

A COMPREHENSIVE PLAN FOR AMHERST, MASSACHUSETTS

by

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ABSTRACT

A Comprehensive Plan for Amherst, Massachusetts
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"Submitted to the Department of City and Regional Planning on
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The Town of Amherst was primarily a farming community for about 100 years after it was set apart from Hadley as a separate community. During the early part of the 19th century a number of paper mills and other industries were started in the town. Diversified manufacturing was carried on in the area for about three-quarters of a century but as the center of population moved westward and factories were drawn toward larger and more advantageously located communities Amherst lost virtually all of its industrial establishments.

During the period in which these industries flourished, two educational institutions were started in the town. Amherst College, a privately endowed, liberal arts institution, opened in 1821 and in 1867, The Massachusetts Agricultural College began to operate. Amherst College grew steadily and early became an important part of the town's economy. In recent years its enrollment has reached a total of about 1050 undergraduate students. The college has attained a strong position in the liberal arts field and present plans are to keep it at approximately its present size.

The Massachusetts Agricultural College was begun originally as a land grant institution devoted primarily toward a broad training in agriculture. Over the years it became first a state college and then, in 1947, The University of Massachusetts. From the limited program which was originally set up there has grown a vast coeducational institution offering many types of graduate and undergraduate courses. The present enrollment numbers about 4150.

In its physical setting Amherst is surpassed by few towns. Most of the 27 square miles comprising the town's area is pleasant, usable land. The town is situated on the eastern side of the fertile Connecticut Valley area, midway between the upland plateau to the east and the broad flood plain to the west. It is surrounded by fairly small rural towns but is within 25 miles of cities such as Northampton, Holyoke and Springfield where there is much diversified manufacturing. The climate is generally good. Rail transportation, for freight only, is directly available toward the north and south and through connections, to the east and west. Two State Highways, Routes 116 and 9 respectively, traverse the town on a north-south and east-west axis, providing fairly good connections to nearby communities and to better highways leading to other parts of the state.

The local road system is about 85% paved and for the most part seems very nearly adequate for the local population. A few bottlenecks exist, particularly at the center of town. Water mains serve most of the built-up portions of town and

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until very recent years the supply available in the reservoirs in Leverett and Pelham has been entirely adequate. Storm and sanitary sewers serve most of the streets near the center of town and also the village of North Amherst. The sewage disposal plant on the western side of town provides primary treatment at peak periods, for over 1,500,000 gallons a day although its designed capacity is only two-thirds of that.

The population of Amherst is estimated to have been about 7600 in 1950 but due to changes in procedure in the 1950 Federal Census, which included a large number of the college students in the enumeration, no accurate count is available for that year. For research purposes, the 1950 census is very misleading and constant interpolation is necessary. The 1955 State Census shows a total population of 8207.

The original economic base in the town was a function of the agriculture which was predominant, but the industrial period was important for some years. In recent times the two educational institutions have become the economic mainstay for the community. Although Amherst College expects to remain at its present size, the University will expand to an enrollment of 10,000 students by 1965 in order to meet the rising demand for higher education within the state. Until recent years the town of Amherst grew slowly and steadily with the sort of quiet prosperity which is usually found in a college town. In the next ten years the planned increase in the University staff will exceed 1000 persons and as the number of primary workers goes up by this amount so also will the number of secondary workers increase and so, also, will the town's problems become manifold.

Public services to date have generally been adequate but in the near future will become entirely inadequate in certain vital respects. The growth in population has already led to an overcrowding in the local school plant which was out of date even before the war. After several attempts to raise funds for an elementary school the town embarked on the construction of a regional senior high school which will soon be completed. Recent investigations into the impending water shortage have failed to point toward an adequate supply because the neighboring towns of Sunderland and Hadley do not wish to sell water to Amherst or have Amherst develop wells within their borders. The sewage treatment plant has been pushed to the limit. The local tax structure suffers by virtue of the fact that more than half the assessed valuation is tax exempt and recent moves by the state university have added some 50 faculty apartments to the tax exempt list. Housing in the community for both college and non-college people has been scarce and quite expensive for some years.

The main elements of the proposed master plan for the town's development can be seen on the large map which is submitted with the thesis. Public services and facilities of all sorts must be stepped up as the growth occurs. It seems likely that a population of 12,000 or more will be reached within 20 years and if the University's growth actually proceeds at the planned rate such a figure will be a reality before 1970.

Expansion of the town as a home base for a commuting population in connection with opportunities for employment in nearby cities might conceivably bring Amherst's population up to 12,000 by the mid 1960's and, therefore, a close watch of migration trends is in order so that planning goals can be adjusted accordingly.

The following recommendations are minimum ones and if growth occurs more rapidly than is indicated in the conservative forecasts the pace of development for this growth must be increased. The state bypass for Route 116 should be built as soon as possible to the west of town and then the state should be induced to carry a bypass of Route 9 along Bay Road at the southern end of town. East Hadley Road should be relocated so as to cross South Pleasant Street to the north of Mill Valley and then should be further extended to South East Street and ultimately across Belchertown Road to Pelham Road. A relocation of the highway bridge toward the west in Mill Valley should be undertaken at the same time. In order to provide a better route to the University on the west Lincoln Avenue should be carried across Northampton Road and in a broad arc into South Pleasant Street. Channelization of the center of town and provision of adequate off-street parking should reduce much of the congestion there.

The sewage treatment plant should be doubled in capacity in the near future and some extension made of the existing system. Since adequate supplies of good quality water are not available nearby the town should be connected with the Metropolitan District Commission's Quabbin Reservoir within 5 years.

The University ought to provide additional housing units, hopefully on private land and some form of payment in lieu of taxes should be worked out to cover some of the existing drain on town facilities.

The future development of the town should be guided by a thorough rezoning study with a general density pattern allowing 6 to 10 families an acre in University housing developments, 3 F/A in the next and more restricted zone, followed by zones which would induce densities of 1 F/A and 3 A/F in the more outlying areas. School sites in North and South Amherst should be set aside now as well as one additional site near the center of town. In connection with the general density proposals and the zoning, shopping centers should be provided in North and South Amherst.

Thesis Advisor: Roland B. Greeley,
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CHAPTER I
INTRODUCTION

Noah Webster once characterized Amherst as "...a village where no peculiar circumstances exist to invite dissipation and extravagant expenditures; surrounded by well cultivated territory; inhabited by people whose moral, religious and literary habits dispose them to cherish the cultivation of the mind and the propagation of evangelical truth; while the extensive prospect...is designed by nature and by art to delight the student, and to furnish to piety perpetual sources of contemplation and improvement." From this description one can see that the town of Noah Webster's day offered an ideal environment. It may also be said that the modern town of Amherst provides a very pleasant setting for the homes of those who now live there and for the employment of those who reside in the town or in neighboring communities. This thesis is concerned with the present situation in the town but in the main it points toward a comprehensive plan for future development. Many people in this and other communities are continuously at work on the mechanics of the everyday functioning of government in order that law and order may be maintained, property protected, schools and other community facilities operated efficiently, roads built, etc. The operation of government in terms of contemporary life is important and must not be neglected, but

equally important is the functioning of each municipality in the years to come. As new forces - economic, social and political - rapidly thrust themselves upon us, forces which are fostered and then maintained by modern technology, we must think not only of the present but also of the future of our towns and cities. For only through a complete understanding of today's problems can we effectively plan for future development and growth which will retain the good features which exist while still preparing for the proper integration of the forces, both known and unknown, which are bound to confront us in the years to come.

Although this thesis is aimed at a community plan for the future it contains a description of the historical development of the town and considerable material on existing conditions. Since future policy and action usually reflect what has previously occurred, the facts and figures which make up the contemporary scene, coupled with a careful analysis of future goals and the use of modern planning techniques, should constitute a realistic guide for future action.

CHAPTER II
HISTORICAL BACKGROUND

According to the best historical evidence most of the land within the present town of Amherst is a part of the area purchased by John Pynchon of Springfield from the Nonotuck or Norwottuck tribe of Indians in 1658.¹ Surprisingly enough, Amherst was settled from the west despite the fact that it was an outgrowth of the early settlements that had already spread along the shores of Massachusetts Bay almost one hundred miles to the east. The first settlers of what is now Western Massachusetts had separated from the original groups which had come from England to the Massachusetts Bay area in the years following 1631² and then gradually spread to the west looking for new lands and a greater opportunity to live as they wished. Scouts who had explored the wilderness areas to the west of the original settlements had reported a great fertile valley within easy reach. The first of the new citizens of the Connecticut River area built homes at Wethersfield and Hartford in 1635 and in 1636 some ventured as far north as Agawam and the future site of Springfield. Then, under pressure of religious and govern-

1. Carpenter and Morehouse, History of the Town of Amherst, Massachusetts, Amherst, 1896, p. 1.

2. Frederick H. Hitchcock, Handbook of Amherst, Massachusetts, Amherst, 1891, p. 1.

mental disputes and impelled also by the restless urge common to most pioneers, a group of these people moved north settling in Northampton in 1654.³ In 1659 Puritan settlers from the Hartford area began to occupy land which now constitutes Hatfield, Hadley, Amherst, South Hadley and Granby. In 1662 the bounds of Hadley were determined to include an area ten miles in length and extending four miles eastward from the river.

Ten years later the inhabitants of Hadley petitioned the General Court so that the town could be enlarged to include Pine Plain, as the area to the east was called. When this request was carried out, the new boundary of the town was drawn six miles east of the meeting house.⁴ A further vote in the Hadley town meeting in 1700 set up as common property, the land running eastward from a north-south line which was three and one-fourth miles from the Hadley meeting house. It was the area between these two boundaries which eventually became the town of Amherst. It was further stipulated that the "Inner Commons," as they were known, should be divided into three strips separated by highways running north and south and that these roads would be crossed by another set of roads from east to west. The present locations of East Street and Pleasant Street were

3. Claude M. Fuess, Amherst, The Story of a New England College, Boston, 1935, p. 10.

4. Carpenter and Morehouse, op. cit., p. 10.

laid out in 1703 and the pattern of development for the future growth of the town was determined at that time. East Hadley, as it was called, extended from the Holyoke Range on the south to Mill River on the north. Although this area was surveyed and each of the two main highways laid out to a width of forty rods, there apparently was little intention of opening the land to immediate settlement. The inhabitants of Hadley, who were granted lots, wished to have definite bounds for their pastures and woodlots; however, they kept their homes close together in the area just east of the Connecticut River, near the fortifications which had been built as a result of the increasing depredations of the Indians beginning in 1675. During King Philip's War the whole Connecticut Valley area as far up as Northfield was subject to frequent surprise attacks which delayed the settlement of much of the peripheral land around the combined military outposts and settlements until the end of the French and Indian War in 1713.⁵ The inhabitants of Hadley were not entirely free from strife until the end of the fifth Indian war in 1748.

People apparently began to move into the East Hadley area in the 1730's as lots were staked out in the middle and western strips of land while the third area extending toward the Pelham Hills, on the east side, was split up into

5. Hitchcock, op. cit., p. 4.

pasture land. In 1734 an act of the General Court established this new section of town as Hadley Third Precinct, and before long a new pastor arrived for what is now the First Congregational Church in Amherst.⁶ The land was gradually cleared of timber and soon much of it was plowed and used for agriculture. The families in the area were virtually self-sufficient since they not only grew their own food but also wove their own cloth and did all their own building. In 1753 the area south of the Holyoke Range became the district of South Hadley, and the East Hadley lands then became known as the Second Precinct. The spirit of independence prevailed and in 1759, after a petition to the General Court, "a separate and distinct district by the name of Amherst" was created.⁷ It was named, by Governor Pownall, for Sir Jeffery Amherst, who at that time was a popular military hero having recently captured Louisburg from the French. The new district was not formally a township until after the Revolution when the General Court passed a resolution that all districts incorporated before January 1, 1777 were to be considered towns. In the census enumeration of 1776, the white population was listed as 915.

During the early years of its existence and extending up into the 19th century, much of the activity in Amherst

6. Fuess, op. cit., p. 13.

7. Ibid., p. 14.

seemed to be centered in the east side of the town around the common, which, in reality was land originally laid out to a width of forty rods for one of the two main highways. As the years went on the major part of the new growth in town occurred to the west along the ridge of land where the other main highway was located. Consequently, the common which was formed from the original highway land, attracted most of the early stores and the post office was moved there from the East Village about 1820. Apart from the church, which grew up from the meeting house erected in 1784 and one or two small stores plus some later attempts at industry, East Amherst never again reached the prosperity which it had known in the early years.⁸ The grounds of the East Hampshire Agricultural Society were located there in 1850 and on the sixteen acres purchased, an exhibition hall, some cattle barns and a race track were erected. The agricultural fairs were successful for some years, but finally the major fair in the county was held in Northampton and, following some lean years, the fairgrounds in Amherst were closed.

Throughout the first hundred years of its history as a corporate entity, Amherst was primarily an agricultural town. In the early days the colonists raised good crops of wheat, oats, barley, rye and Indian corn and kept some livestock. The land surrounding Amherst proved, for the most

8. Carpenter and Morehouse, op. cit., pp. 276-284.

part, to be quite fertile and although not as flat as the original Hadley area it was farmed without difficulty. In their History of the Town of Amherst, written in 1896, Carpenter and Morehouse had this to say about the town, "Amherst is, as it has ever been, essentially an agricultural community. For more than a century after its first settlement no other interest came in active competition with the culture of the soil. For the past fifty years Amherst has become better known to the world as a college community, an educational center, yet its prosperity rests with those who labor in the fields."⁹ Other crops which were raised in the area included peas, beans, flax and pumpkins. Potatoes and turnips seem to have come somewhat later than other crops. Tobacco, which has been important in the valley economy since about 1900 was actually introduced in 1840. Although most of the early farming was of a general nature some specialization developed in Amherst, as in other towns, in brown corn, hogs, beef cattle, onions and poultry; also, a number of orchards and dairy farms were established. Most of the farms were relatively small and were operated primarily by the family of the owner.

Amherst has been essentially an agricultural community, but it has also seen a surprising number of diversified industries, many of which depended upon the water power pro-

9. Ibid., p. 276.

vided by the Mill River or the Fort River. Although several of the industries prospered for some years, virtually everyone of them has long since closed its doors and in most cases it is now difficult to distinguish the sites where the buildings were once located. The first of these local industries seems to have started in 1795, when a paper mill was built on the Mill River in the section called Amherst City. This mill, and others which followed near that location and in nearby Factory Hollow, produced strawboard, leatherboard, and heavy wrapping paper as well as writing paper.¹⁰ In 1866 the newsprint for the New York Tribune was made by the Cushman Brothers paper mill in the "City" and it was at about this time that this section of town, where several of the mills were located, became known as Cushman. In the early days much of the paper was produced almost entirely by hand, but with the advent of machines in the mills output was increased. At the peak in the 1860's there seem to have been four or five mills operating at one time and these mills, which employed about forty people, turned out nearly 900 tons of paper a year, valued at about \$100,000.

From 1809 on there were various attempts to get cotton yarn spinning mills and woolen mills into operation, most of them in or near Factory Hollow in North Amherst. It is

10. Ibid., p. 288.

difficult to determine the exact number of textile mills in operation at any given time because they were frequently destroyed by fire after they had been running a few years. The various mills employed anywhere from fifteen to sixty workers each and the large ones produced over 200,000 yards of cloth a year. Carpenter and Morehouse sum up the textile situation as follows: "The series of disastrous fires that destroyed so many mills proved a death-blow to the textile industry at North Amherst. After the year 1860, there is no further mention of any attempt to manufacture either cottons or woollens in Amherst."¹¹

The largest and most successful manufacturing venture within the town actually started out as an operation which was carried on primarily in the homes, like the craft work in the old days of the guilds. Palm-leaf first appeared in Amherst in the early part of the 19th century. It was brought to Boston by sea from the West Indies and then carried overland by team to centers where it was distributed to the families in the area. Here it was split by hand and braided and made into hats. In 1829 the centralization of finishing processes began in factories in Amherst, first at Factory Hollow and then finally along the route of what is now the Central Vermont Railroad between East Amherst and the main part of town. In 1868 patents were taken out for

11. Ibid., p. 291.

the weaving of palm-leaf on power driven looms and ultimately this became the most important industrial enterprise in the town. Massachusetts was the only state in which palm-leaf hats, and later, Shaker hoods, were made and Amherst was the chief producing point with New York the major market. In the 1870's production topped 100,000 dozen hats a year and by 1892 two factories were in operation, employing a total of almost 600 local people and over 350,000 dozen hats were made. Changing styles in hats and competition from shops in the cities nearer the markets brought the local hat business to an end in the 20th century.

At various times from the 1830's on, Amherst's share in the diversification of industry in the Commonwealth grew considerably.¹² In 1835 there were factories in East Amherst and below Mill Valley, with a daily output of about 200 carpenter's planes and other tools for joinery. Cutlery and pistols were made for a time after 1837 just off Pelham Road. Stoves were produced in 1834; plows, axes and steel springs came from another factory beginning in 1837. In 1827 a small factory in South Amherst began to produce carriages and it was joined by another in East Amherst soon after that. These organizations ultimately employed around 150 and were among the best known makers of fine quality carriages in New England but they had pretty much died out

12. Ibid., pp. 277-301.

by 1890. At one time wire hoop skirts and wire screens were made in East Amherst and the manufacture of children's wagons and sleds, which started in South Amherst in 1845, finally led to the point where three factories were turning out 18,000 items a year. Tanneries began to open in the 1830's and shoes were made soon after that. At the same time several brickyards were started in South and East Amherst and, in time, about forty employees were making three to four million bricks a year. Woodworking operation of all sorts utilizing some of the local timber accounted for wooden pumps, shingles, broom handles, doors, sash and other building specialties. Boxes for tobacco and other agricultural products became a big item and one fairly small factory turned out, among other things, 40,000 boy's tool chests in a year. In 1866 the Roper Repeating Rifle Company began operations near the railroad, but it lasted only a few years before it moved to Hartford. So it was that industry came - and then either died out or moved to more productive sites closer to ready markets. The industrial period in the town stretched out about 100 years and provided a livelihood for a considerable number of people but today only a small fraction of the population is engaged in manufacturing operations. Grist mills, cider mills, button and hat factories and woodworking shops are mere memories.

Amherst, as we have seen, witnessed the rise and fall of a number of small and medium-sized manufacturing concerns.

In some instances, they were located without much regard to the source of supply, but most of them were situated where water power was convenient and where some or all of the raw materials, such as wood, could be found nearby.¹³ Many of the factories in places like Amherst grew up as a result of local demand at a time when transportation from one region to another was comparatively slow and difficult. The early manufacturing was a product of Yankee initiative utilizing such raw materials and power sites as were available. The industry was small and spread out because that pattern pretty much matched the population. Most of the early industries were concerned with staple items such as shoes, textiles, and various early mechanical devices which were made to meet the primary needs of the people. The early location of New England itself was advantageous, but when the hinterland moved farther west as the population spread out during the era of national expansion, its relative importance declined.¹⁴ More abundant and better quality natural resources were developed in the interior of the country. With the introduction of steam power in the 1880's, the advantage of location shifted to areas on the coast where coal could be delivered easily by ship and the larger

13. John S. Keir, "New England's Manufactures," New England's Prospect - 1933, New York, 1933, p. 322.

14. John D. Black, The Rural Economy of New England, Cambridge, 1950, p. 14.

and more efficient factories which were built hastened the demise of the many, small, scattered plants in towns like Amherst. In the final stages of decline, the continued movement of consuming markets away from the small towns and toward the new, large centers of population brought the final abandonment of most of the old factories in Amherst.

Simultaneous with the growth of industry in the town had come another activity which grew more slowly but which has outlasted the industry and now appears destined to be the primary function in Amherst during the foreseeable future. Education was favored, ultimately, to surpass, as an employer, the peaks attained by both agriculture and industry put together. The beginnings of this new economic base were to be seen in the founding of Amherst Academy in the year 1814.¹⁵ This school, which was to be the precursor of Amherst College, was founded as a result of a popular movement among the townsfolk to provide improved educational facilities for the young people of Amherst and nearby towns. Such an institution had been needed for some years since the town, despite its agricultural basis, seemed to crave, as it grew, a culture and stature more befitting a society thriving on mercantilism. Therefore, beginning about the middle of the 18th century, a number of young men from Amherst began to attend Harvard and Yale and later Dartmouth and

15. The definitive work on this period is Frederick Tuckerman's Amherst Academy 1814-1861, Amherst, 1929.

Williams.¹⁶ Although some other towns such as Deerfield, New Salem and Monson had started their own secondary institutions there was none in the immediate area. The money needed to found the Academy was subscribed in spontaneous fashion throughout the county and a charter was granted by the state in 1816. The school, of white-painted brick, stood on the site of the present Amity Street school. Fuess has said that, "The community was proud of Amherst Academy, and it flourished beyond the expectations of its founders. Its pupils, coming from all sections of Northwestern Massachusetts, carried back with them to their homes a consciousness of Amherst as an educational centre."¹⁷ This was all the more reason why, when the trustees began to raise \$10,000 for scholarships, the fund was oversubscribed and it was decided to go after a larger sum of money and build a college.

Ultimately, over \$50,000 was raised for the "Collegiate Charitable Institution" and building was started in the summer of 1820.¹⁸ Like the Academy, this was to be, throughout its early history, an institution receiving most of its support from the wholehearted interest of the

16. Fuess, op. cit., p. 13.

17. Ibid., p. 25.

18. For authoritative material on the early years of the college see William S. Tyler, History of Amherst College, Amherst, 1869.

citizenry. In "The History of the Town of Amherst" this has been pointed out: "The town and the college have been closely associated since the latter was first founded; there has been a recognized community of interest which has been of mutual benefit."¹⁹ Amherst College opened officially in September, 1821, with forty-seven students. Despite opposition from Harvard, Williams and other well-established institutions, Amherst was granted a charter by the state in 1825 and from there gained stature under the leadership of such men as Humphrey, Hitchcock, Stearns and Seelye and, with the gradual buildup of endowment, became an institution of first rank. After an early emphasis on the education of young men for the ministry, medicine, and law, it began to train men, from a wide geographic and economic background, in the liberal arts. Until the 1850's the student body averaged under 200 men, but from there on its growth has been steady. About 400 students were enrolled in 1900 and this number grew to a point where enrollment leveled off just above 1000 students fifty years later. The College has ever been a considerable force in the Town. The two have been inseparable physically for years and in many ways the trend of events at the institution on the hill has profoundly affected the fortunes of the community.

The second institution of higher learning grew out of

19. Carpenter and Morehouse, op. cit., p. 156.

the passage in 1862 of that splendid piece of legislation, the Morrill Act, under which individual states were granted portions of the disappearing Federal domain. From the sale of a sizable portion of this land they were to assist certain types of colleges. In Massachusetts, there had been considerable but sporadic interest in the founding of an institution devoted to training in agriculture. A board of trustees was finally appointed, after the passage of the new act, which gave some hope that such an institution could be supported. From the very first, only communities willing to invest \$75,000 toward the founding of a college of this type were to be seriously considered.²⁰ Lexington, Springfield, Northampton and Amherst all seemed interested in attracting the new college and in one way or another offered to raise the needed funds. Levi Stockbridge, an influential farmer in Hadley, William S. Clark, an Amherst College professor, and Edward Dickinson, treasurer of Amherst College and, incidentally, father of Emily Dickinson, pointed out the advantages of Amherst to the new board of trustees and meanwhile, under President Stearns, the trustees of Amherst College voted to raise \$25,000 for the new institution. The citizens outdid themselves by voting in town meeting to raise the remaining \$50,000 by taxation. Actually, the idea of having a college of this sort in Amherst was not

20. Frank P. Rand, Yesterdays at M.S.C. 1863-1933, Amherst, 1933, p. 3.

new. Edward Hitchcock, the famous geologist, who had been president of Amherst College just before Stearns, had been so interested in agricultural education that he had established a chair at the College for the theoretical and practical teaching of agriculture. Shortly before his death he had indicated his interest in establishing a new college of agriculture within the state. He had also pointed out the advantages which Amherst held as a site for such an institution.

