ReConnect Engineering Requirements 101 – Talking Points

Introduction –

Slide numbers and titles/descriptions align with the PowerPoint deck presented on March 12, 2019.

Slide 1: Cover Slide

Welcome to the Engineering 101 Module Presentation for the ReConnect Program. My name is Travis Featherby, and I will be your guide through today's presentation.

This presentation will provide a high-level overview of the engineering requirements for the program and application, a description of the linkages between the engineering components of the application and other components, an overview of the assumptions that an applicant should provide to support their engineering information, and key considerations for engineering sections of the application.

Before we begin, I want to let the audience know we will not be doing and live question-and-answer session. Feel free to submit your questions through the chat function. We will collect questions, review and post answers on the ReConnect website following the webinar.

Slide 2: Announcements

I will now walk you through some program announcements. On February 6, 2019, USDA announced that the funding window for ReConnect has been extended to allow applicants to access technical assistance provided by USDA.

The final funding windows were announced in a notice in the Federal Registrar on February 25, 2019. Applications for the 100 Percent Grant funding category will be accepted through May 31, 2019. Applications for the 50/50 Loan/Grant Combination funding category will be accepted through June 21, 2019. Applications for the 100 Percent Loan funding category will be accepted through July 12,2019.

Slide 3: Genesis of Broadband Pilot Program

The President's Rural Prosperity Task Force, chaired by Secretary of Agriculture Sonny Perdue, found that E-connectivity is fundamental for economic development, innovation, advancements in technology, workforce readiness, and an improved quality of life. Access to broadband in our rural communities will have the effect of increasing productivity in farms, mining, factories, forests, and small businesses across rural America through access to high-speed Internet.

The awards made under this program will bring high-speed broadband to rural areas that lacked sufficient access to broadband; deliver broadband connection and high-quality service, which will enable technologies critical to rural communities, such as precision agriculture; fuel long-term economic development and opportunities in rural America; and, support improved access to education and health care in rural communities.

Slide 4: The Act

In the 2018 Consolidated Appropriations Act, Congress provided $600 million dollars to the Broadband Pilot Program, which we are now calling the ReConnect Program. This program is a pilot program offering a unique federal financing option in the form of grants, loans, and combinations thereof to extend broadband service to rural areas.

The Program focuses on areas that completely lack or have insufficient access to broadband service. Sufficient access is defined in the statute as 10 Mbps (Megabits per second) downstream and 1 Mbps upstream. If an area has less than 10/1 service, then the area is eligible.

The Program includes incentives, which are built into the application process, that encourage applicants to focus on farms, businesses, educational facilities, health facilities, and critical community facilities in solution planning. The minimum requirement is to provide 25 Mbps downstream and 3 Mbps upstream to rural America.

Slide 5: Timeline

Now we are going to walk through the program timeline. There are a few key dates that we want to highlight. The official program announcement and the release of the Funding Opportunity Announcement (FOA) were made in December 2018. The Federal Register notice providing guidance on the application deadlines was published February 25, 2019. Next, the date that applications will start being accepted will be announced in March 2019.

The first deadline for submitting applications is in May 2019. Applications will be accepted for the 100 Percent Grant funding category through May 31, 2019; applications will be accepted for the 50/50 Loan/Grant Combination funding category through June 21, 2019; and, applications will be accepted for the 100 Percent Loan funding category through July 12, 2019.

Slide 6: Linkages

Several components of the application will be evaluated together. This slide shows the relevant linkages between the engineering components and the other application requirements.

Applicants should be mindful of the required synergies between sections of the application. Specifically, engineering submissions must align to financial submissions. Inclusions and assumptions in one section must percolate through each linked or relevant section of an applicant's submission. Failure to adequately align sections of an application may increase the complexity of USDA's review of that application. There must be correlation between the assets applicants input into the Capital Investment Workbook (CIW) and the environmental section of the application. For example, the number of towers should be consistent across sections.

The requirements in this presentation are specific to the ReConnect Pilot Program. Therefore, applicants may see some differences from past programs.

Slide 7: Program Design (Transition Slide)

We will now walk through the program design.

