



**National Telecommunications
and Information Administration
(NTIA)**

Next Generation 9-1-1 (NG911) Cost Study

April 2026

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1. Executive Summary

1.1 Report Overview

The purpose of this report is to present an estimate of the remaining costs required to complete the nationwide transition from legacy 911 systems to secure, interoperable, IP and standards-based NG911 systems, as defined later in this report. The report finds that the estimated cost of implementing NG911 nationwide has declined since NTIA’s 2018 assessment, reflecting both state investments to date and a broader shift in the market from equipment-based systems to software-driven subscription models. As many states have made significant investments since 2018 and as the market has evolved toward lower upfront costs and recurring service-based pricing, the estimated remaining cost of nationwide implementation has fallen from \$9.5 billion to \$12.7 billion in 2018 to \$5.8 billion to \$9.27 billion today, a reduction of roughly 30 to 40% that is even more significant after accounting for inflation.

This estimate is intended to inform national-level planning, coordination, oversight, and policy activities related to NG911 implementation. The report does not prescribe policy, and decisions regarding the appropriate federal role in nationwide NG911 implementation are outside the scope of the report. Accordingly, the report does not assume the existence of a federal grant program or include administrative costs associated with such a program.

This report documents the methodology, assumptions, data sources, and analytical framework used to develop an Independent Cost Estimate for NG911 implementation.

1.2 Summary of Results

The below summary of the total estimate represents the investment required to transition remaining Public Safety Answering Points (PSAPs), Next Generation Core Services (NGCS), and Emergency Services IP Networks (ESInets) components to NG911 capabilities, inclusive of both one-time transition costs (i.e., capital expenditures or “CapEx”) and recurring operating costs (i.e., operating expenditures or “OpEx”) incurred during the study period. The estimate is influenced by variables and sensitivities outlined further in this report, notably, the number of years that are considered in the study post-implementation has an impact on the final cost estimate. NG911 deployments have increasingly evolved from on-premise deployments to cloud-based and as-a-service models. This shift reduces upfront implementation costs in NG911 deployments, but results in higher recurring costs throughout the duration considered. The amount of additional post-implementation years considered and the impact on the cumulative estimate is outlined in Table 1 below.

Total Independent Cost Estimate (in millions)	Additional Post-implementation Years – 7 Year Total (’26 - ’32)		
	2-year	3-year	4-year
Cumulative NG911 Nationwide estimate	\$5,802	\$7,583	\$9,277

Table 1: NG911 Cost Study Output (in millions)

The table below outlines what is included and excluded within the cumulative NG911 nationwide estimate. Cost components are described in detail in the Cost Model Overview below. Further assumptions, limitations, sensitivity and variability of the cost study and estimate are detailed in respective sections throughout the report.

Cost Consideration	Cumulative NG911 Nationwide estimate	Not Included in Study
Costs for Incremental Transitions	X	
Ongoing Costs of Completed Transitions	X	
State-level Costs	X	
PSAP transition costs (excluding RMS)	X	
NGCS/ESInet Costs	X	
Carrier Solutions		X
National-level Costs	X	
Grant Program Administrative Costs		X
Other Considerations:		
Additional years of recurring cloud-based software costs	X	
PSAP consolidation		X
Ongoing costs post year 7		X
Transmission and applications outside of the PSAP		X
First responder equipment and technologies		X

Table 2: NG911 Cost Study Considerations

1.3 Scope

The scope of this study is to estimate the costs associated with transitioning legacy 911 systems to NG911 capabilities across the United States.¹ The study is intended to update and expand upon prior cost analyses by reflecting changes in technology, deployment progress, and implementation approaches. The analysis considers both investments made to date by states and the remaining costs required to complete NG911 transitions.

The scope of the cost analysis includes three primary NG911 system components: PSAPs, NGCS, and ESInets. For the purposes of this study, only NG911 cost elements required to take in and respond to 911 calls and data to the PSAP are considered. Elements outside the PSAP (e.g. Originating Service Provider (OSP) capabilities, first responder technologies, field transmission capabilities or further applications outside the PSAP) are not included. For PSAPs, the study considers costs associated with transitioning call handling, dispatch support systems, data integration, cybersecurity, and related operational capabilities required for NG911 functionality. For NGCS and ESInet components, the study includes infrastructure and software

¹ United States for purposes of this report defined as all 50 states and the District of Columbia (DC)

required to support IP-based call routing, location validation, multimedia support, AI-related functionality, security, resiliency, redundancy, and interoperability.

The study also considers ancillary NG911 costs that are not attributable to all individual states, such as costs associated with interoperability, resiliency, redundancy, and other transition costs such as training, backfill and additional upfront planning and preparation. The analysis distinguishes between one-time implementation costs, recurring operating costs, and recurring costs delivered as a service, and considers how costs are distributed across federal, state, local, and private sector entities.

The analytical scope incorporates publicly available data sources and structured market research to inform cost assumptions and deployment status. The study also reflects insights from stakeholder engagement and market research conducted to validate cost drivers, deployment models, and technology trends relevant to NG911 implementations.

The scope of this study is intentionally limited to estimating the incremental costs required to achieve NG911 capabilities. It does not include detailed assessments of current-state deployments at the individual state or PSAP level or provide individual state cost estimates. Instead, it accounts for cost differences across states through on a model that uses state archetypes based on varying levels of progress in NG911 deployment.

2. Cost Framework and Methodology

2.1 NG911 Definition

Aligning on a clear definition of NG911 is critical to confirm the cost study is consistent, transparent, and aligned with policy and technical expectations. NG911 encompasses a system of systems rather than a single technology or deployment model. Establishing a common definition anchors the study's scope, aligns cost elements and assumptions, and establishes that estimated costs reflect the capabilities required for a NG911 ecosystem.

For the purposes of this study, NG911 is defined as an interoperable, secure, resilient, and redundant IP-based system consisting of Originating Service Environments, NGCS, ESInets, and PSAP solutions that:

- A. Employs commonly accepted standards
- B. Enables emergency communication centers to receive, process, and analyze all types of 9-1-1 requests for emergency assistance
- C. Acquires and integrates information useful to handling 9-1-1 requests for emergency assistance
 - I. PSAPs are IP-enabled and equipped to utilize next generation solutions, receive, and transmit next generation (i3) data (call handling, GIS, data analytics)
 - II. NGCS incorporates cybersecurity frameworks to support flexible, cloud-capable architectures
 - III. NG911 systems must have planned capabilities to integrate current and future AI-related functionality to better assist emergency responders

- D. Supports sharing information related to 9-1-1 requests for emergency assistance among emergency communications centers and emergency response providers

NG911 Definition – Characteristics

- **Interoperability:** The ability to receive 911 requests for emergency assistance and process and share the request for emergency assistance with other centers and first responders, regardless of jurisdiction, device, software, service provider, or other relevant factors.
- **Security, Resiliency, and Redundancy:** Operations, systems, and networking that are secure, geo-diverse, and redundant through secondary connectivity, to mitigate downtime during primary connectivity outages, and use strong encryption and cybersecurity techniques to protect data.
- **IP-based Networking:** Systems that are operated through ESInet(s), emergency services IP networks that enable IP-based transmissions of data.
- **Standards Based:** Consensus-based, publicly available technical standards for network and equipment that provides interoperability, developed and approved by a standards development organization (e.g., NENA, FCC, NIST).
- **Multimedia Support:** Systems that enable multimedia 911 requests, such as voice, text, picture, video, or IoT.
- **PSAP Solutions:** Technical and operational capabilities (e.g., call handling, computer aided dispatch (CAD), GIS, data analytics, call handling) to improve emergency assistance capabilities.
- **AI-related Functionality:** The capability to integrate and utilize next-generation AI solutions, such as routing solutions, live translations, call triaging, as well as future AI features and functionality.
- **Information Sharing:** Capabilities that enable efficient sharing of information, such as RTT (real-time texting) and emergency mass notifications, both to other emergency centers, first responders, as well as the general public.

