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COMMONWEALTH *of* VIRGINIA
Virginia 9-1-1 Services Board

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Kelvin Wright
City of Chesapeake

Robert Osmond
CIO - VITA

Regional Advisory Committee - June 21, 2022
10:00am - 11:00 am
Informational Meeting (Virtual)

Webex Link

Access Code / Meeting Number 2429 062 4401
Join by Phone +1-866-692-4530

Agenda:

1. Discussion of NG9-1-1 Deployment Observations and Recommendations

   Prepared by VDEM 9-1-1 & Geospatial Services (NGS) Bureau at request of VDEM State Coordinator at the 05/12/2022 9-1-1 Services Board Meeting

2. Public Comment

Regional Advisory Committee (RAC) Meeting

Date: Tuesday, June 21, 2022

Agenda

- Discussion of NG9-1-1 Deployment Observations and Recommendations
- Public Comment

Tracking NG9-1-1 Deployment

Project Coordination with AT&T

- AT&T Project Managers and other AT&T staff track items as they completed.

- AT&T Program Manager regularly shares export of tracking spreadsheets with NGS.

- NGS team members participate on AT&T project calls with PSAPs and maintain visibility on any additional updates or challenges.

- Both AT&T & NGS use the collaboration as an opportunity to verify and cross-check any updates to tasks that appear to be completed.

Measuring Overall Project Completion %

Calculating the Completion Percentage

- 19 Fields from the AT&T Forecasting Spreadsheet

- 5 Options for NG9-1-1 GIS Readiness Level

- 24 Total values that combine for an overall completion percentage between 0% and 100%

  0% = 24 Tasks Remaining

  50% = 12 Tasks Remaining

  100% = 0 Tasks Remaining

General Observations

- **50% Completion Percentage**

  Typically, special construction is completed and the AVPNs begin to be ordered

  Project managers begin to be assigned and project calls commence (typically monthly)

  NG9-1-1 GIS work accelerates

  CHE upgrades and/or i3 configuration work proceeds

- **65% Completion Percentage**

  Project calls start to become more frequent (every 2-3 weeks)

- **75% Completion Percentage**

  ORT and Cutover dates begin to be identified

  Project calls remain every 2-3 weeks until about the final month before ORT where they may move to weekly

- **100% Completion Percentage**
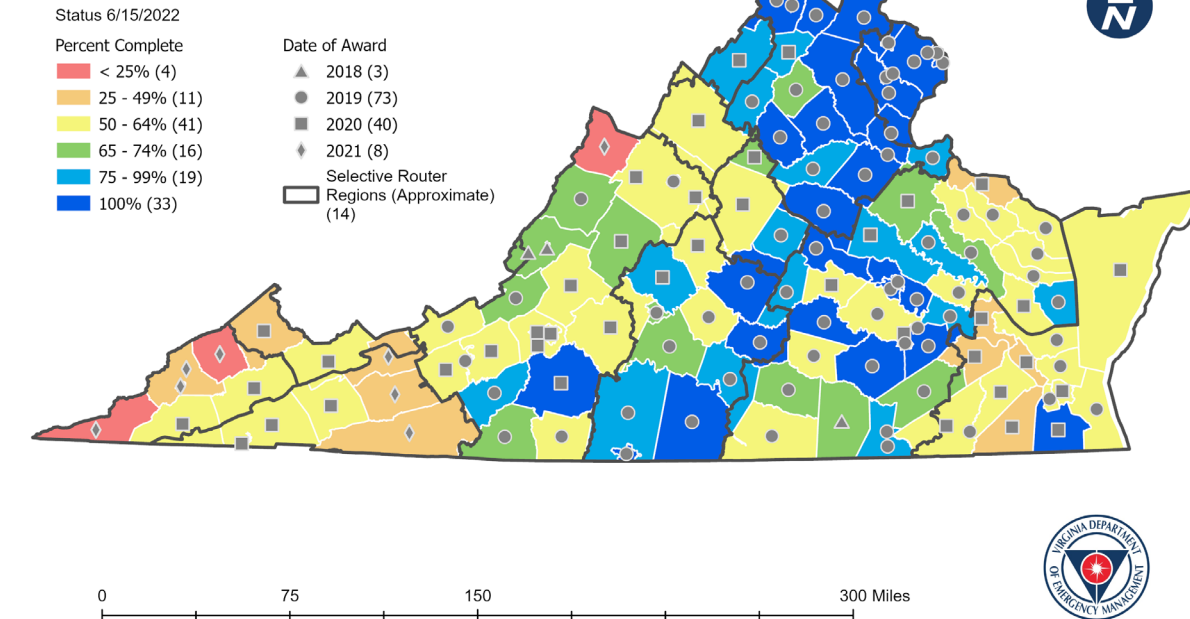
  Cutover was a success

