will bill at the hourly rates outlined below.

The table below lists the hourly rates for CTC and REBEL staff for any requested services outside the agreed-upon scope of services.

Hourly Rates	
Staff/Labor Category	Hourly Rate
CTC Technology & Energy	
CTO/Director of Business Consulting	\$300
Principal Analyst / Engineer	\$275
Senior Analyst / Engineer	\$250
Staff Analyst / Engineer	\$225
REBEL	
Senior Program Manager	\$395

Senior Analyst	\$260
Financial Analyst	\$220

CITY OF SAN DIEGO
ADMINISTRATIVE REGULATION

SUBJECT	Number 90.64	Issue 2	Page 1 of 8
PROTECTION OF SENSITIVE INFORMATION AND DATA	Effective Date May 5, 2017		

1. PURPOSE

- 1.1. To establish a policy to ensure the confidentiality and protection of *Sensitive Information* against unauthorized use; to establish procedures to control access to *Sensitive Information* so that it is only accessible by *Authorized Persons*; and to establish safeguards to ensure the appropriate use of *Sensitive Information* by *Authorized Persons*.
- 1.2. To define responsibility and procedures for granting *Authorized Persons* access to *Sensitive Information*.
- 1.3. To define processes by which access to *Sensitive Information* is administered and to develop control points in compliance with City policy.

2. SCOPE

- 2.1. This policy applies to all City employees in all City departments, including independent departments as authorized by the signing authorities below; and to City volunteers, contractors, vendors, and other individuals granted access to *Sensitive Information* under the City's control by the nature of their support or service functions.
- 2.2. This policy and procedures apply to all Sensitive Information created, owned, stored, managed or under the control of the City of San Diego, regardless of the media which contains the Sensitive Information, including but not limited to paper, microfilm, microfiche or any analog or digital format.
- 2.3. Nothing in this Administrative Regulation supersedes any stricter requirement(s) set by other authorities (i.e., local, state, and/or federal laws, rules or regulations), such as obtaining or retaining employment in a law enforcement agency; nor does this Administrative Regulation supersede any applicable, stricter rules, regulations or policies that affect access to or use of *Sensitive Information*. In such cases, the department head must ensure implementation or application of any such superseding rules, regulations or policies include adequately strong internal controls over *Sensitive Information*.

(Supersedes Administrative Regulation 90.64, Issue 1, effective July 1, 2009)

Authorized

(Signature on File)

CHIEF OPERATING OFFICER

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3. DEFINITIONS

- 3.1. Appointing Authority - An unclassified, management-level position designated by the department head or higher who has the authority to grant permission for an employee or individual to be authorized for access to *Sensitive Information*.
- 3.2. Authorized Person - An employee or other individual who is granted permission to access or use *Sensitive Information* by an *Appointing Authority*, as approved by the *Information/Data Owner*, at the type and the *Level of Access* to the specific information required for the performance of his or her job duties.
- 3.3. Authorization Acknowledgment Form - The City's official form used to request and authorize an individual's access to or use of *Sensitive Information* (see Appendix). This form will be available on the City's Intranet site (CityNet) on the 'Forms' page.
- 3.4. Information/Data Owner - The department head or designee who is the primary recipient or manager of particular *Sensitive Information* or who has the responsibility to oversee the collection, maintenance or management of such information or data. There will only be one defined *Information/Data Owner* for any particular source of data; although other departments may collect and/or access the data. An *Information/Data Owner* may also be an *Appointing Authority*, as defined in Section 3.1 above.
- 3.5. Level of Access - The amount of *Sensitive Information* for which access is granted for any specific category or type of *Sensitive Information*, such as full access to all information related to a particular category or document, or limited access to only specific pieces of information (i.e., certain fields in a database) required for the performance of valid job duties.
- 3.6. Personal Identifying Information - Shall include information listed in California Penal Code Section 530.55(b), as amended (Sept. 2006), which reads, in pertinent part:
 - 3.6.1. Person - A natural *Person*, living or deceased, firm, association, organization, partnership, business trust, company, corporation, limited liability company, or public entity, or any other legal entity.
 - 3.6.2. Personal Identifying Information - Any name, address, telephone number, health insurance number, taxpayer identification number, school identification number, state or federal driver's license or identification number, social security number, professional or occupational number, mother's maiden name, demand deposit account number, savings account number, checking account number, PIN (personal identification number) or password, alien registration number, government passport number, date of birth, unique biometric data including fingerprint, facial scan identifiers, voiceprint, retina or iris image, or other unique physical representation, unique electronic data including information identification number assigned to the *Person*, address or routing code, telecommunication identifying

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information or access device, information contained in a birth or death certificate, credit card number of an individual *Person*, or an equivalent form of identification.

3.7. For the purpose of this policy, *Sensitive Information* shall mean:

3.7.1. *Personal Identifying Information* (as defined above), also including debit card number of an individual *Person*, and where home/personal address and telephone number are included and work/office address and telephone number are excluded (i.e., the City Directory is not considered *Sensitive Information*); and

3.7.2. Any information that is possessed by the City of San Diego which is not subject to the California Public Records Act (refer to Administrative Regulation 95.20), and which may be used for other than the intended purpose of such information, to cause harm to or otherwise jeopardize the City of San Diego or any individual, or used in violation of any local, state or federal law (for example the Health Insurance Portability and Accountability Act of 1996 (HIPAA)).

3.8. *Sensitive Information Custodian* - The *Person* who manages the physical or computer-based access to *Sensitive Information*; for example an office manager or records manager who controls access to locked file rooms/cabinets, or a computer systems administrator who manages the creation of user accounts and passwords to provide specific access to particular data. A *Sensitive Information Custodian* may also be an *Information/Data Owner*, as defined in Section 3.4. above.

3.9. *Type of Access* - Refers to Read Only, Write/Create, Edit/Modify, and Delete.

4. POLICY

4.1. *Sensitive Information* shall be maintained in a confidential manner and access restricted to only employees or individuals properly authorized by his or her *Appointing Authority* and approved by the *Information/Data Owner*, based on verified business needs to have access to such information and/or in compliance with specific legal requirements.

4.2. Contractors and vendors or other non-City employees who are authorized to access or use *Sensitive Information*, shall be required to enter into agreements stating that the individuals specified for this access and their employing Contractor/Vendor agree to be contractually bound by the terms and conditions of this policy, including personal liability, as part of their contract or agreement prior to being granted access to *Sensitive Information*.

4.3. Authorization to access or use *Sensitive Information* shall be based on a functional role (job duties) and not linked directly with a specific individual, such that when an *Authorized Person's* job duties no longer require access to or use of *Sensitive Information*, the ability to access or use such information shall be revoked. At no time shall a contractor's or vendor's access to *Sensitive Information* extend beyond the termination of the authorizing

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contract, and such access shall be revoked as soon as the duties requiring access or use have ended, regardless of the end date of the contract.

- 4.4. The *Information/Data Owner* shall specify the type and the *Level of Access* that should be assigned to various functional roles that require access to the *Sensitive Information* based on an employee's or individual's job requirements.
- 4.5. *Authorized Persons* shall access or use *Sensitive Information* only for its intended purpose for which it was obtained and maintained by the City of San Diego. An employee or individual authorized to access or use *Sensitive Information* shall sign an *Authorization Acknowledgement Form* stating he or she has read, understands, and agrees to abide by this policy.
- 4.6. As a standard IT security measure, *Authorized Persons* shall not share their User ID and/or password with anyone else, and shall not have their User ID and/or password written down in any unsecured location (e.g., anywhere around their work location). "Generic" User IDs shall not be used for system access to *Sensitive Information*; each *Authorized Person* must use an assigned, unique User ID that is directly linked with the user's name. As a standard physical security measure, *Authorized Persons* shall not share their building or facility access key card or key(s) with anyone else, nor shall they allow access into secured areas by unauthorized *Persons*.
- 4.7. Violation of this policy, either by unauthorized *Persons* accessing or attempting to access *Sensitive Information*, or by *Authorized Persons* accessing or using *Sensitive Information* for other than its intended purpose or beyond the scope of their duties, may result in disciplinary action, up to and including termination of employment, and also subject the violating individual(s) to personal liability without the option of City legal defense. In the case of contractors or vendors, violation of this policy will be considered a breach of contract and appropriate actions taken on that basis. If deemed necessary, information regarding employee, volunteer, contractor or vendor violation of this policy may be referred to the appropriate agency for any civil and/or criminal action, as applicable.
- 4.8. Appointing Authorities shall review the list of their employees, contractors or other individuals who they have designated as *Authorized Persons* with access to *Sensitive Information*, at least semi-annually, to ensure continued authorization is warranted and to update (add, delete or modify) the authorization list appropriately.
- 4.9. *Information/Data Owners* shall verify and document semi-annually that the Appointing Authorities performed a thorough review of authorized users in compliance with this policy (Section 4.8.), by comparing the *Appointing Authority's* report with a list of individuals currently authorized to access the *Sensitive Information* over which the Information/Data Owner has control and authority. For internal control purposes, to maintain segregation of duties, this verification must be performed by someone other than the *Appointing Authority* who submitted the semi-annual review of *Authorized Persons*. All discrepancies shall be reported back to the impacted *Appointing Authority* for

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appropriate corrective action. *Information/Data Owners* shall retain records of such reviews and actions for the period of time set within the citywide or departmental Records Retention Schedule as approved by the City Clerk.

- 4.10. *Sensitive Information* stored in City computer systems shall be secured and maintained in accordance with applicable provisions of the Information Security Guidelines and Standards, as amended.
- 4.11. *Sensitive Information* stored in paper or other non-digital formats shall have appropriate physical security, and access to such information shall also comply with Administrative Regulation 95.10 for validating the identity of the individual requesting authorized access.
- 4.12. Upon the discovery of any breach of the protection of *Sensitive Information* through the accidental, inadvertent or purposeful release of such information to any unauthorized *Persons*, the *Person* discovering such breach should immediately notify the *Information/Data Owner* or their *Appointing Authority*, and, if the information was stored on City computer systems, also notify the Chief Information Security Officer in the Department of Information Technology.
 - 4.12.1. Depending on the nature and scope of such breach and release of information, additional notifications must comply with applicable state and federal regulations.
 - 4.12.2. The Information/Data Owner, in coordination with the Chief Information Security Officer from the Department of Information Technology (if applicable), should immediately take whatever steps are deemed necessary to stop any further breach of the protected information and to minimize any potential or actual losses or damages to the City of San Diego.

5. RESPONSIBILITY

5.1. Supervisor

- 5.1.1. When an employee's, volunteer's or contractor's job duties require access to or use of *Sensitive Information*, the immediate supervisor will complete an Authorization Acknowledgment Form. In addition, the supervisor must ensure that the proper system access/account request form and process is followed for the specific computer system where the *Authorized Person* needs access, specifying the nature of the job duties and the level and *Type of Access* or use requested. The supervisor will ensure the accuracy and completeness of information on the forms. After obtaining the employee's signature, the acknowledgement and request forms will be routed to the *Appointing Authority* for approval. Likewise, when an employee's, volunteer's or contractor's job duties change such that access to or use of *Sensitive Information* is no longer needed, the immediate supervisor will notify both the

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Appointing Authority and the *Information/Data Owner*, as soon as possible (no more than five (5) business days).

- 5.2. *Authorized Person* (employee, volunteer, contractor, vendor or other individual being authorized for access).
 - 5.2.1. Any *Person* being given access to *Sensitive Information* must sign the *Authorization Acknowledgement Form* stating he or she has read, understands, and agrees to comply with this policy for access or use and protection of such information. A copy of the final, approved form shall be kept in the employee's departmental personnel file, as the *Appointing Authority's* record; or for volunteers, on file with the department where assigned; or for a contractor, on file with the contract manager.
- 5.3. Department *Appointing Authority*
 - 5.3.1. The Department *Appointing Authority* having management control over the employee, volunteer, contractor Vendor or other individual seeking authorization to access *Sensitive Information*, shall review the *Authorization Acknowledgement* and system access/account request forms for appropriateness of the job functions for the type and *Level of Access* requested while considering appropriate segregation of duties, and ensure the forms are signed by both the individual and supervisor.
 - 5.3.2. The Department *Appointing Authority* will sign either approval or denial of the request, providing the reasons for any denial, and route the approved request form to the appropriate *Information/Data Owner(s)*, or route a denied form back to the supervisor. *Appointing Authorities* shall maintain a copy of all authorization forms they approve, including those for non-City employees (i.e., volunteers and contractors). Any changes reported in the job duties of *Authorized Persons* which require a change in the access to or use of *Sensitive Information* must be immediately communicated to the *Information/Data Owner* to initiate the appropriate change in access. The semi-annual reviews should take place in May and November each year. The *Appointing Authority* will submit documentation of each review to the *Information/Data Owner* and these records will be retained by the department for the period of time set by the citywide or departmental Records Retention Schedule as approved by the City Clerk.
- 5.4. *Information/Data Owner* (owner of the information, regardless of its format or mechanism of access, [i.e., computerized system, hard copy file, etc.])
 - 5.4.1. The *Information/Data Owner* for each different source of *Sensitive Information* covered by an approved access request form will review each request to ensure the type and *Level of Access* requested is appropriate for the job functions of the individual seeking access. Upon confirmation of the business need to have access

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to *Sensitive Information*, the Information/Data Owner will sign approval to grant access, and may modify the type or *Level of Access* granted, as he or she deems necessary and appropriate, in consultation with the requesting *Appointing Authority*. The Information/Data Owner will initiate any further actions necessary to grant access to the *Authorized Person* (such as any computer system access processes). *Information/Data Owners* will maintain a list of individuals currently authorized access to their *Sensitive Information* and provide such list to the appropriate *Appointing Authority* for semi-annual review at the end of April and October each year

5.5. *Sensitive Information Custodian* (Administrator of the format and/or mechanism of access [i.e., computerized system or hard copy file] for the given information)

5.5.1. The *Authorized Person's* access to the identified *Sensitive Information* will be set up following the established procedures either in the IT Security Guidelines and Standards for access to electronic or digital data or following departmental internal controls for paper or physical records, based on the nature (media/format) of the *Sensitive Information*.

5.6. Department of Information Technology

5.6.1. Annually review this policy for any necessary updates or revisions, taking into account changes in City organization and IT systems. Maintain the list of *Information/Data Owners* and update it annually. Maintain the necessary correlation between this policy and other IT security policies and/or regulations. Ensure City third-party vendors who have access to this data comply with this and other IT security policies. The Department of Information Technology is also responsible for ensuring that the requirements of this policy are communicated to all employees at least annually, using citywide and/or departmental training or communication channels.

5.7. Purchasing & Contracting Department

5.7.1. Ensure that this policy is included as an Addendum to or within the Terms and Conditions of signed contracts or agreements, for all contracts and/or agreements that include a contractor's or vendor's need to access or use the City's *Sensitive Information*.

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APPENDIX

Legal References

Civil Service Rules and City Personnel Manual
Civil Service Rules, Definitions (p.1), "Appointing Authority"
Civil Service Rule XI, "Resignation, Removal, Suspension, Reduction in Compensation, Demotion"
Personnel Manual, Index Code A-3, "Improper Use of City Resources"
Personnel Manual, Index Code G-1, "Code of Ethics and Conduct"
Administrative Regulation 45.50 - Private Use of City Labor, Materials, Equipment and Supplies Prohibited
Administrative Regulation 90.63 - Information Security Policy
Administrative Regulation 95.10 - Identification of City Employees and Controlled Access to City Facilities
Administrative Regulation 95.20 - Public Records Act Requests and Civil Subpoenas;
Procedures for Furnishing Documents and Recovering Costs
Administrative Regulation 95.60 - Conflict of Interest and Employee Conduct
IT Security Guidelines and Standards
Employee Performance Plans, Ethics and Integrity Section
Applicable California State Laws
Applicable Federal Laws

Forms Involved

Form DoIT-010A, "*Sensitive Information* Authorization Acknowledgement-City Employees"
Form DoIT-010B, "*Sensitive Information* Authorization Acknowledgement-City Volunteers"
Form DoIT-010C, "*Sensitive Information* Authorization Acknowledgement-City Contractors/Vendors"

Subject Index

Sensitive Information
Sensitive Data Information Security
Protection of *Sensitive Information*

Distribution

All Departments (Mayoral and Non-Mayoral)

Administering Department

Department of Information Technology

CITY OF SAN DIEGO
Sensitive Information Authorization Acknowledgement Form - City Employees

Authorized Person (City Employee requesting authorized access to Sensitive Information):

<i>Name (Printed)</i>	<i>Job Classification</i>	<i>Network (AD) Login/User ID</i>
<i>Department / Division</i>		
<i>Mail Station</i>	<i>Office Phone</i>	<i>Office FAX</i>
<i>Supervisor's Name (Printed)</i>	<i>Supervisors Phone</i>	

Policy Summary (pertinent excerpts from Administrative Regulation 90.64):

- 4.1. Sensitive Information shall be maintained in a confidential manner and access restricted to only employees or individuals properly authorized by his or her Appointing Authority and approved by the Information/Data Owner, based on verified business needs to have access to such information and/or in compliance with specific legal requirements.
- 4.3. Authorization to access or use Sensitive Information shall be based on a functional role (job duties) and not linked directly with a specific individual, such that when an authorized person's job duties no longer require access to or use of Sensitive Information, the ability to access or use such information shall be revoked. [...]
- 4.5. Authorized Persons shall access or use Sensitive Information only for its intended purpose for which it was obtained and maintained by the City of San Diego. An employee or individual authorized to access or use Sensitive Information shall sign an Authorization Acknowledgement Form stating he or she has read, understands, and agrees to abide by this policy.
- 4.7. Violation of this policy, either by unauthorized persons accessing or attempting to access Sensitive Information, or by Authorized Persons accessing or using Sensitive Information for other than its intended purpose or beyond the scope of their duties, may result in disciplinary action, up to and including termination of employment, and also subject the violating individual(s) to personal liability without the option of City legal defense. In the case of contractors or vendors, violation of this policy will be considered a breach of contract and appropriate actions taken on that basis. If deemed necessary, information regarding employee, volunteer, contractor or vendor violation of this policy may be referred to the appropriate agency for any civil and/or criminal action, as applicable.

Acknowledgement

By signing below, the above employee acknowledges that he or she has been provided a full copy of A.R. 90.64 ("Protection of Sensitive Information and Data"), which has been discussed with his or her supervisor, and further acknowledges that he or she has read, understands, and agrees to comply with the provisions of the policy. Employee understands that this form will be kept as part of his or her permanent employee file, and that he or she may receive a copy, if requested. The supervisor acknowledges that he or she has discussed the policy with the above employee and understands the supervisor's obligations regarding employee's access to Sensitive Information under this policy.

Employee's Signature

Date Signed

Supervisor's Signature

Date Signed

CITY OF SAN DIEGO
Sensitive Information Authorization Acknowledgement Form-City Volunteers

Authorized Person (City Volunteer requesting authorized access to Sensitive Information):

<i>Name (Printed)</i>	<i>Volunteer Assignment</i>	<i>Network (AD) Login/User ID</i>
<i>City Department / Division (where assigned as volunteer)</i>		
<i>Work Location</i>		<i>Contact Phone</i>
<i>City Supervisor's Name (Printed)</i>	<i>City Supervisor's Phone</i>	<i>City Supervisor's Mail Station</i>

Policy Summary (pertinent excerpts from Administrative Regulation 90.64):

- 4.1. Sensitive Information shall be maintained in a confidential manner and access restricted to only employees or individuals properly authorized by his or her Appointing Authority and approved by the Information/Data Owner, based on verified business needs to have access to such information and/or in compliance with specific legal requirements.
- 4.3. Authorization to access or use Sensitive Information shall be based on a functional role (Job duties) and not linked directly with a specific individual, such that when an authorized person's job duties no longer require access to or use of Sensitive Information, the ability to access or use such information shall be revoked. At no time shall a contractor's or vendor's access to Sensitive Information extend beyond the termination of the authorizing contract, and such access shall be revoked as soon as the duties requiring access or use have ended, regardless of the end date of the contract.
- 4.5. Authorized Persons shall access or use Sensitive Information only for its intended purpose for which it was obtained and maintained by the City of San Diego. An employee or individual authorized to access or use Sensitive Information shall sign an Authorization Acknowledgement Form stating he or she has read, understands, and agrees to abide by this policy.
- 4.7. Violation of this policy, either by unauthorized persons accessing or attempting to access Sensitive Information, or by Authorized Persons accessing or using Sensitive Information for other than its intended purpose or beyond the scope of their duties, may result in disciplinary action, up to and including termination of employment, and also subject the violating individual(s) to personal liability without the option of City legal defense. In the case of contractors or vendors, violation of this policy will be considered a breach of contract and appropriate actions taken on that basis. If deemed necessary, information regarding employee, volunteer, contractor or vendor violation of this policy may be referred to the appropriate agency for any civil and/or criminal action, as applicable.

Acknowledgement

By signing below, the above City Volunteer acknowledges that he or she has been provided a full copy of A.R. 90.64 ("Protection of Sensitive Information and Data"), which has been discussed with the City Supervisor, and further acknowledges that he or she has read, understands, and agrees to comply with the provisions of the policy. City Volunteer understands that this form will be kept on file with the City Department, and that he or she may receive a copy, if requested. The City Supervisor acknowledges that he or she has discussed the policy with the above volunteer and understands the supervisor's obligations regarding the volunteer's access to Sensitive Information under this policy.

Volunteer's Signature

Date Signed

City Supervisor's Signature

Date Signed

CITY OF SAN DIEGO

Sensitive Information Authorization Acknowledgement Form- City Contractors/Vendors

Authorized Person (City Contractor/Vendor requesting authorized access to Sensitive Information):

<i>Name (Printed)</i> Joanne S. Hovis	<i>eMail Address</i> renewals@ctcnet.us	<i>Network (AD) Login/User ID</i> N/A
<i>Company/Organization</i> Columbia Telecommunications Corporation		<i>Contractor/Vendor Office Phone</i> 301-933-1488
<i>City Department (managing contract)</i>		<i>Contractor/Vendor Office FAX</i> N/A
<i>City Contract Manager's Name (Printed)</i>	<i>City Contract Manager's Phone</i>	<i>City Contract Manager's Mail Sta.</i>

Policy Summary (pertinent excerpts from City Administrative Regulation 90.64):

- 4.1. Sensitive Information shall be maintained in a confidential manner and access restricted to only employees or individuals properly authorized by his or her Appointing Authority and approved by the Information/Data Owner, based on verified business needs to have access to such information and/or in compliance with specific legal requirements.
- 4.3. Authorization to access or use Sensitive Information shall be based on a functional role (job duties) and not linked directly with a specific individual, such that when an authorized person's job duties no longer require access to or use of Sensitive Information, the ability to access or use such information shall be revoked. At no time shall a contractor's or vendor's access to Sensitive Information extend beyond the termination of the authorizing contract, and such access shall be revoked as soon as the duties requiring access or use have ended, regardless of the end date of the contract.
- 4.5. Authorized Persons shall access or use Sensitive Information only for its intended purpose for which it was obtained and maintained by the City of San Diego. An employee or individual authorized to access or use Sensitive Information shall sign an Authorization Acknowledgement Form stating he or she has read, understands, and agrees to abide by this policy.
- 4.7. Violation of this policy, either by unauthorized persons accessing or attempting to access Sensitive Information, or by Authorized Persons accessing or using Sensitive Information for other than its intended purpose or beyond the scope of their duties, may result in disciplinary action, up to and including termination of employment, and also subject the violating individual(s) to personal liability without the option of City legal defense. In the case of contractors or vendors, violation of this policy will be considered a breach of contract and appropriate actions taken on that basis. If deemed necessary, information regarding employee, volunteer, contractor or vendor violation of this policy may be referred to the appropriate agency for any civil and/or criminal action, as applicable.

Acknowledgement

By signing below, the above City Contractor/Vendor acknowledges that he or she understands that the Terms and Conditions of the underlying City Contract contain the provisions of the full policy stated above, and he or she agrees to comply with such contract provisions. City Contractor/Vendor understands that this form will be kept on file with the underlying contract documents in the City Purchasing & Contracting Department, and that he or she may receive a copy, if requested. The City Contract Manager acknowledges that he or she has discussed the contract Terms and Conditions related to this policy with the above Contractor/Vendor and understands the supervisor's obligations regarding the Contractor's/Vendor's access to the City's Sensitive Information under this policy.



 Contractor's/Vendor's Signature

2/29/2024

 Date Signed



 City Contract Manager's Signature

Mar 28, 2024

 Date Signed

Appendix A

About the City of San Diego. Located in Southwest California, the coastal City of San Diego with a population close to 1.4 million residents and 372.4 square miles shares borders with the country of Mexico in the South. The second largest city in California and eighth largest in the nation, it lies on approximately 200 deep canyons and hills separating its [mesas](#), creating small pockets of natural open space scattered throughout the city and giving it a hilly geography. Traditionally, San Diegans have built their homes and businesses on the mesas, while leaving the urban canyons relatively wild. Thus, the canyons give parts of the city a segmented feel, creating gaps between otherwise proximate neighborhoods and contributing to a low-density, car-centered environment. Interstate 8 runs East to West, and divides the city between low-income Latinx communities such as Barrio Logan that lack internet access at some of the highest rates in San Diego County and affluent and well-connected communities in the North.

City Demographics. San Diego's population is 40.7% White (non-Hispanic), 29.7% Hispanic or Latino, 17.6% Asian, 6.6% Black or African American, 0.5% Native American or Alaska Native, and 0.4% Native Hawaiian or Pacific Islander. The median household income is \$83,454 while 11.8% of the population lives in poverty.¹

The region boasts more than 102,000 millionaire households (*San Diego Business Journal*, Dec. 13, 2021), perhaps leading to the common conception that San Diegans are extremely wealthy. However, the city identified several vulnerable, low income, disadvantaged populations designated as Communities of Concern (CoC), and in 2016, designated the San Diego Promise Zone as one of 22 federally designated Promise Zones or high poverty communities in the United States and one of only four in California. The San Diego Promise Zone covers a 6.4-square mile [targeted area](#) that spans East Village and Barrio Logan east to Encanto in the Southeast. It is home to the city's most culturally rich and ethnically diverse neighborhoods but also some of the most disadvantaged and underserved communities. More than 80,000 San Diegans live in the Promise Zone, an area where unemployment is high (15.61 percent, pre-pandemic), and poverty is concentrated (39.06%).

City of San Diego Equity Climate Action Policy

Under-resourced Communities. Historically, residents of some of the city's communities have had less access to opportunities than others and the city has lacked policies ensuring the provision of needed services to such underserved communities. To better understand the disparities faced by residents, the city worked with Equity Stakeholder Working Group members to develop the first-of-its-kind Climate Equity Index (CEI), an innovative tool in terms of both the design and development process. This tool brings together 41 indicators from publicly

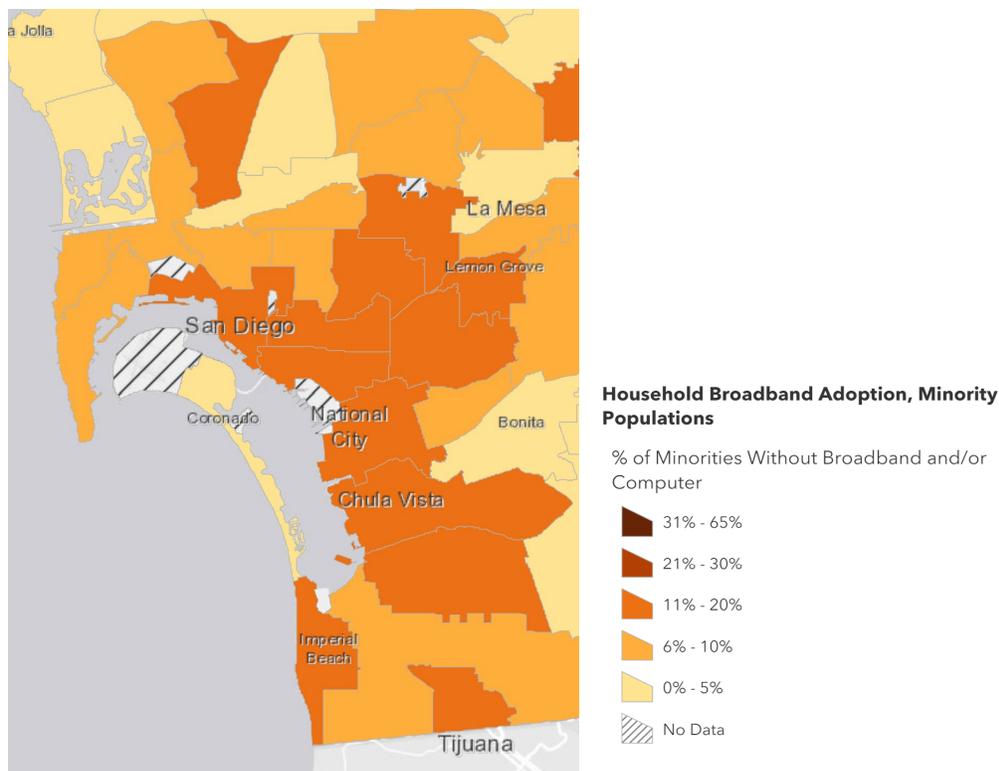
¹ U.S. Census Bureau, accessed 10/27/2022:

<https://www.census.gov/quickfacts/fact/table/sandiegocitycalifornia/PST045221>.

available data sources that look at factors like social and structural vulnerabilities, environmental pollution, and additional climate change impacts like flood and fire risks in census tracts within the city's jurisdiction.

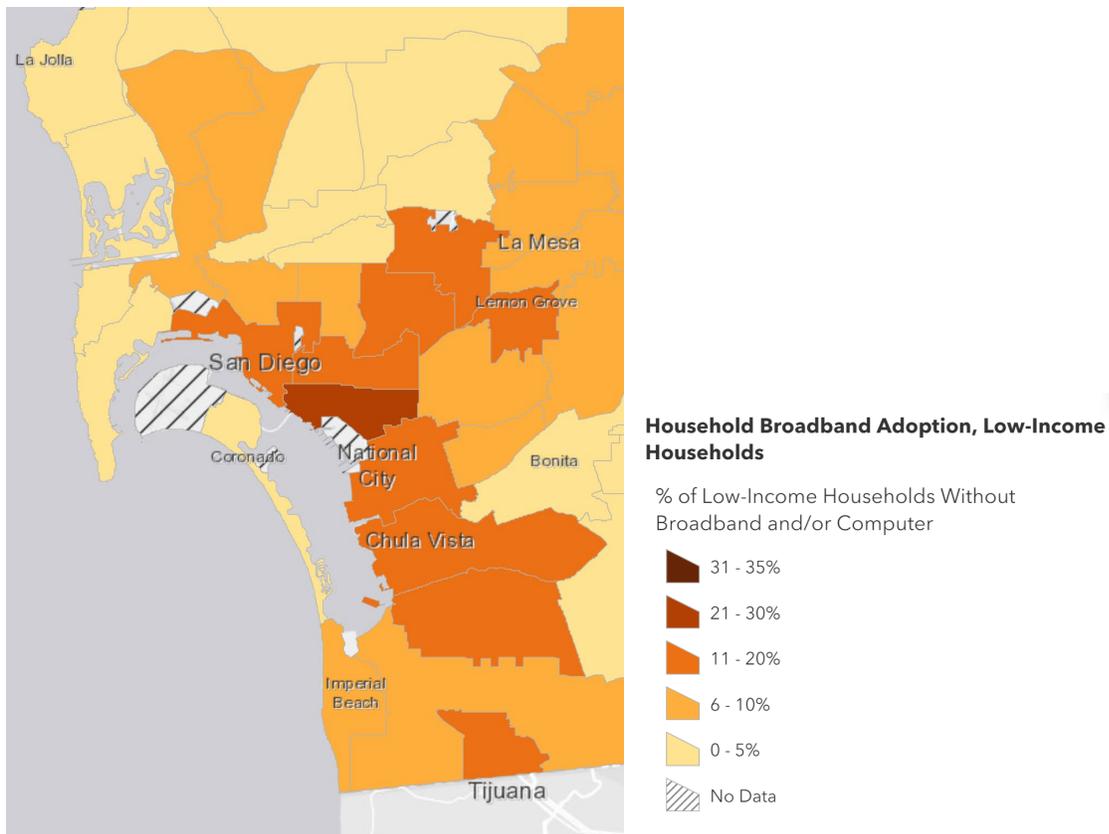
Importantly, CEI factors in broadband access data as a key indicator. By calculating relative scores for each census tract, the CEI separates the tracts into five categories: Very Low, Low, Moderate, High, and Very High Access to Opportunity. The city recognizes census tracts with Very Low, Low and Moderate Access to Opportunity as Communities of Concern.

Unfortunately, not much has improved over time: a map of San Diego's CoC and a map of redlined communities from 1939 share striking similarities. These areas also coincide with low-income neighborhoods in the South including City Heights, Promise Zone and Otay Mesa and San Ysidro along the US/Mexico border, which lack broadband access at extremely high rates. These neighborhoods also have the highest percentage of African Americans and people of color. Stark disparities in access to robust, affordable broadband by low-income and communities of color are illustrated in the maps below produced by the San Diego Association of Governments (SANDAG) pulling from the Census Bureau's American Community Survey (ACS).



SANDAG Digital Divide Storymap 2022

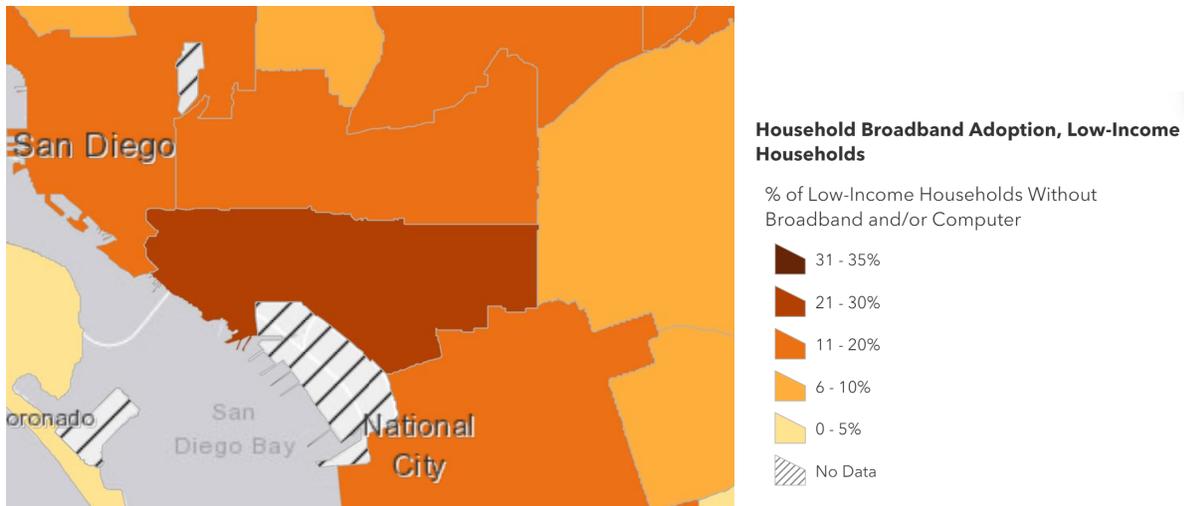
<https://storymaps.arcgis.com/stories/f204b9b88ea4483b8a0d46c8d099c3a7>



SANDAG Digital Divide Storymap 2022

<https://storymaps.arcgis.com/stories/f204b9b88ea4483b8a0d46c8d099c3a7>

While 53,000 households in the City of San Diego lack home internet (ACS 2014- 2018), in low-income areas or CoCs hardest hit by the pandemic such as the San Diego Promise Zone, more than 28% of households report having no broadband internet access whatsoever. Many of these neighborhoods experience digital redlining, described by the National Digital Inclusion Alliance as, “discrimination by internet service providers in the deployment, maintenance, or upgrade of infrastructure or delivery of services.” These areas of the city are home to the majority of minority-owned, micro, and home-based businesses who have reported difficulty securing and affording internet that is both stable and high-quality enough to meet their operational needs.



