



COMMONWEALTH of VIRGINIA

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September 30, 2021

MEMORANDUM

TO: The Honorable Ralph S. Northam

CC: The Honorable Luke Torian, Delegate and Chair, House Appropriations
The Honorable Janet Howell, Senator and Chair, Senate Finance and Appropriations
Dan Timberlake, Director, Department of Planning and Budget

THROUGH: The Honorable Daniel Carey, MD
Secretary of Health and Human Resources

FROM: M. Norman Oliver, MD, MA 
State Health Commissioner

SUBJECT: Chapter 0001 of the Acts of Assembly of the 2021 Special Session II
VDH Reports Required for ARPA Project Appropriations

As required in Chapter 0001 of the Acts of Assembly of the 2021 Special Session II, the Virginia Department of Health (VDH) is providing implementation plans and schedules for the five projects requiring the submission of these documents. VDH will provide additional details in the quarterly update report that is due by December 31, 2021.

These reports includes the following ARPA project appropriations to VDH:

1. Broadband connectivity at local health departments
2. Electronic Health Records
3. Facility Infrastructure at VDH Central Office and Local Health Departments
4. Modernization of VDH administrative systems and software
5. Records Management System

Our staff has worked diligently since the August special session to turn these appropriations and proposals into detailed plans for implementation. We are excited about the opportunity to use these funds to improve the efficiency and effectiveness of VDH and to improve the lives of the people of Virginia.

If you have any questions or need additional information, please let me know.

FACILITIES BROADBAND

American Rescue Plan Act (ARPA) State Fiscal Fund (SFF) Workplan



9/30/2021

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Context for ARPA Initiatives

The Virginia Department of Health (VDH) is excited about the opportunity presented by the appropriation of ARPA State Fiscal Funds in the August 2021 Special Session II of the General Assembly to improve public health in Virginia. The agency views this as a once in a generation opportunity and we will work tirelessly to maximize use of funds to create and sustain these initiatives. Simultaneously, VDH is fully engaged in responding to COVID-19 and protecting the health of the people of Virginia from that disease. Such emergency response efforts may impact the agency's ability to complete the ARPA initiatives on schedule. At this time, VDH is creating project plans to minimize the impacts of emergencies on local health departments in the first year and will be flexible in our implementation of these initiatives as dictated by the emergency response. When changes or impacts to plans occur, VDH will reflect that in future updates.

Executive Summary

The Virginia Department of Health (VDH) seeks to upgrade the internet infrastructure of its Local Health District offices and client service areas within health department facilities throughout the Commonwealth to enable delivery of broadband service at speeds of at least 100 Megabit per second (Mbps) download and 20 Mbps upload. The COVID-19 public health emergency has underscored the importance of universally available, high-speed, reliable, and affordable broadband coverage as millions of Virginians rely on the internet to participate in critical activities, remote school, healthcare, and work. The workplace environment has shifted considerably since the onslaught of the COVID-19 pandemic, making the reliance on a stable broadband connection necessary to work remotely during instances when it may be dangerous to congregate indoors, and to remotely serve clients through video conferencing to protect the safety of both customer and employee. As a result, \$8 Million of ARPA State Fiscal Fund dollars have been allocated to the development and improvement of technology improvements, for which each office needs reliable broadband internet.

With nearly 96% of assessed VDH buildings currently unserved or underserved by broadband (speeds less than 25 Mbps download and 3 Mbps upload), significant internet infrastructure upgrades are imperative for VDH to adequately serve Virginians in the aftermath of COVID-19. Through fiber optic broadband connection, wireless 5G broadband connection, or reliable wireline connection, the ARPA SFF funding will be used to upgrade unserved and underserved VDH facilities.

Objective(s)

The objective of this initiative is to add a broadband connection to unserved and underserved VDH buildings that will reliably deliver speeds of 100 Mbps download and 20-100 Mbps upload, to:

- Enable internet speeds for the operation of an Electronic Health Records (EHR) system, digitized records storage, and increasingly automated administrative systems at each location.
- Enable adequate bandwidth for employees to virtually access systems and allow them to effectively work remotely.

- Provide speeds adequate for two-way video conferencing between VDH and other stakeholders or patients who are unable to visit in person due to COVID-19.
- Increase the capacity of each office to access online systems and resources to more efficiently complete daily operations and serve clients.

Background

Throughout the past year and a half, VDH has been assessing the current state of local health district buildings' internet speeds and upgrading the bandwidth, when deemed appropriate. Out of the 76 facilities assessed thus far, 68 had original download speeds of less than 5 Mbps, meaning they are underserved by broadband. While the bandwidth improvements through these wireline upgrades will increase the internet capabilities of these buildings, 69 of the same 76 buildings are upgrading to service of 20 Mbps download or less, still leaving these locations underserved by broadband.