Slide 8: Grant and Loan Products

There are three products offered through this program: loans, a combination of loans and grants, and grants. Across all products, there is a minimum speed requirement of 25 Mbps downstream and 3 Mbps upstream. The 50/50 Loan/Grant Combination and 100 Percent Grant products will be incentivized to provide higher speeds via the scoring criteria. An applicant must map polygons for Proposed Funded Service Areas (PFSAs) for all funding categories. Thresholds for eligible service areas are determined by the funding category the applicant applies for. These thresholds are the same for the 100 Percent Loan and 50/50 Loan/Grant Combination applications, but differ from the 100 Percent Grant application.

For 100 Percent Grant applications, the polygon must be in an area where 100 percent of the households do not have sufficient access to broadband defined as 10 Mbps downstream and 1 Mbps upstream. For the 100 Percent Loans and the 50/50 Loan/Grant Combination, the polygon must be in an area where 90 percent of the households do not have sufficient access to broadband defined at 10 Mbps downstream and 1 Mbps upstream.

Slide 9: Key Engineering Components of the ReConnect Application (Transition Slide)

We will now dive into the key engineering components of the ReConnect application.

Slide 10: Applicants Will Need to Submit

The FOA requires that the applicant submit a network design certified by a professional engineer. The network design must be developed to the level of maturity so that a cost estimate can be developed. For example, anticipate a number of fixed wireless towers to be deployed at a number of locations using point-to-point microwave backhaul to an existing Point of Presence at a number of locations for interconnect.

Applicants must submit a network diagram certified by a professional engineer. Applicants must submit project costs and a buildout timeline that is also certified by a professional engineer. The referenced professional engineer must be certified in at least one of the states where there is project construction. The certification from the professional engineer must state the proposed network can deliver broadband service at the required level of service to all premises in the PFSA. There is a sample template for the engineering certification online at the ReConnect webpage under resources, which applicants are encouraged to use as a guide.

Applicants will be asked to submit the following items as part of the executive summary in the application: the solution overview, network speeds, services, premise type, timelines, overall subscriber count, and coverage/locations.

Slide 11: Applicants Must Demonstrate

The type of funding an applicant chooses to apply for will determine which percentage of households the PFSA will need to include. For a 100 Percent Loan, the PFSA must demonstrate 90 percent of the households do not have sufficient access to broadband defined as 10 Mbps downstream and 1 Mbps upstream. For a 50 Percent Loan and 50 Percent Grant Combination, the PFSA must demonstrate 90 percent of the households do not have sufficient access to broadband defined at 10 Mbps downstream and 1 Mbps upstream. Finally, for a 100 Percent Grant, the PFSA must demonstrate 100 percent of the households do not have sufficient access to broadband defined at 10 Mbps downstream and 1 Mbps upstream.

Service Areas Validations (SAVs) will occur in PFSAs to validate the speeds of existing services. USDA will be evaluating the technical feasibility of the application by reviewing the requirements pursuant it to the FOA. The following slides will drill down into what applicants must be prepared to submit on behalf of the technical characteristics of their proposed project or projects.

Slide 12: Applicants Should Consider

The ReConnect Program is technology neutral. Any technology or combination of technologies must meet the minimum construction requirements of 25 Mbps downstream and 3 Mbps upstream to all premises.

Slide 13: Detailed Overview of Required Application Materials (Transition Slide)

We will now go through a detailed overview of required application materials.

Slide 14: Required Application Materials: A Network Design

The network design should represent the way an entity plans to build their proposed network to meet the ReConnect program requirements. The network design should identify if and how applicants are connecting to an existing network. Specifically, the network design must include a description of proposed technology that will be used to deliver the broadband services and detailed descriptions of the applicant's existing and proposed networks.

As previously mentioned, the ReConnect program is technology neutral. Applicants will be able to choose from technologies including Fiber-to-the-Premises, Hybrid-Fiber-Coax, Fixed Warless-Licensed, Fixed Wireless-Unlicensed, and other. If "other" is selected, applicants will be required to insert a description of the technology or technologies they choose.

