



Virginia Department of
Emergency Management

9-1-1 and Geospatial Services Bureau (NGSB) Regional Town Halls

Date: August 15-18, 2022

Agenda

1. Welcome
2. Introduce the 9-1-1 and Geospatial Services Bureau
3. Review of Actionable Roadmap
 - Feedback on roadmap
 - Priorities and pain points
 - Local response and emerging technology
4. Statewide NG9-1-1 Deployment
5. Virginia Geographic Information Network (VGIN)
6. 9-1-1 Cost Study
7. Open Discussion



NGS Bureau

- Continuation of a conversation that started about two years ago on July 1, 2020
- The Virginia Information Technologies Agency's Integrated Services Program was “shifted and lifted” into the Virginia Department of Emergency Management as the 9-1-1 and Geospatial Services (NGS) Bureau
- This action was the result of legislation



NGS Divisions

- The NGS Bureau consists of the Public Safety Communications (PSC) Division, the Virginia Geographic Information Network (VGIN) Division, and the Regional Outreach Division
- The Code of Virginia ([§44.146.18:5 through 44.146.18:6](#)) establishes the PSC and VGIN Divisions and assigns specific powers and duties to each
- The Regional Outreach offices were established in early 2006 as a recommendation from the 9-1-1 community to provide consolidated, centralized program for delivery of services to local government 9-1-1 and geospatial professionals



Bureau Governance

- The 9-1-1 Services Board ([§56-484.13&14](#)) provides direction and planning for the PSC Division and the VDEM state coordinator serves as the 9-1-1 Services Board chair
- The VGIN Advisory Board was created ([§2.2-2423](#)) to advise the VGIN division and its coordinator on issues related to the division's powers and duties



Actionable Roadmap – NGS Collaboration with VDEM

The following are business process improvements that are in progress or under consideration. Based on the nature of each recommendation, we've categorized them by Culture & Behaviors; Roles & Structures; Core Processes; Governance; and Compliance.

Culture and Behavior

Short Term
Consider/Initiate in 1–2 Months

- NGSB and VDEM document expanded mutual understanding in agency's strategic plan

Medium Term
Consider/Initiate in 3–6 Months

- Consider impact of VDEM's mission expansion into technology with VGIN integration and NG9-1-1
- Increase routine collaboration among NGSB, Disaster Services, and VEST through an established framework



Actionable Roadmap – NGS Collaboration with VDEM

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Roles and Structures

Short Term

Consider/Initiate in 1–2 Months

- Review and implement updated duties for PSC Division
- Develop a SOW for contractor support for statewide NG9-1-1 project
- Hire Regional Outreach Division Director

NG9-1-1

- Identify dedicated NG9-1-1 project manager(s)
- Gather feedback on how NG9-1-1 infrastructure may be utilized during Regional Town Halls

Long Term

Consider/Initiate in 6+ Months

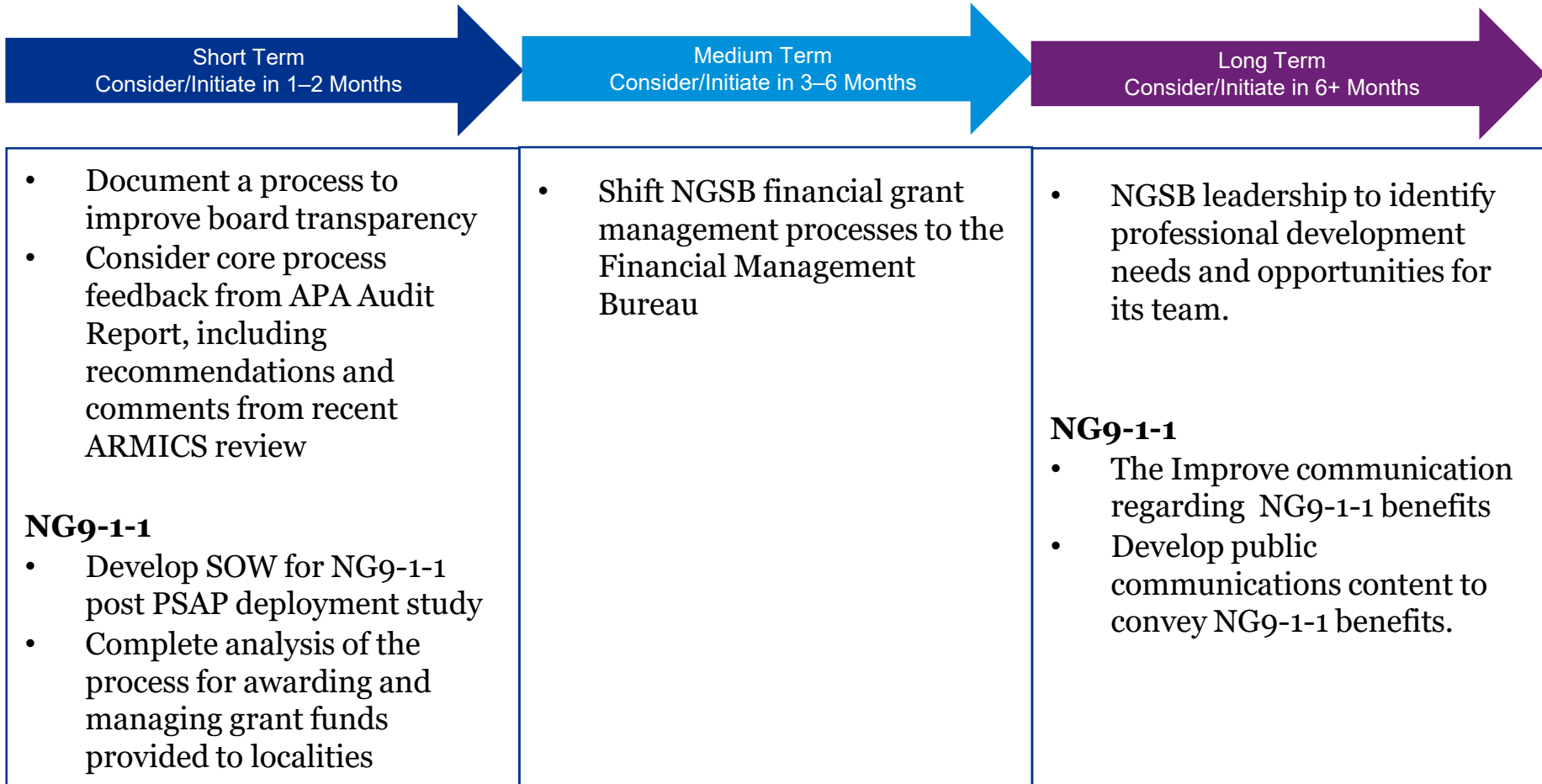
- Consider further integration opportunities with VDEM at the conclusion of the PSAP deployment phase of the NG9-1-1 project



Actionable Roadmap – NGS Collaboration with VDEM

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Core Processes



Actionable Roadmap – NGS Collaboration with VDEM

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Governance

Short Term
Consider/Initiate in 1–2 Months

- Increase participation of VDEM leadership in board meetings
- Document the roles and responsibilities of NGSB staff, 9-1-1 Services Board and VGIN Advisory Board according to *Code*

Medium Term
Consider/Initiate in 3–6 Months

- Document a process for legislative outreach and monitoring; incorporate into role and responsibilities of the Intergovernmental Affairs liaison (new hire)
- Connect with PEMA to discuss stakeholder engagement and integration lessons learned
- Continue with biannual 9-1-1 Summit



Actionable Roadmap – NGS Collaboration with VDEM

The following are business process improvements that are in progress or under consideration. Based on the nature of each recommendation, we've categorized them by Culture & Behaviors; Roles & Structures; Core Processes; Governance; and Compliance.