San Diego Promise Zone

SANDAG Digital Divide Storymap (American Community Survey)

<https://storymaps.arcgis.com/stories/f204b9b88ea4483b8a0d46c8d099c3a7>

According to market research and consulting firm Connect California, the City of San Diego has a high digital divide compared to other major metros in California, thanks to low overall competition between providers and low broadband penetration in low-income communities. Census data shows that neighborhoods with higher median incomes are first to receive expansion programs like AT&T Fiber or Verizon 5G home internet (ACS 2018).¹

Meanwhile, minority households identified as African American or Latinx commonly report lower rates of broadband subscription, at about half the rate of White-identified households. As of 2020, 12,000 households with school-aged children in San Diego lack internet access or mobile devices capable of high-speed connection for education purposes.²

About the San Diego Housing Commission (SDHC). The San Diego Housing Commission (SDHC) will operate as a key partner in the city’s broadband access planning activities. The two entities have established a years-long digital equity partnership through the co-design and roll-out of the city’s Digital Navigator Program and joint computer access efforts for low-income residents.

SDHC has earned a national reputation as a model public housing agency, creating innovative programs that provide housing opportunities for individuals and families with low incomes or who experience homelessness. SDHC fosters social and economic stability for vulnerable populations in San Diego through:

- Quality, affordable housing;
- Opportunities for financial self-reliance; and
- Homelessness solutions

² <https://www.connectcalifornia.com/internet-service/san-diego>

SDHC has 2,401 affordable housing units spread among 150 properties. Of these, 189 are public housing units, while the remainder are deed-restricted at 80% of the area median income. In 2021, SDHC conducted a Residential Survey to gain a better understanding of residents' internet needs. The findings demonstrated that ongoing internet service costs are the biggest challenge to housing commission clients.

About City of San Diego Department of Information Technology (DoIT). The city's award-winning Department of Information Technology was established in 1994 and provides citywide technology strategy; operational support of applications, infrastructure, and wireless technologies; enterprise application services; and management for IT services contracts and assets. The Department's services span 34 city departments over 300 locations, more than 12,000 employees, and the 1.4 million residents of San Diego.

The Department's mission is to provide high quality, secure and resilient technology solutions and public safety wireless radio services through strategic innovation and partnerships with regional stakeholders. To fulfill its mission and vision and align with the goals of the various city departments, as well as the city's Strategic Plan, the DoIT combines a citywide perspective with industry best practices for its Guiding Principles. The city benefits most from services designed for citywide use and provide economies of scale. The DoIT incorporates security at the highest level to ensure city services are delivered securely for city employees and the public.

Project Background and Scope

City of San Diego's Digital Equity and Inclusion Efforts. The city has demonstrated an ongoing commitment to achieving Digital Equity and Inclusion through their initiative, *SD Access 4 All*. The city's overarching goal under this initiative is to ensure all residents have access to high quality broadband connectivity; access to devices, tools and skills necessary to use technology; and publicly accessible environments conducive to remote learning and distance work. Tasked by City Council and the Mayor's Office with connecting low-income households to the internet, the City's Digital Equity working group was established in 2021 prompted by the conditions and impact of Covid-19

Since April 2021, *Access 4 All*, housed in the DoIT, has taken action to bridge the digital divide and assist low-income communities without access to the internet. Since inception, *Access 4 All* has launched multiple free to the public digital equity programs and services. These initiatives have been designed and delivered with specific attention to cultivating strategic and creative partnerships with public as well as private sector entities including Parks and Recreation, Public Libraries, SANDAG, San Diego College of Continuing Education, International Rescue Committee, Computers2Kids, Cox Communications, ATT, Lokket, and numerous additional non-profit community-based organizations. *Access 4 All* offerings comprise several Affordable Connectivity Program (ACP) adoption outreach initiatives, Digital Navigator services, Tech on the Go digital literacy classes, a low-cost computer ownership program, Public Library mobile hotspot and Chromebook lending, and the roll-out of more than 400 Open Public Wi-Fi sites concentrated in in historically underserved and under-connected neighborhoods of the city including 10 schools. The program makes available 4,000 free laptops and mobile hotspots for

check out at libraries and recreation centers and provides 10 free bilingual computer training classes weekly at sites across the city.

In October 2022, to continue to close the divide, the city launched a new Digital Navigator program to provide ACP enrollment assistance and culturally competent one-on-one computer and technology support to those in need. Currently, navigators are placed at seven host sites including city libraries, a tuition-free vocational college and a community recreation center with plans for expansion. Navigators also actively connect communities to resources at outreach events and staff a toll-free helpline for support and triage services. Navigators educate and empower residents to engage with and understand local broadband access and aid in community adoption.

To optimize on the success, existing infrastructure, and access provided by *SDAccess4All*, the city understands the need to accelerate the deployment of resilient and robust broadband internet infrastructure and access for all residents. This would include households, businesses, anchor institutions, and community-based organizations.

The City of San Diego currently lacks a strategic master plan from which to inventory, analyze and design solutions to last mile broadband access in underserved areas of the city. Although the City of San Diego owns extensive fiber networks for the purposes of transportation, public utilities, and fire/emergency services, departments lack coordination around fiber usage and management. The city also lacks a current, comprehensive map of its fiber and digital infrastructure assets.

In addition the city serves as an active contributor to SANDAG's regional Digital Divide Task Force and Digital Infrastructure Subcommittee. City leadership is equally engaged in the State of California Broadband for All initiative including tracking the statewide open-access middle mile developments. The city plans to follow and participate in the State's digital equity planning efforts closely. Throughout the planning process it is the intention of the city to consult and comply with all directives resulting from the State of California's Broadband for All Action Plan which will be treated as a central guiding framework for all of the city's broadband planning activities.

Goals of the project include:

1. Increase access and affordability for broadband in the City of San Diego with a focus on outreach to underserved communities and low-income housing residents;
2. Meet State of California regulatory standards for broadband speed;
3. Position the city to effectively coordinate, leverage and implement state broadband infrastructure investments and policy;
4. Identify how city and public resources can be utilized to increase broadband access and affordability cost effectively; and
5. Identify public-private partnerships and how they can be leveraged to increase broadband access and affordability.
6. Align with City's commitment to equity and goals of the Climate Action Plan.

Tasks and Deliverables

PHASE 1 – Data Gathering Data gathered during this phase will be foundational for the Broadband Master Plan and future work plan actions including planning for broadband infrastructure deployment.

Deliverable A: Digital Infrastructure Gap & Asset Analysis

Consultant shall conduct interviews with internal stakeholder departments and the San Diego Housing Commission along with various levels of government, anchor institutions, wireless carriers, wireless and wireline providers, independent competitive local exchange carriers (CLECs), electric utilities, and other relevant parties. In addition, the firm shall analyze existing data and information from various sources including, but not limited to, databases emanating from SANDAG and San Diego County’s broadband access planning efforts, the California Interactive Broadband Map, the National Telecommunications Information Administration, and Federal Communications Commission. The firm will also prepare a digital infrastructure Gap and Asset Analysis.

More specifically, the contractor shall:

- Compile and assess fixed wireline speed test data utilizing tools and data sources such as CalSPEED and Ookla’s speed test by 100-meter bin;
- Investigate and, if proven feasible, develop a design for alternative methods including the use of crowdsourcing apps potentially utilizing City of San Diego civic application, “[Get it Done App](#)”³
- Work with City of San Diego GIS data team as appropriate and comply with GIS Policy and Procedures and Addendums outlined in Appendix C.

Task A1: Community Broadband Access mapping: market and needs assessment of businesses and residences.

The design of this effort shall reflect the purpose of each identified stakeholder group, and the methods to be used for communicating the initiative. Consultant shall make a good faith effort to utilize planned and existing meetings and engagement efforts lead by government agencies and at the community level.

The consultant shall work with relevant parties such as the city’s established Digital Navigator Program which operates citywide both in-person and via a toll-free helpline. The firm shall also work with the Housing Commission to design an effective and innovative community speed test process along with a survey to gather data on broadband access conditions and needs focused on, but not limited to, residents and small businesses in underserved areas of the city. An implementation plan will be provided with clear timelines and outcomes.

The consultant shall consider how community-based organizations, local businesses and Housing Commission-supported residents in underserved areas of the city will be integrated into

³ <https://www.sandiego.gov/get-it-done>

this process to scale outreach efforts around data gathering, while building community trust and awareness. Community organizations may be subcontracted to perform outreach functions. This task is intended to be combined with the Affordable Connectivity Program outreach efforts and, thus, will support current internet adoption initiatives and act as a model for future adoption efforts as broadband infrastructure is expanded.

Goals of this task include:

- Collecting accurate and granular data on broadband access in the City of San Diego;
- Establishing a baseline dataset for city to measure progress on broadband equity actions and utilize for Key Performance Indicators;
- Understanding need and barriers to access, such as cost and existing infrastructure conditions for community stakeholders, including residents and local businesses;
- Achieving community buy-in for increased adoption and awareness; and
- Utilizing an opportunity for ACP outreach and model for future adoption efforts if community groups are engaged.

Task A2: City of San Diego Digital infrastructure inventory and assessment,

Task A3: San Diego Housing Commission Property Assessment,

All SDHC/HDP properties shall be assessed using, at a minimum, mapping and additional strategies to be proposed by Consultant including on-site assessments for a sample set of properties.

- Existing communications infrastructure within the building structures and in near proximity
- Building layouts, identify MPOE, coverage heatmaps.
- Surveying for internet cost and quality
 - General characteristics and features of the property such as
 - property name, address, mapping, number of buildings, number of floors, property size, number of units, etc.

Task A4: Digital infrastructure Private and Public Asset Inventory and Assessment.

The consultant shall identify, map, inventory and define utilization of existing and planned broadband infrastructure and permitting practices, including potential digital infrastructure assets such as storm water drainage systems and public utilities facilities. Assets to be considered include but are not limited to city maintained public utilities facilities, storm water drainage systems, buildings, towers, streetlight poles, utility poles, *Access 4 All* public Wi-Fi sites, fiber networks, and dark fiber.

Such information will clarify each City of San Diego department's assets and how assets are managed and utilized. Information will also be obtained on broadband infrastructure gaps and deficiencies that could be improved to increase public broadband access. Considerations may include bandwidth needs for planned technology upgrades such as security, infrastructure and future usage needs to support programming and equitable technology access. Consideration will also be given for implementing next generation 9-1-1 emergency networks.

The consultant shall evaluate the methods necessary to ensure that low-income housing residents have access to robust and affordable broadband services. This may require onsite assessments at Housing Commission owned and managed properties.

The consultant shall consider the following data sets:

- Addresses, streets, streetlights, utility poles
- Neighborhood boundaries, parcels, zoning
- Rights-of-way and easements (local government, Caltrans, and others)
- Overhead strand, conduit (both locality-owned and belonging to other utilities)
- Fiber (both locality-owned and belonging to other utilities)
- Manholes and handholes

Fiber documentation should indicate where the fiber is – whether aerial or underground, or where it is located spatially (e.g., pole or underground). Such documentation will also include conduit color, fiber count, pole locations, and location of asset points.

The consultant shall ensure effective documentation of public conduit assets such as path, size, location (vertical and horizontal), access points, and design specifications (bends, availability of pull strings, composition).

The consultant shall include an evaluation of existing practices in relation to city owned and maintained digital infrastructure and permitting process and recommendations for internal process improvement. The process shall include an evaluation of methods through which city facilities, and assets and processes can be leveraged to increase public access to broadband and considerations for potential fiber hubs. Finally, the consultant shall include considerations for how existing, planned, and future city initiatives and projects can be integrated, leveraged, and optimized to further broadband access equity goals for both adoption and infrastructure development. Examples include the Department of Sustainability and Mobility’s EB charging infrastructure, micro-grid project and public dashboard for the Equitable Climate Index KPIs, Public Libraries CENIC network upgrade, and the Planning Department’s Environmental Justice Goals.

Deliverable B: Market Feedback & Broadband Equity Opportunity Assessment

(Concurrent with Tasks A1-A4)

Task B1: Conduct market assessments and solicit market feedback

The consultant shall study consumer supply and demand as well as customer pricing models. To accomplish this, the firm shall hold interviews with stakeholders such as San Diego Housing Commission, local businesses, traditional Internet Service Providers and smaller service providers, Competitive Local Exchange Carriers (CLECs), and anchor institutions.

- Analysis of Barriers to the Private Sector from expanding into areas of the City of San Diego that lack connectivity of 100 symmetrical
- Evaluation of City of San Diego and San Diego Housing Commission existing and planned digital equity actions

- Development of a rubric priority formula for determining key priority projects of the City of San Diego. This shall consider datasets such as community speed test data, California Interactive Broadband Map, San Diego Housing Commission’s digital inclusion survey, American Community Survey, NTIA data, and city-provided data.

PHASE 2, Strategy and Recommendations The consultant shall develop the final report in discussion with the Broadband Master Plan working group and identified key digital equity partners all of whom will be incorporated into the planning process. Decisions made in this phase will inform phase three.

Deliverable C: City of San Diego Broadband Master Plan Comprehensive Report

*All Tasks listed below shall include recommendations specifically aligned with City of San Diego circumstances and specific broadband access goals; where determined applicable, case studies shall be supplied of projects deemed successful as well as case studies of projects deemed unsuccessful.

Task C1: Comprehensive summary report of benchmark data drawing from phase one findings. Such a summary report will establish a baseline profile for community broadband access levels against which future project outcomes will be measured.

Task C2: Identification of priority project area/s based on composite information and rubric priority formula. Based on metrics to be determined in Phase One and which shall factor in LATA criteria and guidelines.

Task C3: Comprehensive Funding Plan Such a comprehensive funding plan will include a roadmap for identified priority projects with 5-year and 10-year timelines. The plan will consider Federal, state, and philanthropic funding opportunities including, but not limited to, PEG funds, E-Rate, BEAD funding, Capitol Projects Fund, and funding deployed by the California Public Utilities Commission and the Office of the Department of Technology as a result of SB 156.

Task C4: Analysis, models, design and recommendations for strategic and purpose-aligned public/private partnerships that benefit the overall goal of establishing robust sustainable, long-term equitable broadband access at speeds 100 symmetrical.

The plan shall incorporate developing public-private partnerships structures for key projects, including operating revenue, and financing models, and assisting the City of San Diego in determining the optimal structure. A minimum of 3 case studies shall be included.

Task C5: Broadband Model Analysis and Recommendations Recommendations will incorporate the principles of net neutrality, non-throttling, long-term, sustainable access and affordability, 100:100, a robust and secure network.

The consultant shall research the various broadband infrastructure models and include options and recommendations on such models, including but not limited to:

- Government-Owned Broadband – the city would own and operate the network and be the service provider of the network;
- Private Sector-Owned and Operated – a private sector partner would build and maintain network and may have open access;
- Utility-Owned Broadband – a utility would own and operate the network and serve as service provider;
- Dark Fiber – open access model where the government would build infrastructure to the curb and the subscriber would then select an Internet Service Provider (ISP) to finish the connection; and
- Automated or Manual Open Access – allow switching of providers in real time, or by network operators making changes, respectively.

A minimum of 3 case studies are to be included. This task will also include consideration of cooperative models for broadband infrastructure asset sharing.

Task C6: Strategic recommendations to integrate, leverage and optimize existing, planned and future City of San Diego initiatives, projects and assets.

Examples include Department of Sustainability and Mobility's EB charging infrastructure, micro-grid project and public dashboard Equitable Climate Index KPIs, Public Libraries CENIC network expansion, and the Planning Department's Environmental Justice Goals.

Considerations shall be made for streamlining and optimizing permitting processes for city, public, and private projects which prioritize affordable, equitable broadband access.

Task C7: Governance, ownership, and partnership strategy recommendations

The City of San Diego broadband infrastructure internal organizational and management structure will be considered.

Task C8: Digital Equity Adoption & Implementation Plan

This task will include but not be limited to recommendations for network adoption models as well as:

- sample plans for broadband access and a digital equity coalition;
- sample templates for public facing dashboard of digital equity KPI; and
- identification of specific funding sources and required resources.

Task C9: City of San Diego Socio-Economic impact and Historical Analysis of Community Internet Access

This task shall include a historical and up to date analysis of internet service access in the City of San Diego focused on underserved areas of the city. It shall include the impact access or lack of access has had on economic and social opportunities, including health, food access, education, and employment for residents and local businesses. Information on anchor institutions, CBOs and local businesses will be included.

This task shall also examine potential socio-economic benefits for underserved areas of universal, affordable, robust broadband access. The consultant shall consider usage of oral

histories, interviews and focus groups with community stakeholders, pricing/affordability, data gathered in previous phases, precedence of housing redlining, community-led initiatives, and efforts surrounding this issue.

Task C10: Preliminary Digital Infrastructure Design

The consultant shall aim to design broadband infrastructure for identified priority projects that can meet existing and future requirements as technology demands change. The network design and technical specifications should be based on findings from Phase One Tasks along with analysis and findings in the Broadband Master Plan Comprehensive Report and designated stakeholder input.

Digital infrastructure designs shall cover the below but not be limited to the following:

- Detailed technical diagram to include network topology in a format preapproved as acceptable
 - Detailed infrastructure map to include:
 - Transport types currently in existence (wireless, fiber, microwave, cellular, etc.) within each location and the feasibility, cost and ease of installation and management.
 - Potential for using various transport types (wireless, fiber, microwave, cellular, etc.) not currently in existence or within each location and the feasibility, cost and ease of installation and management.
 - Ease of extending, connecting to and/or utilizing infrastructure
 - Necessary tools, labor and technology required to enable implementation
 - Distance
 - Data throughput possible
 - Any potential barriers or challenges to adoption (including location and details of barriers), expansion or use of different infrastructure components
 - Any potential existing or planned future infrastructure that can be leveraged to provide cost effective high bandwidth to each location
 - Ownership
 - Number of people within the region and ability for each of the existing technologies to provide minimum of 100:100
- Estimated costs and potential funding mechanisms including financing models
- Recommended business, delivery and/or partnership model
- Scope and location (e.g., middle-mile and last-mile infrastructure)
- Leverage existing public infrastructure, private infrastructure including complementary infrastructure deployment efforts such as City of San Diego Public Library CENIC expansion efforts, SANDAG's Regional Fiber Ring and the statewide open-access middle mile network

PHASE 3, – Delivery Readiness The goal of this phase is to take the actions necessary to have identified priority broadband infrastructure projects shovel ready.

Deliverable D: City of San Diego Equitable Broadband & Technology Access 3 and 5 Year Workplan containing Infrastructure Design & Implementation Roadmap for Identified Priority Projects

The consultant shall deliver essential work product necessary to have broadband infrastructure projects shovel ready. This may include, but will not be limited to, final draft network design, and a phased implementation plan containing a deployment roadmap, identification of specific funding sources and required resources, and template agreements required for implementation efforts.

The consultant shall also provide applicable work product for environmental impact studies, engineering studies, and any other studies that may be needed to make broadband infrastructure projects shovel ready. The firm shall include guidance on necessary future RFP processes, including preparation of a statement of work for such studies.

In addition, the final draft Digital Equity Implementation Plan shall include guidance and/or applicable work product on the RFP process, preparation, and funding for any initiatives that may be needed to make expanded or new digital equity projects shovel ready. This will include but not be limited to the Mobile lending Hotspot program, Public Wi-Fi program, and template agreements for implementation efforts.

Appendix B

List of Anchor Institutions and Community Based Organizations:

- 2-1-1
- Community Development Organizations
- City of San Diego's Community Planning Groups
- Casa Familiar
- Chamber of Commerce
- Chicano Federation
- City of San Diego Climate Equity Working Group
- Computers2SDKids
- Diamond Business Improvement District
- Downtown San Diego Partnership
- San Diego's Ethnic Chambers
- Horn of Africa Community
- International Rescue Committee
- mohuman
- Parks and Recreations
- Public Libraries
- Pillars of the Community
- Promise Zone working groups
- Logan Heights Community Development Corporation
- Refugee Assistance Center
- San Diego Futures Foundation
- San Diego College of Continuing Education
- San Diego Workforce Partnership
- San Diego Unified School District
- Sherman Heights Community Center
- Somali Family Service
- Urban Collaborative Project
- United Women of East Africa Support Team

APPENDIX C

GIS Policies and Procedures and Addendums

Topic: City of San Diego GIS Data Products, Standards, and Services for Consultants providing GIS services for City business

Key Words: GIS Data, GIS Consultants, GIS Data Standards for Consultants, GIS Services, Products, and Receivables

GIS POLICY : 1

TITLE : City of San Diego GIS Data Policy and Use Standard for External Consultants providing GIS services for City business

PAGES: xx

DATE: 2023-05-02

SUPERSEDES: None

ADENDUM TO : None

STATUS : **DRAFT**

PURPOSE:

This policy on GIS products, standards, and services (PSS) for City consultants, vendors and collaboration partners is designed to standardize the expectation, quality, and formats for products and services requested by City departments from external GIS service providers. This policy additionally applies to non-governmental organizations (NGO), firms, agencies, and other governmental entities that have contractually obligated to provide geospatial data, services, or GIS products to the City of San Diego. This data policy standard is modeled after internal and compatible GIS data and service policies within the City of San Diego. This policy should be referenced as a requirement in the terms and conditions of any City contract that requires GIS products, standards, or services in its deliverables.

By adhering to common GIS standards for consultants, our organization will be able to constitutently acquire and scale up for use GIS PSS without risk of incompatible formats or inappropriate delivery methodologies. Moreover, because the core design of modern GIS technology is to allow data sharing, this policy will save departments considerable costs in money and time by avoiding retooling of PSS. In accordance with this policy, all GIS PSS listed as contractual deliverables in any written agreement with the City of San Diego, shall be governed, managed, and regulated by using this GIS Policy in the terms and conditions.

BACKGROUND:

Agreements not specifying deliverable standards led to developing GIS PSS guidelines to improve the quality and consistency of data and GIS products delivered to the City from contractors. As GIS technology grew in 2020 into more and varied software as a Service (SaaS) applications and third party products, there was a clear need expressed by multiple business unit to develop a single standard to ensure clear understanding on what is expected form external parties delivering GIS PSS to City customers.

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DEFINITIONS

For the purposes of this document, the following definitions shall apply:

Department GIS Coordinator	The City employee responsible for coordinating a department's GIS activities and disseminating GIS information to department staff.
City GIS Manager	The City employee responsible for coordinating and administering the City's GIS activities and the lead staff representing the City's interest in SanGIS.
SanGIS JPA	San Diego Geographic Information Source is a Joint Powers Agency between the City of San Diego and the County of San Diego responsible for the creation and maintenance of the San Diego County GIS Data Landbase and disseminating that data to the departments of the City and County of San Diego.
GIS Data	Data, structured in the form of layers, used by City Departments in a Geographic Information System or other computer system that represents various phenomena using location based coordinates.
California Public Records Act (CPRA)	California Public Records Act (Govt. Code 6250 et seq). PRA is designed to provide the public access to information in possession of public agencies.
Public Records Act Requests	Request for access to public information as provided by the California Public Records Act.
DPC T&C	Department of Purchasing and Contracting Contracting Terms and Conditions

POLICY:

A. Intent

This policy was adopted to create a single basic standard GIS PSS detailed as a deliverable in a City of San Diego contract. This policy is necessary to create a universal terms and conditions language among City departments that use GIS deliverables from consultants. Prior to the standard, GIS PSS was received in an inconsistent manner. The scalability and long-term use of previous GIS PSS, even in a descriptive format or pictorial use, i.e., a picture of a map, was difficult and limited. This is caused by a lack of understanding of what was being required or promised in the contractual language. It is impossible for T&Cs to accurately reflect technological requirements and expectations when contract authors are not familiar with GIS technology. This policy establishes minimal acceptable deliverable expectations that should be present in any T&C deliverable requiring GIS PSS. This policy does not preclude the use or adoption of more complex, complementary, and supplemental data standards, e.g., NMAS. This policy requires that the minimum standards be used and that GIS template datasets (to be completed or "filled in" by consultants) be used and required where available from SanGIS. These GIS PSS elements are required for all GIS projects involving City contractors using GIS and delivering products back to the City.

B. Solicitation, Coordination, and Management

The City GIS Manager will coordinate with the consultants if there is any required explanation of GIS PSS. SanGIS will be the stewards of any GIS dataset templates or service templates that are to be used as examples or requirements in T&C. Additionally the City GIS portal may additionally serve as a reference and storage location of PSS that can be used as template or required elements, e.g., contractor must use dataset “x” from SanGIS or from City GIS Portal. In relation to solicitation of GIS PSS in contracts:

1. It is highly advised that a scoring rubric be used to assess the GIS expertise and qualifications of the candidates based upon the specific deliverables being requested as GIS PSS.
2. Solicitations should be developed to deliver GIS PSS that City of San Diego will own, adopt, share, reuse, and repurpose. If possible, the deliverables should benefit the City of San Diego enterprise with popularization and functional threading.

C. Contractor IP, Data, and Public records with GIS Products, Standards, and Services with requirements and deliverables

All City GIS Data that has been released at least one time, is considered public record unless protected by specific laws or local statutes. No known law exists that protects templates or contract requirements unless they are proprietary, trademarked, or intellectual property (IP). GIS PSS requirements and standards that require proprietary tools or IP are to be avoided, if possible, but can be used if the contract specifically states in the T&Cs acceptable uses and limitations. All GIS PSS and template data that is being used to regulate the consultant is considered public record upon receipt of the deliverables as GIS PSS. These GIS PSS are subject to California Public Records Act (CPRA) and cannot be withheld from a public records request for information (see GIS policy 1 for details). A notable exception to the public record release requirement:

1. GIS PSS that are governed by GIS policy 8 may be withheld from CPRA release if they are delivered in a deliberative or “draft” state. Products that are delivered to the City for deliberative review are exempt from CPRA and are governed in compliance with COSD GIS Policy 1. A Non-disclosure agreement (NDA) between the City of San Diego and the contractor must define the GIS PSS if they are to be exchanged back and forth in an iterative or “design build” format.
2. The input scripts, models, computer programming, supporting data, IP concepts, and secondary data inputs for specific GIS PSS may not be considered public records if they are specifically exempted from the GIS PSS deliverables.

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3. Trademarked, proprietary, intellectual property, commercial products that are owned or controlled by the contractor and provided to the City for a specific contractually governed use.

D. Procedures for use of GIS PSS in requirements

The following procedures shall be followed when these policy-based items are referenced as GIS PSS deliverable in City contracts.

D.1. When drafting a City contract with a GIS PSS deliverable. City staff must:

1. Reference the GIS policy 8 (this policy) T&C GIS PSS deliverables requirements in the consultant contract. Templates that must be used, shall be identified in the contract language and their locations made specific in the document.
2. **Solidify Requirements First** - Send the final GIS PSS requirements for review with your GIS professionals prior to public solicitation of a contract. If you do not have GIS staff, the City GIS manager will assist you.
3. The contract language must clearly state if any element of the GIS PSS deliverables are exempted from the California Public Records Act (CPRA), the reason for the exemption must be clearly stated. Absent these exemptions, the assumption shall be that all GIS PSS deliverables are subject to CPRA and public release.
4. Provide an http:// link by name in the contract or policy to the location of this GIS Policy on a City website. For GIS data templates, standards, empty datasets, or required database formats to be used in contract requirements, all will be made available from SanGIS as downloadable templates.
http://www.sangis.org/Download_GIS_Data.htm
5. Ask the consultant if they understand the GIS PSS deliverable language or if they require additional explanation of the database template, data standard, or metadata requirements. If they do, provide them with an subject matter expert (SME) on the specific subject to ensure they understand the deliverable requirement.
6. **Use The “2 Point Checkpoint** in T&Cs - Ensure in the T&Cs that the consultants work is reviewed before final delivery. This review is done by requiring the consultant to send:
 - a. a preliminary GIS PSS sample to the City GIS steward (The steward will be responsible for using the GIS PSS after delivery). This will require that

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5. Include in T&Cs that all GIS data specified in the GIS PSS deliverables must have metadata and it shall be compliant with the “SanGIS metadata standard”.
6. When delivering a Service Orientated Architecture (SOA) as a GIS PSS, the source data as a downloadable GIS dataset and the SOA service definition document must also be included in the deliverables.
7. When delivering a Service Orientated Architecture (SOA) as a GIS PSS, the Service must include a feature service that will allow data to be manipulated as data and not exclusively an image of data, i.e., feature services.
8. When requesting SOA products – Contract must have a sustainment and maintenance clause for the products that are not going to be hosted on City Machines
9. When requesting SOA products from a consultant that will not reside on City networks – staff must pass City CTO cloud committee prior to solicitation of the contract. This is a fail if not done prior to contract solicitation or task order.

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E. When receiving a GIS dataset as a GIS PSS deliverable. Staff must:

1. Ensure the GIS PSS has either passed through a 2-point checkpoint or is exempt from it
2. Coordinate with the SME or GIS professionals *and* the COR on the requirement and deliverables. These requirements must be reviewed for compliance with the contract requirements.
3. **All of the associated products and supporting content, scripts, database features, ArcGIS Pro layouts and maps, python, models, geoprocessing methods, work flow descriptions – are also delivered per the contract.**

B. QUESTIONS/INFORMATION:

Have questions about a specific GIS PSS deliverable for a contract? Contact the contracting departments professional GIS staff or contract departments COR representative directly.

Have Specific Questions about this requirement or strategy behind this policy:

Scott Daeschner, GIS Manager
Department of Information Technology
Sdaeschner@sandiego.gov
(619) 851-5111

F. APPROVALS

Approved in Form: _____
Scott Daeschner – City GIS Manager

G. ATTACHMENTS:

A. GIS Policy 1 - Appendix 1 – City GIS PSS Standards Appendix

1. **Metadata** – All GIS data layer material should adhere to the following metadata guidelines. All GIS PSS data needs to meet SanGIS standards: https://www.sangis.org/docs/documents/SanGIS_Metadata_Requirements.pdf Metadata Abstract and Description summaries should be specific in methods descriptions for any models created, directions for use, fields explained, and definition queries required when using data.

2. Deliverable Formats for ArcGIS Pro – All GIS material should adhere to the following guidelines

a. Projects

- **Project Packages (.ppkx):** ArcPro Projects (.aprx) should delivered as a “Project Package” (.ppkx).
- **Packaging Recommendations:**
 1. **Summary** - Includes descriptive project Summary
 2. **Tags** - Tags should be included for indexing purposes
 3. **Enterprise Data** – “Share outside of organization” should be check marked
 4. **Geoprocessing History** - “Include History Items” should be check marked
 5. **Toolboxes** – “Include Toolboxes” should be check marked
 6. **Attachments** – All other ancillary data and material that is not/cannot be contained within the ArcPro Project (.aprx) **Content Structure**, should be added to the “Attachments” section/tab of Package Project options dialog.

b. Project File Structure: Should adhere to the ArcGIS Pro Project (.aprx) **Content Structure** and deliverable guidelines.

- **Layer Packages (.lpx):** Layer Packages should be provided where a Project Package is not appropriate (i.e. for standalone data delivery that requires symbology preservation).
- **Layer Files (.lyrx):** Should be created and included in Project Package “Attachments” to preserve custom symbology and should reference custom ESRI styles that are part of the Project where appropriate. All .lyrx files relevant to the project and its symbology/styles should be accessible from the “Folders” Catalog tree Project category.
- **Geoprocessing Packages (.gpkx):** All resources (models, scripts, data, layers, and files) needed to re-execute the tools are included in the package. Use to deliver standalone geoprocessing history and workflows independent of a Project Package (.ppkx).
- **Locator Packages (.gcpk):** Contains one address locator or a composite locator along with its participating locators. Use to deliver standalone custom Address Locators independent of a Project Package (.ppkx).
- **Model Builder:** Any models developed or run (geoprocessing) using ESRI Model Builder should be included in the **Content Structure** and be accessible within the “Toolboxes” Catalog Project Content category.
 - **Other Content:** All other ancillary data and material that is not/cannot be contained within the ArcPro Project (.aprx) **Content Structure**, should be added to the “Attachments” section/tab of Package Project options dialog (i.e. graphic deliverables, python scripts, tables, documentation, Consultant/Agency Logos [png, transparent, etc.]).

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- C. **ArcGIS Pro Projects (.aprx) Content Structure:** Should be easily interpretable, orderly, and relative pathways are stored/enabled.
- **Maps (.mapx):** Maps in APRX Project Structure should be appropriately named for the content (i.e. Not Map1, Map2, etc.). All Maps should be accessible from the “Maps” Catalog tree Project Content category.
 - **Toolboxes (.tbx):** Custom toolboxes (.tbx files) should be contained within the Project file structure and be accessible within the “Toolboxes” Catalog Project Content category.
 - **Databases (.gdb):** All spatial data relevant to the Project should be accessible from a within an ESRI Geodatabase that should be accessible from the “Databases” Catalog tree Project Content category.
 - **Layouts (.pagx):** Map Layouts (.pagx) that are created for the Project should be accessible from the “Layouts” Catalog tree Project Content category.
 - **Styles (.stylx):** Any custom ESRI Styles or Symbols that are created need to be included in the Project Package as a and should be accessible from the “Styles” Catalog tree Project Content category.
 - **Folders:** All relevant folder pathways to the Project folder structure including ancillary project data not contained with a ESRI Geodatabase (.gdb) should be accessible from the “Folders” Catalog tree Project Content category.
- d. **Locators (.loc):** Custom Address Locators that are created specifically for the Project should be accessible from the “Locators” Catalog tree Project Content category.

2. ArcMap (Legacy Projects)

- a. **Map Packages (.mpk):** ArcMap Map Documents (.mxd) and data content should deliver as a “Map Package” (.mpk).
- b. **Packaging Recommendations:**
- **Item Description** - Includes descriptive content Summary
 - **Additional Files** – All other ancillary data and material that is not/cannot be contained within the Map Document (.mxd), should be added to the “Additional Files” section/tab of Map Package options dialog.
- C. **Map Document Structure:** Should adhere to the ArcMap Map Document (.mxd) **Content Structure** and deliverable guidelines.
- **Layer Packages (.lpk):** Layer Packages should be provided where a Map Package is not appropriate (i.e. for standalone data delivery that requires symbology preservation).
 - **Layer Files (.lyr):** Should be created and included in Project Package “Attachments” to preserve custom symbology and should reference custom ESRI styles that are part of the Project where appropriate. All .lyr files relevant to the project and its symbology/styles should be accessible from the “Folders” Catalog tree Project category.
 - **Geoprocessing Packages (.gpk):** All resources (models, scripts, data, layers, and files) needed to re-execute the tools are included in the package. Use to deliver standalone geoprocessing history and workflows independent of a Map Package (.mpk).
 - **Locator Packages (.gcpk):** Contains one address locator or a composite locator along with its participating locators. Use to deliver standalone custom Address Locators independent of a Map Package (.mpk).
 - **Model Builder:** Any models developed or run (geoprocessing) using ESRI Model Builder should be included in the **Content Structure** and be accessible within the Map Document (.mxd) “Toolboxes” ArcCatalog Content category as a Model.

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- **Other Content:** All other ancillary data and material that is not/cannot be contained within the ArcMap map Document (.mxd) **Content Structure**, should be added to the “Additional Files” section/tab of Package Project options dialog (i.e. graphic deliverables, python scripts, tables, documentation, Consultant/Agency Logos [png, transparent, etc.]).