Virginia NG9-1-1 Deployment Percent Complete and Award Dates by PSAP

Overall Project Completion %
VDEM NGS Observations

Items Remaining	% Done	Category
0	100.00%	Deployed
1	95.83%	75-99%
2	91.67%	75-99%
3	87.50%	75-99%
4	83.33%	75-99%
5	79.17%	75-99%
6	75.00%	75-99%
7	70.83%	65-74%
8	66.67%	65-74%
9	62.50%	50-64%
10	58.33%	50-64%
11	54.17%	50-64%
12	50.00%	50-64%
13	45.83%	25-49%
14	41.67%	25-49%
15	37.50%	25-49%
16	33.33%	25-49%
17	29.17%	25-49%
18	25.00%	25-49%
19	20.83%	<25%
20	16.67%	<25%
21	12.50%	<25%
22	8.33%	<25%
23	4.17%	<25%
24	0.00%	<25%

Observations:

- **<50% -** Typically, special construction has not been completed and project managers have not been assigned to the PSAP.

- **50-64% -** Once a PSAP moves into this category, project work speeds up dramatically with recurring meetings and additional quotes for work being executed.

- **65-74% -** This category helps identify the next batch of PSAPs that are moving towards ORT making substantial progress various project tasks.

- **75-99% -** Once ORT dates are identified, there are a handful of critical items remaining. That work generally gets completed in the next ~90 days.

Project Tasks Remaining & Completion Rates Based on 06/02/22 Update

- 2,546 Total Items on AT&T Forecasting Sheet

- 707 Items Remain on the AT&T Forecasting Sheet (66% Complete)

- 181 ALI Items Remaining (Last Step before Cutover)

- 543 Non-ALI Items Remaining (75% Complete)

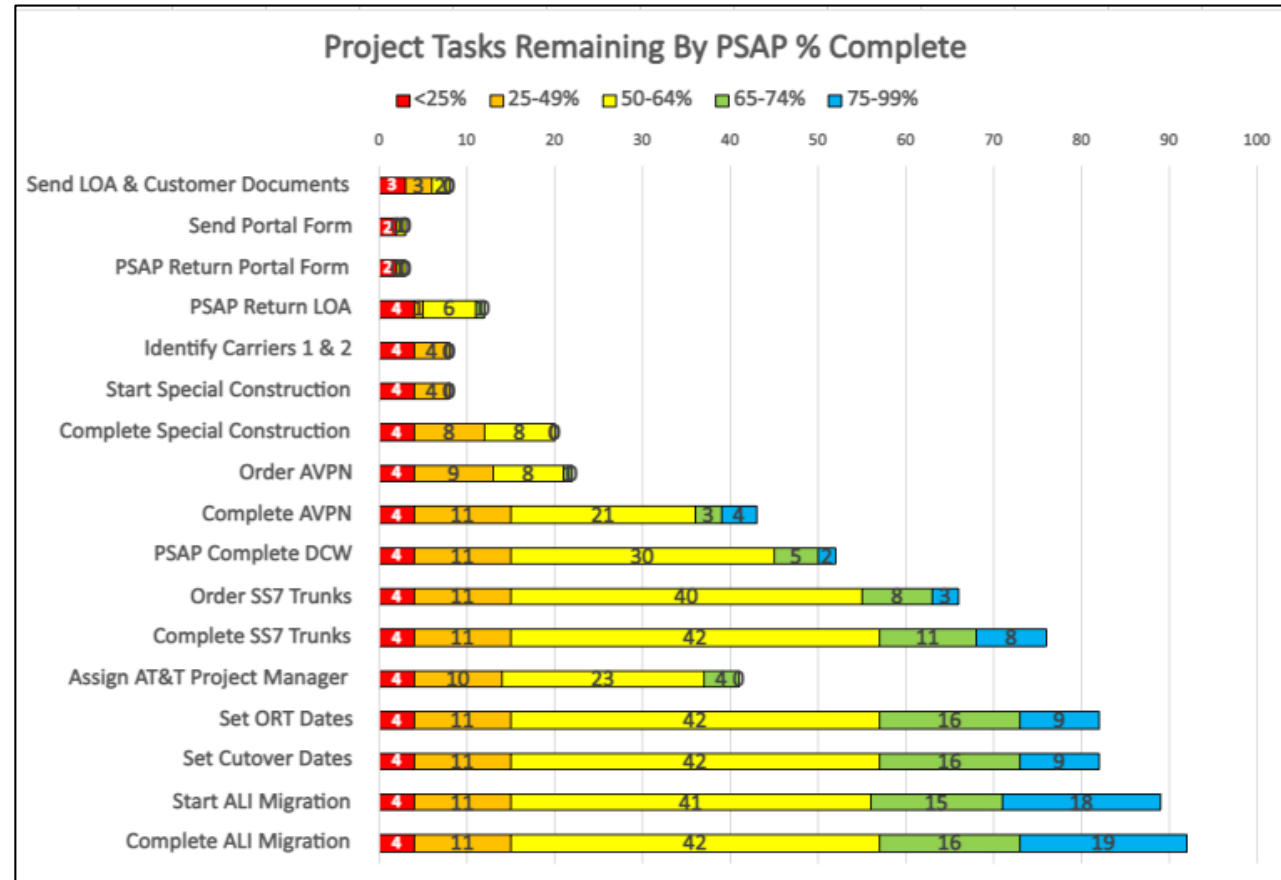Target Benchmarks to Complete Non-ALI Items