NG911 Definition and Characteristics

Aligning on the “NG911” definition: components and standards must be agreed upon to meet the technical definition and specifications. For the purposes of this study, systems must demonstrate the following characteristics:

- 1 **Interoperability** across jurisdictions and vendors
- 2 **Security, resiliency, and redundancy**
- 3 **IP-based**, standards-driven networking
- 4 **Standards based** on applicable technical standards for network and equipment
- 5 **Support for multi-media** emergency communications
- 6 **PSAP solutions** integrated (e.g., GIS, analytics, call handling)
- 7 **Advanced AI-related functionality**
- 8 **Information sharing** and AI-related capabilities

NG911 Characteristics	Cost Element Examples
1 Interoperability	System component, Network-to-network interface / "single pane of glass", NENA i3 / FCC compliance
2 Security, Resiliency, and Redundancy	Physical Security, Cybersecurity awareness training, Cybersecurity implementation, NENA i3 / FCC / NIST compliance, Multi authentication, BCF
3 IP-based Networking	ESInet, IP-capable PSAP / Customer premise equipment, Call Routing, Location Validation
4 Standards Based	Technical standards will apply across all other characteristics and their cost elements
5 Multi-media Support	Text-to-911, Video-to-911, IoT data transmission
6 PSAP Solutions	CAD, GIS, CHE (Call handling equipment), OTT solution integration ¹
7 AI-related functionality	Routing optimization, Live translations, Admin-line triaging, Redundant call screening
8 Information Sharing	RTT, Emergency Mass Notifications

These characteristics determine the cost elements included in the NG911 cost estimate.

<p>Costs are modeled across:</p> <ul style="list-style-type: none"> PSAPs (software, hardware, staffing, facilities, and capabilities) NG911 Core Services (NGCS) ESInet infrastructure 	<p>Costs are structured by:</p> <ul style="list-style-type: none"> Capital vs. operating expenses Recurring vs. non-recurring costs Deployment maturity and state archetype
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Only costs required to achieve and sustain these NG911-defined capabilities are included in the cost estimate.

1. While OTT solutions are an essential part of the ecosystem, the NG911 definition only includes any integration costs for those solutions, not the solutions themselves
 Note: Cost study is focused on NG911 NGCS/ESInet and PSAP solutions. Cost study excludes any costs associated with the first responder ecosystem (e.g., LMR, situational awareness solutions, etc.)

Figure 1: NG911 Definition and Characteristics

NG911 Definition – Core Capabilities

Interoperability

Interoperability within an NG911 system is addressed at multiple levels. At the system component level, interoperability requires that all elements within a single NG911 environment, including ESInets, NGCS, and PSAP solutions such as call handling equipment (CHE) and CAD, operate together seamlessly according to commonly accepted standards. Interoperability must also be ensured through the communication of multiple separate systems (e.g., CAD-to-CAD interoperability). Additionally, over-the-top (OTT) solutions should be able to integrate and interoperate with PSAP systems and the NG911 environment. This level of interoperability is considered the primary requirement for NG911 implementation and the principal focus of cost estimation.

Network-to-network interoperability enables separate ESInets across separate regions or states to transfer 911 calls and associated data across jurisdictional boundaries in a secure, resilient manner. For the purposes of this study, network-to-network interoperability is treated as a secondary requirement and is priced at a higher, more aggregated level.

Interface-level interoperability refers to the ability for different equipment and service providers across the NG911 ecosystem to operate through coordinated user interfaces that provide PSAPs with a “single pane of glass.” This capability is recognized as an important future enhancement but is not assumed to be universally implemented in the current NG911 baseline. Where interoperability gaps exist across vendors or platforms those gaps are recognized, and associated integration or testing costs are considered as part of the estimate where identifiable.

Security

To be considered NG911, 911 systems must meet commonly accepted cybersecurity, resiliency, redundancy, and reliability standards. These include the National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF) and NIST Special Publication 800-53, which provide guidance on cybersecurity governance, access control, incident response, and privacy protections. NG911 systems must also align with FCC security requirements outlined in 47 CFR Part 9, which establish expectations related to resiliency, redundancy, and service reliability.

While NENA i3 standards define important technical and security specifications they are not assumed to be broadly accepted to meet all NG911 security requirements. Instead, the study treats FCC and NIST standards as the primary regulatory and policy anchors for defining NG911 cybersecurity expectations, with NENA i3 serving as a supporting technical baseline.

IP-based Networking

NG911 systems are fundamentally IP-based and rely on ESInets and NGCS to support the transmission, routing, and management of emergency communications. ESInets are assumed to comply with NENA i3 technical standards, including specifications for ESInet architecture, cybersecurity requirements (and other related standards as described above), and information/data support.

NG911 systems must support core services, including call routing, location validation (including GIS integration), multimedia support, network security functions, and data analytics capabilities. These services represent the primary software components required to process and manage NG911 traffic from origination through delivery to PSAPs.

For cost modeling purposes, NENA i3 standards are treated as a sufficient baseline for estimating ESInet costs, with the recognition that additional interoperability testing and integration beyond standards compliance may also be required. OTT solutions are assumed to continue operating outside of the ESInet environment in the near term, with full integration into ESInets considered a future and optional capability rather than a baseline requirement.

PSAP Solutions

NG911 PSAPs must possess a comprehensive set of technical and operational capabilities. Primary PSAP solutions include call handling systems, location data, real-time text, multimedia, and integration with GIS and CAD systems. CAD systems must integrate with call handling equipment, GIS mapping, and mobile data terminals.

GIS capabilities are essential to NG911 operations and must support accurate call routing and location validation through the integration of multiple data sources. PSAPs must also support Additional Data Repositories (ADR), enabling the ingestion and use of supplemental data such as IoT inputs and enhanced location information.

PSAP solutions must meet FCC standards for Phase 1 (IP-based SIP format) and Phase 2 (IP-based SIP that complies with commonly accepted standards outlined in NG911 definition) transmission for OSPs to be able to deliver 911 traffic effectively.

PSAP operations assume integration across CAD platforms, including support for hosted or cloud-based deployment models that enable flexibility, redundancy, and remote operations. PSAPs must be capable of handling voice, text, images, video, and other data streams, including real-time text and emergency mass notifications. Integration with OTT data providers is also assumed although interoperability of OTT with all PSAP solutions is not currently expected or observed. Records Management Systems (RMS) were not considered for purposes of this study as a core solution for NG911 transitions. Resiliency and redundancy are expected to be built into both network and application layers, with operations aligned to APCO and NENA training and operational standards.

Providers of PSAP solutions are now commonly employing Software-as-a-Service (SaaS) pricing models and deployments. As PSAPs integrate more SaaS solutions into their operations, instances of and need of on-premise hardware and equipment are becoming less common. This has an effect on the rate and scale of costs in NG911 deployments. For purposes of this study, it was assumed that PSAPs generally will integrate more SaaS solutions across their systems and operations which will result in lower upfront costs with higher recurring costs expected over the duration of this cost study.

AI-related Functionality

NG911 systems are expected to support the integration of artificial intelligence (AI) functionality. The study assumed that all PSAPs may not integrate the same AI solutions and functionality and most solutions would be utilized by large PSAPs rather than smaller PSAPs due to resources available and ability to spread costs across a larger amount of PSAP positions.

AI-related services supported within NG911 systems include administrative call triaging, routing optimization, real-time transcription and translation, data analytics, redundant call screening, and tools to support PSAP workforce and resource management. Advanced AI-supported call handling (e.g., AI-agent listen in, AI-supported info display) is recognized as a capability that enhances emergency response effectiveness and is considered within future NG911 functional capabilities. The cost for these functionalities was estimated based on current availability forecasted out based on current expectations and what would be reasonably feasible.