3. **ArcMap Map Documents (.mxd) Content Structure:** Should be easily interpretable, orderly, navigable, and contain all relevant layers for the analysis or cartography that was executed as part of the deliverable(s). Map Documents (.mxd) should be saved with relative pathways stored/enabled.
 - a. **Toolboxes (.tbx):** Custom toolboxes (.tbx files) should be contained within the Project file structure and be accessible within the “Toolboxes” Catalog Project Content category.
 - b. **Databases (.gdb):** All spatial data relevant to the Project should be accessible from a within an ESRI Geodatabase that should be accessible from the “Databases” Catalog tree Project Content category.
4. **Map Graphics** - Graphic Exports should be PDF, JPEG or PNG depending on what is requested. All map graphics that are delivered need to be accompanied by a Project Package (ArcPro) or Map Package (ArcMap)
5. **Data Formats**
 - a. **Layers:** GDB w/ FCs and TBL, SHP, LYR or LYRX (w/source data). KML/KMZ is not preferable
 - b. **Tables:** XLS, XLSX, CSV, DBF
 - c. **Projections:** NAD 1983 StatePlane California VI FIPS 0406 Feet (see section D.2)
 - d. **Coordinate Datum:** NAD83
 - e. **CAD data (CAD is not preferable)** : Crosswalk of data needed and spatial reference. Layers need to be in a usable format FC, projections, etc. No CAD files without global coordinates, i.e., none deliver in “Zero, Zero space”.
6. **Web-based Products/deliverables for SOA**
 - a. **Must comply with GIS Policy 7.1**
 - b. **Webmaps:** Need to have APRX or MXD with all source data in formats previously mentioned
 - c. **Need to have Project Package or Map Package with content that was used to publish Dashboards, Surveys 123, field maps apps, AGOL, Portal, apps, etc.**



The City of San Diego

Consultant Services for Development of Broadband Infrastructure Plan

TAB A – Submission of Information
and Forms
SEPTEMBER 28, 2023

ctc technology & energy
engineering & business consulting

Offeror Information:

CTC TECHNOLOGY & ENERGY
10613 Concord Street
Kensington, MD 20895

**Request for Proposal (RFP) for
Consultant Services for Development of Broadband Infrastructure Plan
ADDENDUM B**

Solicitation Number: 10090072-24-S
Solicitation Issue Date: August 7, 2023
Optional Pre-Proposal Conference: August 15, 2023 @ 9:00 a.m.

Microsoft Teams meeting
Join on your computer, mobile app or room device
[Click here to join the meeting](#)
Meeting ID: 295 457 609 642, Passcode: NbjHhj
-See Exhibit B for additional information

Questions and Comments Due: August 21, 2023 @ 12:00 p.m.

Revised Response Due Date and Time (“Closing Date”): **September 28, 2023 @ 2:00 p.m.**

Contract Terms: One (1) year with four (4) additional one-year options to extend from Effective Date, as defined in Article I, Section 1.2 of the City’s General Contract Terms and Conditions.

City Contact: Sandra M. Vasquez, Supervising Procurement Contracting Officer
1200 Third Avenue, Suite 200 San Diego, California 92101
SMVasquez@saniego.gov
(619) 236-6032

Submissions: Respondent is required to provide two (2) original and one (1) electronic copy (e.g. thumb drive or CD) of their response as described herein **OR** submit an electronic response through PlanetBids with an authorized electronic signature (AdobeSign or DocuSign) on the signature page.

Completed and signed RFP signature page is required, with most recent addendum listed as acknowledgement of all addenda issued.

Note: The City may require Bidders to submit original hard copies prior to execution of the contract if the PlanetBids electronic submission does not include an authorized electronic signature page (e.g. Adobe Sign, DocuSign).

Tab A - Submission of Information and Forms

2.1 Exceptions requested by proposer, if any.

CTC Technology & Energy has reviewed and accepts the Scope of Work, the Contract, and the Exhibits included in the City of San Diego Request for Proposals for Consultant Services for Development of Broadband Infrastructure Plan. We do not have specific exceptions CTC is requesting to the Scope of Work, the Contract, or the Exhibits.

We understand that it is not acceptable for proposers to take exception to terms or conditions in general, with a request to later discuss or negotiate specific terms within the RFP / Contract. Nor is it acceptable to refer to other contracts for alternative language. We acknowledge that the City will not consider exceptions addressed elsewhere in the proposal, nor will the City consider exceptions for which no specific alternative or amended language is provided.

Additionally, CTC understands that any exceptions to the Contract that have not been accepted by the City in writing are deemed rejected. The City, in its sole discretion, may accept some or all of proposer's exceptions, reject proposer's exceptions and deem the proposal nonresponsive, or award the Contract without proposer's proposed exceptions.

2.2 The Contractor Standards Pledge of Compliance Form.

CTC Technology & Energy is aware the City of San Diego has adopted a Contractor Standards Ordinance (CSO) codified in section 22.3004 of the San Diego Municipal Code (SDMC). Further, we understand the City of San Diego uses the criteria set forth in the CSO to determine whether a contractor (bidder or proposer) has the capacity to fully perform the contract requirements and the business integrity to justify the award of public funds.

Following this page, please find CTC Technology & Energy's completed Pledge of Compliance form.

City of San Diego
CONTRACTOR STANDARDS
Pledge of Compliance

The City of San Diego has adopted a Contractor Standards Ordinance (CSO) codified in section 22.3004 of the San Diego Municipal Code (SDMC). The City of San Diego uses the criteria set forth in the CSO to determine whether a contractor (bidder or proposer) has the capacity to fully perform the contract requirements and the business integrity to justify the award of public funds. This completed Pledge of Compliance signed under penalty of perjury must be submitted with each bid and proposal. If an informal solicitation process is used, the bidder must submit this completed Pledge of Compliance to the City prior to execution of the contract. All responses must be typewritten or printed in ink. If an explanation is requested or additional space is required, Contractors must provide responses on Attachment A to the Pledge of Compliance and sign each page. Failure to submit a signed and completed Pledge of Compliance may render a bid or proposal non-responsive. In the case of an informal solicitation or cooperative procurement, the contract will not be awarded unless a signed and completed Pledge of Compliance is submitted. A submitted Pledge of Compliance is a public record and information contained within will be available for public review except to the extent that such information is exempt from disclosure pursuant to applicable law.

By signing and submitting this form, the contractor is certifying, to the best of their knowledge, that the contractor and any of its Principals have not within a five (5) year period – preceding this offer, been convicted of or had a civil judgement rendered against them for commission of a fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) contract or subcontract.

“Principal” means an officer, director, owner, partner or a person having primary management or supervisory responsibilities within the firm. The Contractor shall provide immediate written notice to the Procurement Contracting Officer handling the solicitation, at any time prior to award should they learn that this Representations and Certifications was inaccurate or incomplete.

This form contains 10 pages, additional information may be submitted as part of *Attachment A*.

A. BID/PROPOSAL/SOLICITATION TITLE:

Consultant Services for Development of Broadband Infrastructure Plan Solicitation Number 100-0072-24-S

B. BIDDER/PROPOSER INFORMATION:

Columbia Telecommunications Corporation dba CTC Technology and Energy

Legal Name		DBA	
10613 Concord St	Kensington	MD	20895
Street Address	City	State	Zip
Joanne S. Hovis, President	301-933-1488	N/A	
Contact Person, Title	Phone	Fax	

Provide the name, identity, and precise nature of the interest* of all persons who are directly or indirectly involved** in this proposed transaction (SDMC § 21.0103). Use additional pages if necessary.

* The precise nature of the interest includes:

- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the transaction,
- the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and
- any philanthropic, scientific, artistic, or property interest in the transaction.

** Directly or indirectly involved means pursuing the transaction by:

- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City, or
- directing or supervising the actions of persons engaged in the above activity.

Joanne S. Hovis	President
Name	Title/Position
Boca Raton, FL	
City and State of Residence	Employer (if different than Bidder/Proposer)
<u>Communicating or negotiating with City officers or employees</u>	
Interest in the transaction	

Sandi Yatvin	General Counsel and CFO
Name	Title/Position
Long Grove, IL	
City and State of Residence	Employer (if different than Bidder/Proposer)
<u>Communicating or negotiating with City officers or employees</u>	
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

C. OWNERSHIP AND NAME CHANGES:

1. In the past five (5) years, has your firm changed its name?
 Yes No

If **Yes**, use Attachment A to list all prior legal and DBA names, addresses, and dates each firm name was used. Explain the specific reasons for each name change.

2. Is your firm a non-profit?
 Yes No

If **Yes**, attach proof of status to this submission.

3. In the past five (5) years, has a firm owner, partner, or officer operated a similar business?
 Yes No

If **Yes**, use Attachment A to list names and addresses of all businesses and the person who operated the business. Include information about a similar business only if an owner, partner, or officer of your firm holds or has held a similar position in another firm.

D. BUSINESS ORGANIZATION/STRUCTURE:

Indicate the organizational structure of your firm. Fill in only one section on this page. Use Attachment A if more space is required.

Corporation Date incorporated: 2/10/1986 State of incorporation: Maryland

List corporation's current officers: President: Joanne S. Hovis
 CEO ~~Vice Pres~~: Andrew Afflerbach
 Secretary: Joanne S. Hovis
 Treasurer: Joanne S. Hovis

Type of corporation: C Subchapter S

Is the corporation authorized to do business in California: **Yes** **No**

If **Yes**, after what date: Since 2018

Is your firm a publicly traded corporation? Yes No

If **Yes**, how and where is the stock traded? _____

If **Yes**, list the name, title and address of those who own ten percent (10 %) or more of the corporation's stocks:

Please list the following:	Authorized	Issued	Outstanding
a. Number of voting shares:	_____	_____	_____
b. Number of nonvoting shares:	_____	_____	_____
c. Number of shareholders:			_____
d. Value per share of common stock:		Par	\$ _____
		Book	\$ _____
		Market	\$ _____

Limited Liability Company Date formed: _____ State of formation: _____

List the name, title and address of members who own ten percent (10%) or more of the company:

Partnership Date formed: _____ State of formation: _____

List names of all firm partners:

Sole Proprietorship Date started: _____

List all firms you have been an owner, partner or officer with during the past five (5) years. Do not include ownership of stock in a publicly traded company:

Joint Venture Date formed: _____

List each firm in the joint venture and its percentage of ownership:

Note: To be responsive, each member of a Joint Venture or Partnership must complete a separate *Contractor Standards form*.

E. FINANCIAL RESOURCES AND RESPONSIBILITY:

1. Is your firm preparing to be sold, in the process of being sold, or in negotiations to be sold?

Yes No

If **Yes**, use Attachment A to explain the circumstances, including the buyer's name and principal contact information.

2. In the past five (5) years, has your firm been denied bonding?

Yes No

If **Yes**, use Attachment A to explain specific circumstances; include bonding company name.

3. In the past five (5) years, has a bonding company made any payments to satisfy claims made against a bond issued on your firm's behalf or a firm where you were the principal?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

4. In the past five (5) years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

5. Within the last five years, has your firm filed a voluntary petition in bankruptcy, been adjudicated bankrupt, or made a general assignment for the benefit of creditors?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

6. Are there any claims, liens or judgements that are outstanding against your firm?

Yes No

If **Yes**, please use Attachment A to provide detailed information on the action.

7. Please provide the name of your principal financial institution for financial reference. By submitting a response to this Solicitation Contractor authorizes a release of credit information for verification of financial responsibility.

Name of Bank: JP Morgan Chase

Point of Contact: Joshua Stonko

Address: New York, NY 10017

Phone Number: 800-935-9935

8. By submitting a response to a City solicitation, Contractor certifies that he or she has sufficient operating capital and/or financial reserves to properly fund the requirements identified in the solicitation. At City's request, Contractor will promptly provide to City

a copy of Contractor's most recent balance sheet and/or other necessary financial statements to substantiate financial ability to perform.

9. In order to do business in the City of San Diego, a current Business Tax Certificate is required. Business Tax Certificates are issued by the City Treasurer's Office. If you do not have one at the time of submission, one must be obtained prior to award.

Business Tax Certificate No.: Will obtain prior to commencement of work _____ Year Issued: _____

F. PERFORMANCE HISTORY:

1. In the past five (5) years, has your firm been found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for defaulting or breaching a contract with a government agency?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

2. In the past five (5) years, has a public entity terminated your firm's contract for cause prior to contract completion?

Yes No

If **Yes**, use Attachment A to explain specific circumstances and provide principal contact information.

3. In the past five (5) years, has your firm entered into any settlement agreement for any lawsuit that alleged contract default, breach of contract, or fraud with or against a public entity?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

4. Is your firm currently involved in any lawsuit with a government agency in which it is alleged that your firm has defaulted on a contract, breached a contract, or committed fraud?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

5. In the past five (5) years, has your firm, or any firm with which any of your firm's owners, partners, or officers is or was associated, been debarred, disqualified, removed, or otherwise prevented from bidding on or completing any government or public agency contract for any reason?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

6. In the past five (5) years, has your firm received a notice to cure or a notice of default on a contract with any public agency?

Yes No

If **Yes**, use Attachment A to explain specific circumstances and how the matter resolved.

7. Performance References:

Please provide a minimum of three (3) references familiar with work performed by your firm which was of a similar size and nature to the subject solicitation within the last five (5) years.

Please note that any references required as part of your bid/proposal submittal are in addition to those references required as part of this form.

Company Name: CDT California Department of Technology _____

Contact Name and Phone Number: Scott Adams (916) 961-2511

Contact Email: scott.adams@state.ca.gov

Address: 707 3rd Street, 2nd Floor North, West Sacramento CA 95605

Contract Date: _____

Contract Amount: _____

Requirements of Contract: _____

Company Name: State of Maryland

Contact Name and Phone Number: Lee Kenrick (Rick) Gordon (301)429-7426

Contact Email: Kenrick.gordon@maryland.gov

Address: 7800 Harkins Road, lanham MD 20706

Contract Date: _____

Contract Amount: _____

Requirements of Contract: _____

Company Name: City of Cambridge, Massachusetts

Contact Name and Phone Number: Lee Gianetti (617)349-3317

Contact Email: lgianetti@cambridgema.gov

Address: 795 Massachusetts Avenue, Cambridge MA 02139

Contract Date: _____

Contract Amount: _____

Requirements of Contract: _____

G. COMPLIANCE:

1. In the past five (5) years, has your firm or any firm owner, partner, officer, executive, or manager been criminally penalized or found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for violating any federal, state, or local law in performance of a contract, including but not limited to, laws regarding health and safety, labor and employment, permitting, and licensing laws?
 Yes No

If **Yes**, use Attachment A to explain specific circumstances surrounding each instance. Include the name of the entity involved, the specific infraction(s) or violation(s), dates of instances, and outcome with current status.

2. In the past five (5) years, has your firm been determined to be non-responsible by a public entity?
 Yes No

If **Yes**, use Attachment A to explain specific circumstances of each instance. Include the name of the entity involved, the specific infraction, dates, and outcome.

H. BUSINESS INTEGRITY:

1. In the past five (5) years, has your firm been convicted of or found liable in a civil suit for making a false claim or material misrepresentation to a private or public entity?

Yes No

If **Yes**, use Attachment A to explain specific circumstances of each instance. Include the entity involved, specific violation(s), dates, outcome and current status.

2. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a crime, including misdemeanors, or been found liable in a civil suit involving the bidding, awarding, or performance of a government contract?

Yes No

If **Yes**, use Attachment A to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

3. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a federal, state, or local crime of fraud, theft, or any other act of dishonesty?

Yes No

If **Yes**, use Attachment A to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

4. Do any of the Principals of your firm have relatives that are either currently employed by the City or were employed by the City in the past five (5) years?

Yes No

If **Yes**, please disclose the names of those relatives in Attachment A.

I. BUSINESS REPRESENTATION:

1. Are you a local business with a physical address within the County of San Diego?

Yes No

2. Are you a certified Small and Local Business Enterprise certified by the City of San Diego?

Yes No

Certification # _____

3. Are you certified as any of the following:

- a. Disabled Veteran Business Enterprise Certification # _____
- b. Woman or Minority Owned Business Enterprise Certification # WBENC - WBE1801606
- c. Disadvantaged Business Enterprise Certification # _____

J. WAGE COMPLIANCE:

In the past five (5) years, has your firm been required to pay back wages or penalties for failure to comply with the federal, state or local **prevailing, minimum, or living wage laws**? Yes No If **Yes**, use Attachment A to explain the specific circumstances of each instance. Include the entity involved, the specific infraction(s), dates, outcome, and current status.

By signing this Pledge of Compliance, your firm is certifying to the City that you will comply with the requirements of the Equal Pay Ordinance set forth in SDMC sections 22.4801 through 22.4809.



K. STATEMENT OF SUBCONTRACTORS & SUPPLIERS:

Please provide the names and information for all subcontractors and suppliers used in the performance of the proposed contract, and what portion of work will be assigned to each subcontractor. Subcontractors may not be substituted without the written consent of the City. Use Attachment A if additional pages are necessary. If no subcontractors or suppliers will be used, please write "Not Applicable."

Company Name: REBEL

Address: 1015 15th St NW, Suite 600 Washington DC 20005

Contact Name: Wim Verdouw Phone: _____ Email: Wim.Verdouw@Rebelgroup.com

Contractor License No.: _____ DIR Registration No.: _____

Sub-Contract Dollar Amount: \$ _____ (per year) \$ _____ (total contract term)

Scope of work subcontractor will perform: _____

Identify whether company is a subcontractor or supplier: _____

Certification type (check all that apply): DBE DVBE ELBE MBE SLBE WBE Not Certified

Contractor must provide valid proof of certification with the response to the bid or proposal to receive participation credit.

Company Name: _____

Address: _____

Contact Name: _____ Phone: _____ Email: _____

Contractor License No.: _____ DIR Registration No.: _____

Sub-Contract Dollar Amount: \$ _____ (per year) \$ _____ (total contract term)

Scope of work subcontractor will perform: _____

Identify whether company is a subcontractor or supplier: _____

Certification type (check all that apply): DBE DVBE ELBE MBE SLBE WBE Not Certified

Contractor must provide valid proof of certification with the response to the bid or proposal to receive participation credit.

L. STATEMENT OF AVAILABLE EQUIPMENT:

A full inventoried list of all necessary equipment to complete the work specified may be a requirement of the bid/proposal submission.

By signing and submitting this form, the Contractor certifies that all required equipment included in this bid or proposal will be made available one week (7 days) before work shall commence. In instances where the required equipment is not owned by the Contractor, Contractor shall explain how the equipment will be made available before the commencement of work. The City of San

Diego reserves the right to reject any response, in its opinion, if the Contractor has not demonstrated he or she will be properly equipped to perform the work in an efficient, effective matter for the duration of the contract period.

M. TYPE OF SUBMISSION: This document is submitted as:

- Initial submission of *Contractor Standards Pledge of Compliance*
- Initial submission of *Contractor Standards Pledge of Compliance* as part of a Cooperative agreement
- Initial submission of *Contractor Standards Pledge of Compliance* as part of a Sole Source agreement
- Update of prior *Contractor Standards Pledge of Compliance* dated _____.

×

Complete all questions and sign below.

Under penalty of perjury under the laws of the State of California, I certify that I have read and understand the questions contained in this Pledge of Compliance, that I am responsible for completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Purchasing Agent within five (5) business days if, at any time, I learn that any portion of this Pledge of Compliance is inaccurate. Failure to timely provide the Purchasing Agent with written notice is grounds for Contract termination.

I, on behalf of the firm, further certify that I and my firm will comply with the following provisions of SDMC section 22.3004:

(a) I and my firm will comply with all applicable local, State and Federal laws, including health and safety, labor and employment, and licensing laws that affect the employees, worksite or performance of the contract.

(b) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of receiving notice that a government agency has begun an investigation of me or my firm that may result in a finding that I or my firm is or was not in compliance with laws stated in paragraph (a).

(c) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of a finding by a government agency or court of competent jurisdiction of a violation by the Contractor of laws stated in paragraph (a).

(d) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of becoming aware of an investigation or finding by a government agency or court of competent jurisdiction of a violation by a subcontractor of laws stated in paragraph (a).

(e) I and my firm will cooperate fully with the City during any investigation and to respond to a request for information within ten (10) working days.

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed *Pledge of Compliance* is submitted.

Joanne S. Hovis, President
Name and Title


Signature

9/12/2023
Date

**City of San Diego
CONTRACTOR STANDARDS
Attachment "A"**

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed.
Print in ink or type responses and indicate question being answered.

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Joanne S. Hovis, President
Print Name, Title

Joanne S. Hovis
Signature

9/12/2023
Date

2.3 Equal Opportunity Contracting forms including the Work Force Report and Contractors Certification of Pending Actions

We share the City of San Diego's commitment to promote equal employment and subcontracting opportunities.

Following this page, please find CTC Technology & Energy's completed Equal Opportunity Contracting Program (EOCP) forms.

EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP)

GOODS AND SERVICES CONTRACTOR REQUIREMENTS

I. City's Equal Opportunity Contracting Commitment.

The City of San Diego (City) promotes equal employment and subcontracting opportunities. The City is committed to ensuring that taxpayer dollars spent on public contracts are not paid to businesses that practice discrimination in employment or subcontracting. The City encourages all companies seeking to do business with the City to share this commitment. Contractors are encouraged to take positive steps to diversify and expand their subcontractor and supplier solicitation base and to offer opportunities to all eligible business firms.

Contractors must submit the required EOCP documentation indicated below with their proposals. Contractors who fail to provide the required EOCP documentation are considered non-responsive.

II. Definitions.

Commercially Useful Function: a Small Local Business Enterprise or Emerging Local Business Enterprise (SLBE/ELBE) performs a commercially useful function when it is responsible for execution of the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the SLBE/ELBE shall also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quantity and quality, ordering the material, and installing (where applicable) and paying for the material itself.

To determine whether an SLBE/ELBE is performing a commercially useful function, an evaluation will be performed of the amount of work subcontracted, normal industry practices, whether the amount the SLBE/ELBE firm is to be paid under the contract is commensurate with the work it is actually performing and the SLBE/ELBE credit claimed for its performance of the work, and other relevant factors. Specifically, an SLBE/ELBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of meaningful and useful SLBE/ELBE participation, when in similar transactions in which SLBE/ELBE firms do not participate, there is no such role performed.

Disadvantaged Business Enterprise (DBE): a certified business that is (1) at least fifty-one (51%) owned by socially and economically Disadvantaged Individuals, or, in the case of a publicly owned business at least fifty-one percent (51%) of the stock is owned by one or more socially and economically Disadvantaged Individuals; and (2) whose daily business operations are managed and directed by one or more socially and economically disadvantaged owners. Disadvantaged Individuals include Black Americans, Hispanic Americans, Asian Americans, and other minorities, or individual found to be disadvantaged by the Small Business Administration pursuant to Section 8 of the Small Business Reauthorization Act.

Disabled Veteran Business Enterprise (DVBE): a certified business that is (1) at least fifty-one percent (51%) owned by one or more Disabled Veterans; and (2) business operations must be managed and controlled by one or more Disabled Veterans. A Disabled Veteran is a veteran of the U.S. military, naval, or air service who resides in California and has a service-connected disability of at least 10% or more. The firm shall be certified by the State of California's Department of General Services, Office of Small and Minority Business.

Emerging Business Enterprise (EBE): a business whose gross annual receipts do not exceed the amount set by the City Manager, and which meets all other criteria set forth in the regulations implementing the City's Small and Local Business Preference Program. The City Manager shall review the threshold amount for EBEs on an annual basis, and adjust as necessary to reflect changes in the marketplace.

Emerging Local Business Enterprise (ELBE): a Local Business Enterprise that is also an Emerging Business Enterprise.

Local Business Enterprise (LBE): a business that has both a principal place of business and a significant employment presence in the County of San Diego, and that has been in operation for twelve (12) consecutive months.

Minority Business Enterprise (MBE): a certified business that is (1) at least fifty-one percent (51%) owned by one or more minority individuals, or, in the case of a publicly owned business at least fifty-one percent (51%) of the stock is owned by one or more minority individuals; and (2) whose daily business operations are managed and directed by one or more minorities owners. Minorities include the groups with the following ethnic origins: African, Asian Pacific, Asian Subcontinent, Hispanic, Native Alaskan, Native American, and Native Hawaiian.

Other Business Enterprise (OBE): any business which does not otherwise qualify as Minority, Woman, Disadvantaged, or Disabled Veteran Business Enterprise.

Principal Place of Business: a location wherein a business maintains a physical office and through which it obtains no less than fifty percent (50%) of gross annual receipts.

Significant Employee Presence: no less than twenty-five percent (25%) of a business's total number of employees.

Small Business Enterprise (SBE): a business whose gross annual receipts do not exceed the amount set by the City Manager, and that meets all other criteria set forth in regulations implementing the City's Small and Local Business Preference Program. The City Manager shall review the threshold amount for SBEs on an annual basis, and adjust as necessary to reflect changes in the marketplace. A business certified as a DVBE by the State of California, and that has provided proof of such certification to the City manager, shall be deemed to be an SBE.

Small Local Business Enterprise (SLBE): a Local Business Enterprise that is also a Small Business Enterprise.

Women Business Enterprise (WBE): a certified business that is (1) at least fifty-one percent (51 %) owned by a woman or women, or, in the case of a publicly owned business at least fifty-one percent (51%) of the stock is owned by one or more women; and (2) whose daily business operations are managed and directed by one or more women owners.

III. Disclosure of Discrimination Complaints.

As part of its proposal, Contractor shall provide to the City a list of all instances within the past ten (10) years where a complaint was filed or pending against Contractor in a legal or administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors, or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken. (Attachment AA).

IV. Work Force Report and Equal Opportunity Outreach Plan.

- A. Work Force Report. Contractors shall submit with their proposal a Work Force Report (WFR) for approval by the City. (Attachment BB). If the City determines that there are under representations when compared to County Labor Force Availability data, then the Contractor will also be required to submit an Equal Employment Opportunity Plan (EEOP) to the City for approval. Questions regarding the WFR should be directed to the Equal Opportunity Contracting Department.
- B. Duty to Comply with Equal Opportunity Outreach Plan. A Contractor for whom an EEOP has been approved by the City shall use best efforts to comply with that EEOP.

V. Small and Local Business Program Requirements.

The City has adopted a Small and Local Business Enterprise program for goods, services, and consultant contracts. The SLBE requirements are set forth in Council Policy 100-10. For contracts in which the Purchasing Agent is required to advertise for sealed proposals in the City's official newspaper or consultant contracts valued over \$50,000, the City shall:

- A. Apply a maximum of an additional 12% of the total possible evaluation points to the Contractor's final score for SLBE or ELBE participation. Additional points will be awarded as follows:
 - a. If the Contractor achieves 20% participation, apply 5% of the total possible evaluation points to the Contractor's score; or
 - b. If the Contractor achieves 25% participation, apply 10% of the total possible evaluation points to the Contractor's score; or
 - c. If the prime contractor is a SLBE or an ELBE, apply 12% of the total possible evaluation points to the Contractor's score.

VI. Maintaining Participation Levels.

- A. Additional points are based on the Contractor's level of participation proposed prior to the award of the goods, services, or consultant contract. Contractors are required to achieve and maintain the SLBE or ELBE participation levels throughout the duration of the goods, services, or consultant contract.
- B. If the City modifies the original specifications, the Contractor shall make reasonable efforts to maintain the SLBE or ELBE participation for which the additional points were awarded. The City must approve in writing a reduction in SLBE or ELBE participation levels.
- C. Contractor shall notify and obtain written approval from the City in advance of any reduction in subcontract scope, termination, or substitution for a designated SLBE or ELBE subcontractor.
- D. Contractor's failure to maintain SLBE or ELBE participation levels as specified in the goods, services, or consultant contract shall constitute a default and grounds for debarment under Chapter 2, Article 2, Division 8, of the San Diego Municipal Code.
- E. The remedies available to the City under Council Policy 100-10 are cumulative to all other rights and remedies available to the City.

VII. Certifications.

The City accepts certifications of MBE, WBE, DBE, or DVBE from the following certifying agencies:

- A. Current certification by the State of California Department of Transportation (CALTRANS) as DBE.
- B. Current MBE or WBE certification from the California Public Utilities Commission.
- C. DVBE certification is received from the State of California's Department of General Services, Office of Small and Minority Business.
- D. Current certification by the City of Los Angeles as DBE, WBE, or MBE.

Subcontractors' valid proof of certification status e.g., copy of MBE, WBE, DBE, or DVBE certification must be submitted with the proposal or contract documents. MBE, WBE, DBE, or DVBE certifications are listed for informational purposes only.

VIII. List of Attachments.

- AA. Contractors Certification of Pending Actions
- BB. Work Force Report

AA. CONTRACTORS CERTIFICATION OF PENDING ACTIONS

As part of this Contract, the Contractor must provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Contractor in a legal or administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

- The undersigned certifies that within the past 10 years the Contractor has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers.

- The undersigned certifies that within the past 10 years the Contractor has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/ REMEDIAL ACTION TAKEN

Contractor Name: Columbia Telecommunications Corporation d/b/a CTC Technology & Energy

Certified By Joanne S. Hovis Title President
Name

Joanne S. Hovis Date 9/11/2023
Signature

EQUAL OPPORTUNITY CONTRACTING (EOC)

1200 Third Avenue, Suite 200 • San Diego, CA 92101
Phone: (619) 236-6000 • Fax: (619) 236-5904

BB. WORK FORCE REPORT

The objective of the *Equal Employment Opportunity Outreach Program*, San Diego Municipal Code Sections 22.3501 through 22.3517, is to ensure that contractors doing business with the City, or receiving funds from the City, do not engage in unlawful discriminatory employment practices prohibited by State and Federal law. Such employment practices include, but are not limited to unlawful discrimination in the following: employment, promotion or upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training, including apprenticeship. Contractors are required to provide a completed *Work Force Report (WFR)*.

**NO OTHER FORMS WILL BE ACCEPTED
CONTRACTOR IDENTIFICATION**

Type of Contractor: Construction Vendor/Supplier Financial Institution Lessee/Lessor
 Consultant Grant Recipient Insurance Company Other

Name of Company: Columbia Telecommunications Corporation

ADA/DBA: CTC Technology & Energy

Address (Corporate Headquarters, where applicable): 10613 Concord Street

City: Kensington County: Montgomery State: MD Zip: 20895

Telephone Number: (301) 933-1488 Fax Number: _____

Name of Company CEO: Joanne Hovis, President, Andrew Afflerbach, CEO/CTO

Address(es), phone and fax number(s) of company facilities located in San Diego County (if different from above):

Address: _____

City: _____ County: _____ State: _____ Zip: _____

Telephone Number: _____ Fax Number: _____ Email: _____

Type of Business: For Profit Type of License: S-Corp

The Company has appointed: Joanne Hovis

As its Equal Employment Opportunity Officer (EEOO). The EEOO has been given authority to establish, disseminate and enforce equal employment and affirmative action policies of this company. The EEOO may be contacted at:

Address: 10613 Concord Street, Kensington, MD 20895

Telephone Number: (301) 933-1488 Fax Number: _____ Email: hrbenefits@ctcnet.us

- One San Diego County (or Most Local County) Work Force - Mandatory
- Branch Work Force *
- Managing Office Work Force

Check the box above that applies to this WFR.

**Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

I, the undersigned representative of Columbia Telecommunications Corporation d/b/a CTC Technology & Energy
(Firm Name)

Montgomery County, Maryland hereby certify that information provided
(County) (State)

herein is true and correct. This document was executed on this 11th day of September, 2023

Joanne S. Hovis
(Authorized Signature)

Joanne S. Hovis
(Print Authorized Signature Name)

WORK FORCE REPORT – Page 2

NAME OF FIRM: Columbia Telecommunications Corporation d/b/a CTC Technology & Energy DATE: 9/11/2023

OFFICE(S) or BRANCH(ES): All Offices COUNTY: Montgomery County, MD

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- (1) Black or African-American
- (2) Hispanic or Latino
- (3) Asian
- (4) American Indian or Alaska Native
- (5) Native Hawaiian or Pacific Islander
- (6) White
- (7) Other race/ethnicity; not falling into other groups

Definitions of the race and ethnicity categories can be found on Page 4

ADMINISTRATION OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/ Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Management & Financial	2				1	2					11	10		
Professional	2			1		2					9	20		
A&E, Science, Computer			2		2						18	5		
Technical	4	1	3		1	1					5			
Sales														
Administrative Support		2		1	1						1	6		
Services														
Crafts														
Operative Workers														
Transportation														
Laborers*														

*Construction laborers and other field employees are not to be included on this page

Totals Each Column	8	3	5	2	5	5					44	41		
--------------------	---	---	---	---	---	---	--	--	--	--	----	----	--	--

Grand Total All Employees 113

Indicate by Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled												1		
----------	--	--	--	--	--	--	--	--	--	--	--	---	--	--

Non-Profit Organizations Only:

Board of Directors														
Volunteers														
Artists														

WORK FORCE REPORT – Page 3

NAME OF FIRM: Columbia Telecommunications Corporation d/b/a CTC Technology & Energy DATE: 9/11/2023

OFFICE(S) or BRANCH(ES): All Offices COUNTY: Montgomery County, MD

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- (1) Black or African-American
- (2) Hispanic or Latino
- (3) Asian
- (4) American Indian or Alaska Native
- (5) Native Hawaiian or Pacific Islander
- (6) White
- (7) Other race/ethnicity; not falling into other groups

Definitions of the race and ethnicity categories can be found on Page 4

TRADE OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/ Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Brick, Block or Stone Masons														
Carpenters														
Carpet, Floor & Tile Installers Finishers														
Cement Masons, Concrete Finishers														
Construction Laborers														
Drywall Installers, Ceiling Tile Inst														
Electricians														
Elevator Installers														
First-Line Supervisors/Managers														
Glaziers														
Helpers; Construction Trade														
Millwrights														
Misc. Const. Equipment Operators														
Painters, Const. & Maintenance														
Pipelayers, Plumbers, Pipe & Steam Fitters														
Plasterers & Stucco Masons														
Roofers														
Security Guards & Surveillance Officers														
Sheet Metal Workers														
Structural Metal Fabricators & Fitters														
Welding, Soldering & Brazing Workers														
Workers, Extractive Crafts, Miners														

Totals Each Column														
--------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Grand Total All Employees 0

Indicate By Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled														
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Work Force Report

HISTORY

The Work Force Report (WFR) is the document that allows the City of San Diego to analyze the work forces of all firms wishing to do business with the City. We are able to compare the firm's work force data to County Labor Force Availability (CLFA) data derived from the United States Census. CLFA data is a compilation of lists of occupations and includes the percentage of each ethnicity we track (American Indian or Alaska Native, Asian, Black or African-American, Native Hawaiian or Pacific Islander, White, and Other) for each occupation. Currently, our CLFA data is taken from the 2010 Census. In order to compare one firm to another, it is important that the data we receive from the consultant firm is accurate and organized in the manner that allows for this fair comparison.

WORK FORCE & BRANCH WORK FORCE REPORTS

When submitting a WFR, especially if the WFR is for a specific project or activity, we would like to have information about the firm's work force that is actually participating in the project or activity. That is, if the project is in San Diego and the work force is from San Diego, we want a San Diego County Work Force Report¹. By the same token, if the project is in San Diego, but the work force is from another county, such as Orange or Riverside County, we want a Work Force Report from that county². If participation in a San Diego project is by work forces from San Diego County and, for example, from Los Angeles County and from Sacramento County, we ask for separate Work Force Reports representing your firm from each of the three counties.