As an added inducement, a number of private citizens in the town raised a considerable sum to further aid in the construction. Finally, it was decided to establish the new college in Amherst on the farm land to the north of town. Thus Amherst became the site of the fourth land grant college to be set up under the Morrill Act. In October, 1864, 310 acres of land, comprising five farms, were purchased for \$35,000 and an additional seventy-three acres of adjoining land were purchased for the college by one of the trustees. Despite the money which had been raised and the support of the surrounding communities, there were many difficulties facing those starting the new institution. This type of vocational education for the improvement of the quality of agriculture had never been seriously tried on any large scale in the United States before. The Massachusetts Agricultural College actually opened in October, 1867, with about forty students. At that time W. S. Clark, who had

been so interested in locating the new college in Amherst, had become the president and Levi Stockbridge, the influential Hadley farmer, was picked to superintend the construction of the college farm and then to set up the curriculum and take charge of the teaching of agriculture along scientific lines.²¹ Stockbridge created new formulas which changed the manufacture and use of fertilizer in this country and produced royalties which provided some of the funds for the establishment, in 1882, of the Massachusetts Agricultural Experiment station. This was the first such organization to be set up in connection with an agricultural college. In 1887, the Hatch Experiment Station was organized with Federal funds under the Hatch Act for further studies in agricultural science. As the years went by, the College broadened its scope by offering work in the liberal arts, veterinary science, etc. and graduate work in such courses as entomology, botany, chemistry and zoology. Between 1888 and 1908 most of the land owned by M.A.C. was cleared and drained and parts not utilized previously were brought into cultivation.

By 1892 the student enrollment had reached about 190 and there were seventeen members of the faculty. Animal husbandry, horticulture and landscape architecture were

21. For the history of this institution see Rand, op. cit. and L. B. Caswell, Brief History of the Massachusetts Agricultural College, Springfield, 1917.

departments added during this period. In later years a department of forestry joined the ranks and a division of humanities was created while several short courses were organized, particularly in the field of agriculture and an extension program, designed to aid farmers in the state, was begun. In 1915, the number in the graduating class reached 100 for the first time and the beginnings of a graduate school could be seen in the five M.S. and five Ph.D. degrees granted that year.²² Another movement, which was later destined to assume great proportions, was the fact that there were nine women among the entering class of 210 in 1915. By 1916 the total undergraduate enrollment had reached 680. In the late 1930's enrollment seemed to level off with over 1000 students and there was no hint that the period after World War II would lead to tremendous growth. The name was changed, in 1937, from the Massachusetts Agricultural College to the Massachusetts State College, and finally after the war it became the University of Massachusetts.

Apart from the growth of the educational institutions, there had been a number of other ventures which were to be of considerable importance to the town.²³ The completion of the Boston and Worcester Railroad and then the Western Railroad from Worcester through Springfield to Albany in 1842

22. Caswell, op. cit., p. 13.

23. The most complete story of the railroad era is to be found in Carpenter and Morehouse, op. cit., pp. 307-327.

led to a rash of interest and activity in the railway field throughout the central and western parts of the state. The people of Amherst were fired with enthusiasm and immediately started to raise money so that the town could be tied in with the expanding rail network. After years of false starts, planning alternate routes, and raising of funds the Amherst and Belchertown Railroad was completed into town in May, 1853, providing a connection with what was ultimately the Boston and Albany at Palmer and to the south, via the New London, Willimantic and Palmer line. The A. and B. was leased to the New London Northern in 1864 and extended to Millers Falls in 1866 and, thereby, a connection was made to Brattleboro, Vermont. Soon after this, the whole line was leased to the Central Vermont Railroad and it has remained thus through the years. While this line gave the town connections to the north and south it still did not provide direct access to Boston or to the Connecticut River Railroad except via the roundabout route through Brattleboro. The original plans for the Connecticut River Railroad had been to bring it up the east side of the river and to provide a station on the west side of town, but the route through Northampton proved to be more economical. Grading for the Massachusetts Central Railroad began in Amherst in 1880 but it wasn't until 1887, after seventeen years of financial and construction details, that it was possible to go from Boston to Northampton. The route from Amherst to Boston was via

Ware, Hardwick, Marlborough and Sudbury. This road was finally leased to the Boston and Maine and ultimately became the Southern Division of that railroad. In the heyday of railroading there were stations on the New London Northern at Cushman, Amherst and South Amherst and on the Boston and Maine at both Amherst and South Amherst.

Amherst also had its share in the trolley era. The Amherst and Sunderland Electric Railway connected those two towns beginning in 1898 and was later extended to West Pelham. It ceased operations in 1930. The Amherst and Northampton Street Railway began to run in 1900 and operated for thirty-two years. The Holyoke Street Railway had a line during the same period which entered Amherst via a rough route through the Notch in the Holyoke Range. As in most communities, the rise of the automobile and the bus brought the demise of the trolley cars.

The Amherst Gas Company was organized in 1877 to engage in the manufacture, distribution and sale of gas.²⁴ The first plant was located on College Street, east of the Central Vermont tracks. The second and larger manufacturing plant, which was located on Pelham Road near the Fort River, replaced the earlier operation in 1910. The streets were first lighted by gas on a limited scale in 1882. Although

24. The story of the use of gas in Amherst is outlined briefly in a paper, "The Origin and Original Form of Organization, Amherst Gas Company, no date, by J. J. O'Connell, Assistant Treasurer.

the Board of Directors of the gas company had voted, in 1888, to engage in the electrical business, the charter wasn't amended until 1889, and electricity replaced gas in the street lights beginning in that year. The first generating plant was located in a building now used as a residence on Gaylord Street; the second was on College Street near the gas plant, and the third one was in what is now a factory building on Whitney Street. The present substation is the fourth distributing point to be erected. Although the Amherst Gas Company was originally chartered to serve only Amherst, the gas mains were ultimately run into Pelham and in 1905 electricity was extended into Pelham and Sunderland and in 1906 to Hatfield. During 1912 a further extension of power lines and distribution system was made into Hadley and Whately. In 1921, the Sunderland Electric Company, which still served parts of that town, became part of the Amherst system which by then had thirty employees and distributed electricity in six towns. The gas business was finally shut down in the 1920's. In the meantime, the company, in an effort to finance increased distribution facilities and a connection with the Turners Falls Electric Company, had sought financing through a Boston organization run by the Cabots. This group finally set up the Turners Falls Power and Electric Company and gained control of the Amherst concern. In time a merger was arranged and this formed the nucleus of the present Western Massachusetts Electric

Company.

Such has been the history of Amherst. Until very recent years it has been mainly an agricultural town but with an increasing tendency to lean more heavily upon the growing educational business in town and yet remain basically rural in outlook; a town which has seen industry come and go and which has been close enough to the streams and centers of economic activity to know what is going on and yet not be too affected by progress with a capital "P". Now we shall examine present-day Amherst with an eye toward its future.

CHAPTER III
THE PHYSICAL SETTING

Geology and Soils

Amherst is in an area which was once the edge of a vast lake, known as Lake Hadley, which stretched from the foot of the Pelham Hills almost over to the beginnings of the Berkshires and south to the Holyoke Range, which contained it for a time.¹ The lakes which were formed in the Connecticut Valley were along the edge of the great glaciers which covered New England intermittently for perhaps a million years. In some areas the ice left major piles of debris along the way and the drumlin now covered with apple orchards in South Amherst is of this formation and in some places the powerful abraiding action and lesser rocky debris of the glacier can be seen in the Amherst area. The central ridge in town was just above the level of the lake and the Amherst area is composed of some underlying conglomerates leading up into the granite upland, sloping terraces of sand and gravel and several sandy deltas like the one in North Amherst. These deltas were left at the edge of the lake as the vast mountain areas to the northeast were slowly eroded away by the streams which drained them. Volcanoes erupted off and on for a long period and covered some areas with ash

1. George W. Bain and Howard A. Meyerhoff, The Flow of Time in the Connecticut Valley, Northampton, 1942, p. 49.

while other sections were uplifted so that the sedimentary fills of clay and sand were often pushed up in blocks. Precipitous slopes left from this period are found around Amherst, but for the most part, the local scene is one of fairly level or gently sloping land. The town lies at the edge of a large alluvial flood plain of great fertility which forms the major part of the Connecticut River Valley at this point and constitutes one of the richest agricultural areas of the state. Amherst is fortunate in that it lies athwart the low uplands and glacial river terraces and so avoids the hills of trap rock which cut into the central areas of some nearby towns and yet it is well above the lowlying flood plain.

The soil in Amherst is in the gray-brown podzolic (forest) group and the types found include Scantic, Merrimac and Agawam throughout most of town where there is silt and sandy loam. Gently undulating relief is typical in these areas. Beneath these soils are found the gravel, silt, clay and marine sediments remaining from the glacial lake. In the area comprising the extreme northeastern part of town one finds soils of the Gloucester, Essex and Merrimac types which are underlain with acid glacial drift. These soils feature the stony and fine sandy loams and are of lower fertility than those in the rest of town. Hilly relief is normal with this type of soil structure.² The early

2. Soil Classification Map of Amherst, Massachusetts State Planning Board, 1939, based on U.S.D.A. soil survey.

settlers undoubtedly had to clear away many rocks, but from the first the soil was less rocky and more productive than that found in many of the hill towns in the vicinity of Amherst where little sediment was deposited except on valley floors.

Topography

The topography of the town of Amherst is best seen on the accompanying map.³ There are hills to the north and along the southern boundary and hills and a high upland plateau to the east on the Pelham side. Amherst itself enjoys a unique situation. The central village is situated on a ridge running roughly north and south with fairly gentle slopes leading off in all directions except to the north where the remains of an ancient delta left during and after the closing stage of the glacial period kept the level fairly high. The two streams which drain most of the area are the Mill River on the north and the Fort River on the south. The Mill River has its source in Leverett and flows south and west to join the Connecticut in Hadley. It has a drainage area of about twenty-nine square miles. The source of the Fort River is in Shutesbury and it also flows south and west and joins the main river in Hadley. The drainage area approximates fifty-six square miles. A less important

3. Appendix, Fig. 1.

watercourse is Long Plain Brook with its source in Leverett and a drainage area of six and one-half square miles. Like the others, it crosses the Hadley lowlands to enter the Connecticut.⁴ Since these are mature streams throughout most of their length in Amherst, they meander back and forth over small interior flood plains which tend to have insufficient drainage during times of high water. For the most part, their contribution to the local patterns of relief has been the creation of moderate size flood plains rather than sharp valley profiles. There are no lakes in town and of the thirteen ponds, three range in size from twelve to twenty-seven acres while all the others are two acres or less in extent.⁵ The elevation at the town hall is 356 feet above mean sea level.

Climate and Floods

In the valley area in which Amherst is located the weather sometimes changes rather frequently and rapidly and, as in other parts of New England, the winters in recent years appear to be somewhat shorter and also warmer than in the past. Precipitation tends to be higher in the summer and fall than in the winter and spring. Very complete figures on maximum, minimum and average monthly precipita-

4. Massachusetts State Planning Board, Drainage Basin Study No. 2, Connecticut River, Boston, 1938, p. 154.

5. Ibid., p. 159.

tion in Amherst are available since 1836 due, in part, to the fact that there has long been a careful watch over the weather at the colleges and at the United States Weather Bureau Station in town.⁶ The mean annual precipitation is 43.91 inches and between 1836 and 1936 the maximum was 58.04 inches and the minimum 30.68. Like other parts of the state Amherst has been subject, in a few recent cases, to abnormally large amounts of rainfall occurring within a day or two and the record rainfall of 5.63 inches which fell in the town during three days in November, 1927 has recently been exceeded two or three fold within a like period. The mean temperature in January is 23.8°F. and the mean temperature in July is 69.8°F.⁷ The average length of the growing season is about 150 days.⁸ Record high and low temperatures are 104° and -26°F.⁹ The central Connecticut Valley region has been a focal point for a number of storms of the cyclonic type and these disturbances normally travel in a northeasterly direction across the valley so that the rainfall during many of the storms is nowhere near as heavy as it might be if the storms had a north-south axis. Although

6. Ibid., p. 5.

7. Massachusetts Department of Commerce, Division of Research, Monograph No. 41, Town of Amherst, 1955.

8. John D. Black, The Rural Economy of New England, Cambridge, 1950, pp. 36-39.

9. United States Department of Commerce, Bureau of the Census, County and City Data Book, 1952, p. 473.

several destructive floods have inundated the flood plain in the Northampton-Hadley area within recent years, Amherst has been high enough to avoid all but occasional minor flooding confined to the low-lying areas immediately adjacent to the streams. Some damage occurs almost every year from destructive storms combining high wind and rain.

Regional Geographic Relationships

Amherst is bordered by Hadley on the west, Sunderland and Leverett on the north, Shutesbury, Pelham and Belchertown on the east and Granby and South Hadley to the south. It is seventeen miles from Greenfield, twenty-three from Springfield, eighty-seven miles from Boston, fifty miles from Pittsfield and 157 miles from New York. The situation of the town with respect to the Connecticut River has always been important; first in terms of the fact that the valley formed a pathway for early settlement and then because the growth of the larger towns and cities in the area created a market for agricultural produce and also produced a bumper crop of would-be-scholars for the colleges which grew up in the town. The immediate area, including Amherst, is probably the most important agricultural area in the state. The rapid growth of industry in the valley led to a need for more hands, but the immigration of Irish and then French Canadians which began in the 1850's never touched Amherst very much nor did the town become the home of many Poles and

Italians like those who went to nearby towns such as Hadley and Sunderland. The industrial cities of Springfield, Holyoke and Chicopee have had a fairly steady growth with considerable diversification of industry. With its location, which is rather central and yet off the heavily beaten paths of the valley, Amherst's future would undoubtedly be assured as a convenient site for certain types of agriculture adjacent to larger cities and as an increasingly attractive region for housing. The town will never be a large transportation center, but Route 9 will probably continue to be a fairly important east-west highway linking towns and cities along the central axis of the state which will not be served by superhighways like Route 2 or the Massachusetts Turnpike. Amherst, because of its situation, not only with respect to its own institutions, but also because of its proximity to Smith and Mt. Holyoke, may at some time become a cultural and research center far out of proportion to its size. Although it is now a shopping center of sorts for much of the rural populace of towns like Leverett, Shutesbury, Pelham, and parts of Hadley and Sunderland, the drawing power of the larger stores in nearby Northampton and of the metropolitan area to the south, undoubtedly precludes a large commercial growth much beyond the needs of the immediate populace. The Quabbin Reservoir and the rugged terrain to the east and north make it unlikely that there will be any large growth of population in those directions but the

attractive, level land toward the west and northwest and the gradual growth of industry in the valley plus the importance of Westover Air Force Base as a magnet for military and civilian personnel should guarantee a busy future for the town of Amherst. In the United States Census of Agriculture definition of major land use regions the Amherst area lies on the edge of the Eastern Forest - Farm - Urban Region and the Northeastern Forest Region, which covers Western Massachusetts and most of Vermont, New Hampshire and Maine. The Department of Agriculture states that: "This is really indicative of a relatively good position with respect to major centers of population on the one hand and more open rural and mountain country on the other for vacation purposes....It is an ideal location, particularly as the network of better roads develops."¹⁰

Natural Resources

The town has no minerals of great commercial value. Water has been fairly plentiful for most purposes in the past, but the rapid growth of population in recent years has led to a search for more abundant sources. The streams of the area have provided sites for water power in earlier years as already indicated, but the stream flow and the

10. United States Department of Commerce and United States Department of Agriculture; Bureau of the Census, United States Census of Agriculture, 1950, Vol. V, Part 4, Land Utilization, a Graphic Summary, 1952, p. 10.

topography do not lend themselves to the development of water power in the future. Probably the most valuable natural resource in the town is the quality of the soil which produces good crops with the proper application of nitrogen, phosphorus, potassium and lime. The texture of the soil and the variety of cover and vegetation have created an area which is seldom subject to the ravages of erosion. The native vegetation consists mostly of oak, maple and white pine.¹¹ The principal crops in the town are tobacco, vegetables, hay, corn for silage and fruits of certain types. Poultry and dairy farms are found in some numbers.

Land Use

The land use pattern of the town is best seen on the accompanying map.¹² The total land area of the town is 27.70 square miles and the area in water is .09 square miles. The Fish and Wildlife Service of the United States Department of the Interior, working from aerial photographs, has recently estimated that there are 7,597 acres of forest land, 9,659 acres of open land, 252 acres of wet land and over 220 acres of old abandoned fields in an intermediate category

11. The Connecticut River Watershed Council, The Connecticut River, Your Valley, Your Future, 1953, plate no. 5.

12. Appendix, Fig. 2.

between forest and open. The approximate acreage devoted to major land uses is as follows: single family dwellings 800 acres; two-family dwellings 85 acres; multi-family dwelling units 70 acres; retail business 45 acres; wholesale business and industry 85 acres; tilled land 1350 acres; land for livestock 780 acres; town land 240 acres; town roads 470 acres; state highways 51 acres; railroads 200 acres; Amherst College 245 acres; University of Massachusetts 520 acres and active recreation, not included in above categories, 120 acres. These uses added together approximate 4935 acres which means that out of a total acreage of 17,728 something like 13,000 acres are presently vacant. A quick estimate leads one to believe that about 2000 acres of this vacant land are unusable for ordinary building purposes because of rough topography, mostly along the Holyoke Range, or because of swampy conditions. Conditions on the 11,000 acres of vacant, buildable land are, for the most part, very nearly ideal with respect to topography which is mostly flat or gently rolling in nature. In a few areas in town the presence of a high water table would be a problem until proper drains were installed, but such areas do not make up any sizable portion of the total land area available.

The center portion of town from Mill Valley north to the area just above the University and extending, for the most part, over to East Street is urban in character and much of the land is used for housing or by the institutions.

A cluster of homes around the center of South Amherst comprises an area which has much open land and is actually more rural than urban in appearance. The North Amherst and Cushman areas are more urbanized than South Amherst, but, except for the streets near the center, there are no areas of more than moderate density. The land between these various sections of town has scattered farms and residences and new homes are coming in here and there, but at present, considerable portions of the town have a relatively open character which stems from both the small number of dwellings and the topography.

Streets and Transportation Facilities

The Town of Amherst maintains 85.42 miles of roads of which the majority are paved. Virtually all sections of the town may be reached over modern well-paved and well drained highways. Where secondary town roads have not yet been paved an active program of rehabilitation involving three or four streets per year has been supported by the Town Meeting and carried out by the local highway department. It is interesting to note that the two main roads running north and south are the highways each laid out to a width of forty rods in 1703 and the two principal cross streets in existence today, also surveyed in 1703, now encompass the center of the built-up part of the town. The oldest houses in town are located a considerable distance back from the center of

the highway land because the original width of the takings was so wide. There are 8.3 miles of State Highway in the town and these are sections of the two principal highways in Amherst. Route 9 goes to Belchertown, Ware and Worcester on the east and is the shortest route to Boston. On the west, this route goes to Hadley and Northampton and thence to the Berkshires and Pittsfield. In Northampton, this road connects with U. S. Route 5 at a point seven miles from the center of Amherst. This is the main north-south highway in the Connecticut Valley and it leads to Vermont and New Hampshire areas via Greenfield. To the south Route 5 provides the best, but also the longer route to Holyoke and Springfield and ultimately goes to Hartford where a parkway connection can be made for New York and the south. From the center of Amherst to the west, Route 9 is a State Highway and from the Hadley line to the west it was rebuilt two years ago so that it now constitutes a modern two lane road with wide shoulders and few curves. The section from the Amherst town line to the center has been surveyed and the State Department of Public Works appeared to be ready to reconstruct this vital part of the route this year. However there was some opposition, particularly from Amherst College, because the State's plans envisaged using much of the present tree belt in some areas and the loss of these fine old trees seemed to some an unnecessary price to pay for a modern highway. There was also some feeling that a wide,

unobstructed road would lead to more highspeed traffic on a route which virtually bisects the town. Still others were sure that the state would ultimately take over College Street and Belchertown Road and carry a State Highway, at standard width, all the way through the central area of town and then out to the east. At present this portion eastward from the center is an older road in terms of width and is curbed for some distance where it separates Amherst College buildings from a number of fraternities. It is bordered on both sides by healthy trees. This part of Route 9, all the way to Belchertown, is a so-called state-gap. It constitutes a part of the state highway system, but is owned and maintained by the town with some assistance from the Commonwealth. Nearly a mile from the Belchertown line this road has several bad curves as it works its way up along the edge of the Pelham Hills. State funds which were to have been used to correct some of these curves have not been forthcoming. In 1953 the average daily traffic in twenty-four hours in both directions along Route 9 was 4973 just inside the town line on the west. A similar count on Belchertown Road showed 2479 vehicles passing. At present, Route 9 carries a considerable amount of traffic flowing between central Massachusetts and the Berkshires and a quick look at the map will show that this road swings far to the north from its normal route in order to serve the center of Amherst. Because of this, an unnecessarily large amount of

through traffic is brought into and through the built-up part of town. Even with the completion of the Turnpike to the south of Amherst and the gradual reconstruction of Route 2 along the northern rim of the state it is likely that Route 9 will remain a vital link in the highway plans of the state, particularly in view of the fact that topography and the existence of the Quabbin Reservoir make it difficult to run a road between east and west in Central Massachusetts without going in the vicinity of Amherst.

The other State Highways are Routes 116 and 63. The former runs through town on a north-south axis coming originally from the northwestern part of the state and enters North Amherst via Sunderland. It constitutes the main road through town on this axis and is important not only because it leads to other municipalities but also in terms of local circulation since it links North Amherst with the center and provides the main approach to the University of Massachusetts. The section from North Amherst to a point where the Boston and Maine track goes under the road just south of town is maintained by the town itself and then it again becomes state highway. After passing through a small section known as Mill Valley it follows a fairly straight course to the base of the Holyoke Range where it crosses through "The Notch" via a route with many curves and considerable grades. From there it leads to South Hadley, Chicopee and Springfield and provides the shortest route to

Holyoke. The northern and southern parts of this road are not in good shape and, in view of fact that the road handles a considerable amount of traffic, it is inadequate by modern standards. In 1953, a state traffic count showed 6,762 vehicles on Route 116 (North Pleasant Street) just north of the center of town and 3,424 using the road in twenty-four hours near the southern end of town. These counts indicate the additional traffic caused by the University and also the fact that North Amherst is more heavily populated than the southern part of town. Details of plans for a by-pass for Route 116 will be indicated later in this paper.

Route 63 runs to the north from North Amherst. It is a modern, three lane highway, built by the state during and after the war. To date it has not carried a heavy traffic load because it does not presently tie in to any major route. Much of the area which it taps - Millers Falls, Northfield and Southern New Hampshire - is thinly populated but the highway is becoming increasingly popular as a sort of backwoods, fairly highspeed route to New Hampshire and Vermont. When first laid out, this road was to angle off to the southwest and avoid North Amherst by-passing it to the north but the local town fathers petitioned the state to bring it directly into the center so that the town itself would not have to build a new bridge on Montague Road. With the present location of the North Amherst school, stores, etc. this is a danger spot for pedestrians, even with the signals

and channelization which have been provided at the intersection.

With a few exceptions, the town circulation system seems to be adequate for the normal population of Amherst which in 1954 registered 3310 vehicles, but there are also more than 1200 student vehicles, in addition, during the college year. Recent and current Chapter 90 projects have included East Pleasant Street leading to Cushman, Leverett and Shutesbury and Main Street which goes to Pelham and Route 202. This latter road provides the best route to Boston for an increasing number of people who find that the new Route 2 more than offsets the additional mileage involved. Main Street has been in bad shape for some time and with Chapter 90 funds the drainage was entirely reconstructed this year. Within the near future this road will be rebuilt from the East Amherst common to the center of town. Main Street becomes Pelham Road at the lower end and in 1953 an average of 1,790 vehicles passed in twenty-four hours. Triangle Street, which provides a by-pass to the University for traffic from Route 9 and Boston, is in need of considerable repair and since it will provide the main access to the new regional high school it will have to be modernized anyway. East Street serves the whole eastern side of town and particularly South Amherst and is, for the most part, adequate for the foreseeable future with the exception of the narrow bridge and underpasses at the point

where the road meets the two railroads and crosses the Fort River all within a short distance. Shays Street is the main link between Amherst and South Amherst and with some sections recently rebuilt provides an adequate width and pavement for a moderate population increase. Where Route 116 passes through Mill Valley just north of the Shays Street intersection a narrow bridge and two bad curves present a definite hazard. Since South Amherst will undoubtedly grow considerably, this point should receive some attention, particularly in view of the fact that there have been several bad accidents there.