Compliance

Short Term
Consider/Initiate in 1–2 Months

- Develop detailed E-911 Wireless Fund processes to comply with *Code* requirements; ensure NGSB staff has clear understanding of *Code* vs. appropriations requirements



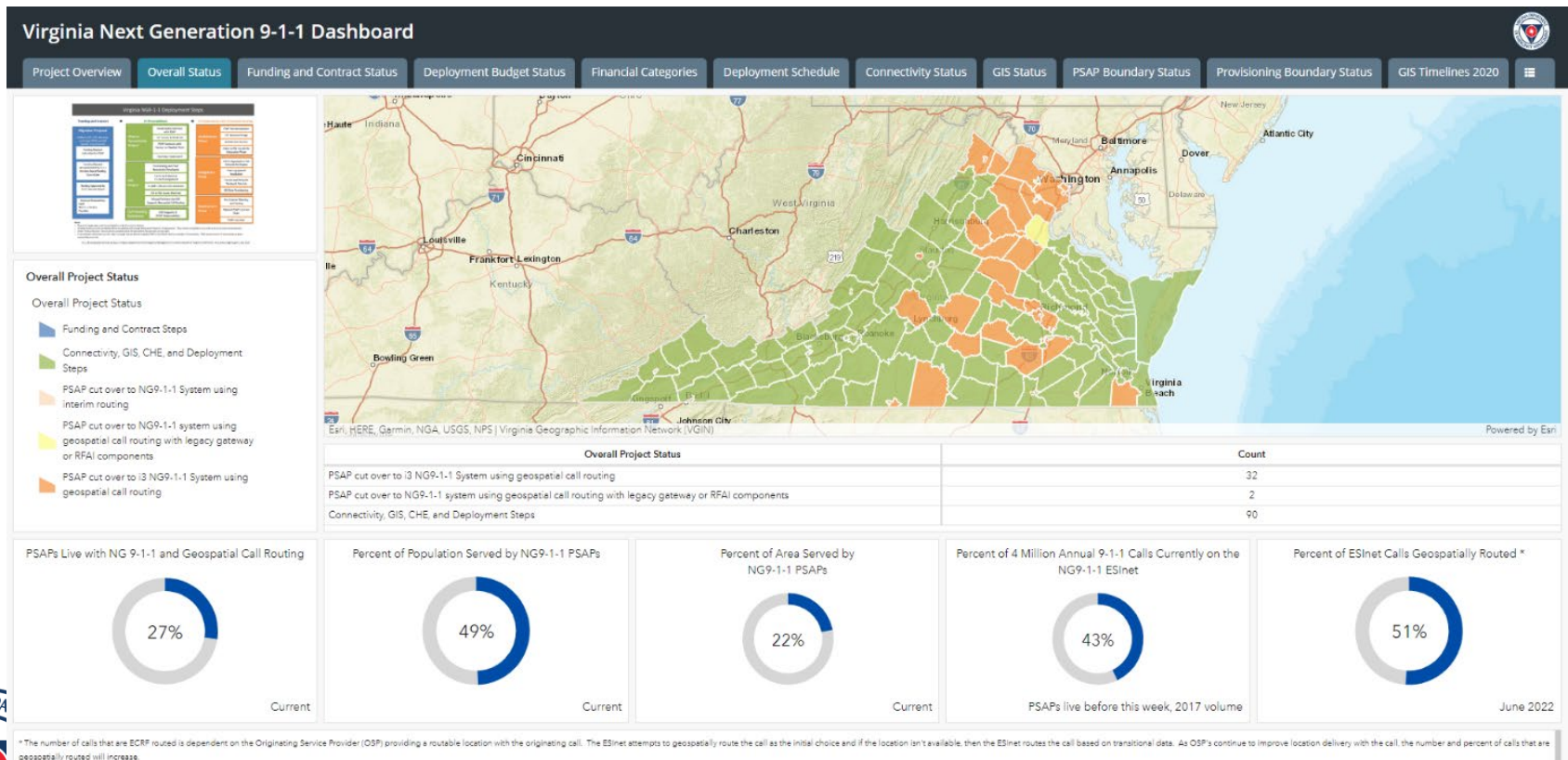


Virginia Department of
Emergency Management

Next Generation 9-1-1 (NG9-1-1) Deployment Status

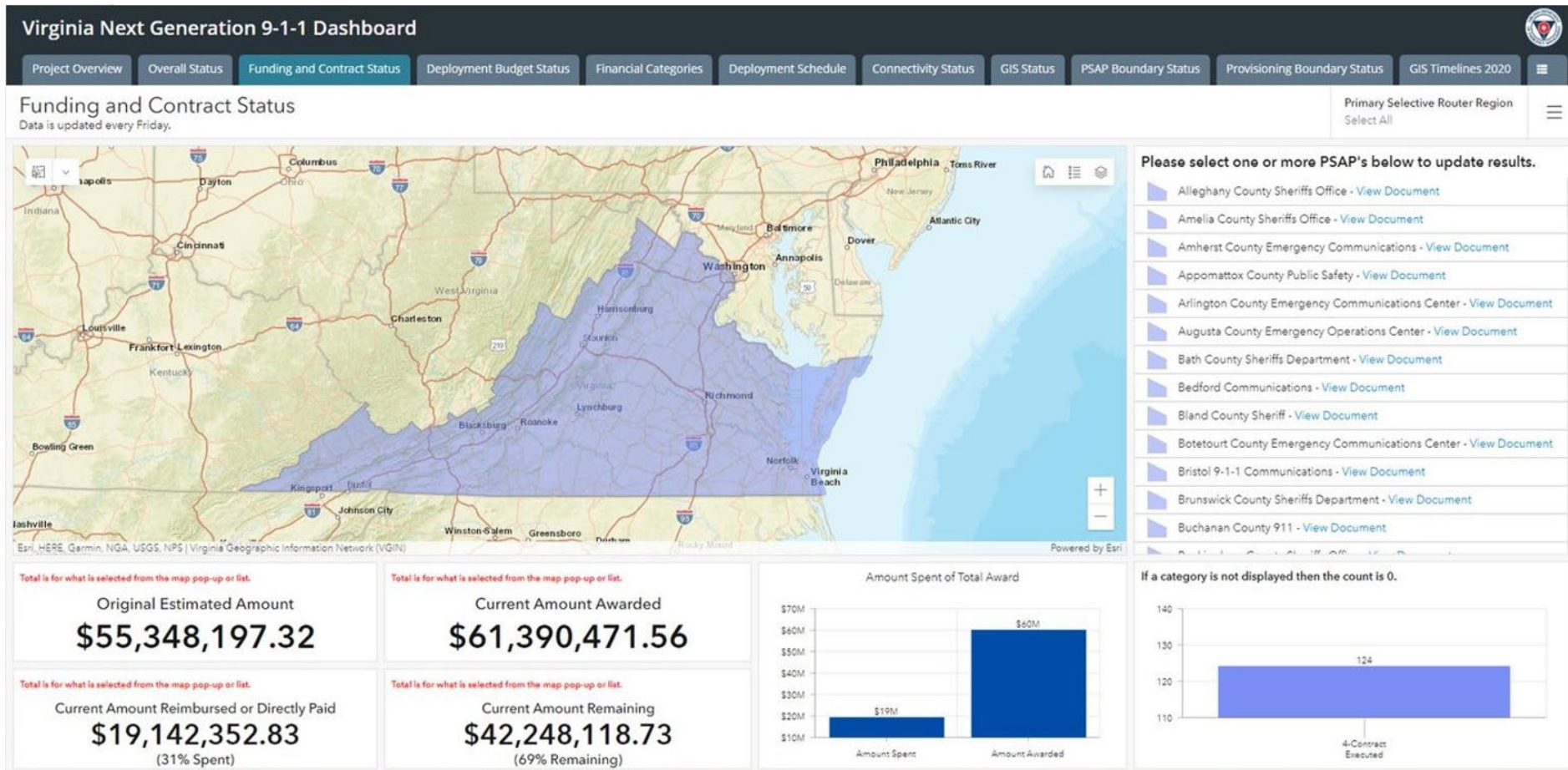
Completed Deployments

- As of 08/12/2022, 34 PSAPs have deployed NG9-1-1 across the Commonwealth (90 remaining)



