

CONNECTICUT MARITIME COALITION

STRATEGIC CLUSTER INITIATIVE



LINKING CONNECTICUT'S FUTURE WITH THE
EMERGING GLOBAL TRADE GRID

Final Report

JULY 2000

STRATEGIC CLUSTER INITIATIVE

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- Bridgeport Port Authority
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- Connecticut Department of Economic and Community Development
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- Logistec Connecticut, Inc.
- Machine Works At Essex, Inc.
- New England Shipping Company, Inc.
- Seaworthy Systems, Inc.

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PREFACE

In 1998, Harvard economist Michael Porter completed a study of the State's economy that organized economic activities into a series of clusters. The concept of the cluster groups provided the impetus for maritime leaders to create a more comprehensive and focused strategy for maritime activities. Through a series of meetings held with the Governor's staff, the State recognized the importance of these activities and provided initial funding to support the creation of a Maritime Cluster Initiative.

In May 1999 Bill Gash was engaged by Jim Abromaitis, Commissioner of the Department of Economic Community Development of the State of Connecticut to investigate the various ways to organize actions to strengthen the Connecticut Maritime Cluster. The first of four planned phases began in June 1999. This phase involved a series of meetings between Connecticut maritime business leaders with the assistance of Connecticut's Department of Economic and Community Development (DECD) and the Connecticut Economic Resource Center, Inc. (CERC) that lead to the formation of the Connecticut Maritime Coalition, Inc. (CMC).

Phase Two began in January 2000 when the CMC engaged Michael Gallis as a consultant to assist in the preparation of a strategic outline entitled "Strategic Cluster Initiative" for the Connecticut Maritime Coalition. Preliminary data from the report confirmed the Maritime's importance to Connecticut's economic future. The report, completed in July 2000, forms the platform to launch Phase Three.

The enthusiasm from public and private sectors to the preliminary concepts of the maritime cluster will drive the momentum built into Phase Three, and will focus on engaging the membership, administrative staff, government and institutions in the creation of a strategic plan. It will focus on building membership via proactive marketing (i.e. presentations, executive level sessions, one-on-one and member referrals). This phase will also include the substantiation of the cluster and framework based on the broader based organization. Additionally, the CMC organization will be defined including its operations, schedules and initiatives. This phase is scheduled to run from July 2000 through March 2001.

The fourth phase will be the CMC functioning as an operating organization engaged in initiating the strategic activities necessary to build and strengthen the maritime cluster beginning in spring of 2001.

EXECUTIVE SUMMARY

The Connecticut Maritime Coalition (CMC), the cluster's organizational center, was formed in February 2000 by Connecticut's maritime leadership to manage the cluster's activities and initiatives. CMC's Board of Directors represents the top leadership of cluster members. The organizational concept of the CMC is to link private, public, environmental, military and institutional leadership and resources into a new partnership that strengthens Connecticut's maritime economy and heritage.

In January of 2000, the CMC in collaboration with the Connecticut DECD and CERC, engaged Michael Gallis & Associates to assist in the preparation of a strategic report entitled "Strategic Cluster Initiative". This report provides a comprehensive framework of explaining, understanding and evaluating the Connecticut maritime cluster and outlines the framework of Connecticut's maritime strategy. This strategic approach to maritime economic growth engages all of Connecticut's maritime businesses in a phased implementation of maritime activities. The benefits of these maritime activities are:

- Strengthens Connecticut's linkages to the global trade grid,
- A necessary component to the revitalization of Connecticut's waterfront cities,
- A viable solution to the congestion on Connecticut's I-95 corridor,
- Attracts/holds a skilled workforce in Connecticut,
- Strengthens Connecticut's quality of life and environment second to none.

Highlights of findings

- The maritime industry is three and one half centuries old and has been a vital and important part of the Connecticut economy since the founding of the state. The industry has passed through several distinct phases throughout its history and has demonstrated a remarkable ability to redefine and restructure itself to changing conditions. The maritime industries are deeply connected to a wide range of business, urban recovery, environmental and transportation issues.
- Four maritime industry components: transportation, manufacturing & services, recreation and commercial fishing form the hub of the cluster's network of economic activity that currently generates direct revenues of \$2.6 billion in Connecticut.
- The cluster's four distinct components are all interdependent on the marine ecosystem.
- The cluster has functional linkage to a wide range of other economic activities and serves a broad customer base with direct and indirect impacts on every citizen of the state.
- Twelve of Connecticut's eighteen major cities are on the waterfront. Maritime is a key to urban recovery.
- Water based transportation has an impact on the existing interstate and transit network and the congestion on Connecticut's I-95 corridor. In the movement of goods, water based transportation has an important and vital role to play as one of the four principal means of moving goods (i.e. air, sea, road and rail) in and out of Connecticut. For passenger movement, water-based transportation moves over 2.2 million passengers and 750,000 vehicles throughout the region each year.
- Connecticut's waterfronts provide the state with a remarkable amenity. Turning this amenity into an active participant in the State's economic future is proportional to the ability to access and utilize these resources as part of the State's quality of life. While the state has extensive waterfront, it has limited public waterfront access. It is through the recreational component of the maritime cluster that this remarkable location along the water's edge can be fully appreciated by the citizens of the state.
- Unlike other industries that are typically located in the center of inland, urbanized areas the maritime industries occupy sites where a variety of land, water and airborne plant and animal species all come together. As a result, these sites and locations are heavily regulated having a powerful effect on the growth and development of all types of maritime activities. Maritime leaders, realizing the importance of the state's most valuable natural resource, are working with environmental organizations to ensure proper balance and efficiencies.
- The State of Connecticut needs to recognize the maritime industries and accept policy that is focused on proactively encouraging the growth and strengthening of the cluster. The policy will serve as a framework for prioritizing actions and will provide all sectors with an understandable framework in which to position their own activities in relationship to the direction of government.

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I. ESTABLISHING THE CONTEXT

A. Vision

The vision of the maritime cluster is to have Connecticut recognized worldwide for its comprehensive and holistic approach to integrating maritime based industries into its economic, environmental and quality of life development. Entering a new global age, Connecticut's maritime activities face a host of new opportunities and challenges. Not only do they form an important part of the state's economy, they are directly linked to a very broad set of other transportation, manufacturing, agricultural, environmental and recreational activities. The maritime activities also are vital parts of the state's quality of life as they provide safe access to the water and ocean resources available to the citizens. The cluster recognizes Connecticut's heritage as a premiere economic contributor of maritime goods and services to the global network.

B. Goal

One of the cluster's major goals, leveraging its legacy and heritage, is to be a key enabler and contributor in linking Connecticut's economic future with the newly emerging global trade grid. A strong vision and goals built upon a deep understanding of the competitive relationships that our businesses, government, environment, military and institution's face can provide the focus for creating a dynamic future for Connecticut's maritime activities.