One major problem area exists right in the center of town at the principal intersection where the following streets come together: South Pleasant, Main, North Pleasant and Amity. In the first place the grading is very curious at this point. It is apparent that business blocks were erected, sidewalks built and the road gradually transformed from a dirt surface to a macadam pavement without ever cutting the whole area down to a respectable average grade for each of the contributing streets. As you come down North Pleasant Street toward its intersection with Amity both the grade and the crown are excessive. There is a further problem both at this point and in other areas near the center of town where the old trolley tracks create artificial grades and actually constitute a real hazard above the surface of the road. The worst aspect of this whole

problem is that Main Street, where it enters the intersection, is offset a considerable number of feet so that the north curb of this street is just opposite the south curb of Amity Street. Since the two streets are not directly opposite one another there is a constant intermixing of traffic destined for opposite lanes. These can't be reached safely unless traffic in the other lanes is held back. Each street has to be separately emptied of its traffic in its turn. The intersection is further complicated because it is here that we find the heaviest pedestrian traffic flow in town trying to cross kitty-cornered from the northeast corner of Main Street to the southwest corner of Amity Street. In 1949 a survey revealed that up to 4847 pedestrians crossed this intersection each day with about 73% of them crossing Pleasant Street.¹³ With some technical aid from the Department of Public Works the town did finally build traffic islands at this main intersection. At the same time parking meters were added and angle parking was restricted to a new parking area created at the north end of the Town Common when the channelization program made it expedient to reduce the width of Main Street from Boltwood Avenue to Pleasant Street.

In general, the parking problem has been aided by the

13. University of Massachusetts, School of Business Administration, "Traffic Survey in Amherst, Mass., A study by the students in the course Economics of Transportation," June, 1949, p. 3.

installation of meters which have speeded the turn over of spaces and made the enforcement problem much easier. The large parking lot created by Louis Foods supermarket has materially reduced the pressure on the whole center area. In 1955 the reconstruction at the point where Spring Street crosses the Town Common not only added new parking spaces but also removed several hazards at the intersections on each side of the common. Although the parking situation has been improved through these measures, additional space will undoubtedly have to be planned if the Central Business District is to grow any larger than it is at present. A program for new street lights in the central area has resulted in virtually all of the antiquated fixtures of small wattage being replaced with fine modern poles and lamps so that little need be done on this score. However, the open wiring on the power lines of the Western Massachusetts Electric Company constitutes an aesthetic as well as a practical nuisance which it is hoped can be removed someday.

Amherst is much more of a center for automobile travel than it is for rail travel. The railroads continue to serve Amherst but are not the potent force that they once were in town. There is no longer any passenger service into or through the town, but freight service is maintained to the east and west on the Boston and Maine through its station on the south side of town. Usually, one short train comes in each day from Northampton with cars for the Amherst area and

a few other spots to the east. The Central Vermont schedules several freight trains a day through Amherst on the route from New London, Connecticut, to Brattleboro and Canada. The freight station and express office lie on the east side of town near the Main Street Crossing. Both railroads are single track lines although the Central Vermont has recently built a passing track in Amherst. It has been rumored for some time that the Boston and Maine line would be closed down when the condition of the bridge across the Connecticut River warrants any considerable repairs. At present both the College and the University receive all their coal via the Central Vermont and this constitutes a substantial yearly tonnage. In the case of the University this import will increase as the institution grows.

A number of local and long distance trucking companies provide fairly frequent service to nearby areas such as Northampton, Holyoke and Springfield and thence connections may be made with national motor carriers. Local bus service with Holyoke is provided by the Holyoke Street Railway and the Western Massachusetts Bus Line provides almost hourly service to Northampton. Interstate bus service is available on Trailways' busses which run from New York to Bangor, Maine. Local transportation is provided by several taxi companies at standard rates. Two small airports in Northampton provide daytime landing facilities for private craft and the smaller types of business planes. Scheduled

airline service to New York state is available at the Westfield Municipal Airport about twenty-six miles away and service to New York City, Chicago and the West is available at Bradley Field in Windsor Locks, Connecticut, about thirty-five miles away.

Utilities

Water

The Amherst Water Company was started in 1880 as a private utility with the main source located on Amethyst Brook in Pelham. A second supply consisting of a small covered reservoir, in Pelham, fed by springs and wells was added in 1887 and in 1893 the Hawley Reservoir was built on Harris Brook, a tributary of Amethyst Brook.¹⁴ As consumption increased, the Legislature granted authority for the water company to expand into Shutesbury and take water from Atkins Pond and Nurse and Dean brooks and later to build the Hills Reservoir. A steel standpipe sixty-six feet high and of 475,000 gallons capacity was constructed on the hill along East Pleasant Street. In 1941, the Town of Amherst purchased the rights and property of the private company. At that time the system consisted of forty-five miles of mains and the reservoirs and watershed lands in Pelham and Shutesbury. There were 1,475 services at the time the town

14. Town of Amherst, Town Report, 1941, Water Department data, p. 19.

took over the water system. By 1955 the Water Department's distribution system had expanded to 52.5 miles of mains and there were 2,034 services. Table 1 gives many of the pertinent statistics concerning water usage. The supply and distribution of water has proceeded much the same under town control as it did under the auspices of the private concern. Virtually all of the water comes from surface supplies and is treated with chlorine before it is distributed. Much of the distribution is by gravity but there is some pumping. Although residents sometimes complain about the color of the water, samples taken in 1952 at Atkins Pond showed only fifteen parts per million and about twice that at the Intake Reservoir on Amethyst Brook. Thus the water tests well within the Drinking Water Standards of the United States Government. At present most areas in the town are served by the distribution system. Sections of town which do not yet have water include the following: Bay Road along the southern end of town, Middle Street in South Amherst, Mill Lane, East Hadley Road, Stanley Street, Henry Street, Flat Hills Road and part of North East Street. For the most part, streets which have any number of houses have been provided with water as quickly as possible but areas like that around Middle Street which have grown up at the far end will have to wait some time for water or will have to pay dearly for the privilege of having it brought to them. At present, water main extensions of any considerable length are voted

TABLE 1
WATER CONSUMPTION FIGURES

Year	Average Daily Consumption in Gallons	Highest Daily Consumption in Gallons	Total Flow in Gallons per Year
1948		1,098,000	306,330,000
1949		1,116,000	323,645,000
1950*	875,000	1,220,000	327,533,000
1951*	975,000	1,243,000	355,315,000
1952	1,040,000	1,559,000	379,677,000
1953	1,230,977	1,591,000	449,351,000
1954	1,196,715	1,689,000	436,801,000
1955 (1/1 - 5/23)	1,400,000	1,680,000	201,818,000

Water Flow in Cubic Feet (in 000's) - 1 cubic foot = 7.48 gallons

	<u>1942</u>	<u>1947</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Amherst College	1,317	2,717	3,310	3,170	3,107	2,980
University of Mass.	9,254	9,617	14,009	15,159	16,881	18,288
Total Flow	30,207	37,696	43,788	47,501	50,759	60,073
Total through Meters	25,057	27,871	33,551	36,740	37,620	40,041
Town less Colleges	14,481	15,337	18,232	18,407	17,632	18,772
Number of Services less Colleges	1,576	1,616	1,773	1,814	1,886	1,937

*Figures prior to 1952 are based on estimates from Atkins System - venturi meter installed in 1952.

Source: From figures of the Amherst Water Department.

in the town meeting and then the users pay 50% of the cost through a minimum charge for water for ten years.

Until recent years the amount of water which the Amherst Water Department could supply seemed to be quite adequate, but with the growth of the University following the war there were indications that new sources would have to be found for the future. As can be seen from the figures, consumption has been rising at a slow but steady rate and in the late summer of 1953 the situation was critical for a time after the drought. Until 1947, the Atkins Reservoir had been used mostly for standby purposes but in that year the town began to feed water in from this source to help during peak periods of demand. Since then it has been utilized much of the time so that by 1954 more than 40% of the town's measured consumption was drawn from this source. Even with the 246 million cubic foot capacity of the four town reservoirs the 1953 dry summer proved that Amherst must take further steps to procure an adequate supply for the future. The short run problem evident in 1953 was taken care of by the purchase of additional property in Shutesbury and by the permanent diversion of all of the Dean Brook water into the Atkins Reservoir. The Water Commissioners also contracted with Tighe and Bond, a firm of consulting engineers in Holyoke, to prospect for the location of wells in the Amherst area to augment the present supply. In 1954 many test wells were drilled at a number of locations but

the town was unable to locate ground water of sufficient quality and quantity to meet the demand. Where the water was of acceptable quality, the quantity was not sufficient and in some other locations there was ample water but the water could not be used because of the high iron content. Drilling has taken place at scattered locations within the town and also in Leverett and Sunderland. The Leverett site has an advantage in that the Town of Amherst already has Legislative permission to obtain water in that town, but unfortunately in Sunderland, where one test well in the Plumtrees section indicated a yield of about one million gallons per day, Amherst does not have the same rights. In 1955, the Town of Sunderland strongly opposed any attempts on Amherst's part to obtain legislative approval of a plan whereby Amherst would develop the wells and sell a given amount of water to Sunderland while utilizing the bulk of the supply itself. There are also possibilities that a tie in with Hadley might tap the wells which that town has recently drilled just west of Amherst.

The peak demand in Amherst up until 1955 was an average of 1,400,000 gallons per day which was reached during October, 1954. Assuming that the population of the town was in the vicinity of 8,000 and that the student population exceeded 5,000, the daily per capita consumption was not far from 100 gallons. Since the planned increase at the University is aimed at providing facilities for an additional

6,000 students it is evident that the town must provide for a new demand of 600,000 gallons per day from the University alone. With the further demand which can be expected from the increase in population in the town itself, plus sufficient extra supply for fires and other contingencies, the town should plan for a combination of sources of supply which could guarantee at least 3,000,000 gallons per day in the foreseeable future. One other problem faced by the Water Department is the replacement of obsolete 3-in. and 4-in. pipes with those of 6-in. and 8-in. in size to provide improved flow for fires and to carry larger amounts of water to more distant points as new services are installed.

At one time Amherst had a very wide spread on water rates. The coefficient of spread, which is found by dividing the cheap high quantity rate into the expensive low quantity rate was 10.5 compared with an average of under three for twenty-four towns in New England prior to 1943.¹⁵ Since that time the rates have been altered and the coefficient is now something like 4.25 which is a considerable improvement but still a long way from communities like Greenfield, Holyoke and Northampton. Since the rate structure has improved in Amherst there has been less agitation for a change even though the present schedule is far from perfect. About 65% of the Water Department revenue is

15. Willis G. Parsons, The Amherst Water Bureau, Economic Honors Thesis, Amherst College, April, 1950.

used in debt retirement. When the water debt is paid in 1971, a considerable reduction in rates may be possible unless there are capital outlays requiring new bond issues.

Sewage Disposal

A sewerage system was started soon after the first water mains were put in. It was paid for by the abutters and was split into three divisions which emptied into streams leading ultimately into the Connecticut River. One of these divisions was later drained directly into the river through a pipe. In 1935 the Federal Government was willing to help any town under the provisions of the Public Works Administration. Despite the fact that the town had accepted some limited aid in 1934 and 1935, for the extension of the sewer system from Amherst to North Amherst, the Town Meeting was too proud to accept a large Federal handout to aid in building a complete sewer system in North Amherst to be connected with the main line sewer to the river.¹⁶ About this time the State Board of Health studied the overloaded Stanley Street filtration beds and found that conditions were quite unsatisfactory near the bed itself and with respect to the amount of raw sewage which was carried to the Connecticut River through the Fort River. The state report went on to point out that the sewage carried to the Stanley Street bed on the east side of town could be diverted and

16. Amherst Town Report, 1939, p. 48.

pumped to the existing outfall and hence into the Connecticut River. Several subsequent reports and engineering studies pointed to the advisability of abandoning both the South Pleasant Street filter bed, just off Hadley Road, and also the Stanley Street beds just referred to. As finally decided, the main line to the latter filter beds was to be relaid and then connected by pumps to a cast iron force main which would carry the sewage up over the grade just south of Amherst College where it could then flow by gravity toward the west and to the river. As a part of this project, the trunk line sewer on the west side of town at the foot of Northampton Road and extending north to the main trunk line sewer on North Hadley Road was to be rebuilt. After several abortive attempts by the Federal Government to provide help, the Town Meeting, in July 1938, amended an earlier vote and increased the appropriation for sewers from \$83,000 to \$151,000 so that a more complete job might be done with Federal help. Amherst College contributed \$5,000 to the project and Massachusetts State College, as it was then called, turned \$10,000 over to the town for the same purpose. The final contracts called not only for renewal of former main sewer lines which had become overloaded because of leakage into the system but also for the new pressure main and a treatment plant adjacent to the main outfall. The total cost of the improvements in the collecting system and of the disposal system came to about \$166,000 of which the

Public Works Administration paid 45%. The engineering report on the collecting system had this to say: "The Town of Amherst straddles a ridge, which slopes easterly to the Fort River and westerly to the Mill River. As a result of this topography, two separate systems of sewers have been developed - the eastern comprising 6.53 miles of sewers and serving 1200 people and the western comprising 19.7 miles of sewers and serving 5300 people."¹⁷ A 10-in. cast iron pipe 4900 feet in length was laid from the pumps in the eastern district to a point in the western district system and then 7585 feet of new 15-in. main led to the treatment plant located in the Town of Hadley, on North Hadley Road about one-fourth of a mile west of the Amherst line. In addition to the two districts described, there was the existing collecting system in North Amherst, which was already connected to the main outfall.

The sewage treatment plant was designed to provide for the removal and digestion of the settleable solids in the sewage resulting from a population of about 8,000 with maximum flow to be treated limited to 1,000,000 gallons a day. With the growth of the town since the completion of the disposal plant in 1939 the amount of sewage to be treated has risen steadily and in the spring up to 1,700,000 gallons have been treated in a day. The present plant can handle

17. F. A. Barbour, Engineering Report on Amherst Sewers, 1938.

this amount or perhaps a bit more, but as the gallonage goes up above the design maximum the treatment of the sewage is less and less complete and therefore the polluttional load becomes greater and greater. Another limiting feature is the size of the main sewer line leading to the plant and the size of the outfall to the Connecticut River. Both of these factors are likely to pose a greater problem than that implicit in the expansion of the treatment plant. Fortunately, the system of collecting sewers is adequate throughout much of the town for the near future.

In addition to the sanitary sewers there is a fairly complete system of storm drains.

One more item of importance in connection with the whole sewer operation is the question of finance. Until the advent of the town manager government, the sewer assessment was based upon the valuation of the user's real estate and in the case of the College and University the rate was determined in an arbitrary fashion without much reference to actual use. Recently, however, the sewer assessment has been tied in with actual consumption of water and in the long run this will provide increased operating and maintenance funds proportionate to the amount of sewage flow which must be treated.

Rubbish and Garbage Disposal

The disposal of rubbish and garbage is certainly not a part of the physical facilities of the town and yet it must

be considered, along with sewage disposal, as a vital link in the health and sanitation of the town. Amherst has no municipal collection of rubbish, and private citizens carry their own litter to the large town dump located on Belcher-town Road near the town line. A modified system of sanitary fill is utilized at this point, but much of the rubbish is afire a good bit of the time until the town bulldozer can be spared to cover what has been dumped. Fortunately, the area is fairly large and can probably be used for several years more. The location is good in that there are almost no dwellings in the immediate vicinity of the dump. Another town dump of smaller size was used for some years in North Amherst just off Pine Street, but this is near existing housing and was closed a few years ago. Garbage is collected by a private individual who feeds the materials to pigs. In 1954, \$8,200 was appropriated to cover his contract with the town.

Electric Power

Electricity is supplied by the Western Massachusetts Electric Company. Amherst is tied in to the north with the Cabot and Turners Falls Hydro-electric plants of that company. These generating stations have a capacity of 51,000 kilowatts and 4,840 kilowatts, respectively. To the south there is a connection with the Dwight hydr-electric station in Chicopee and the Hampden (Springfield) and West Springfield steam generating plants as well as others on the

periphery.¹⁸ These three stations in the Springfield area have a total capacity of 170,000 kilowatts. Two transmission lines pass through the Town of Amherst; one is a 66,000 volt line and the other is rated at 115,000 volts. On College Street is located a substation for Amherst and some surrounding towns. It handles switching, transforming and distribution and in the near future a second substation will be built in the North Amherst area. There are several cross connections between the Western Massachusetts Electric system and the New England Power Company. The number of customers in Amherst in 1954 was 2,400. Throughout the whole area covered by the company, the kilowatt hours per customer averaged 2,215 in 1954. Western Massachusetts Electric's figures on comparative cost of electricity for residential customers is as follows:¹⁹

Weighted Monthly Average Bill (1/1/54)

	<u>W.M.E.Co.</u>	<u>New England</u>	<u>United States</u>
25 KW. hrs.	\$1.48	\$1.53	\$1.33
100 KW. hrs.	4.31	4.38	3.81
250 KW. hrs.	8.51	8.43	7.08

18. Western Massachusetts Electric Company, Data on Western Massachusetts Companies and its subsidiary Western Massachusetts Electric Company, Springfield, 1955, pp. 405-406.

19. Ibid., p. 303.

Miscellaneous Public Facilities

The Town Hall, built in 1889, seats 650 in the auditorium. It contains town offices, police station, etc. and will soon be too small. The Jones Library on Amity Street is a magnificent, privately endowed operation. Circulation in 1954 amounted to 83,055. In North Amherst there is a small library under the direction of the Jones Library staff. Both organizations receive some financial support from the town. In South Amherst, the Munson Memorial Library Building is presently used as a community center and town funds go into its maintenance. It serves a very worthwhile function with its present use, but as South Amherst grows it will undoubtedly need a library of its own.

CHAPTER IV

POPULATION

Introduction

In all communities the people are the most important factor. Virtually all aspects of community life depend upon the fact that numbers of people of various types have come to live within a given area. Therefore, any study of a community, whether it be large or small, must be based on a thorough analysis of population with emphasis on all of its aspects; growth, composition, characteristics, distribution and trends. In the case of Amherst, or any other town, the Federal Census and the state census provide the figures from which many types of facts about the present community may be deduced and on the basis of the original figures, it is usually possible to make some forecasts concerning the size of the probable future population. From this we can estimate the relative needs of these people with respect to housing, roads, schools and other community facilities. Normally, the figures listed in the Federal Census are sufficiently accurate to provide a reasonably good overall view of a community even though there may be inaccuracies here and there during the enumeration of individual census tracts.

Unfortunately, the 1950 Federal Census provides a very imperfect source of material for a study of the town of Amherst for two reasons. First, there was a basic change

relating to college students. Census takers in 1950 received these instructions: "A college student who is away from home attending a school at college level is considered a resident of the Enumeration District in which he lives while attending college and not of the Enumeration District in which his home is located."¹ We therefore find that the census total for Amherst, and other college towns, is swelled by an unknown number of migrants. I say unknown, because enumerators did not list all the students in their districts for a variety of reasons, some of which were purely mechanical in terms of the way they tracked students down and then failed, in the long run, to get all of them. Looking at this change in census procedure, from the standpoint of research in community affairs and growth, one is left with the impression that it would have been much better to have enumerated inhabitants in the pre-1950 fashion and then have secured from college authorities an up-to-date list of students and their college residences. Unfortunately, it is impossible to subtract the known students from the 1950 census and come out with a meaningful figure. While it is true that the student population must be included in the planning process in some vital respects, it is also true that census figures, as a tool, lose much of their effective-

1. United States Department of Commerce, Bureau of the Census, Urban and Rural Enumerator's Reference Manual, Washington, 1950, p. 26.

ness when a new element introduces many aspects of uncertainty. Curiously enough, students below college level were considered to be residents of the districts in which their homes were located and not where they lived while attending school.

A second important change in the 1950 census was the distinction made between certain incorporated and unincorporated places.² Because of this change, the details of population characteristics, etc. for Amherst were based upon the built-up section of town only, and utilized a population, including many students, of 7,900 persons, while the census figures for the entire town showed a population of 10,856. The impact of these shifts in census policy becomes more and more evident as one tries to use the figures listed. One minor change in census procedure took Amherst out of the Springfield-Holyoke Metropolitan Area wherein it was found in the 1940 Census. In the 1950 Census, the Springfield-Holyoke Urbanized Area included all of Northampton and part of South Hadley. Amherst was classified as an urban area of 2,500 or more persons located on the urban fringe of the highly urbanized area to the south.

2. Ibid., p. 6. "Unincorporated Places - Communities having no legal boundaries. The Bureau of the Census has established boundaries for the larger unincorporated places in order that separate statistics can be compiled."

Growth and Trends

Table 2 shows the growth of Amherst since the first census and compares it with the population of Hampshire County, the Commonwealth of Massachusetts and the United States. As can be seen from the table, the rate growth in Amherst has often lagged behind that of the state itself. The pattern of population growth in Amherst roughly parallels that of Hampshire County except for the early decades and some of the most recent periods. In this century Amherst was behind the national rate of growth until the decade ending in 1940, when it began to creep ahead, not only in terms of the United States but also with respect to the county and state.