2.2 Assumptions

Cost Study Scope Assumptions

- All cost modeling, cost elements, and state archetypes are anchored to the agreed-upon NG911 definition above and established during cost methodology working sessions.
- Included in the nationwide NG911 cost study are all 50 US States, the District of Columbia (DC), and tribal areas.²
- Adjustments to state PSAP counts were made to exclude federal PSAPs from state estimates where applicable.

² Tribal areas are included in state-level costs and captured within applicable PSAP, ESInet, and NGCS estimates

- United States territories were not included in the estimate due to the lack of data and information available on the territories that was leveraged to complete the study.

State Archetype and Deployment Assumptions

- Archetype-based modeling is sufficient to estimate national NG911 transition costs without producing state-specific cost estimates.
- States were grouped into archetypes, defined in detail in the Cost Model Overview section, based on NG911 deployment maturity and state legislative deployment model (i.e., regional versus statewide). Determinations on regional versus statewide approaches were based on market research and cost study team discussions.
- Deployment maturity stages (i.e., early, middle, late) are appropriate proxies for remaining deployment differences across states. NG911 deployment maturities were quantified using population coverage, PSAP connectivity to ESInets, and NASNA NG911 deployment scores.

Cost Modeling Assumptions

- Unit costs vary by PSAP size (small, medium, large) and by ESInet deployment model (single statewide network versus multiple regional networks).
- Completed NG911 systems will incur recurring operating costs going forward, while remaining system upgrades would incur both one-time implementation and recurring costs.
- Remaining state NG911 transitions can be completed over a defined multi-year implementation schedule excluding external factors not considered by this study (e.g., funding, administrative, or legislative delays).
- NG911 implementation timelines depend on funding availability, state logistical planning, and vendor capacity.
- Once contracts are executed, statewide NG911 implementation can typically be completed in less than five years based on historical state examples.
- For resiliency and redundancy, alternative approaches to 2N fiber connectivity are considered suitable for rural deployments (e.g., hub and spoke models)
- National NG911 vendors have sufficient capacity to support multiple concurrent state transitions.
- The cost model focuses on remaining costs rather than re-estimating total historical expenditures.
- Each cost element can be attributed across federal, state/local, and private-sector entities depending on the nature of the cost and deployment responsibility.

Data and Research Assumptions

- Self reported state data (e.g., NASNA 2025 NG911 deployment status) is reliable for comparative analysis, despite known limitations.

- The February 2023 *National 911 Annual Report*³ is the most recent authoritative national dataset for NG911 population coverage.

2.3 Market Research

Market research supporting this cost study informs cost assumptions, validates cost drivers, and reflects current NG911 deployments and technologies. The research approach combines structured secondary research with targeted primary research to reflect both publicly documented information and current market conditions across the NG911 ecosystem.

Secondary research provides the foundation for the study and draws from publicly available federal, state, and industry sources. Key sources include the FCC 911 Fee Reports (2026), NASNA NG911 status (2025), National 911 Annual Report (2023), and other publicly available government and industry publications. These sources are used to assess nationwide NG911 deployment levels, funding mechanisms, and historical investment patterns to establish a baseline for the study.

3. Model Use and Limitations

3.1 Model Use

The cost model and associated outputs were developed to support NTIA’s ongoing work and analysis.

The cost model is intended to facilitate discussion of cost drivers, deployment scenarios, and relative cost differences across state archetypes, rather than to produce state-specific estimates.

The cost model presented reflects a structured, archetype estimation approach as discussed earlier in this report. The model relies on a combination of publicly available data, market research, and preliminary assumptions to estimate NG911 transition costs at a national level. As a result, the model does not capture all state-specific, local, or PSAP-level conditions and should not be interpreted as providing precise or definitive cost estimates for individual states or jurisdictions.

The model reflects current-state assumptions about deployment models and technology trends. Actual costs may vary based on alternative deployment approaches, procurement strategies, timing of implementation, or changes in vendor offerings, regulatory requirements, or market conditions. National level cost elements and high level estimates are included where appropriate but are not intended to capture all potential system interactions or future enhancements beyond the defined study scope.

³ [National 911 Annual Report | 911.gov](https://www.fcc.gov/national-911-annual-report)

4. Cost Model Overview

4.1 State Archetypes and Deployment Methodology

This cost study evaluates NG911 transition costs across multiple state archetypes that reflect differences in deployment maturity and contracting models. Rather than providing state-specific cost estimates, the study develops representative cost estimates for state archetypes, which are then used to extrapolate a national cost estimate. Archetypes are designed to capture variation in governance structure, deployment progress, and implementation pathways while maintaining a consistent and scalable modeling framework.

States are grouped into archetypes based on NG911 deployment maturity and contracting models. Archetypes reflect differences in deployment stage (early, middle, late). Deployment maturity scoring incorporates population coverage, PSAP connectivity to ESInets, and NG911 deployment status as reported in national datasets.

State Archetypes

States are categorized based on level of NG911 maturity to indicate remaining deployment to be costed. As needed, states are adjusted to accommodate unique deployment models and deployment maturity

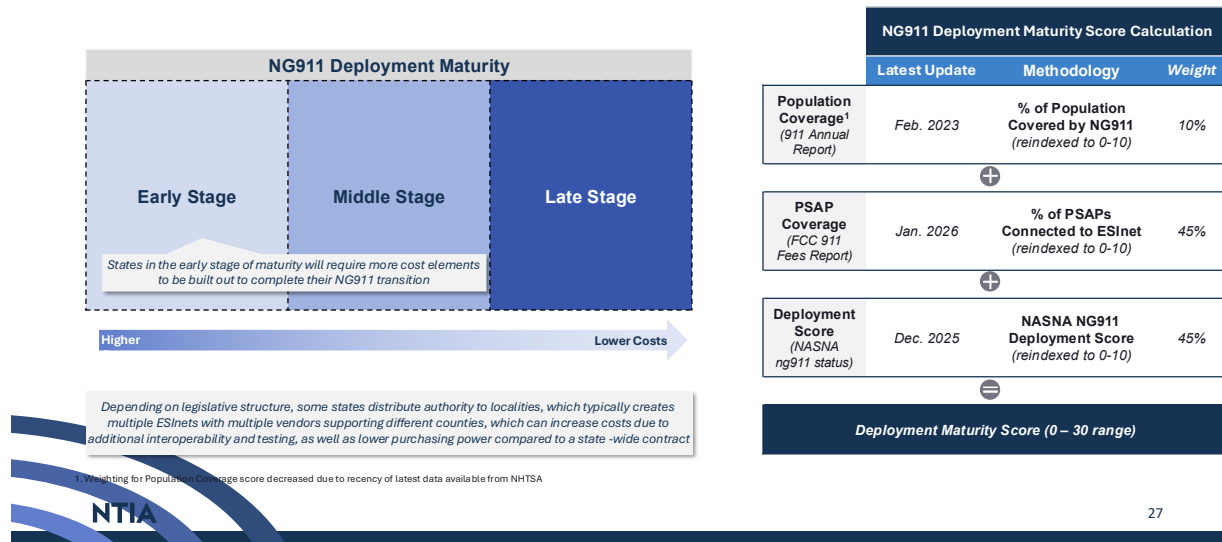


Figure 2: State Archetype Methodology and Scoring

A given state’s deployment maturity score dictates the assumed percentage of incremental transitions required to get a state to 100%, for both PSAPs and NGCS/ESInet. Given an expanded definition of NG911 that includes additional functionality beyond our data sources definitions (e.g., AI, CAD, OTT integration, etc.), deployment maturity scores are decreased by 15% for each state, to account for the fact that current scores are not reflective of the study’s updated definition of NG911.

