Strengthening U.S. Maritime Readiness

Through a National Resilience and Risk Framework

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2026

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1. Introduction

Maritime capability has long been recognized as a critical component of national security, economic stability, and global trade. In the United States, that capability depends on a complex industrial base responsible for building, maintaining, and sustaining both naval and commercial fleets. Over time, however, concerns about shipbuilding performance, workforce availability, and supply chain reliability have become more pronounced.

These challenges are often described in terms of cost growth, production delays, or program execution issues. While those factors are visible and measurable, they do not fully explain the underlying conditions affecting maritime readiness. Persistent schedule delays, limited surge capacity, workforce shortages, and supplier constraints point to a broader pattern that extends beyond individual programs or isolated inefficiencies[i,ii].

Recent assessments from the Government Accountability Office (GAO), Congressional Research Service (CRS), and the Maritime Administration (MARAD) consistently highlight structural limitations across the industrial base. These findings suggest that the issue is not confined to a single segment of the system but reflects a set of interconnected conditions that influence overall performance[i,ii,iii,iv].

Rather than treating shipbuilding challenges as discrete problems, this paper examines maritime readiness as an issue shaped by the interaction between demand, workforce, industrial capacity, and supply chains. When these elements are out of alignment, constraints reinforce one another, increasing instability and limiting the system's ability to respond to changing conditions.

In this context, the central issue is not simply whether ships can be built more efficiently or at a lower cost. The more important question is whether the system itself is designed to sustain, adapt, and scale over time.

To address this gap, this paper introduces a national resilience and risk framework focused on strengthening the conditions that support maritime readiness. The framework is organized around five reinforcing pillars: demand stability, industrial depth, workforce continuity, capital formation, and adaptive modernization[i,ii,iii,iv]. It also outlines how these elements can be coordinated across federal, state, and private sector stakeholders, and presents a phased approach for implementation.

By reframing maritime readiness as a resilience issue rather than a series of isolated constraints, this paper provides a structured approach for understanding and addressing the challenges facing the U.S. maritime industrial base.

2. Structural Conditions Affecting U.S. Maritime Readiness

The current state of U.S. maritime readiness is shaped by a set of underlying structural conditions that influence shipbuilding performance, workforce availability, and supply chain reliability[i,ii]. The following sections examine these factors and how they shape industrial capacity.

2.1 Shipbuilding Capacity and Cost Trends

Over the past decade, U.S. naval shipbuilding programs have revealed persistent structural challenges related to production stability, cost performance, and schedule reliability. Assessments from the Government Accountability Office (GAO) consistently identify the following contributors to cost growth and delivery delays[i]:

- Incomplete design maturity at the start of construction.
- Overlapping development and production phases.
- Constraints on industrial production capacity.

These findings do not appear to be isolated to a single class of vessel. Instead, they are present across nuclear and surface combatant programs, which suggest there are systemic capacity constraints occurring rather than program-specific mismanagement[i].

- Rising costs are often cited as the primary barrier to U.S. shipbuilding competitiveness, although the problem is more structurally complex. Evidence from GAO and Congressional Research Service (CRS) analyses indicates that elevated costs are not only a function of higher labor rates, but broader inefficiencies are also reflected across production processes, supply chains, and the use of critical infrastructure[i,iii].

- U.S. shipyards require significantly more labor hours per vessel compared to international competition, which highlights a persistent productivity gap that significantly increases program cost[iii].
- Overall production capacity has declined in parallel with rising costs, which sets in motion a reinforcing cycle of inefficiency. As the overall volume of shipbuilding decreases, fixed costs are distributed across fewer programs, increasing per-unit costs while limiting opportunities for standardization and learning effects on productivity. As a result, this dynamic contributes to continued schedule delays, cost overruns, and reduced throughput across both naval and commercial shipbuilding activities[i].

A comparative analysis between leading global shipbuilding nations, including South Korea and China, and the U.S. underscores this structural disadvantage. South Korea and China have achieved cost efficiencies through sustained investment in industrial scale, infrastructure modernization, and production standardization[iii,v]. In contrast, the United States operates within a more fragmented production base with limited commercial demand signals, constraining its ability to achieve similar efficiencies. The result is a persistent cost and capacity imbalance that reflects long-term industrial erosion rather than isolated execution challenges.

2.2 Workforce and Industrial Base Constraints

The structural challenges observed in shipbuilding capacity and cost performance are closely related to the underlying workforce and industrial base limitations. Assessments from the Maritime Administration (MARAD), the Government Accountability Office (GAO), and the Department of Defense (DoD) consistently identify shortages in the workforce and fragility in the industrial base as key constraints affecting maritime production output and schedule reliability[iv,ii,] (MARAD, 2025; GAO, 2025b). Fragility in the industrial base refers to a condition where the network of suppliers, manufacturers, workforce, and infrastructure that supports production is easily disrupted, constrained, or unable to scale reliably.