C. Industry Cluster

Throughout the history of Connecticut, maritime activities have been a significant part of its economic mix. While the composition of the cluster has evolved over the past 370 years, it remains a vital part of the state's economy and environmental activities. **The maritime cluster is composed of a set of four distinct components (transportation, manufacturing, recreation and commercial fishing), all interdependent on the marine ecosystem.** The cluster has functional linkage to a wide range of other economic activities and serves a broad customer base with direct and indirect impacts on every citizen of the state. The direct impacts range from employment and job creation to local, state and federal taxes, while indirect impacts range from cost of goods to quality of life.

D. Concept of the CMC

The Connecticut Maritime Coalition, Inc. (CMC) is the cluster's organizational center. The initial vision of the CMC was to develop the organizational capacity and strategy necessary to strengthen Connecticut's Maritime Industry Cluster. **The organizational concept of the CMC is to link private, public, environmental, military and institutional leadership and resources into a new partnership to strengthen Connecticut's maritime economy.** By combining the market knowledge and expertise of maritime business owners with talents and resources of government, education and economic development organizations, the State and member companies can be competitively positioned to face the challenges created in the new economy.

E. Maritime Economic Framework

The CMC recognized that the maritime cluster has not been well defined or understood by the business community, government and institutions throughout the state. The CMC recognized that a framework was needed to explain the various activities that define the cluster, their linkage to economic and environmental activities and the customers that they serve. Therefore, the CMC initiated work on an initial report entitled "Strategic Cluster Initiative" to provide a comprehensive framework of explaining, understanding and evaluating the maritime cluster. CMC provides this document to encourage consensus among state and regional maritime stakeholders, to provide a forum by which business leaders may participate in cluster strategies and to activate private, educational and government resources that advance environmentally balanced maritime economic

development in the state and the region. This document is the first step that begins to shape a strategic framework for strengthening Connecticut's maritime economic activity.

F. Strategic Approach To Growth

This strategic cluster initiative is based on the idea that nurturing the state's maritime industries and linkage industries improves the competitiveness of businesses within these industries and the state's economy, environment and quality of life. **The CMC is activating a strategic approach to maritime economic growth that engages all of Connecticut's maritime businesses in a phased implementation of maritime activities.** Business, government and institutional leadership will continue to define the strategic framework and the CMC as the maritime cluster evolves. The CMC is currently involved in three basic activities. The first is building private-sector membership. Second is the enhancement of relationships between all maritime stakeholders. And third is building a strategic framework and implementing an action agenda.

II. EVOLUTION OF THE CLUSTER

The state's location on the Atlantic Seaboard and Long Island Sound combined with an extensive network of rivers have provided it with access to water and ocean resources that has continually influenced its development. In evaluating the future of the maritime economic activities, an understanding of the previous phases, their characteristics, trends and changes is important in providing context for the decisions we make today about the direction of the state's maritime economic activities.

For hundreds of years, Connecticut has looked to the open waters of the Atlantic, Long Island Sound, the coastal estuaries and inland rivers for both inspiration and livelihood. Connecticut's people always have aggressively found new ways and new industries to exploit the sea's bounty, pursue adventure on and under its surface and enjoy its vast beauty. Through new ideas and technologies, fishery development, naval defense and exploration, Connecticut's continuing connection to the sea helped not only to build the state but also played a large part in America's maritime story. The Connecticut seafaring ways and its coastal connections continue to spur imagination and stimulate the economy.

Connecticut's people have always harvested the ocean's resources for profit. From the earliest days, Native people in Connecticut looked to the sea for sustenance, transportation and culture. Fifty percent of the sustenance base of these native peoples was directly tied to the ocean.

One of the first Connecticut maritime ventures was hunting fur seals in the South Atlantic for trade with China in the late 18th and early 19th centuries. Most of the fur sealers sailed from New Haven or Stonington and traded fur skins for tea, chinaware and textiles. Vast fortunes were established through the fur seal trade but paled in comparison with the riches generated from whaling. By the mid 1840s, New London became the second largest whaling port in the world after New Bedford. The whaling fishery was probably the most important fishery that Connecticut has ever had in terms of dollars. One cargo of whale oil could be worth as much as \$1 million in today's money.

Connecticut farmers and merchants prospered during the Colonial Period and the early nineteenth century with a huge maritime trade to the West Indies Islands of the Caribbean. Connecticut shipped endless amounts of livestock to the West Indies as well as grown products like wheat, corn and potatoes. Rum and molasses were generally brought back on the return trip. New Haven, New London, Norwich, Stonington, Middletown and Hartford were all deeply involved in trade to the West Indies.

Commercial maritime activities have long been important to Connecticut. Today large ports are being upgraded in New London, New Haven and Bridgeport. Lumber is the major port cargo activity in New London. In New Haven, a major oil and steel-importing seaport, automobile scrap is regularly exported to Asia. In Bridgeport, banana boats come in on a weekly basis from Columbia bringing bananas for distribution as far west as the Midwest and as far north as Canada.

Maritime trade created an impetus for shipbuilding all over the state and created a great deal of prosperity in which many people shared. Shipbuilding along the Connecticut River was one of the largest Connecticut industries with the exception of agriculture during the eighteenth and nineteenth centuries. Over the years there were about 42 shipyards between Old Saybrook and Springfield, Massachusetts. These river valley shipyards produced close to 4,000 sailing vessels. Early vessels were built in response to the stone industry and transported brown stone as a building material from the Connecticut River valley to New York City. Later, larger ships in the 700 to 1,000 ton size

were built in the Essex and Old Saybrook shipyards in response to the whaling and cotton industries.

Connecticut also produced the ships and ship captains that sailed out of New York, then the nation's greatest transatlantic shipping port. During the age of the clipper ships, Connecticut furnished 22 clipper ships to the port of New York. These vessels were designed to carry cargo in the quickest possible fashion to the gold fields of California. The Mystic-built clipper ships set three consecutive speed records from New York to San Francisco. When the Civil War arrived, Mystic shipyards produced 56 vessels in a four-year period. The most famous was the gunboat Galena, which was the nation's first oceangoing iron clad vessel. During this time, America's first submarine, the Turtle, was constructed in Essex.

Connecticut's place in submarine history was to continue with Electric Boat in Groton. Submarines built by Electric Boat played a critical part in the Allied war effort in World War II. At the peak of the war, Electric Boat employed over 12,500 people and was launching a new submarine every two weeks. In 1954 Electric Boat launched the world's first nuclear powered submarine, marking the beginning of the nuclear navy so critical to this nation's Cold War strategy. By the early 1980s, Electric Boat's workforce had grown to around 28,000 people and delivered 3 to 4 submarines a year. Presently, Electric Boat employees around 8,000 people and delivers one submarine a year. Submarine Base New London, established in 1868, presently employs over 9,000 military and 1,000 civilian personnel. In 1910 the United States Coast Guard came to New London, first at Fort Trumbull, and then in 1932 to its present location. The Coast Guard Academy is a military higher educational institution that produces high quality maritime graduates.

For the last 200 years, fishing has played a major part in Connecticut's maritime heritage. Stonington is port to Connecticut's surviving fishing fleet. Lobster production is a \$15 million industry in the state. The oyster industry is one of Connecticut's ocean agricultural success stories. From the mid- to late 19th century oysters were the hamburgers of their day and Norwalk oystermen were among the nation's most successful. At the turn of the 20th century, Connecticut could boast of having the largest fleet of steam-powered oyster boats in the world, with many of these boats built in Connecticut. Today more than 30 businesses are involved in culturing oysters, annually producing \$50 to \$60 million worth of oysters. Norwalk is home to the largest single oyster business in the United States, with about 22,000 acres of oyster grounds.