But before we get carried away with the population figure produced for the town in the last Federal Census we should remember the large margin of error previously noted because of the inclusion of many college students in the 1950 count. At first glance, the 69.4% increase in Amherst's population between 1940 and 1950 is reminiscent of the California gold rush. If true, it would have meant that 4,446 new people had come to the town in the 10-year period. An even more unlikely figure is that of 3,767 persons (or a 53.1% increase) between the State Census figure of 7,089 in 1945 and the 1950 U.S. count. Had the 1950 total been meaningful, it would have meant that Amherst had grown, percentagewise, more than any town or city over 5,000 popu-

TABLE 2

GROWTH OF POPULATION IN AMHERST COMPARED WITH PERCENTAGE
INCREASE OF POPULATION IN HAMPSHIRE COUNTY, MASSACHUSETTS,
AND THE UNITED STATES, 1765 - 1950

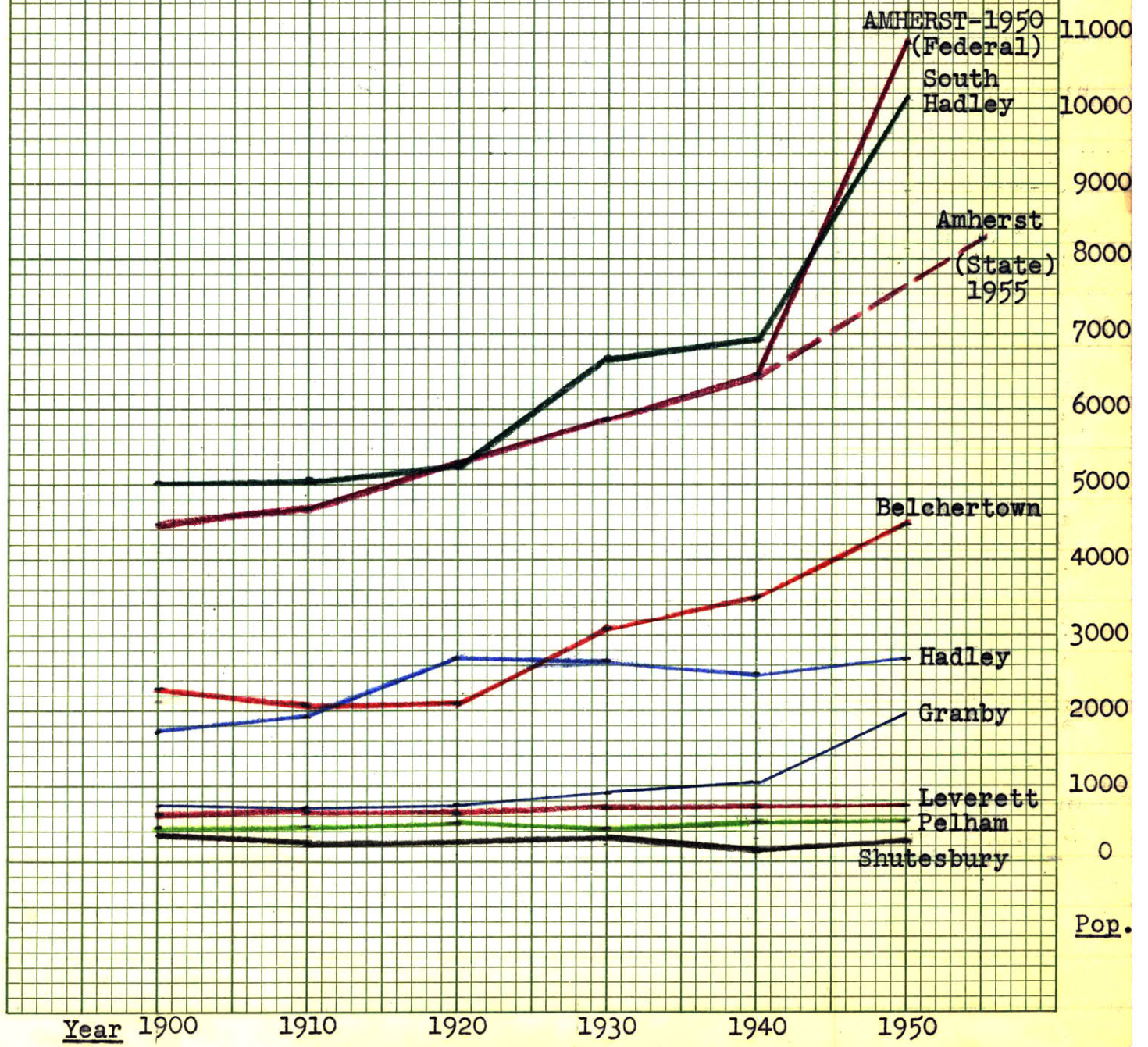
Year	Popula- tion of Amherst	Percentage Increase Over Preceding Census			
		Amherst	Hampshire County	Massa- chusetts	United States
1765	645				
1776	915	41.8	88.4	24.7	
1790	1233	34.7	54.8	26.3	
1800	1358	10.2	21.5	11.6	
1810	1469	8.2	7.3	11.6	
1820	1917	30.5	7.9	10.9	
1830	2631	37.7	15.2	16.6	
1840	2550	-3.1	1.2	20.9	
1850	3057	19.9	15.6	34.8	35.9
1860	3206	4.8	5.9	23.8	35.6
1870	4035	25.8	17.4	18.4	26.6
1880	4298	6.5	5.5	22.4	26.0
1890	4512	4.9	11.5	25.6	25.5
1900	5028	11.1	13.4	25.3	20.7
1910	5112	1.6	7.7	20.0	21.1
1920	5550	8.5	9.9	14.4	14.9
1930	5888	8.8	4.6	10.3	16.1
1940	6410	9.2	- .5	1.6	7.2
1950	10856	69.4	20.9	8.7	14.5
1945	7089 (State Census)				
1950	7600 (Author's estimate)				
1955	8207 (State Census)				

Source: Federal and State Census figures.

lation in the state in either the five or the ten year interval. Fortunately for my calculations, the 1955 State Census figure for Amherst has recently been revealed, although the total state picture has not yet been published. This 1955 census shows a population of 8207, so that we now have a clear indication of the general magnitude of error implicit in the 1950 U.S. figure. It is interesting to plot the Federal figures from 1900 through 1950 and then extend a line, from the 1940 figure, to the total listed by the Commonwealth in 1955. This has been done for the Town of Amherst on Chart 1 and the change in rate of increase is immediately apparent. The Federal figures for surrounding towns, from 1900 through 1950, have also been included. Note that the two college towns, South Hadley and Amherst, have had much the same pattern of growth over the years and this has been carried forward in the 1950 Census. In the case of Amherst a fair amount of the swelling is artificial, but South Hadley has less than one third the student population found in Amherst and much of its rise in population is due to the large commuting group which has settled there.

Looking at this same chart, with reference to other towns, we find only two of Amherst's neighbors growing appreciably. Granby and Belchertown are both reaping the same sort of harvest from the nearby cities that is found in South Hadley. Virtually all of the other towns have been in a nearly static, rural situation for many years and, except

Chart 1 POPULATION OF AMHERST & ITS NEIGHBORS
1900-1950



for Pelham and Hadley, are likely to remain pretty much as they are in the near future. Pelham will benefit for the time being at least, from its lower tax rate and its proximity to Amherst. Hadley will receive new people because much of its topography is easily adaptable for housing purposes and because it is readily accessible from Northampton and Holyoke.

Since the two sources of population growth are births and immigration we must examine these factors in some detail in order to accurately gauge the true magnitude of the change in Amherst. Against these two growth factors are deaths and emigration. Certainly there is some of the latter, or out-migration, as it is now called, but without careful surveys we can only come up with the relative numerical gain over 10-year periods. Tables 3, 4 and 5 record birth and mortality figures in recent periods, migration trends since 1916 and the birth rates in Amherst from 1860 through 1955.³ One factor that throws off the actual birth rate, unless it is dealt with specially, is the inclusion of children born to the wives of students with the births of children born to regular inhabitants in the records of the Town Clerk. To get an accurate figure, it is necessary to subtract them from the totals listed in the Vital Statistics.

3. For an excellent earlier study on population growth and school enrollment, see Arnold D. Rhodes' summary of his sub-committee's report to the Amherst School Committee in the Amherst Town Report, 1950, p. 29.

TABLE 3
BIRTHS AND MORTALITY BY 5-YEAR PERIODS

Period	Births	Deaths	Excess of Births over Mortality
1911-15	547	466	81
1916-20	530	453	77
1921-25	623	384	239
1926-30	458	389	69
1931-35	415	406	9
1936-40	435	366	79
1941-45	567	438	129
1946-50	764*	449	315
1951-55	887*	478	409**

*Students excluded.

**Birth and death figures for 1955 estimated on basis of first 10 months.

Source: Records of Town of Amherst.

TABLE 4
MIGRATION TRENDS SINCE 1916 BY 10-YEAR PERIODS

Period	Population Increase	Excess of Births over Mortality	Gain due to Migration	
			Periodic	Annual
1916-25	384	316	68	7
1926-35	501	78	423	42
1936-45	616	198	418	42
1946-55	1118	724	394	39

Source: Federal and State Censuses and Records of Town of Amherst.

TABLE 5
AMHERST BIRTH RATES AND UNITED STATES BIRTH RATES

Year	Births per Thousand (Local)	Births per Thousand (United States)
1860	21.5	
1870	20.9	
1880	17.2	
1890	13.5	
1900	14.5	
1910	19.0	30.1
1920	21.1	27.7
1930	15.4	21.3
1940	15.3	19.4
1945	15.1	20.4
1950	20.7*	24.0
1951	21.5	24.5
1952	25.6	24.6
1953	22.1	23.+
1954	19.9	--
1955	23.6 (est.)	--

*1950 population estimated at 7,600.

Source: Dewhurst and Assoc., America's Needs and Resources, The Twentieth Century Fund, New York, 1955, p. 56, and local records.

These children were a minor factor until after World War II, but since 1946, children born to students, who were not regular inhabitants of the town, have averaged about forty-four per year and, where they can be identified, these have been excluded from the birth statistics.

It is easy to see, in Table 3, that there has been a considerable increase in the excess of births over deaths since 1930. In the 1930's the birth rate began to sink almost to the low point reached in 1900. After the first World War, Amherst's births had begun to come up, although they lagged considerably behind the national rate. Then, like other communities, this town experienced the lower birth rates brought on by the depression and the number of births barely matched the deaths which occurred. After 1945 the birth rate began to pick up locally as well as on the national scene. Using the State Census results of 1945 which showed a population of 7,089 and the 1955 figure of 8,207 it seems logical to assume that the actual population of the town in 1950 may have been somewhere around 7,600. On the strength of this assumption, the birth rates for the years 1950 through 1955 have been estimated. For these years the average rate is 22.2 per thousand and the high point of 25.6 reached in 1952 is the only time that Amherst has passed the national average. It should be noted that the birth rate for 1955 which is used in Tables 3, 4 and 5 is based upon the records of the first ten months of that

year.

One explanation for the divergence between the local birth rate and the national one lies in the characteristics of the Amherst population prior to the late 1940's. For years the town had been a semi-rural community without the constant ebb and flow of people which are more common in commercial and manufacturing centers. Many of the young people had gone off to urban areas that were more alive and prosperous and Amherst remained essentially a small country town even with the growth that began about the time of World War II. The middle-aged and older people tended to loom as a larger factor than they did in the average community.

In Table 4 we get a clear indication of the magnitude of migration as a factor in population change. The pattern is one of fairly consistent growth, from migration, each year since 1926. The increase in population from the excess of births over deaths, however, has been going up at a rapid rate.

For the purposes of this study two population forecasts have been made; Table 6 constitutes what might be called a "low" forecast. It is based upon a slowly declining birth rate. The average rate for the low forecast for twenty years is 19.8 which is high when compared with the rate in Amherst between 1930 and 1945 but still remains considerably below the recent birth rate in the United States. It is assumed that Amherst College will remain at about its

TABLE 6

PROJECTED POPULATION GROWTH IN AMHERST (Low Forecast)

Year	Est. Pop. Pre- ceding Year	Est. Births Per Thou- sand	Est. Births	Est. Migra- tion Gain	Est. Deaths	Est. Net In- crease	Est. Pop.
1955	8,043	23.6	190	70	96	164	8,207
1956	8,207	22.0	181	70	96	155	8,362
1957	8,362	22.0	184	70	96	158	8,520
1958	8,520	21.5	184	70	96	158	8,678
1959	8,678	21.5	187	70	96	161	8,839
1960	8,839	21.0	184	75	97	163	9,001
1961	9,001	21.0	189	75	97	167	9,168
1962	9,168	20.5	189	75	97	167	9,335
1963	9,335	20.5	191	75	98	168	9,503
1964	9,503	20.0	190	75	98	167	9,670
1965	9,670	20.0	192	75	99	168	9,838
1966	9,838	19.5	191	70	100	161	10,009
1967	10,009	19.5	195	70	101	164	10,173
1968	10,173	19.0	194	60	102	153	10,326
1969	10,326	19.0	195	60	103	152	10,478
1970	10,478	18.5	194	55	104	145	10,623
1971	10,623	18.5	196	55	106	145	10,768
1972	10,768	18.0	194	50	108	138	10,906
1973	10,906	18.0	196	50	110	136	11,042
1974	11,042	17.5	194	45	112	127	11,169
1975	11,169	17.5	196	45	114	127	11,296

Source: State Census of 1955 and Amherst Town Records.

present size, but that the University of Massachusetts will grow, as planned, to about 10,000 students by 1965, and that there will be a levelling off at approximately that enrollment. The death rate, already a bit higher than the national average, is expected to remain about as it is now for a few years and then may decline slightly as numbers of younger people come into town. It is expected that a portion of the new University employees who will operate the plant will come from the present population of Amherst, but that a considerable number of new people will be drawn to the area by opportunities of this sort. Virtually all of the new members of the teaching staff will be newcomers to the Amherst area, and in most cases these people will come in at the Instructor or Assistant Professor level as members of the present faculty move up into the higher ranks with the growth of departments. During the 1954-55 academic year about 15% of the University faculty commuted from outside of Amherst and about 35% of the other staff members were commuters. Since the housing situation in the town is already tight, it is not expected that the percentage of commuters among new faculty and staff members will decline very much and it is quite possible that an increased proportion of these new employees will decide to live out of town of necessity or choice. Recognition has been afforded this commuting group in considering the number of migrants in this population forecast. The figures indicate that the

population might grow to approximately 9,800 in the first ten years and that, under the conditions outlined, something like 11,300 persons might live in Amherst in 1975.

Population prognostications are quite likely to be thrown off by a number of factors which are unforeseen at the time of the original estimates. Industrial towns are subject to considerable and frequently unpredictable shifts in population as economic conditions change. By and large, academic institutions are not likely to have such rapid variations. They usually continue most of their functions during troubled economic periods and they react neither quickly nor very far in periods of economic prosperity. In good times, college personnel, both faculty and maintenance people, find that their incomes lag behind those in the nation. In recessionary periods, however, institutions of higher learning tend to be stabilizing influences, and the attractiveness of the community as a home site or in terms of the jobs that it can offer may, at some stage, become a considerable factor. The planned growth of the University represents a reaction to the fact that Massachusetts has never had a state university in the true meaning of the term and that something must be done in the face of the "impending tidal wave" of students who, even now, are beginning to apply at colleges. Until a few years ago, almost any qualified applicant from the Commonwealth could get into a college in his own state if he wished to go there, but, with

the increasing pressure of numbers, many of the independent colleges in this and other states have become extremely selective in their choice of students. The rise in the size of the University comes none too soon in terms of this growing demand.

Table 7 represents a consideration of a somewhat higher population forecast than the preceding table. It is assumed in setting up this table that the birth and death rates will approximate those in the earlier study. Amherst College will stay about the same or maybe creep up as much as 10%. The University will grow to the planned 10,000 enrollment and then continue to creep up but at a slower rate. The second table covers a considerable increase in secondary workers who will probably be attracted to the town as both the resident and student populations grow. Table 7 includes a moderate commuter growth while few commuters were considered in the first table. It is still assumed that between 15% and 20% of the new University employees and faculty members will live outside of Amherst. It is difficult to judge the impact which the growth of higher education will have on Amherst. Intuitively, the low forecast, although it represents a considerable increase in population, seems a bit too low in view of the sweeping changes at the University and when viewed in comparison with other periods of growth which occurred when there was no major drawing card in Amherst and, in some cases, when the mobility of

TABLE 7
 PROJECTED POPULATION GROWTH IN AMHERST (High Forecast)

Year	Est. Pop. Preceding Year	Est. Births Per Thousand	Est. Births	Est. Migration Gain	Est. Deaths	Est. Net Increase	Est. Pop.
1955	8,043	23.6	190	70	96	164	8,207
1956	8,207	22.0	181	75	96	160	8,367
1957	8,367	22.0	185	85	96	174	8,541
1958	8,541	21.5	183	100	97	186	8,727
1959	8,727	21.5	187	120	97	210	8,937
1960	8,937	21.0	187	140	98	229	9,166
1961	9,166	21.0	193	160	98	255	9,421
1962	9,421	20.5	193	180	99	274	9,695
1963	9,695	20.5	199	180	100	279	9,974
1964	9,974	20.0	200	190	101	289	10,263
1965	10,263	20.0	204	200	103	301	10,564
1966	10,564	19.5	205	150	106	249	10,813
1967	10,813	19.5	210	120	110	220	11,033
1968	11,033	19.0	209	100	113	196	11,229
1969	11,229	19.0	213	90	116	187	11,416
1970	11,416	18.5	211	90	118	183	11,599
1971	11,599	18.5	214	80	120	174	11,752
1972	11,752	18.0	210	80	122	160	11,920
1973	11,920	18.0	214	70	124	160	12,080
1974	12,080	17.5	211	70	126	155	12,235
1975	12,235	17.5	213	70	127	156	12,391

Source: State Census of 1955 and Town Records.

people in general was much less than it is now. In some ways the higher of the two forecasts would seem to take into fuller account the unpredictable, but nevertheless real, increase which is bound to come in all sorts of secondary lines. How much will the general attractiveness of Amherst suffer, as a place to live, when the town begins to bulge at the seams? This depends to some extent on how the impending growth is handled. It is an important question because it will help determine the size of the already growing commuter group. When the network of state roads joining Amherst with other sections of the Commonwealth is further advanced the town will find itself in a good, central location for people who have to travel about the state. Already, there are those who sell everything from adding machines to cement who find Amherst a pleasant and convenient place to live.

As the years go by we can expect still more of these people whose place of employment is an area and not a fixed location. Then there are the commuters who have already settled in Amherst in some numbers. They represent both the laboring man who finds employment at Westinghouse in Springfield or the Greenfield Tap and Die, and the managerial or executive type of person representing organizations like Fisk Rubber in Chicopee, the New England Telephone Company in Holyoke or an insulation concern in Springfield. A few people have even commuted as far as Hartford when skilled hands were needed there, but in the main, most of those who

commute to work find a considerable range of opportunity within about twenty-five miles which includes such employment centers as Westfield, Easthampton, Northampton, Millers Falls, Orange and Athol as well as those mentioned earlier.

It appears likely that Amherst is destined to grow as a home site for many types of commuters. The working man often likes the idea of being within sight of good fishing and hunting grounds and his wife likes to hang out her clothes where there is no soot to soil them and where she can catch an occasional glimpse of the purple hills in the distance. For the white collar worker or the executive, the town provides an approach to country living with some cultural advantages thrown in because of the two institutions. If Route 116 is improved over the Notch it will provide easier connections with Holyoke, Springfield and Westover Air Force Base. When that happens Amherst, and particularly the southern half of town, may begin to attract many new people. If we think of the planned University growth, plus a considerable increase in secondary workers, and a large commuting group, the "high" forecast of population growth may in reality turn out to be more nearly a moderate one. Old-timers in town, and even some of the recent arrivals, would look askance at such predictions but notice the number of new homes built in Amherst in recent years and you have a good measure of growth. New dwellings have been constructed as follows: 1946, 9 dwelling units;

1947, 31; 1948, 41; 1949, 40; 1950, 45; 1951, 29; 1952, 45; 1953, 31; and in 1954, 46 new dwelling units were completed. These figures do not include the new units gained through conversion of existing houses.

In both the so-called "low" and "high" forecasts the same birth and mortality figures have been used and these, of course, may turn out to be considerably off in the long run. Looking at the past we note quite a pronounced cyclical tendency in local birth rates as well as recurring highs and lows in the United States as a whole. Wars and periods of economic strength or weakness inevitably influence the birth rate and often with considerable variation of impact. The national birth rate from 1935 to 1940 ranged from 18 to 19 births per thousand. From 1941 up to 1945 the range in the rate was from 20 to 23, and since 1946, the birth rate has climbed quite steadily from the low to the middle 20's. The rate in Amherst has fluctuated quite a bit but seems, in recent years, to be creeping up slowly or perhaps levelling off, for a time, at a fairly high stage. If the economy of the nation stays at a high level it is conceivable that the United States birth rate may stay way up.

In the case of Amherst, there may be an artificial stimulus placed under the local economy because of the growth factors inherent in the University, apart from the stability normally present in a college town. These elements may tend to keep the local birth rate up somewhat

higher, relatively speaking, than the national rate. The two forecasts reflect the author's attempt to present a reasonably conservative view toward possible birth rate trends between what now seems to be an abnormally high rate and what may be a considerably lower rate later on. If the local birth rate stays fairly high, even the more generous prediction may be too low just on the birth rate score.

Other variables are also based on considered guesses. What we might call the "minimum" and "average" migration figures may be deceptively low. It is possible that the total migration of primary and secondary workers plus the addition of new commuters and some retired people may swell the local population to such a point that the "high" forecast may turn out to be not only moderate but even low.

Population grows or declines as the economic opportunities which are offered advance or subside. As can be seen in detail in the section on Amherst's economic base, the town appears to be on the brink of a considerable economic opportunity and the forces put in motion by this occasion will underlie and govern local population change.

Composition and Characteristics

When one attempts to list the detailed characteristics of Amherst's population, the problems already referred to with respect to the 1950 Federal Census further decrease the value of this material for research purposes. Table 8 shows

TABLE 8
AGE-SEX COMPOSITION - AMHERST AND DALTON

Age Group	Amherst - 1940 Pop. 6410		Amherst - 1950 Pop. 7900*		Dalton - 1950 Pop. 4285*	
	Males	Females	Males	Females	Males	Females
All ages	3056	3354	4712	3188	2057	2228
Under 5	195	196	277	254	253	205
5-9	215	206	146	162	183	168
10-14	252	254	123	120	148	130
15-19	306	288	813	463	139	138
20-24	268	276	1621	479	108	128
25-29	216	218	547	278	156	184
30-34	217	237	211	153	148	163
35-39	219	207	158	143	163	167
40-44	183	229	114	175	150	176
45-49	201	235	140	157	124	113
50-54	183	213	135	163	125	145
55-59	147	191	103	131	100	121
60-64	149	158	93	133	82	102
65-69	119	164	83	109	64	98
70-74	98	138	68	99	47	89
75 & over	88	144	80	169	67	101
21 & over	2029	2369	2986	2057	1322	1569

*Unincorporated part only.

Source: Amherst: 1940 Census of Population, Vol. II, Part 3,
p. 635;
1950 Census of Population, Vol. II, Part 21,
p. 85;
Dalton: 1950 Census of Population, Vol. II, Part 21,
p. 85.

the age and sex composition obtained in the census for Amherst in 1950 and compares it with similar figures from the 1940 Census. This part of the 1950 report covered only the unincorporated or major built-up part of town as a base and excluded much of North and South Amherst, Cushman and some eastern sections of town. For this reason the census includes the bulk of the college students and excludes large numbers of townspeople. If it were possible to isolate the college students from the population of 7900 listed in the 1950 figures, they could be subtracted from the appropriate age brackets which would cover the 15 through 29-year-old age groups, since a fair number of graduate students are probably included. About the only way to estimate the number in each group is to project upward the number of children in the 10-14 age group. This is admittedly a weak approach, but it seems to be about the only suitable one. Table 8 also presents age-sex distribution figures for Dalton, Massachusetts, from the 1950 Census. In looking for towns that might have a population nearly equal to the number the author estimated were actually living in the unincorporated area in Amherst, the census figures for the unincorporated parts of several towns were studied. Great Barrington, Ipswich and Dalton all seemed to run fairly close to the number we might expect were actually present in Amherst. For the sake of further comparison Exeter and Hanover, New Hampshire, were investigated. The former

appeared to be somewhat like Amherst in that it was primarily an educational town, but, as pointed out before, the students in secondary boarding schools were not enumerated at the location of the school. With the students out of the picture, the population distribution would appear to run nearly parallel to that of Amherst in several age groups. Hanover provides an interesting similarity, particularly in view of the fact that the basic town is smaller but the college is larger so that the off-center age groups, which can be detected in Amherst, can be seen even more clearly in Hanover.

Looking at the Dalton figures, the age-sex distribution appears to be roughly similar to that found in Amherst except for those age groups which are artificially inflated in the latter town because of the presence of the students. It can readily be seen that the bulge in Amherst, in the 1950 figures, starts with the 15 to 19 year age group. Under today's conditions it is probable that Amherst has about 110 in the 15-19 year old male group, about 130 in the 20-24 group and about 140 in the 25-29 group. The female groups might run 120, 140 and 155, respectively. If these figures are anywhere near correct, it means that the total number of inhabitants in the unincorporated part of town was around 4500. If these assumptions are valid - and they would appear to be when compared with Dalton - it means that some 2600 male college students were enumerated in the

census plus about 800 female students. Together these groups equal 3400 and, when this figure is subtracted from the 1950 Federal Census total of 10,586, it leaves a town population figure of about 7460. This compares favorably with the estimate of 7600 made earlier in this study which was based primarily on interpolation of State Census figures for 1945 and 1955. The difference between these two estimates is relatively insignificant.

The figures support the contention that the enumerators in the 1950 Census failed to list many of the students living in the so-called "unincorporated" part of town. The 3400 students who appear to have been counted fall considerably short of the total of nearly 5000 who were registered at Amherst College and the University of Massachusetts at that time.

Looking at the present age-sex distribution without the students we can guess that there will soon be increased numbers in virtually all of the age groups and especially up to the 35-year age level reflecting both the increased birth rates present since 1950 and also the policy of the University in hiring younger staff members. We can also expect an increased number of older people as the existing middle-aged groups move up the ladder.

The percentage of the population of school age (5-16) as indicated in the census is only 12.3 compared with figures ranging from 13.8 in Springfield to 21.5% in Natick.

Obviously, the Amherst figure was thrown off by the student group and probably some 17% or 18% of the population was of school age in 1950. The Amherst population did have a high figure on median school years completed - 12.9 - and this again was due to the 1950 Census approach and to some extent, to the large number of college teachers who have had both college and graduate work.

Ethnic-racial characteristics are not of great importance in Amherst but again it is difficult to know where you really stand since many of the foreign-born Polish farmers and others were eliminated from enumeration. Among the 7900 in the unincorporated part of town in 1950 only 388 foreign-born whites were listed and 110 Negroes plus 20 of other races. These figures compare with 588 foreign-born whites, 131 Negroes and none from other races who were listed among the 6410 total population in the 1940 Census. Among the present foreign born the following predominate as countries of birth: England and Wales, Poland, Ireland, and Canada. At present, none of these groups, with the exception of the Negroes, tend to live in particular areas of the community.

