MHC Reconnaissance Survey Town Report

NEWBURYPORT

Report Date: 1985

Reconnaissance Survey Town Reports, produced for MHC's Statewide Reconnaissance Survey between 1979 and 1987, introduce the historical development of each of the Commonwealth's municipalities. Each report begins with an historic overview, a description of topography, and political boundaries. For the purposes of the survey, the historic period has been subdivided into seven periods: Contact (1500–1620), Plantation (1620–1675), Colonial (1675–1775), Federal (1775–1830), Early Industrial (1830-1870), Late Industrial (1870–1915), and Early Modern (1915–1940/55). Each report concludes with survey observations that evaluate the town's existing historic properties inventory and highlight significant historic buildings, settlement patterns, and present threats to these resources. A bibliography lists key secondary resources.

Town reports are designed for use together with a series of town maps that demarcate settlement patterns, transportation corridors and industrial sites for each historic period. These maps are in the form of color-coded, polyester overlays to the USGS topographic base map for each town on file and available for consultation at MHC. For further information on the organization and preparation of town reports, readers should contact MHC.

Users should keep in mind that these reports are now two decades or more old. The information they contain, including assessments of existing knowledge, planning recommendations, understanding of local development, and bibliographic references all date to the time they were written. In some cases, information on certain topics was not completed. No attempt has been made to update this information.

Electronic text was not available for digital capture, and as a result most of the reports have been scanned as PDF files. While all have been processed with optical character recognition, there will inevitably be some character recognition errors.

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MHC RECONNAISSANCE SURVEY REPORT

Date: 1985 Community: Newburyport

I. TOPOGRAPHY

The city of Newburyport is located in the northeastern portion of Essex County, Massachusetts. Physiographically, the city lies within the New England Seaboard lowland, a relatively smooth coastal strip of land with some hills usually below the 400 and 500-foot contours. In Newburyport, land surfaces generally slope easterly from uplands to the coast. Land surfaces average 50 feet or less throughout most of the town. Several hills exceeding 100 feet are present in the extreme western portion of town.

Newburyport's bedrock deposits in eastern and central portions of town are characterized by igneous Newbury quartz diorite deposits. In the north, central and western portions of the city, igneous Dedham grano diorites and sedimentary Merrimack quartzites are also present. Surficial geological deposits in the city derive from Late Pleistocene glaciation. An undulating terrain dotted with kames and kettles clearly indicate surface features of glacial outwash origin. Both the Merrimack River and Plum Island coastline show effects of sea-leve1 rise following the melting of the continental ice sheet.

Newburyport's soil associations also show the effects of Late Pleistocene glaciation. Soils of the Hinckley-Windsor-Merrimac association form the dominant soil types in the city. These deposits are sandy and loamy soils occurring in deep and nearly level to steep areas. They are excessively drained and somewhat excessively drained and are formed in outwash deposits. Soils of the Scantic-Maybid-Buxton association are the second most common soils in Newburyport. These deposits are loamy soils occurring in deep, nearly level to moderately sloping areas. They are very poorly drained to moderately well drained and are formed in lacustrine or manir sediments. In the east, soils of the Ipswich-Westbrook-Odipsamments association are also present. These soils occur in the Plum Island area around the mouth of the Merrimack River. Soils in this association are mucky and occur in deep, nearly level and very poorly drained. Gently sloping to very steep, excessively drained sandy soils med in windblown sand also occur in this association. A limited distribution of soils belonging to the Charlton-Rock outcrop-Medisaprists association is present in the area around the Upper Artichoke Reservoir. Soils in this association are found in nearly level to steep areas. They range from loamy soils formed in glacial till to rock outcrops to mucky soils formed in organic deposits.

Major drainage in Newburyport is through the Merrimack River which drains west to east on the town's northern border. Major surface drainage also occurs through the Artichoke River which drains northerly into the Merrimack River along most of the city's western border. In the southern portion of the city drainage also occurs southerly along the Little River into Newbury. Much of the drainage in the eastern portion of the city occurs in the vicinity of a large estuary at the head of Plum Island River. Very few ponds

or lakes exist in Newburyport; the largest is the Artichoke Reservoir, an artificial body of water.

The original forest growth in Newburyport and in Essex County in general consisted of a mixed growth of white pine, oak, chestnut, poplar, maple, birch and some other hardwoods and conifers. However, second growth patterns characterize most of the city today. These patterns are represented by second growth oak and pitch pine in areas of droughty and sandy soils. Dune and marsh vegetation are present throughout much of the eastern area of the city.

II. POLITICAL BOUNDARIES

Originally included as part of the Newbury Plantation. During the seventeenth century, Newburyport was incorporated as an independent town in 1764. It was, at that time, the smallest in Essex County. In 1851 after two decades of frenzied growth, Newburyport successfully annexed nearly 6,000 acres from Newbury and was incorporated as a city.

III. HISTORIC OVERVIEW

IV. CONTACT PERIOD (1500-1620)

A. Transportation Routes

Native American transportation routes in the Newburyport area likely emphasized combined water and land travel along the Merrimack and Artichoke Rivers inland and Plum Island Sound area along the coastline. Newburyport is situated at the mouth of the Merrimack River, the largest river in southeastern New England area, providing westerly water travel inland to the central New Hampshire area. A land trail also probably existed along the southern coastline of this river. The Artichoke River, a tributary of the Merrimack, provided water travel south along the Newburyport/West Newbury town line to inland areas in those towns. Land trails likely existed along this trail as well. Newburyport was also likely the terminus or starting point of a major north/south trail which probably ran in the Middle Street/Route 1A area of Newbury north to the Parker Street/State Street area of Newburyport.

B. Population

Newburyport was probably inhabited by members of the Pawtucket Indians and related groups whose territory lay between the Piscataqua River and the Charles River then inland to Concord, New Hampshire. Locally, this group included the Penacook Indians in the vicinity of the lower Merrimack drainage and the Agawam Indians south towards the Ipswich/Rowley area. Gookin (1792) lists ca. 3,000 men as belonging to the Pawtucket group prior to the 1617-19 epidemics. During the same period, Mooney (1928:4) lists 2,000 men belonging to the Penacook group. Both estimates could represent as many as 12,000 natives in the region although it is probably exaggerated. Newburyport, lying at the mouth of the Merrimack River may have been the location of a sizeable Contact Period village. Should a village have existed

in this area a sizeable native population numbering several hundred individuals may have existed in this area. This population did not exist in 1620.

C. Settlement Patterns

Contact Period sites are currently unknown for the Newburyport area. In fact, few sites dating to this period have been identified in eastern Massachusetts in general. However, regional ethnohistoric sources and known Contact Period site locations indicate a possibility that sites belonging to this period may be present in the Newburyport vicinity. Preferred site locations appear to emphasize coastal estuary zones and major drainages; a pattern similar to that of Woodland Period sites. In Newburyport, Contact Period sites may be present along the banks of the Merrimack River, particularly in the area of its confluence with Plum Island Sound. One site, a burial, was found in the Market Street area in 1822. A tomahawk, pipe an whetstones were listed in association with bones (Smith 1854:7). Should the tomahawk have been made of metal it may have been a Contact Period burial. The material, however, was not listed. Sites of this period may also be present along the Artichoke River or around the periphery of wetlands and ponds (e.g., Frog Pond). While habitation or village-type sites may be present in the Newburyport area, smaller, special purpose sites such as fishing, hunting and burial sites may also be present.