According to the ARPA State Fiscal Fund (SFF) Interim Final Rule, “many households use upload and download speeds of 100 Mbps to meet their daily needs”. The Interim Final Rule further clarifies that “a household with two telecommuters and two to three remote learners today are estimated to need 100 Mbps download to work simultaneously.” The local health district offices are no different – many buildings have several workers and are becoming increasingly reliant on internet to serve stakeholders and clients that are adapting to a virtual-first location coming out of the COVID-19 pandemic.

In order to adequately serve patients and employees in the wake of the COVID-19 pandemic, enable the success of the other ARPA SFF funding initiatives, and to stay in compliance with the ARPA SFF Interim Final Rule – which requires service that “reliably meet[s] or exceed[s] 100 Mbps download speed and between at least 20 Mbps and 100 Mbps upload speed; and be scalable to a minimum of 100 Mbps download speed and 100 Mbps upload speed” – each local health department building will need to implement broadband service of at least 100 Mbps download and 20 Mbps upload speed.

Additionally, through a different ARPA SFF initiative, VDH local health districts are expected to procure and implement an EHR system, a Records Management system, and upgrade the Administrative Systems. Upgrades to reliable broadband internet to at least 60 Mbps are necessary to support the successful implementation of key initiatives such as the minimum bandwidth requirement of 60 Mbps for the EHR system, and similar requirements for the additional technology systems.

Problem Definition

The existing internet speeds in the local health department's offices and buildings are inadequate for efficient work in an increasingly virtual environment and does not meet the minimum bandwidth requirements for the operation of an EHR system and other upgraded administrative systems.

Executive Sponsors, Key Stakeholders, and Initial Stakeholder Management Plan

Executive Sponsor(s)

- Tiffany Ford, *Deputy Commissioner, Administration*
- Suresh Soundarajan, *Chief Information Officer, VDH*
- *Local Health District Directors*
- *Local Health District Staff*

Proposed Solution, Feasibility, and Approach

To properly plan for the scope of work to upgrade bandwidth at the facilities, the first step is to estimate the type of upgrade that will be needed at each facility – either a Fiber Broadband Connection, a Wireless Connection, or a Wireline Connection – by identifying facility locations in relation to available carriers and networks, as well as size of each facility to understand the type of service and equipment necessary. This initial step is important in capturing the full scope of the work and enables preparation and adjustment of contractor outreach and department resources to deliver on-time execution of this initiative.

Once the initial estimates are captured for each facility, individual, on-the-ground site assessments will be conducted for each of the 135 VDH facilities that are candidates for bandwidth upgrade. These assessments will be conducted with a standardized checklist, with a goal of determining the type of broadband connections available, and the exact hardware needed. Based on the results of the survey, a determination will be made on which type of broadband service will be used at the site. For sites that currently have reliable service of at least 100 Mbps download and 20 Mbps upload (100 Mbps/20 Mbps), no updates will be made to the sites. For sites that do not currently have 100 Mbps download and 20 Mbps upload speeds, the potential outcomes for broadband upgrades are outlined below:

1. **Fiber Broadband Connection** – For those sites with direct access to a service provider’s fiber optic network, a fiber optic connection will be used to provide wired broadband service to the site. This method will be prioritized when possible, as it provides the best reliability and adheres to the ARPA SFF Interim Final Rule suggestion that “recipients are also encouraged to prioritize investments in fiber optic infrastructure where feasible.”
2. **Mobile Broadband Connection** – For sites that do not have a nearby fiber-optic broadband network and do have adequate wireless network throughput, a broadband connection of greater than 100 Mbps download and 20-100 Mbps upload speeds will be created using the wireless network. Though not as reliable as a physical connection, this method still provides reliable broadband internet at a cost less expensive than a hardwired connection. Additionally, these sites will continue to maintain their smaller bandwidth wired connections to serve as a redundant internet connectivity measure (should there ever be interruptions in mobile service).
3. **Wireline Broadband Service** – For sites that have neither access to a fiber-optic broadband network or a mobile network with adequate strength to provide 100 Mbps/20 Mbps, broadband

service can be provided through wired connection at speeds of 100 Mbps/20 Mbps. Given that the monthly service costs exceed that of options 1 or 2, and that the necessary wire improvements to increase the bandwidth (on buildings that have not yet received this update) is time and resource intensive. As such, this option is reserved only in instances where neither options 1 nor 2 are feasible.