5 Non-ALI Items/wk – 06/18/2024

7 Non-ALI Items/wk – 11/21/2023

10 Non-ALI Items/wk – 06/16/2023

12 Non-ALI Items/wk – 04/15/2023

15 Non-ALI Items/wk – 02/13/2023

Project Tasks Remaining By PSAP % Complete

Projections for Cutover Rates

Cutover Rates Over Time
[A] 6/20 to 3/21 - 1 PSAP every 90 days (initial rate)
[B] 3/21 to 09/21 - 1 PSAP every 30 days (3x faster than [A])
[C] 09/21 to 06/22 - 1 PSAP every 12 days (2.5x faster than [B])

Estimated Statewide Deployment Completion Scenarios
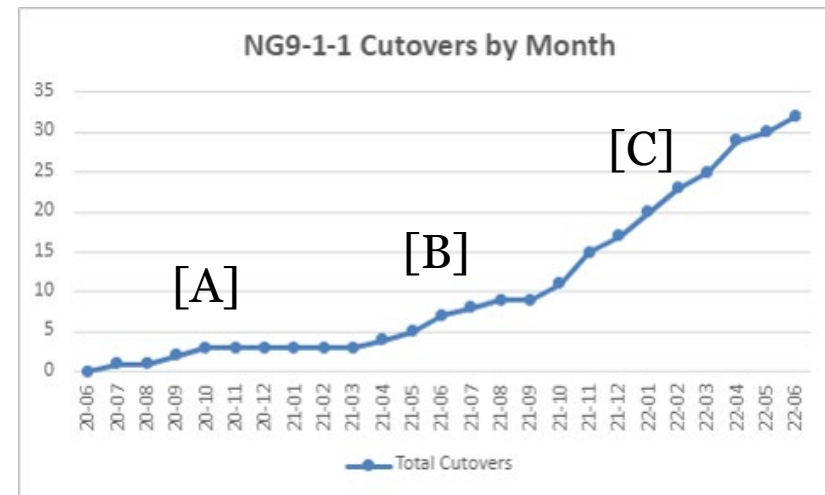### (As of 6/12/2022 - Based on Possible Monthly Cutover Rates)