D. Subsistence Patterns

Native Americans in the Newburyport area subsisted on a variety of seasonally determined activities, including hunting, fishing, the collecting of wild plants and shellfish, and horticulture. In the Newburyport area, these activities were probably similar to those activities practiced by Native Americans in other eastern Massachusetts areas. Hunting was a major activity focusing on larger mammals including deer and smaller fur-bearing sea mammals such as seals and drift whales. Birds may also have been available on the coast and were also hunted including upland game birds and ducks. The Merrimack River and the Plum Island Sound area would have been particularly important for water fowl hunting. Interior ponds, streams and rivers such as the Merrimack and Artichoke Rivers also contained seasonal runs of smelt, alewives, shad, salmon and sea-run trout. A variety of marine species of fish would have been available in the Plum Island Sound and in the Atlantic Ocean. Several species of terrestrial as well as fresh and salt water plants in the Newburyport area provided a valuable food resource. Gathering also focused on shellfish. The Plum Island Sound area, a regionally important shellfish bed, presently contains several species of shellfish which may have been available during the Contact Period. Native American shell midden sites verify this expectation. Domesticated plants such as corn, beans, pumpkins, squash and tobacco were also important. The location of native fields are currently unknown; however, they were likely located along the Plum Island Sound or near riverine areas.

V. PLANTATION PERIOD

A. Transportation Routes

Indian trails likely continued in use in the Newburyport area throughout much of the Plantation Period. In fact, many trails may have been upgraded to horse or cartpaths before settlement. A conjectural coastal trail may have provided an early route from the New Town area to the Upper Common or West Newbury area along which cattle were moved to pasturage. Water travel was also likely present along the Merrimack River which was navigable by larger craft and in the Artichoke River which permitted smaller vessels.

Most land transportation in the Newburyport area was not laid out until after the 1640-50 period when the houselots in New Town Newbury were laid out and divided. In 1649 streets in the New Town on the Merrimack River were actually laid out and graded. At that time there was no distinction between the Port and New Town area. Streets or lanes laid out during this period included Coffin's Lane (1655-56 now Jefferson Street), Fish Street, (ca. 1645 now State Street), South Street, High Street, Merrimack Street, Poore's Lane (now Woodland Street and Merrimack Court) and Woodman's Lane (now Kent Street) . Several streets or lanes were also probably commenced.

Regional transportation corridors were also in existence during this period linking the Newburyport area with settlements on the north side of the Merrimack River, to the west in Andover and to the south in the Ipswich area. As early as 1634-35 a road or pathway was mentioned connecting the Ipswich area with the Merrimack River. This road was often referred to as the "Ould Road" to Newbury and was actually nothing more than a narrow foot path (Jewett 1948:13). In 1639 the General Court ordered a road laid out from Ipswich to Newbury. This road, the first road laid out in the Massachusetts Bay Colony by order of the General Court, was 8 rods in width and known as the Bay Road. In Newburyport this road linked with the Country Road or High Street area. In 1641 a ferry was granted to George Carr at the terminus of this route on the Merrimack River.

A roadway also existed running somewhat parallel with the south bank of the Merrimack River during this period. This road probably existed in the vicinity of Route 113 and may have been referred to as the "Road to Andover."

Wharves had also been developed along the waterfront during this period. At least one wharf had been built by 1649 to service the ferry at Carr's Island. By 1655 rights to build a dock, wharf and warehouse near Watt's Cellar were granted by the town to Captain Paul White. Other docks and wharves were also in existence by this date.

B. Population

Some Europeans were likely present in the Newburyport area shortly after the settlement of Old Town, Newbury in 1635. Settlers were few, probably numbering no more than one or two dozen individuals. These colonists were from the Wiltshire-Hampshire region of England including Southampton. As in

the Newbury settlement, Newburyport's settlers were a diverse group of people coming from distant localities without bonds of friendship and neighbors. This migration contrasted with those in Hingham and Rowley where tightly knit families and friends immigrated from the same English localities. Newburyport's inhabitants were generally young and of local social prominence in England. Religion did not play a major role as a cause for migration. Instead, declining economic opportunities in England were important. This factor would play a clear role in the establishment of Newburyport as an important mercantile center.

Since Newburyport was part of Newbury throughout the Plantation Period, separate population statistics are difficult to determine. However, following the relocation of the Newbury settlement to New Town in 1642-45 and the division of the Newburyport lands at that date a significant population must have resided in the area long before 1675. By that date Newburyport's population must have numbered in the hundreds of individuals, possibly in the 300-person range.

C. Settlement Pattern

Most of Newburyport was not settled before Old Town Newbury was settled in 1635. Prior to that date some Europeans were present in the port area on the Merrimack River as early as 1633 when the Winthrop trucking house (trading house) was granted. Watt's cellar, probably the remains of a fisherman's house, was also present in the Newburyport area shortly after that date.

After Old Town, Newbury had been settled several large farms were granted in the West Newburyport area in the vicinity of Turkey Hill. Each of these grants were large, often amounting to over 500 acres. Large dispersed grants characterized the town's settlement during this early period. Increased settlement in Newburyport occurred in 1642-45 when New Town, Newbury was established. During this period many of Newburyport's house lots and streets were divided as part of New Town, south of the port area. By 1645 all lands between the Artichoke River and New Town were divided. This area included all of Newburyport except for a small strip of land along the Merrimack River.

All of Newburyport was included in the town of Newbury throughout the plantation Period. During the early settlement at Old Town, anyone living in the Newbury port area traveled south to that area for worship and civil matters. A meetinghouse was built in Old Town in 1635 and moved to a knoll of land by the Tuppan barn in New Town by 1646. In ca. 1650 a new meetinghouse was built at the old site followed by another meetinghouse at a new site south of the old house in 1661.

During the Plantation Period, New Town, Newbury was the locus of settlement in the Newbury/Newburyport area. Newburyport was the port area of New Town and settlement in that area was the result of growth in New Town. By the latter part of the period this emphasis was changing. Settlement in the port area (Newburyport) was increasing at a rapid rate.

As the colonists removed from Old Town, Newbury to New Town and the Newburyport area, most of the characteristics of the English open-field system were eliminated. Town offices associated with the system were never filled and the nature of distribution itself was different. Field names were now rare and fields seldom held in common.

As in Newbury, ownership of land was apparently a cornerstone of Newburyport society. Town rights in Newburyport were vested in a handful of men, the proprietors who maintained control of the land. This power enable the proprietors to exercise control over the town independent from the town as a whole. Proprietorship in Newburyport resulted in a highly stratified society and division of land. Small holdings, particularly house lots, were present but most land was in the form of larger grants held by relatively few people. Stinting rights, or the number of animals a landowner was permitted to graze on the commons, followed a similar pattern to land distribution.

D. Economic Base

As colonial settlers moved into the Newburyport area, they likely hunted, fished and gathered wild food in much the same manner as their Native American predecessors would have done. As early as 1633, Europeans had at times established themselves on the Merrimack River, to trade, shoot fowl and fish sturgeon (Smith 1854:11). Watt's cellar is also reported to be the remains of a pre-settlement fisherman's house. However, these ventures did not result in permanent settlement. Some lands in the Newburyport area were granted as large farms when Old Town, Newbury was settled in 1635. The remaining lands were divided in this area after 1645 when New Town was laid out. For the majority of these early settlers, the combined use of agriculture and husbandry were clearly the most important aspects of their economic base. Indian corn, wheat and barley were the most important food crops grown as well as rye when possible. In time corn became the most important food crop. Fruit and vegetables were also grown but grains were the most important food produce. Hemp and flax were also probably grown but never as important as in Rowley or even Newbury. Salt marsh hay was extensively exploited from the marshes in the eastern portion of town between the mainland and Plum Island. Husbandry was also an important activity in Newburyport. Cattle, sheep and goat raising were important in the town at an early date. Pig raising may have also been an important sideline occupation. Fowl and oxen were present as well as cows for dairying activities. Honey bees were introduced after 1695.