4.2 Cost Elements

The cost elements used in the NG911 estimate model reflect the incremental costs required to transition from legacy 911 systems to NG911 capabilities. Cost elements are organized to align with the structure of the consolidated cost model and are grouped by system component, cost type, and deployment status to support consistent estimation across state archetypes.

At the highest level, cost elements are grouped into three primary system components: PSAPs, NGCS, and ESInets. Within each component, costs are further segmented into non-recurring (one-time) transition costs and recurring operational costs, reflecting how expenditures are incurred over the course of NG911 implementation and continuing operations. Where applicable, costs are modeled on a SaaS cost structure rather than on-premise to account for migration to cloud-hosted solutions.

PSAP Cost Elements

PSAP cost elements represent the investments required at the local emergency communications center level to enable NG911 functionality. Within the cost model, PSAP costs are structured around hardware, software, staffing, and facilities-related components, and are estimated on a per-PSAP or per-position basis where applicable.

PSAP cost elements		
Software	Capex	One-time procurement costs
		Interoperability: Integration and testing costs to ensure multi-vendor interoperability
	Opex	Cybersecurity: Intrusion detection (IDP), BCF, and other cybersecurity software costs (NIST / NENA i3 compliant)
		PSAP Solutions: Workstation software costs (including training) ^{4,5}
		PSAP Solutions: Call handling software costs (including training) ^{4,5}
		PSAP Solutions: CAD software & licensing costs (including training) ^{4,5}
		PSAP Solutions: GIS software costs ^{4,5}
		PSAP Solutions: ADR software costs ^{4,5}
PSAP Solutions: OTT solution and integration costs ^{4,5}		
AI-related software costs (e.g., data analytics, AI-supported call handling) ^{4,5}		
Hardware	Capex	Security: Enhanced physical security systems (e.g., Access controls) (NIST/NENA i3 compliant)
		PSAP Solutions: Next generation workstations (NIST/NENA i3 compliant)
		IP-based Networking: Call Handling IP routers (NIST/NENA i3 compliant)
	PSAP Solutions: Headsets, handsets, peripherals (NIST/NENA i3 compliant)	
Opex	Maintenance and refresh costs	
Staff	Capex	Hardware Installation Costs
	Opex	Cybersecurity: NIST CSF training and certifications
Facilities	Capex	Resiliency: PSAP infrastructure upgrade costs, as applicable

⁴ PSAP software solutions are assumed to be transitioned to cloud-hosted solutions that have built-in, geodiverse redundancy. PSAP connectivity redundancy is considered in the ESInet cost estimate.

⁵ PSAP solutions are assumed to transition to follow a SaaS pricing model

Table 3: PSAP Cost Elements

Non-recurring PSAP cost elements include items associated with initial transition activities, such as workstations and peripherals, installation and setup activities, and integration and testing required to support NG911 systems. Recurring PSAP cost elements include ongoing software licensing or subscription costs, operations and maintenance, cybersecurity software, and other pertinent sustained service costs. The model reflects differences in PSAP size and configuration and applies unit costs accordingly.

Training for telecommunicators is a critical component of the NG911 transition, as new call handling systems, multimedia inputs, data integrations, and AI-enabled tools introduce changes to both workflows and add operational complexity. Within the cost model, telecommunicator training costs are reflected as part of PSAP-level implementation and integration activities, consistent with how NG911 vendors typically bundle training into deployment contracts. These costs primarily capture system-specific training delivered during initial implementation or major upgrades, rather than ongoing workforce development or certification programs.

As duration and structure of training vary by PSAP size, technology, and deployment approach additional backfill and workforce development costs have been estimated separately. These additional training costs for telecommunicators to effectively utilize NG911 capabilities estimates have been built into the estimate at the national level.

NGCS Cost Elements

NGCS cost elements capture the centralized services required to route, process, and manage NG911 traffic. In the cost model, NGCS elements are structured to reflect core software services, supporting infrastructure, and ongoing operational support necessary to operate NG911 core systems.

		NGCS/Core cost element
Hardware	Capex	Security: Enhanced security systems (e.g., access controls) (NENA i3 compliant)
		IP-based Networking: Network Operations Center (NOC) hardware costs (e.g., workstations, servers, peripherals, etc.)
		IP-based Networking: IP routers, network hardware, and telemetry (NENA i3 compliant)
	Opex	Maintenance and refresh costs
Software	Capex	Software procurement costs
		NGCS Services: Application server costs
	Opex	NGCS Services⁶: Call Routing software costs (e.g., ESRP)
		NGCS Services⁶: Multimedia support software costs
		NGCS Services⁶: Location validation (LVF) software costs
		NGCS Services⁶: Data analytics software costs
		NGCS Services⁶: GIS software costs
Facilities	Opex	NOC IT office space leasing costs

Table 4: NGCS Cost Elements

⁶ NGCS services may be grouped together depending on how NGCS vendors bundle and price services to states.

Non-recurring NGCS costs include initial implementation and setup activities, while recurring costs reflect hosting, software services, security monitoring, and continued operation of core functions. NGCS cost elements are modeled at the system level rather than the PSAP level and are applied based on the number of core systems within each state archetype.

ESInet Cost Elements

ESInet cost elements represent the network infrastructure required to provide secure, resilient, and redundant IP connectivity between originating service environments, NGCS, and PSAPs. Within the model, ESInet costs include both initial network build-out or upgrade costs and ongoing connectivity and operational costs.

ESInet cost element ⁷		
Hardware	Capex	<p>IP-based Networking: Fiber network build and/or upgrade costs (Egress and Ingress)</p> <p>Redundancy and Resiliency: Backup fiber and other connectivity costs (e.g., additional fiber circuits, wireless and/or satellite connectivity)</p>
	Capex	<p>Interoperability: Integration and testing costs for Regional / Quilted states to ensure network-to-network interoperability between multiple ESInets</p> <p>IP-based Networking: Bandwidth / IP connectivity costs (e.g., annual connectivity costs based on number of links and PSAPs needing ESInet connectivity)</p>
Staff	Capex	Hardware Installation Costs

Table 5: ESInet Cost Elements

ESInet cost elements vary based on deployment architecture, including differences between single statewide networks and multi-network or regional configurations. Additionally, states utilize alternative models to provide redundancy that are considered sufficient. For this cost study, models that states utilized in their deployments such as hub-and-spoke connectivity and alternative methods of back-up connectivity (i.e., satellite, microwave point-to-point) for rural PSAPs were considered sufficient. The model accounts for these differences by applying unit costs and quantities that align with the state archetype and deployment model assumptions.

Cost Treatment and Aggregation

Across all system components, cost elements are mapped as recurring or non-recurring, and costs associated with already completed deployments are treated as ongoing recurring costs only. Remaining transition costs are phased over the modeled implementation period using transition schedules embedded in the cost model. Quantities are derived from PSAP counts, PSAP

⁷ Assumes NGCS vendor as prime contract holder who then subcontracts out ESInet work to a subcontractor, and as such ESInet costs are at a higher level. Other models where ESInet vendor is prime do exist.

positions/seats, population coverage, and deployment maturity assumptions maintained within the model.

Together, these cost elements form a traceable framework that supports aggregation of costs by system component, cost type, deployment status, and state archetype, and enables calculation of the national NG911 estimate.

Ancillary Cost Elements

In addition to component specific cost elements, the NG911 cost model recognizes a limited set of ancillary cost elements that support systemwide functionality and are not directly attributable to individual states or PSAPs. These costs include pre-implementation planning costs, investments associated with interoperability, resiliency, and redundancy that enable NG911 to operate as a cohesive system of systems, training backfill costs, and legacy savings.

National level costs are treated separately within the cost model, incorporating them as aggregated estimates rather than distributing them across archetypes.