Privately owned marine trade businesses are also a significant component of Connecticut's maritime economy. Some businesses, such as net making and sail making, go back to the early days of seafaring Connecticut. But more often the type of maritime businesses evolved primarily reflecting the growth of recreational boating. Since the early 1940s, one such business that has prospered has been the marina. Today, Connecticut's shoreline and rivers are dotted with 175 marinas boasting tens of thousands of pleasure boats. The concept of pleasure boating first became a reality to most people in the early 1800s with the newly invented steamboat. For the first time Connecticut's rivers conveniently connected state residents to the sea and far off ports for business and pleasure. Although the steamboat transportation industry has long vanished, thousands in the region still use the water as an alternative to travel over land. About 2.2 million passengers use the New London and Bridgeport ferries each year, taking about 750,000 vehicles off the road.

The story of Connecticut and the sea is constantly evolving, connecting the rich maritime history of the state to its future. Through the centuries Connecticut's people have used the sea for an endless stream of maritime commerce, production and recreation. Some industries have run their course and have become part of history, others have been transformed by changing times and still others are yet to be born and to flourish. In the

final analysis, the defining characteristic of Connecticut's relationship with the sea is the fertile meeting of imagination with the sea's infinite possibilities and how ideas, expertise and bold ventures have created great rewards, often with equal sacrifice.

III. POSITIONING THE MARITIME CLUSTER

A. Global Change:

As a result of the fall of the Soviet Union in the early 1990s and the establishment of the European Union, global trading patterns have changed on a far-reaching scale. Global economic integration has led to a need to provide transportation/logistics services to the former Communist countries isolated during the Cold War and is creating new points of trade where ocean shipping can access continental trade flows within the European Union and in North America. The Indian and Asian markets also are eagerly seeking new global trade relationships, resulting in new trade flows in these areas as well. The Tiger Economies of the Pacific Rim, including China, have steadily moved the locus of manufacturing activity southward away from Japan. That locus is now close to Singapore and is still moving.

Connecticut's maritime cluster is part of worldwide maritime and maritime-related activities. During this period of global economic reorganization, all facets of maritime activities are in the midst of reorganization. Shipping routes are changing rapidly in response to new technologies, new demands for products and the reorganization of global trading blocs. As a result, new port facilities are coming online and are quickly becoming major hubs in the evolving global network, while some older, more established ports are struggling to respond to these changes. The e-commerce revolution and huge advances in information technologies for tracking goods are driving forces in making intermodal efficiencies on a global scale more important than ever.

Significant corporate restructuring of ocean shipping companies has occurred. This restructuring, combined with the significant changes in the landside distribution pattern, is creating an integrated operational transportation and logistics network. The integration of continental distribution grids has redefined the principal access points to the continental grid leading to a simplified routing structure and creating a need for greater efficiencies. This in turn has led to a demand for larger and larger container ships.

B. NAFTA and the Continental Grid:

The passage of the North American Free Trade Agreement (NAFTA) integrated trade relationships on a continental scale. The resulting restructuring of the continental trading patterns is due to the demands of global competition. New air, trucking, rail and sea transportation alliances are reorganizing the surface distribution pattern and have begun to blur traditional boundaries. Traditional U.S. east-west trading/shipping patterns are undergoing rapid changes and are evolving with a continental-focus rather than solely with an U.S.-focus. The need to integrate the U.S., Canadian and Mexican economies has resulted in a new north-south trading orientation, referred to as the "NAFTA Corridor". This corridor incorporates the Port of Halifax in Canada, the U.S. Midwest and continues to Monterrey, Mexico. The Port of Halifax has become important as a NAFTA entry point due to its closer proximity to the European Union. A transatlantic crossing to this shipping entry point from the European Union is one day shorter to this port than to other major North American ports. Shipping in the Gulf of Mexico has increased as well.

This shift is greatly affecting existing port, air and surface transportation patterns. There is a need for major and specialty ports under this newly revised structure. Though Connecticut currently does not have a major port, its series of specialty ports may have a significant impact under this new structure.

C. "New Atlantic Triangle" and Northeast Region.

The definition of the Northeast region is changing as economic globalization progresses. Within the North American continental bloc, the Northeast has been redefined as a continental-trading bloc instead of an U.S. trading bloc. The Northeast must now be defined as a much larger area including an integrated set of continental corridors

extending from Halifax to Norfolk and westward to Chicago. The region's largest ports are New York/New Jersey, Baltimore, and Norfolk. However, with the Port of Halifax being a day closer to European Union countries, it is rising in importance due to reduced shipping costs and decreased shipping times.

Within that continental structure, lies the "New Atlantic Triangle", a unique urban configuration anchored by the New York, Boston, and Albany metros, that is bisected by the Connecticut River Valley including New Haven, Hartford, and Springfield. This area has one of the largest concentrations of transportation, economic, cultural, institutional and research facilities in the world and has a long history associated with maritime activities. The region has three sets of ports: the New York/New Jersey Ports, Boston and Connecticut's series of specialty ports.

Connecticut is located within the New Atlantic Triangle and has a long section of shoreline and an extensive river system. This area is a high-tech center, has significant R&D centers and is recognized as one of the highest value-added manufacturing centers in the world. These factors have contributed to the strength of the state's, and the New Atlantic Triangle's, maritime cluster. New England is one of three primary shipbuilding centers in the U.S. While the Gulf Coast is known for its civilian shipbuilding and offshore oilrigs and Norfolk for its aircraft carriers, New England is a high-tech marine center that manufactures U.S. Navy submarines and luxury yachts. Additionally, this area is a recreational boat center and a center of fishing and aquaculture.

IV. CONNECTICUT MARITIME INDUSTRY CLUSTER

A. Maritime Cluster and Its Components

The maritime cluster represents a new and complementary way of understanding Connecticut's maritime economy, of organizing economic development thinking and practice and setting public policy. Four maritime industry components (transportation, manufacturing & services, recreation, and commercial fishing) form the hub of the cluster's network of economic activity that currently generates direct revenues in excess of \$2.6 billion in Connecticut.

B. Diagramming the Cluster

The maritime network is further defined and strengthened through activities with maritime stakeholders in government, state economic and workforce development agencies and educational institutions.