Updated: 08/12/2022

NG9-1-1 Funding and Contract Status



Forecasting Completion of Statewide NG9-1-1 Deployment

- Legislative mandate for statewide deployment is set at July 1, 2023
- Per Code, "With a minimum of six months' written notice to the impacted stakeholders, this date may be extended by the Board for good cause."
- " 'Good cause' means an event or events reasonably beyond the ability of the Board to anticipate or control."
- Examples of unexpected events previously presented to the Board include COVID, supply chain issues, and unexpected project complexity.
- Preliminary information has been presented to the Board to extend the deadline by one year and formal action will be taken by the Board prior to the end of the year.



What Information is Needed to Forecast Accurately?

- **History:** Tracking historical progress over an extended period at both the macro and micro levels.
- **Projections:** Assessing future schedules based on current completion percentage.
- **Review:** Reviewing the accuracy of previous forecasts to improve the accuracy of future forecasts.
- **Benchmarks:** Evaluate progress towards benchmarks at both the macro and micro levels.



Tracking Progress and Projecting Future Cutovers

- AT&T staff track information for each PSAP
- Notes are shared with appropriate stakeholders for each ESINET status call for each PSAP.
- AT&T shares statewide progress report twice a month with NGS staff.
- NGS staff lead a monthly private sector stakeholder call to help project likely cutovers over the next 8 months to maintain momentum statewide.
- NGS staff provide regular updates at 9-1-1 Services Board and Committee meetings.



Measuring Overall Project Completion Percentage

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

Target for completing ALI Comparison phase of NG9-1-1 GIS work

• 92% Completion Percentage

All items except for ALI Migration have been completed

• 100% Completion Percentage

Cutover



Tracking Benchmarks: Micro Level

- 646 Items Remain on the AT&T Forecasting Sheet (69.4% Complete)
- 175 ALI Items Remaining (Last Step before Cutover)
- 471 Non-ALI Items Remaining (77.7% Complete)
- Target Completion Benchmark Based on NON-ALI Completion Rate:

5 Non-ALI Items Per Week – 05/26/24

8 Non-ALI Items Per Week – 09/22/23

10 Non-ALI Items Per Week – 07/01/23

12 Non-ALI Items Per Week – 05/07/23

15 Non-ALI Items Per Week – 03/13/23

Estimated Current Pace Highlighted

Category - # Remaining (% Complete)

- Customer Portal & LOA Docs Sent – 7 (94.4%)
- LOA Completed – 11 (91.1%)
- Special Construction Started – 8 (93.5%)
- Special Construction Completed – 18 (85.5%)
- AVPN Ordered – 18 (85.5%)
- AVPN Completed – 41 (66.9%)
- DCW Completed – 48 (61.3%)
- SS7 Ordered – 62 (50.0%)
- SS7 Completed – 70 (43.5%)
- ALI Started – 86 (30.6%)
- ALI Completed – 89 (28.2%)



Tracking Benchmarks: Macro Level

Cutover Rates Over Time

[A] 6/20 to 3/21 - 1 PSAP every 90 days (initial rate)

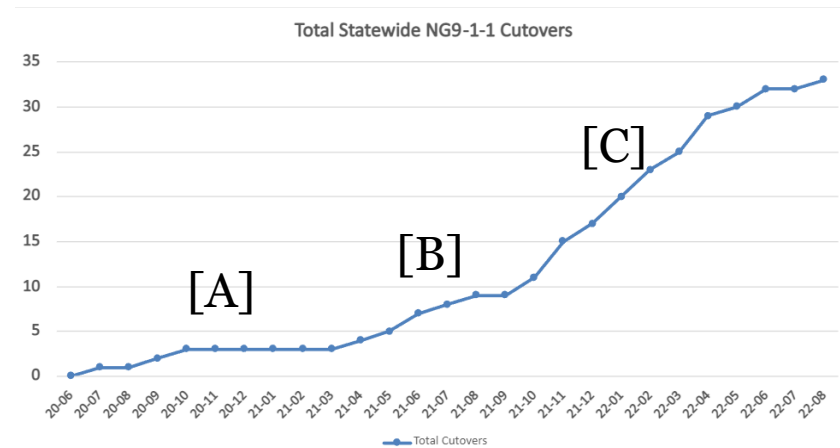
[B] 3/21 to 09/21 - 1 PSAP every 30 days (3x faster than [A])

[C] 09/21 to 06/22 - 1 PSAP every 12 days (2.5x faster than [B])

Estimated Statewide Deployment Completion Scenarios (As of 08/08/2022 - Based on Possible Monthly Cutover Rates)

Cutover Every "n" Days	Cutovers Per Month	Months Remaining	Completion Date (est.)
[C] 12	2.50	36.40	08/02/2025
[D] 8	3.75	24.27	08/03/2024
[E] 6	5.00	18.20	02/03/2024
[F] 5	6.00	15.17	11/04/2023

Current 8 Month Target:
40 PSAPs (5 PSAPs / month)



Overall Project Completion Percentage

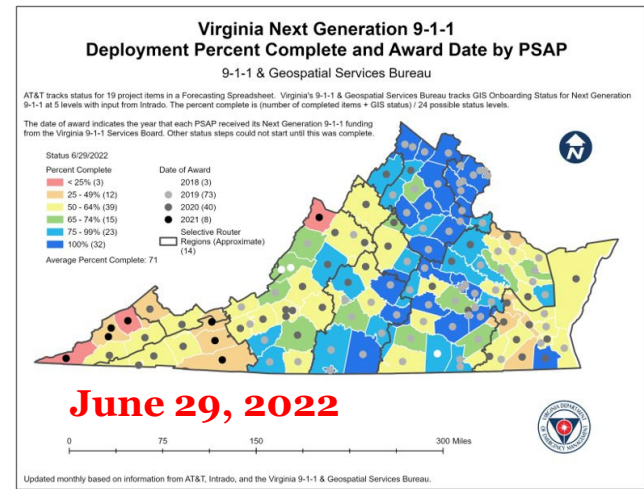
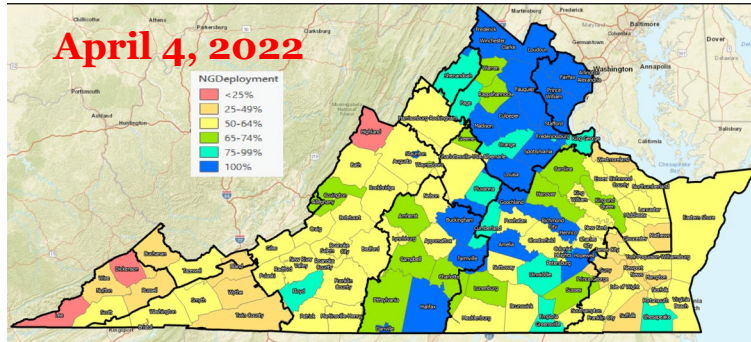
VDEM NGS Observations