Cost Savings from Legacy Transitions

The NG911 cost framework acknowledges that transitioning to IP-based, cloud-hosted, and shared service models may result in incremental operational cost savings over time, particularly as legacy networks and equipment are decommissioned.

These potential savings are estimated at a high level, given the variability in state implementation strategies and the variability of publicly-documented data. As a result, legacy cost savings are not included directly with NG911 transition costs in the model but are acknowledged as a separate estimate that could be realized as PSAPs transition to NG 911 systems.

Estimated cost savings are reflective of current market rates of legacy 911 systems as compared to NG911 systems. The study does not account for any potential changes in legacy rates as carriers and Incumbent Local Exchange Carriers (ILECs) push to decommission their copper footprints.

State Interoperability Costs

Network-to-network interoperability, the ability for separate ESInets across regions or states to exchange calls and data, is treated as a secondary requirement of NG911 transitions and is costed at a higher, more aggregated level. States with regional or home-ruled contracting models may incur additional interoperability costs to address vendor differences, proprietary interfaces, or other network integration challenges. Where identifiable, these costs are recognized in the model through higher level interoperability estimates rather than detailed state specific line items.

Interoperability of cost components within the PSAP including call handling systems and other software solutions are considered within PSAP Cost Elements and ESInet Cost Elements sections above.

Pre-Implementation Costs

Before commencing their NG911 transition, states incur preparatory costs to achieve transition readiness. These costs have been segmented into two major components: planning costs and GIS data readiness costs. Planning costs, typically incurred through external consultants, include pre-RFP strategic planning, operational readiness assessments, and RFP drafting, evaluation, and post-award advisory. GIS data readiness costs, similarly largely incurred through external consultants supporting pre-implementation GIS data configuration, can include development of statewide addressing guidelines, assistance to local governments in developing addressing ordinances, providing additional technical assistance, and funding physical addressing equipment.

Both GIS readiness and planning costs are typically assumed at the state level, as individual PSAPs and smaller regions in multiple ESInet/NCGS provider states often lack the appropriate resources.

Training Backfill Costs

As PSAPs transition to NG911 and implement new CHE, CAD, or other systems, there will be associated training costs so that telecommunicators properly take advantage of NG911. Actual training costs are estimated in the study and included as part of the overall costs of each individual system.

In addition to training costs, PSAPs must provide backfill during the time that telecommunicators are training. These costs are estimated at a high-level. The model assumes a standard number of hours of training per telecommunicator, and applies Bureau of Labor Statistics (BLS) median telecommunicator wage to determine overall costs. Given costs are assumed to be overtime work, a standard 50% increase is applied to the median wage.

These costs are applied to the incremental number of telecommunicators within each state that are estimated to still require a transition to NG911, to calculate an overall cost estimate for backfill costs.

Cost Consideration	Cumulative NG911 Nationwide estimate	Not Included in Study
Costs for Incremental Transitions	x	
Recurring Costs of Completed Transitions	x	
State-level Costs		
PSAP transition costs		
CHE	x	
GIS	x	
AI-related software	x	
OTT integration costs	x	
ADR	x	
CAD	x	
Training costs	x	
RMS		x
NGCS/ESInet Costs		
NGCS services	x	
ESInet buildout w/ redundancy	x	
State-level Interoperability costs	x	
Carrier Solutions		
Location Capture		x
Call Routing		x
Ancillary Costs		
Nationwide interoperability	x	
Legacy system savings	x	
Current funding capacity through 911 fees	x	
Additional planning costs	x	
Grant Program Administrative Costs		x
Other Considerations		
Additional years of recurring cloud-based software	x	
PSAP consolidation		x
Ongoing costs post year 7		x
Land mobile radio (LMR)		x

Table 6: Cost Study Considerations

4.3 Implementation Phasing and Timeline

The timeline for NG911 implementation varies by state and depends on the availability of funding, logistical planning decisions, and vendor capacity. Past state implementations indicate that once contracts are executed, full NG911 implementation can take less than five years. State implementation timelines often align with the availability of funding through state fees or other sources, including federal support.

The NG911 cost model applies a phased implementation approach that reflects how NG911 deployments progress and how costs are incurred over time. The model distinguishes between completed deployments, which incur ongoing recurring costs only, and outstanding transitions, which require both one-time implementation costs and recurring operating costs as systems are brought online. This structure allows the model to focus on remaining NG911 transition costs while accounting for investments already made.

Implementation phasing is applied consistently across PSAPs, NGCS, and ESInet components using deployment maturity and quantity assumptions embedded in the model. For each state archetype, the model identifies the share of systems or PSAP positions already transitioned versus those remaining. Completed components are assumed to continue incurring recurring costs, while remaining components are phased into service over the modeled implementation period.

For outstanding transitions, costs are allocated across a multi-year transition schedule that dictates both the timing of non-recurring implementation costs and the increase in recurring costs. Transition schedules are applied separately for PSAPs and for NGCS/ESInet components to reflect differences in deployment sequencing. As a result, annual costs reflect decreasing implementation activity and increasing steady-state operations as more components become operational.

Implementation timing varies by state archetype, driven by differences in deployment maturity and contracting models. Earlier-stage archetypes incur a larger share of transition costs during the modeled period, while later-stage archetypes primarily incur ongoing operating costs. Archetype schedules allow the model to capture variation in levels of deployment without specific state timelines.

Transition timeline estimates (based on market research and study discussion)

- Early Stage: 5 years to implement
- Middle Stage: 3 years to implement
- Late Stage: 2 years to implement

Overall, the implementation phasing and timeline translate unit costs and quantities into annual and cumulative NG911 cost estimates. This approach is intended to support internal analysis of funding requirements and cost drivers, rather than to prescribe specific deployment schedules for individual states or jurisdictions.

4.4 Cost Model Outputs

The NG911 cost model produces a set of structured outputs that translate unit costs, quantities, and deployment assumptions into national-level estimates of remaining NG911 transition costs. Model outputs are designed to illustrate cost drivers, cost composition, and the timing of investments required to complete the nationwide transition to NG911.

Output Structure

Cost model outputs are organized across several key dimensions to provide transparency, support decision-making, analyze sensitivities, and provide further insight into how costs are estimated and aggregated. Outputs are produced by:

- **System components:** PSAPs, NGCS, ESInets, and additional national-level cost elements
- **Cost type:** non-recurring costs and recurring operating costs
- **Deployment status:** transition costs already estimated to be completed, remaining NG911 transition costs and ongoing costs
- **State archetype:** cost differences in deployment maturity and contracting models
- **Timeline:** costs are distributed across the estimated timeline based on market research and discussions with the internal cost study team

This enables the model to present both high-level national totals and more detailed views of NG911 implementation cost composition.

PSAP-Level Outputs

At the PSAP level, the model produces outputs that estimate remaining transition and ongoing incremental operating costs as part of NG911 transitions across small, medium, and large PSAPs. Model outputs reflect remaining PSAP transition activities required to enable NG911 functionality and ongoing recurring costs.

PSAP outputs are generated by applying unit costs to PSAP counts and positions within each state archetype and phasing those costs over the implementation timeline. Costs associated with PSAPs that have already transitioned to NG911 are reflected as recurring costs only, while remaining PSAPs incur both non-recurring and recurring costs as they transition.

NGCS and ESInet Outputs

For NGCS and ESInet components, the model produces outputs that estimate system-level costs. Study results include remaining NGCS and ESInet implementation costs for states that have not yet completed NG911 deployments and ongoing incremental operational costs of NG911 transitions.

NGCS and ESInet outputs are modeled at the system level and applied to state archetypes based on population estimates, deployment maturity, and additional assumptions embedded in the model.