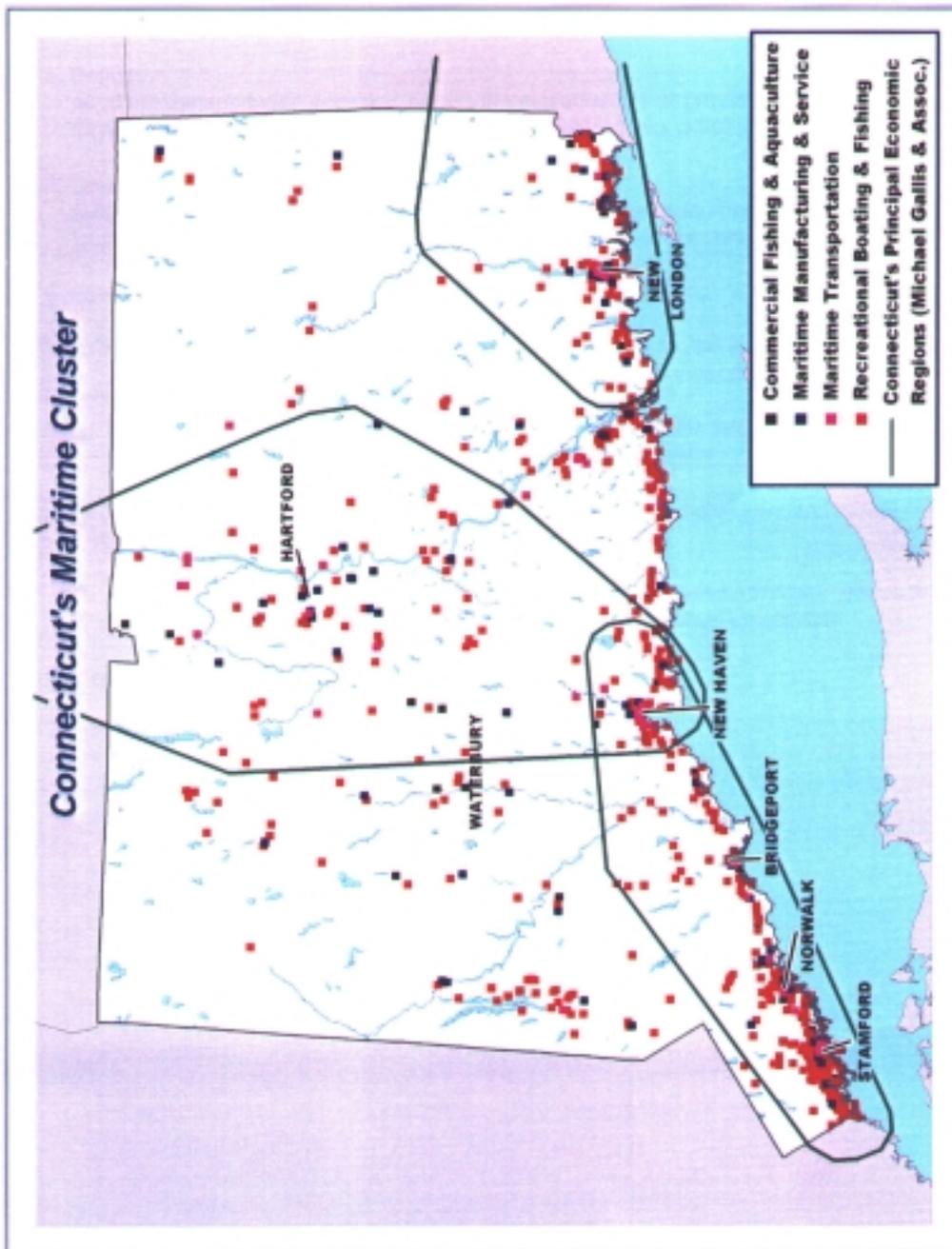
1. Each industry component (transportation, manufacturing, recreation and commercial fishing) is broken into five sub areas that have a meaning to the component.



Basic Industry Cluster Diagram

C. Connecticut Economy

1. Maritime cluster economic impact:
 - **349 businesses**
 - **12,225 jobs**
 - **\$553.3 million payroll**
 - **\$2.6 billion in sales**



Map 1

MARITIME TRANSPORTATION

A. Defined

Maritime transportation activities include the movement of freight and passengers through Connecticut's ports and involve ports, ships, ferries and inland transportation linkages.

B. Goal

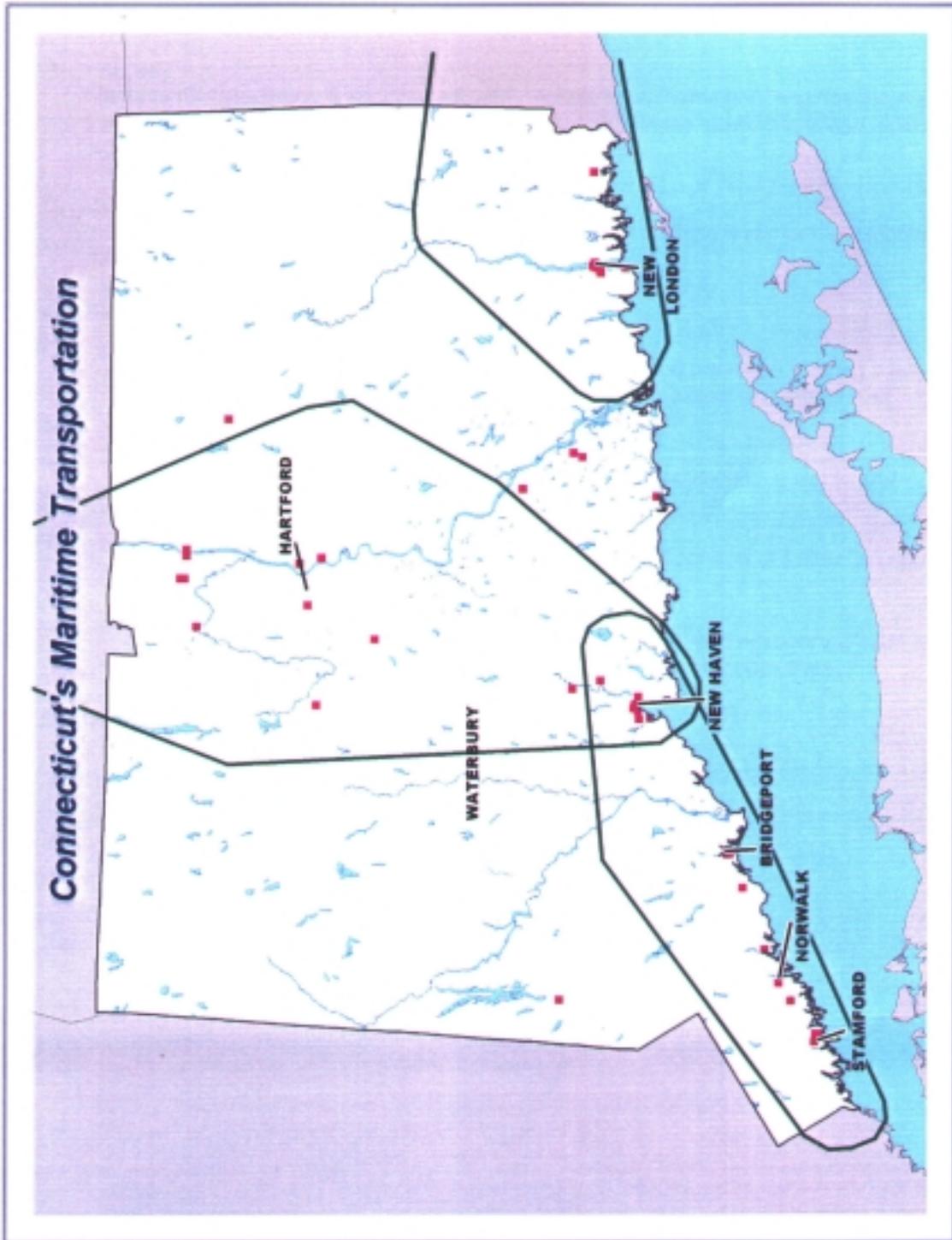
Better leverage Connecticut's highly developed port systems to improve the movement of trade and people within the region and to and from the global network.