A significant portion of the U.S. shipbuilding workforce is aging and approaching retirement eligibility, particularly within skilled trades such as welding, pipefitting, and marine engineering. This trend introduces continuity risk due to the fact that attrition is not being effectively offset by sufficient recruitment and training pipelines. Persistent skill gaps limit the ability of shipyards to scale production efficiently, particularly in specialized and high-complexity build environments (MARAD, 2023).

These workforce challenges are compounded by broader industrial base limitations. Shipbuilding relies on a network of specialized suppliers. However, the supplier base has contracted over time, which has resulted in reduced competition, extended lead times, and increased vulnerability to bottlenecks in production. In several cases, key components are sourced from a limited number of domestic suppliers, creating single points of failure within the production system[i,vi].

Maritime Administration data also highlights the fragmented nature of the U.S. shipbuilding capacity. Production is distributed across a mix of construction and repair facilities with various capabilities, rather than a system optimized for scale (MARAD, 2025). While shipyards continue to produce a range of vessels, much of this output consists of inland and support vessels such as tugs, towboats, and inland barges, rather than oceangoing ships, which indicates a misalignment between domestic production capacity and strategic maritime requirements[vii].

Maintenance and repair backlogs provide additional evidence of industrial base strain. These delays reduce fleet readiness while competing for the same workforce and infrastructure required for new constructions, which further constrains capacity and limits surge capability[i].

Workforce shortages, fragmented production capacity, and supplier limitations function as interconnected constraints within the shipbuilding ecosystem. Together, they leave the industrial base without the depth, scalability, and flexibility required to sustain consistent production or respond effectively to increased demand.

2.3 Supply Chain and Strategic Risk Exposure

The constraints affecting workforce and industrial base capacity extend into the shipbuilding supply chain, where additional risks emerge. Assessments from the, Government Accountability Office (GAO), and Congressional Research Service (CRS) identify supply chain fragility as a persistent challenge impacting production reliability and long-term maritime readiness[ii,vi].

Shipbuilding programs rely on a network of suppliers that provide specialized components such as propulsion systems, electronics, castings, and critical materials. Over time, this supplier base has reduced in size, with many programs relying on a single supplier or a small group of vendors for key components. This creates single points of failure within the system. When disruptions occur, limited alternatives delay production schedules and increase program costs[ii].

Foreign dependency introduces additional risk. Certain materials and components are sourced internationally, exposing production timelines to global supply chain disruption, geopolitical tension, and restrictions on exports. These external factors introduce uncertainty that is difficult to manage and complicates long-term planning.[vi].

The supply chain also lacks the depth required to respond to increased demand due to limited supplier capacity. This leaves little ability to shift production or scale quickly. Downstream, this contributes to instability in scheduling and restricts surge capability across naval and commercial programs.

Supply chain performance is closely tied to workforce and infrastructure availability. Delays in component delivery can cause skilled labor to become idle and can also lead to delay or disruption of production sequencing. Meanwhile, workforce shortages and infrastructure constraints can delay integration once components arrive. Disruptions in one area often create downstream effects across the integrated system.

These conditions reduce the system's ability to absorb disruption and maintain consistent production, particularly during periods of increased demand.