Maritime interests which included fishing, coasting, international trade and shipbuilding rapidly gained in economic importance in Newburyport. The growth of these interests was so great that before 1675 they outweighed all forms of agriculture and husbandry in the town's overall economy. Fishing from the port area for salmon, sturgeon, herring, shad and bass was important throughout the period. The Merrimack River, on which the port is situated, provided one of the best areas for these fisheries in southern New England. The port area also provided a convenient access to the Plum Island Sound area and the Atlantic Ocean for cod fishing which also began during this period. Coasting and the international trade was also important from this port as early as the 1650s. Newburyport vessels were trading in farm

produce, lumber, fish and manufactured goods throughout the American colonies. A regular trade to the southern West Indies was also important. Port facilities such as docks, wharves and warehouses were built as early as 1655 when Captain Paul White received town grants to build facilities such as those in the central port area. While the port area along the Merrimack River was not divided during this period unauthorized use of this locale was common, particularly by shipbuilders. Shipbuilding began with other maritime interests shortly after settlement. By 1675 several shipbuilding yards were established along many favorable locations and the port. One such area was Woodman's Lane, now Kent Street. Carr's Island was also an important shipbuilding location. Smaller vessels up to the sloop class probably characterized much of this Plantation period production.

No mills are reported in the area during the Plantation Period. Only a water-powered grist mill was present in the area by ca. 1642 on the west bank of the Artichoke in West Newbury. At least one malt house, the Moody Malt house, was present in the Chandler's Lane area by 1673. Weavers, tanners, shoemakers and possibly ropewalks were also present by the period's end.

E. Architecture

VI. COLONIAL PERIOD (1675-1775)

A. Transportation Routes

Few native trails likely remained by the Colonial period as most had been upgraded to paths, cartways, roads or overgrown by this time. While lands along the Merrimack River remained undivided throughout the latter 17th century, unauthorized use of this land by shipbuilders and others evidently resulted in the creation of several roads or lanes during this period. These routes included Ordway's Lane (now Market Street), Chandler's Lane (now Federal Street), Bradford Road (now Storey Avenue), Curzon Mill Road and others. Additional roads were also laid out when the lands along the Merrimack River were divided in 1703-04. By 1725 the town of Newbury was divided into 7 highway districts, each responsible for keeping up their own roads. One year later several streets, all of which are now entirely or partly in Newburyport, were relocated and renamed. These streets included Marlborough Street, King Street (Federal Street), Fish Street (State Street), Queen Street (Market Street), Low Street (Toppan Street), Union Street (Toppan Street), and Sandy Street (North Atkinson Street). Other roadways also laid out during this period included Rolfe's Lane, Mozzey's Lane and Moody's Lane.

Main transportation routes into the Newburyport area remained the Country Road/High Street corridor which linked with the Bay Road and Route 7 area in Newbury. The present-day Route 113 area also continued as a major roadway westward along the Merrimack River.

Newburyport's importance as a maritime shipping center also developed early in the Colonial Period. In 1684 Newbury (Newburyport) was made a port of entry where international cargoes could enter the colony. Shipyards

containing docks, wharves and warehouses were also developed in every feasible location along the waterfront. By ca. 1700 these wharves included White' s wharf, Brown and March' s wharf, March' s wharf, and Clark's wharf, to name a few. By the end of the Colonial period, many new wharves had been built, and old wharves built over. They included Tracy's wharf, the Ferry wharf, Starkey's wharf, Toppan's wharf, Johnson's wharf and Somerby's wharf.

B. Population

Newburyport likely began the Colonial period with several hundred individuals living within its limits as they exist today. As the port developed and the Third Parish was created, Newburyport's population likely exceeded that of Newbury since the latter town also contained West Newbury throughout the period. By 1765 2882 individuals resided in the town representing 6.62% of the Essex County total. This total was only 2.71% less than the Newbury total (West Newbury and Newbury) at that time. From 1765 to 1775 Newburyport's population grew considerably by 27.72%. In 1776 Newburyport contained 3681 individuals or 7.23% of the Essex County total. Newburyport's population was growing at a much faster rate than the parent town Newbury. By 1775 Newburyport's population was 12.01% greater than Newbury. "Negroes" (probably slaves) only recognized minority population in 2.22% of the total population.

Both the high percentage of "Negroes" and the town's accelerated growth during the late Colonial period are probably the result of the town's maritime importance and mercantile population.

Newburyport's ecclesiastical history originated with worship in the First and Second Parishes of Newbury. In 1711 a religious society was organized which built Queen Anne's Chapel. This society was the predecessor of the Newburyport Protestant Episcopal Society. In 1725, the First Church in Newburyport was organized as the Third Parish. By 1738 "waterside" members of the Old Queen Anne's Chapel built a Protestant Episcopal church on the site of the later Saint Paul's Church. In 1746 another religious society was formed at the "waterside" by the seceders from the old First Parish at Newbury. This society was later known as the First Presbyterian Society of Newburyport. Late in the Colonial period the North Congregational Church was formed and incorporated as the Third Religious Society of Newburyport by members of the First Church.

C. Settlement Pattern

Colonial period settlement in Newburyport expanded in at least two areas. Dispersed agricultural settlement was growing in the western portion of town in the vicinity of the Artichoke River east of the Newbury Upper Commons. In 1685 residents of the West End of Newbury (of which West Newburyport is included) applied and were given permission to establish a separate form of worship from that in the New Town area. In ca. 1689 a meetinghouse was built on land at or near the place where the road to the mill at the mouth of the Artichoke River crosses the road leading to Bartlett's Cove. This description places the meetinghouse south of Curzon Mill Road and east of its intersection with Gypsy Lane, well within the limits of Newburyport. The

meetinghouse was enlarged in 1696 with the addition of a burial ground. In 1694- 95, this area of Newburyport east of the Artichoke River and roughly west of Interstate 95 was incorporated as part of the Second Parish of Newbury.

The port area of Newbury or Newburyport was also rapidly developing. However, unlike the western portion of town, the port was developing as a maritime/mercantile center with little if any agricultural importance other than the shipping of agricultural goods. In 1722 the bounds of a small area defined as the Third Parish of Newbury were created with permission being given to erect a meetinghouse. In 1725 the Third Parish of Newbury (later the First Parish in Newburyport) was organized and their meetinghouse, located on Market Square, dedicated that year. In 1730 the "Old Hill Burying Ground," located on the southwesterly side of Frog Pond, was set apart as a burial place for the Third Parish. The meetinghouse was enlarged in 1736.

In 1760 a petition was presented to the General Court requesting that a portion of the Second Parish on the east side of the Artichoke River and the western portion of the Third Parish be set apart and made a new parish. Members of the Second Parish disliked this move. Nonetheless, in 1761 the General Court established the Third Parish of Newbury. A meetinghouse was erected in 1762 on Meetinghouse Lane or what is now Noble Street; Newburyport. A church was also organized at that time.

By the late Colonial period the "waterside" or port area of Newbury had become so differentiated from the remainder of the town that in 1763 a petition was presented to the General Court that the area be set off as a separate town. The port area had developed into an "urban" center inhabited mostly by merchants, traders, seamen and the like while the remainder of the town was chiefly husbandmen and farmers. The General Court recognized this difference and, in light of the overall large size of Newbury, incorporated Newburyport as a separate town in 1764. At that time, Newburyport included 647 acres and was the smallest town in the Commonwealth. The town was enlarged in the 19th century when most of the 5th and part of the 1st parishes were annexed.

D. Economic Base

Farming and husbandry continued to be important to some Newburyport residents in the southern and western portions of town. However, maritime interests were clearly the most important aspect in the town's economic base. Port facilities in Newburyport were now growing at a rapid rate, so much so that by the beginning of the period the port was regionally as well as locally important. By 1684 Newbury (Newburyport) was made an official port of entry where vessels could enter carrying goods obtained through international trade. Local fishing in the Merrimack area and off-shore fishing was still important but cargo shipping and shipbuilding were now the major industries at the port. A wealthy mercantile clan had developed in Newburyport who sponsored vessels and crew sailing most seas in the world. The coastwise trade was still important throughout the American 3 colonies gathering lumber, fish, tine, livestock and farm produce for trade locally and abroad. Larger ocean-going vessels traded with Canada, Europe, the West

Indies and South America. Ocean-going rafts fitted with sails were also assembled from oak and pine timber suitable for shipbuilding and sent to England.