MANAGING OFFICE WORK FORCE

Equal Opportunity Contracting may occasionally ask for a Managing Office Work Force (MOWF) Report. This may occur in an instance where the firm involved is a large national or international firm but the San Diego or other local work force is very small. In this case, we may ask for both a local and a MOWF Report^{1, 3}. In another case, when work is done only by the Managing Office, only the MOWF Report may be necessary.³

TYPES OF WORK FORCE REPORTS:

Please note, throughout the preceding text of this page, the superscript numbers one ¹, two ² & three ³. These numbers coincide with the types of work force report required in the example. See below:

- ¹ One San Diego County (or Most Local County) Work Force – Mandatory in most cases
- ² Branch Work Force *
- ³ Managing Office Work Force

**Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

RACE/ETHNICITY CATEGORIES

American Indian or Alaska Native – A person having origins in any of the peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.

Asian – A person having origins in any of the peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

Black or African American – A person having origins in any of the Black racial groups of Africa.

Native Hawaiian or Pacific Islander – A person having origins in any of the peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

White – A person having origins in any of the peoples of Europe, the Middle East, or North Africa.

Hispanic or Latino – A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin.

Exhibit A: Work Force Report Job Categories – Administration

Refer to this table when completing your firm's Work Force Report form(s).

Management & Financial

Advertising, Marketing, Promotions, Public Relations, and Sales Managers
Business Operations Specialists
Financial Specialists
Operations Specialties Managers
Other Management Occupations
Top Executives

Professional

Art and Design Workers
Counselors, Social Workers, and Other Community and Social Service Specialists
Entertainers and Performers, Sports and Related Workers
Health Diagnosing and Treating Practitioners
Lawyers, Judges, and Related Workers
Librarians, Curators, and Archivists
Life Scientists
Media and Communication Workers
Other Teachers and Instructors
Postsecondary Teachers
Primary, Secondary, and Special Education School Teachers
Religious Workers
Social Scientists and Related Workers

Architecture & Engineering, Science, Computer

Architects, Surveyors, and Cartographers
Computer Specialists
Engineers
Mathematical Science Occupations
Physical Scientists

Technical

Drafters, Engineering, and Mapping Technicians
Health Technologists and Technicians
Life, Physical, and Social Science Technicians
Media and Communication Equipment Workers

Sales

Other Sales and Related Workers
Retail Sales Workers
Sales Representatives, Services
Sales Representatives, Wholesale and Manufacturing
Supervisors, Sales Workers

Administrative Support

Financial Clerks
Information and Record Clerks
Legal Support Workers

Material Recording, Scheduling, Dispatching, and Distributing Workers
Other Education, Training, and Library Occupations
Other Office and Administrative Support Workers
Secretaries and Administrative Assistants
Supervisors, Office and Administrative Support Workers

Services

Building Cleaning and Pest Control Workers
Cooks and Food Preparation Workers
Entertainment Attendants and Related Workers
Fire Fighting and Prevention Workers
First-Line Supervisors/Managers, Protective Service Workers
Food and Beverage Serving Workers
Funeral Service Workers
Law Enforcement Workers
Nursing, Psychiatric, and Home Health Aides
Occupational and Physical Therapist Assistants and Aides
Other Food Preparation and Serving Related Workers
Other Healthcare Support Occupations
Other Personal Care and Service Workers
Other Protective Service Workers
Personal Appearance Workers
Supervisors, Food Preparation and Serving Workers
Supervisors, Personal Care and Service Workers
Transportation, Tourism, and Lodging Attendants

Crafts

Construction Trades Workers
Electrical and Electronic Equipment Mechanics, Installers, and Repairers
Extraction Workers
Material Moving Workers
Other Construction and Related Workers
Other Installation, Maintenance, and Repair Occupations
Plant and System Operators
Supervisors of Installation, Maintenance, and Repair Workers
Supervisors, Construction and Extraction Workers
Vehicle and Mobile Equipment Mechanics,

Installers, and Repairers
Woodworkers

Operative Workers

Assemblers and Fabricators
Communications Equipment Operators
Food Processing Workers
Metal Workers and Plastic Workers
Motor Vehicle Operators
Other Production Occupations
Printing Workers
Supervisors, Production Workers
Textile, Apparel, and Furnishings Workers

Transportation

Air Transportation Workers
Other Transportation Workers
Rail Transportation Workers
Supervisors, Transportation and Material
Moving Workers
Water Transportation Workers

Laborers

Agricultural Workers
Animal Care and Service Workers
Fishing and Hunting Workers
Forest, Conservation, and Logging Workers
Grounds Maintenance Workers
Helpers, Construction Trades
Supervisors, Building and Grounds Cleaning
and Maintenance Workers
Supervisors, Farming, Fishing, and Forestry
Workers

Exhibit B: Work Force Report Job Categories-Trade

Brick, Block or Stone Masons

Brickmasons and Blockmasons
Stonemasons

Carpenters

Carpet, floor and Tile Installers and Finishers

Carpet Installers
Floor Layers, except Carpet, Wood and Hard
Tiles
Floor Sanders and Finishers
Tile and Marble Setters

Cement Masons, Concrete Finishers

Cement Masons and Concrete Finishers
Terrazzo Workers and Finishers

Construction Laborers

Drywall Installers, Ceiling Tile Inst

Drywall and Ceiling Tile Installers
Tapers

Electricians

Elevator Installers and Repairers

First-Line Supervisors/Managers

First-line Supervisors/Managers of
Construction Trades and Extraction Workers

Glaziers

Helpers, Construction Trade

Brickmasons, Blockmasons, and Tile and
Marble Setters
Carpenters
Electricians
Painters, Paperhangers, Plasterers and Stucco
Pipelayers, Plumbers, Pipefitters and
Steamfitters
Roofers
All other Construction Trades

Millwrights

Heating, Air Conditioning and Refrigeration
Mechanics and Installers
Mechanical Door Repairers
Control and Valve Installers and Repairers
Other Installation, Maintenance and Repair
Occupations

Misc. Const. Equipment Operators

Paving, Surfacing and Tamping Equipment
Operators
Pile-Driver Operators
Operating Engineers and Other Construction
Equipment Operators

Painters, Const. Maintenance

Painters, Construction and Maintenance
Paperhangers

Pipelayers and Plumbers

Pipelayers
Plumbers, Pipefitters and Steamfitters

Plasterers and Stucco Masons**Roofers****Security Guards & Surveillance Officers****Sheet Metal Workers****Structural Iron and Steel Workers****Welding, Soldering and Brazing Workers**

Welders, Cutter, Solderers and Brazers
Welding, Soldering and Brazing Machine
Setter, Operators and Tenders

Workers, Extractive Crafts, Miners

2.7 Additional Information as required in Exhibit B.



The City of San Diego

Consultant Services for Development of Broadband Infrastructure Plan

TAB B - Executive Summary &
Responses to Specifications
SEPTEMBER 28, 2023

ctc technology & energy
engineering & business consulting

Offeror Information:

CTC TECHNOLOGY & ENERGY
10613 Concord Street
Kensington, MD 20895

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4.01: Does the firm intend to utilize subcontractors for this project? If yes, please discuss how the firm intends to use subcontractee/s, information on any potential subcontractee/s, and details on previous work they have performed that relates to this project.	63
5: <i>Community & Stakeholder Engagement</i>	64
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reference examples of past projects in which the firm engaged historically marginalized communities in planning processes and/or data gathering activities and	64
5.03: Explain how the firm intends to foster collaboration and ensure coordination among participating city departments, anchor institutions and local government agencies throughout this project.	64
5.02: Explain how the firm plans to build and maintain trust with historically marginalized communities in San Diego. If possible, please provide examples of previous work with historically marginalized communities and the short- and long-term impact and outcomes of this work on the community.	64
5.04: As a direct result of this project, the City of San Diego aims to increase access to robust, resilient, and affordable broadband in under-connected areas of the City, public-facing city facilities, and affordable housing properties. Success will be measured by the creation of a workplan that results in concept level broadband access projects and models. The City is not seeking a Broadband Master Plan which simply reiterates digital equity best practices. How will the firm ensure that the resulting work product is actionable and meets the City's identified short- and long-term goals and which include clear, realistic implementation steps?	65
<i>6: Delivery Readiness & Technical Methodology</i>	67
6.01: Please provide examples of technical documentation created by your firm for a project of similar scope involving infrastructure planning e.g. concept level designs for broadband projects, fiber sharing.....	67
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6.02: Please describe in detail the technical skills and methodology the firm plans to employ to accomplish tasks required for the Broadband Master Plan, including the Concept level design.	70
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6.03: For Task A3, The San Diego Housing Commission requires the creation of a representative sample of the broadband characteristics of all of their properties. Please propose how your firm would develop this data set.....	78
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2.13 EXECUTIVE SUMMARY

CTC Technology & Energy is a woman-owned, national consulting firm with a unique combination of qualifications and capabilities in all aspects of broadband strategic and business planning, feasibility studies, financial analysis, needs assessment, and network engineering.

Founded in 1983, CTC has delivered independent financial, strategic, and technical guidance to public and non-profit entities, including large regional, multi-entity, State-level, and local government clients, non-profit consortia, universities, and cooperative and municipal utilities. CTC specializes in helping clients develop sustainable, phased approaches for implementing communications networks to meet their needs.

With offices across the nation, including in California, CTC offers a unique combination of qualifications, capabilities, and local, relevant knowledge in strategic planning, network engineering, financial analysis, business planning, grant writing, grant program management, partnership strategies, wireless facilities siting and application management, and RFI/RFP drafting and administration - delivering unparalleled expertise to help public interest clients realize their broadband goals efficiently and effectively.

CTC's proposed team members are broadband specialists who have designed, managed the development of, and helped to reposition thousands of miles of broadband networks of all kinds that have been built across the U.S. and around the world.

Moreover, Joanne Hovis and Andrew Afflerbach both serve as expert witnesses in the field and have been invited to testify before Congress, the FCC, and state PUCs and legislatures multiple times.

Our knowledge and experience touch every aspect of the ecosystem more broadly, including programs and services that complement infrastructure components. As but one example, our team has been entrusted as the Strategic Advisors and Program Managers for the California Department of Technology as it implements the state's \$3.25 billion Middle Mile Broadband Initiative and complementary Broadband for All Action Plan.

We are independent advisers. We will work solely in the state's interests. Unlike others in our industry, ***we do not seek to profit from the decisions the state will make as a result of our engagement or from funding the state may make available for new networks***. On the contrary, we choose not to own networks and not to bid for grants, construction, or network operations contracts for the precise reason that we believe a consultant should be independent. We commit to you that our loyalty will be to your mission and goals.

We are actively engaged in the development of broadband plans — CTC has provided broadband plans for the states of California, Alabama, Delaware, Georgia, Maryland, and New Mexico. We have delivered detailed broadband infrastructure plans for local entities including Carroll County, Maryland; Holland, Michigan; Huntsville, Alabama; Sublette County, Wyoming; and the city of Vallejo, California—in many cases, we have also designed and supported RFPs for broadband public-private partnerships for these clients. We have provided a broad spectrum of advice over many years to the City of San Francisco.

For this engagement, CTC is partnering with **IMG Rebel Advisory** is a financial and strategic advisor that specializes in improving the finance, development, and operation of public assets and services. We have worked in more than 80 countries and have a leading role in the development of public-private partnerships (P3s), innovative financing, and alternative project delivery. IMG Rebel is a financial and P3 advisor to several states, including Florida, Texas, and Virginia. The firm has been lead financial and transaction advisor on over 50 P3 transactions, including several first-of-a-kind deals. IMG Rebel has developed for the U.S. federal government the model P3 contract guides and a guide on successful P3 practices.

2.14 PROPOSER'S RESPONSE TO RFP

1: Experience

1.01: a. Provide a company overview including (5) years of related experience to the services being requested in this RFP and provide examples of (2) previous engagements within the past (5) years with similar scope.

CTC Technology & Energy is a woman-owned consulting firm that brings 40 years of experience in delivering independent strategic, technical, and financial guidance primarily to public-sector and nonprofit entities such as state, county, and local governments; nonprofit consortia; universities; and municipal electric utilities throughout the U.S. We are experts in leading diverse stakeholder engagement specifically related to broadband access, with experience in gathering data and feedback from internet service providers (ISPs), citizen end users, staff, and private-sector organizations, including working with rural & tribal authorities. We are also subject matter experts in regard to digital equity and opportunity planning within the state and community broadband space.

CTC offers a unique combination of qualifications and capabilities in strategic planning, network engineering, financial analysis, business planning, grant writing, grant program management, partnership strategies, wireless facilities siting and application management, and digital equity/opportunity planning - delivering unparalleled expertise to help public interest clients realize their broadband and digital equity/opportunity goals efficiently and effectively.

Our team is focused on empowering government and nonprofit clients forge transformative broadband programs and achieve digital equity. Our work builds capacity in federal, state, and local governments, as well as community anchor institutions and nonprofits, and internet service providers, to accelerate universal broadband access, affordability, and adoption.

What sets our team apart

We are actively engaged in the development of statewide digital equity plans — CTC is currently leading the development of the statewide digital equity plans in Maryland, New Mexico, and Oregon. We are also serving on the project teams developing digital equity plans for the states of California, New York, and Wyoming.

We are thought leaders in the areas of evolving broadband technologies, and how they can be leveraged to enable economic development and private-sector service in rural areas. As you can see by exploring our website library,¹ we have provided expert testimony before Congress² and many state legislatures. We have prepared reports for the FCC on the costs of connecting schools, libraries, and other institutions to fast broadband³; on state and local processes that can enhance broadband deployment; and on such strategies as “dig once” that deliver economies in broadband deployment. We have published studies on broadband public-private partnerships,⁴ best practices for unlicensed spectrum, technical approaches to managing openness on

¹ <https://www.ctcnet.us/library/>.

² “Closing the Digital Divide: Broadband Infrastructure Solutions,” Testimony of Joanne Hovis, Jan. 30, 2018, <http://www.ctcnet.us/publications/testimony-on-closing-the-digital-divide-broadband-infrastructure-solutions/>. See also: “Broadband: Deploying America’s 21st Century Infrastructure,” Testimony of Joanne Hovis, March 21, 2017, <http://www.ctcnet.us/wp-content/uploads/2019/02/HHRG-115-IF16-Wstate-HovisJ-20170321-1.pdf>.

³ “A Model for Understanding the Cost to Connect Anchor Institutions with Fiber Optics,” Feb. 15, 2018, <http://www.ctcnet.us/publications/a-model-for-understanding-the-cost-to-connect-anchor-institutions-with-fiber-optics/>.

⁴ “Public Infrastructure/Private Service: A Shared-Risk Partnership Model for 21st Century Broadband Infrastructure,” October 14, 2020,

wireless networks, the implications of 5G technology, small cell siting, and other topics across a range of wireline and wireless matters.

Our team brings unparalleled broadband expertise - including digital equity and opportunity knowledge and experience. We have evaluated existing broadband programs, strategies, and access, assessed the unserved and underserved populations, identified, and helped secure adequate funding to support broadband access expansion, ensured broad stakeholder input and engagement on the plans, developed tailored digital equity plans, and designed grant management and monitoring approaches to deliver high-speed broadband access to unserved and underserved populations.

We have prepared digital equity studies for multiple leading cities and counties, including Cambridge, MA; Bloomington, IN; Dallas, TX; and King County, WA. We have conducted cutting-edge, broadband-related market research and community needs analyses for more than two decades. Recently assisting such communities as San Francisco, Seattle, and many others to determine their unmet communications needs, CTC understands how to effectively conduct community outreach and stakeholder engagement qualitatively and quantitatively evaluate underserved and unserved communities.

We have conducted dozens of assessments of broadband infrastructure and services for public sector clients nationwide over the past 25 years, including the cities of Seattle and San Francisco; the District of Columbia (Washington, D.C.); the states of New Mexico, Nebraska, Connecticut, and Kansas; and the U.S. Small Business Administration.

Our work is tailored to the dynamics of the state, region, or communities in which we work and are always led by top experts on digital equity. Our team will be led by digital equity experts. Our senior leadership will be complemented by a team with previous experience in digital equity planning ranging across many geographies ranging from the State of California to rural communities in Texas. The project team is deeply familiar with all components of ARPA and IJA funding, the Digital Equity Act, and digital equity best practices, including how other state and local governments are approaching digital equity planning. We will bring this expertise to stakeholders across New Hampshire, collaborating with state and local partners to develop a comprehensive statewide plan to bridge the digital divide in New Hampshire.

The CTC team are pioneers in the field of digital equity analysis, stakeholder engagement, and planning. Through innovative approaches to data collection and analysis, we help public sector clients better understand the gaps that may be preventing all residents from making the most meaningful use of broadband. These approaches are not focused on building new infrastructure. Rather, we develop strategic guidance on the combination of factors around affordability, device access, digital literacy, language barriers, security concerns, and other issues that prevent internet adoption and use.

We are leaders in developing standards and guidelines for state and local broadband planning. We have developed strategy for a dozen states across a range of agencies (from Commerce to Transportation to the State Library). Because we are able to apply our experience and insight to a range of areas, we have guided states to undertake the following types of efforts:

- Plan to fill rural broadband gaps and provide technical assistance to local, tribal, and other entities (for example, for the New Mexico departments of information technology, transportation, and education)
- Leverage public assets to facilitate broadband (for example, for the Georgia and Texas Departments of Transportation)

- Leverage federal funds to enable broadband deployment (for example, for the Delaware Department of Technology and Information and the New Mexico Public School Facilities Authority)
- Ensure adequate broadband to the most remote institutions and locations (for example, for the California State Library).

CTC has designed, engineered, and overseen the construction of thousands of miles of outside plant for public sector clients over more than three decades. Our past experience includes the following representative sample projects—all of which were completed on time and on budget.

Included in our response are many of our previous engagements. We are happy to provide more project examples as well as additional references upon request.

1.01: c. Provide resumes of personnel assigned to the project.

CTC TEAM RESUMES

Joanne S. Hovis | President

Joanne Hovis is a nationally recognized authority on broadband markets and on the evolving role of public–private partnerships in the provision of communications services to the public. For more than 20 years, she has overseen CTC’s consulting services related to strategic planning, market analysis, business modeling, and financial analysis for localities, states, and tribal governments throughout the country.

Joanne leads the CTC teams that advise the states of Alabama, Connecticut, Nebraska, New Mexico, and New York; the cities of Atlanta, Boston, San Francisco, Seattle, and Washington, D.C.; and the statewide broadband networks in Colorado, Maryland, and Pennsylvania. She also leads CTC’s advisory work regarding federal broadband funding programs.

Joanne has testified on multiple occasions before Congress on rural broadband, broadband public-private partnerships, and the digital divide, and has provided expert presentations to the Federal Communications Commission, the U.S. Conference of Mayors, the National League of Cities, and other national organizations.

Joanne is also CEO of the Coalition for Local Internet Choice (CLIC) and a member of the board of directors of the Benton Institute for Broadband & Society and Consumer Reports. She is a former CEO of the Fiber Broadband Association and is a former president of the National Association of Telecommunications Officers and Advisors (NATOA).

Public–Private Partnership Planning and Negotiations

Joanne has spearheaded projects that explore a range of business models by which local and state governments can leverage their assets to build or expand fiber networks, and to incentivize private sector broadband expansion.

- Joanne has provided extensive business planning, market assessment, and strategic planning for the City and County of **San Francisco** over a dozen years. She played a key role in the project team that developed an innovative partnership strategy for deploying a ubiquitous fiber-to-the-premises network. In an earlier project that laid the groundwork for the city’s current efforts, Joanne conducted an independent evaluation of the feasibility of San Francisco constructing and operating such a network.
- Joanne advises the State of **Alabama** Department of Economic and Community Affairs regarding broadband public-private partnerships and planning, and the Alabama Broadband Connectivity for Students program. She designed the State of **New Mexico** Department of Information Technology’s strategy for grant funding of public-private partnerships in rural broadband. She has developed strategy for broadband public-private partnerships for the Departments of Transportation for the state of **Delaware, Nebraska, Texas, and New Mexico**.
- Joanne has been the strategic and business planning consultant to numerous smaller cities as they have planned and negotiated broadband public-private partnerships, including the **city of Tacoma, WA; Westminster, MD;** and the **Urbana-Champaign Big Broadband Coalition** (University of Illinois and the cities of Champaign and Urbana). For these projects, she developed strategy to enable the communities to identify a private partner that would finance and operate fiber deployment and expansion. She evaluated potential partners’ proposals, then helped

negotiate win-win partnerships that reduce risk to both parties and ensure achievement of economic development and digital inclusion goals.

Business Planning and Feasibility Analysis

Joanne is sought nationwide as an expert in municipal broadband business models and planning. Among the projects she has led are the following CTC engagements:

- Joanne advised the **City of Atlanta** on strategic and tactical approaches it can take to plan, build, and operate its own fiber network to cost-effectively serve its internal needs, promote private sector broadband investment, and enable competition in the City's residential and business broadband markets. She assisted the City in its discussions with telecommunications providers about options for joint build and partnership.
- Joanne advised the **City of Seattle** regarding business planning strategies for a citywide fiber enterprise and facilitating equitable access to wireless broadband services. In her report on citywide fiber, she analyzed the public subsidies a network would require and delivered a full assessment of opportunities and risks. The report included an internal needs analysis, statistically significant market research, an assessment of competing services and technologies, and an evaluation of the business case and financial risks. Joanne led further analysis of the benefits of FTTP beyond the traditional balance sheet, including cost avoidance.
- Joanne advises the **State of New Mexico's Department of Information Technology** on broadband planning. She developed the state's broadband strategic plan and a guidebook for New Mexico's local governments on the business, financial, and strategic planning necessary to implement city- or county-owned broadband networks. The guidebook discusses strategies for exploring public-private partnerships to facilitate broadband expansion.
- Joanne supported the **State of Kansas Department of Commerce** on a needs assessment of the state's network infrastructure. She conducted major market surveys of core sectors across the state (residents, businesses, and community anchor institutions) to evaluate the current uses and needs of broadband infrastructure. She also developed a strategy for the evolution of the state-created broadband program that serves schools, hospitals, libraries, and higher education institutions.
- Joanne has advised officials in the **District of Columbia** government on a range of telecommunications and fiber optic projects for almost a decade. She worked with the Office of the Chief Technology Officer to create a business plan and strategy for building a municipal fiber optic network with a wireless overlay in the least-served wards of the city. She performed a business case and technology analysis for DC-Net, a fiber optic telecommunications network that provides voice and data services for the District. She analyzed governmental, educational, and public safety uses of the network.
- Joanne devised a business strategy and wrote a business plan for **KINBER**, the statewide backbone and middle-mile fiber infrastructure focused on the higher education and healthcare sectors in Pennsylvania. One highlight of the KINBER strategy was developing an actionable plan to increase early cash flow.
- Joanne developed a broadband feasibility study for **Garrett County, Maryland**, with a focus on maximizing the benefits and use of the state's grant-funded fiber backbone. That initial analysis led to strategic planning and support for the county's successful Appalachian Regional

Commission grant funding and a pioneering public-private partnership that has deployed TV White Spaces wireless service to unserved rural parts of the county.

Federal Funding and Grant Planning

Joanne's expertise includes the funding opportunities available to local, state, and tribal governments and public-private partnerships through the federal government and other sources. She has guided clients through project planning, application writing, and fund management. Her work on behalf of clients has included successful applications for funding from a range of agencies, including the FCC/USAC, Rural Utilities Service, National Telecommunications and Information Administration, the Appalachian Regional Commission, and the Department of Homeland Security.

Speaking and Advocacy

Joanne is in wide demand as a speaker and expert source on broadband deployment and public-private partnership issues. She has testified before the U.S. Congress on matters of broadband deployment and policy; has been interviewed by publications including *Business Week*, *The Washington Post*, *The New Yorker*, and *The Baltimore Sun*; and has been featured on C-SPAN's "The Communicators." She was an invited speaker at the 2021 Milken Institute Global Conference.

She has provided expert presentations to the Federal Communications Commission, the U.S. Conference of Mayors, the National League of Cities, the Broadband Communities Summit, Technology Policy Summit, the University of Illinois, Case Western Reserve University, the New America Foundation, and the Congressional Internet Caucus.

Education

Juris Doctor, with honors, University of Chicago Law School, 1994

Bachelor of Arts, with distinction, University of Wisconsin, Madison, 1990

Employment History

2000 – Present	<i>President and Director of Business Consulting</i> Columbia Telecommunications Corporation d/b/a CTC Technology & Energy
1997 – 2000	<i>Vice President and Director of Business Consulting</i> Columbia Telecommunications Corporation d/b/a CTC Technology & Energy
1996–1997	<i>Litigation/Communications Attorney</i> Mintz, Levin, Cohn, Ferris, Glovsky, & Popeo P.C., Washington, D.C.
1994–1996	<i>Litigation Attorney</i> Jenner & Block, Chicago

Selected Publications

- "The Era of the Broadband Public-Private Partnership: New trends and opportunities in the wake of COVID-19" published by the Benton Institute for Broadband and Society, 2021

- “Putting State Broadband Funds to Work: Best Practices In State Rural Broadband Grant Programs,” published by the Benton Institute for Broadband & Society, 2021
- “Public Fiber, Private Service: A Shared-Risk Partnership Model for 21st Century Broadband Infrastructure,” published by the Benton Institute for Broadband & Society, 2020
- “The Broadband Lifeline in a Pandemic: How Your Community Can Quickly Connect the Unconnected,” CTC Technology & Energy, April 2020
- “Closing the Digital Divide: Broadband Infrastructure Solutions,” Testimony Before the United States House of Representatives Committee on Energy and Commerce Subcommittee on Communications and Technology, January 2018
- “Leaping the Digital Divide: Encouraging Policies and Partnerships to Improve Broadband Access Across North Carolina,” co-author, published by the North Carolina League of Municipalities, 2018
- “The Emerging World of Broadband Public–Private Partnerships: A Business Strategy and Legal Guide,” co-author, published by the Benton Foundation, 2017
- “The Atomic Age of Data: Policies for the Internet of Things,” contributor as participant at the Aspen Institute Conference on Communications Policy, 2015
- “The Art of the Possible: An Overview of Public Broadband Options,” published by the New America Foundation, 2015
- “Better Communities through Better Broadband: A Coalition of Public and Private Interests Affirms the Need for Local Internet Choice,” Benton Foundation Blog, 2015
- “The Killer App for Local Fiber Networks,” *Broadband Communities* magazine, November/December 2014
- “Gigabit Communities: Technical Strategies for Facilitating Public or Private Broadband Construction in Your Community,” 2014
- “How communities can facilitate fiber construction,” Google Fiber Blog, 2014
- “Facilitating Broadband Construction,” *Broadband Communities* magazine, January/February 2014

Andrew Afflerbach, Ph.D., P.E. | CEO and Chief Technology Officer

Dr. Andrew Afflerbach oversees a team of expert engineers specializing in the planning, designing, and implementation oversight of broadband communications networks, emerging technology strategies and public safety networks – including 5G, 6G, and NG911. His expertise includes broadband infrastructure design; fiber and wireless technologies and critical technical issues related to broadband engineering; and the unique requirements of public safety networks.

Andrew has planned and designed robust and resilient network strategies for dozens of clients, including state and local governments and public safety users. He has delivered strategic technical guidance on wired and wireless communications issues to cities, states, and national governments over more than 25 years. He has advised numerous cities and states, including New York City, San Francisco, Seattle, Atlanta, Washington, D.C., and Boston, and served as a senior adviser to Crown Fibre Holdings, the public entity directing New Zealand’s national fiber-to-the-home project.

In addition to designing networks, Andrew testifies as an expert witness on broadband communications issues. And he is frequently consulted on critical communications policy issues through technical analyses submitted to the Federal Communications Commission (FCC) and policymakers. He has prepared white papers on:

- Streamlining deployment of small cell infrastructure by improving wireless facilities siting policies
- Limiting interference from LTE-U networks in unlicensed spectrum
- Developing technical frameworks for wireless network neutrality
- Estimating the cost to expand fiber to underserved schools and libraries nationwide
- Conducting due diligence for the IP transition of the country’s telecommunications infrastructure

As CTC’s Chief Technology Officer, Andrew oversees all technical analysis and engineering work performed by the firm. He has a Ph.D. and is a licensed Professional Engineer.

Wireless Network Planning and Engineering

Applying the current state of the art—and considering the attributes of anticipated future technological advancements such as “5G”—Andrew has developed candidate wireless network designs to meet the requirements of clients including the cities of Atlanta, San Francisco, and Seattle. Andrew led the team that evaluated wireless broadband solutions for New York City, including a wireless spectrum roadmap, to complement potential wired solutions.

In rural, mountainous Garrett County, Maryland, Andrew designed and oversaw the deployment of an innovative wireless broadband network that used TV white space spectrum to reach previously unserved residents. To enhance public internet connectivity, Andrew provides technical oversight on CTC’s Wi-Fi-related projects, including the design and deployment of Wi-Fi networks in several parks in Montgomery County, Maryland.

Andrew also advises local and state government agencies on issues related to wireless attachments in the public rights-of-way; he leads the CTC team that supports the Texas Department of Transportation (TxDOT) and many large counties on wireless attachment policies and procedures.

Public Safety Networking

Andrew leads the CTC team providing strategic and tactical guidance on FirstNet (including agency adoption and other critical decision-making) for the State of Delaware and Onondaga County, New York. In the District of Columbia, he and his team evaluated the financial, technical, and operational impact of building the District's own public safety broadband network, including the design of an LTE system that provided public-safety-level coverage and capacity citywide. This due diligence allowed the District to make an informed decision regarding opting in or out of the National Public Safety Broadband Network.

Andrew currently is working with the State of Delaware to evaluate LTE coverage gaps throughout the state to assist agencies in their choice of public safety broadband networks. On the state's behalf, he and his team are also conducting outreach to AT&T and other carriers to evaluate their public safety offerings. He is performing similar work as part of CTC's engagement with El Paso County, Colorado.

Earlier, Andrew led the CTC team that identified communications gaps and evaluated potential technical solutions for the Baltimore Urban Area Security Initiative (UASI), a regional emergency preparedness planning effort funded by the U.S. Department of Homeland Security (DHS).

He previously served as lead engineer and technical architect for planning and development of NCRnet, a regional fiber optic and microwave network that links public safety and emergency support users throughout the 19 jurisdictions of the National Capital Region (Washington, D.C. and surrounding jurisdictions), under a DHS grant. He wrote the initial feasibility studies that led to this project for regional network interconnection.

Fiber Network Planning and Engineering

Andrew has architected and designed middle- and last-mile fiber broadband networks for the District of Columbia (Washington, D.C.); the city of San Francisco; the Delaware Department of Transportation; the Maryland Transportation Authority; and many large counties.

He oversaw the development of system-level broadband designs and construction cost estimates for the cities of Atlanta, Boston, Boulder, Palo Alto, Madison, and Seattle; the states of Connecticut and Kentucky; and many municipal electric providers and rural communities. He is overseeing the detailed design of the city-built fiber-to-the-premises (FTTP) networks in Westminster, Maryland; Alford, Massachusetts; and Holly Springs and Wake Forest, North Carolina.

In Boston, Andrew led the CTC team that developed a detailed RFP, evaluated responses, and participated in negotiations to acquire an Indefeasible Right of Use (IRU) agreement with a fiber vendor to connect schools, libraries, public housing, and public safety throughout the City. This approach was designed to allow the City to oversee and control access and content among these facilities.

Smart Grid

Andrew and the CTC team provided expert testimony and advisory services to the Public Service Commission of Maryland regarding Advanced Metering Infrastructure (AMI). CTC provided objective guidance to the staff as it evaluated AMI applications submitted by three of the state's investor-owned utilities (IOUs). This contract represented the first time the PSC staff had asked a consultant to advise them on technology—a reflection of the lack of standards in the Smart Grid arena.

Broadband Communications Policy Advisory Services

Andrew advises public sector clients and a range of policy think tanks, U.S. federal agencies, and non-profits regarding the engineering issues underlying key communications issues. For example, he:

- Provided expert testimony to the FCC in the matter of the preparation of the **national broadband plan** as a representative of the National Association of Counties (NACo) and the National Association of Telecommunications Officers & Advisors (NATOA).
- Served as expert advisor regarding broadband deployment to the U.S. Conference of Mayors, NACo, National League of Cities, Public Knowledge, New America Foundation Open Technology Institute, and NATOA in those organizations' filings before the FCC in the matter of determination of the deployment of a **national, interoperable wireless network in the 700 MHz spectrum**.
- In connection with the FCC's ongoing **Open Internet proceeding**, advised the New America Foundation regarding the technical pathways by which "any device" and "any application" regimes could be achieved in the wireless broadband arena as they have been in the wireline area.
- Provided expert technical advice on the **700 MHz broadband and AWS-3 proceedings** at the FCC for the Public Interest Spectrum Coalition (including Free Press, the New America Foundation, Consumers Union, and the Media Access Project).
- Served as technical advisor to the **U.S. Naval Exchange** in its evaluation of vendors' broadband communications services on U.S. Navy bases worldwide.
- Advised the **U.S. Internal Revenue Service** regarding the history of broadband and cable deployment and related technical issues in that agency's evaluation of appropriate regulations for those industries.
- Advised the Stanford Law School Center for Internet and Society on the technical issues for their briefs in the **Brand X Supreme Court appeal** regarding cable broadband.

Broadband Communications Instruction

Andrew has served as an instructor for the U.S. Federal Highway Association/National Highway Institute, the George Washington University Continuing Education Program, the University of Maryland Instructional TV Program, ITS America, Law Seminars International, and the COMNET Exposition. He developed curricula for the United States Department of Transportation.

He taught and helped develop an online graduate-level course for the University of Maryland. He developed and taught communications courses and curricula for ITS America, COMNET, and the University of Maryland. His analysis of cable open access is used in the curriculum of the International Training Program on Utility Regulation and Strategy at the University of Florida.

Andrew has also prepared client tutorials and presented papers on emerging telecommunications technologies to the National Fire Protection Association (NFPA), NATOA, the National League of Cities (NLC), the International City/County Management Association (ICMA), and the American Association of Community Colleges (AACC). He taught college-level astrophysics at the University of Wisconsin.