C. Strategies

1. Integrate port facilities into a transportation framework for the state of Connecticut that links land, water, air, and rail infrastructure into global transportation centers.
2. Build/strengthen the state's water-dependent transportation infrastructure to alleviate congestion on a national asset, the Connecticut I-95 corridor.
3. Advance Connecticut's inter-city initiatives by creating employment and career opportunities associated with port activities.
4. Establish partnerships with state environmental agencies and advocacy groups to balance environmental and maritime issues through common objectives.

D. Connecticut Economy

1. Maritime transportation component economic impact.
 - **63 businesses**
 - **1,399 jobs**
 - **\$69.7 million payroll**
 - **\$771.7 million sales**



Map 2

VI. MARITIME MANUFACTURING & SERVICES

A. Defined

Maritime manufacturing & services activities include the construction, engineering and servicing of waterborne vessels including nuclear submarines, powerboats and sailboats, and the manufacturing of supporting marine components.

B. Goal

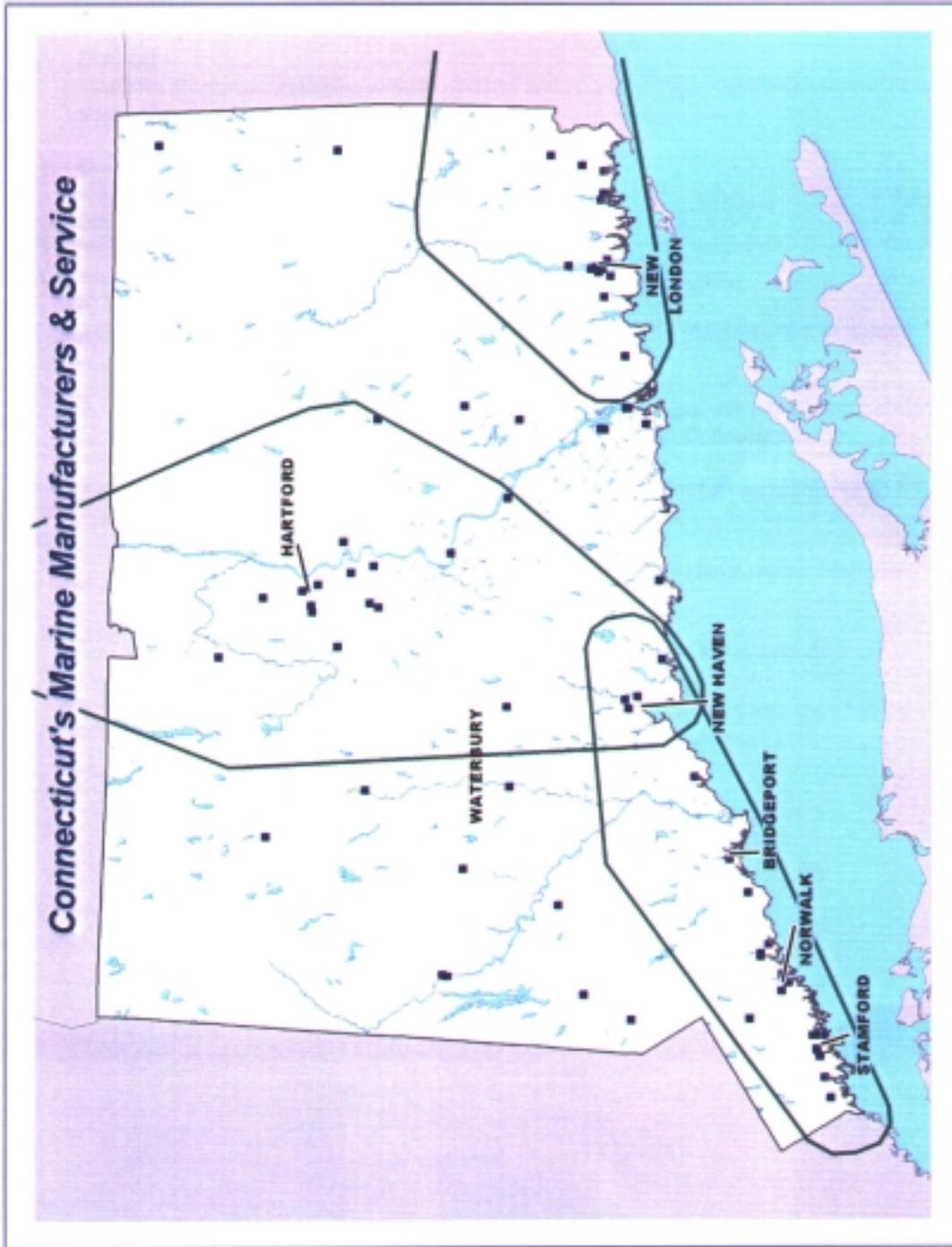
Increase and/or rebuild Connecticut's shipbuilding, boat building and marine component manufacturing capacity.

C. Strategies

1. Advocate for the creation of incentives that supports and broadens existing boat building and marine component manufacturing in Connecticut and attract new maritime manufacturing business to Connecticut.
2. Promote marine manufacturing, boat building and shipbuilding as a viable and lucrative career field.
3. Create marine skills and engineering programs within Connecticut's state education system that produces a versatile maritime workforce.
4. Establish partnerships with state environmental agencies and advocacy groups to balance environmental and maritime issues through common objectives.

D. Connecticut Economy

1. Maritime manufacturing & services component economic impact.
 - **17 businesses**
 - **8,927 jobs**
 - **\$418.9 million payroll**
 - **\$1.6 billion sales**



Map 3

VII. MARITIME RECREATION

A. Defined

Maritime recreation activities include boating and sport fishing and involve marinas, boat dealerships and marine retailers.