Ancillary Cost Outputs

In addition to component-specific outputs, the model produces a limited set of ancillary cost estimates that support NG911. These outputs include aggregated estimates associated with:

- Nationwide and cross-network interoperability

- Incremental planning, coordination, training, and overhead required during transition periods
- Telecommunicator backfill as each PSAP undergoes training for updated software and security
- Transition-related operation of dual systems during periods when legacy and NG911 systems operate simultaneously

Ancillary cost outputs are treated separately within the model, with average consensus assumptions applied at the national level rather than allocated to individual states or PSAPs.

5. Results and National Cost Estimate

5.1 Results

This section presents the results of the NG911 cost model, summarizing the estimated remaining costs required to complete the nationwide transition from legacy 911 systems to NG911 capabilities. Results reflect the aggregation of cost elements, quantities, and implementation schedules described in earlier sections of this report and are presented at a national level across state archetypes and system components. Additionally, the figures in this section represent a point in time and estimate based on assumptions and variables given by and discussed with the internal team at the time of the study.

Overview of National Results

Based on the assumptions, cost elements, and deployment maturity reflected in the model, the estimated remaining cost to complete nationwide NG911 implementation over the modeled period **ranges from \$5,802 million to \$9,277 million depending on years of additional post-implementation costs considered.** This estimate represents the incremental investment required to transition remaining PSAPs, NGCS, and ESInet components to NG911 capabilities, inclusive of both one-time transition costs and recurring operating costs incurred during the study period. At each state's point of completed deployment, an additional years of recurring costs are assumed while staff training and proving out of system functionality occurs.

Total Independent Cost Estimate (in USDm)	7 Year Total Costs by Additional Post-implementation Years ('26 - '32)		
	2-year	3-year	4-year
Cumulative Independent Cost Estimate	\$5,802	\$7,583	\$9,277
Total State-Level NG911 Costs	\$5,492	\$7,273	\$8,967
National Interoperability Costs ²	\$29	\$29	\$29
Pre-implementation Costs (Planning, GIS Readiness)	\$116	\$116	\$116
PSAP Training Backfill Costs ³	\$166	\$166	\$166

Table 7: Cumulative Independent Cost Estimate (in millions)

Total Independent Cost Estimate (in USDm)	7 Year Total Costs by Additional Post-implementation Years ('26 - '32)		
	2-year	3-year	4-year
Total State-Level NG911 Costs	\$5,492	\$7,273	\$8,967
PSAP	\$3,909	\$5,186	\$6,411
NGCS/ESInet	\$1,583	\$2,086	\$2,556
Incremental Transitions	\$3,954	\$4,942	\$5,829
Recurring Costs of Completed Transitions	\$1,538	\$2,330	\$3,138

Table 8: State-Level NG911 Costs by 1) PSAP & NGCS/ESInet and 2) Incremental Transitions & Recurring Costs of Completed Transitions

Additional investment will be required for pre-implementation planning and data readiness, achievement of national ESInet/NCGS interoperability, and telecommunicator backfill during PSAP training. These costs are not included in the estimates above, and are listed below.

Cumulative Ancillary Cost estimates	\$310 million
National Interoperability Costs	\$29 million
Pre-Implementation Costs	\$116 million
PSAP Training Backfill Costs	\$166 million

This study included an estimation of the potential savings due to the cessation of the operation of legacy systems after an NG911 transition is complete but these projected savings have not been included in the overall cost estimate. The range of savings is informed by assumption of the magnitude of operational costs at current market rates for legacy systems vs NG911 operational costs. The range listed below represents the savings that can be achieved through NG911 transition nationwide. This savings has not been included as a deduction to the nationwide cumulative estimate as it is a projection and is dependent upon the number of years that are allocated for post-implementation costs.

Table 9: Potential legacy savings by post-implementation years

Potential savings by number of additional post-implementation years	7 Year Total ('26 - '32)
2 years	\$0.90 - \$0.95 billion
3 years	\$0.60 - \$0.65 billion
4 years	\$0.25 - \$0.30 billion

Timeline and Distribution of Costs

The model allocates costs across the implementation timeline to reflect how NG911 transitions would be implemented. This timeline is based on market research and discussions with the internal study team, federal partners, and state 911 administrators. Based on this research, current assumption is that NG911 transitions could typically be completed within a 5-year period once contracts are executed. To accommodate this transition timeline, the cost estimate includes additional post-implementation costs as shown in the timelines below. The sensitivity of the cost estimate to additional post-implementation years is discussed further in the Model Sensitivity section below.

6. Model Sensitivity and Future Variability

6.1 Model Sensitivity

The results of the NG911 cost model are sensitive to a limited number of key assumptions that influence the magnitude and timing of estimated costs. These sensitivities reflect areas where estimation requires the use of proxies, ranges, or simplifying assumptions due to variability in state deployment approaches and data availability.

Key sensitivity drivers that impact the cost study include assumptions related to deployment maturity, implementation timelines, and operating cost structures. Variations in NG911 transition timelines shift the distribution of non-recurring and recurring costs across the modeled period. Similarly, assumptions regarding cloud-based and service-oriented deployment models versus on-premise solutions influence the balance between upfront non-recurring transition costs and recurring operating costs.

The model is sensitive to assumptions regarding PSAP size distribution and state deployment models, including differences between single statewide ESInet deployments and regional or quilted configurations. These structural differences affect estimated unit costs and are estimated through the state archetype framework. As states change course or adjust deployment strategies, this would impact the estimated costs and deployment timeline.

Additional Post-implementation Years: The overall cost estimates will change based on the number of years of recurring costs that are considered post-implementation. As described earlier, NG911 has increasingly shifted to a higher proportion of recurring costs. The 7-year Total Costs reflects a cost estimate of a fully-loaded system. Current estimates below represent a range of years that post-implementation years would be attributable.

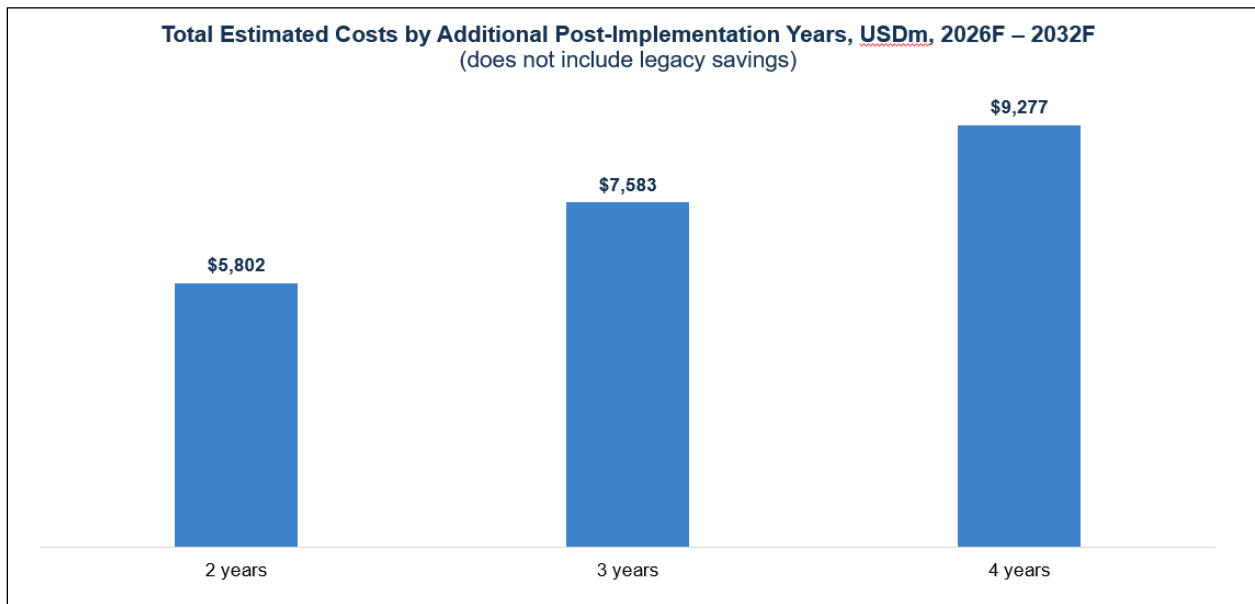


Figure 3: Total Estimated Costs by Additional Post-Implementation Years

6.2 Future Variability

Actual NG911 transition costs may vary from the estimates presented in this study due to future changes in technology, policy, market conditions, and state implementation decisions. NG911 remains an evolving ecosystem, and advancements in technology solutions may alter both cost structures and deployment approaches.