Employment History

1995–Present	CEO/Chief Technology Officer, CTC Previous positions: Director of Engineering, Principal Engineer, Senior Scientist
1990–1996	Astronomer/Instructor/Researcher University of Wisconsin–Madison, NASA, and Swarthmore College

Education

Ph.D., Astronomy, University of Wisconsin–Madison, 1996

- NASA Graduate Fellow, 1993–1996. Research fellowship in astrophysics
- Elected Member, Sigma Xi Scientific Research Honor Society

Master of Science, Astronomy, University of Wisconsin–Madison, 1993

Bachelor of Arts, Physics, Swarthmore College, 1991

- Eugene M. Lang Scholar, 1987–1991

Professional Certifications/Licenses

Professional Engineer, states of California, Delaware, Georgia, Illinois, Maryland, Nevada, and Virginia

Honors/Organizations

- Chairman of Subgroup on Local Government Issues on COVID-19, Disaster Response and Recovery Working Group, FCC’s Broadband Deployment Advisory Committee (BDAC)
- Association of Public-Safety Communications Officials (APCO)
- Board of Visitors, University of Wisconsin Department of Astronomy
- National Association of Telecommunications Officers and Advisors (NATOA) Technology and Public Safety Committees
- Armed Forces Communications and Electronics Association (AFCEA)
- Society of Cable and Telecommunications Engineers (SCTE)
- Institute of Electrical and Electronic Engineers (IEEE)
- Charleston Defense Contractors Association (CDCA)

Selected Publications, Presentations, and Courses

- “How States and Localities Can Set Realistic Small Cell Application Fees Now That the 9th Circuit Has Upheld FCC Preemption of Local Authority,” Sept. 2020
- “The Broadband Lifeline in a Pandemic: Strategies for Provisioning Fast Internet Service to the Most Remote Rural Areas,” March 2020
- “The Broadband Lifeline in a Pandemic: Strategies for Provisioning Broadband to Temporary Emergency Sites,” March 2020
- “The Broadband Lifeline in a Pandemic: How Your Community Can Quickly Deploy Free Wi-Fi to Meet Urgent Needs at Public Housing and Other Locations,” March 2020
- “Small Cell Standards and Processes: Protecting Community Assets, Interests, and Public Safety,” prepared for NATOA, Feb. 2019

- “SB 937: Wireless Facilities – Installation and Regulation,” Testimony before the State of Maryland Senate, Feb. 2019
- “HB 654: Wireless Facilities – Installation and Regulation,” Testimony before the State of Maryland General Assembly, Feb. 2019
- “The Three “Ps” of Managing Small Cell Applications: Process, Process, Process,” Dec. 2018
- Declaration in Response to FCC’s Order, “Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment,” prepared for the Smart Communities and Special Districts Coalition, filed with the FCC, Sept. 2018
- Declaration in Response to the Proposed T-Mobile/Sprint Merger, prepared for the Communications Workers of America, filed with the FCC, Aug. 2018
- “A Model for Understanding the Cost to Connect Anchor Institutions with Fiber Optics” (co-author), prepared for the Schools, Health & Libraries Broadband Coalition, Feb. 2018
- “How Localities Can Prepare for—and Capitalize on—the Coming Wave of Public Safety Network Construction,” Feb. 2018
- “Network Resiliency and Security Playbook” (co-author), prepared for the National Institute of Hometown Security, Nov. 2017
- “Mobile Broadband Service Is Not an Adequate Substitute for Wirelines” (co-author; addressing the limitations of 5G), prepared for the Communications Workers of America, Oct. 2017
- “Technical Guide to Dig Once Policies,” April 2017
- “Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies,” prepared for the Smart Communities Siting Coalition, filed with the FCC, March 2017
- “How Localities Can Improve Wireless Service for the Public While Addressing Citizen Concerns,” Nov. 2016
- “LTE-U Interference in Unlicensed Spectrum: The Impact on Local Communities and Recommended Solutions,” prepared for WifiForward, Feb. 2016
- “Mobile Broadband Networks Can Manage Congestion While Abiding by Open Internet Principles,” prepared for the New America Foundation’s Open Technology Institute – Wireless Future Project, filed with the FCC, Nov. 2014
- “The State of the Art and Evolution of Cable Television and Broadband Technology,” prepared for Public Knowledge, filed with the FCC, Nov. 2014
- “A Model for Understanding the Cost to Connect Schools and Libraries with Fiber Optics,” prepared for the Schools, Health & Libraries Broadband Coalition, filed with the FCC, Oct. 2014
- “The Art of the Possible: An Overview of Public Broadband Options,” prepared jointly with the New America Foundation’s Open Technology Institute, May 2014
- “Understanding Broadband Performance Factors,” with Tom Asp, *Broadband Communities* magazine, March/April 2014
- “Engineering Analysis of Technical Issues Raised in the FCC’s Proceeding on Wireless Facilities Siting,” filed with the FCC (<http://apps.fcc.gov/ecfs/document/view?id=7521070994>), Feb. 2014
- “A Brief Assessment of Engineering Issues Related to Trial Testing for IP Transition,” prepared for Public Knowledge and sent to the FCC as part of its proceedings on Advancing Technology Transitions While Protecting Network Values, Jan. 2014
- “Gigabit Communities: Technical Strategies for Facilitating Public or Private Broadband Construction in Your Community,” prepared as a guide for local government leaders and planners (sponsored by Google), Jan. 2014
- “Critical Partners in Data Driven Science: Homeland Security and Public Safety,” submitted to the *Workshop on Advanced Regional & State Networks (ARNs): Envisioning the Future as Critical Partners in Data-Driven Science*, Internet2 workshop chaired by Mark Johnson, CTO of MCNC,

Washington, D.C., April 2013

- “Connected Communities: How a City Can Plan and Implement Public Safety & Public Wireless,” submitted to the International Wireless Communications Exposition, Las Vegas, March 2013
- “Cost Estimate for Building Fiber Optics to Key Anchor Institutions,” prepared for submittal to the FCC by NATOA and SHLB, Sept. 2009
- “Efficiencies Available Through Simultaneous Construction and Co-location of Communications Conduit and Fiber,” prepared for submittal to the FCC by the National Association of Telecommunications Officers and Advisors and the City and County of San Francisco, 2009, referenced in the National Broadband Plan
- “How the National Capital Region Built a 21st Century Regional Communications Network” and “Why City and County Communications are at Risk,” invited presentation at the FCC’s National Broadband Plan workshop, Aug. 25, 2009

Ziggy Rivkin-Fish, CGEIT | VP of Broadband Strategies and Governance

Ziggy Rivkin-Fish has been an analyst and project manager with CTC since 2005. Mr. Rivkin-Fish has managed multiple federal-grant-funded interoperability projects that interconnect jurisdictional communication networks. He has also applied his management, technical, and governance expertise to the implementation of large-scale network infrastructures, as well as developing governance frameworks to manage both small and large public broadband networks. His background in organizational sociology and certification in Governance of Enterprise IT has enabled him to advise multiple clients on structuring themselves to manage IT departments and fiber optic network services.

In addition to his work on government network interconnections and governance consulting, Mr. Rivkin-Fish has played key roles in other large-scale projects, such as by overseeing the preparation of successful Environmental Assessments (EA) for major BTOF-funded networks including the One Maryland Broadband Network (OMBN) and the Urbana-Champaign Big Broadband (UC2B) fiber optic network, enabling the projects to proceed to the construction phase. Mr. Rivkin-Fish then oversaw the preparation of required addenda to the OMBN and UC2B EAs to address project revisions during the construction phase. In addition, Mr. Rivkin-Fish advised on the preparation of an EA for the State of Maryland Department of Natural Resources to enable construction of a radar support tower on state land.

Notably, Mr. Rivkin-Fish has served as the lead manager for all phases of deployment of NCRnet, the interoperable public safety communications network that interconnects 20 jurisdictions in the National Capital Region around Washington, D.C. Mr. Rivkin-Fish's role with NCRnet includes oversight of fiber optic design, procurement, and implementation to network design, governance development, construction oversight, network operations, and long-term sustainment. Mr. Rivkin-Fish has also ensured project compliance with grant regulations, including environmental and procurement requirements. Currently, Mr. Rivkin-Fish is focused on facilitating public safety applications rollouts on NCRnet, as well as engineering feasibility studies and oversight roles for fiber optic and wireless extensions to new clients.

Mr. Rivkin-Fish's accomplishments include a full fiber optic network feasibility study, including a governance roadmap for the city of Highland Park, Illinois, which enabled the city to decide between ownership models and methods of operational governance. Most recently, he conducted a large organizational governance study for Montgomery County FiberNet to advise the county both on executive governance and on operational organization and business process improvement. He has consulted on governance frameworks for the Commonwealth of Kentucky, Harford County IT Department, and the City of Vancouver. For Vancouver and the City of Vallejo, he also consulted on joint trenching policies and business process improvement. Alongside his work on NCRnet, Mr. Rivkin-Fish also continues to advise public interest-oriented networks on governance at all phases of deployment and operation.

Mr. Rivkin-Fish is currently following up the FiberNet organizational governance study with a project facilitating the development and implementation of key performance indicators aligned to the report's recommendations and guidance by the governing board. He is also managing outside plant and network engineering support projects in Montgomery County, overseeing fiber optic and application projects for NCRnet, and consulting for municipal and regional interconnection networks.

EDUCATION

Master of Arts, Sociology, Princeton University, 2000

Bachelor of Arts, Individualized Major in Social Theory, Rutgers University (4.0 GPA)

RELEVANT PUBLICATIONS

“NCRnet: How the National Capital Region is Building a 21st Century Regional Public Safety Communications Network” *NATOA Journal* 15(4):16-18. 2007.

CERTIFICATIONS

Certified in the Governance of Enterprise IT (CGEIT) certification, 2015

Aimee Meacham | Director of State Broadband Programming

Aimee Meacham serves as Director of State Broadband Programming at CTC Technology and Energy where provides strategic direction for the broadband deployment and digital equity work. She has over 15 years of experience in telecommunications policy, including broadband deployment and digital equity. During that time, she advised senior administration officials on communications policy, led policy engagement at international fora, including the International Telecommunications Union – and managed complex programs to expand broadband connectivity and digital equity for the U.S. Department of Commerce. She worked in private legal practice advising clients on regulatory and transactional matters. She has led multidisciplinary teams and trained staff on complex projects.

CTC Technology & Energy, Director of State Broadband Programming 2023 to present

- Manages all state projects including scheduling and coordination of internal resources.
- Supports significant projects by taking the lead as project manager.
- Provides subject matter expertise regarding NTIA programs and other policy issues.

BT, Vice President of Government Affairs, US and International 2021 to 2023

- Led BT global trade policy and portfolio activities through industry associations and directly with US and UK government.
- Managed BT's engagement with US political stakeholders, industry associations, and Internet governance bodies.
- Provided strategic guidance, coordinated stakeholders and led BT's policy work on internet governance issues at the United Nation's International Telecommunications Union (ITU) and Internet Governance Forum, as well as ICANN.

US Department of Commerce, National Telecommunications and Information Administration

Deputy Associate Administrator, Office of International Affairs 2019 to 2021

- Represented NTIA and the US government in the development of telecommunications and information policies at international organizations, as well as in the presentation of such policies to Congress, federal agencies, industry, stakeholders, and the public.
- Engaged and managed talented team of skilled, multi-disciplinary professionals to advance international telecommunications and information policy program meeting long and short-term policy goals.
- Established relationships with officials across the government, private sector and foreign governments to achieve U.S. policy goals on Internet governance, telecom, trade and emerging issues.
- Coordinated among internal and external stakeholders, including industry associations, to create viable policy options and recommendations. Recruited and trained expert staff.

Chief of External Affairs, BroadbandUSA

2015 to 2019

- Led stakeholder outreach and intergovernmental affairs team and launched start-up venture within NTIA to expand broadband access and digital equity.
- Developed and strengthened strategic relationships and built coalitions with key state and local government and telecom industry stakeholders to advance agenda.
- Directed bi-partisan Congressional outreach, leading to increased budget from \$3 million to over \$15 million.

Director of Policy and Compliance, Broadband Technology Opportunities Program

2010 to 2015

- Spearheaded several efforts associated with NTIA's administration of the Broadband Technology Opportunity Program's \$4.3 billion investment in broadband infrastructure, education, and adoption projects, including: regulatory affairs, policy development, risk management, grant compliance, and budget appropriations.
- Developed innovative policy positions that moved projects forward to service local needs while protecting taxpayer investments.
- Negotiated complex, innovative agreements among federally recognized Native American tribes and federal agencies.
- Structured interviews and responses for more than 30 audits with minimal recommendations and no waste, fraud, or abuse. Developed and led compliance training for staff and grantees.

Education

LLM, Georgetown University School of Law

JD, American University Washington College of Law

MA in International Affairs, American University School of International Service

BA in English, University of Dayton

Certifications

- Bar admissions: New York and District of Columbia
- Federal Grants Management Certificate, Management Concepts

Heather Mills | V.P., Grant & Funding Strategies

Heather Mills has more than a decade of experience in project management and data analysis. She has exceptional skills in long-term strategic planning for broadband funding; execution of complex tactical funding plans; and grant administration, budgeting, and financial reporting. Heather leads the CTC team that develops grant and funding strategies and delivers tactical application and post-award support to our public sector clients. She has authored guidance on new and emerging federal broadband funding programs that is highly regarded by industry colleagues.

At CTC, Heather guides clients on strategic funding for network planning, as well as applying for and complying with the requirements of major federal broadband and communications grant programs, including those funded by the IIJA (such as the BEAD Program), the ARC/EDA POWER grants, USDA RUS grants (such as ReConnect and Community Connect), and New Market Tax Credits. She has particular expertise in the Federal Communications Commission's E-Rate program, Lifeline program, and Healthcare Connect Fund.

Over the last few years, Heather and her team supported clients with applications to the U.S. Department of Commerce's EDA Public Works and Economic Adjustment Assistance program for funding related to COVID relief; she guided clients in many parts of the country through the consultation process with EDA regional representatives. Under Heather's management, the CTC team supported clients with strategy and navigation of the USDA ReConnect application process through Round 1, 2, and 3 which required detailed understanding of the application, the application portal, and applied strategy.

Heather currently advises clients on new federal funding programs such as the FCC's Affordable Connectivity Program (formerly the Emergency Broadband Benefit) and the NTIA's IIJA programs, while keeping a close eye on and providing singular analysis for clients around funding programs created by the Consolidated Appropriations Act and the American Rescue Plan Act.

Previously, Heather wrote an E-Rate program guidebook for public facing clients; prepared client responses to E-Rate RFPs; oversaw and advised on the strategy and development of RFPs for library and school clients applying for E-Rate; and helped a hospital association develop a consortium-based approach to the Healthcare Connect Fund. She currently utilizes this expertise in oversight and management of the California Library Connect program, a consortia program that maximizes E-rate support for California's libraries.

Heather previously led the CTC team that researched and wrote a successful federal Environmental Assessment (EA) and addenda for the \$115 million One Maryland Broadband Network (OMBN) project—a Broadband Technology Opportunities Program (BTOP) grantee. Following submission of the EA, she coordinated required consultations for the EA and addenda over a period of several months. Similarly, she wrote and coordinated consultations for an EA on behalf of the State of Maryland's Department of Natural Resources when that agency sought to construct a radar support tower on state land.

EDUCATION

Master of Science, Management, University of Maryland University College, 2012

Master of Arts, Political Science, Washington State University, 2002

Bachelor of Arts, English Literature/Pre-law, Washington State University, 2000

SEMINARS

“Strategic Considerations to Prepare for NTIA’s (and other!) New Broadband Funding,” *Broadband Bunch Podcast*, May 2021. <https://register.gotowebinar.com/register/5735217991650536720>

PUBLICATIONS

- “ReConnect Round 3 scoring rules are the key to planning a competitive application: What you need to know,” *CTC blog*, 2021. <https://www.ctcnet.us/blog/reconnect-round-3-scoring-rules-are-the-key-to-planning-a-competitive-application-what-you-need-to-know/>
- “USDA’s new ReConnect broadband grant rules dramatically expand eligible areas and effectively redefine broadband,” *CTC blog*, 2021. <https://www.ctcnet.us/?p=5186>
- “NTIA’s Connecting Minority Communities Pilot Program Is a Broadband Funding Opportunity for Local Governments and Minority Serving Institutions,” *CTC blog*, 2021. <https://www.ctcnet.us/?p=5180>
- “States and Localities Have Updated Guidance for Treasury’s Coronavirus Capital Projects Funds,” *CTC blog*, 2021. <https://www.ctcnet.us/?p=5166>
- “New Federal Grant Opportunity for Broadband Economic Development Projects: \$500 Million in New Funding with Applications Due Early in 2022,” *CTC blog*, 2021. <https://www.ctcnet.us/?p=5147>
- “A Deep Dive into the Scoring Metrics of the NTIA’s Broadband Infrastructure Program,” *CTC blog*, 2021. <https://www.ctcnet.us/blog/a-deep-dive-into-the-scoring-metrics-of-the-ntias-broadband-infrastructure-program/>
- “First Take on NTIA’s Newest Broadband Grant Program,” *CTC blog*, 2021. <https://www.ctcnet.us/?p=5022>
- “Initial Guidance and Analysis: Treasury Issues First Details on \$10B Coronavirus Capital Projects Fund,” *CTC blog*, 2021. <https://www.ctcnet.us/?p=4989>
- “Initial Guidance and Analysis: Treasury Announces Preliminary Guidance for Broadband Projects Funded by the \$350B Coronavirus State and Local Fiscal Recovery Funds,” *CTC blog*, 2021. <https://www.ctcnet.us/?p=4980>
- “Four Strategic Steps Your Community Can Take Now to Prepare for NTIA’s New Broadband Grant Programs,” *CTC blog*, 2021. <https://www.ctcnet.us/blog/four-strategic-steps-your-community-can-take-now-to-prepare-for-ntias-new-broadband-grant-programs/>
- “American Rescue Plan Commits Billions to Broadband,” *CTC blog*, 2021. <https://www.ctcnet.us/blog/american-rescue-plan-commits-billions-to-broadband/>
- “Appropriations Act Delivers Largest Federal Broadband Grant Opportunity in a Decade,” *CTC blog*, 2021. <https://www.ctcnet.us/blog/appropriations-act-delivers-largest-federal-broadband-grant-opportunity-in-a-decade/>
- “Are You Thinking About ReConnect Round Three Yet? You Should Be,” *CTC blog*, 2020. <https://www.ctcnet.us/blog/are-you-thinking-about-reconnect-round-three-yet-you-should-be/>
- “\$1.5 Billion in New Grant Funding Available from Economic Development Administration for Broadband & Other Projects,” *CTC blog*, 2020. <https://www.ctcnet.us/blog/1-5-billion-in-new-grant-funding-available-from-economic-development-administration-for-broadband-other-projects/>

Freny Cooper | Director of Regional and Local Consulting

Freny Cooper is a results-oriented, conscientious, and innovative leader with extensive experience in broadband and digital equity, finance, business planning, operations, and marketing who has helped organizations grow and succeed. She is an expert at consensus building and uses data-driven analytical approaches to problem solving.

Freny has provided consulting services to companies large and small, from tech start-ups to divisions within Fortune 500 companies, with a focus on growth strategies, revenue generation, customer acquisition/retention, brand building, change management and communications.

As Chief Operating Officer and Broadband Director for Monterey Bay Economic Partnership, Freny directed daily operations for a growing economic development nonprofit with public, private, and civic stakeholders.

Freny's financial expertise has helped companies achieve revenue and profit growth, and she has completed many comprehensive strategic plans for both private businesses and nonprofits, providing valuable direction for these organizations. Freny is also extremely committed to building prosperity in the community and building alliances for enhanced social purpose.

CTC Technology & Energy, Director of Municipal Consulting

2022 to present

- Freny leads city-wide broadband projects that often incorporate multiple disciplines and require expertise in digital equity, problem solving, multi-stakeholder engagement, and financial analysis, as well as the leadership of teams of engineers and mapping experts.
- Freny is an expert at delivering projects on time and on budget.

Monterey Bay Economic Partnership, Chief OO & Broadband Director

2016 to 2022

- Initiated and led broadband initiative, acted as the strategic lead for the Central Coast Broadband Consortium and spearheaded digital equity programs. Built consensus among local governments, state officials, regional advocates, incumbents and independent ISPs. Efforts contributed to additional coverage of several hundred households in Santa Cruz and Monterey Counties.
- Formulated strategic direction for regional initiatives and secured several million dollars of grant funding from 2019 to 2022.
- Managed all aspects of HR, Finance and Operations for a growing nonprofit; expanded from 2 to 11 employees, brought organization into compliance with all labor laws, ensured fiscal health, implemented new systems such as CRM, and supported all team members.

Education

University of Southern California, Master of Business Administration, Marketing & Finance

Middlebury Institute of International Studies, Bachelor of Arts, French Studies

David Talbot | Director of Research Services

David Talbot has managed or represented CTC on a wide range of projects including a digital equity study for the cities of Boston and Cambridge, MA; an RFP seeking private broadband provider to perform buildouts in Wildwood, MO; a fiber strategic plan for Norwich Public Utilities in Norwich, CT; a business broadband demand study for the Town of Yarmouth, MA; and a fiber feasibility study for the Hingham Municipal Lighting Plant in Hingham, MA.

Recently, David served as the strategic and business planning consultant to numerous smaller cities as they have planned and negotiated broadband public-private partnerships, including the city of Moline, Illinois and Lancaster, Pennsylvania.

He also advised the City of Cambridge on strategic and tactical approaches to plan, build, and operate its own municipal broadband network. Additionally, David supports other CTC clients around the country on policy studies and collaborates with colleagues on writing and editing reports.

David joined CTC from the Berkman Klein Center for Internet & Society at Harvard University, where he wrote case studies about municipal fiber business models, paybacks, and pricing. A journalist for much of his career, he previously spent nine years as chief correspondent at *MIT Technology Review*, the magazine and website owned by MIT. There he frequently wrote about internet policy topics, emerging communications technologies, and digital divide issues.

A resident of Reading, Massachusetts, David has served for seven years an elected member of the Board of Commissioners of the Reading Municipal Light Department—the largest municipal electric utility in Massachusetts—giving him practical experience in local government and municipal utility governance and management.

David's research projects at the Berkman Klein Center included the following:

- [*Community-Owned Fiber Networks: Value Leaders in America*](#) documented that most U.S. municipal FTTH networks offer lower and clearer prices than do incumbents when considering basic broadband service
- [*Citizens Take Charge: Concord, Massachusetts Builds a Fiber Network*](#) profiled the long-running effort of a Boston suburb to build a smart grid and FTTH network and overcome industry resistance
- [*Holyoke: A Massachusetts Municipal Light Plan Seizes Internet Access Business Opportunities*](#) profiled the long-running effort of a western Massachusetts mill city to build a city network and then expand into serving and consulting for other municipalities

David's earlier background is in newspaper and magazine journalism, covering stories at the nexus of government and technology and a wide range of energy and communications technologies.

Education

Knight Science Journalism Fellow, Massachusetts Institute of Technology, 2000

Bachelor of Arts, English, Colgate University, Hamilton, NY, 1987

Marc Schulhof | Senior Analyst and Technical Writer

Marc Schulhof has 25 years of experience in technical writing, financial journalism, and public and corporate communications. As an analyst and editor, he plays an integral role in developing CTC's client deliverables, including:

- Strategic and master plans (business and engineering)
- Needs assessments
- Feasibility studies
- Requests for proposal (RFP) and requests for information (RFI)
- Survey instruments
- Expert witness testimony
- Federal and regional grant applications
- Wireless facility siting reports
- E-rate RFPs and bids
- Research reports
- White papers

Over the course of his years as CTC's senior technical writer, Marc has supported dozens of CTC clients — including the District of Columbia, the states of Connecticut, Delaware, Kentucky, Maryland, and New Mexico, and the cities of Atlanta, Boston, New York, Palo Alto, San Francisco, and Seattle. He has collaborated on white papers on topics related to fiber optic and wireless technologies, including technical reports filed with the Federal Communications Commission. He is the co-author, with CTC President Joanne Hovis, of "The Emerging World of Broadband Public-Private Partnerships: A Business Strategy and Legal Guide."

Prior to joining CTC, Marc was the worldwide editor-in-chief of CIO program websites at IBM, where he established editorial direction for 36 country-specific CIO websites and worked with local editors to update each site's mix of multimedia content. He also wrote and edited feature articles and white papers on information technology and business topics.

Earlier, as a global editor at PricewaterhouseCoopers Consulting, Marc wrote and edited reports on a variety of technology and business topics. He served as daily editor of the PwC-sponsored *BusinessWeek Online Handheld Edition*, a news summary service for mobile device users in the pre-smartphone era. Marc began his career at *Kiplinger's Personal Finance Magazine*, where he researched, analyzed, and wrote about a range of complex financial issues, first as a reporter and later as an associate editor.

EDUCATION

Master of Science, Journalism, Northwestern University

Bachelor of Science, Journalism, Northwestern University

REBEL TEAM RESUMES

Wim Verdouw | Principal

Project Position

Project Leader

Key Skills Areas

Infrastructure Development
Project Finance
Structuring and Procuring P3s
Financial Modeling
Financial Analysis
Evaluation of Financing
Options
Value-for-Money Assessment
Risk Analysis

Education

CFA Charterholder, 2018
Delft University of Technology
MSc. Civil Engineering (cum laude), 2005
Delft University of Technology
BSc. Civil Engineering, 2005
London School of Economics
and Political Science
BSc. Economics, 2014

Professional History

Rebel, 2014 - present
Senior Manager
Green Ventures, 2011 - 2014
Financial Advisor
United Nations, 2005 - 2010
Water Sector Specialist

Office Location

Washington, DC

Years of Experience

18 Years

Executive summary

Wim has a combined background in economics and engineering with over 18 years of experience in financial analysis, project development and project implementation in broadband, transportation, renewable energy, water, and social infrastructure sectors. He leverages his experience from public and private sector infrastructure projects in the US, Africa, and Asia to advise clients on critical infrastructure financing aspects and project structuring, in particular for public-private partnerships.

Relevant Experience

Broadband & Technology

New Hampshire Fiber Broadband Project: Advised New Hampshire Electric Cooperation on the development of a \$150M+ fiber-to-the-premises network under a partnership model in rural parts of New Hampshire. Responsible for conducting financial due diligence, developing and evaluating partnership structuring options, drafting term sheet, gauging market interest, marketing the project, and developing a competitive solicitation process and documentation that would maximize value for coop members.

San Francisco Fiber-to-the-Premises P3: Advised the City of San Francisco on its innovative \$1.5B-\$1.9B fiber-to-the-premises broadband P3 project. Supported the development of financial/commercial structure and procurement strategy. Led project's financial analysis.

Nevada Fiber Broadband Project (confidential): Advised a mining company on the financial feasibility of a loan to an internet service provider for the construction of a fiber-to-the-premises network in two rural communities in Nevada. Responsible for reviewing the project financial model and providing recommendations to support financial due diligence process.

LUS Fiber Financial Review: As part of the consulting engineer's annual review, conducted financial review of LUS Fiber in Lafayette, as required under LUS Fiber's general bond

ordinance. Responsible for reviewing key documentation including cash flow projections, capital improvement plan, and bond issuances to provide evaluation on LUS Fiber creditworthiness.

Business Case Analysis for Transit Ticketing and Payment: Advised Fortune 500 company on transit open loop payment system P3s. Developed business case for open loop transit payment system investments and innovative P3 structures that allow transit agencies and cities to achieve significant cost savings and revenue increases while contributing to smart city objectives.

Transit Ticketing & Payment P3 (confidential): Advised infrastructure fund and Fortune 500 company on unsolicited P3 proposal to implement contactless open loop payment solution for large US transit system. Developed financial model, advised on financing structure, supported bid preparation.

Oakland Connected Vehicles P3: Advised winning P3Mobility consortium on a first-of-its-kind P3 to test and rollout connected vehicle services and infrastructure in Oakland County, Michigan, focusing on financial structuring and revenue commercialization.

Social Infrastructure & Utilities

Miami-Dade County Courthouse P3: Provided P3 transaction advisory services to the Miami-Dade County on procurement of \$300M+ courthouse. Carried out evaluation of various project delivery models to determine impact on costs, project timeline, and risk transfer to private developer. Supported development of procurement documentation, focusing on evaluation criteria and payment mechanism in RFP and Project Agreement. Conducted review of financial bids to help identify preferred bidder.

Howard County Courthouse P3: As part of transaction advisory team, led review of financial bids for \$140M P3 courthouse project in Howard County. Evaluated financial bids, including overall financing structure, financing terms, and financial models for responsiveness, robustness, and agency fiscal impact.

Washington Aqueduct: Advised Washington Aqueduct (wholesale water supplier to Washington, DC region utilities) on restructuring options to improve access to long-term debt finance for capital improvements as well as achieve better operational performance.

Transportation

P3 Bus Electrification: Advised private developer on an unsolicited proposal to provide electric bus services in a large city in the U.S. Under this availability payment P3, the project company will be responsible for the development of charging infrastructure, solar power plant and energy storage plant as well for providing electric buses. Created financial model, developing financing approach, and supporting bid development.

Parallel Thimble Shoal Tunnel: Conducted audit of the Parallel Thimble Shoal Tunnel Project to ensure it complies with the Virginia Public-Private Transportation Act. The audit focused on procurement of the Design-Build contract, geotechnical risks, T&R forecast, and the financial plan, identifying and quantifying key risks for the Chesapeake Bay Bridge and Tunnel District.

MDOT P3 Opportunities Review: Advising Maryland Department of Transportation (MDOT) on an asset monetization initiative, in which Rebel is analyzing the potential of MDOT's toll roads and various other assets for public-private partnerships or other asset monetization models. Led financial analysis and developed key recommendations per asset class.

LaGuardia AirTrain: Advised PANYNJ on funding/financing and project delivery strategy of the new LaGuardia AirTrain. Led risk and procurement workshops, evaluated a range of funding options including farebox, passenger facility charges, grants, pickup & dropoff fees, developed financial model, and conducted sensitivity analysis. Evaluated and compared fiscal impact of design-build-operate-maintain delivery model to design-build-finance-operate-maintain.

Marcel Ham | Principal

Project Position

Partnership & Finance Expert

Key Skills Areas

Project Finance

Structuring and Procuring P3s

Evaluation of Financing

Options

Value-for-Money Assessment

Risk Analysis and Risk

Valuation

Education

University of Twente

M.Sc., 2000

Specializations: 1)

Infrastructure and 2) Financial Management

Professional History

Rebel Americas, 2012 - present
President

RebelGroup Advisory, 2007 - 2012, *Managing Director*

RebelGroup Advisory, 2002 - 2007, *Senior Consultant*

Ecorys Finance, 2001 - 2002
Financial Consultant

Netherlands Economic Institute, 1999 - 2001,
Consultant

ING Bank, 1998 – 1999
Trainee

Office Location

Washington, DC/Rotterdam

Years of Experience

20 Years

Executive summary

Marcel Ham is co-founder and co-owner of Rebel. He has 20 years of experience in assessing, developing, structuring, and implementing innovative finance and P3 projects. Marcel has been lead transaction advisor on P3 contracts for road, rail, and social infrastructure, including the \$700M RegioTram DBFOM, \$400M A59 DBFM, the \$150M Howard County Courthouse DBFOM, the 600,000 sqft Miami Dade Courthouse DBFOM, and \$2B San Francisco Fiber-to-the-premises P3. Marcel led the team that developed advanced guidelines on risk assessment and value-for-money assessment for U.S. DOT and co-authored the Model P3 Contract Guides and guide on Successful P3 Practices in the U.S.

Relevant Experience

Broadband & Technology

New Hampshire Fiber Broadband Project: Advised New Hampshire Electric Cooperation on the development of a \$150M+ fiber-to-the-premises network under a partnership model in rural parts of New Hampshire. Responsible for conducting financial due diligence, developing, and evaluating partnership structuring options, drafting term sheet, gauging market interest, marketing the project, and developing a competitive solicitation process and documentation that would maximize value for coop members.

San Francisco Fiber-to-the-Premises P3: Developed the business case for a \$1.5B-\$1.9B broadband project in San Francisco. Developed a P3 structure and procurement strategy. Currently leading the transaction team for the procurement of this first-of-its-kind P3.

Oakland County Connected Vehicle P3: Supported the development of the winning bid to secure a partnership with Oakland County for this first-of-its-kind P3 project. Supporting the drafting and negotiation of the P3 concession agreement, financial analysis, structuring, and revenue commercialization.

Transit Open Loop Payment P3: Advised a Fortune 500 company on transit open loop payment system P3s. Developed the business case for open loop transit payment system investments and innovative P3 structures that allow

transit agencies and cities to achieve significant cost savings and revenue increases while contributing to smart city objectives.

Oakland County Connected Vehicle P3: Supported the development of the winning bid to secure a partnership with Oakland County for this first-of-its-kind P3 project. Supporting the drafting and negotiation of the P3 concession agreement, financial analysis, structuring, and revenue commercialization.

NY Prize: Supported Brooklyn Community Board 6 in developing a robust microgrid proposal for the NY Prize microgrid competition. Evaluated costs and benefits and identified innovative project delivery and financing options to enhance the project's overall impact.

Social Infrastructure

Howard County Courthouse P3: Advised Howard County, MD on the structuring of a P3 for the development \$140M new circuit courthouse and structured parking facility. Conducted a Value for Money analysis and prepared the procurement, developed the RFQ and RFP documentation, prepared the industry day and developed the draft P3 agreement. Also supported the County in the shortlisting of qualified bidders, individual meetings with the shortlisted bidders, evaluation of the proposals and selection of the preferred bidder. The project reached financial and commercial close in October 2018 and won four P3 awards.

Clackamas County Courthouse Replacement Project: Advising Clackamas County, OR on the structuring of the optimal financing and delivery model for the development of a new \$220M, 250,000 sqft courthouse.

Delaware Family Courts: Developing a business case and a value-for-money assessment to support decision-making on the preferred project delivery method for a bundle of two new Family Court buildings and an expansion of a judicial facility.

Miami Dade County Courthouse P3: Advised Miami Dade County, FL on the structuring and procurement of a P3 for the development 600,000 a 600,000 square foot courthouse, with 46 finished courtrooms. Advised the County on all aspects of the P3 procurement and P3 agreement, evaluated the bids and supported the County in the negotiations with the bidders.

Transportation

Virginia DOT 460 Audit, Petersburg-Norfolk: Advised Virginia DOT on the US 460 project, a \$1.3B 55-mile toll road between Portsmouth and Norfolk, VA. Conducted an independent audit, including a comprehensive risk assessment and evaluation of partial credit support provided by the Virginia Transportation Infrastructure Bank (VTIB).

US 36 Bus Rapid Transit/Managed Lanes, CO: Advised on TIFIA loan for \$480M bus rapid transit/managed lanes P3 project between Denver and Boulder. Carried out due diligence on project's financial plan, assessed traffic and revenue study, and evaluated construction and development plan. Evaluated equity terms of sponsor and terms of subordinated lender. Helped negotiate an appropriate downside financing case.

Regional Connector and Westside Subway Extension, CA: Advised the TIFIA office on LACMTA loan application for the \$4.0B West Side / Regional Connector project in Los Angeles, CA. Carried out due diligence on project's financial plan, assessed traffic and revenue study, and evaluated construction and development plan.

Bus Terminal P3, Belize: Advised government of Belize on the development of a new national bus terminal through a P3. Conducted an initial financial feasibility study and value for money assessment. Also identified the necessary changes in the enabling environment to successfully implement this project as a P3.

Zachary Karson | Manager

Project Position

Project Manager & Analyst

Key Skills Areas

Financial Analysis

Financial Modeling

Public-Private Partnerships

Project Finance

Public Policy

Education

New York University

MBA/MPA, 2019

Kenyon College

BA, 2013

Professional History

Rebel, 2019 - present

Senior Consultant

Solar Landscape, 2018

Financial Analyst

NYSERDA, 2017 - 2018

*Clean Heating and Cooling
Consultant*

Fenix International, 2017

Business Development Fellow

Jeffries for Congress, 2013 –
2016

Treasurer and Senior Aide

Office Location

Washington, DC

Years of Experience

8 Years

Executive summary

Zachary Karson is a senior consultant on the Rebel Americas team with experience advising both public and private clients on infrastructure projects in various sectors, including mass transit and mobility, renewable energy, broadband, water, and wastewater. Zachary focuses on financial analysis, risk analysis, procurement support, and assisting clients with key commercial and financial decisions. Zachary is also a registered Series 50 municipal financial advisor. Before working at Rebel, Zachary worked for various public and private organizations in the renewable energy sector.

Relevant Experience

Broadband & Technology

New Hampshire Fiber Broadband Project: Advised New Hampshire Electric Cooperation on the development of a \$150M+ fiber-to-the-premises network under a partnership model in rural parts of New Hampshire. Responsible for conducting financial due diligence, developing, and evaluating partnership structuring options, drafting term sheet, gauging market interest, marketing the project, and developing a competitive solicitation process and documentation that would maximize value for coop members.

Nevada Fiber Broadband Project (confidential): Advised a mining company on the financial feasibility of a loan to an internet service provider (ISP) for the construction of a fiber-to-the-premises (FTTP) network in two rural communities in Nevada. Responsible for reviewing the project financial model and providing recommendations to support the company's financial due diligence process.