B. Goal

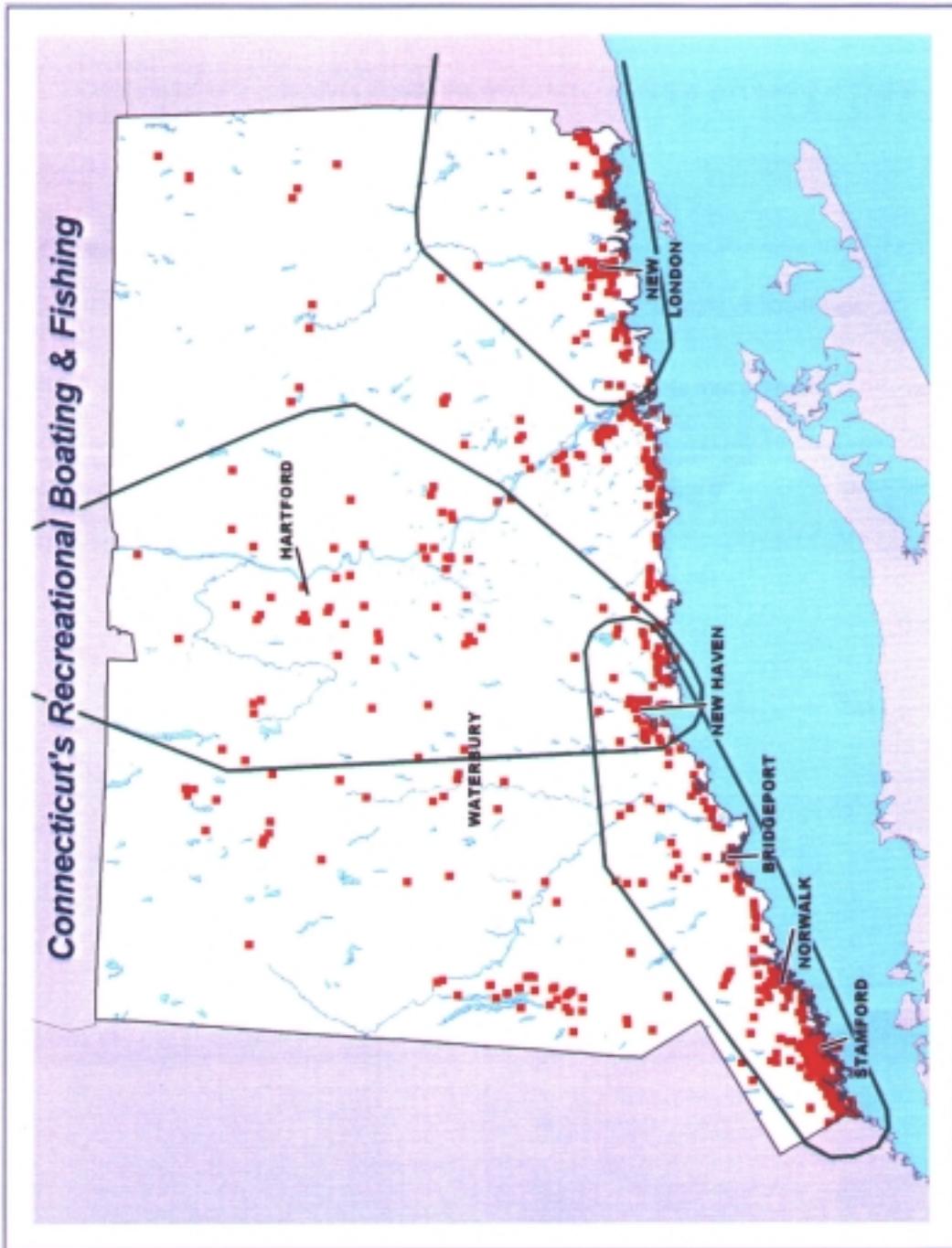
Enhance Connecticut's Quality of Life by maintaining and expanding marine recreational use and access to Connecticut's shoreline and rivers. Create a more attractive marine waterfront that rekindles interest in Connecticut as a destination. Provide industry leadership in the continuous improvement of Connecticut's waterways that sustains clean waters for future generations.

C. Strategies

1. Work to rescind taxation on Connecticut's recreational boating industry to make it competitive to Rhode Island.
2. Work to create a more responsive, efficient and economical marine-related permitting process sensitive to the needs of maritime businesses in Connecticut.
3. Develop a state strategy of water-dependent development that supports public access of Connecticut's waterways and shoreline.
4. Create a marine skills program within Connecticut's public education system that promotes and sustains the maritime career fields.
5. Advocate strategies that support national and international in-water events on Connecticut's waterways and shoreline.

D. Connecticut Economy

1. Maritime recreation component economic impact.
 - **203 businesses**
 - **1,292 jobs**
 - **\$37.4 million payroll**
 - **\$204.3 million sales**



Map 4

VIII. COMMERCIAL FISHING

A. Defined

Commercial fishing activities include the production, harvesting, processing and retail of finfish, shellfish and lobster.

B. Goal

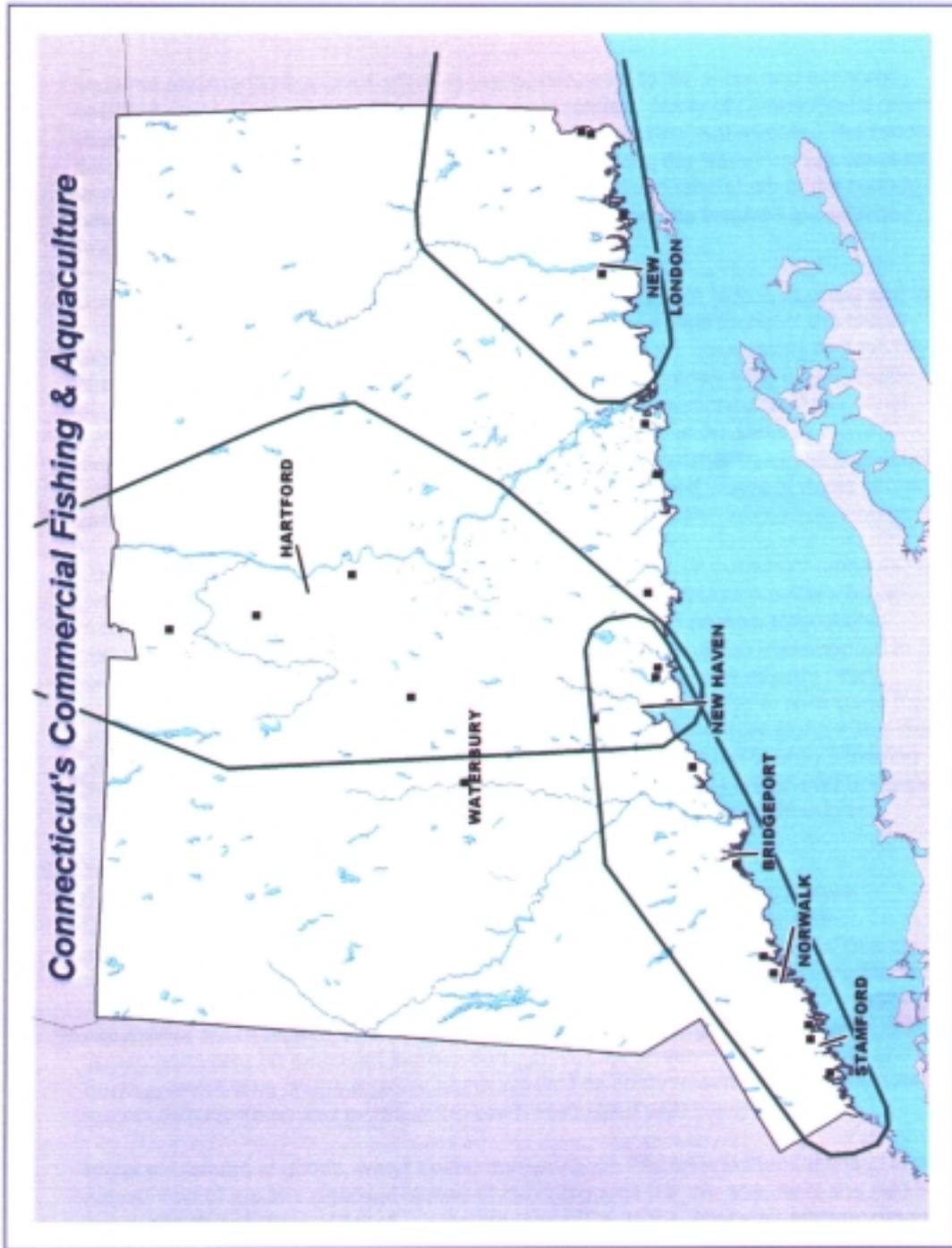
Protect and advance Connecticut's commercial fishing industry.