As sites are surveyed and broadband upgrade options identified, each site will be added to the proposed solution. After determining with contractors the ideal batch order size for each solution option, the confirmed sites will wait in a queue for each of the three project types, and once that batch size threshold is hit, the sites will be submitted as an order and the installation process will commence.

Proposed Solution Team

The solution team will be comprised of VITA partnership, VDH resources and staffing, and private sector suppliers.

Required Capabilities, Initial Risks, and Risk Management

In order to enable the successful execution of VDH broadband updates, the following are capabilities needed and risks to be effectively mitigated throughout the entire duration of the initiative.

Required Capabilities

- Ability to reliably assess sites for the best-suited connection option, and to do so in a timely enough manner to allow for the ongoing installation and activation of broadband at sites.
- Ability to manage the coordination of site assessors, equipment ordering, installation, and activation of different services over all sites.

Initial Risks

- The broadband updates will need to be completed in a timely manner for the successful implementation of the EHR, Records Management, and Administrative Systems initiatives.
- Sites are unique with varying access to broadband service. The initial plan assumes some degree of uniformity across all sites to identify likely candidates for fiber, wireless, or wireline broadband and the associated implementation complexity and costs; however, until individual site assessments are completed the exact needs at each site will not be known.
- There is a dependency on external vendor coordination to perform site assessments, install wiring and hardware upgrades, and activate the service. These are more specifically outlined below for each service type:
 - Wireline Broadband – these upgrades require significant coordination with the vendor to perform site assessments, with local construction contractors to upgrade the wiring and

- conduit, with IT contractors to install the hardware, and with the vendor to activate the service.
- Fiber Broadband – these upgrades will require coordination with local construction contractors to upgrade the wiring and conduit, with IT contractors to install the hardware, and with the service provider to activate the service.
- Wireless Broadband – these upgrades require the least outside dependency, relying only on hardware installation and remote service activation.
- There is another dependency on the availability of the hardware that is necessary to make the broadband upgrades at each site – if there are supply delays on inventory, that has the potential to impact the broadband upgrade progress.
- There is a need to access buildings and for the workers to follow the COVID-19 protocols in place.