The usual comparisons between various decennial Federal Census figures is not meaningful for the reasons pointed out and hence some of the normal barometers of growth and change can not be depended upon but since Amherst's economic and social complexion is due to change quite a bit anyway, the lack of better indices is relatively not critical.

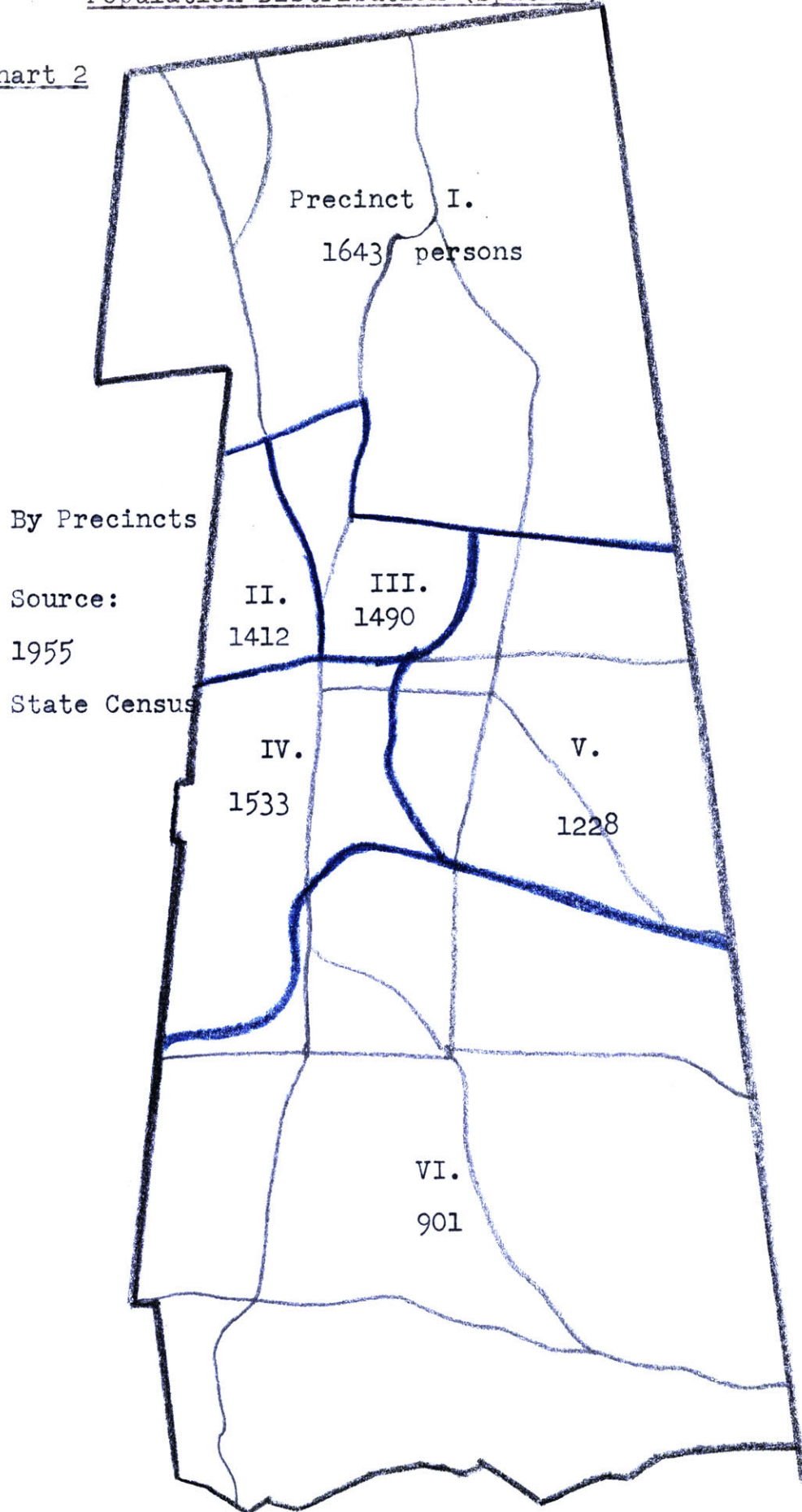
Density and Spatial Distribution

The density of persons per square mile of land area gives a general idea of the intensity of land use within a town. In Amherst, the density has increased very slowly. The land use picture hadn't changed markedly during the present century until the period of growth which occurred within the last decade. The figures on density are as follows: 1900, 182 persons per square mile; 1910, 185 P/sq.mi.; 1920, 200 P/sq.mi.; 1930, 213 P/sq.mi.; 1940, 231 P/sq.mi.; 1950, 392 P/sq.mi. This rather slow progression appears to be subject to a tremendous increase in density in 1950 until we recollect that the use of the 10,856 figure for total population has thrown the result off considerably. Using the adjusted figure of about 7,600 which we arrived at earlier by leaving the students out, we find that the approximate density in 1950 was 274 persons per square mile. By utilizing the 1955 State Census figure of 8,207 it can be seen that the actual density by 1955 had reached 296 persons per square mile. Although the rate in the intensity of the use of land has risen more rapidly in recent years, most of Amherst is still fairly open. Of the surrounding towns, only South Hadley, with a density of 571 persons per square mile in 1950, exceeded Amherst. The other nearby towns range from 8 P/sq.mi. in Shutesbury to 114 in Hadley.

The spatial distribution of people in Amherst by pre-

cinets is shown on Chart 2. The unincorporated area used as a base in the 1950 Federal Census took in Precincts II, III and IV plus small sections of V and VI. Although the northern and southern precincts are relatively sparse in present population, it can be seen that each one already has a considerable nucleus on which to build in the future.

Chart 2



By Precincts

Source:

1955

State Census

CHAPTER V
ECONOMIC BASE

Introduction

Consideration of a community's entire economic base is vital in any study which seeks to determine the scale of present operations and from these, the growth and magnitude of the future economic activity on which the prosperity of the town will depend. As towns grow they become more and more dependent upon a series of complex variables which are generally interwoven with other activities both inside and outside of the community itself. It is important not only to trace each activity within the town but also to try to find out the extent to which it may be influenced by movements of a regional or national nature. A careful examination of the present nature and trends of primary employment in town should allow us to estimate future employment both in primary and secondary lines.

In this survey we have already noted some of the factors that led to the location and development of Amherst. We have seen the town undergo several changes beginning with its rural basis in the early days and extending up through the period of diverse manufacturing operations. The two educational institutions which were established have gradually tended to become the economic lifeblood of the town. Industry, in the sense that the community once knew it, has

gone. There is still a considerable amount of agriculture, but it no longer provides the main income for any sizable proportion of the townspeople. People, income, and jobs are the main factors which must be analyzed. We have already looked pretty carefully at the people themselves. Now we must look at them with respect to their jobs and their income in order to determine the directions in which growth may proceed and also to ascertain what steps the planner should take to properly anticipate this growth.

Occupations and Income

The employment status of the people in both 1940 and 1950 is indicated below in Table 9. It should be remembered that the figures for 1950 are based upon a population of 7,900 in the unincorporated part of town only.

TABLE 9
EMPLOYMENT STATUS OF POPULATION

	1940 - Pop. 6410		1950 - Pop. 7900*	
	Male	Female	Male	Female
14 yrs. old & over	2442	2749	4194	2679
In labor force	1817	727	1204	646
Not in labor force	625	2022	2999	2033

*Unincorporated part only and including students.

Source: Federal Census, 1940 and 1950.

It is quite apparent that a good many students were included when the 1940 figure for males not in the labor force is compared with its counterpart under 1950. Other figures from the same 1950 Census show that there were at that time 412 male government workers and 246 females. Only 23 men and 5 women were listed as unemployed - a remarkably small percentage in a town of this size. The small number of unemployed is undoubtedly due to the fact that Amherst's primary source of income is found in the relatively stable employment provided by the educational institutions and not in various industrial establishments which are often subject to considerable fluctuation in their activities.

In Table 10 will be found an occupational analysis covering various activities in the town. Through a study of such figures concerning the community's labor force, it should be possible to predict, in a general way, how the income will be spent and the extent to which public and private services and facilities will have to be increased. The 1940 enumeration is probably a pretty good index of the actual occupational distribution which was present at that time since it was based upon the entire town. The 1950 Census material is of little value, as it stands, since it was based upon a 20% sample in the unincorporated part of town only. This meant that both the farm groups were way out of line since virtually all the farm areas were excluded from the districts covered in the census. Students were not

TABLE 10
OCCUPATIONAL ANALYSIS OF AMHERST - 1940 AND 1950

Major Occupation Type	1940 Census	1950 Census*	Percentage Distribution				Estimated Distribution Entire Town 1950**
			1940		1950		
			Amherst	U.S.	Amherst	U.S.	
Total Employed (M. & F.)	2269	1810					2630
Professional, Semi-prof., Technical & Kindred	500	572	22.0%	7.0%	31.6%	7.4%	752
Farmers & Farm Managers	142	11	6.2	10.4	0.6	7.0	142
Managers, Officials & Proprietors	188	129	8.3	7.6	7.1	10.4	169
Clerical, Sales & Kindred	327	368	14.4	16.3	20.3	18.9	483
Craftsmen & Foremen	194	182	8.5	11.7	10.0	13.0	238
Operatives & Kindred	184	135	8.1	18.7	7.5	20.8	178
Private Household Workers	179	41	7.8	4.6	2.2	3.2	52
Service Workers	271	244	11.9	7.6	13.5	8.0	321
Farm Laborers & Foremen	114	36	5.9	7.0	2.0	5.1	114
Labor, not Farm or Mine	135	88	6.1	9.1	4.9	6.4	116

*Unincorporated part of town only - actual population estimated at about 4500.

**Adjusted on basis of est. pop. of about 7400 using 1950 percentage distribution.

Source: Census of Pop., 1940, Vol. II, pt. 3, p. 635; 1950, Vol. II, pt. 21, p. 88.

included in the 1950 enumeration figures since they are not classified as full time workers, but their presence in town as part-time workers undoubtedly influences the distribution pattern, particularly with respect to the service worker category and perhaps to a lesser extent in some other groups.

In order to get some idea of the actual occupational distribution which was present in 1950, it was necessary to adjust the results obtained in that census. As already indicated, some 3400 students were included in the 1950 Census total of 10,856. Without these students the population was therefore about 7400 in the entire town. Assuming that the labor force in 1950 represented about the same proportion of the population as it did in 1940 we can estimate the total labor force in 1950 at approximately 2630. It is probable that the two farm groups remained nearly the same in the 10-year period so that figure has been retained for the 1950 estimate. To arrive at the remainder of the distribution, the agricultural groups were removed, leaving a labor force of about 2380. Using the percentage distribution figures gained from the 1950 Census it is then possible to arrive at an estimated, adjusted occupational distribution covering the entire town for 1950. Although the census distribution for 1950 is certainly not completely accurate when applied to the wider area of the town it is the only index available.

Certain aspects of this table stand out immediately and

bear out in a statistical fashion many of the things which we might expect in a college town. The major bulge, occupationally speaking, is in the group labeled "Professional, semi-professional and technical." This group contains the many teachers and technical employees at the two institutions as well as those usually in professions in an average community. It should be noted that a land grant college or state university which has some stress on agricultural education has many staff members who are connected with extension and research activities even though they may not, in fact, be teaching, in the usual sense, right on the home campus. According to the figures Amherst has over four times the average U.S. proportion in this category. The increase in percentage from 1940 to 1950 is undoubtedly due to the growth of the colleges in that period, and this is a trend which is due to continue. The clerical and sales category also bulks large in the total distribution of workers in the town. This group has increased by 6% as the population has gone up. In looking at this category, relative to the growth of the town, it would seem that many of the stores are doing a larger volume of business, but that in most they haven't hired many new employees. This would indicate that much of the increase in this group is due to the large number of new clerks and secretaries who have found employment by virtue of the growth at the College and University.

Amherst is definitely low on the operative and crafts-

man categories which follows from the small amount of manufacturing presently found in the town. The service worker category is higher than the national norm and as the number of students grows it will probably go higher.

Tables 11 and 12 indicate the types of industry in town. The figures in Table 11 are taken from the Massachusetts Division of Employment Security, and the payroll, number of employees, and the percentage distribution of these employees by industries are also given. Due to the particular nature of the industries whose employees must report to this division, certain vital segments of the local economy are not reflected at all in the table. A large majority of the employees at Amherst College and the University do not report to the state in this respect so that the impact of the largest employers in town is lost. As can be seen, the Wholesale and Retail Trade Category has, by far the largest number of employees and payroll among those reported and its percentage of the total employment is rising, while, surprising as it may seem, these figures indicate that the number of employees in the Service Industries has dropped off considerably. This is probably due to a change in reporting procedure.

Table 12 is based entirely on the 1950 Federal Census and, as usual, we must interpolate from these figures which are gleaned from the unincorporated part of town only. Because of considerable differences in procedure the State

TABLE 11

MAJOR INDUSTRY GROUPS AND PAYROLLS IN ALL INDUSTRY, NOVEMBER 1949 AND 1954

Industry	No. of Firms		Annual Payroll (\$'000's)		No. of Employees		Distribution by Employees	
	1949	1954	1949	1954	1949	1954	1949	1954
Agriculture & Mining	1	2	2	8	1	11	.1%	1.3%
Construction	13	22	214	341	85	87	10.3	10.4
Manufacturing	8	9	151	173	93	84	11.2	10.0
Trans., Commun., & Utilities	8	8	36	62	21	26	2.6	3.1
Wholesale & Ret. Trade	70	66	732	1089	385	450	46.5	53.7
Finance, Ins. & Real Estate	10	10	117	184	46	50	5.6	6.0
Service Ind.	33	37	283	234	196	129	23.7	15.4
Unclassified	-	1	-	2	-	1	-	.1

Source: Massachusetts Division of Employment Security.

and Federal figures are not comparable on certain categories. Both sets of figures stress the importance of the wholesale and retail trade in the local employment scheme, and the U.S. Census reiterates the tremendous percentage employed along professional lines.

TABLE 12

MAJOR INDUSTRY GROUPS AS DEFINED IN 1950 FEDERAL CENSUS

Industry	No. Em- ployed	Industry	No. Em- ployed
Agriculture and Forestry	60	Finance, Ins. & Real Estate	46
Mining	1	Business & Repair Ser.	28
Construction	97	Personal Ser.	143
Manufacturing	130	Entertain. & Rec. Ser.	9
Trans., Commun., & Pub. Util.	78	Professional & Related	894
Wholesale & Ret. Trade	249	Public Admin.	66

Source: U.S. Bureau of the Census, Census of Pop.,
Vol. II, pt. 21, p. 88.

Table 13 covers the distribution of income in 1949 as listed in the 1950 Census and compares the local picture with that in Dalton and Great Barrington, Massachusetts. The first of these communities was previously used for comparative purposes because of certain resemblance to Amherst, and Great Barrington has been added here to give a broader

TABLE 13
DISTRIBUTION OF INCOME, AMHERST, GREAT BARRINGTON AND
DALTON, 1949

Total Families and Unrelated Individuals	Amherst	Great Barrington	Dalton
	4750	1340	1355
Less than \$500	1880*	115	80
\$500 - \$999	795*	130	55
\$1000 - \$1499	510*	130	40
\$1500 - \$1999	230	140	60
\$2000 - \$2499	185	105	165
\$2500 - \$2999	180	140	105
\$3000 - \$3499	185	105	155
\$3500 - \$3999	105	75	135
\$4000 - \$4499	80	55	175
\$4500 - \$4999	110	50	70
\$5000 - \$5999	125	90	105
\$6000 - \$6999	90	20	75
\$7000 - \$999	75	20	35
\$10,000 and over	20	30	25
Income not reported	180	135	75
Median income	755	2417	3425

*Includes many students.

Source: U. S. Bureau of the Census, Census of
Population, Vol. II, pt. 21, p.

base for comparison. Both towns seem to run fairly close to Amherst with the exception of certain income groups where the addition of student earnings has thrown the local figures off. Comparing Amherst's reported median income of \$755 with that in a few other towns in Massachusetts we see \$2,677 in Athol, \$3,000 in Ayer, \$2,785 in Ware and \$2,389 in Amesbury. It is interesting to note that the median income in Ann Arbor, Michigan, is \$1,404 compared with \$4,328 in Dearborn, while the median in Iowa City is \$1,381. Both Ann Arbor and Iowa City have large numbers of students and therefore the median income which is reported is warped way out of line as it is in Amherst.

In order to arrive at a more accurate figure for median income it is necessary to exclude the students so that the actual number of families and unrelated individuals resident in the unincorporated part of town can be ascertained. As we have seen, about 3400 students were noted in previous assumptions as having been listed in the census. For the purpose of excluding the students, let us assume that some 130 of the 3400 did not report any income and that all the students who did report had incomes which were less than the median for townspeople. This means that there are about 1350 actual families and unrelated individuals of whom 1300 reported income. The median number of families is therefore 650 and, applying this to the distribution table (working from the top income down), we find that the median income

for non-student families and unrelated individuals would seem to be about \$3,400.

Primary Functions

Primary activities, in most towns, center around some form of production (usually industrial) or around an extractive process. Some primary activities are vital in the economic life of any community and are responsible for its growth. Primary enterprises are normally those which are carried on for people who are outside of the town or city. Amherst's main primary activities differ from those of most towns since they are not industrial activities based upon resources, transportation, water power, unusual agricultural land, or other locational factors. Although there is some agriculture, it does not have the dominant position that it once had, and manufacturing is hardly in the picture at all these days. Amherst now has one dominant function in the primary sense and that function is education. The town's major primary resource consists of the teaching staff built up at Amherst College and the University of Massachusetts, plus the other staff members and the physical plant and equipment needed to support these people and to house their students. Much of the rest of town fulfills a service function to support the educational operations.

As a primary activity, education is bringing money in from outside the town, and these funds are paying for a

product which will ultimately be exported, after its completion, just as an automobile or a machine tool would constitute an export item. Education is a unique form of economic base. There are seldom strikes and the "labor market" problems concern a continuing supply of good teachers with little thought toward some of the labor management problems often associated with large enterprises. Competition, in the usual sense, doesn't enter the picture, and in the foreseeable future there won't be any lack of raw material or any problem about a ready market. Amherst's location will not become a problem as it might in some towns which are oriented toward labor, raw materials or transportation. The present site has, in the past, been attractive for both farming and industry but both have now given way to this new primary giant. Once the educational institutions had established themselves at this place there ceased to be any practical site disadvantages.

Although there isn't a great diversity of employment there does seem to be a rather nice balance which hopefully will continue to maintain itself. Since there seems to be a fairly constant relation between the size of the labor force and the size of the population which it supports, the advent of growth in the educational facilities in town is an important consideration. As has been pointed out, the business of providing education tends to be a pretty stable occupational and economic base so we should be able to look

forward to a stable community in the years to come.¹

Since the educational institutions constitute the backbone of the primary activity in town, it is well to look at some of the details concerning these places. Amherst College employed 325 people in 1950 and has 345 on the payroll in 1955. In 1950, 113 of these people were members of the faculty or administration while there are 140 in those categories now. While the total payroll was \$1,245,662 in 1950 it has risen to \$1,588,053 in 1955. The student enrollment has run along at about 1050 in the last few years and it is expected that it will remain at or near this point in the foreseeable future. No expansion along graduate school lines is contemplated. The present valuation of the physical plant, not including college owned dwelling units, is about \$5,000,000.

For some years the two colleges were not far apart in

1. For an interesting study of a functional economic classification of urban areas see Harried R. Long, "Distinguishing Features in the Economic Function Profiles of Mass. Urban Areas," unpublished dissertation for Ph.D. in Geography, Clark University, 1955. Miss Long has some interesting references to Amherst. On p. 44 when discussing professional and related services (including education) she says that: "10% of the employed urban population in Massachusetts is engaged in this combined service-industry group. Twenty one urban areas are above the state mean of 9.1%, 12 places are between the mean and one sigma, 2 are between 1 and 2 sigmas and the remaining one, Amherst, reaches a high of 6.4 sigmas. Amherst's extremely high percentage of employed workers in the professional and related service industry group, 49%, was 40.3% above the mean for the group and, consequently the distribution veered sharply from the normal."

undergraduate enrollment, but with the growth of the graduate school and then, finally, the move toward state university status, the University of Massachusetts now appears destined to be by far the largest of the primary activities in either Hampshire or Franklin County. Table 14 gives some idea of the magnitude of the operation which is planned at the northern end of town. (In 1949, the University had 593 employees.)

TABLE 14

UNIVERSITY OF MASSACHUSETTS - ESTIMATED ENROLLMENT,
EMPLOYEES AND BUDGET - 1955-1965

Fall Semester	No. of Employees	New Teachers	Total Univ. Enroll.	Est. Budget Add \$00,000
1955	1153		4145	5.2
1956	1220	35	4400	7.4
1957	1281	23	4600	7.9
1958	1356	35	5350	8.5
1959	1470	62	6150	9.3
1960	1593	65	7000	10.3
1961	1706	54	7700	11.2
1962	1814	50	8350	12.1
1963	1905	41	8880	12.8
1964	1996	41	9410	13.5
1965	2096	45	10,000	14.2

Source: Univ. of Mass. Projected Enrollment Estimates, 1954-1965; Univ. of Mass. Estimated Budgets, 1955-1965.

A glance at the above timetable is the best way to judge the future of the town. It is possible that the State Legislature might slow up the program, but if this happens some other place will have to be prepared for the rising tide. Since no other spot seems to have the basic facilities already available in Amherst it is probable that the State will go ahead with the above program pretty much as it is laid out. On top of the large sums to be spent on instruction, operation of the plant, etc. a capital outlay program involving over \$31 million in state funds and over \$8 million in University of Massachusetts Building Association Funds is contemplated and buildings now under construction are worth \$13 million. The present plant is valued conservatively (original cost) at about \$14 million. After looking at such figures and trying to contemplate their significance in the Town of Amherst, the author is moved to say, "Hold onto your hat, the ride is just beginning."

Having looked at the basic primary function for the future it is well to take a quick view of the lesser primary influences. Agriculture, despite the fact that it has definitely taken the back seat, still employs a considerable number as seen in a previous table. There are market gardens, some tobacco, and quite a number of orchards. In connection with the latter there are several cold storage plants for apples and others are contemplated. It is likely

that Amherst will continue to have a diminishing and yet considerable amount of farming for at least five or ten years. Some of the large farms may disappear as people come into town and bid up the price of land while looking for sites for new houses, and the eventual breaking up of some of the larger holdings may be hastened when the frontage along existing streets is reassessed. Recreation, in the sense of attracting tourists, has become a big income-producing operation in many parts of Massachusetts but it is doubtful whether Amherst will ever attract large numbers of people unless they are visiting the College or the University and, in the latter instance, many of them will not stay overnight. There seems little reason to believe that industry will look upon Amherst as a favorable site in the near future, particularly in view of the fact that there are plenty of sites available in nearby towns and cities where the existing labor market is close at hand and where transportation facilities are better, particularly by rail.² It is possible, however, that Amherst may someday attract a few research-oriented groups or concerns which might benefit from proximity to the educational institutions.

2. Long, *op. cit.*, p. 46, "Amherst has negative deviations in 7 of the industry groups. In manufacturing there is minus 2.3 deviation from the mean and except for Hyannis, with a minus 2.4 deviation, Amherst has the lowest score for any urban area in the state."

Secondary Functions

Secondary activities are those which are carried on primarily for the inhabitants in the town itself and they center around the service and trade operations. Consumption by the townspeople of goods, services, education or just time, always involves some sort of secondary activity. As Amherst grows, it is anticipated that there will be a considerable extension of most existing secondary activities.³ It is also possible that new secondary functions, not previously profitable, will result from the increased number of students and townspeople. Tables 10, 11 and 12 have already given us some measure of the number of people employed in service-type functions and also an idea of the number of firms in this general category. Table 15 gives a complete picture of the retail trade situation in Amherst and compares the town with Ware, Massachusetts, and with Hampshire County as a whole.