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%

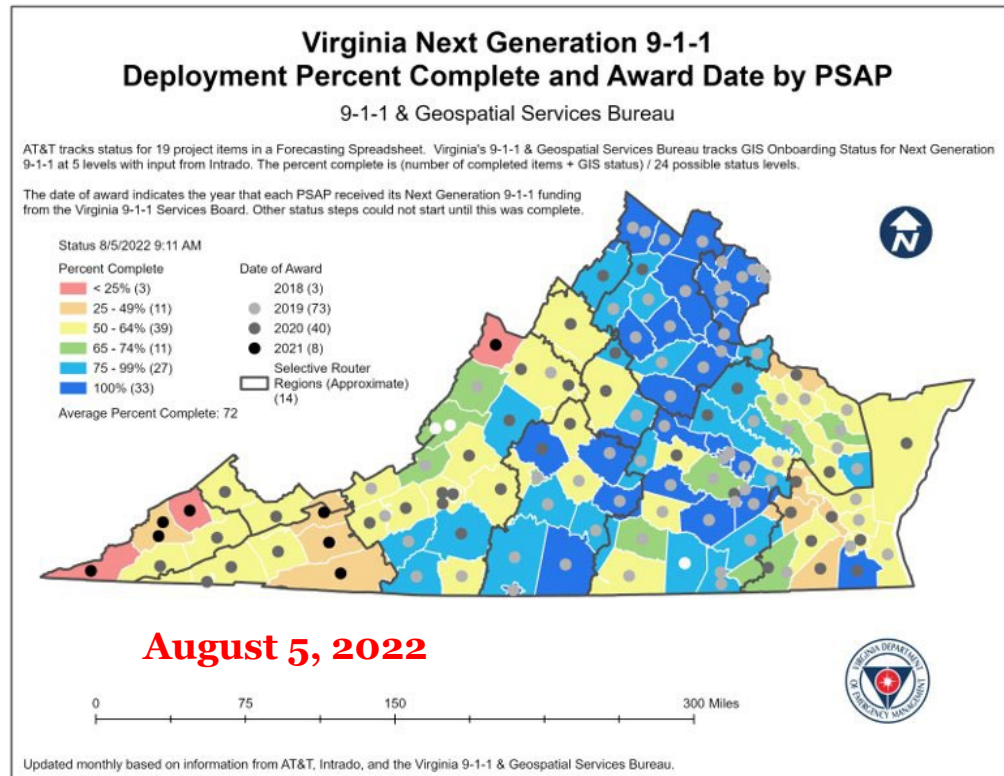
Observations:

- **<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 Typical cutover 6-8 months out.
- **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. Typical cutover <6 months out.





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%



Forecasting the Next 8 Months

PSAPs >65% Complete

Group	Notes of Items to Complete	# of PSAPs	Anticipated Cutover Windows
1	Upcoming Cutover Dates <=60 Days	8	Through 10/08/22
2	Upcoming Cutover Dates >60 Days	4	After 10/09/22
3a	Cut Dates Requested Proposed Dates Under Review	5	Nov 2022 – Dec 2022
3b	Upcoming Cut Date Requests Preliminary Target Dates Being Socialized	4	Nov 2022 – Dec 2022
4	PSAPS >75% Awaiting Target Cutover Window	6	Dec 2022 – Feb 2023
5	PSAPs 65-74% Complete	13	Feb – Apr 2023
TOTAL	40 PSAPs / 8 Months Cutover Rate of 5 PSAPs / Month	40	Now Through April 2023

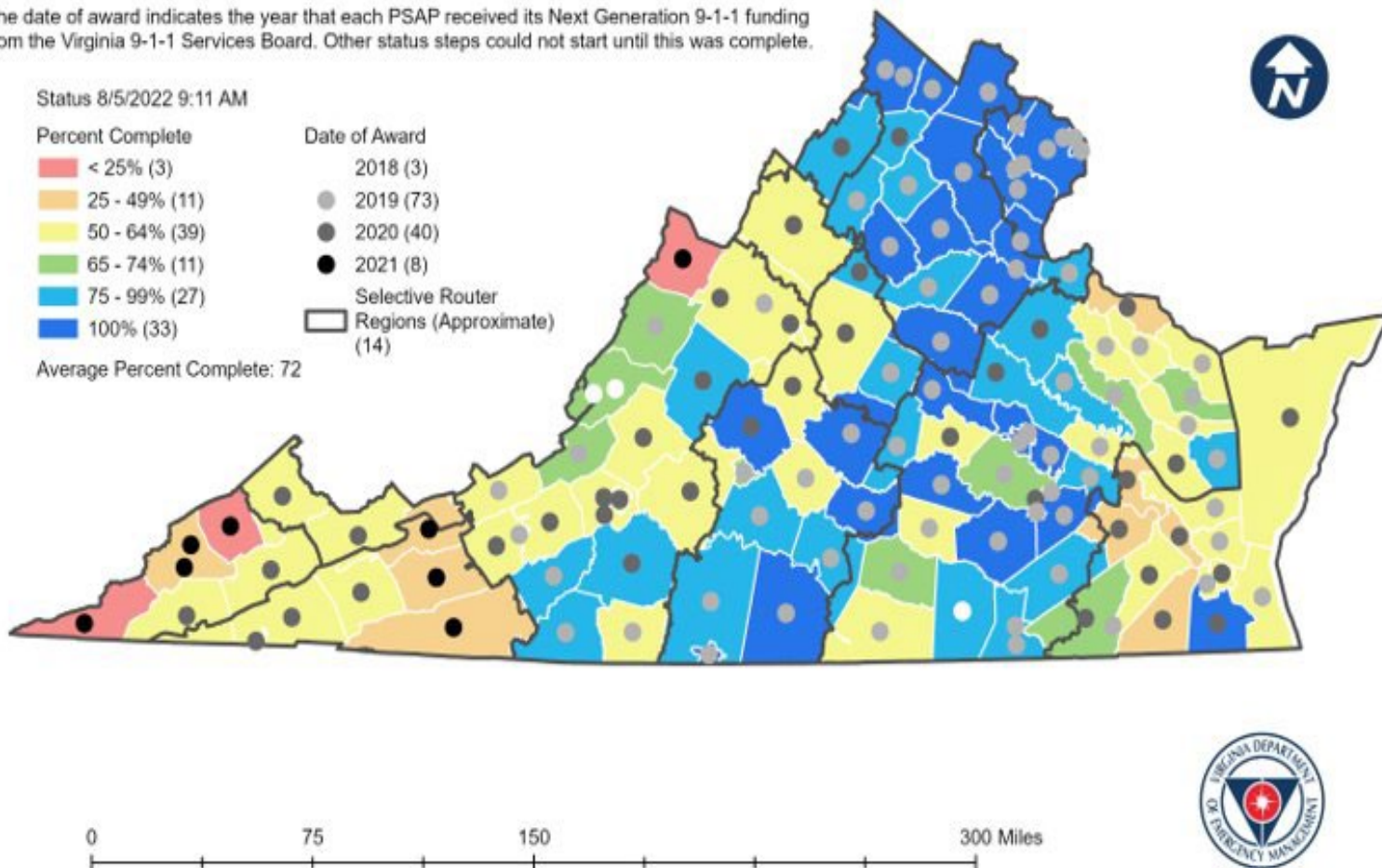


Virginia Next Generation 9-1-1 Deployment Percent Complete and Award Date by PSAP

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.