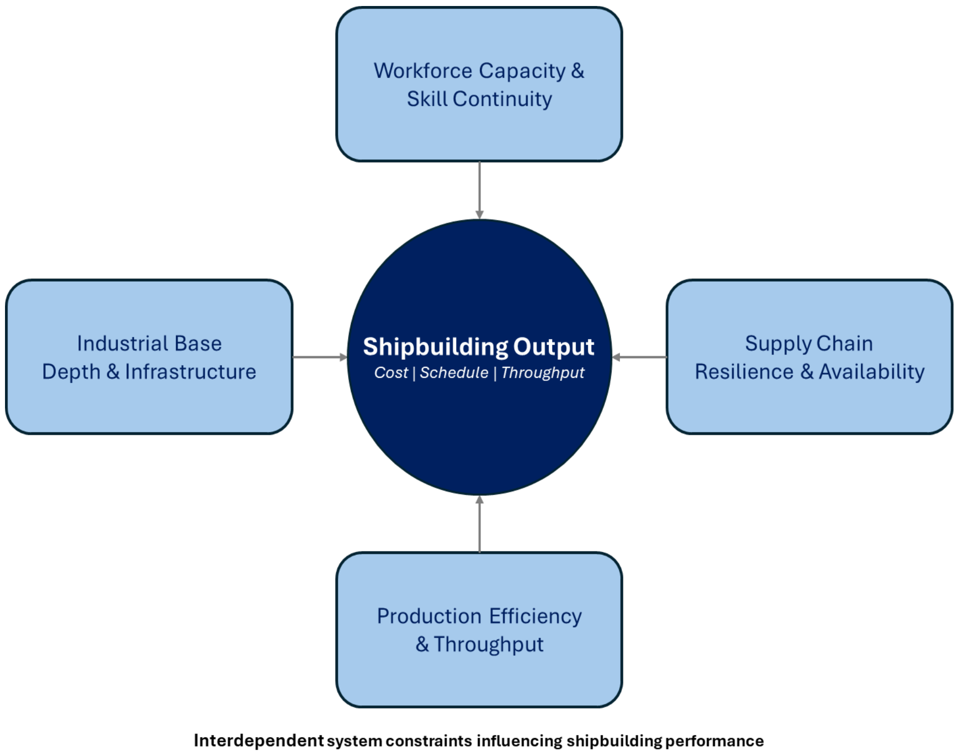

Figure 1. Interdependencies between demand signals, industrial base capacity, and production constraints within the U.S. maritime system. The diagram illustrates how workforce limitations, supplier capacity, and production inefficiencies interact to influence system performance. Adapted from findings within GAO 2025a, GAO 2025b, CRS 2024a, and MARAD 2025.

3. Gap Assessment: Structural Risk Exposure

The constraints previously identified across shipbuilding capacity, workforce availability, and supply chain performance are not independent challenges. As shown in *Figure 1*, they operate as an interconnected system, where limitations in one area directly influence the outcomes in another. The interdependency between constraints introduces a form of structural risk exposure that is not completely captured when each constraint is assessed separately[i,ii].

The demand for maritime capability serves as the initiating force within this system. Fleet requirements, operational speed, and strategic competition generate sustained and rapidly shifting demand signals. This demand can be absorbed through coordinated production, workforce alignment, and supplier performance under stable conditions. However, when demand fluctuates or exceeds available capacity, it acts as a stressor that exposes underlying weaknesses across the industrial base.

The system's ability to respond to these demand signals is restricted by workforce limitations, constrained supplier capacity, and production inefficiencies. When demand increases, shipyards face difficulty scaling labor, suppliers face bottlenecks in the delivery of components, and production timelines become extended. These delays are then fed back into the system, which leads to increased costs, reduced throughput, and further limitations on available capacity.

This dynamic creates a reinforcing cycle. As production slows and costs increase, fewer programs can be executed with efficiency, which reduces overall industrial activity. Lower production volume also limits opportunities for workforce development, supplier expansion, and the standardization of processes. Over time, this results in a gradual erosion of industrial capacity rather than a stable growth environment.[i]

Demand volatility amplifies the system's constraints. Sudden increases in demand cannot be met due to limited surge capability, while periods of reduced demand do not allow for sustained investment in workforce or infrastructure, which creates a reinforcing constraint. This imbalance prevents the system from stabilizing. Instead, instability is reinforced across production, labor, and supply networks.

What emerges is more complex than just a constrained industrial base. The pattern reflects characteristics of declining resilience. The system exhibits a limited ability to absorb disruption, adapt to changing conditions, or recover efficiently from delays. Instead, disruptions often spread through connected systems, causing ripple effects that extend beyond individual programs.

This structural risk exposure is indicative of a broader gap between maritime readiness requirements and the underlying capacity of the supporting ecosystem. While individual constraints such as workforce shortages or supplier limitations are well documented, their combined effect creates a reinforcing cycle. In this cycle, demand volatility, production instability, cost escalation, and capacity erosion amplify one another, increasing overall sensitivity to disruption[ii,vi].