Policy and governance decisions at the federal and state levels may also introduce variability. Changes in funding, procurement strategies, or statutory requirements could accelerate or delay NG911 implementation, affecting the timing and distribution of costs. Similarly, differences in how states choose to sequence PSAP, NGCS, and ESInet deployments may result in cost outcomes that diverge from assumptions during the course of this study.

Market dynamics, including vendor pricing models, consolidation, and innovation, may further influence future costs. Increased adoption of shared services or multi-state solutions could generate efficiencies not captured in the current model, while heightened cybersecurity requirements or resiliency expectations could increase costs beyond those estimated.

Given these factors, the cost estimates presented in this study should be viewed as a snapshot based on current information and deployment information.

7. Future Updates and Summary

7.1 Future Updates

This NG911 cost study represents a point in time estimate based on current deployment conditions, available data, and prevailing technology and market assumptions. Potential future updates to the current study are discussed below:

- 1) Data sources can be updated or revised as newer sources are refreshed or become available
- 2) State-by-state research on deployment status, implementation data, and remaining transition costs
- 3) Updated assumptions reflecting changes in technology adoption, pricing structures, and deployment approaches
- 4) Changes in federal or state policy that affect NG911 scope or funding mechanisms

7.2 Summary

This report presents a national-level estimate of the remaining costs required to complete the transition to NG911 across the United States. Using a transparent and structured cost framework, the study reflects current NG911 deployment realities, advances in technology since prior cost studies, and investments already made by states and local jurisdictions. The resulting estimate provides an updated baseline for understanding the scale and composition of remaining NG911 transition costs.

The analysis applies a consistent NG911 definition, state archetype methodology, and phased implementation approach to estimate costs across PSAPs, NGCS, ESInets, and ancillary requirements. The cost model captures both one-time transition costs and recurring operating costs, reflecting the shift toward cloud-based, service-oriented architectures and increased

emphasis on cybersecurity, resiliency, interoperability, and multimedia capabilities. Emerging functionality, including AI-enabled tools, is discussed within the defined NG911 scope to confirm the estimate reflects the capabilities needed to support modern emergency communications.

Results are presented at a national level and are intended to inform planning, funding discussions, and policy considerations rather than to prescribe state-specific budgets or implementation strategies. The study highlights how remaining costs are distributed over time, how deployment maturity influences cost profiles, and how costs are allocated across federal, state, local, and private-sector stakeholders based on functional responsibilities within the NG911 ecosystem. The estimate does not include any Federal grant administrator costs if a future grant is authorized and funded.

Recognizing the variability inherent in state governance models, funding mechanisms, and deployment approaches, the report documents key assumptions, limitations, and sensitivity considerations. Actual costs may vary as NG911 implementation continues, technologies evolve, and policy or market conditions change. Accordingly, the cost estimates presented represent a point in time view based on the best available data and market research.

Overall, this cost study establishes an updated foundation for understanding the remaining investment required to complete the nationwide transition to NG911. The findings support NTIA's ongoing coordination, oversight, and policy efforts by clarifying the magnitude, timing, and drivers of NG911 transition costs and by providing a framework that can be updated as deployment progresses and new information becomes available.

8. Appendix

8.1 Independent Cost Model Assumptions

This section outlines all the assumptions and toggles built into the excel model, along with the sources used to determine the costs associated with each assumption. Assumptions are grouped into sections that correspond to each tab within the excel model.

National Level Cost Model Assumptions

National Interoperability Costs

- **Population Size Toggle (Toggle)** — *Filters which border populations are included in the interoperability cost estimate (e.g., All vs Small/Medium/Large). Model assumes that all borders with two different ESInet providers would require interoperability costs*
Current: All
- **Cost per Interoperation (Assumption)** — *Unit cost applied per crossborder “interoperation” needed where NGCS providers differ (or are missing) across a border.*
Current: \$250,000
- **Population Bound – Small (Assumption)** — *Upper bound used to classify a border segment as “Small” for reporting/segmentation.*
Current: 1,000,000
- **Population Bound – Medium (Assumption)** — *Upper bound used to classify a border segment as “Medium”.*
Current: 3,000,000
- **Population Bound – Large (Assumption)** — *Lower bound used to classify a border segment as “Large”.*
Current: >3,000,000
- **Sources:** Interviews with market experts from both state and local governments and leading vendors.

Pre-implementation Costs

- **NG911 Planning Cost tier: <100 PSAPs (Assumption)** — *Statewide planning/consulting cost applied when the state has fewer than 100 PSAPs.*
Current: \$750,000
- **NG911 Planning Cost tier: 100 - 150 PSAPs (Assumption)** — *Statewide planning/consulting cost applied when the state has 100 to 150 PSAPs.*
Current: \$750,000
- **NG911 Planning Cost tier: 150 - 200 PSAPs (Assumption)** — *Statewide planning/consulting cost applied when the state has 150 to 200 PSAPs.*
Current: \$1,000,000
- **NG911 Planning Cost tier: 200+ PSAPs (Assumption)** — *Statewide planning/consulting cost applied when the state has 200+ PSAPs.*
Current: \$1,000,000

- **GIS Readiness – Cost per Population (Assumption)** — *Per capita cost used to estimate GIS readiness effort and related preimplementation costs.*
Current: \$1.08
- **Sources:** Interviews with market experts from both state and local governments and leading vendors; publicly available contracts concerning the costs for states to prepare and validate GIS data.

PSAP Training Backfill Costs

- **Training – Total Days (Assumption)** — *Number of training days assumed per position.*
Current: 10
- **Training – Hours per Day (Assumption)** — *Training hours per day.*
Current: 8
- **Training – Total Hours (Assumption)** — *Calculated training hours per position (drives backfill hours).*
Current: 80
- **Wages – Median Pay per Hour (BLS) (Assumption)** — *Median hourly wage used for backfill costing.*
Current: \$24.39
- **Wages – Overtime Rate (Assumption)** — *OT multiplier applied to wage for backfill estimate.*
Current: 150%
- **Wages – Total Hourly Pay (incl. OT) (Assumption)** — *Effective hourly rate used for costing (wage × OT multiplier).*
Current: \$36.59
- **Staffing – Total Telecommunicators (BLS 2024) (Assumption)** — *Starting workforce reference point used to estimate positions.*
Current: 105,200
- **Staffing – Total Estimated PSAP Positions (Assumption)** — *Estimated total positions used to scale training/backfill to “remaining” transitions.*
Current: 31,482
- **Staffing – Telecommunicators per Position (Assumption)** — *Conversion factor used to estimate telecommunicators per “position”.*
Current: 3.34
- **Sources:** Interviews with market experts from both state and local governments and leading vendors.

Legacy System Savings

- **Legacy % of NextGen Operating Costs (Assumption)** — *Assumes legacy operating cost level as a % of NG911 operating costs; used to estimate savings as legacy systems are replaced.*
Current: 70%

- **Sources:** Interviews with market experts from both state and local governments and leading vendors.