By 1703-04 the undivided lands along the Merrimack River were divided among the proprietors and free-holders. However, this division appears to have been a mere formality as the land had been in use for some time. Several grants to build docks, wharves and warehouses were given in this area prior to 1700. By 1692, so much shipbuilding had been done in this area that a tax was ordered on vessels built on that land. By 1698 the Cottle shipyard was operation at the foot of Chandler's Lane (now Federal Street). In 1711-12 the Middle Shipyard was begun near Watt's cellar. The Woodwell shipyard was also established at the foot of Muzzey's Lane in ca. 1738. By the late Colonial period, shipyards occupied almost every available spot between Muzzey's Lane (now Marlborough Street) and Bartlett's Cove.

Other industries were also present in the port area. Prior to 1700, two Pierce malt houses were present on Chandler's Lane as the Ordway malt house (1692) on Ordways Lane (now the corner of Merrimack and Market Streets). Salt works were also present during this period manufacturing salt by the boiling method instead of evaporation. In 1753 scales were erected on Fish Street to weigh hay and other bulk materials, indicating the continued importance of the eastern marshes and husbandry. At least one mill, a wind-powered grist mill, was present near the southeastern end of Frog Pond by 1703. This mill was demolished in 1774 and graded for a training field. Tanneries, sail makers, rope walks, smithies, shoemakers, ice houses, and other trades were also present during this period.

E. Architecture

Industrial: A grain mill, ca. 1678-79, was built on Curzon's Mill Pond. It was extensively renovated following a fire in the 1840s.

VII. FEDERAL PERIOD (1775-1830)

A. Transportation Routes

With the appointment of Timothy Palmer (1800) as Newburyport's Surveyor of Roads, during the century's first decade, many additional streets were laid out (among them Green, Fruit, Oakland and Bromfield Streets), and existing colonial roads improved. Merrimac Street was extended from Oakland to Ashfield Street in 1783, and to the New Chain Bridge at Deer Island in 1803. State Street was extended in 1803, with the construction of the Newburyport Turnpike (1806) to Boston. Cutting a deadstraight path through central Newburyport, beyond its use during the War of 1812, only its northern section enjoyed any substantial amount of traffic. The Plum Island Turnpike and Bridge (1802) was also constructed during the period.

Newburyport had been visited once a week by Portsmouth-to-Boston stages since 1761, but the first stage coach established in the county was by Ezra Lunt in 1774. Running three trips a week, this line connected Newburyport with Boston via Salem. More regular service began in 1796, but in 1818 the

Eastern Stage Company was organized. It provided every-other-day service between Portsmouth and Boston, via Newburyport and Ipswich and dominated stage travel within the town for the remainder of the period.

Much attention was devoted to preparing the harbor and river for regional traffic. 1783, two beacon were erected on Plum Island and in 1787 two small lighthouses added on the island's northern end. In 1791 a canal (one and a quarter miles long) was dug to promote inland navigation between New Hampshire (with its timber resources) and Newburyport. In an effort to deepen the water in the harbor, a 1900' long breakwater was completed in 1831, northwest across the mouth of Plum Island. It was unsuccessful, allowed to deteriorate, and was finally destroyed in an 1851 storm. In 1792 the Essex-Merrimack Bridge, connecting Newburyport (then Newbury) with Salisbury opened, the first bridge to cross the Merrimack. It was partially destroyed in 1812, was rebuilt, collapsed again in 1826, and was rebuilt again in 1828 as a toll bridge. In 1826, a charter was obtained for the Newburyport Bridge, crossing the Merrimack from the foot of Summer Street to the Salisbury Shore. Finished in 1827, it was longer than any other bridge over the river and diverted much of the traffic from the Essex-Merrimack Bridge.

B. Population

Newburyport's population grew from 3681 individuals in 1776 to 6375 individual in 1830 with an overall growth rate of 73.1%. Population growth was the lowest (22.93%) from 1790 to 1800. From 1810 to 1830 population actually dropped by 16.5%. The most population growth (31.4%) occurred from 1776 to 1790. Newburyport's population increased steadily (10.62%) in comparison to the remainder of Essex County until 1810. By 1830 Newburyport contained 7.71% of the total population in Essex County.

C. Settlement Pattern

With the first decade of the nineteenth century arrived the peak of Newburyport's prosperity, and a flurry of improvements to the town. The old meetinghouse at Market Square was destroyed and a new one, on Pleasant Street, erected; Market Square was purchased; a brick Baptist church erected on Liberty Street (1809); a new court house built on the mall (1805). Timothy Parker laid out and/or improved a large number of streets in the city and designed the Bartlett Mall (1800). New three and four-story brick buildings rose in Market Square (1810), wharves were improved and extended, and trees were planted along High Street -- all prior to 1811 and Newburyport's great fire.

The hub of Newburyport's central business district was Market d Square. Commercial and manufacturing activities remained focused at the central waterfront, stretching out immediately north and south from Market Square. State Street, running inland, had emerged as the town's primary commercial corridor. Civic and institutional buildings, similarly attracted to this central district, were located within two blocks east and west of Market Square (within the area roughly defined by High, Federal and Market Streets).

Although indications of change were at hand [an elite residential axis was taking form on High Street (particularly south of Free Pond), and a nascent slum, along the waterfront], regional patterns remained preindustrial in nature. Merchants and professionals continued to live in the central business district, near and often above their places of business. Despite the community's sharp divisions into social classes, class-segregated neighborhoods had not yet formed. In the new three and four-story commercial buildings of Market Square, a typical pre-industrial vertical pattern of segregation was already in place. Business occupied the first floor, offices the second and residences the upper floors. Master, apprentice and journeyman often occupied the same household. The rapid pace of residential construction reflected the inordinate wealth of the Federal town. While the "Ridge" (High Street) attracted Newburyport's mercantile elite and its finest building, affluent dwellings were also attracted to the broader (and centrally located) north/south connectors--notably Green, State, Federal and Market Streets, and to a lesser extent Merrimac Street. With the exception of prestigious High Street, residential construction as a whole remained focused on the waterfront. Dwellings lined Merrimac and Water Streets from Oakland to Bromfield (the entirety of Newburyport's pre-1851 waterfront), but extended inland only one to two blocks. Two particularly dense neighborhoods took form during this period. One, home to mariners and merchants and adjacent to the central business district, extended from State to Federal Streets and departed from the waterfront substantially, reaching inland as far as Prospect Street. The other, occupied by shipbuilders, artisans and merchants and more completely oriented to the waterfront, was only a block in depth, bounded roughly by Boardman, Warren, Russell and Merrimac Streets.

The conflagration of 1811 leveled nearly 250 buildings (16-1/2 acres) in Newburyport's downtown. Combined with the impact of embargoes and war, trade declined, population dropped, the wharves deteriorated and, with the exception of the rapid replacement of the Market Square/State Street commercial buildings, new construction ceased. In 1800, 806 houses were counted in Newburyport. By 1840, only 26 more had been constructed.

D. Economic Base

Newburyport s geographic location (on the Merrimack River and bordering the Atlantic ocean), as well as the lack of any sizable farm acreage (prior to the annexation of 6000 acres from Newbury), made the inhabitants dependent on the ocean and river for their livelihood. During the first half of the period, from 1776 to 1810, the local economy thrived on a mixture of domestic and foreign commerce, shipbuilding and fishing. However, following the Embargo of 1807 and the War of 1812, the foundation of economic prosperity -- foreign trade -- all but collapsed. Even increased business in fishing and the coasting trade were not enough to offset the loss of foreign trade and the corresponding decline of the shipbuilding industry.