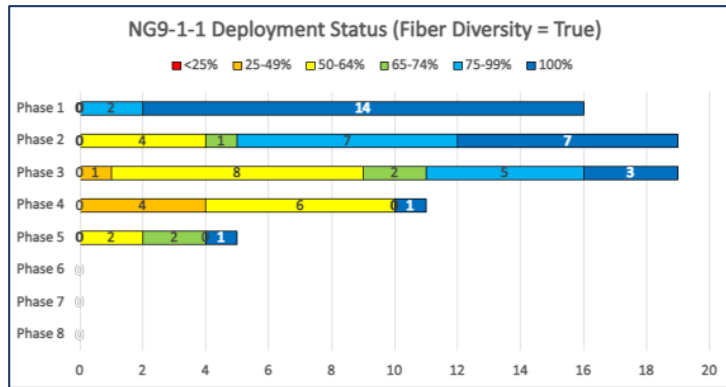| Cutover Every "n" Days	Cutovers Per Month	Months Remaining	Completion Date (est.)
[D] 12	2.50	36.80	6/20/2025
[E] 8	3.75	24.53	6/17/2024
[F] 6	5.00	18.40	12/16/2023

[E] is 1.5x faster than [D]
[F] is 2x faster than [D]
Both are reasonable projections

Diverse Fiber Connectivity Variability By Deployment Phase

NG9-1-1 Deployment Status (Fiber Diversity = True)

NG9-1-1 Deployment Status (Fiber Diversity = False)

NG9-1-1 Deployment Status (Fiber Diversity = TBD)

- Roughly half of the PSAPs have special construction / diversity in their project. This phase takes 6-12 months.

- The remaining PSAPs don't have special construction and use existing fiber from one or more providers, eliminating the 6-12 month construction timeline.

- Special construction was generally not available or not cost effective in phases 6-8 (western half of VA).

- The last group of PSAPs are evaluating their fiber options.
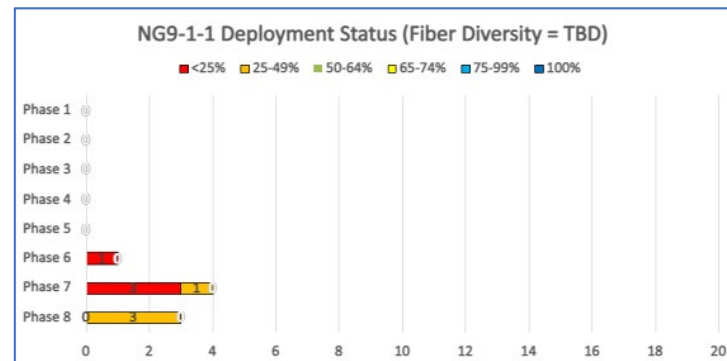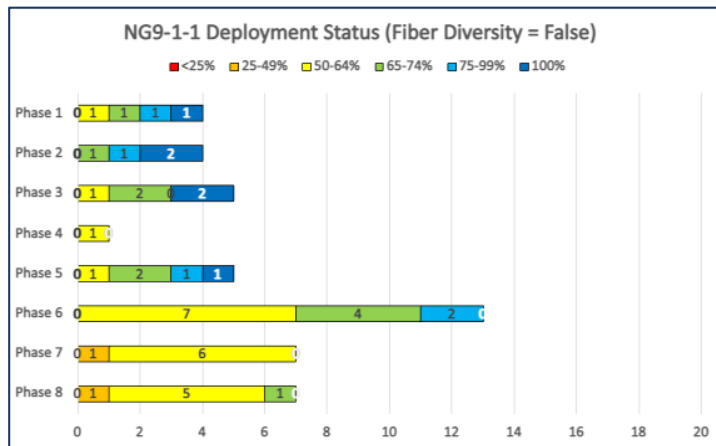
Virginia NG9-1-1 Deployment Percent Complete and Award Dates by PSAP

Virginia Next Generation 9-1-1
Deployment Percent Complete and Award Date by PSAP

