CONNECTMT ARPA PERFORMANCE TESTING AND AS-BUILT REQUIREMENTS

This document details the ConnectMT American Rescue Plan Act (ARPA) Program's performance testing and as-built requirements. It is not intended to be inclusive of all closeout requirements, and subrecipients should review their grant agreement to ensure they meet all requirements.

PERFORMANCE TESTING

Subrecipients will conduct performance testing and submit test results to ConnectMT according to the following process:

- ConnectMT will select locations within the subrecipient's project area for performance testing. ConnectMT will identify a minimum of ten (10) locations within the project area where the applicant has confirmed active subscribers.
- The subrecipient will conduct speed and latency tests for each location selected by ConnectMT.
- Tests will be conducted, at a minimum, once per hour from 6:00 PM to 12:00 AM, for a minimum total of six tests per location.
- Tests will be conducted from the premises of the selected active subscribers to a remote test server located at, or reached by passing through, an FCC-designated Internet exchange point (IXP), which is any building, facility, or location housing a public Internet gateway that has an active interface to a qualifying Internet Autonomous System (ASN).[1]
- Subrecipients must notify ConnectMT in writing of the completion of testing on the same day testing is completed. Subrecipients must submit test results to ConnectMT as soon as possible, but no later than three calendar days after testing is completed.

[1] More information about acceptable test paths and remote server locations is available at https://www.usac.org/wp-content/uploads/high-cost/documents/Tools/PMM-Test-Paths-and-Remote-Server-Locations-1.pdf. Qualifying ASNs are listed in Appendix B of Connect America Fund , WC Docket No. 10-19, Order on Reconsideration, 34 FCC Rcd 10109 (2019), which can be found at https://docs.fcc.gov/public/attachments/FCC-19-104A1.pdf.

- Test results must conform to the following Performance Testing Specifications:
    - At least 80% of the speed test results must be at a minimum of 80% of the speed tiers committed to in the subaward agreement for upload and download.
    - At least 95% of latency measurements must be at or below 100 milliseconds round-trip time.
    - If none of the locations selected by ConnectMT subscribes to a top-tier speed offering, the subrecipient will include testing at a location that does subscribe to a top-tier speed offering. If there are no locations within the project area that subscribe to the top-tier service offering, the subrecipient will upgrade one of the locations selected by ConnectMT temporarily to allow for testing at the top-tier speed.

AS-BUILT TECHNICAL DOCUMENTATION

OVERVIEW

Upon notifying ConnectMT that their project is ready for closeout, the subrecipient must provide ConnectMT and any designated engineering personnel "as-built" technical documentation for all infrastructure deployed within the project scope. The as-built documentation verifies project completion and demonstrates that the deployed infrastructure, service area, and equipment match those in the subaward agreement and are capable of delivering the minimum proposed speeds consistently to all potential customers in the project area.

The as-builts should represent the final installation of the network infrastructure, incorporating any changes from field markups of engineering drawings during construction that are reflected in the final installation.

Subrecipients must identify any differences between the as-builts and the network design in the subaward agreement, and explain the reasons for the differences and any impacts or changes to the project budget in the subaward agreement as a result of these differences. Subrecipients must also validate the performance characteristics of any deployed infrastructure and equipment that differs from the specifications in the subaward agreement.

REQUIREMENTS FOR AS-BUILT DOCUMENTATION

ConnectMT strongly prefers as-built documentation to be submitted as shapefiles or CAD files (DWG or DXF), which enable detailed analysis and integration with GIS and other engineering tools to create a post-construction survey map. At minimum, as-built drawings must be submitted in PDF format. Note: If shapefiles are not submitted, precise Lat/Long

coordinates must be included within the PDFs to allow field survey crews to locate and identify the infrastructure.

The as-builts shall identify the location of any underground and aerial plant attributes in the engineering drawings for the project. As-builts should include:

- Vaults/handholes
- Conduit paths
- Pedestals
- Splice enclosures
- Cabinets
- Fiber cable
- Pole numbers or identifiers (for aerial infrastructure)
- All cable support structures (for aerial infrastructure)
- Any attributes that can identify the physical location of aerial fiber

In addition to the above, subrecipients are encouraged to submit any supporting information that may assist with the final installation and close-out review of infrastructure within a project area. Such information might include:

- For vaults/handholes: length and width dimensions
- For conduit: size, type, and quantity of all conduits installed, as well as offset and depth measurements
- For pedestals/cabinets: model number/type and fiber capacity
- For splice enclosures: size and model when available, as well as slack storage
- For fiber-sequential cable lengths: footage can be marked at the “beginning” and “ending” points for each pole, handhole, and slack loop throughout the entirety of the cable segment
- Attachment heights that adhere to the applicable pole attachment agreement and licenses

As applicable, the as-builts shall identify wireless network attributes necessary to validate that the network adheres to the design:

- Base station locations
- Antenna heights
- Make and model of base station equipment
- Antenna gain
- Frequency bands used
- RF signal maps in GIS format in each frequency band
- Locations able to be served
- Backhaul configuration

- Calculations of available upstream and downstream capacity taking into account line-of-sight and oversubscription

As applicable, the as-builts shall identify all fiber routes that the subrecipient has made available for open access and specify:

- Total strand count made available for open access, documented throughout the entirety of each cable segment
- Network access points

As applicable, the as-builts shall identify all locations where the subrecipient offers colocation of existing and new facilities for public safety communication networks and specify:

- The building or telecom hut footprint
- Estimated quantity of available colocation space (i.e., number of equipment rack RUs)

As applicable, the as-builts shall identify all locations where the subrecipient offers new internet access or a connection increase to an unserved or underserved health care facility that provides telehealth services and specify:

- The official name of the facility offered new internet access
- The building footprint

As applicable, the as-builts shall identify community centers where the subrecipient is providing three years of new services at no cost and specify:

- The official name of the facility offered new, no-cost internet access
- The building footprint