The years of tremendous prosperity between the Revolution and the War of 1812 were based primarily on the expansion of the port's trade network and the related boom in shipbuilding. Newburyport merchant capitalists conducted

a vast trading relationship with interior New England, other American port cities, and especially with the West Indies and Europe. In 1796 the "Proprietors of the Locks and Canals on the Merrimack River," a group of Newburyport capitalists, enhanced the town's economic position by building a canal around Pawtucket Falls (in what would become the City of Lowell), thereby facilitating the transport of timber and agricultural products from the Merrimack River valley. The timber was then used to build the ships employed in the foreign and coasting trade, as well as ships sold to English merchants. Timber and farm products were also carried on these ships to the West Indies where they were sold in exchange for molasses and sugar. These products imported from the West Indies were used to manufacture liquor. In 1790 there were ten distilleries in Newburyport. In 1820, following the sharp decline in foreign trade, there were only four distilleries, all located along Merrimack Street.

Prior to 1810-12, Newburyport was among the wealthiest towns in the United States. In fact, prior to the 1807 embargo it was the ninth largest ship-owning community in the country (in tonnage owned). Even in 1810 Newburyport was the second largest shipping community in Massachusetts (after Boston). That year the tonnage of ships peaked at 39,100, whereas just ten years later the figure had fallen 47.7% to 20,441 tons, and the town fell to seventh in the state in tons of ship owned. Registered tonnage, the weight of ships engaged in foreign trade, constituted the vast majority of the total tonnage. In 1810 (also the peak year) 29,897 tons (76.5% of total tonnage) were registered in the district of Newburyport. By 1819 this figure had dropped 50% to 14,893 tons.

Most of the vessels registered (foreign trade) and enrolled (coasting trade and fishing) in Newburyport were also built there. The enormous demand for brigs, schooners, ships, barques and snows created a need not only for ship's carpenters, but also for rope, sail, block and pumps makers, wood carvers, blacksmiths and other craftsmen and laborers. In 1800 there were at least six shipyards along Merrimack Street, and several others in the part of Newbury annexed in 1851. Ropewalks, foundries, sawmills and saillofts were scattered across the town. Between 1780 and 1829 more than 298 vessels weighing 44,839 tons were built in these shipyards. The majority (57.7%) were built between 1800 and 1819.

The decline of foreign trade and shipbuilding were caused primarily by the embargo and the War of 1812. Additional factors were the construction of the Middlesex Canal, ca. 1807, which redirected goods from the interior to Boston; the fire in 1811 which destroyed the marketplace; the consolidation of commerce in larger ports like Boston, New York and New Orleans; and finally the 1820 navigation laws which forbade trade with all British colonies.

The shipbuilding industry would probably have declined sooner (it peaked in the decade 1810-1819), were it not for growth in the coasting trade and in fishing. Capitalists no longer making money in foreign commerce formed the Newburyport Mercantile Co. and in 1817 built and outfitted 60 vessels of 2,874 tons to pursue cod fishing in Labrador and the Bay of Fundy. In one

year, then, this company equaled the total number of ships engaged in fishing only 10 years earlier.

The expansion of fishing and the coasting trade was not enough to revitalize the economy. By 1820 many craftsmen and laborers were out of work. This fact is expressed by the construction of a large addition to the 1794 almshouse in 1821. Indigent men cultivated land, made oakum and sawed and split logs while women were employed spinning wool, cotton and flax and weaving cloth. Later in the decade the New England Lace Co. established a school where indigent women were taught the art of working lace and engaged in its production.

The occupation distribution in 1820 was as follows: one person in agriculture, 411 in manufacturing and trades, and 245 in commerce (including navigation). Manufacturing employment possibilities outside the shipbuilding industry included production of chairs, chaises (in Belleville parish), combs, gold beads, silver spoons, watches and clocks, shoes, tanned hides and hosiery. A hosiery factory was erected on Pleasant Street in 1825, running 20 looms, and employing 40-50 primarily female operatives, and turning out 200-300 pairs of stockings per week. A machine shop in Newburyport gave rise to the first American-made carding machine in the 1790s (used in Newbury). In 1791, prior to the annexation of 6,000 Newbury acres, Newburyport had only 23 acres of tillage, 29 acres of pasturage and 135 acres of English mowing hay.

E. Architecture

Industrial: Several shipyards stood along Merrimack Street and in the northwest part of town. Warehouses for storing the goods imported and exported were also built close to the waterfront. Other commerce and shipbuilding related shops included those of sail, block, pump and windlass makers, blacksmith, etc. A sailloft still stands at 51 Water Street. It is a 3-story, clapboard structure with pitched roof.

Several small comb, shoe, chair and chaise-making shops dotted the landscape. In the 1790s a machine shop where the Schofields manufactured the carding and other machines for the Newburyport Woolen Co. (i.e. Newbury) was built. A hosiery factory was built on Pleasant Street in 1825. Several distilleries were also erected, mostly along Merrimack Street.

In 1796 Timothy Palmer received a patent for "improvement and the construction of timber bridges." The Essex-Merrimack Bridge was built upon his models and at his direction. It consisted of two wooden Palladian arch spans, each resting on one end of Deer Island and the other on the Salisbury and Newburyport banks of the Merrimack. In 1810 the arch on the Newburyport side was replaced with a chain suspension bridge, considered to be one of the first (if not the first) in the country. It is unknown how long the wooden arch on the Salisbury side survived, but its 1792 stone abutments remain intact. In 1826 the Newburyport Bridge was equipped with a draw of 38' to allow boats built upstream to pass.

VIII: EARLY INDUSTRIAL PERIOD (1830-1870)

A. Transportation Routes

Earlier roads continued in use. Many side streets were laid out in the mid and late nineteenth century, particularly south of Bromfield Street, north of Woodland Street and as infill, wedged between earlier (and broad) north/south connectors--fulfilling the need for additional houselots.

In 1840 the Eastern Railroad completed a connection with Boston, and in 1850, the Newburyport Railroad opened. Running through Georgetown, it connected with the Boston & Maine Railroad. Also in the 1850s, a horse railroad linked Newburyport and Amesbury; Plum Island began to be serviced by a street railway; and the Newburyport City Railroad opened, connecting the city's tidewater area with the Boston & Maine (Newburyport) Railroad. Federal roads continued in use, many streets and sidewalks in the town center being greatly improved during this period.

Packet service on the Merrimack commenced. Although several steamboats made excursions between Haverhill and Newburyport as early as 1831, it was the Steamer Decatur (1846) that first ran as a regular packet between Newburyport and Boston. Several other steamers provided transient service between Newburyport and Plum Island, the Isle of Shoals and Haverhill, but these were profitable only in summer. A permanent steam tug opened in the mid-nineteenth century, to bring vessels over the bar to a railroad terminating at one of the wharves. Also, in 1856, one of the Plum Island Lighthouses was razed by fire.

B. Population

A significant portion of Newburyport's growth came from the annexation of a portion of Newbury in 1851. The town's population was 6375 in 1830, grew moderately to 7161 in 1840 and jumped to 9572 in 1850. Following annexation and incorporation as a city in 1851, population increased to 13,357 in 1855. By period's end however, the total dropped to 12,595. In size, the city fell from third to sixth in the county as the population in the industrial cities of Lawrence and Lynn expanded. Newburyport included 18.8% foreign-born in 1855, including Irish (1430), Canadians (730), English (244) and Scots (58). This proportion dropped to 16.2% ten years later with most of the drop coming from the loss of about 200 in each of the two largest groups.

The town's rich ethnic diversity and class divisions were reflected in the number and variety of fraternal, religious and charitable associations. There were four Masonic Lodges, five Odd Fellows Lodges, seven temperance societies, twelve charitable associations, a YMCA, a local of the Knights of Labor, the Royal Arcanum, the Blue Ribbon Reform Club, the Ancient Order of United Workmen, the Mutual Benefit Association, the Newburyport Rifle Club, the Newburyport Orchestral Club (est. 1876), a Historical and Antiquarian Society (est. 1877) and the Newburyport Yacht Club (est. 1878).