A network design must be developed to the level of maturity in which a cost estimate can be performed. Applicants will be expected to cross reference their network design with items such as subscriber numbers and miles of service coverage. Applicants will have the ability to and must upload documents to support the proposed project or projects network to supplement the descriptions provided in the application. Applicants should consider uploading comprehensive documents depicting their network designs.

The greater degree of accuracy and clarity that can be developed and input in the application will help inform and facilitate the review process. For the network design, applicants should include considering components such as projected subscriber counts and installation considerations. Applicants should also consider components of each of the following layers: access, distribution networks, poor network, and existing network integration.

Components to consider in the access layer include service rings or areas, technology, access equipment, and licensing. Components to consider in the distribution network layer include technology, backhaul (such as ring or star), distribution equipment, and licensing. Components to consider in the core network layer include technology, poor equipment requirements, facility requirements, high availability and redundancy, data storage, interconnect, and licensing. Finally, components to consider in the existing network integration layer include type (whether internal or affiliate), shared elements, interoperability, and licensing.

Slide 15: Required Application Materials: A Network Diagram

Network diagrams are used to map connections of the telecommunications network. Applicants are required to upload their Existing Network Diagrams if applicable, their proposed Network Diagrams, and other additional documents. The Existing Network Diagram provided will help USDA to understand the infrastructure the applicant plans to improve or replace to provide broadband service to all premises in the PFSA.

Applicants should consider the components of the proposed network when creating the network diagram such as: core elements, distribution network elements, and access elements. The certification from the professional engineer must state that the proposed network can deliver broadband service at the required level of service to all premises in the Proposed Funded Service Area. If the applicant is requesting the points for providing a 100 Mbps upstream and 100 Mbps downstream, the certification must also state that the proposed system is capable of delivering this service to all premises; a list of all required licenses and regulatory approvals needed for the proposed project and how much the applicant will rely on contractors or vendors to deploy the network facilities.

USDA will look for the network diagram to clearly communicate data flows. The more substantial and relevant an applicant's supporting documentation provided is, the better USDA will be able to conduct an informed review of the application and applicant assumptions.

Applicants should consider uploading information on the following items to help inform and support their proposed network. These items include technologies, notes, bandwidths, distance (such as estimated distances if connecting outside of a given building), interconnections, connections to Internet Service Providers and other carriers, service area or rings, and central office or tower placements.

Slide 16: Required Application Materials: Buildout Timeline and Milestones

A buildout timeline includes milestones defined as points throughout the project lifecycle that identify key project stages or development changes. An applicant must provide a buildout timeline to include key milestones on a quarterly basis for wireless solutions and annually for wired solutions for the lifespan of the proposed project.

The buildout of the project must be completed within five years from the date funds are made available. Buildout is considered complete when the network design has been fully implemented, the service operations and management system infrastructure is operational, and the awardee is ready to support the activation and commissioning of individual customers to the new system. An applicant must also inform USDA of buildout support for reasonableness and data points for each buildout milestone input into the system to submit the application.

USDA will review an applicant's Buildout Timeline for feasibility and reasonableness, given the technology and resources estimated. In addition to the inputs required for the Buildout Timeline and Milestones, applicants are encouraged to upload supporting documentation that provides more detail related to the proposed project or projects Buildout Timeline and Milestones. For USDA to better understand the project and the financials, applicants are encouraged to give a narrative about the NFSA (Non-funded Service Area) that are included in the project. Applicants must include a milestone that identifies the proposed start time of the project. Applicants are also required to detail the buildout schedule per year for wired solutions or components. However, applicants are required to detail the buildout schedule per quarter for a wireless solution or component.

Applicants should consider a project lifecycle approach, which includes four phases: Planning, Design, Deployment, and Operations. Activities within each of these phases and associated risks should be thought through. Key assumptions applicants should consider include personnel assumptions such as internal use or contractors, licensing and permitting timelines, and elements that have already been completed.