LUS Fiber Financial Review: As part of the consulting engineer's annual review, conducted financial review of LUS Fiber in Lafayette, as required under LUS Fiber's general bond ordinance. Responsible for reviewing key documentation including cash flow projections, capital improvement plan, and bond issuances to provide evaluation on LUS Fiber creditworthiness.

PRESTO/Metrolinx Request for Information: Advised PRESTO and Metrolinx on the development of a Request for Information (RFI) solicitation and subsequent report on RFI findings, which will inform the procurement strategy for upgrading the regional fare collection system in the Greater Toronto and Hamilton Area. Responsible for providing research and analysis to support key decision making and drafting of the RFI documents.

Cal-ITP Payment Acceptance Devices Procurement: Advising the California Integrated Transportation Project (Cal-ITP) on its procurement strategy for payment acceptance devices and transit processing software. Cal-ITP is using an innovative leveraged procurement agreement approach for transit agencies to efficiently and cost-effectively purchase hardware and software to enable contactless payments. Responsible for research, drafting of procurement memos, documentation and minimum requirements for vendors, and Cal-ITP communications to agencies.

Cal-ITP Feasibility Study: Advised Cal-ITP on the feasibility of three proposed initiatives to improve fare payment and trip planning for public transport operators across the entire state of California. Responsible for modeling the financial business case and economic cost-benefit analysis for the initiatives and drafting a report to summarize feasibility study results and recommend next steps to implement the proposed initiatives.

Cal-ITP Payment Processing Master Services Agreement: Advised the California Integrated Transportation Project (Cal-ITP) on the adaptation of a Master Services Agreement for payment processing services for California public transport operators. Responsible for negotiation support and financial analysis to support Cal-ITP decision making.

Credit Advisory

\$319M loan to East County Advanced Water Purification JPA, California: Financial advisor to EPA WIFIA Program for water purification project in East County. Responsible for due diligence, running sensitivity analysis for different financial and economic scenarios to test affordability, and producing a report on project risks and mitigants.

\$250M loan to DeKalb County, Georgia: Financial advisor to EPA WIFIA Program for sewer replacement project in DeKalb County. Responsible for due diligence, running sensitivity analysis for different financial and economic scenarios to test affordability, and producing a comprehensive report on the credit quality of the loan.

\$78M loan to Brunswick County, North Carolina: Financial advisor to EPA WIFIA Program for major drinking water treatment plant expansion. Responsible for due diligence, running sensitivity analysis for different financial and economic scenarios to test affordability, and producing a comprehensive report on the credit quality of the loan.

\$18M loan to Cortland, New York: Financial advisor to EPA WIFIA Program for project expanding water main in Cortland City. Responsible for due diligence, running sensitivity analysis for different financial and economic scenarios to test affordability, and producing comprehensive report on credit quality of the loan.

Other

Naval Station Transit Corridor Project in Norfolk, Virginia: Responsible for supporting STV, Inc. in delivering a transit project in Norfolk, Virginia as a subcontractor in the financial planning effort. Responsible for assessing funding and financing mechanisms (including innovative value capture techniques), conducting risk analysis, developing a financial model, and running sensitivities.

Funding and Financing Strategy for Flood Mitigation Program: Advised Howard County on the planning and implementation of a funding and financing strategy for the deployment of a flood control resiliency project in Ellicott City, MD. Responsibilities included analyzing project cash flows and County debt service to determine optimal funding/financing options and evaluating the feasibility of innovative alternative funding/financing types.

Andrea Arciniegas Murillo | Senior Consultant

Project Position

Senior Consultant

Key Skills Areas

Financial and Economic Analysis
Funding and Financing Strategy
Analytical Writing & Research
Public Policy Analysis

Education

Georgetown University
McCourt School of Public Policy

Master of Public Policy, 2021
University of South Florida
B.A. in Political Science, 2018

Professional History

Rebel, 2021 - present
Consultant
United Nations Institute for Training and Research, 2020
Graduate Intern
Organization of American States, 2019
Short-Term Consultant

Language

Spanish, Native Proficiency
English, Native Proficiency
Portuguese, Beginner

Years of Experience

3 Years

Executive summary

Andrea Arciniegas is a senior consultant at Rebel with experience in public-private partnerships (P3s), infrastructure policy, and the application of innovative funding and financing mechanisms for infrastructure projects. At Rebel, Andrea provides strategic advisory to clients in the US and Latin America and the Caribbean, including development banks, in relation to the financing and delivery of infrastructure projects and PPPs across sectors, with a focus on sustainability. Prior to Rebel, Andrea worked as a consultant at the Organization of American States in Colombia and the United Nations Institute for Training and Research. She holds a master's degree in public policy from Georgetown University's McCourt School of Public Policy.

Relevant Experience

Transportation Infrastructure and PPPs

Sustainable Transit-Oriented Development in Brazil, Municipality of Rio de Janeiro and Inter-American Development Bank: Advising the City of Rio de Janeiro and the Inter-American Development Bank on the financial feasibility of a transit-oriented development pilot in two major transit corridors of Rio de Janeiro (along the Transcarioca corridor and the central area). As part of the project team, main tasks include / will include regulatory and institutional review of real estate development; analyzing potential funding sources for the envisioned capital improvements, including using land value capture mechanisms; brainstorming most applicable mechanisms for the legal and political context in Rio de Janeiro and Brazil; and developing financial model to estimate funding requirements and size of funding available from value capture and other mechanisms.

Surtax Forecast, Miami-Dade Citizens Independent Trust Transit (CITT): Analyzed of the impact of COVID-19 on surtax (sales tax) revenues that provide major operations and capital funding for Miami-Dade County's Department of Transit and Public Works. Assessed the impact of COVID-19 on the Miami-Dade economy (with an emphasis on domestic and international tourism and travel), drawing from national forecasts and benchmarking of the sales tax impact and proposed budget of other major municipal and transit sales tax

programs. Based on this, supported the development of projected scenarios of Miami-Dade County surtax collections with implications for the short-to-medium term. Presentation findings to the Trust.

Hitachi Corporate Financial Analysis, Miami-Dade County Beach Corridor Trunk Line, Miami-Dade County: Drafted a corporate financial review memo on the financials (financial performance and prior project experience) of Hitachi Rail STS USA, Inc., aimed at examining the company's capacity to fulfill its financial obligations as part of the Rapid Mass Transit Solution for the Beach Corridor Trunk Line project.

Phoenix BRT Funding and Financing Workshop, City of Phoenix Transit Department: Analyzed potential funding sources and financing mechanisms to be leveraged in order to advance Phoenix's Bus Rapid Transit (BRT) program.

Review of Financing Mechanisms for Infrastructure Projects on Walking and Cycling Networks, World Health Organization: Advising the World Health Organization by identifying innovative sustainable funding models and financing mechanisms for the development of infrastructure for walking and cycling.

Generally Accepted Value for Money Analysis Principles, Build America Center: Supported the development of "Generally Accepted Value for Money Analysis Principles", aimed at compiling a commonly recognized set of principles on VfM analysis in order to improve clarity and consistency of the communication on the topic across the US transportation sector. The project included roundtables and working sessions with key industry stakeholders.

Guidebook on Estimating Rates of Return for Value-for-Money Assessments, Build America Center: Co-drafted a white paper for the Build America Center on the cost of debt and equity for P3 projects to be used in the context of early-stage value-for-money assessments. The white paper provides hands-on guidance to practitioners on key determinants of the weighted average cost of capital: long-term interest rate margins, expected equity return, and debt-to-equity ratio.

Tool to Evaluate the Sustainability of PPPs in Colombia, Inter-American Development Bank and Colombian National Infrastructure Agency: Advising the IDB and the Colombian National Infrastructure Agency by developing a toolkit for the integration of climate risk adaptation strategies within the Colombian PPPs cycle, specifically for transportation projects. The toolkit covers the entire PPP cycle, from pre-feasibility to contract management. Additionally, supported the drafting of guidelines for the identification and application of innovative mechanisms for sustainable financing. Co-lead capacity building workshops with stakeholders in Colombia on the Toolkit.

Resilient Assessment Product for Infrastructure Assets and Land-Based Developments, City Resilience Program (CRP), World Bank: Supporting CRP in the development of a rapid assessment tool (and service) aimed at identifying gaps and prioritizing actions for mainstreaming resilience

into the transaction design of fully or partially privately finance urban infrastructure investments and land-based developments.

Scaling Up Climate-Resilient Infrastructure Masterclasses in Africa, Global Center for Adaptation: Contributed to supporting the GCA in the development of tailored content on climate-resilient PPPs. Developed a case study on how climate resilience was mainstreamed in the eThekweni Municipal Wastewater Treatment Plant PPP, along with key lessons learned and recommendations. Presented the case study at one of the masterclasses.

Development of Financial Strategies for the Structuring and Financing of PPPs, Inter-American Development Bank: Supported the IDB by the challenges and opportunities for Bancoldex's (Colombian public development bank) in infrastructure project financing (with a focus on project finance). Conducted research and assessed the current macroeconomic conditions in Colombia and globally, as well as their impact on infrastructure project financing. Reviewed the dynamics of the project finance market in the country, including relevant actors and the role of public development banks. Analyzed the potential role of Bancoldex and produced a report outlining the findings, along with strategic short-to-medium term recommendations.

1.01: d. Provide all licenses and certifications relevant to or required for the project.

- Professional Engineer License, State of California
- Governance of Enterprise IT (CGEIT) Certification
- Master of Laws Degree (LLM)
- Juris Doctor (JD)
- Master of Business Administration Degree

1.02: a. Provide references for your proposal from the last three years.

The reference information required in Exhibit E: Interrogatories form has been included below for your convenience.

1.02 Reference 1

a. Client name: **California Department of Technology**

b. Contact name and role: Scott Adams, Deputy Director, Broadband and Digital Literacy

c. Contact details: scott.adams@state.ca.gov / Tel #: (916) 661-2511

e. Location: Office of Government Affairs, California Department of Technology, 707 3rd Street, 2nd Floor North, West Sacramento, CA 95605

f. Deployment size: 45 staff

g. Description: **California Middle Mile Broadband Initiative**

CTC serves on the State of California's broadband consultant team for Broadband Advisory & Program Management Services for the State's broadband program delivering oversight of a statewide open-access middle-mile network, the state digital access plan, and the Governor's Broadband for All Action Plan. Our team is providing technical assistance to CDT and multiple state lead agencies to operationalize the plan's 24 action items, including external stakeholder engagement, public communications, and program design. We are also advising and supporting strategic planning efforts on integrating the plan with upcoming federal funding opportunities.

We are also supporting the implementation of the \$3.25 billion Middle Mile Broadband Initiative, managing all aspects of the deployment such as supervision of design, construction, maintenance, and operation of the statewide open-access middle-mile network. Our team is providing engineering, technical, and GIS support for design and planning of the statewide middle-mile network, including preparing multiple technical deliverables such as design parameters, specifications, and guidance documents; data processing and mapping of middle-mile routes; development of cost estimates and construction strategies; technical planning and design' collaboration with Caltrans regarding construction specifications and procurement strategy.

Currently, CTC is supporting CDT's implementation of the state's Broadband for All Action Plan, designed to provide high-speed broadband availability and affordability, devices, and digital skills training and support to unserved and underserved communities across California. The team is also assisting with ongoing construction of the 10,000-mile broadband network to bring high-speed internet to all Californians.

1.03 Reference 2

a. Client name: **City of Cambridge, Massachusetts**

b. Contact name and role: Lee Gianetti, Director of Strategic Planning and Communications

c. Contact details: lgianetti@cambridgema.gov / Tel #: (617) 349-3317

e. Location: Communications Office, 795 Massachusetts Avenue, Cambridge, MA 02139

f. Deployment size: An average of eight staff, varying at different stages of the project

g. Description: **Comprehensive Digital Equity Study**

CTC, with our partner IMG Rebel Advisory, produced a digital equity study and developed programmatic and infrastructure recommendations for the City of Cambridge. The study featured intensive stakeholder interviews, pricing analyses, broadband provider engagement, and statistically valid mail surveys of the Cambridge population as a whole and of the Cambridge Housing Authority (CHA) population. CTC also included preliminary high-level engineering and cost estimation work for high-speed residential broadband service in three CHA developments.

This study, conducted from late 2019 through 2020, explored internet access, affordability, digital skills, and device ownership. CTC did the following:

- Analyzed consumer and FCC pricing and availability data to understand the local broadband market, the presence of competition, and any market changes since the City of Cambridge commissioned its earlier broadband study;
- Through a variety of means (surveys, resident interviews, and conversations with local broadband providers) gathered data on the usage of existing low-cost broadband subsidy programs, particularly the \$10 Comcast Internet Essentials program;
- Conducted a statistically valid mail survey of residents to understand broadband usage patterns, needs, and gaps;
- Conducted a statistically valid mail survey of a sample of residents of subsidized housing concerning the challenges they face;
- Interviewed a range of stakeholders representing city departments, nonprofits, schools, library, and others;
- Interviewed a sampling of Cambridge Housing Authority (CHA) and subsidized housing residents who volunteered to be interviewed as part of our mail survey, to better understand what they pay for services, and what challenges they face;
- Conducted in-home internet speed tests of Comcast customers to take hourly measurements over a period of weeks to evaluate service quality and assess potential sources of reported problems, albeit at an anecdotal level; and
- Interviewed practitioners and experts who have studied or implemented digital equity plans and programs in other cities to glean lessons and suggest strategies that might assist the City and its stakeholders in implementing solutions.

CTC and IMG Rebel Advisory have continued to provide strategic advisory services to the City of Cambridge.

1.04 Reference 3

a. Client name: **State of Maryland**

b. Contact name and role: Lee Kenrick (Rick) Gordon, P.E., Director, Office of Statewide Broadband

c. Contact details: kenrick.gordon@maryland.gov / Tel #: (301) 429-7426

e. Location: Office of Statewide Broadband, 7800 Harkins Road, Lanham, MD 20706

f. Deployment size: 23 people participated in the project

g. Description: **Broadband & Digital Equity Consulting**

CTC is currently supporting the State of Maryland through its BEAD and Digital Equity planning processes, the development of the Five-Year Broadband Action Plan and Initial Proposal, and the Statewide Digital Equity Plan (SDEP) in compliance with NTIA's Infrastructure Investment and Jobs Act (IIJA) broadband programs. This planning engagement encompasses stakeholder engagement and outreach as well as the development of the state's broadband office capacity to plan and administer the BEAD grant program. It also includes data collection and analysis to create a cost optimization model and a funding utilization model to best allocation BEAD and Digital Equity funds, as well as an inventory of digital equity assets and strategies. Finally, the plans include the design and deployment of the BEAD infrastructure grant program with the objective of connecting all unserved residential households across Maryland.

Previously, CTC was the lead engineer, program manager, and project manager for the development of the Maryland Inter-County Broadband Network (ICBN) project—the largest sub-grantee of the One Maryland Broadband Network.

In that role, we designed and engineered approximately 360 miles of ICBN fiber routes for four large counties in the state; oversaw and directed engineering and fiber network construction contractors for the deployment of nearly 800 miles of fiber to 645 anchor institution sites; executed a strong management plan, staffing plan, and quality control plan; maintained the project plan for our work; allocated resources; tracked every aspect of the OSP process; oversaw the budgets and worked with the design team's Project Coordinators to manage deliverables and due dates; and oversaw \$100 million in project funding during the period from 2010 through 2013.

1.05: d. Please describe the firm's experience in the following areas including staff roles, staff expertise, project scope, project objectives and project outcomes (wherever applicable):

a. telecomms sector

Over the years, CTC has completed hundreds of projects in the telecommunications sector. In addition, our key personnel have provided expert testimony on and written seminal articles about developments in telecommunications.

1. City of Westminster, Maryland

CTC prepared a fiber feasibility study and business case for Westminster in 2012 and 2013. Our report, which included a technical design and cost estimates for a citywide FTTP deployment, led to the implementation of two last-mile FTTP pilot projects (one focused on residential customers, one focused on businesses).

Following the success of the city's pilot projects, and ultimately the funding approval for the citywide FTTP deployment, CTC continues to support the ongoing FTTP deployment over a range of tasks spanning fiber infrastructure engineering, network design, construction bidding, construction oversight, and quality assurance inspection.

We also assisted the city in identifying a private partner to assume operating risk in providing services to the public over the city's FTTP infrastructure; the city announced its public-private partnership in 2015.⁵

2. Town of Holly Springs, North Carolina

CTC conducted a broadband needs assessment and developed a strategic approach and return on investment (ROI) analysis for the town's proposed fiber network implementation. Our team of project managers, outside plant engineers, and network engineers then designed and oversaw implementation of a middle-mile fiber network serving the town's community anchor institutions (e.g., schools and libraries) and major economic development partners. The first sites on the 19-mile network went live in June 2014.

As in our engagement with the County of Westminster, we also assisted the town in identifying a private partner to construct and operate a last mile FTTP network providing services to the public leveraging the town's backbone infrastructure. The town announced its public-private partnership with Ting Internet in 2015.⁶

3. Anne Arundel County, Maryland

CTC has provided the county with OSP fiber design and engineering for multiple large projects. In 2010 to 2012, CTC provided OSP engineering for a federally funded project to connect community anchor locations (e.g., government buildings, schools) and expand the county's fiber infrastructure. The engineering for that project totaled over 70 miles, and included a rural FTTP network in the southern portion of the county.

⁵ For more details, see CTC's website: <http://www.ctcnet.us/blog/maryland-county-announces-groundbreaking-fiber-partnership-with-ting-internet/>.

⁶ For more details, see CTC's website: <http://www.ctcnet.us/blog/ctc-helps-position-holly-springs-nc-to-attract-big-private-fiber-investment-through-smart-infrastructure-planning-and-best-business-practices/>

In 2015, CTC provided OSP engineering for a county-funded project to connect schools and traffic signal locations and further extend the county-built fiber infrastructure by 90 miles. CTC's work on both projects included field surveys, generating engineering prints and bills of materials, network and splicing design, permitting, and acceptance testing. CTC also developed RFP language for OSP construction and fiber maintenance.

CTC currently provides the county with ongoing engineering support for various last mile engineering projects and provides construction oversight and QA/QC work for the county.

4. Arlington County, Virginia

CTC currently is designing and managing the construction of ConnectArlington, the last-mile fiber network that will connect approximately 80 of the County's government buildings, schools, and public safety facilities. CTC staff members, including an on-site project manager, are overseeing every aspect of the project, from network mapping to construction supervision and acceptance.

CTC has also developed the business plan and strategy for the County's dark fiber leasing initiative, and is currently preparing an RFP for the County's use in selecting a fiber broker. This third-party broker innovation is the first of its kind among public entities in the United States.

Additionally, CTC staff are providing critical input into the design and testing for other phases of the County's self-managed fiber construction project, which will ultimately have close to 60 miles of backbone fiber.

5. California State Library

As broadband consultants to the California State Library, we have delivered program management and strategic and technical guidance around a range of issues—including the High-Speed Broadband in California Libraries project, through which the Library (and its partners, the Corporation for Education Network Initiatives in California (CENIC) and public benefit corporation Califa Group) have sought to bring high-speed broadband to all California public libraries.

In that ongoing engagement, we have acted as the State Library's trusted adviser on both tactical elements of operating the High-Speed Broadband in California Libraries program and strategic planning for future program operations and enhancements. We have provided project management, grant administration (including oversight of budgets and spend-down efforts, and review and recommendation of grant applications), strategic analysis of broadband funding options (including E-rate and other federal funding programs), and technical analysis of potential future broadband efforts.

6. State of Montana – Connect Montana

Currently, CTC is providing technical consultation and grant services to the State of Montana for the Connect Montana program.

Connect Montana is designed to allocate funding to providers for broadband development projects located in unserved and underserved areas. CTC is supporting the \$266 million grant program by assisting the State in establishing broadband grant program requirements, developing application materials, and developing evaluation and scoring criteria for the program. As a grant administrator, CTC is helping the state assess project infrastructure proposals. Responsibilities include predicting the whether the network will meet key speed metrics, assessing the sustainability of the technology and business model, predicting

maintenance, and otherwise assessing the viability of the proposed networks over the long term across Montana’s challenging scale and topography.

7. Montgomery County, Maryland – wireless siting

CTC was central to the development of the 500-square-mile County’s wireless siting process, which has been identified by the Intergovernmental Advisory Committee at the FCC and others as providing notable examples of many best practices.

We have been the designated coordinator for the Montgomery County Telecommunications Facilities Coordinating Group (TFCG) from its inception in 1996 until today—marshaling DAS, small cell, and other wireless siting applications from filing to final action by the TFCG.

We subject each application—for antenna colocation, new facilities, or modifications to existing sites—to rigorous review. In addition to evaluating applications from a technical and regulatory standpoint, we subject each application to the high bar of its potential community impact: Is the siting necessary to meet the applicant’s coverage goals? Has the applicant considered all available options for colocation rather than constructing a new mounting structure? Would a lower antenna mounting level achieve the same coverage objective? Would smaller, less noticeable antennas suffice?

In this way, we seek to balance the County’s rights and regulations, the wireless industry’s interest in delivering services, and the public’s interest in minimizing the visual impact of wireless facilities in their neighborhoods.

We provide technical engineering support, coordinate and review carriers’ applications to site transmission facilities in the County, conduct physical inspections of proposed siting locations, review applicants’ RF engineering submittals, and provide recommendations on each siting request based on zoning standards, the potential visual impact of the installation, and other parameters. We also ensure the County’s compliance with the FCC’s “shot clock” for processing applications.

Over the course of this 20-year commitment and collaboration, we have drafted policies and procedures for review of applications, provided recommendations on related aspects of zoning text amendments, and informed the TFCG of changes in federal regulations governing the processing of applications to site wireless facilities in the County. We advise the County on approaches to enabling robust wireless service while being as mindful as possible of the impact of new antennas in the community.

We also developed a machine-learning model to predict where small cell antennas will be installed—so the County can update zoning regulations, develop standards, and ensure enough staffing to manage the applications.

8. National Capital Region (NCR) Interoperability Program

NCRnet is a regional public safety communications network interconnecting 19 fiber-based government networks in the greater Washington, D.C. region. Our involvement with this project began immediately after 9/11, when we were asked by the Metropolitan Washington Council of Governments CIOs to evaluate the feasibility of such a network; that study later served as the basis of the successful grant application to the Department of Homeland Security. We were also asked to analyze the business cases for build vs. lease for each portion of the network.

Dr. Andrew Afflerbach, CTC's Director of Engineering, served as lead engineer and technical architect for planning and developing NCRnet. CTC performed a comprehensive review of existing technologies and capabilities in the individual jurisdictions, identified potential synergies and standards, and analyzed the jurisdictions' needs for security, availability, and data exchange. NCRnet's physical build-out phase was completed in 2010, followed by network electronics infrastructure upgrades that were completed in 2012.

We have been a trusted adviser and management support to the government project leadership, providing many roles including program management. During the course of our support of NCRnet, we have also performed the following tasks:

- We implemented and now oversee network monitoring systems for NCRnet and the videoconferencing network operated under the U.S. Department of Homeland Security's Urban Area Security Initiative (UASI) ESF-5a Program. The network monitoring systems provide instant notification of network outages and help speed the repair and recovery of NCRnet and the videoconferencing network.
- We developed technical solutions for regional interconnections.
- We provided project management and financial management services.
- We enabled a SharePoint system and wrote a SharePoint user guide.
- We completed a risk assessment and disaster recovery strategy guide for NCRnet.

b. fiber projects with government bodies

1. *Crown Fibre Holdings (Government of New Zealand)*

CTC's Director of Engineering, Dr. Andrew Afflerbach, served as technical adviser to the Chief Technology Officer of Crown Fibre Holdings, the entity overseeing the construction of a \$1 billion open-access FTTP network that will connect 75 percent of all homes and businesses in New Zealand.

Dr. Afflerbach led a team that developed an FTTH architecture for the project and worked closely with the candidate fiber construction companies across the nation to develop requirements for outside plant fiber and network electronics. Dr. Afflerbach also developed bid specifications for a nationwide procurement and supported the preparation of all procurement documents. Dr. Afflerbach then led the CTC team that evaluated vendor responses to the procurement documents; this process, which was repeated many times for different aspects of the project, involved the creation and testing of detailed scoring matrices across dozens of parameters.

2. *City and County of San Francisco*

CTC has advised San Francisco on fiber and wireless broadband planning—including custom fiber architectures, technical specifications, and needs analyses—for more than a dozen years.

We completed an evaluation of options for an integrated Smart Cities wireless and fiber communications strategy to meet the City's public safety and municipal communications needs ("Evaluation and Design for Digital City Communications Initiative," May 2020).

In this innovative analysis, we created an architecture for an expanded City-operated fiber network that would support a range of communications functions (including a mobile wireless network, public-facing kiosks, and government operations), users (including public safety and public health), and public policy goals (including broadband equity).

In late 2017, we delivered a study documenting a major broadband strategic planning project with the City (“The Potential for Ubiquitous Open Fiber to the Premises in San Francisco: Fiber for San Francisco Initiative,” <http://www.ctcnet.us/publications/fiber-for-san-francisco-initiative-the-potential-for-ubiquitous-open-fiber-to-the-premises-in-san-francisco/>).

In that engagement, we provided strategic, financial, and technical advisory services as part of a broad effort to analyze the City’s broadband options including citywide fiber-to-the-premises (FTTP). We investigated the varied underground and aerial construction environments in San Francisco; developed strategies for cost-effectively building fiber infrastructure in those environments; and created a candidate FTTP architecture.

CTC has also assisted the City in developing and evaluating options for backhaul to serve City-operated Wi-Fi service to the public and to residents of public housing. And, to facilitate the cost-effective expansion of broadband infrastructure throughout the City, CTC developed technical specifications for a municipal Dig Once policy (“Dig-Once Specification,” 2015).

In addition, we previously prepared a series of path-breaking analyses of the feasibility of the City building and operating an FTTP network—including a system design and detailed analysis of candidate architectures and open access models. The project also included analysis of multiple business models and business recommendations customized for San Francisco’s unique circumstances.

CTC also provided ongoing consulting and strategic guidance with respect to an FTTP pilot and related technology projects, and helped the City with business planning, financial analysis, and engineering design to support its preparation of an extensive application for federal grant funding. The market research analysis provided measurements to predict emission reductions and other ancillary benefits of facilitating work-at-home initiatives through an FTTP implementation.

3. Multnomah County, Oregon

CTC prepared an extensive fiber-to-the-premises feasibility study for the County in 2020. The report was commissioned to consider the feasibility of a publicly owned and operated fiber-to-the-premises network to serve residential and business customers throughout Multnomah County. CTC’s engineers and analysts developed candidate fiber and wireless network designs and cost estimates; prepared financial analyses; conducted statistically valid market research of residents and businesses; and explore partnership models and approaches. Since then, CTC has supported the County in grant applications for federal funds.

c. fiber sharing, digital asset sharing models and open access models

1. City of Huntsville, Alabama

CTC conducted broadband feasibility planning for the City and identified a range of options for models and approaches. We wrote the RFI through which the City launched its efforts to identify a private partner for citywide FTTP deployment. That process ultimately led to the City’s negotiations and agreement with Google Fiber—a partnership that follows the model that we developed for the City of Westminster,

Maryland model. Huntsville Utilities will leveraged its poles and infrastructure to construct its own FTTP citywide network with Google Fiber acting as anchor tenant on the network. For more details, see CTC’s website: <http://goo.gl/i2jtZS>.

2. *City of Lexington and Fayette County, Kentucky*

CTC prepared a broadband feasibility study to help the Lexington-Fayette Urban County Government (LFUCG) understand the challenge of meeting broadband needs in the rural areas of Fayette County, and to develop cost estimates and potential strategies for meeting those needs. CTC evaluated the County’s current broadband supply and demand, and potential approaches to filling that gap—through public–private partnership, middle-mile fiber, or a fiber-to-the-premises (FTTP) network.

We found that businesses in the rural areas of Fayette County had very limited broadband connectivity options, and service providers had no active plans for widespread deployment. A major reason for the lack of service was the high cost of build-out in low-population-density areas; we estimated that the cost of network construction in the County was nine times higher than the cost of construction in the City of Lexington.

To illustrate LFUCG’s options, CTC’s engineers produced two system-level network designs in the Fayette County area of the LFUCG: middle-mile and FTTP.

Following the County’s decision to move forward with a public-private partnership approach, CTC helped the City negotiate a partnership with MetroNet, which has constructed a fiber network under an agreement that shifts the majority of financial risk to the private company.⁷

3. *Los Angeles Department of Water and Power (LADWP)*

The Los Angeles Department of Water and Power (LADWP) in 2007 selected CTC to assist with the development of strategy regarding the Fiber Optic Enterprise (FOE).⁸ LADWP developed an extensive network throughout the Los Angeles area. A portion of the network was used to generate revenue by selling services to outside entities, including government agencies, educational institutions, other telecommunications providers, and private enterprises.⁹

4. *City of Palo Alto*

CTC has a multi-decade relationship with the City of Palo Alto and Palo Alto Utilities.

CTC assisted the City in its negotiations with Google Fiber over joint builds and other partnership options related to a potential citywide fiber-to-the-premises (FTTP) build-out. That engagement represented a continuation of CTC’s long commitment to helping the City meet its broadband goals. In two parallel projects in 2015, for example, CTC developed both an FTTP master plan and a wireless network plan for the City. These feasibility analyses required an extensive engineering review of the City’s existing physical infrastructure and operational capabilities.

⁷ MetroNet, “Construction Area: Lexington, KY,” <https://construction.metronet.com/cct/constructionArea?location=Lexington,%20KY>.

⁸ <https://www.ctcnet.us/news/city-of-los-angeles-department-of-water-and-power-selects-ctc-technology-energy-to-assist-in-strategy-development-of-the-fiber-optic-enterprise/>.

⁹ LADWP, “Amendment No. 1...”, December 21, 2018, http://clkrep.lacity.org/onlinedocs/2016/16-0665_misc_2_01-10-2019.pdf.

In response to the city's desire for fiber broadband, CTC determined the extent to which the City's infrastructure could be used to enable FTTP build-out. We developed a full FTTP feasibility study for a range of potential business models, including public, private, and P3. In the wireless engagement, CTC conducted a system-level requirements analysis and a needs assessment, and recommended wireless technologies, network designs, and business models.

CTC previously provided strategic guidance and advice to the City on expanding its dark fiber network to create opportunities for enhanced municipal and commercial services. We assessed how to leverage existing infrastructure to promote commercial wireless broadband deployment and improve municipal Smart Grid and public safety technologies. We also prepared a framework for establishing a public-private partnership to encourage greater infrastructure deployment.

CTC engineers also developed a "dig once" ordinance and related processes for the City.

CTC continues to provide strategic guidance to the City on wireless siting.

d. firsthand fiber deployment experience including cost mapping and project management

1. *Montgomery County, Maryland – FiberNet*

The CTC FiberNet Team Lead serves as CTC's on-site liaison to the FiberNet manager. At the FiberNet manager's direction, the team lead spends up to 20 hours per week at the FiberNet offices, supporting the FiberNet team on a range of significant short- and long-term design and planning engagements.

CTC developed the initial design and architecture, in collaboration with the Department of Public Works and Transportation, for the network that would later become FiberNet. We did this in response to the immediate need to support traffic communications and cameras—but also in response to what we saw as the County's future needs for networking, video, data services, and the Internet.

Later, during the County's cable TV franchise renewal, we identified as a high priority the need to obtain fiber-optic infrastructure from the cable operator; this outside plant would complement the County's existing infrastructure and become part of FiberNet—and enable the County to have high availability services at a reasonable cost. As a result, the County has become a national leader in its network and enterprise capabilities.

CTC assisted the Montgomery County Government in assessing the current and future organizational and operational structures of FiberNet via an Organizational Study. The study covered technical, budgetary, and organizational considerations. For the study, CTC reviewed technical, budget, and governance documents related to FiberNet's operations; interviewed county leadership, network engineers, and network managers; and evaluated the organizational structures and processes of the government-operated fiber networks in jurisdictions across North America, with a particular focus on neighboring jurisdictions. The report resulted in actionable recommendations across the three subject areas: technology, budget, and governance.

2. *Southside Network Authority, Chesapeake, Virginia (Hampton Roads)*

CTC is currently providing outside plant engineering and construction oversight services to support the Southside Network Authority's project: Southside Regional Connectivity Ring (RCR). The Southside

Network Authority has been formed by the cities of Chesapeake, Norfolk, Portsmouth, Suffolk, and Virginia Beach (five Southside Cities).

For this engagement, CTC is performing detailed engineering design work for approximately 117 miles of the 119 miles that make up the RCR network routes. Along with the field surveys, GIS design and engineering plans, CTC is also providing right-of-way permitting and environmental quality assessment and permitting services.

CTC will also serve as the Southside Network Authority's representative overseeing the performance of the selected fiber construction contractor – supporting construction quality assurance of the Authority's network through completion. CTC will also produce final as-built revisions to applicable engineering work documents, to include construction CAD prints, GIS data, and splice matrices/schematics.

3. Town of Alford, Massachusetts

CTC's engineers and analysts helped this rural town in western Massachusetts deploy a roughly 25-mile fiber-to-the-premises (FTTP) network to connect about 350 residences. The network deployment, for which CTC delivered engineering and construction oversight services, capitalized on the Massachusetts Broadband Initiative (MBI) backbone fiber that connects Alford's fire station. Working with the Town's Municipal Light Plant, CTC provided guidance on aerial make-ready and prepared an Invitation for Bid (IFB). During the construction phase, a CTC engineer provided on-site quality-assurance (QA) reviews and facilitated discussions with the Town and its construction contractor to resolve issues.

2: Planning

2.01: Provide a project plan for a milestone-based fixed-price delivery of the Broadband Master Plan. Include the following:

a. High level project plan (Microsoft Project Gantt chart, or equivalent);

Projected Timeline

The below table displays the forecasted project timeline. Our goal is to complete all tasks within the described scope of work within 12-15 months.

Deliverable	3 Months	6 Months	9 months	12 months	Final
Project Initiation and Stakeholder Engagement					
Phase 1: A - Digital Infrastructure Gap & Asset Analysis					
Phase 1: B - Market Feedback & Broadband Equity Opportunity Assessment					
Phase 2: C - City of San Diego Broadband Master Plan Comprehensive Report					
Phase 3: D - City of San Diego Equitable Broadband & Technology Access 3 and 5 Year Workplan containing Infrastructure Design & Implementation Roadmap for Identified Priority Projects					
Phase 4: Final					

b. Explanation of the roles of the proposed project team;

CTC will lead this project and oversee quality of all deliverables. Our subcontractor, REBEL, will focus specifically on the following tasks within the scope of work:

1. Task B1 - Conduct market assessments and solicit market feedback
2. Task C3 - Comprehensive Funding Plan
3. Task C4 - Analysis, models, design and recommendations for strategic and purpose-aligned public/private partnerships
4. Task C5 - Broadband Model Analysis and Recommendations
5. Task C6 - Strategic recommendations to integrate, leverage and optimize existing, planned and future City of San Diego initiatives, projects and assets
6. Task C7 - Governance, ownership, and partnership strategy recommendations

c. Explanation of the role of the City (including time commitments);

1. City will participate in initial project strategic workshop and confirm project plans and timeline.
2. City will provide information to data requests, as needed to complete scope tasks and deliverables.
3. City will work with Contractor to develop a comprehensive stakeholder list, including contact information.
4. City shall participate in regularly scheduled meetings for progress reporting.
5. City staff will provide timely review and feedback of draft deliverables for development.

The parties may mutually agree in writing to any adjustments only to the delivery schedule for deliverable obligations. City approval must be given by a person with authority to contractually bind the City of San Diego.

d. Description of a recommended team structure including City and Consultant staffing; and

e. List of key personnel functions, staffing profiles and responsibilities.