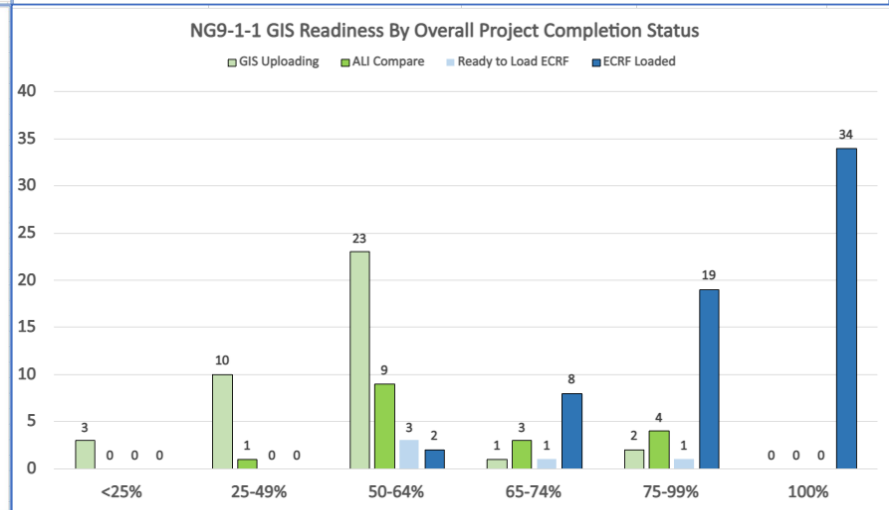
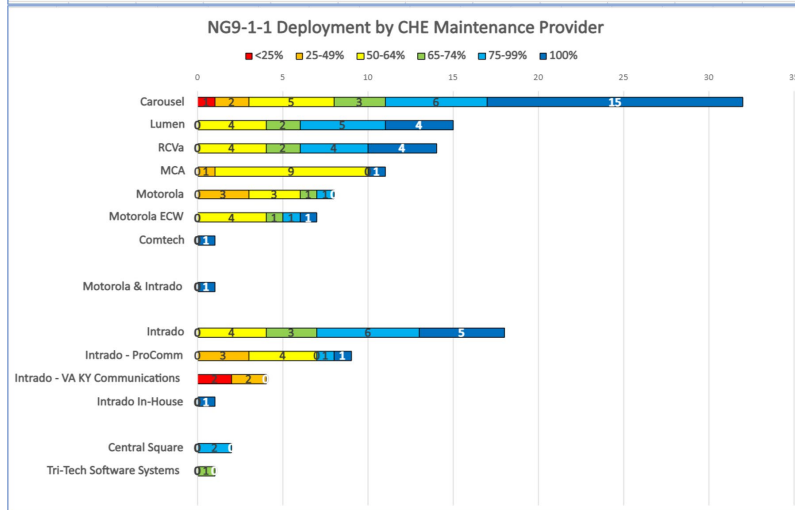
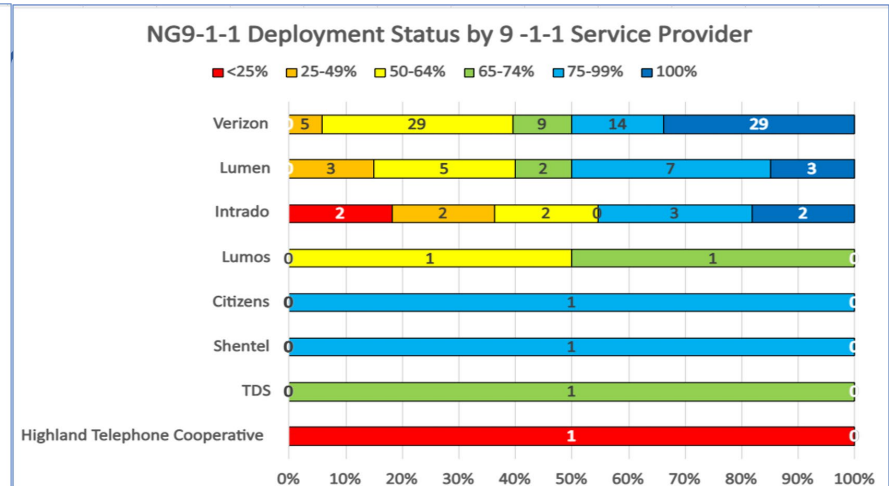
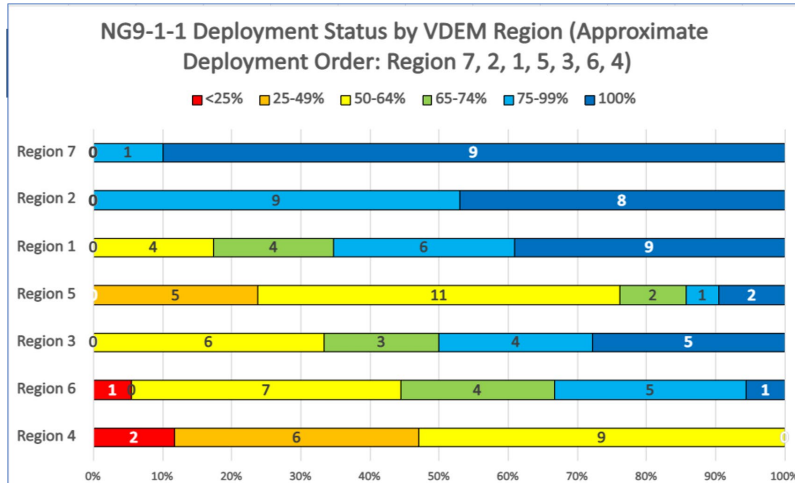
The date of award indicates the year that each PSAP received its Next Generation 9-1-1 funding from the Virginia 9-1-1 Services Board. Other status steps could not start until this was complete.



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

Updated: 08/08/2022

NG9-1-1 GIS Readiness



MSAG & ALI Maintenance after NG9-1-1 Go Live

Goals and Background

- 1) Inform stakeholders of requirements

Continued maintenance is **required** during 9-1-1 ecosystem transition from legacy 9-1-1 to Next Generation 9-1-1, including OSPs

- 2) Gather feedback about options
AT&T / Intrado support **9-1-1 Net** (included) and Transitional Data Management Service (**TDMS**) (additional cost) options

* Develop model for stakeholder engagement & feedback

Questions

- Are the benefits worth the cost for VA?
- If not, should interested localities be funded in whole or in part?

Opportunities

- 9-1-1 Board and committees in July, Aug, Sept
- Virginia NG9-1-1 GIS User group meeting Aug
- AT&T MSAG, ALI, & TDMS discussions Aug
- Other meetings that may occur in Aug or Sept



