Foresight Planning for Maine's Economy

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camoin associates

Introduction

Why foresight, and why now?

Economic development planning has traditionally relied on historical data, current market conditions, and projections based on known trends. These tools remain essential, but they are often less effective at capturing the implications of rapid, overlapping change.

Technology, climate conditions, demographics, global markets, geopolitics, consumer behavior, and public policy are evolving simultaneously. These forces do not affect industries independently. Strategic foresight provides a structured way to explore these dynamics. It helps us look beyond the continuation of current trends, identify emerging signals of change, consider multiple plausible futures, and better prepare for risks and opportunities that may not yet be fully visible.

This is particularly important for Maine where the state's economic future is closely tied to industries that are being reshaped by technological innovation, workforce and demographic change, climate pressures, shifting global markets, and increasing competition. At the same time, Maine has significant assets on which to build. Foresight can help Maine consider how these assets may be used differently as conditions change and how the state can position itself to capture emerging opportunities.

What was the purpose of this foresight analysis?

The purpose of this analysis was to anticipate how emerging trends and signals might impact Maine's major industries and identify the strategies that local and state economic developers should consider when preparing for the future. The insights consider both Maine's economy as a whole and the specific opportunities and challenges facing each of the state's target sectors.

More specifically, the analysis aimed to:

- Identify and understand emerging trends and signals that are shaping the future of Maine's economy and target sectors, including manufacturing, life sciences and biotechnology, transportation, warehousing and logistics, the blue economy, and forest products.
- Equip Maine's economic development practitioners with foresight intelligence across the state's target sectors by identifying potential disruptors, emerging opportunities, and competitive threats.
- Movie beyond trend data and predictions toward strategic preparedness, helping Maine grow its economic opportunities within the context of signals shaping the future.

Who was this analysis completed for?

This analysis supported a presentation by Camoin Associates for the 2026 Annual Conference of the Economic Development Council of Maine. It will also be used to inform ongoing economic development-related projects and discussions in Maine.

Introduction

Who conducted this analysis?

This analysis was conducted by Camoin Associates, a national economic development consulting firm with 27 years of experience supporting strategic planning, implementation, and evaluation for state and regional economies, including extensive work in Maine.

Through our work with communities, regions, and targeted industry sectors across the country, we have seen how rapid change and growing complexity related to technology, climate, culture, geopolitics, and economic disruption have created a need for planning processes that are grounded in intelligence, informed by multiple perspectives, and designed to look both near-term and long-range. Effective plans must also be continuously assessed and adapted as conditions change.

For this reason, Camoin Associates has integrated strategic foresight intelligence and planning methods into our adaptive planning approach for resilience.

How was this analysis completed?

The analysis drew on Camoin Associates' experience and insights from multiple years of work across Maine, as well as a review of recent statewide economic plans, strategies, and industry reports.

The analysis was supported by PreEmpt.Life, a leader in AI-enabled strategic foresight and Camoin's preferred strategic foresight tool. PreEmpt.Life uses AI-enabled models to identify emerging signals, potential disruptions, opportunities, and competitive threats.

Recent Maine economic plans and reports were integrated into the foresight tool, including:

- *Maine 2020–2029 Economic Development Strategy: The 2024 Reset* — Maine Governor's Office and Maine DECD
- *Maine Economic Vision 2035* — Maine State Chamber and Maine Development Foundation
- *Measures of Growth* — Maine Development Foundation
- *Industry Market Analyses* — Maine DECD Domestic Trade Program
- *Advanced Manufacturing Workforce Strategy: A Workforce Development Strategy for Maine's Advanced Manufacturing Industry* — MAME, MTI, Maine Department of Labor, Workforce Maine, and the Maine Forest Bioproducts Tech Hub
- *Maine's Blue Economy Task Force 2.0 Report* — Maine DECD

Results of Strategic Foresight Process

How is this analysis meant to be used?

This analysis is not meant to be predictive or provide an answer. It is meant to guide further inquiry and discussion. It is meant to support **adaptive planning**, which is continuous strategic planning that considers both near-term and long-term emerging trends, signals, and possibilities and builds capacity to be prepared and proactive.