We commit to providing an exceptional level of service and to meeting your timeline. We have a robust roster of national and international clients, and our workload reflects that success. As we have proven over the past four decades, we are adept at managing our clients' needs and our staffing levels. We pride ourselves on our track record of completing projects on time, regardless of the size or complexity of the tasks at hand.

Our proposed team brings the critical experience and qualifications needed to successfully complete the requirements of the City of San Diego's request for proposal for consultant services for development of a broadband infrastructure plan. Furthermore, **the CTC-REBEL team is an established partnership with resources able to mobilize quickly to meet the City of San Diego's planning goals.**

Project Lead

For this effort, we have assembled an exceptionally qualified team with proven expertise and experience across the tasks and deliverables outlined in Appendix A. Our team will be led by **Project Manager Freny Cooper, CTC Director of Local and Regional Consulting.** She brings vast experience developing client

relationships and working with multiple teams to achieve strategic goals. She will be the overall lead accountable for delivery of the scope of work and the management of the overall contract, as well as responsible for ensuring timely and on-budget completion of all deliverables. She will be the single point of contact for all services and will be responsible for assembling teams, securing resources, assigning and managing workloads, and ensuring the service meets the commission's expectations and contractual requirements. She will establish clear lines of accountability and communication to raise concerns or understand the progress of the project.

Freny Cooper, MBA, Director of Local and Regional Consulting, CTC

Role: Project Manager

Qualifications/Contribution: Freny Cooper is a results-oriented, conscientious, and innovative leader with extensive experience in broadband and digital equity, finance, business planning, operations and marketing who has helped organizations grow and succeed. She is an expert at consensus building among multiple sectors and constituents to achieve common goals and uses data-driven analytical approaches to problem solving and initiative support. Freny has provided consulting services to a variety of small tech start-ups and divisions within Fortune 500 companies, with a focus on growth strategies, revenue generation, customer acquisition/retention, brand building, change management and compelling and consistent communications. As Chief Operating Officer and Broadband Director for Monterey Bay Economic Partnership, Freny directed all aspects of daily operations for a growing nonprofit, membership organization consisting of various public, private, and civic entities, serving the Monterey Bay region to improve economic vitality. Freny's financial expertise has helped companies achieve revenue and profit growth, and she has completed many comprehensive strategic plans for both private businesses and nonprofits, providing valuable direction for these organizations. Freny is also extremely committed to building prosperity in the community and building alliances for enhanced social purpose.

Key Management Team

The key management team will consist of seasoned consultants who have led similar engagements to this scope of work and who are ultimately accountable and responsible for successful project delivery. These leaders will work closely together on this effort to bring expertise and diverse experiences to New Hampshire. The leadership team will meet frequently with the Department of Business and Economic Affairs and provide insight, problem-solving support, and quality management for the core working team.

Joanne Hovis, President, CTC

Role: Director of Client Service, Engagement Expert, Trainer, Lead Business Strategist

Qualifications/Contribution: Joanne Hovis is a nationally recognized authority on broadband markets and on the evolving role of public-private partnerships in the provision of communications services to the public. For more than 25 years, she has overseen CTC's consulting services related to strategic planning, market analysis, business modeling, and financial analysis for localities, states, and tribal governments throughout the country.

Joanne leads the CTC teams that advise the states of Alabama, California, Delaware, Georgia, Maryland, Montana, Nevada, New Mexico, New York, and Vermont; and the cities of Atlanta, Boston, San Francisco, Seattle, and Washington, D.C. She also leads CTC's advisory work regarding federal broadband funding programs.

Joanne has testified on multiple occasions before Congress on rural broadband, broadband public-private partnerships, and the digital divide, and has provided expert presentations to the Federal Communications Commission, the U.S. Conference of Mayors, the National League of Cities, and other national organizations.

Joanne is also CEO of the Coalition for Local Internet Choice (CLIC) and a member of the boards of directors of the Benton Institute for Broadband & Society and Consumer Reports. She is a former president of the National Association of Telecommunications Officers and Advisors (NATOA) and former Fiber Broadband Association board member.

Andrew Afflerbach, CEO/CTO, CTC

Role: Technical Oversight; Broadband Technologies and Engineering Subject Matter Expert

Qualifications/Contribution: Dr. Andrew Afflerbach specializes in the planning, designing, and implementation oversight of broadband communications networks, smart cities strategies, and public safety networks. His expertise includes state-of-the-art fiber and wireless technologies, the unique requirements of public safety networks, and the ways in which communications infrastructure enables smart and connected applications and programs for cities, states, and regions.

Andrew has planned and designed robust and resilient network strategies for dozens of clients, including state and local governments and public safety users. He has delivered strategic technical guidance on wired and wireless communications issues to cities, states, and national governments over more than 25 years. He has advised numerous cities and states, including New York City, San Francisco, Seattle, Atlanta, Washington, D.C., and Boston, and served as a senior adviser to Crown Fibre Holdings, the public entity directing New Zealand's national fiber-to-the-home project.

In addition to designing networks, Andrew testifies as an expert witness on broadband communications issues. And he is frequently consulted on critical communications policy issues through technical analyses submitted to the Federal Communications Commission (FCC) and policymakers. He has prepared white papers on:

- Streamlining deployment of small cell infrastructure by improving wireless facilities siting policies
- Limiting interference from LTE-U networks in unlicensed spectrum
- Developing technical frameworks for wireless network neutrality
- Estimating the cost to expand fiber to underserved schools and libraries nationwide
- Conducting due diligence for the IP transition of the country's telecommunications infrastructure

As CTC's Chief Technology Officer, Andrew oversees all technical analysis and engineering work performed by the firm. He has a Ph.D. and is a licensed Professional Engineer.

Ziggy Rivkin-Fish, CGEIT, Vice President of Broadband Strategy and Governance, CTC

Role: Lead Broadband Analyst and Governance Subject Matter Expert

Qualifications/Contribution: Serving as Vice President of Broadband Strategy and Governance, Ziggy Rivkin-Fish brings extensive experience to all elements of planning and fiber network deployments at the community and state-level. Among the many broadband planning and oversight projects conducted, Ziggy has served as the lead manager for all phases of deployment of NCRnet, the interoperable public safety communications network that interconnects 20 jurisdictions in the National Capital Region, in three states and around Washington, D.C. Serving as a broadband strategist and analyst since 2005, Ziggy has played key roles in dozens of large-scale projects, such as overseeing the preparation of successful environmental

assessments (EA) for major public sector fiber networks including the \$130 million One Maryland Broadband Network (OMBN) and the Urbana-Champaign Big Broadband (UC2B) network. His background in organizational sociology and certification in Governance of Enterprise IT has enabled him to advise multiple clients on structuring their operations to manage IT departments and fiber optic network services. In addition to his work on environmental assessments, broadband planning, government network interconnections, and governance consulting, Ziggy specializes in strategic planning, including public-private partnership analysis and grant strategies. In that capacity, he has led or contributed to numerous projects leveraging federal and state grants to build or expand broadband networks around the country. His recent broadband strategic planning projects include engagements with King County, WA, Pierce County, WA, the State of Alabama, Greene County, PA, the State of New Mexico, Harford County, MD, Charles County, MD, and Queen Anne's County, MD. Ziggy also leads CTCs digital inclusion and equity team and is both leading projects specifically oriented toward addressing the digital divide and addressing those issues within the context of broadband strategy planning. Ziggy's past accomplishments include a full fiber optic network feasibility study, including a governance roadmap for the city of Highland Park, IL, which enabled the city to decide between ownership models and methods of operational governance. He conducted a large organizational governance study for Montgomery County, Maryland's FiberNet network to advise the county both on executive governance and on operational organization and business process improvement; following that project, he helped the county identify and implement key performance indicators (KPI) for the network.

Aimee Meacham, Director of State Broadband Programming, CTC

Role: Program Oversight

Qualifications/Contribution: Aimee Meacham serves as Director of State Broadband Programming at CTC Technology and Energy where she provides strategic direction for the broadband deployment and digital equity work for state clients. She has over 15 years of experience in telecommunications policy, including broadband deployment and digital equity. During that time, she advised senior administration officials on communications policy, led policy engagement at international fora, including the International Telecommunications Union – and managed complex programs to expand broadband connectivity and digital equity for the U.S. Department of Commerce. She worked in private legal practice advising clients on regulatory and transactional matters. She has led multidisciplinary teams and trained staff on complex projects.

Research & Engagement Team

Dave Talbot, Director of Research Services, CTC

Role: Digital Equity Subject Matter Expert; Research Director and Analyst

Qualifications/Contribution: David Talbot, who wrote the Cambridge and Boston digital equity studies, joined CTC from the Berkman Klein Center for Internet & Society at Harvard University, where, as a fellow researching community networks, he convened local leaders and wrote case studies about municipal fiber business models, paybacks, and pricing. He is also supporting other CTC clients around the country on policy studies and other reports. A resident of Reading, Massachusetts, he serves on the Reading Municipal Light Department Board of Commissioners, giving him practical experience in local government and municipal utility governance and management. Previously, as chief correspondent at MIT Technology Review, the magazine and website owned by MIT, he frequently wrote about internet policy topics, emerging communications technologies, and digital divide issues.

David Tidd, Ambassador Call Center Manager/Special Projects Coordinator, CTC

Role: Customer Service and Outreach

Qualifications/Contribution: David Tidd provides quality assurance and management support of CTC's Ambassador Call Center. David has more than two decades of experience in project management and data analysis, and he is a seasoned subject matter expert in customer service, data collection, and community outreach efforts. David directed the team that facilitated the State of Alabama's digital equity project: ABC for Students. Additionally, David led special digital equity projects for clients focused on increasing participation in the Federal Communications Commission's Emergency Broadband Benefit (EBB) program, now the FCC's Affordable Connectivity Program.

Prior to joining CTC Technology & Energy, David worked at the Constellation Brands as a State Manager. In that role, he managed a team of Market Sales Managers in addition to overseeing relationships with distributor partners, facilitating larger scale marketing efforts and outreach.

David has extensive experience in teambuilding efforts and bolstering communication and relationships with multi-project partners and the community.

Andrea Arciniegas, REBEL

Role: Policy and Funding Strategist

Qualifications/Contribution: is a senior consultant at Rebel with experience in public-private partnerships (P3s), infrastructure policy, and the application of innovative funding and financing mechanisms for infrastructure projects. At Rebel, Andrea provides strategic advisory to clients in the US and Latin America and the Caribbean, including development banks, in relation to the financing and delivery of infrastructure projects and PPPs across sectors, with a focus on sustainability. She holds a master's degree in public policy from Georgetown University's McCourt School of Public Policy.

Technical Assistance

Heather Mills, Vice President of Grant and Funding Strategies, CTC

Role: Grant Planning & Funding Strategies Subject Matter Expert

Qualifications/Contribution: Heather Mills has more than a decade of experience in project management and data analysis. She has exceptional skills in long-term strategic planning for broadband funding; execution of complex tactical funding plans; and grant administration, budgeting, and financial reporting. Heather leads the CTC team that develops grant funding strategies and delivers tactical application and post-award support to our public sector clients. She has authored guidance on new and emerging federal broadband funding programs that is highly regarded by industry colleagues. At CTC, Heather guides clients on strategic funding for network planning, as well as applying for and complying with the requirements of major federal broadband and communications grant programs, including those funded by the IIJA (such as the BEAD Program), the ARC/EDA POWER grants, USDA RUS grants (such as ReConnect and Community Connect), and New Market Tax Credits. She has particular expertise in the Federal Communications Commission's E-Rate program, Lifeline program, and Healthcare Connect Fund. Over the last few years, Heather and her team supported clients with applications to the U.S. Department of Commerce's EDA Public Works and Economic Adjustment Assistance program for funding related to COVID relief; she guided clients in many parts of the country through the consultation process with EDA regional representatives. Under Heather's management, the CTC team supported clients with strategy and navigation of the USDA ReConnect application process through Round 1, 2, and 3 which required detailed understanding of the application, the application portal, and applied strategy. Heather currently is

advising clients on new federal funding programs such as the FCC's Affordable Connectivity Program (formerly the Emergency Broadband Benefit) and the NTIA's Infrastructure Investment and Jobs Act programs, while keeping a close eye on and providing singular analysis for clients around funding programs created by the Consolidated Appropriations Act and the American Rescue Plan Act.

Wim Verdouw, REBEL

Role: Economics Subject Matter Expert

Qualifications/Contribution: Wim has a combined background in economics and engineering with over 16 years of experience in financial analysis, project development and project implementation in broadband, transportation, renewable energy, water, and social infrastructure sectors. He leverages his experience from public and private sector infrastructure projects in the US and internationally to advise clients on critical infrastructure financing aspects and project structuring, in particular for public-private partnerships.

Marcel Ham, REBEL

Role: Partnership Subject Matter Expert; Business Analyst

Qualifications/Contribution: Marcel is co-founder and co-owner of Rebel. He has 20 years of experience in assessing, developing, structuring, and implementing innovative finance and P3 projects including San Francisco's Fiber-to-the-premises P3 project. Marcel led the team that developed advanced guidelines on risk assessment and value-for-money assessment for U.S. DOT and co-authored the Model P3 Contract Guides and guide on Successful P3 Practices in the U.S.

Zachary Karson, REBEL

Role: Financial Analyst

Qualifications/Contribution: Zachary is an experienced manager on the Rebel team with a successful track record advising both public and private clients on infrastructure projects in various sectors, including broadband, mass transit and mobility, renewable energy, water, and wastewater. Zachary focuses on financial analysis, risk analysis, procurement support, and assisting clients with key commercial and financial decisions. Zachary is also a registered Series 50 municipal financial advisor.

Matthew DeHaven, VP for Fiber and Infrastructure, CTC

Role: Engineering Lead and Fiber and Infrastructure Subject Matter Expert

Qualifications/Contribution: Matt DeHaven has experience at many levels of network design, procurement, and implementation for high-capacity metropolitan-area networks to support converged video, voice, and data communications. He has assisted in the design, prepared specifications for competitive bid processes, and overseen implementation and testing in many cases for a wide range of government clients. Matt has prepared designs and cost models to support decision-makers in the deployment of a range of data network technologies, traditional telephone systems, voice-over-IP (VoIP) networks, one-way video distribution, and two-way videoconferencing. Data network experience includes work with SONET, Ethernet, and ATM networks, using a range of fiber optic, copper, and wireless technologies. Matt has assessed existing and projected wireless broadband needs and technologies and recommended potential strategies for utilizing these technologies and services to enhance and improve network operations and services in the future for numerous clients.

Mitchell Hergett, Director of Outside Plant Services, CTC

Role: Outside Plant Services Lead

Qualifications/Contribution: Mitchell Hergett has extensive experience in OSP engineering as well as managing long-term OSP Fiber engineering projects. Within CTC, Mitch has managed projects and has

conducted engineering analysis for numerous projects, one such being the fiber network deployment project within Anne Arundel County, Maryland. Additionally, Mitch has provided project management and consultations for projects within the North Carolina (Town of Wake Forest), Virginia (Hampton Roads, City of Alexandria), and New Mexico (City of Gallup). His tasks on these projects included outreach and the provision of technical support. Mitch has also worked in-depth on the construction of fiber optic networks within projects in the City of Atlanta, the City of Bozeman, Baltimore City of Public Schools, Delaware Department of Transportation, Town of Holly Springs, and the City of Westminster.

Cyle Chapman, Director of Field Engineering, CTC

Role: Field Evaluation Lead

Qualifications/Contribution: California-based, Cyle Chapman maintains an in-depth expertise and knowledge of both creation and implementation aspects of deploying successful fiber networks. With 25 years of experience in FTTP/FTTC/FTTX engineering including 20 years of project management and engineering design experience, Cyle is currently serving as a lead on the California Department of Transportation project. Having served as a Design Engineering Manager at Ledcor and Lead Engineering Manager at Tilson Technology Management, Cyle has managed numerous fiber OSP projects with both high and low designs with a focus on margins of productivity. Cyle has also mentored numerous engineers on the fundamentals and essentials of OSP, establishing and monitoring the completion and progress of tasks and benchmarks on projects.

Marc Schulhof, Director of Editorial Services, CTC

Role: Senior Analyst and Technical Writer

Qualifications/Contribution: Marc Schulhof has 25 years of experience in technical writing, financial journalism, and corporate communications. He previously was the worldwide editor-in-chief of CIO program websites at IBM, a global editor at PricewaterhouseCoopers Consulting, and an associate editor at *Kiplinger's Personal Finance* magazine. He specializes in writing master plans and other project deliverables that make complex technical and financial analyses more easily accessible to nontechnical audiences.

f. Detailed explanation of how you plan to deliver an essential work product necessary to have broadband infrastructure projects shovel ready per the requirements of Appendix A.

CTC has delivered fiber network design, engineering, cost estimation, and construction oversight services to clients nationwide for more than three decades. We have designed, engineered, and overseen the construction of thousands of miles of outside plant fiber, including for municipal middle-mile and fiber-to-the-premises initiatives.

The following are sample tasks CTC performs in the detailed design stages, as needed, to explain how we may support the City of San Diego with shovel ready broadband infrastructure projects.

CTC's outside plant (OSP) fiber network engineering processes are centered around Geographical Information System (GIS) technologies that are compatible with the GIS resources of the Southside Cities, enabling us to deliver a more precise design and bill of materials (BOM). We develop preliminary designs using GIS tools, and perform field surveys using precision GPS receivers. Before initiating more manual drafting phases, our designs undergo rigorous quality control review in their native GIS formats.

We have refined our processes over the years to minimize the potential sources of human error, and to increase cost efficiencies by eliminating manual data input steps. Ultimately, this allows us to provide

accurate design and as-built materials to the City in formats that can be merged with existing GIS databases. These databases can in turn be used to populate industry-leading fiber cable management systems and/or used directly to facilitate more effective maintenance, repairs, and underground locating.

Field Surveys

The CTC engineer walks out the routes and will photograph, survey, and take detailed notes via a GPS device on all relevant physical features relating to outside plant construction. CTC uses state-of-the-art field survey equipment, including Trimble Geo 7X handheld GPS receivers and related software (Trimble Pathfinder Office and TerraSync), to automate the outside plant engineering and GIS surveying processes. A walkout map of the route will be designed and produced in ESRI ArcGIS.

The field survey includes measuring features within the right-of-way for placement of conduit, and recording other pertinent details, including:

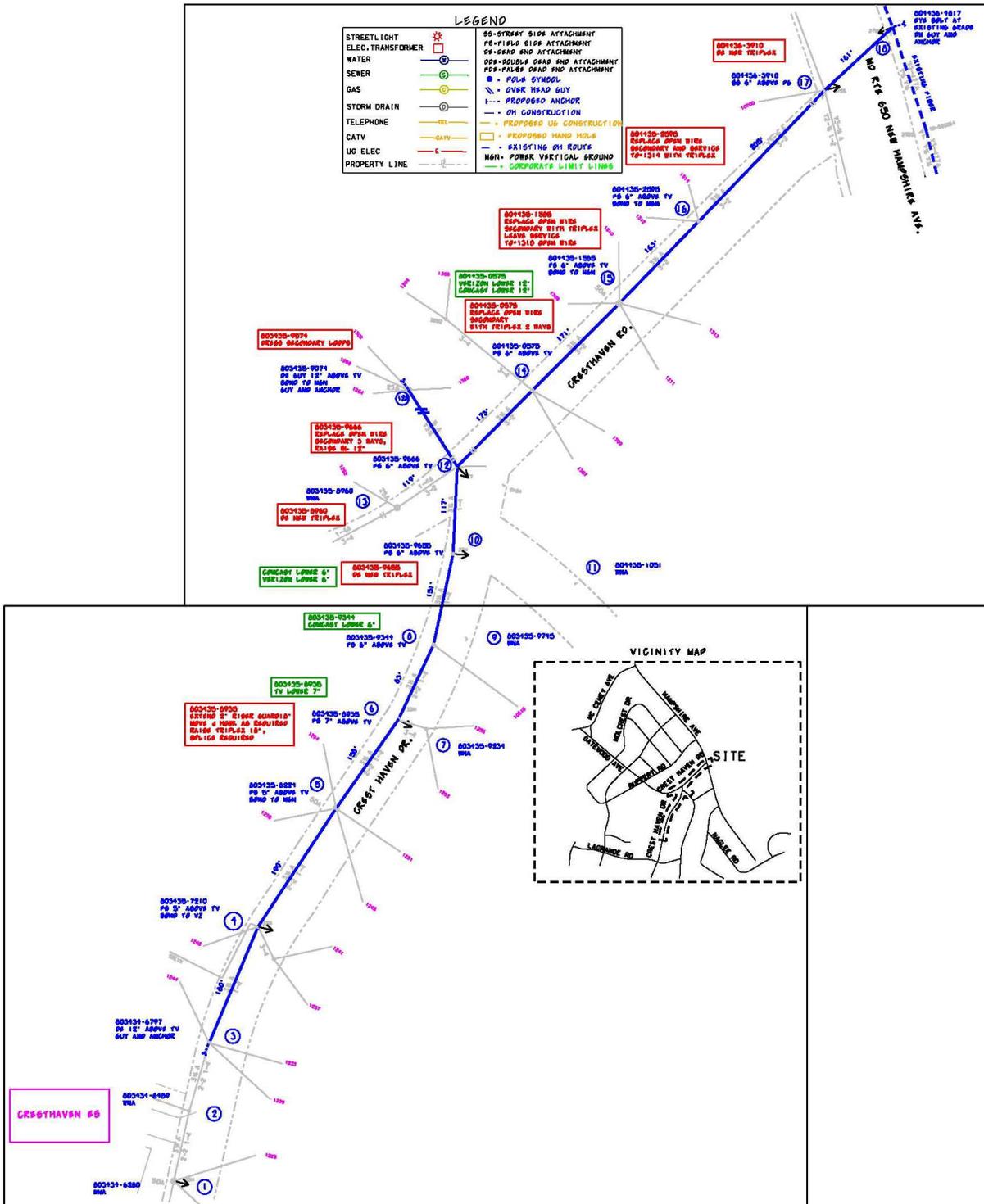
- Slack storage
- Storm drains and culverts
- Edge of pavement
- Street lights and signal poles
- Splice cases
- Equipment cabinets
- Vaults and pedestals
- Existing third-party utilities
- Green space

The information listed above is recorded from visual observation while the survey is conducted, and those items necessary to aid in construction will be documented in the construction plans. CTC's engineer notes any potential barriers to construction, as well as potential route improvements, and also determines what permits will be needed to construct the fiber.

Using the information from the survey, our team would complete a desktop review to identify and avoid potential impact to environmentally sensitive areas and vulnerable wildlife species. We would advise the client as to our desk review findings and any likely areas of environmental permitting identified by our review and will make design decisions intended to avoid permanent disturbances and the need for environmental permitting. Moreover, CTC would support initial consultations with environmental permitting authorities that may be necessary to determine permitting requirements.

CTC can provide update route maps with any recommendations for realignment, to include cost comparisons if applicable, and updated material specifications.

Figure 1: Sample Walkout Map

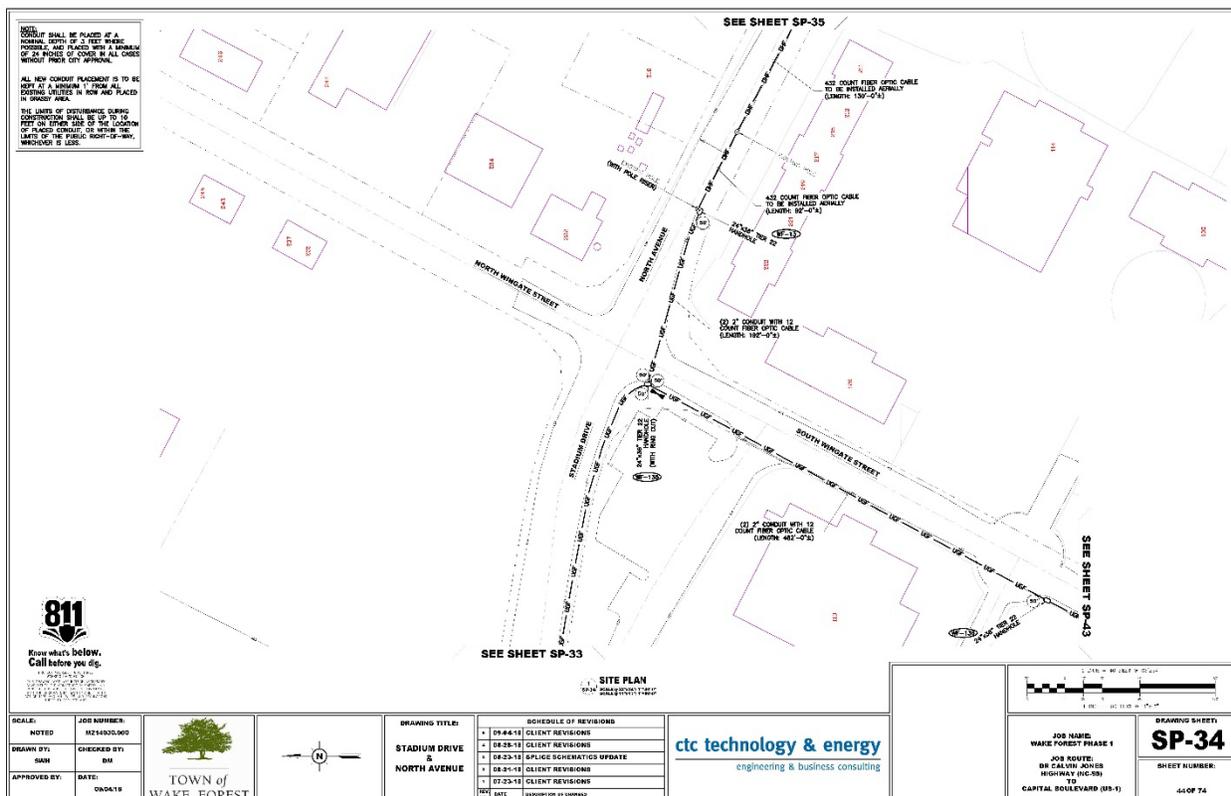


CAD Drawings

CTC's team would generate CAD construction drawings from our field work, which capture related data from walkout map drawings and the GIS data collected during field surveys. The drawings include:

- Running line of fiber
- Position of existing utility poles
- Road names
- Railroad crossings
- Bridges
- Fixed markers/significant landmarks (e.g., fire hydrants, valves, poles)
- Environmental protected areas (e.g. wetlands, bodies of water)
- Flood plains
- Easements
- Rights-of-way
- Any applicable public utilities or assets
- Any applicable private utilities or assets
- Termination points, coils, vaults, splices
- Fiber entry and installation, as applicable

Figure 2: Sample Design Drawing



CTC can provide design materials for review (both in CAD and GIS formats) at the 60 percent and 90 percent, stages of development. CTC would generate a Bill of Materials (BOM), detailing material types and quantities needed by the construction contractor to construct the engineered design based on the

material specifications defined by the RFP and revisions determined in consultation with the City during the system-level design task.

Based on field verification, CTC can prepare a complete list of required permits. Any special permits, such as railroad crossings (e.g., right-of-way and encroachment permits) and bridge attachments, would also be prepared to complete the engineering services, but may require additional input and discussion with the City and the appropriate permitting agency/organization.

At the City's direction, CTC can initiate and manage the submissions of all required permits and will track each application through to approval. To ensure the timely approval of permit applications, CTC has the capabilities to quickly follow up on issues raised by the permitting authorities. When an issuing entity identifies any concerns in its initial review of a permit application, the reviewer will typically return the plans, send an e-mail about the issue, or call the engineer or project manager to discuss the concern. If an application or portion of an application is returned, CTC staff will discuss the necessary changes internally, then make appropriate revisions and resubmit the application (as needed), or simply e-mail or call the permit reviewer to provide the information requested.

Where aerial construction is deemed preferable, CTC can perform the engineering necessary to complete the pole attachment applications according to the requirements of the corresponding pole attachment agreements. We anticipate this would include the measurement of existing pole attachments and documenting related physical attributes (guys, grounding, anchors, etc.).

For this task, CTC's engineers coordinate and conduct meetings and ride-outs with the construction contractor and utility pole owner to gather information for pole owner approvals and licensing. We would also coordinate the payment by the City of any engineering fees from local utilities.

On behalf of clients, CTC can track pole attachment applications, the status of make-ready work reported by the pole owners, payments, and final licensing issued.

3: Industry Recognition

3.01: Provide details on Certifications that the Consultant has achieved in respect to product awards or certifications.

- CTC is a nationally certified Woman-owned Business Enterprise
- Professional Engineer License, State of California
- Governance of Enterprise IT (CGEIT) Certification
- Rebel is a MSRB-registered municipal advisor.
- Rebel was the financial and transaction advisor to the Clackamas County Courthouse P3 project, which received the prestigious "Social Infrastructure Deal of the Year" award at IJ Global's 2022 Awards ceremony.

4: Subcontracting

4.01: Does the firm intend to utilize subcontractors for this project? If yes, please discuss how the firm intends to use subcontractee/s, information on any potential subcontractee/s, and details on previous work they have performed that relates to this project.

CTC has partnered with IMG Rebel Advisory, Inc. ("Rebel") – a leading financial and transaction advisory firm specialized in improving the finance, management, and operation of infrastructure. Rebel will focus on helping the City of San Diego bridge the gap between infrastructure needs and financial resources through innovative capital financing, optimized project delivery, risk mitigation, and innovative delivery models, such as public-private partnerships (P3s).

Rebel's expertise covers all infrastructure sectors, including broadband and other technologies. In many of these sectors, Rebel has pioneered the introduction of private financing and the application of P3 approaches in its home markets.

In recent years, Rebel has worked closely on multiple broadband consulting engagements with CTC. We believe that Rebel and CTC together provide a unique value proposition to our clients in helping them navigate the technical, operational, and commercial complexity of the broadband industry, and advance projects forward. In recent years, Rebel has worked with CTC on broadband consulting engagements for the City of Cambridge, Massachusetts, the New Hampshire Electric Cooperative, the California Department of Transportation, the California Department of Technology, and the City of San Francisco, to name a few key projects.

5: Community & Stakeholder Engagement

5.01: Describe the methods the firm would utilize to incorporate community members, community-based organizations and community stakeholder groups into the 1. Community Broadband Mapping task 2. City of San Diego Socio-Economic impact and Historical Analysis of Community Internet Access. If possible, please reference examples of past projects in which the firm engaged historically marginalized communities in planning processes and/or data gathering activities and

5.03: Explain how the firm intends to foster collaboration and ensure coordination among participating city departments, anchor institutions and local government agencies throughout this project.

Our planning process is designed to provide data on existing gaps with respect to infrastructure, affordability, skills, and devices, followed by actionable policy, programmatic, and budgetary recommendations intended to help bridge the digital divide for all residents. We will seek to understand the full range of these gaps and deliver strategic recommendations in line with the goals stated by the City.

The consulting team will lead a two-hour strategic planning workshop with municipal leaders (and key stakeholders if the City wishes to invite them). The purpose of the workshop—and the value to all the participants—will be to come to a collective understanding of the available information on:

- The anticipated digital equity grant and funding landscape in 2024 and beyond,
- The specific types of data (including from the stakeholder meetings and survey) that the City will need to provide to the state to set the stage for future federal funding
- The types of projects and initiatives that may be eligible for funds
- The City's priorities in terms of initiatives and programs that it is able to pursue.

Based on the meeting and the research done by the consulting team (led by CTC), we will produce a joint memorandum on the above points and provide this memorandum to the City within one month of the project initiation meeting for City review and approval. This step will assist in guiding the community engagement and gathering process, with the goal of collecting the most relevant data.

We will also seek to gather any updated data from the City about digital equity gaps and of the reach of recently funded initiatives.

After the initial strategy meeting with municipal leaders and their invited stakeholders, we will then hold meetings with regular updates every two weeks with the municipal staff together with elected representatives if requested. We will also meet with any relevant municipal body (such as school board, human rights commission, or broadband task force) if requested.

5.02: Explain how the firm plans to build and maintain trust with historically marginalized communities in San Diego. If possible, please provide examples of previous work with historically marginalized communities and the short- and long-term impact and outcomes of this work on the community.

The CTC team has extensive experience designing and conducting barriers analyses for historically marginalized populations. Currently, we are actively engaged in the development of statewide digital equity plans. CTC is leading the development of the statewide digital equity plans in Maryland, New

Mexico, and Oregon. We are also serving on the project teams developing digital equity plans for the states of California, New York, and Wyoming.

To better understand barriers to digital equity for populations such as seniors; veterans; racial minorities; English as a second language; individuals with disabilities; incarcerated individuals; and/or low-income residents, CTC works with clients to implement a research methodology that works with government and community leaders to understand the broader set of issues that creates challenges for full broadband participation by these populations.

Our barriers analysis is driven by the information collected through online facilitated sessions and follow-up questionnaires/surveys of expert organizations and organizations that support historically marginalized populations.

By working with leaders and organizations that support these populations, we develop insight into the experiences and challenges faced to provide a more robust understanding to challenges and opportunities for residents who have historically been unserved or underserved.

This significant research effort produces new insights into the challenges faced by these populations as well as into those programs that have been tried and found most effective at providing support to engage the broadband internet, including programs for affordability, device use, digital skills, and internet safety training.

5.04: As a direct result of this project, the City of San Diego aims to increase access to robust, resilient, and affordable broadband in under-connected areas of the City, public-facing city facilities, and affordable housing properties. Success will be measured by the creation of a workplan that results in concept level broadband access projects and models. The City is not seeking a Broadband Master Plan which simply reiterates digital equity best practices. How will the firm ensure that the resulting work product is actionable and meets the City's identified short- and long-term goals and which include clear, realistic implementation steps?

CTC will document existing broadband coverage and gaps with the most recent publicly available information on broadband-related topics. This includes demographic, economic, and population data from the U.S. Census Bureau and the American Community Survey (ACS); internet availability and usage data from the FCC, the NTIA Internet Use survey, and the ACS.

We will summarize existing data and studies around connectivity for the City of San Diego.

Of particular importance, we will also gather data about current enrollment in the Affordable Connectivity Program (ACP) and estimate how many households are potentially eligible for the ACP in the City, but not enrolled, as a first step toward designing programs to close enrollment gaps quickly and cost effectively. Closing the ACP enrollment gap is one “measurable objective” in the NTIA’s digital equity program.

Finally, we will consult ISP websites and other fixed broadband providers to determine what level of service is offered and the prices charged.

Taken together, this information and analysis will provide a baseline overview of broadband access and affordability gaps affecting the City’s population—and the available opportunities for closing those gaps, dovetailing with the citywide survey.

Rebel will perform community engagement and stakeholder outreach in coordination with CTC. Our team will engage residents, organizations, and agencies to better understand needs, challenges, and opportunities, so that San Diego's plan is prepared according to guidance and discussions from the kickoff meeting.

Rebel will work with the City to identify and recommend groups and individuals for engagement and will work with CTC and the City on preparing focused question guides and facilitation approaches for these meetings. The Rebel team will reach priority populations using an equity analysis to ensure underrepresented voices are elevated, will lean on existing relationships with the City and stakeholders. Our approach to community engagement will be based on the following activities:

1. *Focus groups* - The Rebel team will work with the City and other stakeholders to prioritize and conduct 8-10 focus groups designed around the priority's populations identified by the City which include (but are not limited to):

- Seniors/Older adults
- Immigrant populations
- People who speak languages other than English (LOTE)
- Low-income populations: people on government assistance programs (SNAP, Social Security Income)
- Black community
- Indigenous community
- People in public housing/restricted housing units
- Families of school-aged children
- People with disabilities
- LGBTQ+ community
- Formerly incarcerated people
- Veterans
- Youth
- Unhoused people

2. *Stakeholder small group interviews* – The Rebel team will coordinate with the City to conduct up to 15 small group or 1:1 interviews (depending on the most effective mode of engagement) among the priority populations mentioned above and/or key agencies listed by the City in Appendix B.