25



vgin



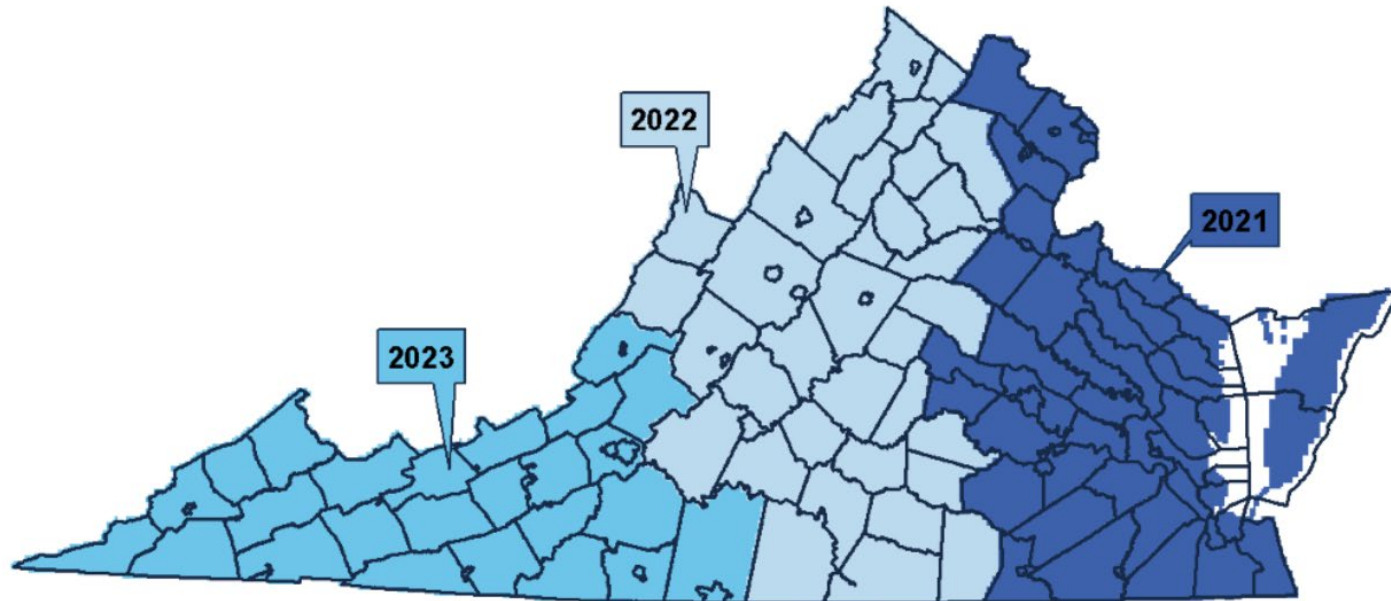
**Virginia Geographic
Information Network**

*Serving the Commonwealth
since 1997*



VGIN Updates

- Virginia Base Mapping Program Orthoimagery





Virginia Base Mapping Program Orthoimagery 2022 Production

Milestones

Aug-Oct: Locality Outreach

Nov-Dec: Locality Quotes

Nov-Dec: IT Portfolio Update

Dec-Jan: Procurement &
Flight Planning

Feb-Apr: Aerial Acquisition

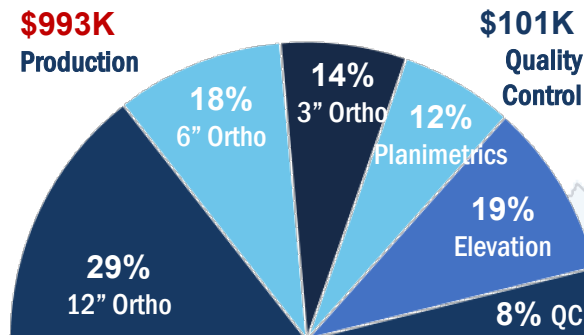
Mar-Sep: Ortho Production

Aug-Oct: Quality Control

Oct: Clearinghouse Release

Nov-Dec: Locality Delivery

Value



Acquisition Elevation

12,500 ft.

12" - Standard Product

6,250 ft.

6" - Locality Buyup

3,125 ft.

3" - Locality Buyup

By the Numbers

39 Virginia localities served

32,120 Ortho tiles produced

52 Quality control steps

4.3 TB (est) Data produced



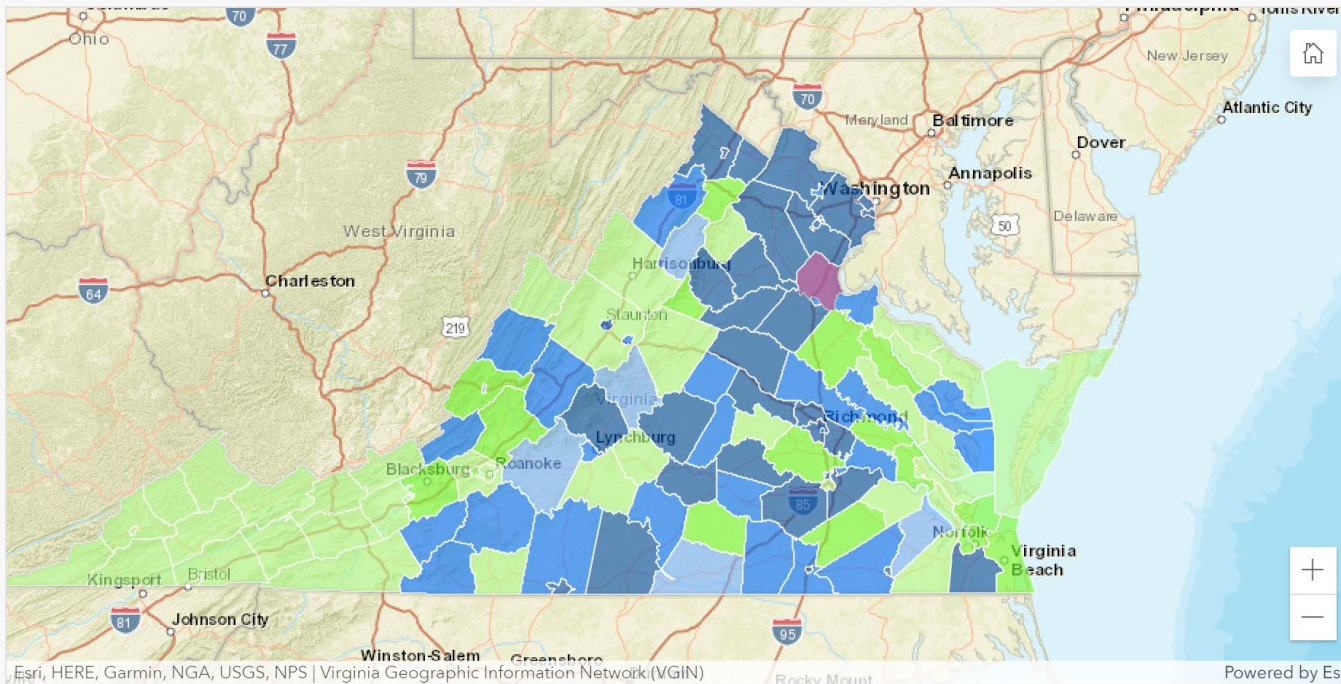
Openly accessible
at no cost



234 days (est) between last flying day and public availability of VBMP data

VGIN Updates

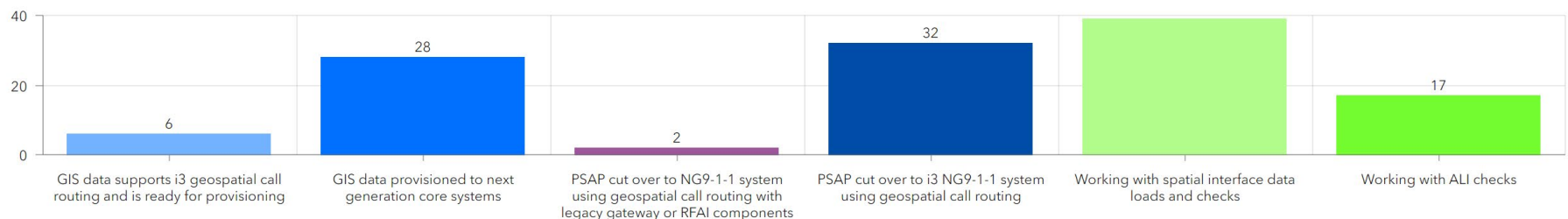
Virginia Next Generation 9-1-1 Dashboard

[Project Overview](#)[Overall Status](#)[Funding and Contract Status](#)[Deployment Budget Status](#)[Financial Categories](#)[Deployment Schedule](#)[Connectivity Status](#)