Slide 17: Required Application Materials: Project Costs

Applicants will provide project costs via the Capital Investment Workbook (CIW). The CIW represents a detailed list of costs associated with the project. Questions answered by applicants in the project information section can have downstream effects on the application and required inputs. In some cases, depending on the project type and network design.

Applicants, if applicable, due to information provided earlier in the application process, will input information into the CIW for the following network design or project financing components: Proposed Funded Service Areas (PFSA), Non-Funded Service Areas (NFSA), or Unadvanced Prior Loan Funds (UPLF).

USDA will review the CIW in order to assess technical feasibility and to determine that applicants have thoroughly thought through the proposed network design. This CIW will auto-populate the Capital Investment Schedule (CIS) where applicants must project costs throughout the project's lifecycle per asset. We will continue to talk about project cost information in the coming slides.

Slide 18: Required Application Materials: Project Costs Continued

The applicant must input the information below for service areas and Common Network Facilities for the three categories listed on the previous slide: project asset category, project asset type, description, quantity, measure unit, and associated project asset cost per unit. Applicants must understand the assets input into the Capital Investment Workbook and other cost projections input into the Capital Investment Schedule will inform financial documents required in later parts of the application. It is vital that applicants are aware of the categories and types of assets that will be required to submit as part of their application. Therefore, on the next slide we will dive deeper into the options given to applicants when identifying their proposed project asset.

Note, in preparing budget costs for the equipment and materials, Rural Utilities Services by American requirements apply and are the governing requirements. It may not be necessary to have a vendor chosen at this point, but applicants should understand what infrastructure will be required for their network. Applicants should also understand the linkage that project Buildout Timeline and Milestones have with the project cost input into the application portal, which will inform the proposed project or projects feasibility. We will now dive deeper into project asset categories and types.

Slide 19: Project Asset Categories and Examples of Asset Types

Project assets required by the application inform the level of detail that must go into the initial design of a proposed network in order for an applicant to submit an application. Examples are outside plant, such as conduit systems; buildings, such as new construction or pre-fab huts; towers, such as guyed towers or tower improvements; customer premise equipment, such as smart meters; network and access equipment, such as routing equipment; non-depreciable assets, like right-of-way procurement; support assets, like construction vehicles; professional services for engineering, environmental etc. (These professional services will need to be allocated per asset in the Capital Investment Schedule in the year in which the professional service expenses will be anticipated to be incurred); and finally, other expenditures.

All project assets must comply with the following: 7 CFR part 1788 and 7 CFR part 1970 located at rd.usda.gov/ under the publications, in the section for regulations and guidelines; the ReConnect Program Construction Procedures, located at reconnect.usda.gov.; and, any successor regulations found on the agency's website, including other guidance from the agency. By applicants inputting these project assets, it helps USDA assess the degree of accuracy the applicant is providing. For example, it will be identified how much cost the applicant is allocating to a specific asset which will be able to raise red flags on an application if a disproportionate amount of cost is allocated into a category inconsistent with industry practices.

Not all asset categories and types are required to be part of a proposed project. Applicants will have the ability to select an "other" option in the application when selecting their asset type, but not the asset category. Applicants should consider the use of professional services such as engineering and environmental services to increase quality assurance and mitigate future project risks.

Slide 20: Capital Investment Workbook (CIW)

On this slide you will see a screenshot of the Capital Investment Workbook from the application system. The CIW requires applicants to detail cost estimates and the timing of construction and project expenses over the buildout period. USDA will assess the applicant's financial position over the course of the buildout period. Therefore, the capital investment schedule should fit with the financial forecast. Again, not all asset categories and types will be required of applicants to report if they are not part of the proposed project or projects. The network documents uploaded in the ReConnect application portal should be detailed and support the information applicants input into the CIW.

Slide 21: Capital Investment Schedule

On this slide you will see a screenshot of the Capital Investment Schedule from the application system. The CIS is required to show the proposed system can be built within five years. The CIS will also act as a link between the project plan and the project financial allocations. Not all applicants will have the need to input costs for the entire five-year projection if their proposed project buildout timeline is not five years in duration. When projecting project costs, applicants should keep their project timeline front of mind.