C. Strategies

1. Push for regulatory policies designed to increase the competitive advantage of Connecticut's commercial fishing industry.
2. Push for the development of a "water-dependent" initiative that supports Connecticut's commercial fishing industry.

D. Connecticut Economy

1. Commercial fishing component economic impact.
 - **66 businesses**
 - **607 jobs**
 - **\$27.4 million payroll**
 - **\$32.5 million sales**



Map 5

IX. IMPACTS OF THE MARITIME INDUSTRY ON CONNECTICUT'S FUTURE

A. Waterfront and Urban Centers

Maritime and maritime-related activities are fundamental to the social and economic health of many of Connecticut's traditional urban centers. Many of Connecticut's major cities and towns were founded along the ocean, sound or river waterfronts. The fabric of these cities was oriented toward these waterfronts, making the waterfront a focal point for the layout of the community as well as its economy. Additionally, much of the historic housing stock in these areas was built and owned by residents involved in maritime related professions.

Historically, these waterfront locations provided basic access to global, regional and local markets. However, for many of these cities and towns, the relationship of the cities' fabric evolved away from the waterfront, causing a loss of the connectivity that the city shared with its waterfront. These waterfront cities devolved away from having multi-dimensional relationships to their waterfronts into having one-dimensional functional relationships or no relationships at all. For example, Groton is the location of the extensive Electric Boat submarine building facilities. Bridgeport is known as a specialty cold storage port and New Haven is a steel and petroleum port. Each of these centers has retained a limited functional relationship to the water.

Today, many towns and cities are rediscovering these potential waterfront amenities and are re-establishing their relationships to the water. The waterfronts provide a broad variety of opportunities from world trade access to active and passive recreational opportunities. A "Connecticut Urban Waterfront Strategy" should be implemented to help the cities and towns reconnect with the water. Many projects have already been undertaken. For example, Hartford's Millennium Project is designed to re-engage the city with the river. Bridgeport's downtown renewal involves the waterfront along with a new baseball stadium. Mystic is home to the Mystic Seaport, one of the country's leading maritime museums and the Mystic Aquarium. New Haven, New London and Bridgeport all have active ports providing access to steel, fuel, food and other commodities.

B. Transportation System: Freight & Passengers

Connecticut and New England face an uncertain transportation/logistics future. Connecticut and New England are becoming more isolated from global and transcontinental traffic flows due to several factors. The region's major point of entry is via the New York/New Jersey ports from which most of the region's goods are trucked. The present structure of the Port of Boston is in decline. There are no double-stack rail capabilities out of Boston's port and rail connections to the area from the New York/New Jersey ports take an extended journey through Albany. Present traffic volumes and trucking restrictions on the region's highways limit its ability to send and receive goods, extend delivery times and increase the costs associated with transportation.

In the movement of goods, water based transportation has an important and vital role to play as one of the four principal means of moving goods (i.e. air, sea, road and rail) in and out of Connecticut. Globally, water transportation is the most cost-efficient means of moving goods. However, there are no major general ports in Connecticut - only specialty ports. It will become increasingly more important for Connecticut to reestablish its connections to ocean shipping through port improvements and possibly through the expansion of roll-on/roll-off rail barges to speed delivery of goods from New York/New Jersey.

For passenger movement, water-based transportation has an impact on the existing interstate and transit network, moving over two million passengers per year. Improved

passenger ferry service may provide some increases in waterborne passenger services further relieving some of the traffic on the region's congested interstate highways.

C. Quality Of Life

Connecticut's waterfronts provide the state with a remarkable amenity. Turning this amenity into an active participant in the State's economic future is proportional to the ability to access and utilize these resources as part of the State's quality of life. While the state has an extensive waterfront, it has limited public waterfront access. It is through the recreational maritime cluster that this remarkable location along the water's edge can be fully exploited. The different waterfronts can be used as platforms for a variety of activities for maintaining the state's quality of life. Better access to the waterfront by the state's citizens is critical to its citizens' quality of life. This can be achieved through the development of more public parks, establishment of more public access points and through more maritime related public events.

1. New London Schooner Invitational Race

A precursor to Opsail, this invitational race of schooners on Long Island Sound was one of many synergistic activities associated with the Tall Ships event.

2. OPSAIL 2000 CT - Tall Ships

OPSAIL 2000 CT, a four-day festival celebrating tall ships and the sights and sounds of the sea with a "Parade of Sail" and numerous other activities was held July 12-15, 2000 in New London, CT. This 40-ship international flotilla was one of only eight stops along the East Coast of the United States.

X. STRATEGIC ACTIVITIES

A. Private Sector Action

1. Organize for action.

The private sector needs an organization to provide a comprehensive and integrated platform for representing the issues facing the maritime cluster in the new global economy. The CMC is a unique partnership of business leadership, governmental representatives, military and institutional leadership. By providing an organization through which leaders of each of the four sectors can meet and discuss key issues facing the maritime cluster activities, the organization can serve as a vehicle for building consensus and taking effective strategic action.

2. Involvement in strategic activities.

Over the past three and a half centuries, Connecticut's maritime industries have been continually evolving. During this period of accelerated global change, all aspects of the maritime industries are experiencing significant reorganization and restructuring. This brings with it enormous new opportunities and significant new challenges. The maritime cluster has four basic components that, at one level, share common issues and, at a second level, face very distinctly different opportunities and challenges. Each member of the CMC needs to have an involvement in the overall activities of the organization and to be a participant in at least one of the component areas. Through this organizational structure, the various members can be directly involved in the strategic actions that affect their business, government agency or institutional unit.

3. Information resource.

Connecticut's maritime cluster is a surprisingly broad set of economic, institutional, environmental, government and military activities. Because it is such a broad range of activities involving four different sectors, there is no single information clearinghouse available to the citizens of the state or the global marketplace to access information about the various aspects of this cluster. A single-source information clearinghouse accessible through electronic and print media would facilitate the visibility and market penetration of this cluster. This clearinghouse would be important for a variety of economic purposes including new businesses seeking locations in Connecticut, boat owners looking for marinas, shipping agents looking for port facilities and the full range of other information needs related to the growth of the maritime cluster.