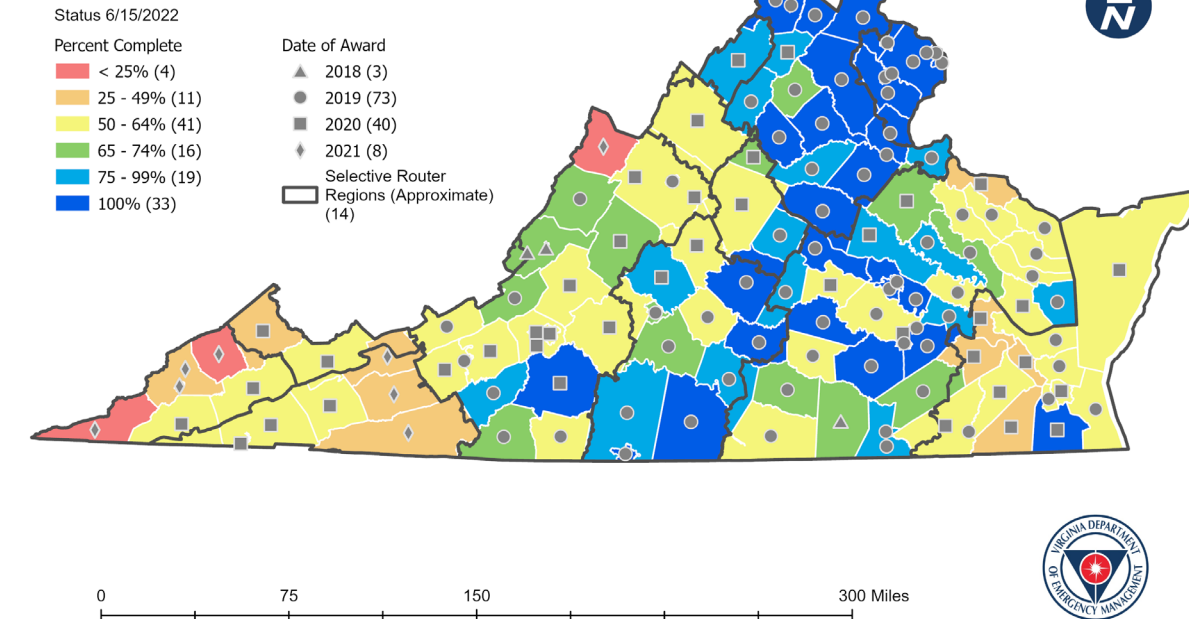9-1-1 & Geospatial Services Bureau

AT&T tracks status for 19 project items in a Forecasting Spreadsheet. Virginia's 9-1-1 & Geospatial Services Bureau tracks GIS Onboarding Status for Next Generation 9-1-1 at 5 levels with input from Intrado. The percent complete is (number of completed items + GIS status) / 24 possible status levels.

The date of award indicates the year that each PSAP received its Next Generation 9-1-1 funding from the Virginia 9-1-1 Services Board. Other status steps could not start until this was complete.

Status 6/15/2022

Percent Complete
- < 25% (4)
- 25 - 49% (11)
- 50 - 64% (41)
- 65 - 74% (16)
- 75 - 99% (19)
- 100% (33)

Date of Award
- ▲ 2018 (3)
- ● 2019 (73)
- ■ 2020 (40)
- ◆ 2021 (8)

Selective Router Regions (Approximate) (14)

0   75   150   300 Miles

Updated monthly based on information from AT&T, Intrado, and the Virginia 9-1-1 & Geospatial Services Bureau.

NG9-1-1 Deployment Recommendations for VDEM State Coordinator

NGS Bureau Internal Adjustments and Recommendations

- Coordination between AT&T and NGS – Meet 2x per month to review regular project tracking updates.

- Private Sector Stakeholder Coordination – Monthly statewide project call for private sector stakeholders to assess progress, identify issues, and project out for the coming months.

- NG9-1-1 Deployment Deadline – Extend by 12 months to July 1, 2024.

- NG9-1-1 User Group – Develop a recurring user group for PSAP stakeholders to ask questions and share experiences about their deployment projects.

- NGS Bureau Staffing – Split duties for NG9-1-1 Project Lead and Regional Outreach Division Director so they are covered by two staff members so one staff member has 100% focus on statewide NG9-1-1 deployment project management.

Contractor Support to Assist NG9-1-1 Project Lead

- Evaluate AT&T project tracking documents to provide more timely and targeted feedback for monthly stakeholder coordination calls. Individualized feedback will be provided to support each stakeholder group including other NGS staff, PSAPs, AT&T, 9-1-1 service providers, fiber providers, CHE maintenance providers.

- Maintain the project metrics developed to support AT&T recurring calls, the NG9-1-1 User Group, stakeholder coordination calls and Board meetings.

- Supplement the work of the NGS Regional Coordinators by participating on individual PSAP project calls to help document challenges and successes across various projects. Work with the NG9-1-1 Project Lead to incorporate holistic observations into briefings for PSAPs, stakeholder groups listed above, and for the Board and its committees.