Some of the concepts presented are intentionally exploratory. Their purpose is to expand the range of possibilities under consideration and help economic development leaders identify areas that may warrant deeper analysis, partnership, or experimentation.

What is Strategic Foresight?

At its foundation, strategic foresight is the process of anticipating multiple possible futures to inform present decisions.

- Foresight is not modeling to predict.
- It does consider plausible future possibilities expressed through scenarios.
- It is used to build capacities to adapt plans and actions to be future-ready.

Used alongside traditional economic analysis, foresight can help decision-makers move from reacting to change toward preparing for it.

Adaptive planning

Strategic planning, which emphasizes defining a clear direction and end goals, works best when there are predictable future environments and data. These conditions are increasingly less common. Adaptive planning considers multiple possible futures and uses imperfect or evolving data to guide decisions as conditions change

Executive Summary

Maine's traditional economic strengths such as deep-water ports, working forests, a highly regarded science and biotech base remain real assets, but are increasingly exposed. Aging infrastructure, a shrinking and aging workforce, climate-driven disruption, and fragmented, short-cycle policy making are converging to put the state's core industries at risk of losing ground to better-resourced and more agile competitors. Left unaddressed, these pressures threaten to turn Maine into a net exporter of talent and value rather than a place where growth is captured and reinvested locally.

Challenges and Threats

Stress is broadest where Maine's industries depend on scale, logistics, and labor: shipbuilding, pulp and paper, and food processing all rely on supply networks now strained by climate disruption and unreliable staffing, while shipping and forest-product margins are increasingly commoditized by out-of-state and global competitors. Rural communities bear the brunt through boom-bust cycles and thin broadband access, as fisheries and forestland face mounting climate risk.

Compounding this, a thinning workforce pipeline, wage and skill mismatches, capital scarcity, and slow, siloed permitting and regulatory processes make it harder for promising sectors like modular wood products, aquaculture, marine technology, advanced manufacturing, biotech to scale within the window of opportunity. Political short-termism and an over-reliance on risk-averse legacy investors further undercut the sustained, long-range investment these transitions require.

Opportunities

Maine's sectors are more interdependent than they are often treated: manufacturing and logistics hinge on innovation in timber and the blue economy, biotech connects to agriculture and aging-related demand, and infrastructure renewal touches nearly everything else. This interdependence is itself an opening.

Maine is well positioned to convene North Atlantic clean-shipping and sustainable port innovation, and to lead in "nature tech" - digitally enabled climate-adaptive forestry, aquaculture monitoring, and marine carbon markets. Concrete near-term opportunities include cross-laminated timber and other forest-products innovation, aquaculture and marine-tech expansion built on Gulf of Maine assets, advanced-manufacturing platforms (automation, digital twins, supply-chain resilience), a life-sciences and biotech cluster leveraging biomedical manufacturing and diagnostics, and deeper cross-border collaboration with Atlantic Canada and the broader Northeast on trade, workforce sharing, and green logistics corridors.

Key Findings

Recommendations

Closing the gap between risk and opportunity calls for action on five fronts:

1. First, build genuine foresight capacity that includes a statewide horizon-scanning desk with live dashboards and scenario libraries, paired with participatory planning that brings policymakers, businesses, and communities into shared scenario work, and contingency funds sized for recurring shocks.
2. Second, invest in workforce systems that move faster than the labor market changes: just-in-time credentialing, comprehensive reskilling paired with immigration and youth-retention strategies, and circular-migration or remote-work models for border-adjacent counties.
3. Third, accelerate business and industry development through tiered incentives for advanced manufacturing, biotech, and sustainable forestry; supply-chain risk councils; and fast-track permitting that cuts administrative drag without weakening equity or environmental safeguards.
4. Fourth, modernize digital and physical infrastructure, including ports, broadband, and microgrid energy, with resilience built in from the start.
5. Fifth, embed rural communities directly in every initiative rather than treating them as an afterthought, including new innovation-district models that link university extension, telework, and skills pipelines to keep young people and repurpose legacy assets.