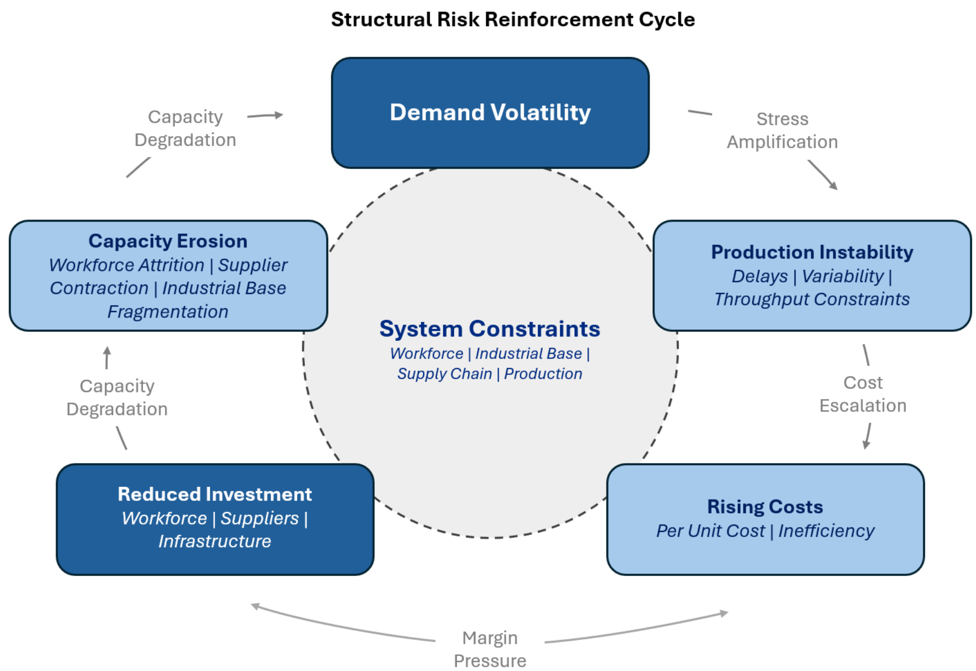

Figure 2. Reinforcing cycle of structural risk exposure in the maritime industrial base. Demand volatility, production delays, cost escalation, and capacity erosion interact in a feedback loop that amplifies system instability and reduces resilience over time. Adapted from findings within[i,ii,vi].

4. Reframing the Problem: Industrial Weakness vs. Resilience Deficit

The challenges facing U.S. maritime readiness are often framed in terms of cost inefficiency or production shortfalls. These perspectives are valid, however, they are also incomplete. The evidence presented across shipbuilding performance, workforce constraints, and limitations of the supply chain suggests a more fundamental issue.

The central question is not whether the United States can build ships more efficiently or at a lower cost. The more relevant question is whether or not the underlying system is designed to sustain, adapt, and scale under varying demand conditions.

From this perspective, maritime readiness can be evaluated through three potential lenses:

- A cost competitiveness issue, driven by labor rates and production expense.
- A production efficiency issue, driven by throughput and process performance.
- Or a system resilience design issue, driven by the ability to absorb disruption and maintain continuity of output.

Cost and efficiency are contributing factors, but they do not fully explain the patterns observed across the industrial base. Persistent schedule delays, supplier bottlenecks, workforce shortages, and limited surge capacity point to a system that is not only constrained, but structurally brittle.[i,ii]

The reinforcing dynamics identified in Section 3 further support this conclusion. Demand volatility not only exposes inefficiencies, but also amplifies weaknesses in the system. Demand increases cannot be absorbed due to limited capacity, and decreases in demand prevent sustained investment in workforce development and infrastructure. This creates a cycle in which the system struggles to remain stable or adapt.

These characteristics are consistent with resilience degradation rather than isolated industrial underperformance. A resilient system is defined by its ability to absorb shocks, adapt to changing conditions, and recover efficiently. In contrast, the current shipbuilding ecosystem demonstrates:

- Limited surge capacity during periods of increased demand.
- Sensitivity to disruption across workforce, suppliers, and production.
- Reduced ability to recover from delays without cascading impacts.
- Dependence on stable conditions to maintain baseline performance.

Taken together, the evidence indicates that maritime readiness is best understood as a resilience deficit embedded within the structure of the industrial base.

The distinction here is crucial. If the problem is framed as cost inefficiency, the solution will focus on reducing expenses. If it is framed as a production issue, the response will emphasize throughput improvements. However, if the problem is recognized as a resilience deficit, the solution must address the design of the system itself.

This shift in perspective provides the cornerstone for a more comprehensive approach that prioritizes stability, scalability, and adaptability in addition to efficiency. The following section introduces a national resilience and risk framework designed to address these underlying structural conditions.

5. A National Resilience and Risk Framework

Addressing the structural challenges identified in previous sections requires more than incremental improvements in cost control and production efficiency. The evidence suggests the need for a system-level approach that strengthens the underlying conditions required for sustained maritime readiness[ii].

This section introduces a national resilience and risk framework designed to address the interdependent constraints across demand, workforce, industrial capacity, and supply chains. The framework is structured around five pillars, each targeting a critical dimension of system performance identified in GAO, CRS, and MARAD assessments.

The framework emphasizes reinforcing conditions that enable stability, scalability, and adaptability across the maritime industrial base.

Pillar 1: Demand Stability

Industrial performance requires sustained and predictable demand. Volatility in procurement cycles contributes directly to inefficiencies in production planning, retention of critical skillsets in the workforce, and supplier investment.