Contractor Support to Assist NG9-1-1 Project Lead

- Provide surge capacity to support NGS Regional Coordinators as project calls begin to occur more frequently closer to cutover dates, or if there are any staffing gaps that have implications for project call coverage by the NGS Regional Coordinators.

- Supplement existing financial support for the project to improve visibility for PSAPs and NGS staff that incorporates the initial award, all amendments, reimbursement requests, and line-item closeouts.

- Prepare material for and participate in bimonthly Funding Review Team meetings where amendments, scopes of work, and closeouts are review for approval.

- Augment NGS staff to improve the interaction with legacy 9-1-1 and originating service providers as it relates to carrier billing agreements and OSP cost recovery.

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Verizon Comminications

Robert Osmond
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Historical Timeline of NG9-1-1 Deployment in Virginia

2017-08: Fairfax County selected AT&T for Next Generation 9-1-1 Core Services that included pricing for all Virginia localities.

2018-01: The 9-1-1 Services Board (Board) approved the Virginia NG9-1-1 Deployment Plan recommending use of the Fairfax County contract. The plan included a proposed deployment schedule starting in October 2018 and ending in 2022.

2018-03: Legislation was adopted with a deadline of July 1, 2023 for statewide NG9-1-1 deployment. This also provided the Board with discretion to extend this date for good cause, with a minimum of six months written notice to impacted stakeholders.

2018-11: The Board approved the first set of PSAP requests for NG9-1-1 deployment funding and a six-phase deployment schedule from January 2019 to December 2021.

2019-01: Virginia Beach issued an RFP for NG9-1-1 Core Services.

2019-08: Virginia Beach awarded a contract to AT&T for NG9-1-1 Core Services that included the same pricing as the Fairfax County contract. This provided Virginia PSAPs with two NG9-1-1 Core Services contract vehicles with cooperative procurement riders.

2019-11: The Board modified the deployment schedule to include eight phases deploying between January 2020 and December 2021. This update addressed two major concerns. First, CHE vendors needed more time to update their products to work correctly on the AT&T network. Second, roughly half of Virginia PSAPs requested more time to review the Virginia Beach contract prior to making their procurement decision. The schedule update also moved the Fredericksburg region from 4th to 2nd and Tidewater from 2nd to 4th because Tidewater was reviewing the results of the Virginia Beach RFP and the Fredericksburg region had received migration awards using the Fairfax contract.

2020-03: COVID impacts were seen across the country with an impact to on-site work and supply chains. Legislation was adopted to move the Public Safety Communications (PSC) Division and responsibilities for the Board from VITA to VDEM on July 1, 2020.

2020-06: Fairfax County became the first Virginia PSAP deployed on the AT&T network.

2021-03: The Board approved the last set of requests for NG9-1-1 deployment funding.

2021-09: Goochland County became the 10th Virginia PSAP on the AT&T network.

2021-12: Amelia County became the 20th Virginia PSAP on the AT&T network.

2022-05: Madison County became the 30th Virginia PSAP on the AT&T network.

VDEM 9-1-1 & Geospatial Services (NGS) Bureau
Observations and Lessons Learned

Local Procurement Decisions: The choice of CHE vendor, CHE maintenance provider, legacy 9-1-1 service provider and NG9-1-1 service provide are local choices. As a result, the primary relationships are between an individual PSAP and their chosen vendors. This was evident in 2019 when roughly half of Virginia PSAPs chose to wait for the results of the Virginia Beach RFP before making their NG9-1-1 procurement decision.

Stakeholder Responsibilities: Many stakeholders have different responsibilities for tasks and scope within the Virginia move to Next Generation 9-1-1 (the Board, PSAPs, AT&T, NGS Bureau, CHE vendors, Legacy 9-1-1 Service Providers and Originating Service Providers).

Comparison to NG9-1-1 Deployment in Other States: Most other states are deploying NG9-1-1 incrementally, phasing in smaller parts of the end-state solution, resulting in a phased deployment of geospatial call routing, diverse fiber connectivity, and i3 ready CHE. This is different from the approach in Virginia where these components are being deployed at the same time. Additionally, other sites take a more direct role with choosing the vendors, CHE providers, and equipment used by PSAPs. These differences add a level of complexity that is seen in Virginia that may not be seen in other states.