Many of the city's residents were Catholic. By 1880 25% of the population belonged to the Catholic church. Parochial schools were established in the

1870s and 1880s. In 1903 the city's first Irish-American mayor was elected. The Seventh-Day Adventists began meeting in 1877. In 1909 the city's three Congregational churches merged, forming the Central Congregational Church.

In 1888 only 71% of the city's 2,515 school children were enrolledin public schools. They attended the Boys' and Girls' High School (a merger of the Putnam Boys' School and the Brown Girls' School), several boys' and girls' grammar and secondary schools, and a few mixed grammar and primary schools. In 1882 the Wheelwright Scientific School was established. Its purpose was to "educate Protestant young men in the highe mathematics, civil engineering and mineralogy."

C. Settlement Pattern

At mid-century, the Industrial Revolution took Newburyport by storm. Between 1840 and 1851, the city's population nearly doubled and over 600 dwellings were built to accommodate the growth. Oak Hill Cemetery was laid out (1842), several new schools and a girls' high school erected (1840-42), the telegraph arrived (1847), gas was introduced (1850), a new Town Hall was built (1850), and the court house on the mall was remodeled (1853). By 1851, the maritime town had become a manufacturing city of sufficient wealth and population that it annexed nearly 6,000 acres from Newbury.

Merchants and maritime artisans increased in numbers on the waterfront, but their focus of activity remained the Market Square central business district. State Street continued as the locus of dry goods merchants, the first (commercial) floors of its buildings now undergoing renovation.

By 1850, Newburyport had lost its preindustrial character and a clear pattern of residential segregation by social class had emerged. The highest density of laborers were found in buildings along the waterfront (on Merrimac and Water streets). Workers also lived, in substantial numbers, on Ship, Charles, Salem and Federal streets --near the James Complex; in houses behind the central business district (especially near the Bartlett Mill); on Olive, Kent, Warren and Monroe streets near the Ocean Mills; and above the stores in the downtown. On the whole, construction during the period "fleshed out" the earlier established neighborhoods, and increased residential densities in areas beyond and behind them (edging now more inland toward High Street and further North and South along the waterfront).

D. Economic Base

Diversification was the key to Newburyport's emergence from the economic depression it suffered beginning in the previous period. While shipbuilding, fishing and the coasting trade continued to bolster the economy throughout the 1830s, the town's dependence on the ocean lessened considerably in the late 1830s and 1840s upon the introduction of steam-powered manufacturing.

Shipbuilding (especially in the Newbury portion of the Merrimack) picked up as the period advanced, stimulated first by growth in the fishing industry, and later (in the 1850s) by the demand for large ships used in the California gold rush. Tonnage of ships built increased 44.5% from 1830 to

1840. Meanwhile more than 100 ships engaged in the mackerel and cod fisheries (tonnage peaked at 7,709 in 1838). By the end of the period only around 30 ships were still so engaged. An attempt was even made to promote whaling. In 1833 a company was formed and three ships were built to pursue whales on the Pacific. Each ship carried at least 100 men. This venture failed after a few years. Shipbuilding peaked (for this period) in the 1850s. While the number of ships built did not reach the level of the period 1800-1819, the tonnage far exceeded the entire period, thus indicating that much larger ships were in demand. In 1855 Newburyport climbed from 7th to 4th in the Commonwealth in tonnage of ships owned. Nonetheless, shipbuilding and fishing were not sufficient to carry the economy.

Many Newburyport capitalists, aware of the declining profitability of maritime related industries, looked for new investment opportunities. Steam-powered manufacturing was just such an avenue. In 1837 the Wessacumcom Mills were incorporated. By 1840, under the name "Bartlett Mills," this company had two mills and was capitalized at $350,000. The Bartlett Mills were the brainchild of General Charles T. James, who was responsible for the promotion of steam-powered factories in Newburyport. James and steampower were to Newburyport what Francis Cabot Lowell and waterpower were to Waltham and Lowell. James's efforts gave rise to a textile manufacturing boom in the 1840s. Between 1842 and 1845 the James Steam Mill (1842), the Essex Steam Mill (1843), the Globe Steam Mill (1845) and the Ocean Steam Mill (1845) were incorporated and erected. These four and the Bartlett Mills were capitalized at $1.25 million in 1850, employed 1500 people (the majority, women) and produced 11 million yards of cotton cloth per year. In 1858 operatives in the Bartlett Mills struck for eight days to protest longer working hours and a pay cut. The Globe, Bartlett and James mills ranked among the forty-one largest textile mills in the country (in capitalization). According to Thernstrom "the most important American experiment with steam-powered mills prior to the Civil War was conducted in Newburyport."

Steampower also led to the mechanization of the comb industry. In 1832, 19 people were employed in small shops and produced combs worth less than $10,000. In 1842 a steam-powered comb factory was built. By 1865 factories and shops were employed 100 men and women and producing 210,000 dozen combs worth $110,000.

The shoe industry also experienced rapid growth during the period. Like comb making, it evolved from the shop stage to the small factory. In 1865 four of these small factories were in operation, employing about 100 people. The value of shoes manufactured increased from $60,000 in 1832 to $160,430 in 1865.

Other important industries established in this period include the Russell Iron Foundry, ca. 1840, which made pumps, windlasses and capstans fcr the shipbuilding industry; the Towle Silver Manufacturing Co., ca. 1857, which made silver articles, especially silverware; and two hat manufacturing companies which in 1865 employed 200 men and women making more than 150,000 hats worth more than $100,000. In addition to these, there were several craftsmen doing maritime-related work, a chair factory, a sewing machine

factory and a machine shop. By 1865 the value of goods manufactured was just under four million dollars. Of this total, 90% was accounted for by cotton goods (63.2%), shipbuilding and related industries (16.7%), boots and shoes (4.1%), combs (2.9%), and hats (2.7%). Thus while shipping and shipbuilding was still an important industry, it was no longer the basis of the Newburyport economy.

The decline in shipbuilding and commerce and the boom in fishing and factory production of textiles, shoes and combs led to important changes in the employment situation. The number of men in navigation (maritime commerce) fell by 78.0% from 1840 to 1865. The number in manufacturing held steady over the same period. However, there was a sharp drop in the number in skilled trades (especially shipbuilding) and a substantial increase in the number of semi-skilled factory operatives. Furthermore, women accounted for 60-75% of the employees in the textile mills. While many men turned to fishing (about 5% of the total population -- 741 men -- were employed in the fishing industry in 1865), population growth exceeded the growth in the job market, thus leaving many men unemployed.

E. Architecture

Industrial: Five steam-powered cotton textile mills were built between 1837 and 1845. The first, the Bartlett Mill, a four-story brick factory, was erected on Pleasant and Inn Streets in 1838. It measured 150' x 48', and had a clerestory roof and bell tower. A second mill, five stories, 200' x 49', with a stair and bell tower and a gable roof, was erected in 1840. Five outbuildings and a counting house were built at the same time. The counting house, at 24 Pleasant Street, ca. 1840, a two-story brick building with granite window sills, is all that remains following a fire in 1881. In 1882 a two-story addition was made to the counting house, and in 1976 a storefront was added. The James Mill, ca. 1842, built at the corner of Water and Charles Streets, is an extant four-story brick factory, 310' x 49', with gable roof, chimney, two stair water towers, a brick lintel cornice, granite window lintels and wrought iron balconies. A two-story, brick picker house, 100' x 501, ca. 1842 also still stands on the site. Another building belonging to the James Mill, a small two-story, brick structure five bays deep with granite lintels, a pitched roof, and a chimney, still stands on State Street near Oak Hill Cemetery. The Globe Mill, ca. 1845, a 3 1/2 story brick, gable-roofed factory with a cupola bell tower stood on Federal Street, near Water Street. The building has been destroyed. The Ocean Steam Mill, ca. 1845, a five-story brick factory with gable roof and a stair and water tower and attached boiler house, was erected at Kent and Munroe streets. It was destroyed in 1920. In 1867 the factory was enlarged. Building #6, a two-story brick, 87' x 71' building with granite lintels and brick arches over the doors was added, as were buildings #7 and #8, two one-story structures with granite foundations and gable roofs.