A more stable demand signal enables:

- Long-term workforce development and retention.
- Capital investment in infrastructure and modernization.
- Supplier base expansion and diversification.
- Improved production planning and scheduling.

Evidence from CRS and GAO reporting indicates that inconsistent procurement profiles and uncertainty with funding have contributed to production inefficiencies and increased program costs[i,ii,viii] (GAO, 2025a; GAO, 2025b; CRS, 2026). Stabilizing demand planning can reduce volatility and support more efficient industrial operations.

Demand stability functions as a primary risk control by reducing the likelihood of system disruption caused by abrupt and unforeseen changes in the workload.

Pillar 2: Industrial Depth

Industrial depth reflects the capacity, redundancy, and distribution of production capabilities across shipyards and supporting infrastructure. A system with limited depth is more vulnerable to disruption and less capable of scaling production efficiently.

Current assessments highlight a production environment that is fragmented with constrained capacity and limited surge capability (CRS, 2026). Strengthening industrial depth requires:

- Expanding shipyard capacity and modernization efforts.
- Reducing reliance on single points of failure in production.
- Increasing redundancy across critical manufacturing capabilities.
- Aligning commercial and defense production where feasible.

A deeper industrial base improves resilience by enabling the system to absorb localized disruptions without significant impact to overall output. It also enhances scalability by providing the ability to increase production in response to demand surges.

Pillar 3: Workforce Continuity

The maritime workforce is a key driver of production capacity, but current trends indicate significant risk due to aging labor, skill gaps, and insufficient training pipelines.

Workforce continuity focuses on ensuring the sustained availability of skilled labor through:

- Expansion of training and apprenticeship programs.
- Development of specialized trade pipelines.
- Retention strategies for experienced personnel.
- Alignment between workforce development and projected demand.

MARAD and GAO findings consistently identify workforce limitations as a primary constraint on production output[i,ix]. Without a stable and scalable workforce, investments in infrastructure and supply chains cannot be fully realized[i].

Continuity in the workforce reduces systemic risk by strengthening the system's ability to maintain operations over time and adapt to changing production requirements.

Pillar 4: Capital Formation

Capital investment is necessary to modernize infrastructure, develop advanced manufacturing techniques, and expand production capacity.

Bring infrastructure to modern standards, develop advanced manufacturing techniques, and expand production capacity. However, uncertainty in demand and market conditions is often a limiting factor in private sector investment.

Capital formation focuses on creating conditions that enable sustained investment, including:

- Public-private partnership models.
- Incentives for infrastructure modernization.
- Financing mechanisms to support supplier expansion.
- Long-term policy alignment to reduce investment risk.

Evidence from industrial base assessments suggests that underinvestment has resulted in aging infrastructure and limited production efficiency[vii]. Strengthening capital formation enables modernization and supports long-term capacity growth.

This pillar directly influences both industrial depth and workforce capability by providing the resources necessary for system expansion and improvement.

Pillar 5: Adaptive Modernization

Modernization efforts must extend beyond physical infrastructure to include processes, technologies, and system integration. Adaptive modernization focuses on the ability of the system to evolve in response to changing conditions.

Key components include:

- Adoption of advanced manufacturing technologies.
- Digital integration across supply chains and production systems.
- Process standardization to improve efficiency and reduce variability.
- Continuous improvement mechanisms informed by data and performance metrics.

Adaptive modernization enhances both efficiency and resilience by enabling faster response to disruption and improved coordination across the system.

It also supports long-term competitiveness by aligning the maritime industrial base with global advancements in shipbuilding and manufacturing.

These five pillars function as an integrated system where progress in one area reinforces outcomes in others. Demand stability enables capital investment. Capital investment strengthens industrial depth. Industrial depth and workforce continuity improve production reliability. Adaptive modernization enhances performance across the entire system.

Together, this framework provides a structured approach to addressing the resilience deficit identified in earlier sections.

The following section explores how these principles can be operationalized through coordinated action across federal, state, and private sector stakeholders.