Flagship pilots such as a "Digital Twin Maine" for ports and supply chains, a Resilient Workforce Hub for cross-sector redeployment, and a Coastal Circularity Lab turning wood and seaweed waste into new aquaculture feed illustrate how these priorities can be tested quickly and at modest cost.

Bottom Line

Maine has a narrow but real window to convert its natural, scientific, and geographic assets into durable, home-grown economic value. Doing so will require treating foresight, workforce renewal, and infrastructure modernization as a single integrated strategy rather than separate initiatives — and acting on that strategy before the workforce and climate pressures already visible today become irreversible.

Maine has significant natural, scientific, and geographic assets that can support durable, home-grown economic value. Realizing their full potential will require a more integrated approach to foresight, workforce renewal, and infrastructure modernization. As workforce, climate, technology, and market conditions continue to evolve, Maine's competitiveness will depend on its ability to recognize emerging opportunities, respond to risks, and adapt its strategies over time.

The Results

Central Findings

If Maine uses traditional trend-watching and incremental planning, it will lose its competitive edge to faster, more adaptive regions. It is imperative that Maine shift from risk-avoidance to active leadership in adaptable, inclusive growth across its strategic industries.

Top Trends and Contextual Patterns

1. **Manufacturing** is rapidly reshaping around low-carbon tech, digital automation, and circular economy models, but faces an acute shortage of skilled talent and exposure to global supply chain shocks.
2. **Life sciences/biotech** is accelerating, with rural health innovation, agri-tech, and bio-derived medicines moving ahead, yet regulatory bottlenecks and capital concentration are slowing decentralized adoption.
3. **Transportation, warehousing, logistics (TWL)** is at an inflection, with booming port and intermodal volumes powered by e-commerce, but strained by inadequate rural logistics and shifting cross-border policies.
4. **Blue economy** is surging on aquaculture diversification, climate infrastructure, and marine tech—where Maine's bet is collective—but legacy resource management and climate adaptation lag.
5. **Forest products** is pivoting to value-added wood products, biomaterials, CLT, and sustainable packaging, fighting competition from global clusters, yet promising significant emissions reductions if scaled.

Challenges, Threats, and Roadblocks

Where Maine's Industries Feel Stress

Value Creation at Risk: Maine's edge lies in its deep-water ports, forests, and science talent, but aging infrastructure and workforce shortages leave all major sectors exposed.

Value Extraction Weakness: Shipping and forest-product profits are being commoditized by out-of-state and global players; biotech success stories too rarely scale at home.

Interdependency Red Flags: Pulp, shipbuilding, and food processing depend on robust logistics networks now choked by climate disruptions and unreliable labor supply.

Harms and Inequity: Rural towns see boom-bust cycles, lacking broadband, while climate change threatens both fisheries and wooded lands. Additionally, if Maine's investments succeed without jointly upgrading local workforce benefit structures, the state will become a "feeder" of talent, not a beneficiary.

Economic Threats

- Industry growth is patchy and volatile; workforce pipelines are thinning
- Fragmented planning leaves many companies exposed to shocks
- National and global rivals invest boldly in advanced technology and talent, outpacing Maine
- Demographic collapse (labor force)
- Outcompeted for digital/VC capital
- Market/price volatility (fish/wood/fuel)
- Fragmented industrial policy, regulatory lag
- Skill mismatch, wage gaps
- Climate-driven supply chain instability

Challenges

- Overcoming the rural workforce and skills pipeline collapse under digital transition, increased outmigration, and loss of education/health anchors.
- Achieving economies of scale in small/medium sectors in the face of global consolidation in bio-based and food systems.
- Accelerating regulatory and permitting reforms to allow new clusters (e.g. modular wood, aquaculture, marine tech) to scale within the next three years.
- Talent and aging workforce shortages hampering growth, especially for sectors like advanced manufacturing, biotech, and logistics.
- Infrastructure gaps (digital, port, grid, rail) limiting competitiveness; slow permitting and fragmented governance impeding innovation.
- Margin pressures from global competition, trade volatility, and rising input costs challenging profitability and reinvestment.
- Climate risks (sea level rise, extreme weather) threatening blue economy assets, maritime infrastructure, and rural supply chains.
- Limited scale/market reach, compounded by a "capital desert," restricting entrepreneurship and next-stage investment.
- Community resistance to change and "brain drain" threatening innovation pipeline and generational transition within legacy sectors.
- Fast-evolving environmental, social, and governance frameworks, biodiversity, and AI/biotech safety regimes internationally could rapidly shift license to operate, triggering need for pre-emptive regulatory upgrades.