Several small shoe factories were also built in this period, most of them probably wood frame. The Rave Shoe Factory, ca. 1860, a two-story, clapboard, Greek Revival building with gable roof still stands at 330 High Street. An adjoining building at 332 High Street was also a shoe factory. A third shoe factory was built on High Street at the corner of Jefferson

Street. Small comb factories were also built at this time. In 1853 a brick machine shop on Fair Street was converted to a comb factory. Two hat factories (at least one was brick) were constructed during the period.

Iron foundries were established in 1837, 1840 and 1857. The Russell and Son Foundry at 105-97 Merrimac Street was established in 1840. Two of the machine shops, ca. 1840-50, stand, although altered. A two-story, brick shop with pitch roof still stands at the corner of Merrimac and Strong streets.

In 1866 a four-story, brick, shallow pitch roof mill, 150' x 45', with a stair-tower covered with a mansard roof, was erected by the Merrimack Arms and Manufacturing Co. (This extant building has been occupied by the Towle Silver Manufacturing Co. since 1883.)

Transportation: A new brick railroad depot was built in 1853. A depot of the Eastern Railroad was constructed between Washington, Winter and Strong streets ca. 1840. Both a freight depot ( ) and a passenger depot ( ) of the Boston & Maine Newburyport Railroad was constructed ca. 1850 between Pond and Greenleaf streets, near Frog Pond. Their appearance is unknown. The buildings do not survive.

IX. LATE INDUSTRIAL PERIOD (1870-1915)

A. Transportation Routes

Early Industrial period roads continued in use and saw improvement. Newburyport's waterfront was drastically altered in 1872 with the construction of the Newburyport City Railroad. As the demand for transporting coal and freight increased, the City Railroad was built to link the city's wharves directly with the main line of the Eastern Railroad.

Regular packet service continued between Haverhill, Amesbury, other towns on the Merrimack and Newburyport and Boston until 1891. At that time, the street railway from Market Square, Newburyport to Salisbury Beach was equipped for electric car service and year-round steamer transit was discontinued. Steam-tugs remained in operation, particularly aiding coal and lumber barges into and out of the harbor, until the first decade of the twentieth century. Steam yachts, offering tourist excursions on the river in the summer months, continued until 1902. Also, one lighthouse on Plum Island was rebuilt in 1905.

Several of Newburyport's bridges were modified or rebuilt. In 1894 the Essex suspension bridge was reinforced and in 1909, the bridge razed and the present suspension bridge constructed. The Route 1 highway bridge (with turntable) between Salisbury and Deer Island was erected in 1902. In 1888 the Newburyport railroad bridge (also with turntable) was built, replacing a wooden structure. In addition, in 1873, the Newburyport Range Light was constructed (its height possibly increased at a later time).

B. Population

Newburyport's population grew slowly but steadily from 1870 to 1915, beginning the period at 12,595 and ending at 15,311, a 21.5% increase. The population never declined from the previous census figure and also did not grow by more than 5% in any five-year period. The absolute number and percentage of foreign-born also grew during the period, increasing every census year with the exception of 1905. The number of immigrants grew by 42% from 1875 to 1915, from 2303 (17.3% of total population) to 3283 (21.4% of total population). Irish (1306 persons) and Canadian (842 persons) immigrants were the largest groups in 1885. There were also 260 English, 60 Scottish, 25 Swedish and 34 German-born people. By 1905 the ethnic diversity of Newburyport was considerably augmented. Sixty Russians, 40 Turks, 42 Italians, 34 Armenians, 25 Greeks, and 20 Poles were also counted by the census taken, as were 14 Norwegians and 6 French immigrants. In 1915 the Polish population was 523. The increase of immigrants from southern and eastern Europe occurred simultaneous to the decline in numbers of immigrants from Canada and northern and western Europe.

C. Settlement Pattern

The construction of the railroad link to Newburyport's wharves (1872) profoundly affected the activities of the waterfront and central commercial district. Built parallel to Water Street and across existing wharves (rendering them useless), the City line stimulated a host of new construction within the area. A coal pocket was erected (1876) of such massive scale that it towered over every waterfront structure; a railroad terminal was built behind the Market House (now the fire station) and additional commercial and warehouse buildings, along the new Railroad Avenue at the central waterfront. Market Square was now physically divorced from the river. Its traditional maritime enterprises (including the food industry) were ousted by larger business unrelated to shipping and shipbuilding. Market Square, by 1900, had deteriorated into an area associated with coal pockets, junk and hardware stores, tenements and saloons (Faulkner, Peters et al). It follows that improvements to the city were not proximate to the waterfront. A swan-shaped fountain was built in the middle of Frog Pond (1891) and the old jail expanded (1899).

Residential building, of a smaller volume than previous periods, tended to be focused upon the eastern and western fringes of the city, especially east of the City Railroad (beyond Marlboro Street); north of Tyng, near High Street; north of Woodland near Merrimac Street; and scattered south of High Street. Many of these were modest two-family dwellings. Affluent building continued to be attracted to the "Ridge"/High Street axis.

D. Economic Base

The principal players in the late industrial economy were essentially the same as in the previous period. Nonetheless changes did occur in their relative importance.

Despite modernization and enlargement of the steam textile factories, the textile industry in Newburyport steadily declined. From 1865 to 1875 the value of cloth produced fell by 50%. The number of people employed also declined sharply. The mills underwent several changes in ownership and by 1895 only two of the original five were still in operation. The James Mill (changed to Victoria Mills in 1876) contained 17,000 spindles and 350 looms. By 1907, under the ownership of the Bay State Corp., the looms were removed and only cotton yarn was manufactured. Newburyport textile mills were no match for those in Fall River, Lowell, Lawrence, and in the south.

After a short boom in the 1870s the shipbuilding industry practically disappeared. In 1875 almost $800,000 worth of ships (mostly schooners) were built. By 1905 four small boat yards produced less than $6500 worth.

Despite the decline of these two critical sectors of the economy (textiles and ships), the value of manufactured goods rose steadily during the period. The rise of large-scale shoe manufacturing was largely responsible for this growth. Two large shoe factories and six smaller factories were built in the 1870s-1880s period, the largest of which, the E. P. Dodge Co., ca. 1873, was built on Pleasant Street. A relative, N.D. Dodge, built a large factory around the corner on Prince Place in 1880 and another factory on Prince Place in 1900. Between 1865 and 1875 the value of shoes produced rose from $160,430 to $572,163. Over the next three decades similar growth rates were sustained. By 1905 12 shoe factories, employing 1864 people, manufactured $4,101,935 worth of boots and shoes.

Another important firm, Caldwell's Distillery, was established in 1870. In 1875 a distillery and warehouse were erected on Merrimack Street, and the business grew to be one of the largest in the late industrial city.

Hats and combs were still made through most of the period. However, by the end of the period the number of comb factories was reduced to one, the Noyes Co., on Chestnut Street.

From 1875 to 1905 the value of manufactured goods rose 62.5%. Textiles (27.8%), shipbuilding and outfitting (21.3%), boots and shoes (12.9%), rum and beer distilling (9.5%), hats (5.5%) and combs (3.4%) accounted for 80% of all manufacturing production. Textiles was clearly on the decline from 1865 (when it was 63% of the total), and shoes were on the rise (from 4.1% to 12%). By 1905 shoes accounted for 60% of the almost $7 million in manufactured goods, and 63% of all industrial workers worked in the twelve shoe factories, most of them in the E.P. and N.D. Dodge factories.