We will work with the City to both prioritize and agree on the purpose of each of these conversations to be clear on intended outcomes. As part of the prioritization process, we will ask the City to identify where additional conversations may be redundant based on previous digital equity related efforts.

3. *Community Outreach Events* – Rebel will research and attend relevant community outreach events (approximately 3) throughout the City that are hosted by or for the priority populations mentioned above to capture their input in the digital planning process. These outreach events will be developed in partnership with the City of Boston and key stakeholders.

Through data synthesis and integration from the existing conditions and community engagement processes, the consulting team, led by CTC, will develop a plan consisting of recommendations for consideration by the City that address the digital equity needs of the City.

Depending on the findings, these solutions may include methods for:

- Facilitating enrollment in the Affordable Connectivity Program (ACP)
- Pursuing infrastructure funds or solutions if gaps or needs are found over the course of the study
- Expanding adoption of existing low-cost services such as Comcast’s Internet Essentials and the equivalent plans from RCN/Astound
- Creating new local subsidy programs (for providers or residents) to make broadband cheaper or free for target communities
- Establishing or expanding skills training and device provisioning to residents in need
- Establishing or expanding loaner programs for laptops and hotspots
- Expanding the capacity of existing service organizations presently working with underserved groups in Boston, to enable them to launch or expand existing programs around devices and skills, and distribute information through trained facilitators
- Evaluating the potential costs (per person served) of a call center to assist residents in navigating subsidy, device, and skills programs

Our team will deliver a comprehensive plan that documents our analysis of the City’s broadband and equity gaps and recommends a potential infrastructure-based solution (depending on the findings of Task 2), proposed programmatic solutions or expansions, and an implementation roadmap. We will provide an electronic draft of our report; solicit the City’s consolidated feedback as line-edits and comments in the draft; incorporate the feedback; and deliver an electronic version of the final report. To conclude the engagement, we will also present summary findings and recommendations to the City’s project team, elected officials, and invited stakeholders—either in person or virtually as preferred by the City.

6: Delivery Readiness & Technical Methodology

6.01: Please provide examples of technical documentation created by your firm for a project of similar scope involving infrastructure planning e.g. concept level designs for broadband projects, fiber sharing

State of Vermont

CTC developed Vermont’s 10-year Telecommunications Plan to address gaps in broadband connectivity using funding from the American Rescue Plan Act and the Rural Digital Opportunity Fund to cover the \$362-\$439 million price tag (depending on fluctuating prices of materials and labor).

The 10-year plan laid out ambitious goals of extending broadband capable of 100 Mbps symmetrical service to all Vermont addresses by 2024, facilitating competition between ISPs and choice for residents, promoting local input and oversight, and building telecommunication systems that are resilient, secure, and future-proof (upgradable to 1–10 Gbps symmetrical to keep pace with increasing demand). Four core values were central to the plan’s recommendations: efficiency, longevity (i.e., future-proof infrastructure), local control, and equity (e.g., income, race, and geography shouldn’t present barriers to broadband access).

To achieve these goals, the roadmap recommended using Communications Union Districts (CUDs) as vehicles for infrastructure deployments. Public-private partnerships can help balance tradeoffs and tensions between deployment efficiency and community agency.

Vermont can maximize its investment by addressing affordability, digital skill building, and digital equity, and by including subsidy programs for low-income subscribers to help close the gap.

Example Document: Vermont 10-Year Telecommunications Plan (2021),

https://publicservice.vermont.gov/sites/dps/files/documents/Pubs_Plans_Reports/State_Plans/Telecom_Plan/F10%20Year%20Telecom%20Plan_Final_June30_2021.pdf

Example Document: Vermont Covid-19 Response Telecommunications Recovery Plan (2020),

<https://publicservice.vermont.gov/content/covid-19-response-telecommunications-recovery-plan>

State of Maryland: One Maryland Broadband Network

Working closely with the Maryland Department of Information Technology, CTC provided strategic guidance and was the lead engineering and business planning consultant in conjunction with the development of the statewide, multi-jurisdiction One Maryland Broadband Network (OMBN). Our services included network architecture, plant engineering, and detailed project preparation, with a focus on expanding the state's existing fiber network and interconnecting with other existing fiber infrastructure across the state to reach underserved areas and achieve other program goals. CTC analysts also provided extensive business planning, business modeling, and pro forma preparation.

Example Document: Strategy for Development of State Broadband Grant Program (2017),

<http://www.ctcnet.us/wp-content/uploads/2019/08/MD-DoIT-Pilot-Funding-Program-20170412.pdf>

State of New Mexico

As broadband adviser to the State of New Mexico for many years, CTC has provided strategic guidance on a range of issues. On behalf of the New Mexico Department of Information Technology, we prepared a statewide broadband strategic plan in 2014¹⁰; we updated that report and developed a rural broadband assessment at the state's request in 2020.¹¹

The state published our "Broadband for Business Study," which provides recommendations for improving access to affordable and reliable broadband services for businesses in support of economic development.¹² That comprehensive statewide strategic plan included the development of a cost estimate for building fiber to the unserved business areas of the state. In an earlier engagement, CTC wrote a guidebook for New Mexico's local governments to lead them through the business, financial, and strategic planning necessary to implement city- or county-owned broadband networks.¹³

Example Document: Statewide Broadband Strategic Plan (2014; updated in 2020),

<https://www.ctcnet.us/wp-content/uploads/2020/07/New-Mexico-Broadband-Strategic-Plan->

¹⁰ <http://www.ctcnet.us/wp-content/uploads/2018/04/New-Mexico-Strategic-Plan.pdf>.

¹¹ <https://www.ctcnet.us/wp-content/uploads/2020/07/New-Mexico-Broadband-Strategic-Plan-20200616.pdf>.

¹² <http://www.ctcnet.us/wp-content/uploads/2017/12/NM-Broadband-for-Business-Study-20170117.pdf>.

¹³ <http://www.ctcnet.us/NewMexicoCommunityGuidebook.pdf>.

[20200616.pdf](#)

Example Document: Broadband for Business (BB4B) Strategic Plan (2017),
<http://www.ctcnet.us/publications/new-mexico-broadband-for-businesses-study/>

City of Bloomington, Indiana

CTC led a study and analysis of “digital equity” gaps affecting the city’s low-income or otherwise disadvantaged population in their use of the broadband internet. Our goal for the study, which included a statistically valid survey, was to help the city better understand the gaps — including those related to broadband access, affordability, digital skills, and device ownership — that may be preventing some residents from making the most effective, meaningful use of broadband. Based on the research and data gathered, we developed an actionable plan of steps that could be taken by both the public and private sectors to address those challenges.

CTC has also supported the city’s efforts to develop ubiquitous, gigabit-class broadband. We collaborated with city staff and other stakeholders to facilitate a public symposium and related communications materials on the value of next-generation infrastructure. We performed in-depth analysis of the local broadband market and fostered engagement with a range of public and private stakeholders. CTC’s analysts and engineers also assessed the city’s existing assets, prepared a competitive assessment of broadband services, benchmarked the city’s broadband availability, and developed high-level engineering and cost estimates. Additionally, our team developed and administered an RFI to gauge public-sector interest in partnering with the city to achieve its broadband goals.

Example Document: Digital Equity Strategic Plan (2020),
<https://bloomington.in.gov/sites/default/files/2020-12/City%20of%20Bloomington%20Digital%20Equity%20Strategic%20Plan%2020201220.pdf>

City of Dallas and Dallas Independent School District

Working with the Dallas Independent School District (Dallas ISD), the City of Dallas, and the regional “Internet for All” coalition (i.e., the Dallas ISD and the city’s collaboration with Dallas County, Dallas College, and other independent school districts within the Dallas region), CTC developed solutions to ensure all students have access to high-speed home broadband service — and studied the digital equity issues facing students and their families.

Capitalizing on existing incumbent service availability, we developed potential pilot solutions for quickly serving unconnected students. We conducted research to identify, quantify, and understand the nature of the digital divide affecting students (and Dallas residents more broadly), with a goal of developing a longer-term strategy. The data and analysis we developed then informed a comprehensive plan to sustainably bridge the digital divide affecting Dallas ISD’s students and Dallas residents.¹⁴ Finally, we assisted the Internet for All coalition in developing an RFP and selecting vendors to implement those longer-term solutions.

¹⁴

[https://dallascityhall.com/departments/pnv/resilient_dallas/DCH%20Documents/Broadband%20and%20Digital%20Equity%20Strategic%20Plan%20\(FULL\).pdf](https://dallascityhall.com/departments/pnv/resilient_dallas/DCH%20Documents/Broadband%20and%20Digital%20Equity%20Strategic%20Plan%20(FULL).pdf)

Example Document: Broadband and Digital Equity Strategic Plan (2021),

[https://dallascityhall.com/departments/pnv/resilient_dallas/DCH%20Documents/Broadband%20and%20Digital%20Equity%20Strategic%20Plan%20\(FULL\).pdf](https://dallascityhall.com/departments/pnv/resilient_dallas/DCH%20Documents/Broadband%20and%20Digital%20Equity%20Strategic%20Plan%20(FULL).pdf)

6.02: Please describe in detail the technical skills and methodology the firm plans to employ to accomplish tasks required for the Broadband Master Plan, including the Concept level design.

We understand that the data gathered in this phase should be stored in formats that will enable future use. We strongly encourage every engagement to start with a kickoff meeting where participants discuss goals and processes, establish lines of communication, and share resources.

We would provide a draft agenda before the meeting. One of the topics would be to review the City's goals for this project, which include the following items detailed in the RFP:

1. Increase access and affordability for broadband in the City of San Diego with a focus on outreach to underserved communities and low-income housing residents;
2. Meet State of California regulatory standards for broadband speed;
3. Position the city to effectively coordinate, leverage and implement state broadband infrastructure investments and policy;
4. Identify how city and public resources can be utilized to increase broadband access and affordability cost effectively;
5. Identify public-private partnerships and how they can be leveraged to increase broadband access and affordability; and
6. Align with City's commitment to equity and goals of the Climate Action Plan.

PHASE 1, Data Gathering

Deliverable A: Digital Infrastructure Gap & Asset Analysis

As described broadly in Section 5, Community & Stakeholder Engagement above, Rebel, supervised by CTC, will engage with government, anchor institutions, wireless and wireline providers including independent competitive local exchange carriers (CLECs), electric utilities, and other relevant parties. The City's existing contacts and research will increase the efficiency of this process.

Task A1: Community Broadband Access mapping: market and needs assessment of businesses and residences.

Subgoal 1: Accurate and granular data on broadband access in the City of San Diego

The RFP requests that the 372.4 square miles of San Diego be divided into 100 square meter bins for the purpose of fixed wireline speed data collection. As 372.4 square miles is approximately 965 square kilometers, and each square kilometer contains $10 \times 10 = 100$ bins each 100 square meters in size, there would be approximately 96,500 100 square meter bins in this area. Although the 100 square meter bin is feasible for data collection, as long as location data is accurate, the City may wish to utilize larger bins for data analysis. Data from Ookla and CalSPEED are a valuable starting point, subject to the limitations of IP-based location data. CTC Technology & Energy is developing a Raspberry Pi-based device that is designed to deliver the performance of FCC white boxes for household internet performance measurement, but

the deployment of these devices in an area of San Diego's size and population density could take considerable time.

[Subgoal 2: Establishing a baseline dataset for city to measure progress on broadband equity actions and utilize for Key Performance Indicators](#)

We recommend a statistically valid survey that can provide a baseline for measuring changes going forward, including the impact of City efforts and interventions. As discussed in Subgoal 3, each survey methodology has strengths and weaknesses, and a variety of survey methodologies may be useful. Note especially that listening sessions can provide useful qualitative data that can help experts analyze quantitative data.

[Subgoal 3: Understanding need and barriers to access, such as cost and existing infrastructure conditions for community stakeholders, including residents and local businesses](#)

CTC has conducted needs assessments at the state, county, and city level. The participation of representatives of disadvantaged populations is helpful in these assessments. At the kickoff meeting, we can discuss the relative strengths of alternative methodologies including a phone survey, a mail survey, and community engagement and listening sessions. This project could benefit from multiple methodologies.

Our proposed methodologies reflect best practices with respect to how pioneering cities and states have gathered data on questions of digital equity, including on how they went about seeking insights from residents.

CTC will undertake the survey with a goal of receiving sufficient responses to result in statistically significant results. Previously, mail surveys were preferable to phone surveys, which tend to overrepresent older residents (in large part because younger residents are unlikely to have landline phones—and reliable, geographically based cellphone number databases are only now emerging). In some communities, however, phone surveys are more appropriate, and we therefore recommend that CTC and the City discuss the optimal methodology for distribution; CTC has the expertise to conduct either mail or phone surveys depending on which methodology is preferable.

For listening sessions, we assume that the City will identify and invite participants and will be responsible for managing meeting logistics (including by providing a suitable meeting location). We recommend a mix of meeting times (e.g., morning, afternoon, early evening). We assume, for the sake of judicious use of City resources, that the meetings will be held over a period of up to four sequential weekdays.

Surveys may underrepresent low-income and immigrant residents because participation in surveys frequently aligns with age, education, and income level, and because an English-language survey may inevitably limit participation by people for whom English is not the first language. To adjust for this bias, our analysis includes weighting of results to census-based demographic data. We can also offer translation of this survey into Spanish for an additional fee if the City chooses to do so.

[Subgoal 4: Achieving community buy-in for increased adoption and awareness](#)

We will consult with the City's Digital Navigator Program, as suggested in the RFP. Working with the City and with contacts identified by the City, we will endeavor to utilize planned and existing meetings and engagement efforts led by government agencies and at the community level, as requested in the RFP. We have conducted similar awareness campaigns, such as for the California Public Utilities Commission (CPUC).

Subgoal 5: Utilizing an opportunity for ACP outreach and model for future adoption efforts if community groups are engaged

The organizations mentioned above could also assist with Affordable Connectivity Program outreach, as noted in the RFP. San Diego's rate of enrollment is roughly equivalent to that of the United States, according to the latest data from Education Superhighway.¹⁵ According to the data as of September 11, 2023, 193,396 San Diego households are eligible and only 75,801 are enrolled, with 45,022 eligible households listed as "unconnected."

Task A2: City of San Diego Digital infrastructure inventory and assessment and Task A3: San Diego Housing Commission Property Assessment

CTC will analyze existing broadband infrastructure, reviewing any data that the City can share regarding broadband and broadband-enabling infrastructure in the area—including the locations of communications towers and potential interconnection points as well as GIS files showing known facilities. We will draw on a range of other publicly available data sources, including the locations of anchor institutions, demographic data, and information about federal grant and subsidy awards. We will also evaluate any anecdotal information about broadband deployment plans in the area.

We understand and agree to comply with the GIS standards and rules set in the RFP's Appendix C, but would like to discuss those in greater detail at the kickoff meeting.

In this task, CTC anticipates leveraging the experience of the San Diego Housing Commission and the City of San Diego Department of Information Technology (DoIT), especially the insights gained through their collaborative digital equity work, as described in the RFP.

In addition, CTC will perform a technologies alternatives analysis in which we assess current and emerging technologies, including fiber, fixed wireless (e.g., CBRS, 5 GHz), and LEO satellite, to evaluate their potential roles in sustainable, scalable solutions to meet the needs of the City. If needed, we will develop a matrix that compares the technologies and aligns with the criteria developed in this and earlier tasks which will compare CTC's findings to information provided by ISPs to better understand actual market conditions. San Diego's hilly geography presents challenges to both wireless and wireline deployments. Permitting issues present additional challenges but the City may have rights of way and other intangible assets – in addition to physical resources – that could be used to address these challenges.

Task A4: Digital infrastructure Private and Public Asset Inventory and Assessment

We have conducted this type of assessment for numerous clients. Typically, our analysis includes but may not be limited to the following tasks:

- Identify and analyze relevant commercial datasets as appropriate. There exist a range of commercial datasets of different levels of usefulness that provide insight into broadband infrastructure and availability. We will incorporate these datasets, if available, into our full analysis.
- Review other relevant maps, studies, documents, or data the City can share.

¹⁵ See <https://www.educationsuperhighway.org/no-home-left-offline/acp-data/>, click on the State of California, and scroll through the list of cities, or filter it, to view data for San Diego.

- Conduct independent research on residential broadband service availability and pricing. We will investigate the websites of broadband providers delivering service to the City and conduct phone inquiries to determine what broadband products are available to residential customers; we will identify available services and collect the general advertised pricing available at a sample of addresses within the City.

Ideally, we will be able to use this multi-step analysis to develop a map that visually approximates what kind of services are available in each part of the City. We will divide the City into regions guided by the City and by the existing data sets described in the RFP, such as the maps produced by the San Diego Association of Governments (SANDAG) in 2022 based on the Census Bureau's American Community Survey (ACS).

[Deliverable B: Market Feedback & Broadband Equity Opportunity Assessment](#)

[Task B1: Conduct market assessments and solicit market feedback](#)

CTC will assess the availability of broadband services, seeking to determine which ISPs are active in the area, what services are available, and what residents pay for varying levels of service. Our assessment will include developing a list of current broadband providers and their costs for services based on publicly available information. We will evaluate Federal Communications Commission (FCC) National Broadband Map data, as well as other relevant data sources, and prepare a high-level assessment of the City's broadband marketplace.

PHASE 2, Strategy and Recommendations

[Deliverable C: City of San Diego Broadband Master Plan Comprehensive Report](#)

We understand the goals of this project include:

1. Increase access and affordability for broadband in the City with a focus on underserved communities, low-income housing residents, and public serving City facilities;
2. Meet State of California standards for broadband speeds;
3. Position the City to coordinate, leverage and implement state and federal broadband infrastructure investments and policy;
4. Identify how City and public resources can be utilized to increase broadband access and affordability;
5. Identify public-private partnerships and how they can be leveraged to increase broadband access and affordability; and
6. Align with City's commitment to equity, sustainability, and City of San Diego Strategic Plan.

Our team will build upon work conducted by entities bordering the City of San Diego and operating within its jurisdiction to ensure that there is a comprehensive and coordinated approach for the San Diego region. We will develop the final report in discussion with the City's Broadband Master Plan working group and key digital equity partners, all of whom will be incorporated into the planning process.

The City of San Diego Broadband Master Plan Comprehensive Report we deliver will:

- Evolve through a data driven and participatory planning process that incorporates key stakeholders who are integral to project objectives and, appropriately centers communities most impacted by the digital divide.
- Integrate relevant City of San Diego equity and digital equity efforts and strategies, related policies e.g. Dig Once, plans e.g. Climate Action Plan, City of San Diego Strategic Plan and partnerships.

- Include a baseline set of data and measurable metrics on broadband access.
- Identify, map and leverage, public and private digital infrastructure assets within the City of San Diego. Determine areas of high need and designate priority locations for broadband access projects in accordance with project goals.
- Deliver actionable, evidence backed solutions and concept level designs as appropriate to achieve long-term, affordable last mile broadband of 100 symmetrical upload/download speed wherever possible.
- Propose solutions and concept level designs specific and achievable within the City of San Diego.
- Provide proposed solutions and concept level designs supported with (but not limited to) the following:
 - business cases;
 - governance and operational models;
 - Cost models
 - market soundings; and
 - matched to funding sources.

Tasks listed below shall include recommendations specifically aligned with City of San Diego circumstances and specific broadband access goals.

Where determined applicable, case studies shall be supplied of projects deemed successful as well as case studies of projects deemed unsuccessful.

Task C1: Comprehensive summary report of benchmark data drawing from phase one findings.
Such a summary report will establish a baseline profile for community broadband access levels against which future project outcomes will be measured.

Task C2: Identification of priority project area/s based on composite information and rubric priority formula.

Based on metrics to be determined in Phase One and which shall factor in LATA criteria and guidelines.

Task C3: Comprehensive Funding Plan

We will develop a realistic strategy for seeking funding for the municipality's digital equity and infrastructure solutions and other potential efforts to address the digital equity goals. We will draw on our hands-on knowledge of broadband funding opportunities and our extensive experience in assisting in preparing grant applications.

The Infrastructure Investment and Jobs Act (IIJA) contains \$65 billion in funding for broadband deployment and digital equity initiatives. These initiatives include the Broadband Equity, Access, and Deployment (BEAD) Program, with \$42.45 billion to support broadband deployment, mapping, and adoption); and Digital Equity Act Programs, consisting of \$2.75 billion for three grant programs:

- State Digital Equity Planning Grant Program: \$60 million for states and territories to develop digital equity plans
- State Digital Equity Capacity Grant Program: \$1.44 billion for states and territories will fund annual grants for five (5) years to support projects and implementation of digital equity plans

- Digital Equity Competitive Grant Program: \$1.25 billion to fund annual grant programs for five (5) years to implement digital equity projects

Beyond these, the plan will consider Federal, state, and philanthropic funding opportunities including, but not limited to, PEG funds, E-Rate, Capitol Projects Fund, and funding deployed by the California Public Utilities Commission and the Office of the Department of Technology as a result of SB 156.

Our goal here will be to determine whether there is a path toward at least partial funding for viable funding solutions that reduce the digital divide. To make the funding strategy more actionable, we will identify the efforts that the municipality will need to undertake to access each funding option. A comprehensive funding plan will include a roadmap for identified priority projects with 5-year and 10-year timelines.

Task C4: Analysis, models, design and recommendations for strategic and purpose-aligned public/private partnerships that benefit the overall goal of establishing robust sustainable, longterm equitable broadband access at speeds 100 symmetrical.

The plan shall incorporate developing public-private partnerships structures for key projects, including operating revenue, and financing models, and assisting the City of San Diego in determining the optimal structure. A minimum of 3 case studies shall be included.

Task C5: Broadband Model Analysis and Recommendations

Recommendations will incorporate the principles of net neutrality, non-throttling, long-term, sustainable access and affordability, 100:100, a robust and secure network.

Our team will research the various broadband infrastructure models and include options and recommendations on such models, including but not limited to:

- Government-Owned Broadband – the city would own and operate the network and be the service provider of the network;
- Private Sector-Owned and Operated – a private sector partner would build and maintain network and may have open access;
- Utility-Owned Broadband – a utility would own and operate the network and serve as service provider;
- Dark Fiber – open access model where the government would build infrastructure to the curb and the subscriber would then select an Internet Service Provider (ISP) to finish the connection; and
- Automated or Manual Open Access – allow switching of providers in real time, or by network operators making changes, respectively.

We anticipate a minimum of 3 case studies are to be included. This task will also include consideration of cooperative models for broadband infrastructure asset sharing.

Task C6: Strategic recommendations to integrate, leverage and optimize existing, planned and future City of San Diego initiatives, projects and assets.

Examples include Department of Sustainability and Mobility's EB charging infrastructure, micro-grid project and public dashboard Equitable Climate Index KPIs, Public Libraries CENIC network expansion, and the Planning Department's Environmental Justice Goals.

Considerations shall be made for streamlining and optimizing permitting processes for city, public, and private projects which prioritize affordable, equitable broadband access.

Task C7: Governance, ownership, and partnership strategy recommendations

The City of San Diego broadband infrastructure internal organizational and management structure will be considered.

Task C8: Digital Equity Adoption & Implementation Plan

This task will include but not be limited to recommendations for network adoption models as well as:

- sample plans for broadband access and a digital equity coalition;
- sample templates for public facing dashboard of digital equity KPI; and
- identification of specific funding sources and required resources.

Task C9: City of San Diego Socio-Economic impact and Historical Analysis of Community Internet Access

This task shall include a historical and up to date analysis of internet service access in the City of San Diego focused on underserved areas of the city. It shall include the impact access or lack of access has had on economic and social opportunities, including health, food access, education, and employment for residents and local businesses. Information on anchor institutions, CBOs and local businesses will be included.

This task shall also examine potential socio-economic benefits for underserved areas of universal, affordable, robust broadband access. The consultant shall consider usage of oral histories, interviews and focus groups with community stakeholders, pricing/affordability, data gathered in previous phases, precedence of housing redlining, community-led initiatives, and efforts surrounding this issue.

Task C10: Preliminary Digital Infrastructure Design

To meet the City of San Diego's identified goals, our engineers will prepare a preliminary, system-level design and cost estimate for an infrastructure solution, which might include a municipal network, a fiber or fixed-wireless network serving a targeted area such as a public housing development, or a public Wi-Fi network.

The network will be designed to connect the facilities and areas we identify in collaboration with the municipality's project team. Based on the high-level design, our engineers will prepare cost estimates and supporting documentation for fiber and/or wireless deployment, inclusive of anticipated construction labor, materials, and engineering.

The cost estimates will be an important part of business modeling, partnership planning, and a potential procurement process. To be clear, we will not be providing a blueprint-level network design or cost estimate. Rather, we will be providing a conceptual design, high-level maps, and a system-level overview of the potential infrastructure, which in turn will become a roadmap for financial analysis and business modeling, and for future decisions (including detailed engineering and construction).

As is typical in this phase of a construction project, the cost estimates will not be based on a detailed design, environmental assessment, or geotechnical analysis of soil composition. As a result, actual costs may vary due to unknown factors, including the presence of subsurface hard rock. We will incorporate suitable assumptions.

In this effort, we will design broadband infrastructure and technical specifications based on findings from Phase One Tasks along with analysis and findings in the Broadband Master Plan Comprehensive Report and designated stakeholder input.

We anticipate the digital infrastructure designs to include but not be limited to the following:

- Detailed technical diagram to include network topology in a format preapproved as acceptable
 - Detailed infrastructure map to include:
 - Transport types currently in existence (wireless, fiber, microwave, cellular, etc.) within each location and the feasibility, cost and ease of installation and management.
 - Potential for using various transport types (wireless, fiber, microwave, cellular, etc.) not currently in existence or within each location and the feasibility, cost and ease of installation and management.
 - Ease of extending, connecting to and/or utilizing infrastructure
 - Necessary tools, labor and technology required to enable implementation
 - Distance
 - Data throughput possible
 - Any potential barriers or challenges to adoption (including location and details of barriers), expansion or use of different infrastructure components
 - Any potential existing or planned future infrastructure that can be leveraged to provide cost effective high bandwidth to each location
 - Ownership
 - Number of people within the region and ability for each of the existing technologies to provide minimum of 100:100
- Estimated costs and potential funding mechanisms including financing models
- Recommended business, delivery and/or partnership model
- Scope and location (e.g., middle-mile and last-mile infrastructure)
- Leverage existing public infrastructure, private infrastructure including complementary infrastructure deployment efforts such as City of San Diego Public Library CENIC expansion efforts, SANDAG's Regional Fiber Ring and the statewide open-access middle mile network

PHASE 3, Delivery Readiness

In this phase, the CTC team will assist the City of San Diego take the actions necessary to have identified priority broadband infrastructure projects shovel ready.

[Deliverable D: City of San Diego Equitable Broadband & Technology Access 3 and 5 Year Workplan containing Infrastructure Design & Implementation Roadmap for Identified Priority Projects](#)

Our team will work with the City of San Diego to deliver essential work product necessary to have broadband infrastructure projects shovel ready. This may include, but will not be limited to, final draft network design, and a phased implementation plan containing a deployment roadmap, identification of specific funding sources and required resources, and template agreements required for implementation efforts.

The consultant shall also provide applicable work product for environmental impact studies, engineering studies, and any other studies that may be needed to make broadband infrastructure projects shovel ready. The firm shall include guidance on necessary future RFP processes, including preparation of a statement of work for such studies.

In addition, the final draft plan shall include guidance and/or applicable work product on the RFP process, preparation, and funding for any initiatives that may be needed to make expanded or new digital equity projects shovel ready.

We anticipate the workplans containing:

- Network scope and costs; System-level design including proposed routes, infrastructure, technical specifications, build timing, associated costs, and schematic diagrams;
- Phased implementation plan containing a deployment roadmap including but not limited to updated physical and virtual blueprints of the existing and planned network infrastructure;
- Preliminary network design and technical specifications;
- Recommended Business and Delivery Model, public/private partnership models, cost share models, JPAs, fiber sharing agreements;
- Cost model
- Organizational and governance structure;
- Identification of specific funding sources and required resources;
- Template agreements required for implementation efforts;
- Applicable work product for environmental impact studies, engineering studies, and any other studies that may be needed to make broadband infrastructure projects shovel ready.;
- Descriptions of any potential regulatory or legal issues, including any necessary right of entry permitting ; and
- Guidance on necessary future RFP processes, including preparation of a statement of work for such studies.

6.03: For Task A3, The San Diego Housing Commission requires the creation of a representative sample of the broadband characteristics of all of their properties. Please propose how your firm would develop this data set.

Our team is aware that the San Diego Housing Commission (SDHC) will operate as a key partner in the City's broadband access planning activities. It is our understanding that the SDHC and the City have established a years-long digital equity partnership through the co-design and rollout of the city's Digital Navigator Program and joint computer access efforts for low-income residents.

Additionally, we are aware that SDHC has 2,401 affordable housing units spread among 150 properties. Of these, 189 are public housing units, while the remainder are deed-restricted at 80% of the area median income.

An optional solution to address the need for a representative sample of the broadband characteristics of all SDHC properties is the design and administration of a residential survey.

Our team has the capability to conduct a phone survey of housing residents to develop characteristic data regarding barriers to meaningful use of broadband throughout the SDHC properties. (To be clear, this will not be a web-based survey, which produces unreliable data.) The survey would include a representative sampling of residents as a means of enabling detailed, meaningful analysis of challenges and needs across the critical areas of digital equity including access, adoption, devices, tech support, and digital skills and literacy.

In our experience, phone surveys represent the optimal approach for collecting statistically valid data for a digital equity needs assessment. The survey will provide the municipality with critical baseline information that can be updated on a periodic basis to determine changes over time and measure the efficacy of digital equity solutions and community interventions.

The survey, if delivered via phone through CTC's established Ambassador Call Center, can be conducted in both English and Spanish, by trained staff with extensive experience conducting telephone digital equity surveys of lower-income households.

7: Additional Considerations

7.01: As a subject matter expert in the development of broadband master plans please identify any additional considerations that would be in the best interest of the City of San Diego which have not already been incorporated into the RFP solicitation.

At the City's direction, our team can prepare, present, and answer questions (onsite or virtually) at briefings, Budget and Government Efficiency Committee, and City Council meetings.

2.15 Redacted Version of Proposer's Response to the RFP

An additional, redacted version of Proposer's response to the RFP containing all requested redactions of confidential, proprietary or other information which proposer alleges to be exempt from disclosure under the California Public Records Act, including the legal basis for such exemption, as fully set forth in Section 9. Public Records below.

CTC Technology & Energy understands and acknowledges that by submitting a proposal, any information submitted in response to this RFP is a public record subject to disclosure unless the City determines that a specific exemption in the California Public Records Act (CPRA) applies.

We have not submitted information deemed confidential or proprietary thus resulting in a redacted version of our response to the RFP.

Cost Proposal

CTC proposes to perform the tasks described in Appendix A for an estimated total, not-to-exceed cost of \$495,100. CTC will invoice the client, based on an agreed project timeline and milestone schedule, upon the completion of tasks. We will not bill based on the estimated breakout of hours.

As requested in Exhibit D, Pricing Summary and Proposed Milestone Scheule, we have provided the estimated hours per task or an estimated cost per deliverable.

Table 1. Project Initiation
(Milestone Percentage = 5%)

Deliverable	Description	Total Hours	Total Cost
Project Initiation	Stakeholder Engagement and Planning	40	\$10,500
Total – Initiation Deliverable		40	\$10,500

Phase 1 – Data Gathering

Table 2. Deliverable A. Digital Infrastructure Gap & Asset Analysis
(Milestone Percentage = 14%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
A1	Community Broadband Access mapping: market and needs assessment of businesses and residences	80	\$18,500
A2	City of San Diego Digital infrastructure inventory and assessment	60	\$17,500
A3	San Diego Housing Commission Property Assessment	40	\$10,500
A4	Digital Infrastructure Private and Public Asset Inventory and Assessment	80	\$18,500
Totals – Deliverable A		260	\$65,000

Table 3. Deliverable B. Market Feedback & Broadband Equity Opportunity Assessment.
(Milestone Percentage = 6 %)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
B1	Conduct market assessments and solicit market feedback	80	\$26,400
Totals – Deliverable B		80	\$26,400

Phase 2 – Strategy and Recommendations

Table 4. Deliverable C. City of San Diego Broadband Master Plan Comprehensive Report
(Milestone Percentage = 30%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
C1	Comprehensive summary report of benchmark data drawing from phase one findings	20	\$6,600
C2	Identification of priority project area/s based on composite information and rubric priority formula	80	\$26,400
C3	Comprehensive Funding Plan	80	\$26,400
C4	Analysis, models, design and recommendations for strategic and purpose-aligned public/private partnerships	200	\$81,200
C5	Broadband Model Analysis and Recommendations	60	\$17,500
C6	Strategic recommendations to integrate, leverage and optimize existing, planned and future City of San Diego initiatives, projects and assets	80	\$26,400
C7	Governance, ownership, and partnership strategy recommendations	40	\$13,200
C8	Digital Equity Adoption & Implementation Plan	20	\$6,600
C9	City of San Diego Socio-Economic impact and Historical Analysis of Community Internet Access	40	\$13,200
C10	Concept Level Digital Infrastructure Design and technical specifications	120	65,000
C11	Presentations for City Executive Leadership and Stakeholders	20	\$6,600
Totals – Deliverable C		760	\$289,100

Phase 3 – Delivery Readiness

Table 5. Deliverable D. Digital Infrastructure Gap & Asset Analysis

(Milestone Percentage = 30%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
D	Digital Equity Implementation Plan	240	\$93,600
Total – Deliverable D		240	\$93,600

Phase 4 – Committee and Council Action

Table 6. Final Deliverable. Consultant will be required to prepare, present, and answer questions (onsite) at briefings, Budget and Government Efficiency Committee and City Council meetings.

(Milestone Percentage = 15%)

Task	Description	Total Hours (by Task)	Total Cost (by Task)
Final	Committee and Council Action	40	\$10,500
Total – Final Deliverable		40	\$10,500

Table 7. Deliverable Cost and Milestone Summary:

Phase	Deliverable	Description	Total Hours (by Deliverable)	Total Cost (by Deliverable)	Milestone Percentage
Project Initiation	N/A	Stakeholder Engagement	40	\$10,500	5%
1	A	Digital Infrastructure Gap & Asset Analysis	260	\$65,000	14%
1	B	Market Feedback & Broadband Equity Opportunity Assessment	80	\$26,400	6%
2	C	City of San Diego Broadband Master Plan Comprehensive Report	760	\$289,100	30%
3	D	Digital Equity Implementation Plan	240	\$93,600	30%
4	Final	Committee and Council Action Preparation and Participation	40	\$10,500	15%
TOTAL – ALL DELIVERABLES			1420	\$495,100	100%

CTC reserves the right to adjust budgeted hours, moving resources and time from one task to another, as needed, as long as it does not exceed the fixed fee.

This estimate does not include costs associated with any potential supplementary requests made throughout the project timeline. Should the client request additional resource time or services outside of scope, CTC will bill at the hourly rates outlined below.

The table below lists the hourly rates for CTC and REBEL staff for any requested services outside the agreed-upon scope of services.

Hourly Rates	
Staff/Labor Category	Hourly Rate
CTC Technology & Energy	
CTO/Director of Business Consulting	\$300
Principal Analyst / Engineer	\$275
Senior Analyst / Engineer	\$250
Staff Analyst / Engineer	\$225
REBEL	
Senior Program Manager	\$395

Senior Analyst	\$260
Financial Analyst	\$220

Signature: Joanne S. Hovis
Joanne S. Hovis (Mar 25, 2024 19:01 CDT)

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