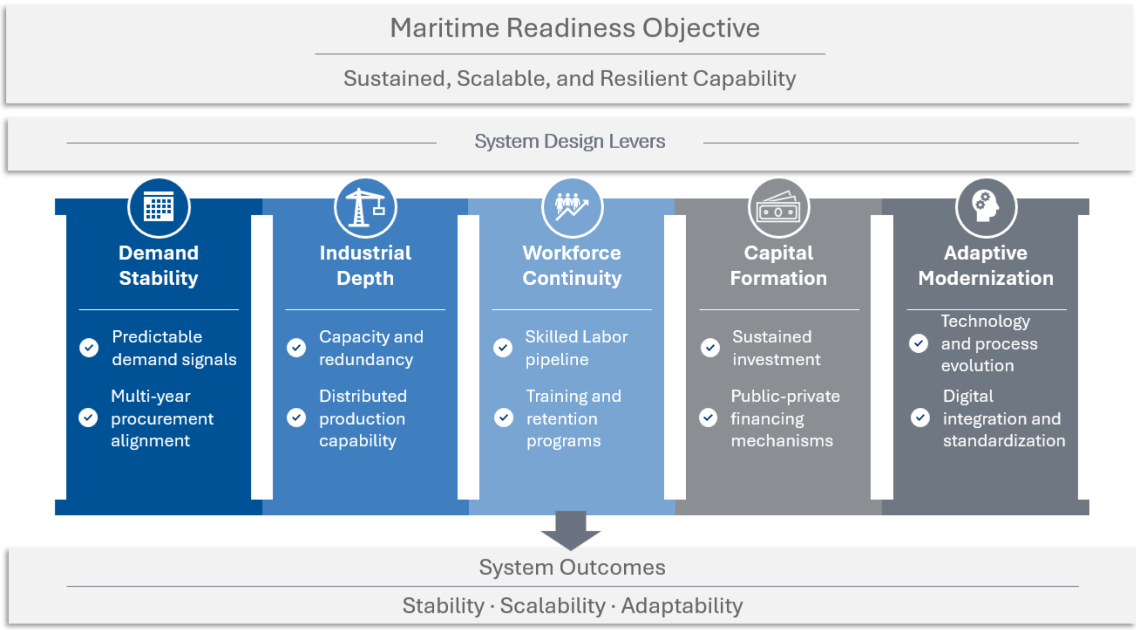

Figure 3. National resilience and risk framework for strengthening maritime readiness. The model highlights five reinforcing pillars: demand stability, industrial depth, workforce continuity, capital formation, and adaptive modernization, which collectively improve system resilience and long-term performance. Framework is based on analysis of industrial base and shipbuilding constraints (CRS, 2024a, 2024b, 2026; GAO, 2025a, 2025b; MARAD, 2021, 2023, 2025).

6. Integrating Federal, State, and Private Sector Action

Translating the resilience and risk framework into outcomes that are measurable requires coordinated action across federal, state, and private sector stakeholders. The constraints identified in earlier sections are not a result of a single point of failure, which means they cannot be resolved through isolated intervention. Instead, effective implementation depends on alignment across policy, workforce development, industrial investment, and operational execution.

Each pillar of the framework corresponds to a set of responsibilities distributed across these groups of stakeholders. System effectiveness depends on how well these roles are coordinated and reinforce one another.

6.1 Federal Alignment: Demand Signal and Strategic Direction

The federal government plays a critical role in shaping demand stability and long-term industrial conditions through the practices of procurement, policy, and strategic planning.

Key areas of responsibility include:

- Establishing consistent and predictable procurement profiles.
- Aligning budget cycles with multi-year shipbuilding strategies.
- Reducing funding volatility that disrupts industrial planning.
- Providing policy signals that support long-term capital investment.

Federal procurement decisions function as the primary demand signal within the system. When this signal is inconsistent, it introduces instability across workforce planning, supplier investment, and production scheduling. Conversely, stability and transparency in the demand profile enables downstream alignment across the industrial base.

In addition to procurement, federal policy influences capital formation and modernization through incentives, regulatory frameworks, and industrial base strategies. These actions create the conditions necessary for sustained investment and system-wide improvement.

6.2 State-Level Enablement: Workforce and Regional Ecosystems

State and regional entities are central to workforce continuity and localized industrial capacity.

Key areas of responsibility include:

- Development of workforce training and apprenticeship programs.
- Partnerships with technical schools and maritime academies.
- Regional workforce pipeline alignment with industry demand.
- Incentives to attract and retain skilled labor in shipbuilding regions.

Workforce challenges identified in MARAD and GAO assessments are localized within each region. Shipbuilding relies on geographically concentrated labor markets, and workforce availability is directly influenced by local education systems, economic conditions, and policy incentives.

State-level coordination strengthens the system by ensuring that workforce development efforts are aligned with both current and projected industrial demand. This reduces the risk of labor shortages while supporting long-term continuity in critical skillsets.

6.3 Private Sector Execution: Industrial Capacity and Innovation

The private sector drives production execution, investment in infrastructure, and manufacturing innovation.

Key areas of responsibility include:

- Expansion and modernization of shipyard infrastructure.
- Investment in advanced manufacturing technologies.
- Supplier base development and diversification.
- Adoption of digital integration and process standardization.