Ware is basically a factory town and in the 1950 Federal Census it had a total population of 7,517 compared

3. Ibid., "...Amherst is a professional center par excellence. Coupled with this large, positive deviation in the professional service industry group is a smaller, yet marked deviation in personal services, an industry group frequently associated with the professional service group." and, p. 40, "There seems to be some association between personal and professional services as they frequently appear as distinguishing functions in the same urban area." (referring to the fact that the profiles of these functions showed considerable likeness in Amherst).

TABLE 15

RETAIL TRADE IN AMHERST, WARE AND HAMPSHIRE COUNTY (1948)
 (Business Types and Sales in Thousands of Dollars)

	Amherst	Ware	Hampshire County
Total number of stores	86	132	933
Total sales	7,312	7,327	60,033
Average sales per store	86	55	65
Payroll	752	642	5,807
Active proprietors	69	117	802
Paid employees	405*	345	3,164
Average sales per paid emp.	182	211	189
Food stores	15	29	209
Sales	1,970	1,765	14,786
Average sales per store	131	61	71
Eating and drinking estab.	15	22	182
Sales	556	526	5,281
Average sales per store	37	24	29
General merchandise stores	3	4	32
Sales	-	553	3,570
Average sales per store	-	139	111
Apparel stores	10	17	77
Sales	494	678	5,069
Average sales per store	49	40	65
Furniture and appliances	3	6	38
Sales	391	322	2,176
Average sales per store	130	54	56
Automotive stores	6	10	52
Sales	992	915	7,955
Average sales per store	165	92	155
Gasoline stations	9	9	98
Sales	322	301	2,933
Average sales per store	36	22	30
Lumber, bldg., hardware stores	3	8	43
Sales	-	1,270	5,203
Average sales per store	-	16	121
Drug and Proprietary	3	6	34
Sales	302	208	2,017
Average sales per store	100	35	59
All other retail stores	19		
Sales	1,662		

*Week ending 11/15/48. No. of employees, normal full work week - 306.

Note: Survey covers entire towns and county.

Source: Census of Business, 1948, Retail Trade Area Statistics, Vol. III, pt. 20, p. 13.

with the 7,400 to 7,600 whom we have assumed were actual residents of Amherst during that year. On the basis of these figures it is possible to make several deductions concerning a considerable amount of Amherst's secondary activities, relative to those in a town of similar size, and with respect to the county. It should be remembered that Hampshire County had a population of 87,594 in the 1950 Census and therefore Amherst represented about 8.3% of the population of the whole county. In 1948 it had 9% of all the stores in the county and did 12% of the total sales volume. Per capita retail sales in Amherst in 1949 were about \$1,020 compared with the following: Greenfield - \$1,423; Holyoke - \$1,090; Northampton - \$1,101; and Springfield - \$1,421.⁴ These per capita sales reflect, in part, the purchasing power of the community but they also give some indication of the relative importance of the area as a trading center. In view of the high median income in Amherst one might expect higher per capita spending but more than an average amount of money goes into housing in Amherst and, in many cases, academic personnel sometimes tend to spend less money on luxuries and conspicuous consumption than people in other occupations who have nearly the same income. The fact that larger and more complete shopping centers such as Northampton and Springfield are nearby tends to reduce the amount

4. Survey of Buying Power, 1949.

spent in Amherst on furniture, large appliances and major items of clothing, particularly for women. To offset some of this, Amherst does offer trading facilities which are not available in towns like Pelham, Leverett, Shutesbury and Sunderland and for these rural areas, it is a trading center for food, hardware, some clothing, etc.

There are thirty-four establishments which are listed as offering personal, business and repair services. Their receipts during 1948 totaled \$436,000 and the payroll for all of them was \$118,000 which went to sixty-eight employees. Of the total number of service organizations, twenty-four were devoted to personal service and they took in \$252,000 in one year. There are three local establishments which are listed under the amusement category and two hotels.⁵ Amherst has only two concerns operating in wholesale trade.⁶

There are also a number of other categories which fall in the service area. Like most towns, Amherst had a much smaller number of household workers in 1950 than it had in 1940. The war and changing economic conditions took their toll among this group. Various public services, transportation services, communications and utilities can be expected to grow almost in proportion to the population. Finance,

5. Census of Business, 1948, Service Trade-Area Statistics, Vol. VII, pt. 20, p. 21.

6. Census of Business, 1948, Wholesale Trade-Area Statistics, Vol. V, pt. 20, p. 9.

insurance and real estate organizations presently operating have been in business for many years and have not yet increased their staffs very much, so a new surge of activity may not be long in coming in that line. One factor that should be noted in the retail trade line is that when such trade is concentrated in larger units, such as supermarkets, fewer employees are required per dollar of sales than in the older, traditional types of store. This is particularly true in the food category but its influence is felt later in other merchandising areas. Various town functions such as public education, police and fire protection, etc. are also considered to be in the service category and can be expected to grow as the population which they serve increases in size. It should be noted that many of the secondary activities go through a relatively slow period during the summer when both students and faculty are present in much reduced numbers and the town, for a couple of months, goes into hibernation in some respects.

Now - what does all this present activity mean in terms of Amherst's future? We have seen that the increase in University personnel in the next ten years is going to mean about 1,000 new jobs and hence about 1,000 new primary workers. In most communities, secondary workers are quite likely to outnumber primary workers by a small percentage. If this is to be the case in Amherst, we can expect something like 1,500, or more, new workers in the town, assuming

that perhaps 25% of the new employees will live outside of the town. Since some of the new primary and secondary workers will be unmarried, it is logical to assume that some 60% of the new employees will have wives. In making this assumption considerable weight is given to the fact that some of the new University employees will be unmarried women in clerical jobs. If the above assumptions are anywhere near correct there will be about 1800 new married people plus 600 or more single men and women. If each of the 900 married couples ultimately has an average of 1.5 children, the population might increase by 3700 or more just as a result of the increase in primary and secondary employment brought on by the expansion of the University within ten years.

In addition to the above possibilities there are other factors which may lead to further increases. As in any input-output situation in the world of industry, each sizable boost in the number of workers will set off still another round of increases. Any major increase in primary employment may lead to still more primary employment and this in turn will be supported by additional secondary employment.

Apart from the increases stemming from the new employees there are the 6,000 new students who will broaden the existing market to some extent. Table 16 lists the results obtained from a questionnaire circulated among College and University students in 1954 in a study of student expenditure patterns.⁷

7. Roger B. Clark, Economic Development of Amherst, Amherst College, Economics Honors Thesis, 1955, Appendix.

TABLE 16

AVERAGE YEARLY EXPENDITURES OF STUDENTS AT AMHERST COLLEGE
AND THE UNIVERSITY OF MASSACHUSETTS

	Amherst College Students	Uni- versity Men	Uni- versity Women
Total expend.outside tuition, board, room and fees	\$430	\$380	\$252
Amount spent in Amherst	300	230	132
Books, records, sch. supplies	96	20	14
Movies	22	16	8
Food	40	94	64
Entertainment and beverages	52	42	6
Auto. operation and repair	4	24	2
Clothing	40	14	22
Miscellaneous	46	16	16

These figures form an interesting, if not too accurate, pattern. A few points are definitely out of line. Since the class to which the questionnaire was circulated at the College is not allowed to keep automobiles at college this figure is deceptively low. As far as the University students go, some of their wants will soon be taken care of at the store, snack bar, etc. that will be incorporated in the vast Student Union building now under construction. How much this will reduce student spending in town is difficult to judge, but the figures listed above indicate that something like \$1,000,000 is now being spent in town each year

by the students. Even with the completion of the new facilities at the University, it is quite likely that the total dollar volume of student expenditures within the town will increase substantially as the 6,000 additional students arrive on the scene.

In the overall picture, the major growth-producing factor is the University of Massachusetts. If the projected enrollment plan is carried out anywhere near schedule, the town is definitely on the way toward a larger population, increased needs for goods and services and further demands for housing, public facilities, etc. This would appear to be the main facet in which the reflection of the future may be seen, but we still haven't said much about those presently mythical hordes of commuters who may someday make their way into the town. It might not be a horde in the sense of the suburb-to-city rush which we see going on outside many cities these days, but it is true that it wouldn't take many new families each year to build up a substantial commuter group and, ultimately still more rounds of primary and secondary growth. We live in an age of ceaseless change. New techniques or at least improvements on older techniques will allow us to move more quickly and effortlessly from home to job. The whole radius of our daily activity is gradually being widened. Some of the nearby cities are beginning to decentralize and in doing so are pushing still more people out into the far peripheral areas such as the

one in which Amherst lies. New locations for business and industry, perhaps not in, but near Amherst can certainly lead to significant changes within twenty years and possibly even within five or ten years. From these changes may come significant alterations in the economic base which will undoubtedly affect the size of the town.

The expansion of population directly attributable to the changes underway at the University may, as has just been shown, go well beyond the net increases estimated in the population forecasts given earlier. Even the "high" population prediction was based upon fairly conservative estimates of in-migration. If the University's role in the future of the local economic base is of the magnitude referred to in this present chapter both of the population forecasts will be too low. Furthermore, considerable numbers of new commuters could significantly throw off any prediction made today. In view of the probabilities of growth set off by the University and the possibilities inherent in the commuting realm, Amherst's population in the middle or late 60's may actually equal or even exceed both the "low" and "high" estimates previously given for the year 1975.

CHAPTER VI

HOUSING

The provision of adequate housing at a price which most people can afford is not a new problem. Many communities have begun to solve this dilemma, but Amherst has had a moderately bad housing situation for some time and unless increased measures are taken to build new housing for people as they come along this will be one of the first of several long-term headaches that the town will have to cope with.

In trying to assess the present scene we are again caught with 1950 Census figures which must be interpolated or at least looked over pretty carefully if an accurate picture is desired. The figures given are for the unincorporated part of town and the confusion which results is primarily one of having accurate information on only part of the town and not being sure, without considerable research, how typical these results are for the community clusters which are spread out around town in the peripheral areas.

Tables 17 and 18 list a variety of figures concerning the amount and conditions, etc. of housing in the unincorporated part of Amherst. Student housing does not enter this picture in the sense of regular dormitory facilities, but where married students are living in apartments controlled by an institution they are considered to be occupying actual dwelling units. Dormitories, sororities and

TABLE 17

HOUSING AND OCCUPANCY CHARACTERISTICS IN AMHERST - 1950
 All dwelling units - 1,584. Number occupied - 1,560.

<u>Number of Dwelling Units by Size</u>		<u>Contract Monthly Rent</u>	
1 unit	724	\$19 and below	22
2 units	411	\$20 - \$39	392
3 and 4 units	191	\$40 - \$74	334
5 - 9 units	147	\$74 and above	24
10+ units	82	Median rent	\$38.39
Trailers	29	Median (gross)	\$47.14

<u>Year of Construction</u>		<u>Owner-Renter Occupancy</u>	
1945 and later	290	Number owner occupied	762
1940 - 1944	30	% owner occupied	48.8
1930 - 1939	70	Number renter occupied	798
1920 - 1929	125	% renter occupied	51.2
1919 and earlier	1,045		

<u>Facilities and Improvements</u>		<u>No. of Rooms Per Dwelling</u>		<u>No. of Persons Per Dwelling</u>	
% with elec. lights	99.7	1 room	34	1 person	139
% with central heat	78.4	2 rooms	164	2 persons	526
% mechanical refrig.	89.2	3 "	150	3 "	381
% with kitchen sink	99.7	4 "	211	4 "	262
% radio or TV	99.3	5 "	227	5 "	129
% hot and cold water	95.2	6 "	253	6 "	69
% tub or shower	96.1	7 "	192	7 "	24
% with toilet facil.	99.2	8 "	142	8 "	14
		9+ "	191	9 "	8
				10+ "	8

Source: Bureau of the Census, 1950 Census of Housing, Vol. I, General Characteristics, pp. 21-39, pp. 21-45.

TABLE 17 (continued)
HOUSING AND OCCUPANCY CHARACTERISTICS IN AMHERST - 1950

<u>Value of Owner Occupied Single Dwelling Units</u>			
Less than \$3,000	7	\$7,500 - \$9,999	82
\$3,000 - \$3,999	9	\$10,000 - \$14,999	157
\$4,000 - \$4,999	20	\$15,000 +	142
\$5,000 - \$7,499	117	Median value	\$10,969

<u>Median No. of Persons</u>		<u>Persons per Room</u>	
All occupied D.U.	2.9	0.75 or less	1,081 D.U.
Owner occupied D.U.	3.1	0.76 - 1.00	328 D.U.
Renter occupied D.U.	2.6	1.01 - 1.50	94 D.U.
(All occupied D.U. 1,560)		1.51 +	39 D.U.

Source: Bureau of the Census, 1950, Census of Housing, Vol. 1, pp. 21-45.

fraternities were enumerated as non-dwelling-unit quarters regardless of the living arrangements of the occupants.¹

The provision of new homes in Amherst presents a problem, which to date, has been dealt with through four approaches. Most of the new houses have been built by private individuals, either for speculation or on order. About twenty new single-family homes were built under the direction of the State Housing Board for rental and, ulti-

1. Bureau of the Census, Urban and Rural Enumerator's Reference Manual, 1950, p. 72.

TABLE 18
 NUMBER AND LOCATION OF NEW HOMES IN AMHERST
 NUMBER OF NEW DWELLING UNITS BY PRECINCTS, 1946-1950

Year	Precinct						Total	Per- cent
	1	2	3	4	5	6		
1946	3	-	3	-	3	1	10	4.7
1947	6	-	4	20	3	5	38	17.8
1948	12	2	6	6	5	3	34	16.0
1949	13	1	7	6	8	4	39	18.3
1950	16	2	57*	3	6	8	92	43.2
Total	50	5	77	35	25	21	213	
Per- cent	23.4	2.3	36.2	16.4	11.7	9.9		100.0
- - - - -								
1950	-	45 D.U.	1952	-	45 D.U.	1954	-	46 D.U.
1951	-	29 "	1953	-	31 "	1955	-	36 "

*Includes 50-unit University apartment building.

Source: Town of Amherst building permits.

mately for sale, to qualified veterans. This Memorial Drive housing project, built under town and government auspices, is Amherst's closest approach to public housing to date. This particular program was very successful and it has added an orderly and pleasant street of new homes to the community. Most of the houses have now been sold to veterans. Other housing has been provided by the educational institutions. Amherst College, over a period of many years, has acquired

fifty tax-paying dwelling units, the majority of which are single family units. These are rented to faculty members whose order of priority is determined through a point system and sometimes by expediency. Until recently the rent for these homes was relatively low for accommodations of this type. However, in 1954 rentals were boosted so that some subsidy was still provided but the rates were closer to those in town than they had been for some years. People living in college houses usually enjoy the same rent scale for some years after inflationary pressures have raised the costs of taxes and maintenance. Amherst College has recently announced that it will build twenty new faculty apartments this year. Such a move should relieve most of the pressure at that institution, and these units will allow the final demolition of some government housing which was originally built for married students. Some of these units were trussed up and held together for a few faculty members and their families when the number of married students began to drop off. The College also helps faculty members finance the cost of a mortgage on a house.

The University has had a considerably tighter housing situation than has the College. This institution has had no faculty housing until recent years, and one of its major problems has been to attract new faculty members when there was no guarantee that they would find adequate housing at a price which they could afford anywhere near Amherst. In

1950, the University erected an apartment building containing fifty units. This structure served to take the heat off for only a short time. Even with a rent scale which was relatively high for the Amherst area, these apartments were all occupied in a short time and considerable need still existed. This building was erected on state land by the University of Massachusetts Building Association which is alumni-sponsored. Funds for this building were raised through bond issues and, like the dormitories which this group has built, the building will be transferred to the state when it has been amortized. Although this is one way of providing housing, the principal objection to it is that structures which are erected on state land are tax exempt so that the town cannot collect any direct tax money despite the additional burden of this increased population. At present, University authorities are discussing the construction of a second faculty apartment building to be built, hopefully, on private land. The growth of faculty and staff at this institution is one of the major reasons for the tight situation which now exists in the local housing market, and it is hoped that some fairly direct way will be found to house at least a portion of the new staff members without further tax exemption privileges.

The various figures which are given in the tables on housing provide the best measure of the housing available in Amherst. One of the most significant figures is that indi-

cating a median contract monthly rent of \$38.39. This is quite high for any town in this area and, in fact, it is one of the highest rates in the state when compared with some of the following: Springfield, \$34.96; Palmer, \$25.16; Orange, \$22.55; Andover, \$26.33; Natick, \$35.43; Easton, \$24.55, and Hampshire County, \$27.37. Since the period of growth started after the war, all types of housing have been short in Amherst, and there does not appear to be any immediate solution to a problem which is already bad and which will probably get worse as the population grows. The housing which the town does have is in reasonably good shape. The percentage of owner occupied homes is low for a town of this sort and actually makes Amherst resemble factory towns like Spencer and Ware more than might be expected. These homes are worth \$3,000 to \$4,000 more than those in most surrounding communities and there are a considerable number of homes which are in the category above \$15,000. It not only costs a lot to rent in the town, but it is also expensive to build. Almost no new rental-type dwellings of any type have been erected except for those sponsored by the colleges. Many people have been doubled up in apartments that just aren't big enough and are itching to build or rent adequate dwellings, but it takes a large amount of money to build even a small house and rental property is already taken in most cases. Although most of Amherst's homes are better than one might find in many communities, the bulk of them were built

more than thirty years ago and the town will soon have a replacement problem in addition to caring for the new folks.

At present, the town has no real slums and few dwellings that would be classed as substandard on any urban scale. A half dozen homes in Factory Hollow and a similar number of shack-like structures, which are mostly on the outskirts, comprise the closest thing that we have to a slum. Here and there are houses in need of paint or repair but few that are actually dilapidated.

One major problem is that posed by some of the large homes of older vintage, which, in some cases, have been made into fraternity houses and sometimes into rooming houses, but in other instances are in between stages of usefulness. Many of these are clustered around the central part of town, particularly on the west. Local zoning amendments and University regulations on fire and safety have cut down the radius in which fraternities and sororities may spread. Many of the houses are too big for a normal family and too expensive to run. Rooms are let out on a large scale to young faculty members, who in many cases are single, and married students or graduate students take many of the remainder but don't often constitute anything more than a migrant group, soon to leave town, or constantly on the look for better quarters. Many of these big homes might be converted into fairly nice apartments and this has already happened to some, but with rebuilding costs as high as they are, the rent

which must be charged is often out of reach for the people who most need such space.

New homes are coming in some abundance and most of them are built outside of the center of town where not too much land is available and what is left hasn't yet been developed. North and South Amherst and the East Pleasant Street areas seem to be getting the majority of the new houses. If faculty and staff pay can go up without setting off additional inflationary spirals, it is possible that more and more new homes will be built as people decide that it is better to mortgage the next twenty years than it is to continue to live in unsatisfactory rented apartments.

CHAPTER VII
SCHOOLS AND RECREATION

Introduction

Amherst has begun to feel the bulge which other towns are also feeling in school enrollment, but in contrast to some other towns, it had nothing that could be called an adequate school building on even the lowest of modern standards. Many municipalities were in relatively bad shape when the additional children began to come along after the war, but few of them seem to have stagnated as much of the physical plant as Amherst did. When the future trend was first evident in 1946, the citizens of Amherst set up a special group, in conjunction with the School Committee, to study the entire picture of the physical needs of the town. Three possible solutions were suggested by this committee and the consultants that it hired. One involved a new 3-year senior high school and a rearrangement of lower classes in various ways in the remaining buildings. The second solution also advocated a new high school building, but this time for the top six grades. Lower classes were to be moved around accordingly, and, in both this and the first solution, the Amity Street School building was to be abandoned for school purposes.

The third possible solution was the one finally recommended by the committee. Under this plan the town would

build a new elementary school for the first six grades and eventually a kindergarten. Pressure on the junior and senior high schools could then be relieved by opening up two former elementary schools to upper class use. All three of these plans involved the purchase of a new, centrally located school site.¹

Like many other towns, Amherst had been pretty thoroughly built up around the rim of the central business district, except for the area owned by Amherst College and one large parcel of land on the north east side of town. This land, the former Stanisiewski farm, comprised some thirty-seven acres of rolling land, some of which was low lying but which apparently could be drained. The town had already purchased a relatively small portion of this area for a recreation field.

Not long after this recommendation, the Town Meeting voted to buy the farm for future school purposes. This was a bold and unusual stroke for conservative Amherst, but as the recommendation pointed out, it was a golden opportunity which the town could ill afford to pass up. Following the purchase of the site, plans were drawn up for a central elementary school of 14 rooms. After \$30,000 had been expended, the school was voted down in a bitter town meeting battle.

1. Joint School and Town Committee to Study the Physical Needs of the Schools, "Study of the Present and Future Needs of the Amherst School System," Amherst, 1946, p. 10.

Next, the school committee recommended a 12-room elementary school which was more conservative, architecturally speaking. As part of this plan, a 4-room addition was to be built onto the East Street School where some of the elementary bulge was already quite evident. This plan was unanimously adopted in the Town Meeting, but was then defeated in a referendum. After further study by a new committee a regional senior high school was proposed. The region was to be formed with Pelham, which was already sending tuition students to the Amherst schools and was tied in with Amherst on the basis of a superintendency union.

The school which was suggested, was to be a 3-year, 500-pupil capacity high school as far as classrooms were concerned, but it was to have common facilities such as auditorium, etc. for an eventual enrollment of 900-1000 pupils in Grades 7-12. Although the major need at the time was for elementary facilities, the town finally bought the idea of the regional high school. The shift in opinion was apparently due to the increased state aid available on the regional basis and because many townspeople were tiring of the long school fight and felt that any school was better than none and believed that the construction of this school would relieve pressure all along the line. One small bright spot in the otherwise dim picture for elementary schools up to this point, had been a compromise arrangement which involved a modern, two-room addition to the South Amherst ele-

mentary school. This was voted in the lull which occurred following the defeat of the most recent elementary proposal.

Present Physical Plant

Now, having seen a bit of the recent history of the efforts to provide new schools in Amherst, we must look, in some detail, at the existing structures before proceeding to a consideration of future needs.

Cushman School - a one and one-half story, frame building erected in 1927 on a plot of about three acres. This building has 3 classrooms housing grades 1-5 in 1955 with a total enrollment of 61. Some of the pupils in past years have been housed in an attic room. The two main classrooms have less than the recommended space, and the type of construction in this building makes its early removal mandatory, even though it is one of the most recent of the school structures.

The North Amherst School is a one story, brick building erected in 1870 and remodelled in later years when two rooms were added. It is located on Route 116, in the center of North Amherst, at a bad intersection. The four class rooms house 75 students in grades 1-4 in 1955. All the classrooms are inadequate in size and the building should be replaced as soon as possible. The two acre site is far too small, the location is bad and the structure obsolete.

South Amherst School - the original building was put up

in 1902 on a one and one-fourth acre plot. It has 2 classrooms which are a shade under size. In 1953 a modern 2-room addition was built alongside as a separate, but connected, structure and additional land was purchased so that the site was about doubled. The school now houses 93 pupils in grades 1-5.

East Street School - a two story, 5-room brick building erected in 1936 on a two acre site. In 1955 it houses 95 children in grades 1-4 but it is far too small to handle the number of children in the part of town which it serves. Only one of the classrooms is of adequate size.

Kellogg East School - a two story, brick building erected in 1912. It shares a three and one-half acre site with two other elementary buildings plus the junior-senior high. There are 4 classrooms above grade and 101 pupils in grades 2 and 3 use the building in 1955. There is adequate area per pupil in all classrooms. The building is not a safe one by modern fire standards and the site is far too small.

Kellogg West School - is a two story, brick structure, built in 1905. It shares the centrally located site mentioned above and in 1955, its 4 classrooms housed 102 students in grades 4-6. The rooms are adequate in size but the site is definitely too small, and the building needs considerable fireproofing.

Amity Street School - this is the oldest of the local school buildings as it was erected in 1868, although it was

remodelled in 1920. It is a two story, brick building with 4 classrooms which are adequate in size for the 101 first and second graders who are there. The site covers less than 18,000 square feet. This building should be abandoned as soon as practicable. It has been fireproofed, to some degree, in terms of the exits, but structurally the school is not sound for continued use.