Opportunities

Market Dynamics for Opportunities

- Maine's sectoral futures are deeply interconnected. Manufacturing and logistics depend on innovation in timber/blue economy; biotech ties to agri-bio, aging, and global demand volatility; transport/logistics and blue economy are co-dependent on infrastructure renewal and climate impact responses.
- Regional policy convergence and talent/capital flows with New England and Atlantic Canada will shape the competitive envelope.
- Maine can play a unique convenor role for North Atlantic clean shipping and sustainable port innovation, leveraging its geography, policy capacity, and cross-border ties.

Overlooked potential exists in "nature tech"—digitally enabled ecosystem services for rural resilience (e.g., climate-adaptive forestry, aquaculture monitoring, marine carbon markets).

Opportunities

1. Maine as a living laboratory for climate-driven manufacturing and "blue/green" convergence startups.
2. Leveraging collaborative platforms for adaptive workforce reskilling (youth, late-career, immigrants, disconnected rural populations) targeting both immediate and future gaps.
3. Aligning state procurement and anchor institution demand toward homegrown CLT modular construction, green packaging, and biotech.
4. Advanced manufacturing innovation (automation, digital twins, sustainability, supply chain resilience) creates platform effects across industries.
5. Life sciences/biotech cluster potential—leveraging biomedical manufacturing, agri-tech, and diagnostics for high-value exports and talent attraction.
6. Blue economy leadership via aquaculture expansion, marine tech, and sustainable fisheries, building on Gulf of Maine assets.
7. Forest products innovation (cross-laminated timber, bio-fuels, circular economy) pivots aging sector to high-value and low-carbon markets.
8. Transportation/logistics modernization with digital supply chain integration, nearshoring, green corridors, and inland port development.
9. Regional collaboration (e.g., Atlantic Canada/Northeast US corridor) for cross-border trade, workforce sharing, and marine logistics.
10. Emergent public-private-academic partnership models around workforce, entrepreneurship, and cluster development.

Strategic Options

Foresight and Adaptive Planning

1. Build an anticipatory, participatory foresight hub that integrates policymakers, businesses, the workforce, and local communities for adaptive scenario planning.
2. Seed "applied lighthouse" experiments in blue economy/green finance, leveraging blue-carbon, aquaculture, and digital marine pilot zones.
3. Incentivize cluster innovation "sandboxes" with public-private networks and cross-border peer learning; leverage Maine's trusted stakeholder organizations as conveners.
4. Embed economic resilience and equity measures in all initiatives (stakeholder share ownership, Indigenous co-design, social procurement).
5. Build state-local policymaker networks for scenario planning and collective risk monitoring, with embedded digital foresight platforms.
6. Stand up a statewide foresight and horizon scanning desk, with live digital industry dashboards and scenario libraries accessible to all economic development practitioners.
7. Pilot rapid-response innovation "sprints" with economic developers, using crowdsourced field calls to validate/triage faint and reemerging signals in real time.
8. Significantly strengthen scenario-based policymaker training and cross-sector horizon scanning. Move beyond static "trend reports" to dynamic, linked foresight cycles.
9. Proactively design "shock absorbers" such as contingency capital, regional risk pools, and just transition funds. Anticipate more frequent large-scale shocks (e.g., supply chain, workforce, climate, cyber disruptions).

Workforce

10. Fast-track upskilling and "just-in-time" credentialing pipelines aligned to emerging subsectors and incorporate global best practice apprenticeships.
11. Approach workforce development comprehensively, integrating reskilling, immigration, and attraction/retention of young talent.
12. Lifelong Mobility Models: Address workforce/aging challenges by piloting circular migration and remote work programs, keeping Maine in the talent economy, especially in border-adjacent counties.