Decisions made within the private sector directly determine the system's capacity, efficiency, and adaptability. However, these decisions are influenced by external factors including demand stability and access to capital.

When supported by consistent demand signals and alignment with policy frameworks, private industry is positioned to invest in long-term capacity and innovation. Without these conditions, investment remains constrained, which limits the system's ability to scale or become modernized.

6.4 Integrated System Performance: Coordination as a Risk Control

The effectiveness of this implementation model is not defined solely by the performance of individual stakeholders, but by the level of coordination between them.

When there is a misalignment between federal demand signals, state workforce development, and private sector investment, friction is introduced into the system. This friction results in production delays, workforce shortages, supplier bottlenecks, and underutilized capacity.

In contrast, coordinated action enables:

- Synchronization between demand and production capacity.
- Alignment between workforce availability and industrial requirements.
- Efficient allocation of capital toward modernization and expansion.
- Improved system responsiveness to changes in demand.

From a resilience perspective, coordination functions as a critical risk control. It reduces the likelihood that disruptions in one area will propagate across the system and amplifies the effectiveness of investments made across all five pillars.

6.5 Bridging the Framework to Execution

The national resilience and risk framework provides a structured model for strengthening maritime readiness. However, its effectiveness depends on the ability to translate these principles into coordinated action across multiple levels of the system.

Federal, state, and private sector roles are not independent. They operate as interconnected functions within the broader industrial ecosystem. The success of this approach requires:

- Clear definition of roles and responsibilities.
- Alignment of incentives across stakeholder groups.
- Mechanisms for coordination and information sharing.
- Continuous evaluation and adjustment based on system performance.

By aligning these drivers, the framework can move beyond conceptual design and function as an operational model for improving maritime resilience.

7. Way Forward: Phased Implementation Strategy

Strengthening maritime readiness requires a phased approach that reflects the complexity of the system and the time required to rebuild industrial capacity. The constraints identified in earlier sections have come to light over decades and cannot be resolved through immediate intervention. Progress depends on coordinating actions in a way that stabilizes the system, builds capacity, and enables long-term resilience.

This section outlines a three-phase approach that aligns with the national resilience and risk framework and supports coordinated execution across federal, state, and private sector stakeholders.

7.1 Short-Term Priorities: Stabilization and Visibility

The initial phase focuses on improving visibility across the system and reducing immediate sources of instability. Key priorities include:

- Establishing a comprehensive view of workforce capacity, supplier dependencies, and production constraints.
- Improving transparency in procurement planning and timelines for funding.
- Accelerating workforce training programs in critical trades.
- Identifying high-risk, single-source suppliers and developing near-term mitigation strategies.

These actions are designed to create a clearer understanding of current conditions while addressing constraints that have the most immediate impact on performance.

The objective is to reduce uncertainty and improve decision-making. Enhanced visibility enables better coordination across stakeholders and provides a more accurate foundation for future investment.

7.2 Mid-Term Priorities: Capacity Expansion and Market Alignment

In the second phase, the focus shifts to strengthening the industrial base by investing where it matters most and improving how demand aligns with production capacity.

Key priorities include:

- Expanding shipyard capacity and modernizing existing infrastructure.
- Strengthening supplier networks through diversification and increased competition.
- Coordinating workforce development programs with project demand at a regional level.
- Implement consistent multi-year procurement strategies to stabilize demand signals.

In this phase, the system shifts from reacting to constraints to building capacity. Investments made in workforce, infrastructure, and suppliers start to reinforce one another, which improves both production efficiency and resilience.

7.3 Long-Term Priorities: System Integration and Sustained Resilience

The final phase focuses on establishing a self-reinforcing system capable of adapting to changing conditions while maintaining consistent performance.

Key priorities include:

- Institutionalizing stable procurement and funding models that support long-term planning.
- Advancing digital integration across supply chains and production environments.
- Embedding continuous improvement processes informed by performance data.
- Sustaining workforce pipelines through ongoing alignment with industry needs.

At this stage, the system is no longer defined by constraints, but by its ability to absorb disruption, scale in response to demand, and maintain continuity over time. The reinforcing dynamics identified earlier begin to operate in a positive direction, supporting sustained industrial performance.

7.4 From Intervention to System Design

The phased approach outlined above reflects a shift from isolated intervention to intentional system design. Short-term actions reduce instability, mid-term investments build capacity, and long-term integration promotes sustained resilience.

This progression aligns directly with the five pillars of the national resilience and risk framework. Demand stability, industrial depth, workforce continuity, capital formation, and adaptive modernization evolve together over time, reinforcing one another as the system matures.

This phased approach reinforces the central premise of this paper that maritime readiness is not a discrete industrial challenge, but a system-level resilience issue that requires coordinated, long-term design.