GIS Onboarding Project Status

Status

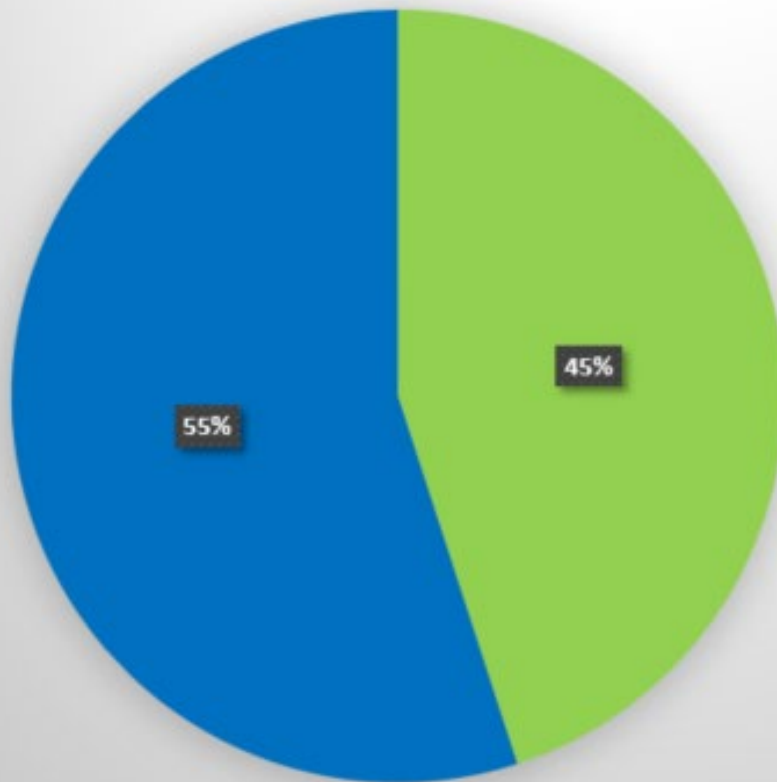
- Not ready for GIS kickoff
- Waiting for GIS kickoff to be scheduled based on overall deployment plan timeline
- GIS kickoff being scheduled
- GIS kickoff scheduled
- GIS kickoff complete
- Initial spatial interface training being scheduled
- Initial spatial interface training scheduled
- Initial spatial interface training complete
- Working with spatial interface data loads and checks
- Working with ALI checks
- Ready for mutual decision of ability of GIS data to support i3 geospatial call routing



The GIS Project occurs when localities start working with solution partners to make data available to the ESInet. This step must be completed 90 days before scheduled cut-over.