Slide 22: Construction Map (Transition Slide)

I will now touch on the construction map interface within the application.

Slide 23: Construction Map Interface

In the Environmental section of the ReConnect Application "Construction Map". This map includes 14 different resource layers, such as Flood Hazard Zones and National Wetlands Inventory, that will assist an applicant in completing the Environmental Questionnaire portion of the application once an applicant draws all the sites and routes and provides a description for each. The map also includes a Service Area Layer identifying all of the service areas provided on the Service Area Map.

The first step an applicant will have to do after accessing the map is to identify whether a site or route will be drawn, and a name will have to be provided for that site or route. Applicants are required to draw polygons that represent "sites" for their proposed project. Applicants must be prepared to add and describe project assets at each site. For example, applicants will be asked descriptive questions about each new or existing building, tower, access road, and parking lot (if the proposed project includes these assets).

Applicants will follow a similar procedure for routes which are defined as the path in which the proposed technology will be installed. If the proposed technology is a wireless solution, the applicant will not be required to draw routes on the map. For non-wireless solutions, the applicant must draw lines which represent the route or routes of their proposed technology. If the applicant has a combination of technology types or plans to install the technology with different methods, applicants must delineate that by adding multiple routes. For example, if a cable is going to be laid in existing conduit systems for a certain distance but then switches to aerial cables on existing poles for another distance, one route will specifically be created for the portion of the cable in the existing conduit system and the other route would be for the cable to be attached to existing poles. Applicants may draw a single site or route then describe that site or route by jumping between pages in the application or an applicant can draw all sites and all routes then complete the descriptions all at once.

Applicants cannot complete the Environmental Questionnaires until after all the sites and routes have been drawn and the descriptions for each site and route have been provided in the system. Applicants will see the following statement and check box to select to affirm the site and route descriptions are complete. The statement reads: "By checking the box I affirm that I have completed the Construction Map and Site Route Descriptions." While checked, the Construction Map and Site and Route Descriptions will lock for completion of the below Environmental Questionnaires. To edit the Construction Map and/or Site Route Descriptions, uncheck the box. Changing the information provided on the previous pages may result in changes to the requirements for the Environmental Questionnaires.

Slide 24: Post-Award Considerations (Transition Slide)

We will now discuss post-award considerations for applicants.

Slide 25: Post-Award Engineering Reporting Considerations

Awardees will be required to submit annually updated service area maps through the USDA mapping tool showing the areas where construction has been completed and premises are receiving service until the entire proposed funded service area can receive the broadband service. At the end of the project, Awardees must submit a service area map indicating that all construction has been completed as proposed in the application. If parts of the proposed funded service area have not been constructed, USDA may require a portion of the award to be rescinded or paid back. Awardees must submit semiannual reports for three years after completion of the project, which must include the following technical items: the types of facilities constructed and installed; the speed of the broadband services being delivered; and the broadband adoption rate for each proposed service territory, including the number of new subscribers generated from the facilities funded.

Slide 26: Available Resources (Transition Slide)

Finally, I would like to touch on some available resources that can provide guidance as you prepare applications.

Slide 27: Available Resources

USDA Rural Development is providing the following resources and technical assistance to applicants as they prepare to apply for ReConnect. Rural Development (RD) will conduct a series of workshops around the country designed to provide assistance to applicants as they apply. These workshops will have RD experts and provide detailed walkthroughs of the applications. Our first workshop is scheduled for April 2nd and 3rd in Washington, Pennsylvania. There is a link to register available on the events page of the ReConnect website. Rural Development will continue to facilitate webinars addressing Frequently Asked Questions and specific aspects of the application. RD's ReConnect website contains information, fact sheets, and other resources that can be used when developing applications. Information on the site will be updated and added as we approach the application windows. RD is maintaining a help desk to respond to questions submitted via the ReConnect website.

I would like to thank you for attending today's webinar. As a reminder, we are collecting questions submitted through the chat during today's webinar. We will leave the chat box open for about five more minutes to allow participants to submit questions. Answers to these questions will be posted to the ReConnect website in the coming days.

[Event Concluded]