Strategic Options

Business and Industry Development

13. Provide triple-tiered incentives for advanced manufacturing, biotech, and sustainable forestry innovation focused on circularity, digital, and low-carbon solutions.
14. Form statewide supply chain "risk councils" including SMEs and large employers to stress-test, simulate, and contingency-plan for shocks.
15. Embed rapid permitting "checkpoints" and dynamic market intelligence nodes in agencies to accelerate launches and improve responsiveness.
16. Accelerate cluster-focused innovation hubs. Tie public research and development incentives to scalable commercial anchor projects and cross-sector applied research.
17. Foster catalytic public-private capital for scaleups, emphasizing place-based industrial funds with local co-investment.
18. Launch "blue-green" growth zones aligned with climate resilience, combining aquaculture, coastal tech, and forest product manufacturing.
19. Develop fast-track regulatory and siting processes for emerging industries, modeled on successful international "innovation zones."
20. Expand fast-lane permitting/one-stop shop models for qualified greenfield and brownfield industrial projects, reducing administrative drag without compromising equity or environmental safeguards.
21. Create Climate Adaptation Markets and foster development of new insurance, data, and investment services focused on "climate-adaptive" assets helping Maine industries monetize resilience and create new exportable services.
22. Support ocean and forestry genomics by investing in next-gen genetic research and development to boost productivity/resilience in aquaculture and forest products (partnering with regional genomics consortia).
23. Accelerate community wealth building by launching a pilot fund for locally owned industry spinouts, providing technical assistance to co-ops, and securing community equity stakes in key initiatives.
24. Fast-evolving Environmental, Social, and Governance (ESG), biodiversity, and AI/biotech safety regimes internationally could rapidly shift license to operate, triggering need for pre-emptive regulatory upgrades.

Strategic Options

Infrastructure

25. Accelerate digital/physical infrastructure with "resilience-by-design" (e.g., port AI/logistics, mesh broadband, microgrid energy).
26. Prioritize smart infrastructure investments: port digitalization, green energy corridors, renewable-powered logistics, and fiber broadband statewide.

Rural Development

27. Embed rural outreach in all innovation/economic policies to address the demographic and workforce crunch.
28. Develop a coordinated, state-led blueprint for multi-sector rural digital and workforce infrastructure, emphasizing inclusive design with marginalized and under-resourced communities.
29. Build and test new rural innovation district models, linking university extension, telework, maker, and skills pipelines in "microlocal" nodes to retain youth and repurpose legacy assets.

Potential Breakthroughs & Hybrid Solutions

Innovation	Practical Application	Cost & Viability
AI-driven crop/forest mapping	Boosts harvest yield, climate-resilient plans	Moderate—public seed funding, proven in SE Asia & Finland
Modular aquaculture/food hubs	Sidesteps distribution bottlenecks	Medium—co-ops can run, tested in Chile, Denmark
Bio-based packaging	Replaces plastics, locks in pulp value	Getting cheaper, supported by EU policy shifts

Rails: Transition Programs That Move Maine Forward

Program/Lab	Description	How It Accelerates Change
Digital Twin Maine	Real-time virtual copies for ports, forests, whole supply chains	Early warning of shocks, tests new policy fast
Resilient Workforce Hub	Ongoing cross-training: logistics, robotics, marine tech	Rapid redeployment, equitable job access
Coastal Circularity Lab	Pilot: aquaculture feed from wood waste & seaweed blends	Closes loops, new revenue channels

About Camoin Associates

This report was meant to be a high-level assessment based on strategic foresight methods. The work was drawn from the insights and experience of Camoin Associates and the utilization of the PreEmpt foresight intelligence tool. The work leading to this report generated significant additional insights, assessments, and recommendations. This overview is meant to provide high-level, thought-provoking insights for economic developers in Maine. The work and methods that went into this analysis can be further used for more in-depth assessments and strategies for economic and industry development.

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