Success Involves Working on Tasks in Parallel: In Virginia, there are roughly 25 major tasks that need to be completed before being able to move a PSAP to the NG9-1-1 environment. Each of these tasks only involve two or three of the stakeholders listed above. When one part of the project like fiber construction takes longer than expected, the stakeholders working on that task should continue to complete the work, but other stakeholders who have responsibility for other areas such as CHE, GIS readiness or document completion should attempt to complete the other portions of the project that are not experiencing a delay.

Each PSAP is Unique: While each project has the same major tasks, the nature of the work needed for each PSAP differs to the unique configuration of stakeholders, equipment, and resources for each site. The variability and complexity make it challenging to many PSAPs to manage a project of this complexity.

Moving From a Phased Approach to Statewide NG9-1-1 Deployment: The Board-approved phased approach to NG9-1-1 deployment was very effective for obtaining funding and coordinating the start of work in a phased / structured manner. However due to the complexity and variability at each site, the completion time for PSAPs in the same geographic region varies greatly. Once work on a PSAP begins using the phased approach, work on each PSAP will continue until they are able to deploy. This will result in some PSAPs from earlier or later phases deploying out of order, but this is necessary to keep the deployment timeline from extending our several years into the future.

Stakeholder Feedback on Overall Project Complexity: Based on conversations with each stakeholder group in May and June 2022, each stakeholder commented that they did not fully anticipate the complexity of this project until recently. Similarly, they provided feedback that NGS charts, graphs, maps, reports, and other project coordination resources have been instrumental in helping them focus on their respective tasks while gaining visibility on upcoming PSAPs within their respective area of responsibility. This also helps stakeholders to anticipate resource requirements to overcome potential supply chain challenges that may exist at any given time.

Tracking the Rates for Project Task Completion and Cutovers: While recent discussions about NG9-1-1 deployment have centered around impacts from the pandemic, the Board made several schedule modifications between 2018 and 2019. Each of those adjustments occurred prior to the first cutover in June 2020. As a result, they were unable to incorporate the speed/rate of individual task completion and the speed/rate of successful cutovers into the updated statewide cutover schedule. A sample size of roughly 20-30 PSAP deployments is appropriate before updating statewide deployment estimates.

NGS Bureau Internal Adjustments and Recommendations

Coordination between NGS and AT&T: NGS Bureau staff and AT&T meet twice a month to review regular updates to project tracking documents. NGS performs additional analysis on the AT&T information to develop supplemental briefing and coordination material, and broadly shares that analysis.

Private Sector Stakeholder Coordination: Targeted information can be provided to the multitude of stakeholders supporting NG9-1-1 deployment in a more coordinated fashion. NGS staff will begin to hold a monthly call open to 9-1-1 service providers, fiber providers, CHE maintenance providers and AT&T to address private sector coordination. This will streamline how these stakeholders receive statewide project updates and will also provide a forum for discussing emerging deployment trends and successes, and to resolve any significant issues or concerns.

NG9-1-1 Deployment Deadline: Staff recommend extending the NG9-1-1 deployment deadline by 12 months to July 1, 2024. If additional extensions should be needed, staff recommend future extensions in 12-month increments, matching with the state fiscal year.

NG9-1-1 User Group: While NGS staff currently support a NG9-1-1 GIS User Group, staff recommend the development of a NG9-1-1 User Group for PSAP stakeholders focusing on all deployment related tasks and activities to provide the opportunity for questions and feedback in all areas, not just NG9-1-1 GIS.

NGS Bureau Staffing: Currently, the NGS Regional Outreach Division Director manages the day-to-day supervision of the division and the NGS Regional Coordinators. The director also currently serves as the lead for NG9-1-1 project management within the NGS Bureau. These duties should be split among two people/positions with one staff member managing the Regional Outreach Division and another staff member serving as the NG9-1-1 Project Lead.

Requirements for Contractor Support to Assist the NGS Bureau and the NG9-1-1 Project Lead

Evaluate AT&T project tracking documents to provide more timely and targeted feedback for monthly stakeholder coordination calls. Individualized feedback will be provided to support each stakeholder group including other NGS staff, PSAPs, AT&T, 9-1-1 service providers, fiber providers, CHE maintenance providers.

Maintain the project metrics developed to support AT&T recurring calls, the NG9-1-1 User Group, stakeholder coordination calls and Board meetings.

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Augment NGS staff to improve the interaction with legacy 9-1-1 and originating service providers as it relates to carrier billing agreements and OSP cost recovery.