VGIN Updates

Virginia NG9-1-1 GIS Onboarding Status



- Localities Uploading
- GIS Onboarding Complete

August 2022



VGIN Updates

2022 Data Call 2 (July) - Locality GIS Data Call Metrics

Data Received

128

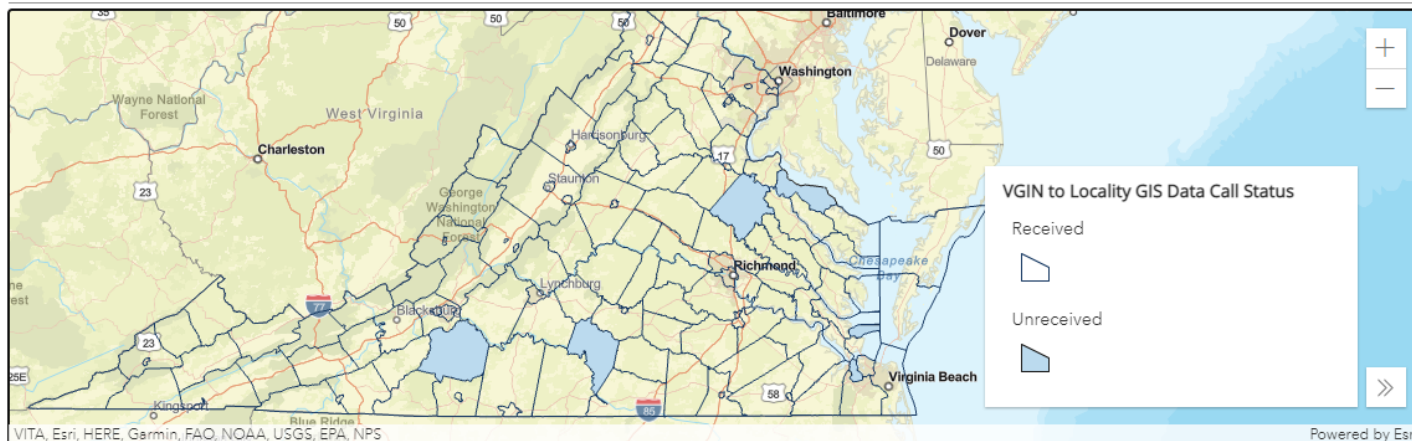
Localities

Data Not Received

6

Localities

VGIN GIS Data Call Currency Since July 1, 2022

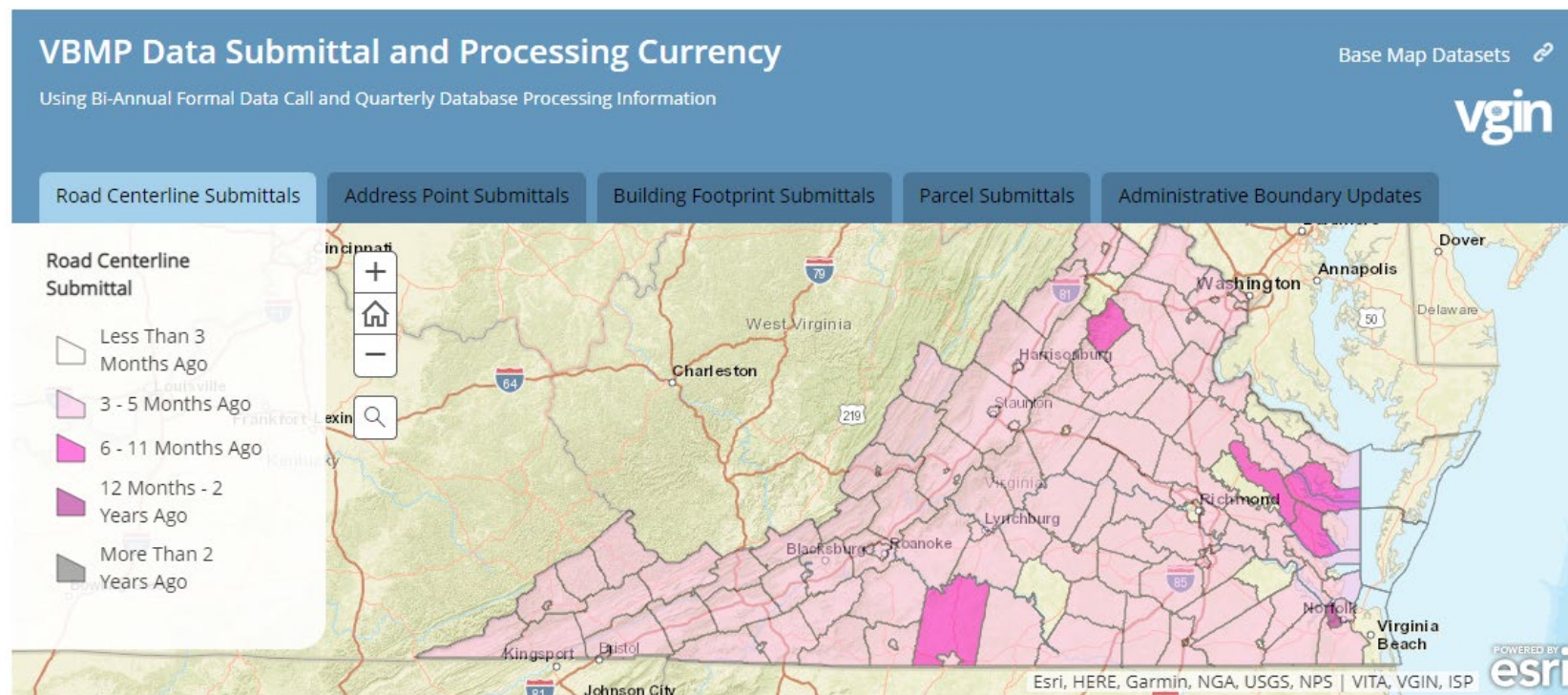


Data Source: [VGIN GIS Data Call Management](#)
Updated: Weekly



VGIN Updates

2022 Q2 Quarterly Release Snapshot



Data Source: [VGIN Local Basemap Data History](#)
Updated: Quarterly



Virginia GIS Clearinghouse

Data Downloads

Explore Virginia geospatial datasets from the source or hosted agency by selecting data by category, browsing by source entity geoportal, or searching by keyword. Data shared with the Virginia GIS Clearinghouse is from Virginia state and local government agencies alike and can be toggled by data owner.

Browse Virginia Data By Category

Base Map



Agriculture



Biota



Boundaries



Climate



Communications



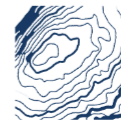
Economic



Education



Elevation



Metrics Snapshot

VGIN captures metrics of VGIN ArcGIS Server services and downloads for data published on the Virginia GIS Clearinghouse. The following figures take into account the amount of uses and overall bandwidth required for base map data layer distribution to the Geospatial Enterprise Platform (GEP). They benefit the broader GIS community as they provide important snapshots of cost savings to the end user. Cost savings include monetary, time, digital storage, etc.

Data is updated within the **first week** of the month.

Total Hits

616,292,619

Past 12 Months

Total Bandwidth GB

32,740.88

Past 12 Months

Total Hits

387,904,624

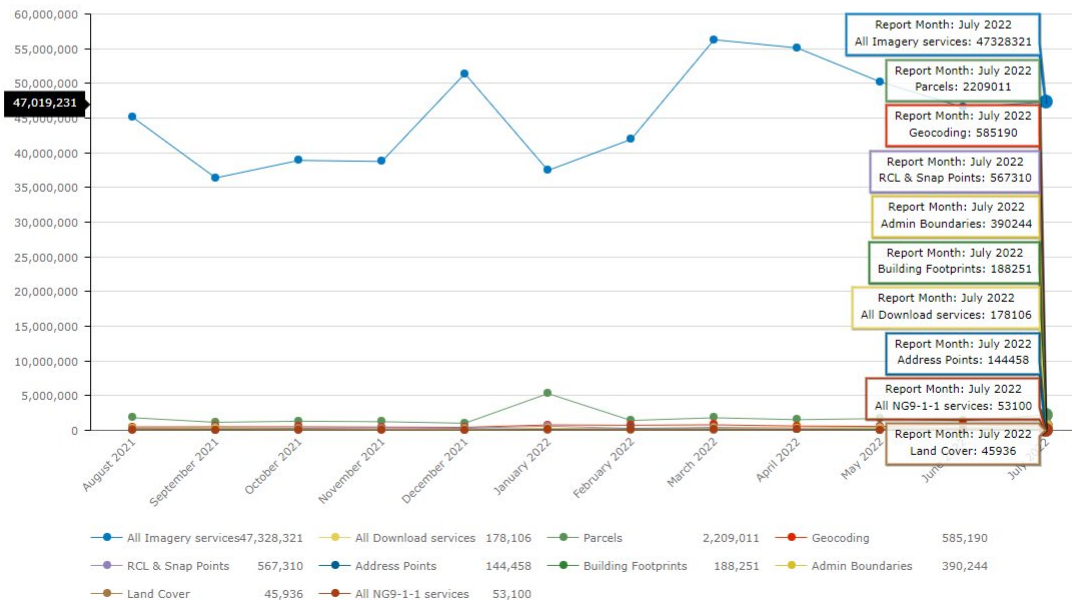
Year To Date

Total Bandwidth GB

21,419.47

Year To Date

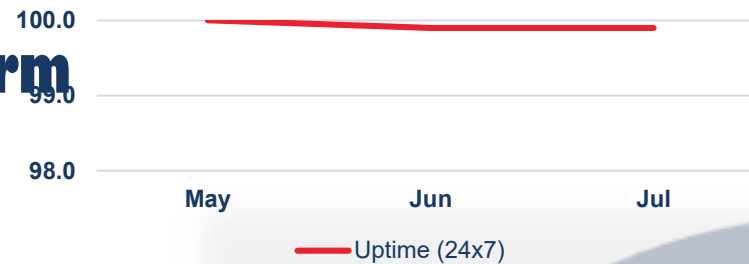
VGIN ArcGIS Server Map & Feature Service Hits - - To turn lines on & off click on them at the bottom of the graph in the legend.





Virginia GIS Clearinghouse

Production Platform 24 x 7 Uptime



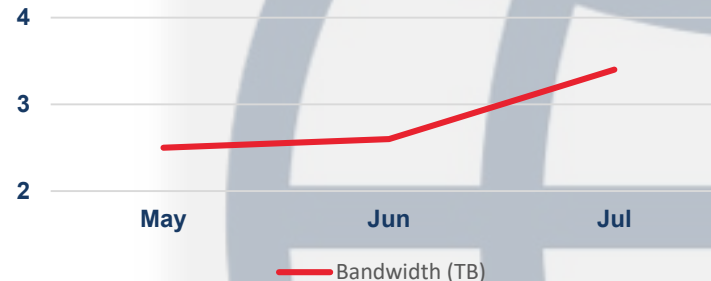
July: 99.9%
Past Three Months: 99.9%
Year-to-Date: 99.9%
CY 2022 (est): 99.9%

Total Hits



July: 52M
Past Three Months: 158M
Year-to-Date: 385M
CY 2022 (est): 660M

Bandwidth Served



June: 3.4TB
Past Three Months: 8.5TB
Year-to-Date: 20.4TB
CY 2022 (est): 34.9TB



VGIN Updates

- **August 17:** MSAG / ALI webinar
- **September 14:** NG9-1-1 GIS User Group
- **September 28:** VGIN Advisory Board Meeting (*tentative*)
- **September 30:** Q3 Quarterly Base Map Update
- **September:** State User Group (virtual / tentative)
- **September:** VBMP 2023 Webinar
- **October 26-28:** 2022 APCO / NENA Fall Conference
 - Addressing Workflows and Coordination Panel
- **November 15:** VBMP Locality Interest Deadline
- **November:** 2022 VBMP Ortho Release



9-1-1 Cost Study

- Distributed a survey to PSAPs to obtain information on specific elements of current operating costs and specific sources of revenue and funding
75 surveys returned (about 63%)
- Moving on to stakeholder interviews
Anticipate about 25 to be conducted
- Anticipate study to be completed by late September and Board members briefed at November meeting
- Legislation committee to review after that



9-1-1 Cost Study

- The 9-1-1 Services Board directed NGSB to conduct a 9-1-1 cost study
- This study will generate an analysis of local 9-1-1 costs and make recommendations related to further revenue and funding strategies
- Stakeholder feedback related to primary PSAP operational expenses, funding methodology, and future goals will help to determine statewide 9-1-1 costs and trends related to these items



Questions & Feedback

If more time to consider this information is needed, all questions and feedback can be sent to Dorothy Spears-Dean.



THANK YOU!