8. Conclusion

The challenges facing U.S. maritime readiness are often described in terms of cost or production performance. Those factors matter, but they do not fully explain what is happening across the industrial base. When viewed collectively, the evidence points to something more fundamental. The issue is not simply how efficiently ships are built, but whether the system that supports shipbuilding is capable of sustaining, adapting, and scaling over time.

The same pattern emerges across workforce availability, supplier networks, and production capacity. These are not isolated constraints. They are interconnected conditions that influence one another and shape overall system performance. When one area is stressed, the effects extend across the broader environment, increasing instability and limiting the ability to respond effectively to changing demand.

Framing the problem in this way shifts the focus toward strengthening the underlying conditions that allow the system to function reliably over time, rather than relying on program-level improvements or cost reduction alone.

The framework introduced in this paper is designed to reflect that shift. Demand stability, industrial depth, workforce continuity, capital formation, and adaptive modernization are not separate initiatives. They represent a set of reinforcing conditions that, when aligned, improve both performance and resilience across the industrial base. The phased approach outlined in Section 7 recognizes that these conditions cannot be rebuilt quickly. Progress depends on sustained effort, coordination across stakeholders, and a willingness to invest ahead of immediate need.

Industrial capacity does not adjust on short timelines. Workforce pipelines, supplier networks, and infrastructure development all require long-term commitment. The decisions made today will shape maritime capability for many years to come.

Strengthening maritime readiness means designing a system that can perform under pressure, adapt as conditions change, and continue to deliver over time. That requires coordination, consistency, and a sustained commitment to long-term system design.

9. Author Biography

Alison Svrcek is an enterprise resilience and business continuity professional with over 20 years of experience supporting complex, global organizations. She specializes in the development and integration of business continuity programs, crisis management, and operational resilience strategies within industrial and high-risk environments.

Her experience spans the energy, manufacturing, technology and healthcare sectors, where she has led enterprise-wide initiatives to strengthen preparedness, improve response capabilities, and align continuity practices with broader management systems. Alison holds the Member of the Business Continuity Institute (MBCI) certification and is actively involved in advancing the profession through leadership roles within the Association of Continuity Professionals (ACP).

10. References

[i] Government Accountability Office (GAO). (2025a). Shipbuilding and Repair: Navy Needs a Strategic Approach for Private Sector Industrial Base Improvements, GAO-25-106286, https://www.gao.gov/assets/gao-25-106286.pdf

[ii] Government Accountability Office (GAO). (2025b). Navy Shipbuilding: A Generational Imperative for Systemic Change (GAO-25-108136), https://www.gao.gov/assets/gao-25-108136.pdf

[iii] Congressional Research Service (CRS). (2024a). *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress* (RL32665) https://s3.documentcloud.org/documents/25174318/navy-force-structure-and-shipbuilding-plans-background-and-issues-for-congress-sept-24-2024.pdf

[iv] U.S. Department of Transportation Maritime Administration (MARAD 2025). *Report on Survey of U.S. Shipbuilding and Repair Facilities*, https://www.maritime.dot.gov/sites/marad.dot.gov/files/2026-02/US%20Shipbuilding%20Facilities%20-%202025-05-20.pdf

[v] Potter, B, (2024). Why Can't the U.S. Build Ships?, Noahpinion Blog, https://www.noahpinion.blog/p/why-cant-the-us-build-ships.

[vi] *Congressional Research Service (CRS). (2024b). The U.S. Defense Industrial Base: Background and Issues for Congress* (R47751), https://www.congress.gov/crs-product/R47751.

[vii] Maritime Administration (MARAD), March 30, 2021, The Economic Importance of the U.S. Private Shipbuilding and Repairing Industry, https://www.maritime.dot.gov/sites/marad.dot.gov/files/2021-06/Economic%20Contributions%20of%20U.S.%20Shipbuilding%20and%20Repairing%20Industry.pdf

[viii] Congressional Research Service (CRS). (2026). *Navy Constellation (FFG-62) and FF(X) Class Frigate Programs: Background and Issues for Congress* (R44972)

[ix] U.S. Department of Transportation Maritime Administration (MARAD 2023). *Mariner Workforce Strategic Plan FY 2023 to FY 2027*, https://www.maritime.dot.gov/sites/marad.dot.gov/files/2025-03/MARAD Mariner Workforce Strategic Plan - Rev. March 2025_0.pdf

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Svrcek, A. (2026). Strengthening U.S. Maritime Readiness Through a National Resilience and Risk Framework. (Report No. 2026 - 1041). The Sam Houston

State University Institute for Homeland Security.
https://doi.org/10.17605/OSF.IO/DM4WY

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