Risk Management

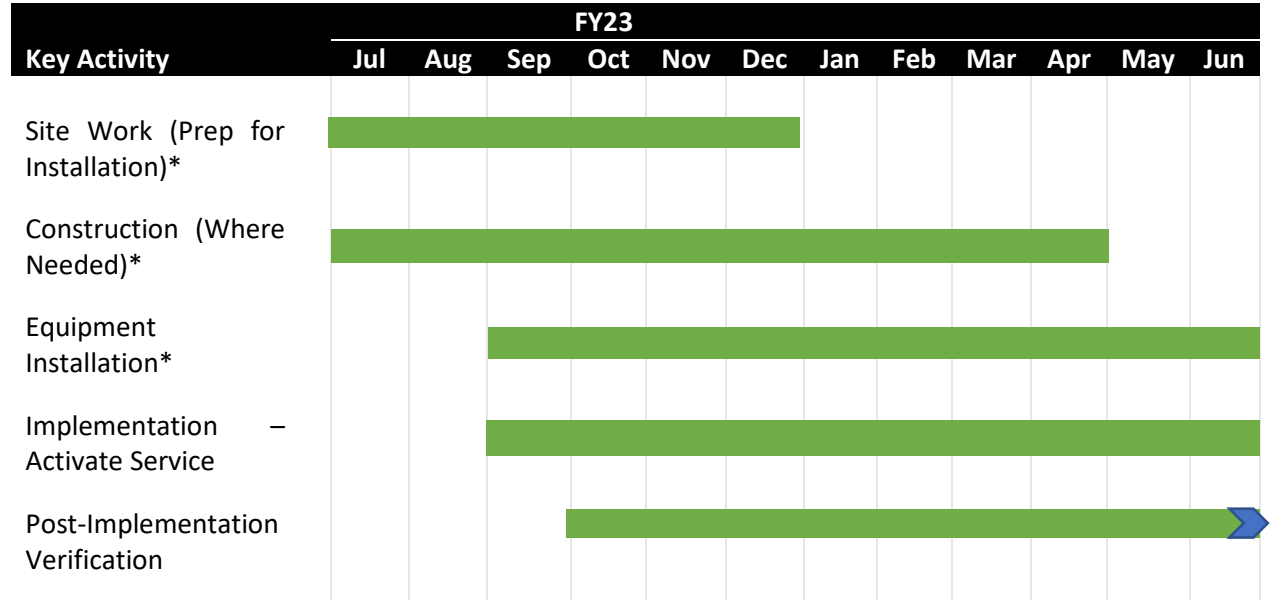
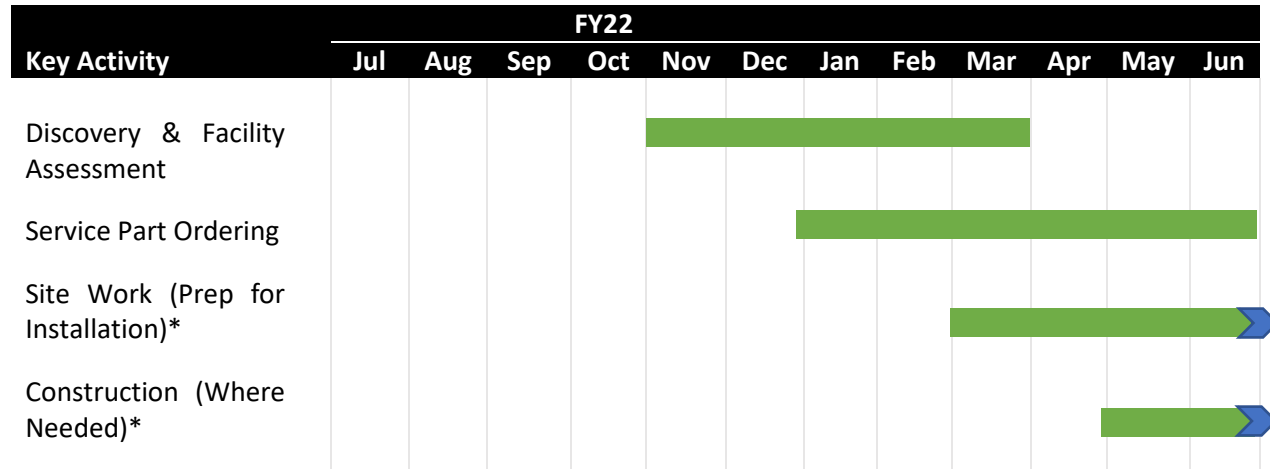
- The initial step to estimate the scope of work and number of installations by type to understand the resources needed to complete the project in the outlined timeframe.
- The initial site estimates will include high and low estimates of expenses, resources use, and time to complete to “plan for the worst” and build in contingency for unexpected outcomes from site assessments.
- Based on the results of the initial site assessment, the initiative team will inform contractors of the scope and timeline of the expected work so that sufficient resources are in place before implementation begins. Additionally, by confirming the optimal “Batch Size” for each installation type, the department will enable contractors are fulfilling site orders at their optimal speed.
- The initial estimate and “Batched” implementation approach will be established to enable consistent availability of resources for meet the timeline for site upgrades.

Change Management Considerations

VDH understands that transformation initiatives are successful not only with the right technology, processes, and resources, but also with people who are properly equipped for the changes. Successfully navigating transformation in a highly complex environment requires effective managing business process changes and the way people accomplish work, communications, and stakeholder management to create buy-in at the early stages. VDH will develop and implement an effective change management and communications strategy to establish employee understanding of the initiatives and any impacts to their individual jobs. The strategy will include communication of the goals of the upcoming changes, preparation and alignment of the changes, and an overall building of confidence in the benefits of the changes.

Initiative Timeline, Key Activities, and Milestones

The initiative timeline will be iterative, based on the method of upgrade, vendor, and requirements for site work and construction. Activities with asterisks and arrows indicate an activity that occurs over two or more fiscal years.



Key Activity	FY24												
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Post-Implementation Verification													

- Discovery – Requirements by site – What speed does each site currently have, what speed should the sites have based on activity (EHR vs. WIC vs. ODW for example) – 3 weeks
- Assessment – 4 weeks
 - Sourcing – What are the available options/suppliers/methods available?
 - Vendor site assessment
- Service ordering – 12 weeks
- Site Work - 8 weeks
- Construction – 1 year
- Equipment installation – 4 to 6 weeks
- Implementation – 3 weeks
- Post-implementation verification – 1 week

Initiative Budget

Total Budget: \$8,000,000

Project	FY 2022	FY 2023	FY 2024
Mobile Internet Costs	\$690,000	\$860,000	\$570,000
Broadband (Fiber Optic) Internet Costs	\$690,000	\$1,100,000	\$2,790,000
Wired Internet Costs	\$460,000	\$540,000	\$300,000
Total Initiative	\$1,840,000	\$2,500,000	\$3,660,000