B. Public Sector Action

1. Policy development.

The State of Connecticut needs a maritime policy structure focused on proactively encouraging the growth and strengthening of the maritime cluster. The current lack of a maritime policy is an impediment to each of the cluster components and the coordination of government, business, institutional and military activities that could grow and strengthen the maritime cluster within the state. The policy would also serve as a framework for prioritizing actions and would provide business, institutions and the military with an understandable framework in which to position their own activities in relationship to the direction of government. An active maritime policy would also provide greater visibility for all aspects of the cluster.

2. Studies & plans.

Many aspects of the maritime cluster are not well understood and have not been properly researched and documented. Effective policies, sensible regulation and needed investments should be based on a firm foundation of research, analysis and

conclusions that can only be achieved through thorough studies of all aspects of the maritime cluster. These studies need to be positioned within a broader and more comprehensive framework that allows the various members and participants to understand how the various studies fit into the overall development of the maritime cluster. By relating various individual studies to the overall, there can be a buildup of the database necessary to the growth of the cluster.

Public agencies are continually involved in making plans for various parts of the public infrastructure. Some of these plans are directly related to maritime activities and facilities while others will have indirect impacts on the maritime cluster. It is important that the maritime cluster be proactively involved in the creation of plans that will have direct effects on its facilities and have input into plans that will have indirect effects on its activities.

3. Regulatory environment.

The maritime industries are generally located in the most environmentally sensitive areas of the state along the riverfronts and shoreline. Unlike other industries that are typically located in the center of inland, urbanized areas, the maritime industries occupy sites where a variety of land, water and airborne plant and animal species all come together. As a result, these sites and locations are heavily regulated having a powerful effect on the growth and development of all types of maritime activities. Within this context, a new partnership of government, business, institutions and the military are needed to discuss the realities facing each of the sectors and to create regulatory policy that can meet the needs of each sector without unduly and unnecessarily hampering the growth and development of the maritime cluster. Creating regulations that make sense involve the careful crafting of regulations that achieve public goals while encouraging the growth of the economy of the state.

4. Investment & incentive strategy.

The federal, state and local governments will need to make continuing investments in various aspects of the maritime cluster including facilities, programs, research, plans and various incentives. There are also important investments that need to be made in functionally linked areas that will have impacts on the maritime cluster. This broad range of investments needs a framework for evaluating and prioritizing those investments/incentives that have the greatest impact on the growth of the cluster.

Direct investments in maritime cluster economic growth would include investments in various public facilities, public match of private investment, public support of a wide variety of programs and operational funds to support ongoing maritime activities. Direct investments also include incentive programs designed to attract, strengthen and maintain maritime economic activities.

Indirect investments in maritime cluster activities include functionally linked areas like technology, railroad connections to the ports, university programs, workforce training and other related elements necessary to support the maritime cluster.

C. Institutional Sector Action

1. Educational infrastructure.

In the new "knowledge" economy, education plays a vital role. Connecticut's maritime cluster contains some of the most advanced, high-technology sets of economic activities that exists in the state. These activities are dependent on higher educational support in the form of university programs and research. They also are dependent on a highly trained workforce that needs various types of educational support. The involvement of public and private institutions in the growth and development of maritime activities is very important and vital to the continued health

of the cluster. These programs need to address each of the four components of the cluster including transportation, recreation, manufacturing and fishing.

2. Support for maritime cultural initiatives and heritage.
Connecticut's 370-year history is linked to its maritime cluster. Many of its historic towns, museums and festivals are wholly or partially linked to its maritime culture. These historic towns, museums and festivals give visibility to the role that the maritime cluster has played in the development of the state's social and economic life. These resources also are an important part of the maritime cluster as they form an important segment of the recreation component. The historic towns, museums, festivals, and other cultural initiatives have enormous appeal to tourists and form the backbone for the "heritage" dimension of the state's tourism. They also are important parts of the state's quality of life as they offer that state's citizens and children an opportunity to encounter living parts of the state's history and to participate in a wide variety of educational experiences.

D. Military Sector

1. Relationship of military facilities to maritime.
Connecticut has always had a strong presence of military, especially the Navy and Coast Guard, both of which are linked to the maritime cluster. The military involves several dimensions of connection to the maritime cluster including employment, various supplier and vendor relationships, educational and skill training and investments in facilities. The military presence gives a greater depth and breadth to the cluster as the shift to the new economy has also resulted in a high-tech military. Advances in military technology have typically lead to advances in civilian technologies.
2. Educational activities.
The military offers a variety of educational activities within the state that add to the total educational infrastructure within the state. Notably, the Coast Guard Academy is a military higher educational institution that produces high quality graduates. The Navy operates a broad range of educational programs ranging from administrative training to maintenance. These programs, while oriented to the military, have a synergistic effect on related maritime activities as they increase the total educational infrastructure within the state. By strengthening the military educational infrastructure, the state's workforce and economy is strengthened.
3. Employment skills relationship to maritime.
The new high-tech military requires personnel to have higher degrees of training. This raises the level of the Connecticut workforce as many former military personnel remain in Connecticut after military service and enter civilian employment. The employment skills and training required of personnel also raises the general benchmarks for all industry personnel by setting a high standard of quality. Maintaining our military workforce strengthens the overall economy and the skill level of the civilian workforce.

E. Marketing & Public Information

1. Comprehensive overview.
While the maritime cluster has been part of the state's social and economic life since its inception, there is little understanding of the dimensions and the importance of the cluster both within the state and in the global marketplace. An important strategy of the CMC is to raise the visibility and create a deeper understanding of the maritime cluster to the state's citizens and the global marketplace. These activities will involve two separate types of activities. First a strong public information program must be

implemented. Second a very active marketing program should be formed. The public information program will be aimed at creating a better understanding of what is the maritime cluster, its characteristics and dimensions and importance to the state's economy and quality of life. The marketing program will be aimed at increasing the visibility and penetration of the maritime cluster within the global economy. These two programs should be linked components of a total cluster growth strategy.

2. Public information.

The public information program would be primarily focused on marketing the maritime cluster within the state to the public, private and institutional sectors. This program would clearly delineate and describe the importance and characteristics of each of the four components of the maritime cluster. It would provide citizens and leaders from each of the three sectors with a description of the importance of the maritime cluster and its four components to Connecticut's economy, quality of life, character and heritage. The goal of the public information program is to build broad-based public consensus on the importance of the maritime cluster on the state's economy and quality of life. By creating a foundation of public consensus, the various programs and investments needed to grow the cluster can be secured.

3. Marketing.

The goal of the marketing program should be to expand each of the components of the maritime cluster on a national, continental and global scale. Connecticut's maritime cluster now competes with other maritime clusters on a global basis. Connecticut is only one of many places that compete for marine transportation, recreational, manufacturing and aquaculture activities. To effectively compete, Connecticut needs greater visibility within the global marketplace that can only be achieved through a strategic marketing program.

The marketing program should be based on relating each of the maritime components to their target audience (e.g. Maritime recreation to sailing enthusiasts and tourists, transportation – ports to shipping lines, fuel companies, etc.). Each of these components is linked to their targeted audiences through their own set of media outlets.