The Junior High School was built in 1929 and is located on the three and one-half acre site already referred to. It is of two story, brick construction with 6 classrooms and 2 shops in the basement. The class rooms are not large but they now house 168 pupils in the fifth and sixth grades, since the school is no longer used for junior high purposes. The building is structurally sound but the site is far too small.

The Senior High School was built in 1916 and in 1936 a gymnasium and other facilities were added. It is of two story, brick construction and now contains 22 classrooms, many of which are of inadequate size. Other facilities such as the gymnasium and auditorium are too small or poorly planned and there is presently no room that can be properly used as a library. The site is very small, particularly when shared with the other schools. The Community Recreation Field on Triangle Street is used to supplement the school grounds. At present there are 407 Junior High students in grades 7-9 and 305 Senior High pupils in grades

10-12 using this building plus an additional number of tuition students.

Having looked at the present enrollment (total 1506, not including tuition students) we must now look toward the future with the thought that the present plan is inadequate, in many ways, even for the present enrollment. The new Amherst-Pelham Regional High School will solve some of the problems for the upper classes when it goes into use in the fall of 1956, but this school, even though it releases some space for lower grades, will not solve many of the problems faced by these grades. The school system has attempted to take care of all students to the best of its ability by holding double sessions and by carrying the pupils around by bus to make full use of the limited space available but this isn't really providing adequate answers even for today's children, let alone those to come in the future.

Enrollment Trends

Enrollment projections are important in the future of the school system of any town. At best they are likely to be inaccurate for several reasons. Even when they are based upon children already born the factor of migration is likely to throw the figures off a bit. Comparative enrollment figures for past years give some idea of what is likely to happen to any given class but the future may show that young people tend to remain in high school longer than they used

to and this factor would make a considerable difference in whether a town would have an adequate high school or not. When you get beyond the realm of the births which have already occurred you are definitely in the zone of prediction since no one can accurately forecast how far the rate will swing up or down in any given year or period of years.

An analysis of enrollment figures in Amherst has shown the following pattern which has prevailed in recent years with minor differences: the number on top is the grade and the number on the bottom is the enrollment in that grade as a per cent of Grade 1.

1	2	3	4	5	6	7	8	9	10	11	12
100	93	91	90	90	90	95	95	95	85	80	75

Table 19 is a projection of school enrollment up to 1975. In general, it is based upon the "low" population forecast given in Chapter IV. It utilizes actual births to date and then follows the birth rate pattern used in the population forecast. The additional children migrating into Amherst after birth but before school age have been assumed to have been balanced out by mortality plus the children born to students or graduate students who appear on the pre-school census and in the birth statistics but who don't actually stay in town long enough to attend school in most cases. After children actually start school it is assumed that there

TABLE 19
ESTIMATED ENROLLMENT, 1956-1975*

Year	Grades 1 - 3	Grades 4 - 6	Grades 7 - 9	Grades 10 - 12	Total
1955 (actual)	434	362	403	307	1506
1956	429	363	401	336	1529
1957	438	396	392	350	1576
1958	447	420	379	344	1590
1959	468	416	391	344	1619
1960	520	423	415	336	1694
1963	530	519	442	452	1943
1966	528	509	533	380	1950
1969	542	507	534	462	2045
1972	546	521	531	459	2057
1975	555	524	548	456	2082

*Does not include tuition students.

will be one child added to each grade each year through the first six grades from in-migration. Since most of the new people coming to town will be younger people, it is assumed that there won't be many older children added to the school system. It should be stressed that this enrollment estimate was based upon the "low" population forecast in order to arrive at a conservative idea as to the future growth; actually, the figures given above should be taken as a bare minimum and it is quite likely that school enrollment figures

will probably run quite a bit higher.

It is quite evident from these figures, and facts already given, that something must soon be done about the elementary situation. There isn't time, at present, to worry about tearing down any of the old schools. They will all be needed in the near future even if a new school is built. If all the elementary buildings are used, a total of 28 rooms will be available and figuring 25 students to a room these buildings have a capacity of 700 pupils; and if the enrollment grows as estimated, there will soon be over 1000 elementary pupils and even now there are almost 800 to be accommodated. It will not be possible to move any of these children into the present high school because that will be just about filled up with the growth in junior high grades. The new high school will probably be filled by 1958 in view of the fact that Leverett and Shutesbury have joined the Regional School District. Those towns, along with Pelham and Sunderland, already send a growing number of youngsters to the Amherst schools on a tuition basis. Present estimates by school officials predict a peak enrollment of tuition students of more than 200 per year. If the high population forecast turns out to be closer to actual fact, then the schools will really be in for some hard going. There is talk of reinstating the kindergarten which Amherst had prior to 1920, but at the moment, the school housing situation is so desperate that this group must, of necessity,

be left out of the picture for the near future.

Recreation

In the past Amherst has not really needed the recreational space which more densely populated areas must have. Even today, there are considerable open areas thrusting, like fingers, toward the heart of the town. Although these are not all open to the townspeople for active recreation, they do provide pleasant green spaces and the fact that the colleges own and maintain them relieves the town of some financial burden. Although many people think of the educational institutions as being only a drain on the tax base, there are many compensations which accrue from these places. Amherst College has recently built an artificial ice rink and it is open several times a week for public skating at nominal prices. The College also owns a nine-hole golf course which it leases to the local golf club that is open to anyone from the town. At certain times the swimming pool is open to organizations like the Boy's Club, the Girl Scouts, etc. When there is snow, a small ski tow operates on the campus and is open to anyone who wishes to use it. The University has somewhat similar things, open to the general public in some cases or restricted to the Scouts, etc. when something like the pool is to be used. Although it can not be classed as active recreation, the opportunity that the townspeople have to attend sports events such as

football, gives many folks an occasional afternoon that is interesting and outdoors in the sunshine. Amherst College maintains a wildlife sanctuary of nearly 100 acres which is wooded and contains several small ponds and all of this is within fairly easy reach of town.

Recreation and schools are normally linked in various ways but in this respect Amherst has not fared too well. Most of the schoolgrounds are below the minimum required area standards even for pupils, without worrying about recreation facilities for others. Virtually all the school sites in town provide just enough space for small children and could be used only as tot lots when school was not in session. The baseball diamond used by the Little League in North Amherst is adjacent to the school, but its location is poor because of the main road which skirts it on one side and makes access from the community difficult.

Soon after the war the town began work on the Community Field so that it could gradually be developed as a center for several types of recreational activities. A very alert Recreation Commission has repeatedly pleaded with Town Meeting members for support and over a period of several years the facilities on about four acres of land situated on Triangle Street have grown steadily. The location is very central and with the new high school on adjacent land this recreation area will receive double use on the part of townspeople and pupils. A good baseball diamond has been

built and the town has also provided funds for a wading pool, football field, etc. At the Town Meeting in 1955, funds were appropriated, to be matched by a similar amount from public subscription, for the construction of an outdoor swimming pool. A steel pool with bathhouse was constructed to the west of the baseball diamond.

In Mill Valley, toward the southern part of town, land was left for a public area to be known as Groff Park. The Recreation Commission tried for several years to get the town interested in developing a swimming pool by building a dam across the adjacent stream. Water pollution problems and location away from the center held this attempt down but the area has been developed for picnics and has a baseball field. It totals about ten acres.

The Town could use some playgrounds scattered around independently of the schools although this does not seem to be a pressing need so long as there is open space near most neighborhoods where children can play, but of course there is no supervision. Probably the best answer is to develop sizable play areas in conjunction with new schools.

CHAPTER VIII
GOVERNMENTAL STRUCTURE AND PROBLEMS

Introduction

Amherst is incorporated as a town in Hampshire County. Until recently it had a 3-man, paid Board of Selectmen, and the chairman worked nearly full time as a town administrator. Then, under the provisions of Chapter 11 of the Acts of 1951, a new Board of Selectmen of five unpaid members was elected and this group hired a Town Manager who took office on May 10, 1954. His first job was to reorganize the town government under the administrative powers granted by the town manager charter. The Selectmen operate primarily as a policy making board. Over a period of many years, elected and appointed positions in the town government in Amherst have been filled more frequently than not with conscientious citizens who have had the best interests of the town at heart. In the running of its affairs, Amherst has been particularly fortunate to have had very able and intelligent men in the position of Moderator, which can be, and frequently is, a pivotal position in the administration of town government. Amherst had good government under the older form of organization, but the town and its many problems were getting too big and complex for amateur operation. Under the Town Manager approach, local citizens seem to be getting responsible government through the present policies

of the Board of Selectmen and the administrative ability of the manager.

At present, Amherst is not operating on a formalized six-year capital improvement program, but the Finance Committee seems to think along those lines whenever possible. There is undoubtedly something to be gained by moving in the direction of a regular program of this sort.

The Property Tax

One of Amherst's greatest problems concerns the large amount of tax-exempt property which lies within its borders. Although there are many benefits which the town gains by virtue of the location of the College and the University, there are a good many indirect costs, such as the need for additional police and fire protection, wear and tear on town roads because of student automobiles, expenditures for education for children of married students and faculty members who live on the campus or adjacent to it on state land. In 1952 the total valuation of property in Amherst was \$32,952,099, but exemptions excluded 62.8% of this amount from the tax lists.

Generally speaking, Amherst's financial house seems to be in reasonably good order. For comparative purposes, it is to be noted that the per capita assessed valuation in 52 municipalities in Massachusetts in 1955 was \$1,810 and the per capita tax levy was \$93.93. In January 1955, the per

TABLE 20
TOWN TAX AND DEBT FIGURES*

<u>Tax Rate</u>		<u>Tax Levy</u>		
<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>	<u>Per Capita</u>
1955	\$55.00	1955	\$718,734	\$87.60
1954	52.00	1954	668,482	82.50
1953	47.00	1953	594,468	74.10
1952	47.00	1952	576,133	72.10
1951	47.00	1951	555,464	71.80

Assessed Valuation

<u>Year</u>	<u>Amount</u>	<u>Per Capita</u>
1955	\$12,976,263	\$1,582
1954	12,760,000	1,595
1953	12,538,225	1,567
1952	12,258,145	1,532
1951	11,712,725	1,521

Debt

<u>January 1955</u>	<u>Amount</u>	<u>Per Capita</u>
General Purpose (net)	\$481,000	\$58.73
Public Service (net)	<u>340,000</u>	<u>41.46</u>
Net Total	\$821,000	\$100.19

December 1953

General Purpose (net)	\$526,500	\$65.81
Public Service (net)	<u>360,000</u>	<u>45.00</u>
Net Total	\$886,500	\$100.81

*Per capita figures on author's estimate of population.

capita net debt for this same group was \$115.60, of which \$100.06 was for general purposes and \$15.54 was for the public service debt.¹ In 1940, the average tax levy per dwelling in Amherst was \$135 and in 1950, it had risen to \$180.

Planning and Zoning

The Amherst Planning Board was first adopted under the provisions of the early planning enabling act, but in 1951 the Board was re-established under the provisions of Chapter 41 of the General Laws, Sections 81 a-y. It is a nine-man board and over the years it has had an opportunity to draw on the talent available in town because of the educational institutions. Members with training in civil engineering, forestry, landscape architecture, municipal government and planning have added to the breadth already provided by several conscientious bona fide residents of the town. The Planning Board has kept almost entirely out of "town politics" and its recommendations have usually been accepted unanimously. The Planning Board has a published set of regulations covering subdivision control. The number of subdivisions now being referred to the Board annually has picked up considerably after an initial reluctance by builders to cope with the regulations. A Zoning By-law was

1. Massachusetts Department of Commerce, Monograph #41, Town of Amherst, 1955.

adopted in 1940. It provides for three classes of districts: Limited Residence, General Residence and Business. Minimum lot widths are 80 feet in the Limited Residence District and 60 feet in the General Residence District. There is no square footage requirement. This by-law has been amended several times but should be entirely redrafted in the near future. The Planning Board began, in 1955, to operate with a greatly increased budget. There is a three-man Zoning Board Of Appeals.

The town has a building code, but it is neither modern nor strict. It is hoped that a better building code may be drawn up in the future. The Fire Chief doubles as Building Inspector. In the past the town hasn't been large enough to require anything like full time on this and other inspection jobs, but as the community grows, it is evident that the administration of this and other regulations, including the enforcement of the Zoning By-law, must be improved.

Protection of Persons and Property

The Amherst Police Department is a small but well-equipped unit with a new headquarters in the basement of the Town Hall. The Department has eight regular officers, six special officers and an auxiliary group. There are two police cruising cars. The expansion of the University will require additional police officers in the near future, partly because of the growth of the town itself but also

because of the tremendous number of student vehicles.

The Fire Department appears to be well-staffed and provided with considerable modern equipment if one looks only at the town itself, but this department of twelve men also protects over 5,000 students and millions of dollars in college property. The main fire station is of fairly modern design and a new section was recently added at the rear to house the town ambulance and additional fire equipment. An 85-foot aerial ladder was purchased jointly by the colleges and the Town in 1954. One 750 GPM pumper was added in 1950. All other major pieces of equipment date back into the 1930's and 1940's and a new pumper should be added soon. One pumper is stationed in the North Amherst area but is not manned. Both the Fire and Police Departments have modern radio equipment. The Fire Department has a large number of call men to augment the regular firemen.

CHAPTER IX
OUTLINE OF A COMPREHENSIVE PLAN FOR AMHERST

Introduction

The material which follows has been drawn up as a basic outline of some of the steps which should be taken in Amherst if the town is to properly anticipate the growth which has already been discussed. This plan is not, nor is it intended to be, a detailed, step by step approach to all the problems which the town may have - now or in the near future. Its aim is to point out the present strengths and weaknesses of the community and to show, in a broad way, a two-stage program of development which should allow the town to keep pace with the expected growth in population by providing things that will be needed as they are needed. No long or short range financial program is presented because the compilation of detailed statistics on the present financial situation of the town and the preparation of such a financial program is beyond the scope of this work.

Amherst differs from many communities in a number of ways. It would appear to be on the brink of a considerable increase in population and yet it isn't going to have the greatly increased tax base which is found in growing suburban towns like Natick or West Hartford. It is unlikely that any large taxable plums such as Raytheon, Lord and Taylor or the Prudential Insurance Company will want to

locate in Amherst. It is also unlikely that any number of fine new \$35,000 houses will be lined up along our streets waiting to be assessed. We can expect growth but much of it will be of the type which we can't reach very well under our present forms of state and local taxation, at least in the initial stages. As the new students pour into town with their automobiles, additional police will be necessary and yet Amherst itself won't be collecting many of those excise taxes which could help to pay for increased police coverage.

After making the survey of the town, which is contained in this study, the author feels that Amherst doesn't look too bad, in general. Certainly there are weak spots here and there that require attention if the town is to run smoothly and efficiently in the future. The town itself is not a problem area in the sense that many towns and cities are. A great deal of new growth has been forecast for the town, but with relatively minor changes in the present physical plan the place should be good for a number of years, provided it receives occasional attention as the pattern of growth emerges.

Basically, the plan which is proposed here, is to cover a 20-year period and would be accomplished gradually but with two 10-year periods during which major changes or additions to the plan or to the physical aspects of the town should be accomplished. The planning period is split into these periods partly for general convenience and also because

the present enrollment projections of the University extend through 1965. As that year approaches, there should be some clear indication as to whether there will be an end to major institutional growth, whether there will be a lull with continued growth later or little by little, or whether the 10,000 enrollment figure is just one step in a whole flight of stairs leading to what might become a tremendous institution and a relatively large supporting community.

Basic Land Use and Density Pattern

It is hoped to retain the general land use pattern which prevails at present; namely, a central built-up area with the colleges lying on the periphery of this area and continuing to provide a transition zone leading to more open development beyond. This open development would contain several village clusters as at present. Density in these village centers would be allowed to rise above that found in the intervening areas but, hopefully, not as high as that found in the central part of town. Central Amherst is now pretty well developed so there is little that can be done to change the basic density pattern now existing within a radius of almost a mile, with the possible exception of a strip of undeveloped land running along the western border of the town. Since some of this is low it may not be developed until the day when the land situation is really tight.

The present village clusters at North Amherst and South Amherst should be retained and encouraged to become the centers of even larger tributary areas on each end of town. Cushman is not now large enough to constitute a separate village and its proximity to North Amherst makes its development as an independent area seem remote even if it were desirable. The East Amherst area has been slow in developing in the present century, partly because it was lower and used to have the reputation of being on the other side of the tracks, which in this case shouldn't make any difference because the land is as pleasantly situated on the east as it is on the west. Although there is now considerable population on this side of town and more and more people are erecting homes on the way to and into Pelham, it seems unlikely that a separate neighborhood framework will develop there because of the proximity to the center of town.

In general, it would be desirable to hold the density down to six to ten families per acre in the most intensively developed areas. It is assumed that the University will ultimately find some group to finance faculty housing on private land. This would allow the building of two-family detached houses at some location, presumably to the north, when the time came to put them up. It would be hoped that such densities would not involve large areas. Apart from this most intensive use, a desirable density for sections that are really in the center of North Amherst but not yet

developed would be three families per acre where there is relatively easy access to the existing sewer system, or where, without major additions, new sewers can be provided. The next zone beyond the 3 F/A area would, hopefully, be developed at a density of 1 F/A. As housing works out toward the extensive areas of more open land 2 or 3 A/F should be the maximum development both with respect to existing utilities and possible extensions and also because this sort of density will help to retain the open countryside flavor which is found at present and which is so desirable.

The development of a new shopping center on the east side of North Pleasant Street above the University is recommended. This should have a minimum of three to five acres to allow for future growth, but for the present, no more than ten stores would be contemplated and these might take several years to develop. Such an area could be adjacent to the main intersection which will ultimately occur in this region if the University's plan for moving non-campus traffic to the east goes through. If a shopping center were built it could be joined to the Grandview Heights development and thence to East Pleasant Street making it readily available for a fair-sized tributary population. Development of the area recently picked by one builder for a shopping center right in North Amherst is not recommended because of the relatively poor location and limited means of access plus

the proximity to an intersection involving a fair amount of through traffic.

For the South Amherst area, the development of a shopping center at the intersection of Pomeroy Lane and West Street is recommended. This location is already zoned for business. The north-east corner would be the most desirable since it would then be between South Amherst center and West Street and a properly designed business area would allow circulation from South Amherst without getting onto West Street. On the opposite corners it might be desirable to erect a church or to hold the sites for some sort of public or semi-public use so that the intersection could retain an open feeling. This location was picked over any site in or adjacent to the present center of South Amherst. This group of houses, community building, church and school constitutes one of the pleasantest vistas in Amherst and is more reminiscent of the old New England common than any other spot in town. If possible, it should be kept this way. Since most people travel to stores by car anyway, the site should be picked carefully, after weighing matters of circulation, convenience and aesthetics.

If the new growth can be spread out the town will not be pushed into major extensions of the sewerage system and the community will stand a better chance of maintaining the present semi-rural feeling which one gets in many parts of Amherst today.

Zoning and Subdivision Control

The zoning by-law should be entirely rewritten to take advantage of newer forms of control worked out in recent years and to better guide the growth of the town into proper channels. The present zoning by-law is completely out of date in terms of the sort of development which is quite likely to occur in Amherst in the near future. The minimum lot size is far too small and it is presently maintained through a frontage requirement only. The zoning by-law is the best tool, along with subdivision control, for moulding the future character of the community, and it should be developed so that it can be used most effectively toward that end. The town presently utilizes much of the standard subdivision regulation material suggested by the state but could be more strict than it now is on some aspects, such as paving, sidewalks, sewer tie-ins, etc. It is recommended that the subdivision control regulations of the town be stiffened so that the subdivider will provide all the items which he can reasonably be asked to put in. Adoption of Chapter 80 would allow the town to assess betterments against abutting property owners. This might help clear up a backlog of street paving jobs and sewer and water extensions which, although not critical, do cause some problems.

The Central Business District

The center of town, where most of the stores are located, presents some problems but most of them are not sufficiently serious so as to require immediate and expensive attention. Some cleaning up of the general appearance on the part of the store owners would improve things greatly. Parking is a little tight at some busy periods but isn't really critical as yet. However, it would be well for the town to set aside some areas for off-street parking as the opportunities present themselves. Perhaps the most logical site lies on the east side of South Prospect Street behind the existing stores. The two large rooming houses which are there, plus a couple of smaller homes, are all fairly old and in need of repair. As they come on the market, the town would do well to buy them and ultimately, when the Amity Street School is torn down, a right of way well over a hundred feet wide would be provided all the way to Amity Street. Other areas behind existing stores could be developed for parking through the joint efforts of the town and the businessmen. Spring Street along behind the Lord Jeff Inn would provide an excellent site for parking which would be useful for the hotel and churches as well as during business hours. All day and all night metered parking somewhere in that area would be convenient for many who do not need to park right in front of a store. As some of the

older and less efficient houses go on the market a careful look at the usefulness of their sites for town purposes should be made.

One of the areas which should someday be available, if the town wishes it, is the present school ground between Lessey Street and Kellogg Avenue. The school situation will certainly be so tight for some years that these buildings will have to be kept in school use but, toward the end of the 20-year planning period, or before if possible, the town should thoroughly investigate the possibility of moving the municipal offices into one or more of the school buildings. The old junior high building would appear to be most useful from this standpoint and not too large as is the case with the present high school building. Development of this area for town government purposes and metered off-street parking could go hand in hand with gradual abandonment of the buildings by the schools. Purchase by the town of the large nursing home on Lessey Street would open up the western side of the school property from Kellogg Avenue all the way to Lessey Street. This strip of land could be highly desirable for off-street parking and it would be directly adjacent to a large block of stores.

Development of the business district in ribbon fashion along North Pleasant Street to the north should be carefully controlled or prevented if possible, since that is already a congested street and with the growth of the University it

will get worse. Sufficient area for business expansion is already found on East Pleasant Street and it is now zoned for this purpose. Use of this frontage all the way to Triangle Street is recommended for retail business purposes. Beyond that, no major expansion of business around the CBD is desirable. With the development of shopping centers in North and South Amherst as recommended, there shouldn't be a need for further development at the center. If the town offices are ultimately moved to the school area the present town hall site would make an excellent location for a large store.

The main intersection has been previously mentioned. It is a point of friction between pedestrians and vehicular traffic. To change it so that Amity Street and Main Street would come in opposite one another would be a very expensive job and certainly during the first ten years of the planning period it would probably not be worth the cost. A careful reassessment of this problem, after the by-pass route is constructed to the west, may show that some minor readjustment of the grades, curbs and traffic islands, combined with traffic lights, would solve many of the problems.

Roads and Highways

The circulation system of a town is just as vital as is the circulation system in a human being in terms of a healthy, functioning life. Amherst suffers at present from a fair

amount of through traffic on state highways. Some of this is soon to be removed, however, since the State is about to build, in several successive stages, a nine-mile by-pass on Route 116, to the west of town. As indicated on the circulation plan, this road will take much of the north-south traffic out of town and will insulate the center of town from much of the University traffic which now clutters up the place. Completion of this road will help the town in many ways which will have to be assessed carefully after the road has been in operation long enough to change people's habits.

The state solution for the by-pass on Route 116 is an excellent one and it removes a major headache, but Route 9 still traverses the town from east to west and brings much through traffic into the built-up sections. Several routes for a by-pass have been suggested to the south. Mill Valley is a possible one but seems to involve too many problems where the river and South Pleasant Street meet and it would bring through traffic up into town more than is necessary. Another route down Depot Road from Belchertown into the center of South Amherst and thence to the west is possible, but it would confuse the South Amherst situation very badly. The best route would seem to be the one along the foot of the Holyoke Range on Bay Road. This avoids any built up area and it provides the shortest route across from Belchertown to Hadley and Northampton, cutting a couple of miles

off the present route. This route would also have an advantage in that it would by-pass the center of Hadley. Whenever the new Route 9 by-pass is located, it will have to cross the route of the new north-south highway and some sort of traffic separation will be necessary. Plans call for a divided lane, limited access highway for Route 116 and it is supposed that Route 9 will also be of this type when it is built. Probably an interchange will have to be provided at this point along with the one where Route 116 will cross Northampton Road and also where the new access road from the University ties into Route 116.