The occupation distribution of men in 1905 was as follows: 121 in agriculture (on 70 farms, of which six were dairy farms, of 2431 acres); 145 in fishing (down from 741 in 1865); 2275 in manufacturing (up from 1201 in 1865); 247 in government and professional positions; and 995 in trade and transport. These last were owing to the emergence of many retail and wholesale establishments.

E. Architecture

Industrial: Some modernization and enlargement of the steam textile mills took place during the period. In 1880 a second mill was added to the Ocean Co., measuring 98' x 234'. This large, three-story brick building with granite sills, brick-arched lintels, large windows, and a flat roof, still stands. Another building was added in 1890. An engine and boiler house was added to the James Mill in the late 1870s. A cotton storehouse, four-stories, 100' x 50' with a shallow pitched roof was added ca. 1890. In 1900 a cotton combing building, 50' x 75' was built. All are extant.

Large shoe factories were built in the 1870-1900s period. The E.P. Dodge Shoe Factory, a four-story, brick, Italianate building measuring 300' x 50' and still standing on Pleasant Street, was erected in 1873. In 1880 a boiler and engine house with chimney was added. In 1900 a fifth floor and mansard roof were added to the factory. The renovated building is now an apartment complex. Nearby on Prince Place is another shoe factory, ca. 1880, a four-story brick building once owned by N.P. Dodge, Perry and Bliss (originally five floors with shallow pitch roof). The N.D. Dodge Co. shoe factory, a three-story, wooden structure, 200' x 501, with a flat roof, was built in 1900. The extant building has been covered with asbestos shingles. Six smaller shoe factories were also built early in the period.

The large Noyes' Comb Factory was erected in 1871, also on Prince Place (since destroyed). In 1898 the Richardson Comb Co. was established on Dalton Street.

A wooden machine shop and storehouse of three-stories, 100' x 35' with a shallow pitch roof was added to the Towle Manufacturing Co. site in 1880. Around 1870 an ell 100' x 100' x 50' was added to the 1866 building (built by Merrimack Arms), while two large water towers were added ca. 1910.

Caldwell's distillery was established in the 1870s. The wood distillery was destroyed, but a three-story, brick warehouse (1876) still stands at 182 Merrimac Street. It measures 35' x 50' and originally had segmental-arched windows, many of which have since been bricked in.

Around 1908 the Newburyport Building Association built three brick factories in the city (size, location unknown).

Transportation: The depot of the City Railroad was built behind the old Market House (now the fire station), between Water Street and the Merrimack near Market Square.

When the Essex suspension bridge was strengthened in 1894, steel cable wires replaced some of the chains, a Howe stiffening truss was added, and a new flooring system installed. The towers are identical in form to those of the original bridge, but are constructed of reinforced concrete. The deck is strengthened with Warren trusses. The Route 1 highway bridge (1902) is "an inclined chord, riveted, lattice and plate girder, through bridge," its center panels resembling Warren trusses, its outer, Baltimore trusses. The central span is mounted on a turntable 30' in diameter. The Newburyport

Railroad Bridge (1888) consisted of a triple system of Pratt trusses. Its swing span, on a turntable, was operated mechanically.

X. EARLY MODERN PERIOD (1915-1940)

A. Transportation Routes

Between 1949 and 1955, Route U.S. 1 (now Interstate 95) was constructed through western Newburyport. Route 113 (High Street) and Route 1 (the Newburyport Turnpike) continue as primary highways within and through the city. Railroad service continues, on both the Eastern and City lines.

In 1922, the Newburyport railroad bridge was strengthened, and its turntable made electrically-powered. At an unknown date the Route 1 highway bridge was demolished and replaced with the present bridge (with draw). The Whittier Memorial bridge (part of the Interstate 95 system) was completed in 1954. The Newburyport Light Tower functions today, its light having been removed, as a range marker for the Merrimack at Newburyport.

B. Population

After rising steadily for the last half century, Newburyport's population totalled 15,311 in 1915. Thereafter, the town entered a period of fluctuation and decline. Its population had decreased fully 9% (to 13,916) by 1940 and recouped only 1.4% (to 14,111) by the end of the following decade. Although a wide range of nativities are represented within the foreign-born of Newburyport, a fundamental shift in their relative proportions occurred during the period. The Irish, having comprised approximately 40% of the foreign-born population at the turn of the century, had fallen to 25% by 1915 (829 of 3283 persons) and to only 15% (226 of 1486 persons) by 1950. Canadians, on the other hand, by mid-century accounted for over 35% of Newburyport's foreign-born. Other nationalities represented within the town include: Russians (89), Italians (62), Greeks (97), Poles (182) and English (80).

C. Settlement Pattern

Manufactures began to decline, population to stabilize and new building to slow in pace. Residential construction was directed to the creation of suburban neighborhoods located in an ever-widening circumference from the Federal commercial core. Construction focused particularly (for the first) inland of High Street (bounded by Low and Hale streets and Storey Avenue); north and west of Atkinson Common and off Pine Hill Road; and in scattered form, near Interstate 95 (off Gypsy Lane and Hale Street). Because of earlier (dense) building between High Street and the waterfront, only scattered dwellings were constructed in that vicinity during the period.

D. Economic Base

Shoe manufacturing was the principal industry early in the period. In 1933 1500 people (40% women) were employed in seven shoe factories. The industry suffered during the Depression. A one-month strike in 1933 was conducted to

protest wage-cuts and the loss of jobs. Despite declining during the twenties and thirties, the industry recovered after World War II. In 1952 eight companies employed 1500 people, or 31.4% of all industrial workers. However, in the intervening years the electronics and electric machinery industry replaced shoe-making as the principal manufacturing activity. With 2500 employees, such firms as the Chase-Shawmut Co., Hytron Radio and Electronics Corp. (located in the Ocean Steam Mills buildings) and others accounted for 52.5% of all manufacturing employees.

Other industries continuing from the previous period included the Towle Silverware Manufacturing Co., the Russell Foundry, the Noyes Comb Co., and small boat-building firms.

Manufacturing firms employed 76% of all employees in 1952. From 1915 to 1952 the number of industrial workers grew by 60% to 4475, while agricultural workers fell from 276 to 17 and those employed in commerce from 1071 to 873 (14.8% of all employees in 1852). The service industry and construction accounted for another 5.5%.

E. Architecture

Industrial: Following the removal of the Whitefield textile company the Ocean Mills were enlarged. In 1915 building #5, a one-story brick structure was erected (extant). In 1920 the original 1845 mill was destroyed and replaced with (building #2), a large two-story concrete and wood-frame, asbestos-shingled building, with a gable roof and measuring 103' x 275' (extant). Two aluminum silos are recent additions. The Hytron Electronic Corp. used the Ocean Mills site for several years, and another electronics company may have used the James Mills.

The Newburyport railroad bridge was reinforced in 1922, by the addition of several Warren trusses connected to the original Pratt trusses. The present Route 1 highway bridge is a "steel and concrete girder bridge with a bascule draw mechanism." 1100 feet long and 60 feet wide, the Whittier Memorial (Interstate 95) bridge (1954) is a "double truss and steel riveted" bridge reinforced with Warren trusses.

XI. SURVEY OBSERVATIONS

Residential tract development threatens to devour vast sections of rural Newburyport. In areas immediately west and south of the Federal-period core (and adjacent to Interstate 95) suburban neighborhoods are being created with alarming rapidity. Already dominated by such development, areas off Ferry and Pine Hill roads to the northwest, off Gypsy Lane and Storey Avenue to the west, and along Hale Street immediately south and west of the historic core.

XII. BIBLIOGRAPHY [missing]