PSAP Model Assumptions

PSAP Estimate

- **Attributability Toggle (Yrs.) (Toggle)** — *Sets the number of years used to classify costs as “attributable” vs “nonattributable”. Attributable costs are only considered for the final cost estimate.*
Current: 2

PSAP Unit Costs (unit cost assumptions used throughout PSAP Estimate)

Nonrecurring unit cost assumptions (Upfront costs, 12 position PSAP)

- Software Procurement Costs — **\$46,667**
- Next Generation Workstations — **\$41,904**
- Hardware installation costs — **\$39,998**
- PSAP infrastructure upgrade costs — **\$24,000**
- Integration & testing (interoperability) — **\$15,996**
- Enhanced Physical Security Systems — **\$12,000**
- NIST CSF training & certifications — **\$9,750**
- Headsets/Handsets/Peripherals — **\$7,200**
- Call Handling IP Routers — **\$3,000**
- **Total nonrecurring (rollup) — \$200,515**

Recurring unit cost assumptions (Annual costs, 12 position PSAP)

- CAD software — **\$228,000**
- Call handling software — **\$160,402**
- O&M — **\$38,700**
- AI-related software — **\$32,000**
- GIS software — **\$22,800**
- OTT integration — **\$8,000**
- ADR software — **\$5,400**
- **Total recurring (rollup) — \$495,302**

PSAP size addressability assumptions – Assumptions used to determine which cost elements are addressable to each size PSAP. Utilizing expert feedback, only unaddressable cost element is **AI-related functionality for small sized PSAPs**, given the lack of budget and need for advanced solutions.

PSAP pricing scaler by size assumptions – Assumptions used to scale unit costs up or down depending on the size of PSAP, given market and expert feedback that larger PSAPs have lower unit pricing given negotiating power and tiered-based discounts.

- **Pricing Scaler (Large PSAPs) Current:** 80%
- **Pricing Scaler (Medium PSAPs) Current:** 100%
- **Pricing Scaler (Small PSAPs) Current:** 110%

PSAP pricing escalator assumptions – Model assumes as flat **2%** pricing escalator year over year to account for standard price increases of unit costs due to inflation.

Sources: Interviews with market experts from both state and local governments and leading vendors; publicly available data and contracts from States and local governments outlining costs of PSAP NG911 systems.

Additional detail on unit costs (per position and per PSAP) can be found in the *PSAP Unit Costs* tab in the excel model.

PSAP Transition Schedule

- **Transition Schedule Toggle (Toggle)** — *Selects the transition pattern logic (e.g., “Staged”) used to spread remaining PSAP/position transitions across years.*
Current: Staged
- **Years to Complete Transition – Early stage (Assumption)** — *How long early-stage states take to complete transition (drives allocation shape).*
Current: 5
- **Years to Complete Transition – Middle stage (Assumption)** — *How long middle-stage states take to complete transition.*
Current: 3
- **Years to Complete Transition – Late stage (Assumption)** — *How long late-stage states take to complete transition.*
Current: 2
- **Sources:** Interviews with market experts from both state and local governments and leading vendors; publicly available data from States concerning existing timelines to complete maturity stages.

PSAP Quantity

- **PSAP per State Quantity Estimates** – PSAP quantities per state are sourced directly from the *FCC Master PSAP Registry*. PSAP quantities include primary, secondary, and tribal PSAPs, but exclude any Federal or military PSAPs.
- **Sources:** FCC Master PSAP Registry

NGSC & ESInet Model Assumptions

NGCS & ESInet Estimate

- **Attributability Toggle (Yrs.) (Toggle)** — *Sets the number of years used to classify costs as “attributable” vs “nonattributable.” Attributable costs are only considered for the*

final cost estimate.

Current: 2

NGCS & ESInet Unit Costs (unit cost assumptions used throughout NGCS & ESInet Estimate)

Nonrecurring unit cost assumptions (annual per population)

- IP Routers & Networking Hardware — **\$0.26**
- Hardware Installation Costs — **\$0.23**
- NOC hardware costs — **\$0.21**
- Enhanced Physical Security Systems — **\$0.08**
- **Total nonrecurring — \$0.78**

Recurring unit cost assumptions (annual per population)

- NGCS1 Software Costs — **\$0.40**
- Fiber build/upgrade — **\$0.36**
- Backup fiber/connectivity — **\$0.19**
- O&M — **\$0.12**
- NOC IT office space leasing — **\$0.09**
- Application Server Costs — **\$0.06**
- Integration & testing — **\$0.06**
- Bandwidth / IP connectivity — **\$0.06**
- Software Procurement Costs — **\$0.05**
- **Total recurring — \$1.39**

Sources: Interviews with market experts from both state and local governments and leading vendors; publicly available data and contracts from States and local governments outlining costs of NGCS & ESInet NG911 systems.

Additional detail on unit costs (per position and per PSAP) can be found in the *NGCS & ESInet Unit Costs* tab in the excel model.

NGCS & ESInet Transition Sched.

- **Transition Schedule Toggle (Toggle)** — *Selects the transition pattern logic (e.g., “Staged”) used to spread remaining PSAP/position transitions across years.*
Current: Staged
- **Years to Complete Transition – Early stage (Assumption)** — *How long early-stage states take to complete transition (drives allocation shape).*
Current: 5
- **Years to Complete Transition – Middle stage (Assumption)** — *How long middle-stage states take to complete transition.*
Current: 3

- **Years to Complete Transition – Late stage (Assumption)** — *How long late-stage states take to complete transition.*
Current: 2
- **Sources:** Interviews with market experts from both state and local governments and leading vendors; publicly available data from States concerning existing timelines to complete maturity stages

NGCS & ESInet Quantity

- **Population Density Threshold – Low (Assumption)** — *Density cutoff used to assign a state into an ESInet cost bucket (e.g., Low/Median/High).*
Current: 35
- **Population Density Threshold – Mid (Assumption)** — *Density cutoff used to assign a state into an ESInet cost bucket.*
Current: 17
- **Population Density Threshold – High (Assumption)** — *Density cutoff used to assign a state into an ESInet cost bucket.*
Current: 0
- **Population Estimates** – State specific population estimates and population densities are sourced directly from the US Census.
- **Sources:** US Census; interviews with market experts from both state and local governments and leading vendors; publicly available data from States concerning existing timelines to complete maturity stages

State Quantity and Archetype Assumptions

State Archetype Scores

- **Deployment band score – Early stage (Assumption)** — *Score used for classifying early-stage maturity.*
Current: 10
- **Deployment band score – Middle stage (Assumption)** — *Score used for classifying middle-stage maturity.*
Current: 20
- **Deployment band score – Late stage (Assumption)** — *Score used for classifying late-stage maturity.*
Current: 30
- **Archetype weighting – Population (Assumption)** — *Multiplier weighting applied to population component in scoring.*
Current: 0.30
- **Archetype weighting – PSAP (Assumption)** — *Multiplier weighting applied to PSAP component in scoring.*
Current: 1.35

- **Archetype weighting – NASNA (Assumption)** — *Multiplier weighting applied to NASNA component in scoring.*
Current: 1.35
- **Maturity Adjustment (Assumption)** — *Adjustment factor applied to maturity score outcomes.*
Current: 15%

Lookups

- **Archetype mapping (Assumption/Lookup logic)** — *Maps ESInet model + deployment stage to the archetype used throughout the model.*
 - Multiple ESInets + Early/Middle/Late → **Archetype 1/2/3**
 - State-wide ESInet + Early/Middle/Late → **Archetype 4/5/6**

2018 Study PSAP Distributions

- **PSAP size distribution & staffing ranges (Assumption set)** — *Used to infer PSAP size mix and position counts – unchanged assumption from 2018 study, validated through market experts.*
 - **Small:** 85% of PSAPs; **Average positions: 3**
 - **Medium:** 12% of PSAPs; **Average positions: 12**
 - **Large:** 3% of PSAPs; **Average positions: 30**