The southernmost route for the east-west by-pass has other advantages apart from those mentioned which were mainly of benefit to the town itself. The approach from Belchertown to the Bay Road area is such that a good route could be worked out without going to any trouble to straighten existing curves on Route 9 farther to the north. That would have to be done if the by-pass didn't utilize the southern route. It would also appear that the Bay Road route involves smoother topography and less swamp than either the Mill Valley axis or the route through South Amherst.

Whether Route 9 goes through Mill Valley or not, something must be done at that point to remove the narrow bridge and sharp curves. The situation is complicated by East Hadley Road coming in just north of the river and Mill Lane which angles in from the east and hits the main road just

south of the river. The area involves some grades as well as the stream running diagonally to the whole intersection. One solution which seems to be possible with respect to the topography is to swing East Hadley Road to the north in a sweeping curve so that it follows the contours northeasterly for a short distance and then ducks east to intersect with South Pleasant Street. This road would then cross South Pleasant Street just north of the Highway Department building and proceed in an easterly direction crossing Mill River via a new bridge. A new road parallel to Mill Lane, then cutting toward the northeast across the stream to a junction with South East Street would open up new land for development and would allow the discontinuance of the present intersections at each end of Mill Lane. To provide proper access to this latter street, one short section of road could be put in near each end of Mill Lane to connect it with the new section of road. In order to avoid a new railroad underpass it might be possible to carry the Boston and Maine track over to the Central Vermont farther to the north so that the section of track which now parallels the Central Vermont way down into South Amherst could be eliminated. This move would also make unnecessary a new railroad underpass on South East Street. The continuation of the East Hadley Road extension might ultimately cross South East Street and tie in with Stanley Street. All of this might very well be carried out sometime during the first ten years of the planning period

if the growth of population toward the southern end of town made expedient a better connection between the east and west sides of town somewhere south of the center. Any cross connection which might be tried north of the Mill Valley area would run into topographical problems and still farther north into the College campus.

Within the second 10-year planning period the new road extending from Hadley via Mill Valley to the east might be carried along Stanley Street to cross Belchertown Road and thence across the broad flood plain to Pelham Road. This would mean that through traffic from Northampton and the west could by-pass the built-up section of town and proceed in a more direct way to Pelham Road and thence out to Route 202 for Boston, etc. As Route 2 is improved in the Athol and Templeton areas it will become more and more useful as the main east-west road for traffic from the central Connecticut Valley area moving toward eastern Massachusetts and the Maine coast. The diagonal by-pass which is proposed would solve several town circulation problems as well as providing a better route for through traffic. As part of this Mill Valley project it is assumed that the present bridge over the Mill River on the State Highway would be replaced with a new structure farther to the west. This would allow the removal of the two bad curves and would make possible a better intersection with Shays Street, which will become more and more important as South Amherst grows.

One other by-pass that will be needed is a connection between Route 63 and the new Route 116 above North Amherst. Bull Hill Road in Sunderland and Leverett would seem to offer about the only route in terms of the topography.

On the west side of town Lincoln Avenue is the best route to and from the University area but it terminates at Northampton Road so that some traffic is needlessly diverted through the center of town. A practical way to avoid this would be to bring Lincoln Avenue across Northampton Road and swing it east to South Pleasant Street. Woodside Avenue should then be made one-way where it enters Northampton Road. Orchard Street should be discontinued where it joins Northampton Road and Walnut Street would be cut off at Woodside Avenue.

The University's expansion plans will obviously require a large investment in campus roads and the plan for that program is now being worked out. Changes by the town in that area should wait until the University's program is well under way.

A few minor changes in the routing of traffic should be made at a number of locations which will become congested as the population grows. On the South Amherst Common the traffic should be made one-way, going north on the east side and south on the west side. Rounding off a few corners and the installation of some traffic islands should complete this job. Improvements can also be made at the north and

south ends of the East Amherst Common. On the north end, cutting back the grass toward the south and widening the throat into South East Street would help greatly combined with channelization of the intersection. Somewhat the same thing could be done at the south end of the Common leading out to Belchertown Road. One other intersection which needs attention is at the point where Northampton Road strikes South Pleasant Street. Widening Northampton Road and College Street, removing most of the vertical curve to improve sight distances and providing channelization should do the trick.

Schools and Recreation

Probably the biggest challenge facing Amherst concerns the crowded situation in the schools. One possibility is that the University will build a practice school for its education program and take some of the load off the town, but the extent to which this would aid the town is hard to judge at this time and, whether the State builds such a school or not, Amherst will need a new elementary school in North Amherst very soon - in fact such a building is urgently needed now in view of the inadequate structures in use at North Amherst and Cushman. The site for this school should be purchased right now even if there is no intention of erecting the building in the near future. The best site would seem to be one north of Grandview Heights. This would

be central for both Cushman and North Amherst pupils. A large site of at least fifteen or twenty acres would provide for expansion and also leave room for a recreational development for North Amherst. Although the present school committee believes in neighborhood schools for the first three grades and then central elementary schools for the older children, it is recommended that a school site be picked out in South Amherst to provide for the sort of growth which has been projected. If such growth comes, the school in North Amherst would be needed during the first 10-year stage of the planning program and the South Amherst school would probably be needed in the second 10-year period. It is possible that the Triangle Street school site won't be big enough for both the regional high school and junior high development plus a large central elementary school. Two possible sites for an elementary school include the area between Lincoln Avenue and North Prospect Street and the area just north of Chestnut Street and not far from the Triangle Street schools. A right of way from Chestnut Street into the high school site would be highly desirable if this latter site is picked for an elementary school.

If school sites are picked as recommended, good areas for large scale recreational activities will become available in each of the three major sections of town, and as the population grows some tot lots can be provided where there is unused land.

Utilities

As has been pointed out previously, Amherst is fast reaching a point where it will not have enough water. Attempts to get water in Sunderland and Leverett have fallen through either because of the hostility of the other town or because there did not seem to be a sufficient supply of good quality water. For the present it appears that an arrangement can be made with the Town of Hadley to tie into the wells which they recently put in between Amherst and North Hadley. These are relatively convenient and it would be a good idea for the towns to have a cross connection anyway. In the meantime work is under way on an engineering survey to determine whether Amherst, the Town of Belchertown and the Belchertown State School can share in the vast supply so close at hand in the Quabbin Reservoir. The Metropolitan District Commission through its Chief Water Engineer, Mr. Toole, has recently indicated an interest in this project and he has directed their engineering staff to look into the possibilities of such a project. Water might be brought in from the Chicopee Valley Aqueduct or directly from the present outlet at the dam or perhaps through a new outlet on the west side of the reservoir. In this case it would have to be pumped over the ridge to a gravity feed leading to the towns.

The sewage disposal problem of the town can apparently

be taken care of through the expansion of the present treatment plant. An expenditure of \$100,000 to \$150,000 will probably be sufficient to double the capacity to two million gallons a day. If a new outfall is necessary in the future, secondary treatment could be added to the present primary treatment and the effluent could then be dumped into the nearby stream. In that case the present outfall might be used by the Town of Hadley.

Recommended water and sewer extensions are indicated on the accompanying map.

Conclusions

The Master Plan which is proposed is unique as all master plans should be. Amherst itself is quite unique as we have seen. It has an unusual economic base which contains both advantages and disadvantages. The inherent stability of a college town in the economic sense can not be overlooked. There are also many cultural, recreational and other advantages which go with the fact that it is a college town. The people who are attracted to such a town are quite likely to want to stay here. This means that they will ultimately build and maintain nice homes within the realm allowed by their modest but steady incomes. There should be little of the labor and economic strife often associated with industrial cities. In terms of appearance, Amherst should be a nice looking town without any of the poor

housing, streets congested with trucking, smoke stacks belching fumes and piles of industrial wastes which are found even in smaller manufacturing centers.

On the other side of the ledger there are obvious disadvantages. There will always be a tax-gathering problem where tax exemption is found in large measure. Municipal income will always lag behind growth. Some local congestion will result from the large number of students who will pour in. Schools will continue to be a major problem as the University expands.

Looking at the good and the bad, we still see a town in reasonably good shape, even today without much conscious planning having been introduced as yet. The master plan given in these few pages is an outline of some of the things which should be looked into first. Increased expenditures for schools and some other items must be anticipated, but the funds necessary for the capital public works items which are proposed should not be too hard to raise if the projects are anticipated as the growth of the town proceeds. The increase in the size of the University is a pretty sure thing, but this change need not upset the present complexion of the town. If attention is given to proper planning as the growth occurs, Amherst should still be a pleasant place in which people may live and work.

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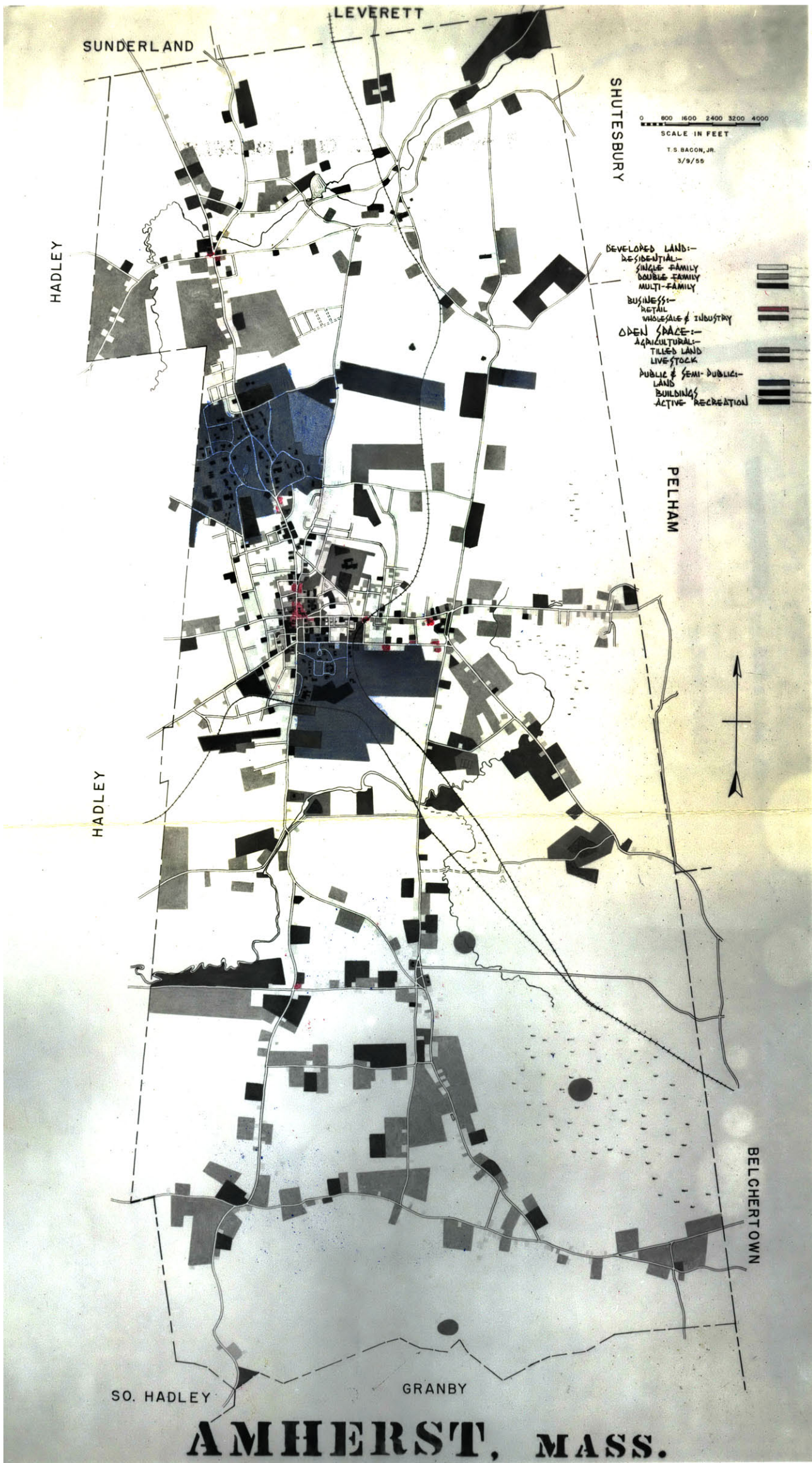
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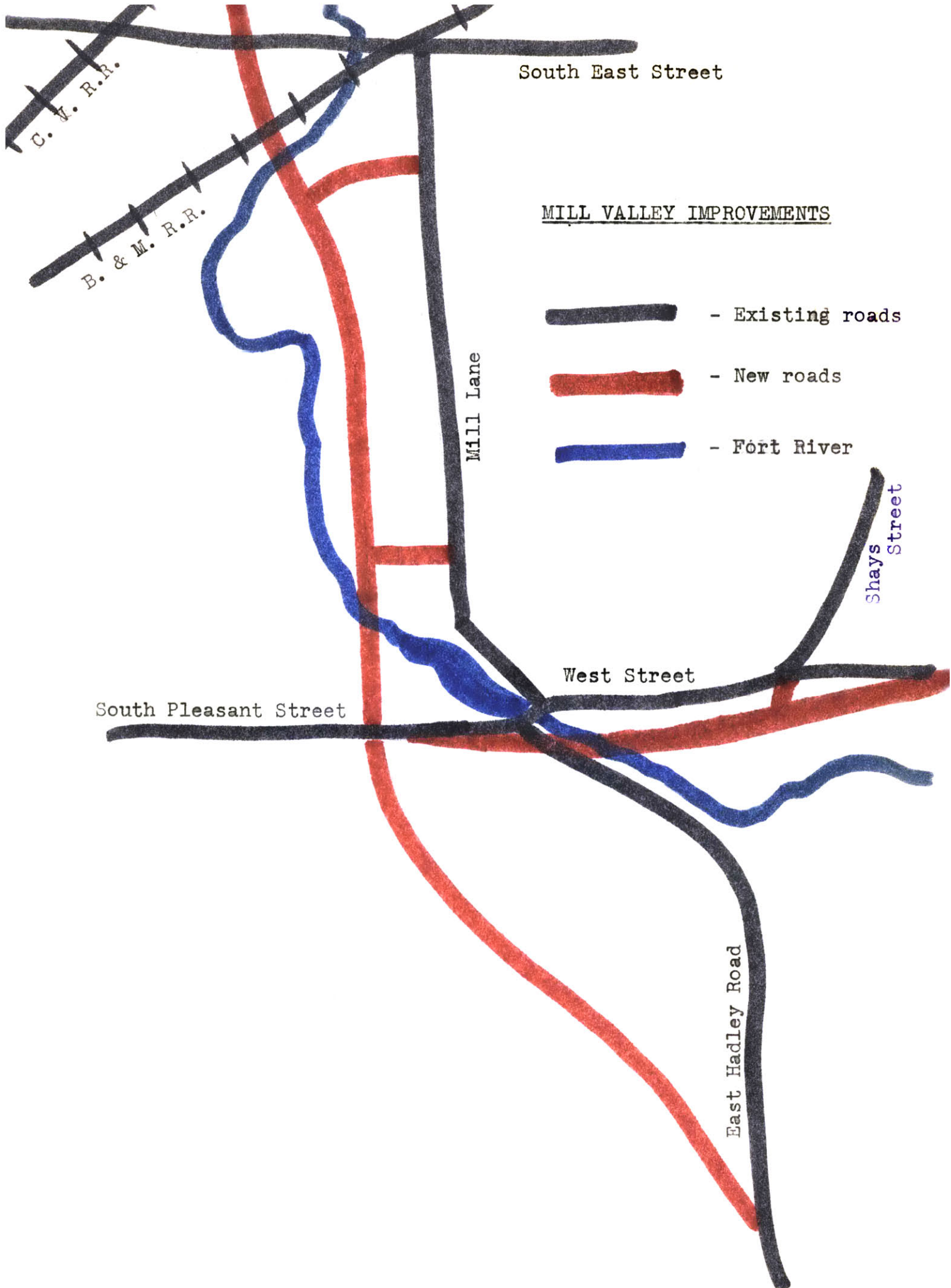
Figure 1

TOPOGRAPHY








EXISTING LAND USE * Figure 2



South East Street

MILL VALLEY IMPROVEMENTS

-  - Existing roads
-  - New roads
-  - Fort River

Mill Lane

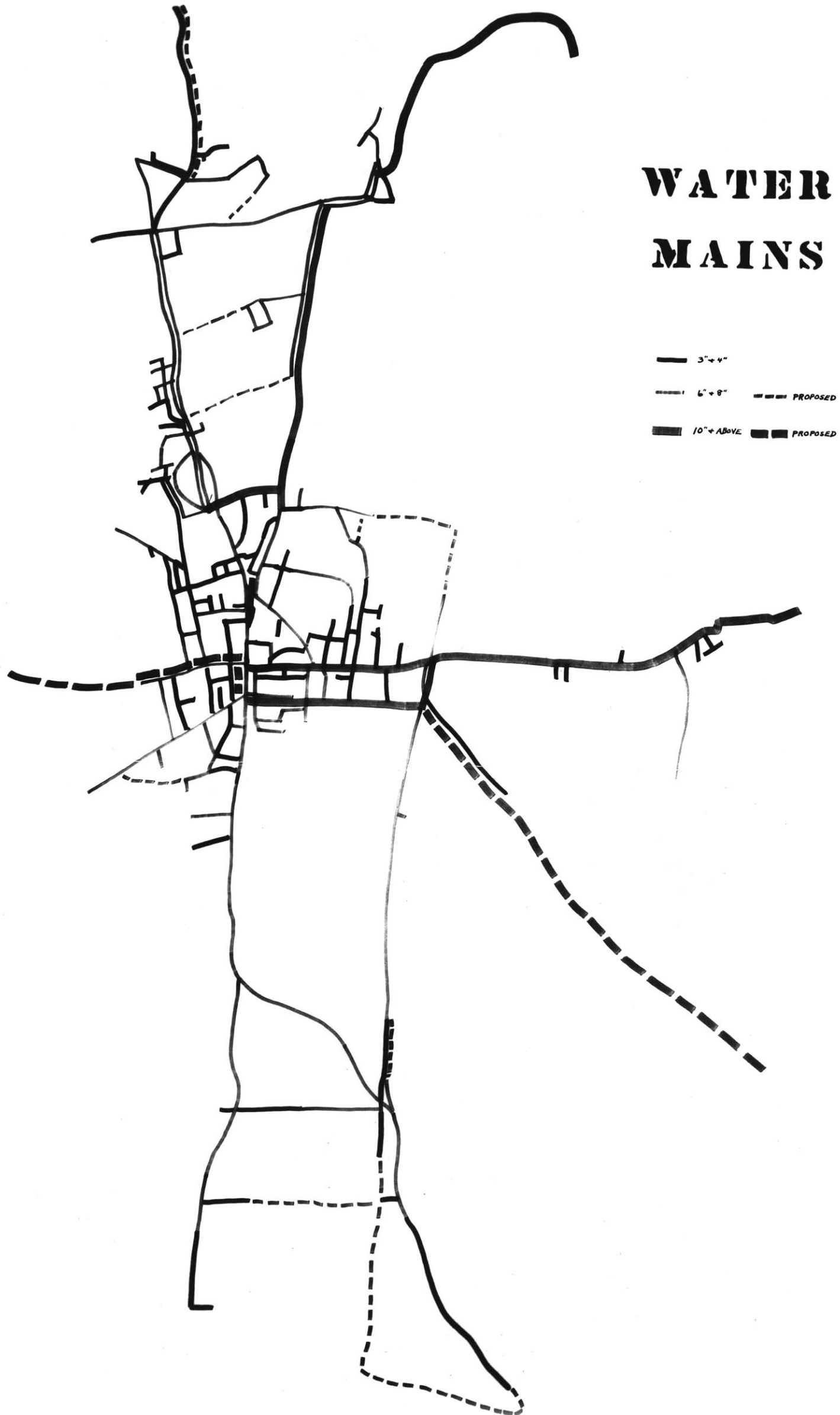
Shays Street

West Street

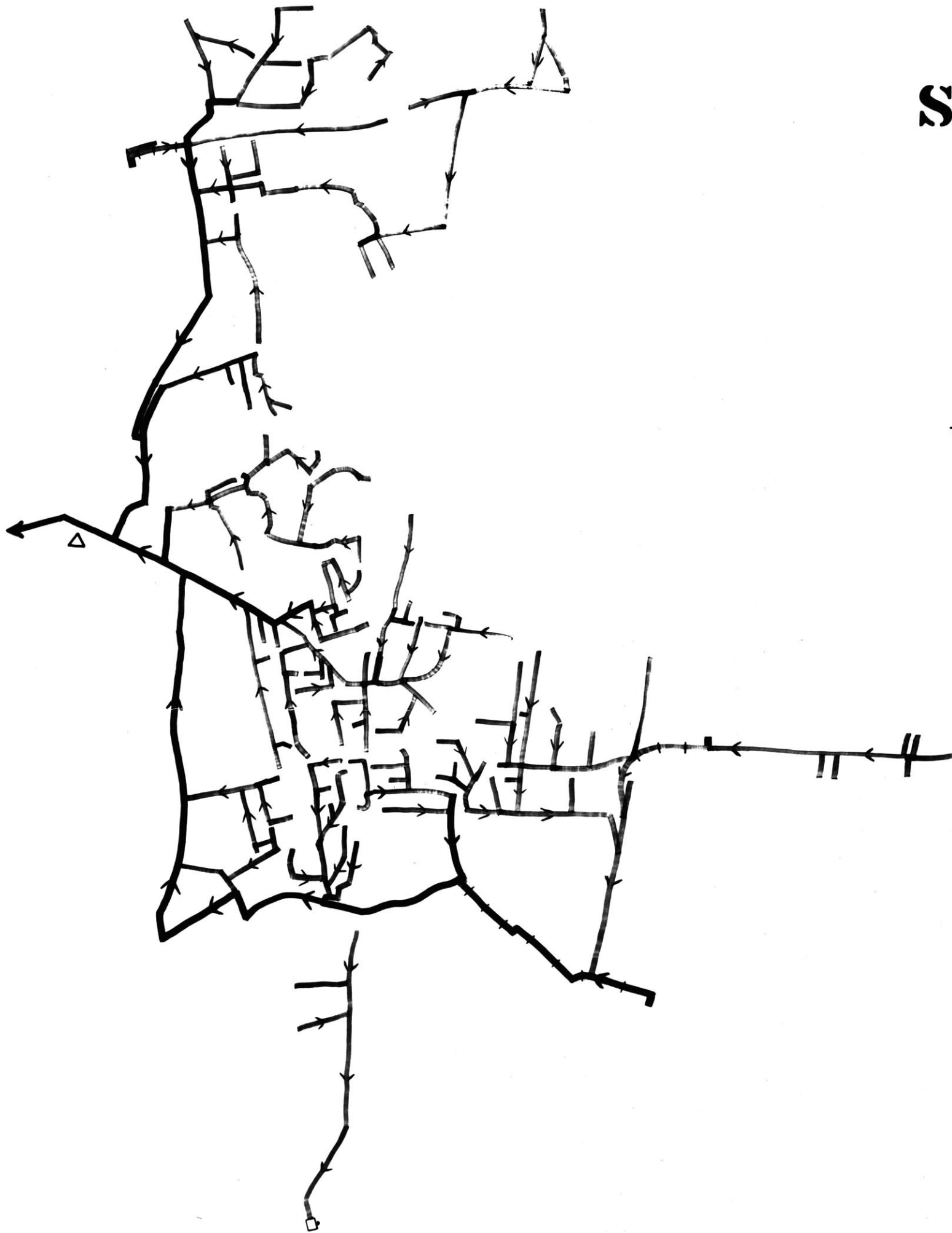
South Pleasant Street

East Hadley Road

WATER MAINS



SEWERS



----- 6" + 8"

———— 10" + ABOVE

— DIVISION LINE

+++++ FORCE MAIN

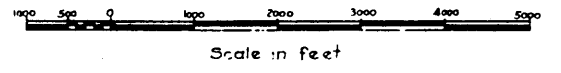
■ PUMPING STATION

□ FILTER BED

△ TREATMENT PLANT

ZONING MAP OF THE TOWN OF AMHERST, MASS.

HAMPSHIRE COUNTY
1937



L. Warren Ward, Eng.

- DISTRICTS**
- Limited Residence - white
 - General " - cross-hatched
 - Business " - dotted

Jan. 1, 1940

Walter H. Harrison,
Planning Dir.

Revised 1953

